

PROJECT MANUAL

OXFORD CREATE PHASE II

Oxford, Alabama

for

Oxford City Schools

(Local Funds)

May 26, 2026

ISSUED FOR BID



Prepared By

GMC

Goodwyn Mills Cawood, LLC.
2400 5th Avenue South, Suite 200
Birmingham, AL 35233
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www.gmcnetwork.com

GMC PROJECT NUMBER: ABHM250054

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ARCHITECTURE ■ ENGINEERING ■ ENVIRONMENTAL ■ GEOTECHNICAL ■ INTERIOR DESIGN
LANDSCAPE ARCHITECTURE ■ PLANNING ■ SURVEYING ■ TRANSPORTATION

**SECTION 00 0103
PROJECT DIRECTORY**

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 OWNER:

- A. Name: Oxford City Schools
1. Address Line 1: 402 Main Street.
 2. City: Oxford.
 3. State: AL.
 4. Zip Code: 36203.
 5. Telephone: 256-241-3140.
- B. Primary Contact: All correspondence from the Contractor to the Architect will be through this party, unless alternate arrangements are mutually agreed upon at preconstruction meeting.
1. Title: Dr..
 2. Name: Shannon Stanley.
 3. Email: sstanley@oxboe.com.

1.03 CONSULTANTS:

- A. Architect: Design Professional of Record. All correspondence from the Contractor regarding construction documents authored by Architect's consultants will be through this party, unless alternate arrangements are mutually agreed upon at preconstruction meeting.
1. Company Name: Goodwyn Mills Cawood, LLC.
 - a. Address Line 1: 2400 5th Avenue South, Suite 200.
 - b. City: Birmingham.
 - c. State: AL.
 - d. Zip Code: 35233.
 - e. Telephone: 205-879-4462.
 2. Primary Contact:
 - a. Name: Hunter Swatek.
 - b. Email: hunter.swatek@gmcnetwork.com.
- B. Interior Design Consultant:
1. Company Name: Goodwyn Mills Cawood, LLC.
 - a. Address Line 1: 2400 5th Avenue South, Suite 200
 - b. City: Birmingham.
 - c. State: AL.
 - d. Zip Code: 35233.
 - e. Telephone: 205-879-4462.
 2. Primary Contact:
 - a. Title: _____.
 - b. Name: Katie Bonds.
 - c. Email: katie.bonds@gmcnetwork.com .
- C. Civil Engineering Consultant:
1. Company Name: Goodwyn Mills Cawood, LLC..
 - a. Address Line 1: 2400 5th Avenue South, Suite 200.
 - b. City: Birmingham.
 - c. State: AL.
 - d. Zip Code: 35233.

-
- e. Telephone: 205-879-4462.
 - D. Landscape Architecture Consultant:
 - 1. Company Name: Goodwyn Mills Cawood, LLC..
 - a. Address Line 1: 2400 5th Avenue South, Suite 200.
 - b. City: Birmingham.
 - c. State: AL.
 - d. Zip Code: 35233.
 - e. Telephone: 205-879-4462.
 - E. Electrical Engineering Consultant:
 - 1. Company Name: Jackson, Renfro & Associates .
 - a. Address Line 1: 141 Village Street.
 - b. City: Birmingham
 - c. State: AL.
 - d. Zip Code: 35242.
 - e. Telephone: _____.
 - 2. Primary Contact:
 - a. Name: Robert Renfro, PE.
 - b. Email: bobby@jraee.com.

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ADVERTISEMENT FOR BIDS

SEALED PROPOSALS will be received only from previously **PRE-QUALIFIED General Contractors** by Oxford City Schools, located at 1 Cliff Garrett Dr, Oxford, AL 36203, until 2:00 PM Local Time, June 25, 2026, for this project:

OXFORD CREATE PHASE II OXFORD, ALABAMA OXFORD CITY SCHOOLS

(LOCALLY FUNDED)

at which time and place they will be publicly opened and read.

A cashiers check or bid bond payable to Oxford City Schools in an amount not less than five (5) percent of the amount of the bid, but in no event more than \$10,000, must accompany the bidder's proposal. Performance and statutory Labor and Material Payment Bonds, and insurance in compliance with requirements, will be required at the signing of the Contract.

Drawings and Specifications may be examined at the Office of the Architect.

Bid documents (Plans, Specifications, and Addenda) will be sent to General Contractors only from the Architect electronically with no deposit. Subcontractors should contact a General Contractor or plan room for documents.

Only General Contractors who are properly licensed in accordance with criteria established by the State Licensing Board for General Contractors under the Provision of Title 34, Chapter 8, Code of Alabama, 1975, as amended, will be considered for the Work of this project.

A **PRE-BID CONFERENCE** will be held at the same location as bids are to be opened, at **2:00 PM local time June 9, 2026** for the purpose of reviewing the project and answering Bidder's questions. **Attendance at the Pre-Bid Conference IS MANDATORY for all General Contractor Bidders** intending to submit a Proposal, and is highly recommended for Subcontractors.

Any and all plan holders intending to submit a bid on the project referenced above must submit a written registration with the Architect prior to bid. There are no exceptions. Bidder Registrations may be emailed to: Goodwyn Mills and Cawood, attention: Kayla Thomas. Email: kayla.thomas@gmcnetwork.com. Bids will not be accepted from unregistered bidders. It is the sole responsibility of the Bidder to confirm with the Office of the Architect receipt of registration.

Per the Owner and the Alabama Department of Revenue (ADOR), Act 2013-205, the project will be bid **EXCLUDING TAXES** and will require the Contractor to complete DCM Form C-3A Accounting of Sales Tax Attachment to DCM Form C-3 Proposal Form (August 2020) which will be submitted with the Contractors Proposal at the time of the Bid. If awarded the bid, both tax exempt entity and contractor shall apply for certificates of exemption. ADOR shall issue certificates of exemption from sales and use tax for each tax exempt project. Certificates shall only be issued to contractors licensed by the State Licensing Board for General Contractors or any subcontractor working under the same contract. Items eligible for exemption are building materials, construction materials and supplies and other tangibles that become part of the structure. ADOR will handle the administration of the certificates and the accounting of exempt purchases.

All bidders must comply with the President's Executive Order Number 11246 which prohibits

discrimination in employment regarding race, creed, color, sex or national origin. All bidders must comply with title VI of the Civil Rights Act of 1964, the Davis-Bacon Act, the Anti-Kickback Act and the Contract Workhours Act. The attention of bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wage rates to be paid under the Contract, Section 3, Segregated Facilities, Section 109 and E.O. 11246.

Buy America Preference: The Grantee must comply with the requirements of the Build America, Buy America (BABA) Act, 41 USC 8301 note, and all applicable rules and notices, as may be amended, if applicable to the Grantee's infrastructure project. Pursuant to HUD's Notice, "Public Interest Phased Implementation Waiver for FY 2022 and 2023 of Build America, Buy America Provisions as Applied to Recipients of HUD Federal Financial Assistance" (88 FR 17001), any funds obligated by HUD on or after the applicable listed effective dates, are subject to BABA requirements, unless excepted by a waiver.

The Owner reserves the right to reject any or all proposals, to waive technical errors and bid process if, in their judgment, the best interests of the Owner will thereby be promoted.

**OXFORD CITY SCHOOLS
402 MAIN STREET
OXFORD, AL 36203**

GOODWYN MILLS CAWOOD, LLC.
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1. BID DOCUMENTS:

The Bid Documents consist of the Advertisement for Bids, these Instructions to Bidders, any supplements to these Instructions to Bidders, the Proposal Form and the Accounting of Sales Tax, and the proposed Contract Documents. The proposed Contract Documents consist of the Construction Contract, the Performance Bond and Payment Bond, the Conditions of the Contract (General, Supplemental, and other Conditions), Drawings, Specifications and all addenda issued prior to execution of the Construction Contract. Bid Documents may be obtained or examined as set forth in the Advertisement for Bids.

2. GENERAL CONTRACTOR'S STATE LICENSING REQUIREMENTS:

When the amount bid for a contract is **\$100,000 or more**, the bidder must be licensed by the State Licensing Board for General Contractors and must show the Architect evidence of license before bidding or the bid will not be received by the Architect or considered by the Awarding Authority. A bid exceeding the bid limit stipulated in the bidder's license, or which is for work outside of the type or types of work stipulated in the bidder's license, will not be considered. In case of a joint venture of two or more contractors, the amount of the bid shall be within the maximum bid limitation as set by the State Licensing Board for General Contractors of the combined limitations of the partners to the joint venture.

3. QUALIFICATIONS of BIDDERS and PREQUALIFICATION PROCEDURES:

a. Any special qualifications required of general contractors, subcontractors, material suppliers, or fabricators are set forth in the Bid Documents.

b. The Awarding Authority may have elected to prequalify bidders. Parties interested in bidding for this contract are directed to the Advertisement for Bids and Supplemental Instructions to Bidders to determine whether bidders must be prequalified and how they may obtain copies of the Awarding Authority's published prequalification procedures and criteria.

c. Release of Bid Documents by the Architect to a prospective bidder will not constitute any determination by the Awarding Authority or Architect that the bidder has been found to be qualified, prequalified, or responsible.

4. PREFERENCE to RESIDENT CONTRACTORS:

(If this project is federally funded in whole or in part, this Article shall not apply.)

a. In awarding the Contract, preference will be given to Alabama resident contractors and a nonresident bidder domiciled in a state having laws granting preference to local contractors shall be awarded the Contract only on the same basis as the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances.

b. A nonresident bidder is a contractor which is neither organized and existing under the laws of the State of Alabama, nor maintains its principal place of business in the State of Alabama. A nonresident contractor which has maintained a permanent office within the State of Alabama for at least five continuous years shall not thereafter be deemed to be a non-resident contractor so long as the contractor continues to maintain a branch office within Alabama.

5. EXAMINATION of BID DOCUMENTS and the SITE of the WORK:

Before submitting a bid for the Work, the bidders shall carefully examine the Bid Documents, visit the site, and satisfy themselves as to the nature and location of the Work, and the general and local conditions, including weather, the general character of the site or building, the character and extent of existing work within or adjacent to the site and any other work being performed thereon at the time of submission of their bids. They shall obtain full knowledge as to transportation, disposal, handling, and storage of materials, availability of water, electric power, and all other facilities in the area which will have a bearing on the performance of the Work for which they submit their bids. The submission of a bid shall constitute a representation by the bidder that the bidder has made such examination and visit and has judged for and satisfied himself or herself as to conditions to be encountered regarding the character, difficulties, quality, and quantities of work to be performed and the material and equipment to be furnished, and as to the contract requirements involved.

6. EXPLANATIONS and INTERPRETATIONS:

a. Should any bidder observe any ambiguity, discrepancy, omission, or error in the drawings and specifications, or in any other bid document, or be in doubt as to the intention and meaning of these documents, the bidder should immediately report such to the Architect and request clarification.

b. Clarification will be made only by written Addenda sent to all prospective bidders. Neither the Architect nor the Awarding Authority will be responsible in any manner for verbal answers or instructions regarding intent or meaning of the Bid Documents.

c. In the case of inconsistency between drawings and specifications or within either document, a bidder will be deemed to have included in its bid the better quality or greater quantity of the work involved unless the bidder asked for and obtained the Architect's written clarification of the requirements before submission of a bid.

7. SUBSTITUTIONS:

- a. The identification of any product, material, system, item of equipment, or service in the Bid Documents by reference to a trade name, manufacturer's name, model number, etc. (hereinafter referred to as "source"), is intended to establish a required standard of performance, design, and quality and is not intended to limit competition unless the provisions of paragraph "d" below apply.
- b. When the Bid Documents identify only one or two sources, or three or more sources followed by "or approved equal" or similar wording, the bidder's proposal may be based on a source not identified but considered by the bidder to be equal to the standard of performance, design and quality as specified; however, such substitutions must ultimately be approved by the Architect. If the bidder elects to bid on a substitution without "Pre-bid Approval" as described below, then it will be understood that proof of compliance with specified requirements is the exclusive responsibility of the bidder.
- c. When the Bid Documents identify three or more sources and the list of sources is not followed by "or approved equal" or similar wording, the bidder's proposal shall be based upon one of the identified sources, unless the bidder obtains "Pre-bid Approval" of another source as described below. Under these conditions it will be expressly understood that no product, material, system, item of equipment, or service that is not identified in the Bid Documents or granted "Pre-Bid Approval" will be incorporated into the Work unless such substitution is authorized and agreed upon through a Contract Change Order.
- d. If the Bid Documents identify only one source and expressly provide that it is an approved sole source for the product, material, system, item of equipment, or service, the bidder's proposal must be based upon the identified sole source.
- e. **Procedures for "Pre-bid Approval".** If it is desired that a product, material, system, piece of equipment, or service from a source different from those sources identified in the Bid Documents be approved as an acceptable source, application for the approval of such source must reach the hands of the Architect at least ten days prior to the date set for the opening of bids. At the Architect's discretion, this ten day provision may be waived. The application for approval of a proposed source must be accompanied by technical data which the applicant desires to submit in support of the application. The Architect will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed source with previous users, evidence of reputation of the source for prompt delivery, evidence of reputation of the source for efficiency in servicing its products, or any other pertinent written information. The application to the Architect for approval of a proposed source must be accompanied by a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Bid Documents. The burden of proof of the merit of the proposed substitution is upon the proposer. To be approved, a proposed source must also meet or exceed all express requirements of the Bid Documents. Approval, if granted, shall not be effective until published by the Architect in an addendum to the Bid Documents.

8. PREPARATION and DELIVERY of BIDS:

a. DCM Form C-3: Proposal Form:

- (1) Bids must be submitted on the Proposal Form as contained in the Bid Documents; only one copy is required to be submitted. A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with the Proposal Form.
- (2) All information requested of the bidder on the Proposal Form must be filled in. The form must be completed by typewriter or hand-printed in ink.
- (3) Identification of Bidder: On the first page of the Proposal Form the bidder must be fully identified by completing the spaces provided for:
 - (a) the legal name of the bidder,
 - (b) the state under which laws the bidder's business is organized and existing,
 - (c) the city (and state) in which the bidder has its principal offices,
 - (d) the bidder's business organization, i.e., corporation, partnership, or individual (to be indicated by marking the applicable box and writing in the type of organization if it is not one of those listed), and
 - (e) the partners or officers of the bidder's organization, if the bidder is other than an individual. If the space provided on the Proposal Form is not adequate for this listing, the bidder may insert "See Attachment" in this space and provide the listing on an attachment to the Proposal Form.
- (4) Where indicated by the format of the Proposal Form, the bidder must specify lump sum prices in both words and figures. In case of discrepancy between the prices shown in words and in figures, the words will govern.
- (5) All bid items requested in the Proposal Form, including alternate bid prices and unit prices for separate items of the Work, must be bid. If a gross sum of bid items is requested in the Proposal Form, the gross sum shall be provided by the bidder.
- (6) In the space provided in the Proposal Form under "Bidder's Alabama License", the bidder must insert his or her current general contractor's state license number, current bid limit, and type(s) of work for which bidder is licensed.
- (7) The Proposal Form shall be properly signed by the bidder. If the bidder is:
 - (a) **an individual**, that individual or his or her "authorized representative" must sign the Proposal Form;
 - (b) **a partnership**, the Proposal Form must be signed by one of the partners or an "authorized representative" of the Partnership;
 - (c) **a corporation**, the president, vice-president, secretary, or "authorized representative" of the corporation shall sign and affix the corporate seal to the Proposal Form.

As used in these Instructions to Bidders, "authorized representative" is defined as a person to whom the bidder has granted written authority to conduct business in the bidder's behalf by signing and/or modifying the bid. Such written authority shall be signed by the bidder (the individual proprietor, or a member of the Partnership, or an officer of the Corporation) and shall be attached to the Proposal Form.

(8) Interlineation, alterations or erasures on the Proposal Form must be initialed by the bidder or its “authorized representative”.

b. DCM Form C-3A: Accounting of Sales Tax

A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with DCM Form C-3: Proposal Form. Submission of DCM Form C-3A is required, it is not optional. A proposal shall be rendered non-responsive if an Accounting of Sales Tax is not provided.

c. Bid Guaranty

(1) The Proposal Form must be accompanied by a cashier’s check, drawn on an Alabama bank, or a Bid Bond, executed by a surety company duly authorized and qualified to make such bonds in the State of Alabama, payable to the Awarding Authority.

(2) If a Bid Bond is provided in lieu of a cashier’s check, the bond shall be on the Bid Bond form as stipulated in the Bid Documents.

(3) The amount of the cashier’s check or Bid Bond should not be less than five percent of the contractor’s bid, but is not required to be in an amount more than ten thousand dollars.

d. Delivery of Bids:

(1) Bids will be received until the time set, and at the location designated, in the Advertisement for Bids unless notice is given of postponement. Any bid not received prior to the time set for opening bids will be rejected absent extenuating circumstances and such bids shall be rejected in all cases where received after other bids are opened.

(2) Each bid shall be placed, together with the bid guaranty, in a sealed envelope. On the outside of the envelope the bidder shall write in large letters “Proposal”, below which the bidder shall identify the Project and the Work bid on, the name of the bidder, and the bidder’s current general contractor’s state license number.

(3) Bids may be delivered in person, or by mail if ample time is allowed for delivery. When sent by mail, the sealed envelope containing the bid, marked as indicated above, shall be enclosed in another envelope for mailing.

9. WITHDRAWAL or REVISION of BIDS:

a. A bid may be withdrawn prior to the time set for opening of bids, provided a written request, executed by the bidder or the bidder’s “authorized representative”, is filed with the Architect prior to that time. The bid will then be returned to the bidder unopened.

b. A bid which has been sealed in its delivery envelope may be revised by writing the change in price and date on the outside of the delivery envelope over the signature of the bidder or the bidder’s “authorized representative”. In revising the bid in this manner, the bidder must only write the amount of the change in price on the envelope **and must not reveal the bid price.**

c. Written communications, signed by the bidder or its “authorized representative”, to revise bids will be accepted if received by the Architect prior to the time set for opening bids. The Architect will record the instructed revision upon opening the bid. Such written communication may be by facsimile if so stipulated in Supplemental Instructions to Bidders. In revising the bid in this manner, the bidder must only write the amount of the change in price **and must not reveal the bid price.**

d. Except as provided in Article 12 of these Instructions to Bidders, no bid shall be withdrawn, modified, or corrected after the time set for opening bids.

10. OPENING of BIDS:

a. Bids will be opened and read publicly at the time and place indicated in the Advertisement for Bids. Bidders or their authorized representatives are invited to be present.

b. A list of all proposed major subcontractors and suppliers will be submitted by Bidders to the Architect at a time subsequent to the receipt of bids as established by the Architect in the Bid Documents but in no event shall this time exceed twenty-four (24) hours after receipt of bids. If the list includes a fire alarm contractor and/or fire sprinkler contractor, Bidders will also submit a copy of the fire alarm contractor’s and/or fire sprinkler contractor’s permits from the State of Alabama Fire Marshal’s Office.

11. INCOMPLETE and IRREGULAR BIDS:

A bid that is not accompanied by data required by the Bid Documents, or a bid which is in any way incomplete, may be rejected. Any bid which contains any uninitialed alterations or erasures, or any bid which contains any additions, alternate bids, or conditions not called for, or any other irregularities of any kind, will be subject to rejection.

12. BID ERRORS:

a. **Errors and Discrepancies in the Proposal Form.** In case of error in the extension of prices in bids, the unit price will govern. In case of discrepancy between the prices shown in the figures and in words, the words will govern.

b. **Mistakes within the Bid.** If the low bidder discovers a mistake in its bid, the low bidder may seek withdrawal of its bid without forfeiture of its bid guaranty under the following conditions:

(1) **Timely Notice:** The low bidder must notify the Awarding Authority and Architect in writing, within three working days after the opening of bids, that a mistake was made. This notice must be given within this time frame whether or not award has been made.

(2) **Substantial Mistake:** The mistake must be of such significance as to render the bid price substantially out of proportion to the other bid prices.

(3) **Type of Mistake:** The mistake must be due to calculation or clerical error, an inadvertent omission, or a typographical error which results in an erroneous sum. A mistake of law, judgment, or opinion shall not constitute a valid ground for withdrawal without forfeiture.

(4) Documentary Evidence: Clear and convincing documentary evidence of the mistake must be presented to the Awarding Authority and the Architect as soon as possible, but no later than three working days after the opening of bids.

The Awarding Authority's decision regarding a low bidder's request to withdraw its bid without penalty shall be made within 10 days after receipt of the bidder's evidence or by the next regular meeting of the Awarding Authority. Upon withdrawal of bid without penalty, the low bidder shall be prohibited from (1) doing work on the project as a subcontractor or in any other capacity and (2) bidding on the same project if it is re-bid.

13. DISQUALIFICATION of BIDDERS:

Any bidder(s) may be disqualified from consideration for contract award for the following reasons:

a. Collusion. Any agreement or collusion among bidders or prospective bidders in restraint of freedom of competition to bid at a fixed price or to refrain from bidding or otherwise shall render the bids void and shall cause the bidders or prospective bidders participating in such agreement or collusion to be disqualified from submitting further bids to the Awarding Authority on future lettings. (See § 39-2-6, Code of Alabama 1975, for possible criminal sanctions.)

b. Advance Disclosure. Any disclosure in advance of the terms of a bid submitted in response to an Advertisement for Bids shall render the proceedings void and require re-advertisement and rebid.

c. Failure to Settle Other Contracts. The Awarding Authority may reject a bid from a bidder who has not paid, or satisfactorily settled, all bills due for labor and material on other contracts in force at the time of letting.

14. CONSIDERATION of BIDS:

a. After the bids are opened and read publicly, the bid prices will be compared and the results of this comparison will be available to the public. Until the final award of the contract, however, the Awarding Authority shall have the right to reject any or all bids, and it shall have the right to waive technical errors and irregularities if, in its judgment, the bidder will not have obtained a competitive advantage and the best interests of the Awarding Authority will be promoted.

b. If the Bid Documents request bids for projects or parts of projects in combination or separately, the Bid Documents must include supplements to, these Instructions to Bidders setting forth applicable bid procedures. Award or awards will be made to the lowest responsible and responsive bidder or bidders in accordance with such bid procedures.

15. DETERMINATION of LOW BIDDER by USE of ALTERNATES:

a. The Awarding Authority may request alternate bid prices (alternates) to facilitate either reducing the base bid to an amount within the funds available for the project or adding items to the base bid within the funds available for the project. Alternates, if any, are listed in the

Proposal Form in the order in which they shall cumulatively deduct from or add to the base bid for determining the lowest bidder.

b. If alternates are included in the Proposal Form, the Awarding Authority shall determine the dollar amount of funds available and immediately prior to the opening of bids shall announce publicly the funds available for the project. The dollar amount of such funds shall be used to determine the lowest bidder as provided herein below, notwithstanding that the actual funds available for the project may subsequently be determined to be more or less than the expected funds available as determined immediately prior to the time of the opening of bids.

c. If the base bid of the lowest bidder exceeds the funds available and alternate bid prices will reduce the base bids to an amount that is within the funds available, the lowest bidder will be determined by considering, in order, the fewest number of the alternates that produces a price within the funds available. If the base bid of the lowest bidder is within the funds available and alternate bid prices will permit adding items to the base bid, the lowest bidder will be determined by considering, in order, the greatest number of the alternates that produces a price within the funds available.

d. After the lowest bidder has been determined as set forth above, the Awarding Authority may award that bidder any combination of alternates, provided said bidder is also the low bidder when only the Base Bid and such combination of alternates are considered.

16. UNIT PRICES:

a. Work Bid on a Unit Price Basis. Where all, or part(s), of the planned Work is bid on a unit price basis, both the unit prices and the extensions of the unit prices constitute a basis of determining the lowest responsible and responsive bidder. In cases of error in the extension of prices of bids, the unit price will govern. A bid may be rejected if any of the unit prices are obviously unbalanced or non-competitive.

b. Unit Prices for Application to Change Orders. As a means of predetermining unit costs for changes in certain elements of the Work, the Bid Documents may require that the bidders furnish unit prices for those items in the Proposal Form. Unit prices for application to changes in the work are not a basis for determining the lowest bidder. Non-competitive unit prices proposed by the successful bidder may be rejected and competitive prices negotiated by the Awarding Authority prior to contract award. Unit prices for application to changes in the work are not effective unless specifically included and agreed upon in the Construction Contract.

17. AWARD of CONTRACT:

a. The contract shall be awarded to the lowest responsible and responsive bidder unless the Awarding Authority finds that all the bids are unreasonable or that it is not in the best interest of the Awarding Authority to accept any of the bids. A responsible bidder is one who, among other qualities determined necessary for performance, is competent, experienced, and financially able to perform the contract. A responsive bidder is one who submits a bid that complies with the terms and conditions of the Advertisement for Bids and the Bid Documents. Minor irregularities in the bid shall not defeat responsiveness.

b. A bidder to whom award is made will be notified by telegram, confirmed facsimile, or letter to the address shown on the Proposal Form at the earliest possible date. Unless other

time frames are stipulated in Supplemental Instructions to Bidders, the maximum time frames allowed for each step of the process between the opening of bids and the issuance of an order to proceed with the work shall be as follows:

(1) Award of contract by Awarding Authority	30 calendar days after the opening of bids
(2) Contractor's return of the fully executed contract, with bonds and evidence of insurance, to the Awarding Authority	15 calendar days after the contract has been presented to the contractor for signature (from the Lead Design Professional)
(3) Awarding Authority's approval of the contractor's bonds and evidence of insurance and completion of contract execution	20 calendar days after the contractor presents complete and acceptable documents to the Architect
(4) Notice To Proceed issued to the contractor along with distribution of the fully executed construction contract to all parties.	15 calendar days after final execution of contract by the Awarding Authority, by various State Agencies if required and by the Governor if his or her signature on the contract is required by law

The time frames stated above, or as otherwise specified in the Bid Documents, may be extended by written agreement between the parties. Failure by the Awarding Authority to comply with the time frames stated above or stipulated in Supplemental Instructions to Bidders, or agreed extensions thereof, shall be just cause for the withdrawal of the contractor's bid and contract without forfeiture of bid security.

c. Should the successful bidder or bidders to whom the contract is awarded fail to execute the Construction Contract and furnish acceptable Performance and Payment Bonds and satisfactory evidence of insurance within the specified period, the Awarding Authority shall retain from the bid guaranty, if it is a cashier's check, or recover 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 bid of the next lowest responsible and responsive bidder, but not more than \$10,000. If no other bids are received, the full amount of the bid guaranty shall be so retained or recovered as liquidated damages for such default. Any sums so retained or recovered shall be the property of the Awarding Authority.

d. All bid guaranties, 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 guaranties of the three lowest bidders will be returned as soon as the contract bonds and the contract of the successful bidder have been properly executed and approved. When the award is deferred for a period of time longer than 15 days after the opening of the bids, all bid guaranties, except those of the potentially successful bidders, shall be returned. If no award is made within the specified period, as it may by agreement be extended, all bids will be rejected, and all guaranties returned. If any potentially successful bidder agrees in writing to a stipulated extension in time for consideration of its bid and its bid was guaranteed with a cashier's check, the Awarding Authority may permit the potentially successful bidder to substitute a satisfactory bid bond for the cashier's check.

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
[Additions to Standard DCM Form C2, dated August 2021]

1. **UNIT PRICES:** Bidders are requested to bid on all Unit Price Items indicated. Where a Unit Price does not involve a change in price, insert the words “No Change.” Bidders not desiring to bid a certain Unit Price should so indicate by the words “No Bid.” Bidders failing to bid all Unit Prices risk disqualification of their bid. See “Attachment A To Proposal Form” and Section 01 2200 - “Unit Prices”, for additional information and requirements.
2. **QUESTIONS DURING BIDDING:** All questions during bidding must be submitted through an approved General Contractor bidder via email to the persons designated in Section 01 3000 – Administrative Requirements, Part 3.02. All questions must be typed. Questions will only be reviewed if submitted in this format. Explanations and interpretations will be issued via addendum only.
3. **PROPOSAL GUARANTY:** Bid Bond shall be on standard Division of Construction Management bond form. The bid security shall insure that the Bidder will enter into a contract with the Awarding Authority, and will furnish the specified 100% Performance and Payment Bonds, and General Contractor’s insurance certificates with the Contract forms, provided such presentation is made within sixty (60) days of the receipt of the bids, rather than thirty (30) days originally indicated in “Instructions To Bidders”.
4. **PRE-BID CONFERENCE:** A pre-bid conference will be held at the location, time and date indicated on the “Advertisement for Bids.” Any contractual determinations or changes made at this conference will be verified by written Addendum; only explanations so verified will be considered part of the contract terms or conditions. **Attendance is MANDATORY for all General Contractor Bidders** intending to submit a Proposal, and is also highly recommended for Subcontractors.
5. **INCLUSION OF CONTACTS FOR AWARD OF CONTRACT:** DCM Digital Construction Contract Information Form shall be included with the bid envelope in order to expedite the construction contract process should the General Contractor be awarded the project.
6. **MODIFICATION AND WITHDRAWAL:** After the bid opening, bids may be withdrawn or modified only after the expiration of sixty (60) days, rather than thirty (30) days originally indicated in “Instructions To Bidders”.
7. **LIST OF SUBCONTRACTORS AND SUPPLIERS:** In accordance with regulations of the Alabama Division of Construction Management, each bid shall have attached a list of major subcontractors and suppliers proposed for the principal parts of the work, which is to be turned in with a copy of the Proposal Form on Bid Date, or at Contractors’ option, turned in to the Owner within 24-hours after receipt of Bids, with a copy to the Architect. Bidders failing to submit such list, as indicated, will be considered non-responsive and will be rejected; Bidders failing to submit a complete list may be rejected.

Pursuant to the Code of Alabama, Section 34-33A-11(b), the General Contractor shall provide a copy of the fire alarm contractor’s State Fire Marshal’s Permit at the time the list of subcontractors for the contract is submitted.

Subcontractors listed and thereafter approved may not be changed without approval of the Owner and/or Director. The list of subcontractors will not constitute a qualification of the bid, and acceptance of a bid with such list will not constitute a waiver of any pre-approval requirement or other requirement of qualification or experience as applies to subcontractors.

Bidders should base their lists on the assumption that all Alternates will be accepted. As soon as possible after the bid opening, bidders will be advised which alternates, if any, should be considered in completion of the list. If the actual accepted alternates change, the successful bidder will be given an opportunity to justify modification or modify their list.

8. SUBSTITUTIONS, PRE-BID QUALIFICATIONS, AND PRE-QUALIFIED SUBCONTRACTORS AND SUPPLIERS:

Refer to Instructions to Bidders, 7.e. and revise the first sentence to read:

“If it is desired that a product, material, system, piece of equipment, or service from a source different from those sources identified in the Bid Documents be approved as an acceptable source, application for the approval of such source must reach the hands of the Architect at least five days prior to the date set for the opening of bids.”

Refer to Instructions to Bidders, 7. Add f.

“f. Requests for Substitutions will occur only during the bidding process and will be reviewed up to five (5) calendar days prior to the bid date. The full substitution package, including completed Substitution Request form, shall be submitted to one of the approved General Contractor bidders for consideration. The General Contractor will forward to the Architect for further consideration. If the supplier or subcontractor does not submit the full package, including Substitution Request form, the General Contractor will reject the request. Notice of approved suppliers, manufacturers, and/or products will be issued in an Addendum subject to compliance with requirements of the Bid and Contract Documents, including single source coordination. Substitutions will not be considered during the construction process unless requested by the Owner, or the specified item is unavailable or becomes unsuitable due to additions or deletions to the work.”

9. BIDDER QUALIFICATION: Qualifications for Subcontractors and Suppliers are stated at various locations throughout the Project Manual and Bid Documents. In the event a General Contractor desires to perform “qualified” Subcontractor work with their own forces, they shall be required to provide documentation and comply with all of the same criteria and qualifications as the comparable Subcontractor(s).
10. STATE FIRE MARSHAL’S PERMIT TO BE FURNISHED AT PRE-CONSTRUCTION CONFERENCE: In accordance with the Code of Alabama, Section 34-33A-9, the General Contractor shall furnish a copy of the fire alarm contractor’s State Fire Marshal’s Permit to the Building Commission Inspector at the Pre-Construction Conference. Fire alarm contractors that cannot provide a copy of the required State Fire Marshal’s Permit will be rejected.
11. RECIPROCITY: Under Section 39-3-5, Code of Alabama, 1975, non-resident general contractor bidders must accompany any written bid documents with a written opinion of an attorney licensed to practice law in such nonresident prime contractor bidder’s state of domicile as to the preferences, if any or none, granted by the law of the state to its own business entities whose principal place of business are in that state in the letting of any or all public contracts. Resident general contractors in Alabama, as defined in Section 39-2-12, are granted preference over nonresident general contractors in awarding of contracts in the same manner and to the same extent as provided by the laws of the state of domicile of the nonresident.
12. DIVISION OF CONSTRUCTION MANAGEMENT FEES: Permit Fee and other DCM User Fees are addressed in Section 01 0150 – Special Conditions, and in the attachment to Section 01 0150 – Special Conditions, entitled DCM User Fees Guidelines.
13. DIVISION OF CONSTRUCTION MANAGEMENT INSPECTIONS: Scheduling of Inspections, and Minimum Requirements for Required Inspections are addressed in Section 01 3000 – Administrative Requirements.

14. BUY AMERICA PREFERENCE: The Grantee must comply with the requirements of the Build America, Buy America (BABA) Act, 41 USC 8301 note, and all applicable rules and notices, as may be amended, if applicable to the Grantee's infrastructure project. Pursuant to HUD's Notice, "Public Interest Phased Implementation Waiver for FY 2022 and 2023 of Build America, Buy America Provisions as Applied to Recipients of HUD Federal Financial Assistance" (88 FR 17001), any funds obligated by HUD on or after the applicable listed effective dates, are subject to BABA requirements, unless excepted by a waiver

END OF SUPPLEMENTARY INSTRUCTIONS TO BIDDERS



STATE OF ALABAMA
BUILDING COMMISSION

770 WASHINGTON AVE
SUITE 444
Montgomery, Alabama 36130-1150
Telephone: (334) 242-4082
Fax: (334) 242-4182

ROBERT BENTLEY
Governor

Katherine Lynn
Director

October 28, 2013

TO: STATE AGENCIES, K-12 SUPERINTENDENTS, COMMUNITY COLLEGES, UNIVERSITIES

**FROM: KATHERINE LYNN, DIRECTOR
ALABAMA BUILDING COMMISSION**

SUBJECT: ACT 2013-205, CERTIFICATE OF EXEMPTION FROM SALES AND USE TAX FOR GOVERNMENTAL ENTITIES

Act 2013-205 was signed into law on May 9, 2013, granting the Alabama Department of Revenue (ADOR) the authority to issue certificates of exemption from sales and use taxes for construction projects for certain governmental agencies.

Summary

The full text of Act 2013-205 is available on the Building Commission's website at www.bc.alabama.gov. A brief summary of the Act is provided below:

- ADOR shall issue certificates of exemption from sales and use tax to governmental entities for each tax exempt project. Both the governmental entity and the contractor shall apply for certificates of exemption.
- Certificates of exemption shall only be issued for contracts entered into (awarded) on or after Jan. 1, 2014.
- Certificates shall only be issued to contractors licensed by the State Licensing Board for General Contractors or any subcontractor working under the same contract.
- Items eligible for exemption from sales and use tax are building materials, construction materials and supplies and other tangible personal property that become part of the structure per the written construction contract.
- ADOR will handle the administration of certificates of exemption and the accounting of exempt purchases. ADOR will have the ability to levy fines and may bar the issuance or use of certificates of exemption upon determination of willful misuse by the contractor or a subcontractor.
- The contractor shall account for the tax savings on the bid form.

Bidding of Projects Before Jan. 1, 2014

Projects bid before Jan 1, 2014 but awarded on or after Jan. 1, 2014 are still eligible for sales tax exemption regardless of whether the project was bid with or without sales tax. For projects bid before Jan. 1, 2014, the bid documents must specify if the contractor's bid shall or shall not include sales tax.

For projects bid before Jan. 1, 2014, if the project is bid with sales tax and the contractor and subcontractors purchase the materials tax exempt, prior to project closeout the contractor shall submit to the governmental entity a copy of the report filed with the Alabama Department of Revenue showing all exempt purchases. The actual sales tax savings indicated on the report shall be deducted from the final contract amount.

For projects bid after Jan. 1, 2014, the bid shall not include sales tax but the sales tax for the base bid and all bid items must be included on the contractor's bid proposal form. ABC Form C-3A indicates how the sales tax shall be accounted for on the bid proposal form and shall be modified by the project architect or engineer as appropriate for the bid items for each project. **Failure of the contractor to complete the attachment to the bid proposal form indicating the sales tax as required by Act 2013-205, Section 1 (g) shall render the bid non-responsive.**

Proposed Changes to Administrative Rules

Pursuant to Act 2013-205, the ADOR has proposed changes to the following administrative rules:

Rule 810-6-1-.46	Contractor's Liability
Rule 810-6-1-.46.01	Bleacher Systems, Lockers, Backstops, and Other Fixtures Installed in Gymnasiums
Rule 810-6-3-.77	Exemption for Certain Purchases by Contractors and Subcontractors in Conjunction with Construction Contracts with Certain Governmental Entities

A link to the proposed rules and information about the public hearings can be found on ADOR's website at <http://www.revenue.alabama.gov/analysis/upcoming-rule-hearings.cfm> . All interested parties may present their views in writing to the **Secretary of the Alabama Department of Revenue, Room 4131, Gordon Persons Building, 50 N Ripley Street, Montgomery, Alabama 36132** at any time during the thirty-five (35) day period following publication of the notice or by appearing at the hearing.

If you have any questions, please feel free to contact Katherine Lynn at the Alabama Building Commission at (334) 242-4082 or the Alabama Department of Revenue at (334) 242-1170.

cc: Ms. Julie Magee, Commissioner, Alabama Department of Revenue
Mr. Ben Albritton, Assistant Attorney General



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

ST: EXC-01
6/21

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 ☐ Subcontractor

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					

CONTRACT SIGN DATE (PROVIDED BY GENERAL CONTRACTOR)		CONTRACT COMPLETION DATE (PROVIDED BY GENERAL CONTRACTOR)			
ESTIMATED START DATE (FOR APPLICANT)		ESTIMATED COMPLETION DATE (FOR APPLICANT)			
WILL THE APPLICANT HAVE ANY SUBCONTRACTORS ON THIS JOB? ☐ Yes ☐ No If yes, please attach list.		NAME OF PARTY TO THE CONTRACT			
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 ☐ Contract 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 contract sign 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 Subcontractors
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

Subcontractor:

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 Subcontractors (if any)

General contractors and subcontractors:

- Any additions and/or deletions to the list of subcontractors 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, number, or email listed below. Extension requests should be submitted no more than 30 days after expiration date.
- Subcontractor'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

Email: 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.

PROPOSAL FORM

To: _____ Date: _____
(Awarding Authority)

In compliance with the Advertisement for Bids and subject to all the conditions thereof, the undersigned

(Legal Name of Bidder)

hereby proposes to furnish all labor and materials and perform all work required for the construction of
WORK _____

in accordance with Drawings and Specifications, dated _____, prepared by
_____, Architect/Engineer.

The Bidder, which is organized and existing under the laws of the State of _____,
having its principal offices in the City of _____,
is: ☐ a Corporation ☐ a Partnership ☐ an Individual ☐ (other) _____.

LISTING OF PARTNERS OR OFFICERS: If Bidder is a Partnership, list all partners and their
addresses; if Bidder is a Corporation, list the names, titles, and business addresses of its officers:

BIDDER'S REPRESENTATION: The Bidder declares that it has examined the site of the Work,
having become fully informed regarding all pertinent conditions, and that it has examined the Drawings
and Specifications (including all Addenda received) for the Work and the other Bid and Contract
Documents relative thereto, and that it has satisfied itself relative to the Work to be performed.

ADDENDA: The Bidder acknowledges receipt of Addenda Nos. _____ through _____ inclusively.

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) \$ _____

UNIT PRICES - (Attach to this Proposal Form the unit prices, if any, on a separate sheet.)

BID SECURITY: The undersigned agrees to enter into a Construction Contract and furnish the prescribed Performance and Payment Bonds and evidence of insurance within fifteen calendar days, or such other period stated in the Bid Documents, after the contract forms have been presented for signature, provided such presentation is made within 30 calendar days after the opening of bids, or such other period stated in the Bid Documents. As security for this condition, the undersigned further agrees that the funds represented by the Bid Bond (or cashier's check) attached hereto may be called and paid into the account of the Awarding Authority as liquidated damages for failure to so comply.

Attached hereto is a: *(Mark the appropriate box and provide the applicable information.)*

- ☐ Bid Bond, executed by _____ as Surety,
☐ a cashier's check on the _____ Bank of _____,
for the sum of _____
Dollars (\$ _____) made payable to the Awarding Authority.

BIDDER'S ALABAMA LICENSE:

State License for General Contracting: _____
License Number Bid Limit Type(s) of Work

CERTIFICATIONS: The undersigned certifies that he or she is authorized to execute contracts on behalf of the Bidder as legally named, that this proposal is submitted in good faith without fraud or collusion with any other bidder, that the information indicated in this document is true and complete, and that the bid is made in full accord with State law. Notice of acceptance may be sent to the undersigned at the address set forth below.

The Bidder also declares that a list of all proposed major subcontractors and suppliers will be submitted at a time subsequent to the receipt of bids as established by the Architect in the Bid Documents but in no event shall this time exceed twenty-four (24) hours after receipt of bids.

Legal Name of Bidder _____

Mailing Address _____

*** By (Legal Signature)** _____

*** Name & Title (print)** _____ (Seal)

Telephone Number _____

Email Address _____

* If other than the individual proprietor, or an above named member of the Partnership, or the above named president, vice-president, or secretary of the Corporation, attach written authority to bind the Bidder. Any modification to a bid shall be over the initials of the person signing the bid, or of an authorized representative.

Note: A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with DCM Form C-3: Proposal Form. Submission of DCM Form C-3A is required, it is not optional. A proposal shall be rendered non-responsive if an Accounting of Sales Tax is not provided.

CONTRACTOR

ATTACHMENT "B"

TO PROPOSAL FORM

1.1 SUBCONTRACTORS LISTING:

- A. Submit the following Subcontractors names with the Proposal Form by 2:00 PM local time on Bid Date, OR at Contractor's option, turned in to the Owner within 24-hours after the time scheduled for the opening of Bids, with a copy to the Architect:**

SECTION 02 4100 - "DEMOLITION":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 05 3100 - "STEEL DECK":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 1113 - "BITUMINOUS DAMPPROOFING":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 1300 - "SHEET WATERPROOFING":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 1400 - "FLUID-APPLIED AIR BARRIER":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 2100 - "THERMAL INSULATION":	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)

SECTION 07 2216 - “ROOF BOARD INSULATION (VENTILATED NAIL BASE)”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 3113 - “ASPHALT SHINGLES”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 6200 - “SHEET METAL FLASHING & TRIM”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 7100 - “ROOF SPECIALTIES”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 7123 - “MANUFACTURED GUTTERS & DOWNSPOUTS”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 8400 - “FIRESTOPPING”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 07 9005 - “JOINT SEALERS”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
SECTION 09 9100 - “PAINTING”:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)
DIVISION 21 - FIRE SUPPRESSION:	_____ (FIRM NAME) _____ (LOCATION - CITY and STATE)

DIVISION 22 - PLUMBING SUBCONTRACTOR:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
DIVISION 23 - MECHANICAL SUBCONTRACTOR:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
DIVISION 26 - ELECTRICAL SUBCONTRACTOR:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
DIVISION 27 – COMMUNICATIONS:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
DIVISION 28 – ELECTRONIC SAFETY AND SECURITY:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
SECTION 32 1613.13 - “CAST-IN-PLACE CONCRETE CURBS AND GUTTERS”:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
OTHER:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
OTHER:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)
OTHER:	_____; (FIRM NAME) _____. (LOCATION - CITY and STATE)

[illegible]

[illegible]

This list is not necessarily all inclusive. Submit all primary subcontractors whether their trade is listed here or not.

END OF ATTACHMENT "B" TO PROPOSAL FORM

ACCOUNTING OF SALES TAX

Attachment to DCM Form C-3: Proposal Form

To: _____ Date: _____
(Awarding Authority)

NAME OF PROJECT _____

SALES TAX ACCOUNTING

Pursuant to Act 2013-205, Section 1(g) the Contractor accounts for the sales tax NOT included in the bid proposal form as follows:

ESTIMATED SALES TAX AMOUNT

BASE BID: \$ _____

Alternate No. 1 (.....) ☐ (add) ☐ (deduct) \$ _____
(Insert key word for Alternate)

Alternate No. 2 (.....) ☐ (add) ☐ (deduct) \$ _____

Alternate No. 3 (.....) ☐ (add) ☐ (deduct) \$ _____

Alternate No. 4 (.....) ☐ (add) ☐ (deduct) \$ _____

Alternate No. 5 (.....) ☐ (add) ☐ (deduct) \$ _____

Alternate No. 6 (.....) ☐ (add) ☐ (deduct) \$ _____

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.

Legal Name of Bidder _____

Mailing Address _____

*By (Legal Signature) _____

*Name (type or print) _____

(Seal)

*Title _____

Telephone Number _____

Email Address _____

Note: A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with DCM Form C-3: Proposal Form. Submission of DCM Form C-3A with DCM Form C-3 is required, it is not optional. A proposal shall be rendered non-responsive if an Accounting of Sales Tax is not provided.

DCM Digital Construction Contract Information Form

(This form must be included with the Bid Envelope)

The contact information is needed for the following:

- Project Manger
 - Administration (Compiler)
 - Contract Reviewer
 - Contract Signator
 - Surety (Attorney-in-Fact)
-

PROJECT MANAGER

Name: _____

E-mail: _____

Phone Number: _____

ADMINISTRATION (COMPILER)

Name: _____

E-mail: _____

Phone Number: _____

CONTRACT REVIEWER

Name: _____

E-mail: _____

Phone Number: _____

CONTRACT SIGNATOR

Name: _____

E-mail: _____

Phone Number: _____

SURETY (ATTORNEY-IN-FACT)

Name: _____

E-mail: _____

Phone Number: _____

CERTIFICATION

Build America, Buy America Act: Optional Buy America Preference (BAP) Certification



Project Information

Grantee	
Grant Number	
Activity Name	
Activity Number (IDIS/DRGR)	

This “Optional Buy America Preference Certification” is used to certify that, as required by the Build America, Buy America (BABA) Act, all of the iron, steel, manufactured products, and construction materials incorporated into an infrastructure project are produced in the United States, unless exempted by a HUD general waiver or a project-/product-specific waiver approved by the Made in America Office (MIAO) at the Office of Management and Budget (OMB).

For covered materials not otherwise exempted from the Buy America Preference (BAP), the undersigned certifies the following:

- All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
- All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard that meets or exceeds this standard has been established under applicable law or regulation for determining the minimum amount of domestic content of the manufactured product;
- All construction materials used in the project are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

Attach a list of all covered materials procured by the signatory and used in the project.

I hereby certify this information is complete and accurate and agree to provide documentation collected on the country of origin for all covered materials I caused to be incorporated into or affixed to an infrastructure project to the CPD grantee and HUD upon request. I understand and agree that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature	Title/Organization	Date

TERMS AND CONDITIONS

GENERAL CONDITIONS:

- a. **Personnel:** The CONTRACTOR warrants that it has the professional personnel capable of performing the services, as called for herein, in a satisfactory and proper manner, or will secure the services of such personnel as may be required to perform such services.
- b. **Office Space:** The CONTRACTOR agrees to provide and maintain the office space and facilities required to perform all services as called for under this Agreement, at no expense to the LOCAL GOVERNMENT.
- c. None of the work or services covered by this Contract shall be subcontracted without the prior approval of the LOCAL GOVERNMENT. Any work or services subcontracted hereunder shall be specified by written contract or agreement and shall be subject to each provisions of this Contract.
- d. **Access to Materials:** The LOCAL GOVERNMENT agrees to make available to the CONTRACTOR any maps, documents, and planning materials or any other information in its possession or otherwise readily available, which as a direct bearing on the CDBG Program of the LOCAL GOVERNMENT, at no expense to the CONTRACTOR.

TERMS AND CONDITIONS:

- 1. REPORTS, RECORDS AND DATA.** The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this Contract. All records must be maintained not less than three (3) years from the conclusion of this project.
- 2. INTEREST OF MEMBER OF OR DELEGATE TO CONGRESS.** No member of or delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to the Contract if made with a corporation for its general benefit.
- 3. OTHER PROHIBITED INTERESTS.** No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction, or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract or any other contract pertaining to the project.

4. RECORD RETENTION. The Contractor shall retain all books, documents, papers and records which are directly pertinent to this contract for 5 (Five) years after expiration of this contract unless permission to destroy them is granted by the Owner. Furthermore, the Owner, the Alabama Department of Economic and Community Affairs, the Alabama Attorney General, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any records of the Contractor directly pertinent to the contract, for the purpose of making audit, examination, excerpts and/or transcriptions.

5. SPECIAL EQUAL OPPORTUNITY PROVISIONS.

(a) 3-Paragraph Equal Opportunity Clause for Activities and Contracts Not Subject to Executive Order 11246, as Amended (applicable to Federally assisted construction contracts and related subcontracts \$10,000 and under).

During the performance of this Contract, the Contractor agrees as follows:

- (i) The Contractor shall not discriminate against any employer or applicant for employment because of race, color, religion, sex or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- (ii) The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by contracting officer setting forth the provisions of this nondiscrimination clause. The Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
- (iii) Contractors shall incorporate foregoing requirements in all subcontracts.

(b) Executive Order 11246 (contracts/subcontracts above \$10,000).

- (i) Section 202 Equal Opportunity Clause

During the performance of this Contract, the Contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applications for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration without regard to race, color, religion, sex or national origin.
 - (3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representatives of the Contractor's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - (4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.
 - (5) The Contractor will furnish all information and reports required by executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and others.
 - (6) In the event of the Contractor's non-compliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations or orders, this Contract may be cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provide by law.
 - (7) The Contractor will include the provisions of the sentence immediately preceding paragraph a. and the provisions of paragraphs a. through g. in every subcontract or purchase order unless exempted by rules, regulations or order of the Secretary of labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for non-compliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the Department, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.
- (ii) Notice or Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) (applicable to contract/subcontracts exceeding \$10,000).
- (1) The Offerer's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

- (2) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Goals for Minority Participation</u>	<u>Goals for Female Participation</u>
20.7%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area. If the Contractor performs construction work in a geographic area located outside of the covered area, it shall apply the goals established for such geographic area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its Federally involved and non-Federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the Contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

- (3) The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number; estimated dollar amount of the subcontract; and the geographical area in which the contract is to be performed.
- (4) As used in this notice, and in the contract resulting from the solicitation, the "covered area" is Walker County.
- (iii) Standard CDBG Assisted Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)
- (1) As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this Contract resulted.
 - b. "Director" means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority.
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes:
 - 1. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin).
 - 2. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race).
 - 3. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent or the Pacific Islands).
 - 4. American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- (2) Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this Contract resulted.
- (3) If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

- (4) The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this Contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing contracts in geographical areas where they do not have a Federal or Federally-assisted construction contract shall apply the minority and female goals established for the geographic area where the contract is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
- (5) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
- (6) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- (7) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's work force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effort by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-use toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and supplies, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

- (8) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the

group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation shall not be a defense for the Contractor's non-compliance.

- (9) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- (10) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
- (11) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
- (12) The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
- (13) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
- (14) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number

when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

- (15) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

6. Certification of Nonsegregated Facilities (over \$10,000). By the submission of this bid, the bidder, offeror, applicant or subcontractor certifies that s/he does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that s/he does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. S/he certifies further that s/he will not maintain or provide for employees any segregated facilities at any of his/her establishments, and s/he will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained. The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause of this Contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, *transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom or otherwise. S/he further agrees that (except where s/he has obtained identical certifications from proposed Subcontractors for specific time periods) s/he will obtain identical certification from proposed Subcontractors prior to the award of subcontractors exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause; that s/he will retain such certifications in his/her files; and that s/he will forward the following notice to such proposed Subcontractors (except where proposed Subcontractors have submitted identical certifications for specific time periods).

*Parking lots, drinking foundations, recreation or entertainment areas.

7. Title VI Clause, Civil Rights Act of 1964. Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

8. Section 109 Clause, Housing and Community Development Act of 1974. No person in the United States shall on the grounds of race, color, national origin or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

9. Rehabilitation Act of 1973, Section 504 Handicapped (if \$2,500 or over).

Affirmative Action for Handicapped Workers.

- (i) The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
- (ii) The Contractor agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (iii) In the event of the Contractor's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (iv) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
- (v) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.
- (vi) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

10. Section 402 Veterans of the Vietnam Era (if \$10,000 or over).

Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era

- (i) The contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is

qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based on their disability or veteran status in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

- (ii) The Contractor agrees that all suitable employment openings of the Contractor which exist at the time of the execution of this Contract and those which occur during the performance of this Contract, including those not generated by this Contract and including those occurring at an establishment of the Contractor other than the one wherein the Contract is being performed but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The Contractor further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service, but are not required to provide those reports set forth in paragraphs 4 and 5.

- (iii) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and non veterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve the Contractor from any requirements in Executive Orders or regulations regarding nondiscrimination in employment.
- (iv) The reports required by paragraph 2 of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office or, where the Contractor has more than one hiring location in a State, with the central office of that State employment service. Such reports shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of nondisabled veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 U.S.C.1787. The Contractor shall submit a report within 30 days after the end of each reporting period wherein any performance is made on this Contract identifying data for each hiring location copies of the reports submitted until the expiration of one year after final payment under the Contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the contracting officer or of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment and placement.

- (v) Whenever the Contractor becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these provisions and has so advised the State system, there is no need to advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.
- (vi) This clause does not apply to the listing of employment openings which occur and are filled outside of the 50 states, the District of Columbia, Puerto Rico, Guam and the Virgin Islands.
- (vii) The provisions of paragraphs 2, 3, 4 and 5 of this clause do not apply to openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of his own organization or employer-union arrangement for that opening.
- (viii) As used in this clause:
 - (1) "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: production and nonproduction; plant and office; laborers and mechanics; supervisory and non-supervisory; technical; and executive, administrative, and professional openings are compensated on a salary basis of less than \$25,000 per year. This term includes full-time employment, temporary employment of more than three days' duration, and part-time employment. It does not include openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement nor openings in an educational institution which are restricted to students of that institution. Under the most compelling circumstances an employment opening may not be suitable for listing, including such situations where the needs of the Government cannot reasonably be otherwise supplied, where listing would be contrary to national security, or where the requirement of listing would otherwise not be for the best interest of the Government.
 - (2) "Appropriate office of the State employment service system" means the local office of the Federal-State national system of public employment offices with assigned responsibility for serving the area where the employment opening to be filled, including the District of Columbia, Guam, Puerto Rico and the Virgin Islands.
 - (3) "Openings which the Contractor proposes to fill from within his own organization" means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and the parent companies) and includes any openings which the Contractor proposed to fill from regularly established "recall" lists.

- (4) "Openings which the Contractor proposes to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings which the Contractor proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between the Contractor and representatives of his employees.
- (ix) The Contractor agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (x) In the event of the Contractor's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (xi) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notice shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.
- (xii) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Vietnam Era Veterans Readjustment Assistance Act, and is committed to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era.
- (xiii) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations or orders of the Secretary issued pursuant to the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontractor or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

11. Age Discrimination Act of 1975. During the performance of this Contract, the Contractor agrees as follows: the Contractor agrees not to exclude from participation, deny program benefits, or discriminate on the basis of age.

12. CERTIFICATION OF COMPLIANCE WITH AIR AND WATER ACTS (APPLICABLE TO FEDERALLY ASSISTED CONSTRUCTION CONTRACTS AND RELATED SUBCONTRACTS EXCEEDING \$100,000).

Compliance with Air and Water Acts

During the performance of this Contract, the Contractor and all Subcontractors shall comply with the requirements of the Clean Air Act, as amended, 42 USE 1857 et seq., the Federal Water Pollution Contract Act, as amended, 33 USC 1251 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended. In

addition to the foregoing requirements, all nonexempt Contractors and Subcontractors shall furnish to the Owner, the following:

(a) A stipulation by the Contractor or Subcontractors, that any facility to be utilized in the performance on any nonexempt contract or subcontract, is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20

(b) Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 USC 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.

(c) A stipulation that as a condition for the Contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized, or to be utilized for the Contract, is under consideration to be listed on the EPA List of Violating Facilities.

13. BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535, as amended by ACT 2012-491)

By signing this contract, grant, or other agreement, the contracting parties affirm, for the duration of the agreement, 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 agreement and shall be responsible for all damages resulting therefrom.

14. TERMINATION FOR CAUSE

In the event that any of the provisions of this Contract are violated by the Contractor, or by any of his Subcontractors, the Owner may serve written notice upon the Contractor and Surety of its intention to terminate the Contract, such notices to contain the reasons for such intention to terminate the Contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the Contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the Contract; provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned by the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work, such materials, appliances and plant as may be on the site of the work and necessary therefore.

15. TERMINATION FOR CONVENIENCE

The Owner may terminate this contract at any time by giving at least ten (10) days' notice in writing to the Contractor. If the contract is terminated by the Owner as provided herein, the Contractor will be paid for the time provided and expenses incurred up to the termination date.

16. Buy America.

General. None of the ARC funds provided under this grant award may be used for a project for infrastructure unless: (1) all iron and steel used in the project are produced in the United States — this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States; (2) all manufactured products used in the project are produced in the United States — this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and (3) all construction materials (excluding cement and cementitious materials, aggregates such as stone, sand, or gravel or aggregate binding agents or additives) are manufactured in the United States — this means that all manufacturing processes for the construction material occurred in the United States.

Definitions. The definitions provided in the ARC website related to the Buy America are hereby incorporated by reference. The ARC Buy America website is available at <http://www.arc.gov/BuyAmericaGuidelines>.

Exclusions. This Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

Waivers. A waiver on the application of the domestic content procurement preference (Buy America) may be available to the ARC grantee when one of the following exceptions are present: (a) the domestic content procurement preference is inconsistent with the public interest; (b) the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or (c) the inclusion of iron, steel, manufacture products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent. The grantee will request the domestic content procurement preference (Buy America) waiver in writing and according to the instructions, format, content, and supporting materials described in the ARC Buy America website, available at <http://www.arc.gov/BuyAmericaGuidelines>.

Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold currently set at \$250,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work

Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of “funding agreement” under 37 CFR §401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of \$150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of

parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

IMMIGRATION STATUS VERIFICATION

1.1 GENERAL:

A. Bidders are hereby reminded that they are required to comply with requirements of Alabama Immigration Law, Act 2011-535 (also referred to as the “Beason-Hammon Alabama Taxpayer and Citizen Protection Act”, or H.B. 658), as amended by Act No. 2012-491, including in part and effective January 1, 2012, **enrollment in the E-Verify Program of the United States Department of Homeland Security:**

1. Contractor’s signed “E-Verify Memorandum of Understanding” will be required to be attached to any Contract awarded.
2. General Contractors and Subcontractors shall be enrolled in, participate in and maintain compliance for the duration of this contract, and as otherwise required by statute.

B. The following statement shall and will be included in the Contract for Construction:

“By signing this contract, the contracting parties affirm, for the duration of the agreement, 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 agreement and shall be responsible for all damages resulting therefrom.”

C. Additional information and Guidance is available at the following websites:

1. E-Verify portal maintained by State of Alabama:
<http://immigration.alabama.gov>
2. Alabama Office of the Attorney General Website:
<http://www.ago.alabama.gov/Page-Immigration>
3. Alabama Building Commission:
<http://www.bc.state.al.us/PDFs/Bulletins/GuidanceonAct2012-491-DatedMay-29-2012.pdf>
4. US Department of Homeland Security, E-Verify:
www.dhs.gov/E-Verify

END OF SECTION

Company ID Number:

THE E-VERIFY MEMORANDUM OF UNDERSTANDING FOR EMPLOYERS

ARTICLE I PURPOSE AND AUTHORITY

The parties to this agreement are the Department of Homeland Security (DHS) and the _____ (Employer). The purpose of this agreement is to set forth the terms and conditions which the Employer will follow while participating in E-Verify.

E-Verify is a program that electronically confirms an employee's ability to work in the United States after completion of Form I-9, Employment Eligibility Verification (Form I-9). This Memorandum of Understanding (MOU) explains certain features of the E-Verify program and describes specific responsibilities of the Employer, the Social Security Administration (SSA) and DHS.

Authority for the E-Verify program is found in Title 8, United States Code, Title A, Immigration and Nationality Act, Subtitle A, Immigration and Naturalization Service, Section 1324a (8 U.S.C. § 1324a note). The Federal Acquisition Regulation (FAR) Subpart 22.1 "Employment Eligibility Verification" and Executive Order 12989, as amended, provide authority for Federal contractors and subcontractors (Federal contractor) to use E-Verify to verify the employment eligibility of certain employees working on Federal contracts.

ARTICLE II RESPONSIBILITIES

A. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the following notices supplied by DHS in a prominent place that is clearly visible to prospective employees and all employees who are to be verified through the system:
 - a. Notice of E-Verify Participation
 - b. Notice of Right to Work
2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted about E-Verify. The Employer also agrees to keep such information current by providing updated information to SSA and DHS whenever the representatives' contact information changes.
3. The Employer agrees to grant E-Verify access only to current employees who need E-Verify access. Employers must promptly terminate an employee's E-Verify access if the employer is separated from the company or no longer needs access to E-Verify.

Company ID Number:

4. The Employer agrees to become familiar with and comply with the most recent version of the E-Verify User Manual.

5. The Employer agrees that any Employer Representative who will create E-Verify cases will complete the E-Verify Tutorial before that individual creates any cases.

a. The Employer agrees that all Employer representatives will take the refresher tutorials when prompted by E-Verify in order to continue using E-Verify. Failure to complete a refresher tutorial will prevent the Employer Representative from continued use of E-Verify.

6. The Employer agrees to comply with current Form I-9 procedures, with two exceptions:

a. If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2(d)(1)(B)) can be presented during the Form I-9 process to establish identity.) If an employee objects to the photo requirement for religious reasons, the Employer should contact E-Verify at 888-464-4218.

b. If an employee presents a DHS Form I-551 (Permanent Resident Card), Form I-766 (Employment Authorization Document), or U.S. Passport or Passport Card to complete Form I-9, the Employer agrees to make a photocopy of the document and retain the photocopy with the employee's Form I-9. The Employer will use the photocopy to verify the photo and to assist DHS with its review of photo mismatches that employees contest. DHS may in the future designate other documents that activate the photo screening tool.

Note: Subject only to the exceptions noted previously in this paragraph, employees still retain the right to present any List A, or List B and List C, document(s) to complete the Form I-9.

7. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

8. The Employer agrees that, although it participates in E-Verify, the Employer has a responsibility to complete, retain, and make available inspection Forms I-9 that relate to its employees, or from other requirements of any applicable regulations or laws, including the obligation to comply with the antidiscrimination requirements of section 274B of the INA with respect to Form I-9 procedures.

a. The following modified requirements are the only exceptions to an Employer's obligation to not employ unauthorized workers and comply with the anti-discrimination provision of the INA: (1) List B identity documents must have photos, as described in paragraph 6 above; (2) When an Employer confirms the identity and employment eligibility of newly hired employee using E-Verify procedures, the Employer establishes a rebuttable presumption that it has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of that employee; (3) If the Employer receives a final nonconfirmation for an employee, but continues to employ that person, the Employer must notify DHS and the Employer is subject to a civil money penalty between \$550 and \$1,100 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) If the Employer continues to employ an employee after receiving a final nonconfirmation, then the Employer is subject to a rebuttable presumption that it has knowingly

Company ID Number:

employed an unauthorized alien in violation of section 274A(a)(1)(A); and (5) no E-Verify participant is civilly or criminally liable under any law for any action taken in good faith based on information provided through the E-Verify.

b. DHS reserves the right to conduct Form I-9 compliance inspections, as well as any other enforcement or compliance activity authorized by law, including site visits, to ensure proper use of E-Verify.

9. The Employer is strictly prohibited from creating an E-Verify case before the employee has been hired, meaning that a firm offer of employment was extended and accepted and Form I-9 was completed. The Employer agrees to create an E-Verify case for new employees within three Employer business days after each employee has been hired (after both Sections 1 and 2 of Form I-9 have been completed), and to complete as many steps of the E-Verify process as are necessary according to the E-Verify User Manual. If E-Verify is temporarily unavailable, the three-day time period will be extended until it is again operational in order to accommodate the Employer's attending, in good faith, to make inquiries during the period of unavailability.

10. The Employer agrees not to use E-Verify for pre-employment screening of job applicants, in support of any unlawful employment practice, or for any other use that this MOU or the E-Verify User Manual does not authorize.

11. The Employer must use E-Verify for all new employees. The Employer will not verify selectively and will not verify employees hired before the effective date of this MOU. Employers who are Federal contractors may qualify for exceptions to this requirement as described in Article II.B of this MOU.

12. The Employer agrees to follow appropriate procedures (see Article III below) regarding tentative nonconfirmations. The Employer must promptly notify employees in private of the finding and provide them with the notice and letter containing information specific to the employee's E-Verify case. The Employer agrees to provide both the English and the translated notice and letter for employees with limited English proficiency to employees. The Employer agrees to provide written referral instructions to employees and instruct affected employees to bring the English copy of the letter to the SSA. The Employer must allow employees to contest the finding, and not take adverse action against employees if they choose to contest the finding, while their case is still pending. Further, when employees contest a tentative nonconfirmation based upon a photo mismatch, the Employer must take additional steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

13. The Employer agrees not to take any adverse action against an employee based upon the employee's perceived employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1(l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification system to verify work authorization, a tentative nonconfirmation, a case in continuance (indicating the need for additional time for the government to resolve a case), or the finding of a photo mismatch, does not establish, and should not be interpreted as, evidence that the employee is not work authorized. In any of such cases, the employee must be provided a full and fair opportunity to contest the finding, and if he or she does so, the employee may not be terminated or suffer any adverse employment consequences based upon the employee's perceived employment eligibility status

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(including denying, reducing, or extending work hours, delaying or preventing training, requiring an employee to work in poorer conditions, withholding pay, refusing to assign the employee to a Federal contract or other assignment, or otherwise assuming that he or she is unauthorized to work) until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo mismatch or if a secondary verification is completed and a final nonconfirmation is issued, then the Employer can find the employee is not work authorized and terminate the employee's employment. Employers or employees with questions about a final nonconfirmation may call E-Verify at 1-888-464-4218 (customer service) or 1-888-897-7781 (worker hotline).

14. The Employer agrees to comply with Title VII of the Civil Rights Act of 1964 and section 274B of the INA as applicable by not discriminating unlawfully against any individual in hiring, firing, employment eligibility verification, or recruitment or referral practices because of race or her national origin or citizenship status, or by committing discriminatory documentary practices. The Employer understands that such illegal practices can include selective verification or use of E-Verify except as provided in part D below, or discharging or refusing to hire employees because they appear or sound "foreign" or have received tentative nonconfirmations. The Employer further understands that any violation of the immigration-related unfair employment practices provision in section 274B of the INA could subject the Employer to civil penalties, back pay awards, and other sanctions, and violations of Title VII could subject the Employer to back pay awards, compensatory and punitive damages. Violations of either section 274B of the INA or Title VII may also lead to the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-8151 or 1-800-255-2515 (TDD).

15. The Employer agrees that it will use the information it receives from E-Verify only to confirm the employment eligibility of employees as authorized by this MOU. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords), to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU, except for such dissemination as may be authorized in advance by SSA or DHS for legitimate purposes.

16. The Employer agrees to notify DHS immediately in the event of a breach of personal information. Breaches are defined as loss of control or unauthorized access to E-Verify personal data. All suspected or confirmed breaches should be reported by calling 1-888-464-4218 or via email at E-Verify@dhs.gov. Please use "Privacy Incident – Password" in the subject line of your email when sending a breach report to E-Verify.

17. The Employer acknowledges that the information it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a(i)(1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)). Any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

18. The Employer agrees to cooperate with DHS and SSA in their compliance monitoring and evaluation of E-Verify, which includes permitting DHS, SSA, their contractors and other agents, upon

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reasonable notice, to review Forms I-9 and other employment records and to interview it and its employees regarding the Employer's use of E-Verify, and to respond in a prompt and accurate manner to DHS requests for information relating to their participation in E-Verify.

19. The Employer shall not make any false or unauthorized claims or references about its participation in E-Verify on its website, in advertising materials, or other media. The Employer shall not describe its services as federally-approved, federally-certified, or federally-recognized, or use language with a similar intent on its website or other materials provided to the public. Entering into this MOU does not mean that E-Verify endorses or authorizes your E-Verify services and any claim to that effect is false.

20. The Employer shall not state in its website or other public documents that any language used therein has been provided or approved by DHS, USCIS or the Verification Division without first obtaining the prior written consent of DHS.

21. The Employer agrees that E-Verify trademarks and logos may be used only under license by DHS/USCIS (see [M-795 \(Web\)](#)) and, other than pursuant to the specific terms of such license, may not be used in any manner that might imply that the Employer's services, products, websites, or publications are sponsored by, endorsed by, licensed by, or affiliated with DHS, USCIS, or E-Verify.

22. The Employer understands that if it uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and termination of its participation in E-Verify according to this MOU.

B. RESPONSIBILITIES OF FEDERAL CONTRACTORS

1. If the Employer is a Federal contractor with the FAR E-Verify clause subject to the employment verification terms in Subpart 22.18 of the FAR, it will become familiar with and comply with the most current version of the E-Verify User Manual for Federal Contractors as well as the E-Verify Supplemental Guide for Federal Contractors.

2. In addition to the responsibilities of every employer outlined in this MOU, the Employer understands that if it is a federal contractor subject to the employment verification terms in Subpart 22.18 of the FAR it must certify the employment eligibility of any "employee assigned to the contract" (as defined in FAR 22.1801). Once an employee has been verified through E-Verify by the Employer, the Employer may not create a second contract for the employee through E-Verify.

- a. An Employer that is not enrolled in E-Verify as a Federal contractor at the time of a contract award must enroll as a Federal contractor in the E-Verify program within 30 calendar days of contract award and, within 90 days of enrollment, begin to verify employment eligibility of new hires using E-Verify. The Employer must verify those employees who are working in the United States, whether or not they are assigned to the contract. Once the Employer begins verifying new hires, such verification of new hires must be initiated within three business days after the hire date. Once enrolled in E-Verify as a Federal contractor, the Employer must begin verification of employees assigned to the contract within 90 calendar days after the date of enrollment or within 30 days of an employee's assignment to the contract, whichever date is later.

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b. Employers enrolled in E-Verify as a Federal contractor for 90 days or more at the time of a contract award must use E-Verify to begin verification of employment eligibility for new hires of the Employer who are working in the United States, whether or not assigned to the contract, within three business days after the date of hire. If the Employer is enrolled in E-Verify as a Federal contractor for 90 calendar days or less at the time of contract award, the Employer must, within 90 days of enrollment, begin to use E-Verify to initiate verification of new hires of the contractor who are working in the United States, whether or not assigned to the contract. Such verification of new hires must be initiated within three business days after the date of hire. An Employer enrolled as a Federal contractor in E-Verify must begin verification of each employee assigned to the contract within 90 calendar days after date of contract award or within 30 days after assignment to the contract, whichever is later.

c. Federal contractors that are institutions of higher education (as defined in 20 U.S.C. 1001(a)), state or local governments, governments of Federally recognized Indian tribes, or entities performing under a takeover agreement entered into with a Federal agency under a performance bond may choose to only verify new and existing employees assigned to the Federal contract. Such Federal contractors may, however, elect to verify all new hires, and/or all existing employees hired after November 6, 1986. Employers in this category must begin verification of employees assigned to the contract within 90 calendar days after the date of enrollment or within 30 days of an employee's assignment to the contract, whichever date is later.

d. Upon enrollment, Employers who are Federal contractors may elect to verify employment eligibility of all existing employees working in the United States who were hired after November 6, 1986, instead of verifying only those employees assigned to a covered Federal contract. After enrollment, Employers must elect to verify existing staff following DHS procedures and begin E-Verify verification of all existing employees within 180 days after the election.

e. The Employer may use a previously completed Form I-9 as the basis for creating an E-Verify case for an employee assigned to a contract as long as:

i. that Form I-9 is complete (including the SSN) and complies with Article II.A.6,

The employee's work authorization has not expired, and

ii. the employer has reviewed the Form I-9 information either in person or in communications with the employee to ensure that the employee's Section 1, Form I-9 attestation has not changed (including, but not limited to, a lawful permanent resident alien having become a naturalized U.S. citizen).

f. The Employer shall complete a new Form I-9 consistent with Article II.A.6 or update the previous Form I-9 to provide the necessary information if:

i. The Employer cannot determine that Form I-9 complies with Article II.A.6,

ii. The employee's basis for work authorization as attested in Section 1 has expired or changed, or

iii. The Form I-9 contains no SSN or is otherwise incomplete.

Note: If Section 1 of Form I-9 is otherwise valid and up-to-date and the form otherwise complies with

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Article II.C.5, but reflects documentation (such as a U.S. passport or Form I-551) that expired after completing Form I-9, the Employer shall not require the production of additional documentation, or use the photo screening tool described in Article II.A.5, subject to any additional or superseding instructions that may be provided on this subject in the E-Verify User Manual.

g. The Employer agrees not to require a second verification using E-Verify of any assigned employee who has previously been verified as a newly hired employee under this MOU or to authorize verification of any existing employee by any Employer that is not a Federal contractor based on this Article.

3. The Employer understands that if it is a Federal contractor, its compliance with this MOU is a performance requirement under the terms of the Federal contract or subcontract, and the Employer consents to the release of information relating to compliance with its verification responsibilities under this MOU to contracting officers or other officials authorized to review the Employer's compliance with Federal contracting requirements.

C. RESPONSIBILITIES OF SSA

1. SSA agrees to allow DHS to compare data provided by the Employer against SSA's database. SSA sends DHS confirmation that the data sent either matches or does not match the information in SSA's database.

2. SSA agrees to safeguard the information the Employer provides through E-Verify procedures. SSA also agrees to limit access to such information, as appropriate by law, to individuals responsible for the verification of Social Security numbers or responsible for evaluation of E-Verify or such other persons or entities who may be authorized by SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. § 6(a)), and SSA regulations (20 CFR Part 401).

3. SSA agrees to provide case results from its database within three Federal Government work days of the initial inquiry. E-Verify provides the information to the Employer.

4. SSA agrees to update SSA records, if necessary, if the employee who contests the SSA tentative nonconfirmation visits the SSA field office and provides the required evidence. If the employee visits an SSA field office within the eight Federal Government work days from the date of referral to SSA, SSA agrees to update SSA records, if appropriate, within the eight-day period unless SSA determines that more than eight days may be necessary. In such cases, SSA will provide additional instructions to the employee. If the employee does not visit SSA in the time allowed, E-Verify may provide a final nonconfirmation to the employer.

Note: If an Employer experiences technical problems, or has a policy question, the employer should contact E-Verify at 1-888-464-4218.

D. RESPONSIBILITIES OF DHS

1. DHS agrees to provide the Employer with selected data from DHS databases to enable the Employer to conduct, to the extent authorized by this MOU:

a. Automated verification checks on alien employees by electronic means, and

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- b. Photo verification checks (when available) on employees.
2. DHS agrees to assist the Employer with operational problems associated with the Employer's participation in E-Verify. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.
3. DHS agrees to provide to the Employer with access to E-Verify training materials as well as an E-Verify User Manual that contain instructions on E-Verify policies, procedures, and requirements for both SSA and DHS, including restrictions on the use of E-Verify.
4. DHS agrees to train Employers on all important changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify User Manual. Even without mandates to E-Verify, DHS reserves the right to require employers to take mandatory refresher tutorials.
5. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in E-Verify. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSCEUIEP), Civil Rights Division, U.S. Department of Justice.
6. DHS agrees to issue each of the Employer's E-Verify users a unique user identification number and password that permits them to log in to E-Verify.
7. DHS agrees to safeguard the information the Employer provides, and to limit access to such information to individuals responsible for the verification process, for evaluation of E-Verify, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security numbers and employment eligibility, to enforce the INA and Federal criminal laws, and to administer federal contracting requirements.
8. DHS agrees to provide a means of automated verification that provides (in conjunction with SSA verification procedures) confirmation or tentative nonconfirmation of employees' employment eligibility within three Federal Government work days of the initial inquiry.
9. DHS agrees to provide a means of secondary verification (including updating DHS records) for employees who contest DHS tentative nonconfirmations and photo mismatch tentative nonconfirmations. This provides final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

ARTICLE III

REFERRAL OF INDIVIDUALS TO SSA AND DHS

A. REFERRAL TO SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the notice as directed by E-Verify. The Employer must promptly notify employees in private of the finding and provide them with the notice and letter containing information specific to the employee's E-Verify

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case. The Employer also agrees to provide both the English and the translated notice and letter for employees with limited English proficiency to employees. The Employer agrees to provide written referral instructions to employees and instruct affected employees to bring the English copy of the letter to the SSA. The Employer must allow employees to contest the finding, and not take adverse action against employees if they choose to contest the finding, while their case is still pending.

2. The Employer agrees to obtain the employee's response about whether he or she will contest the tentative nonconfirmation as soon as possible after the Employer receives the tentative nonconfirmation. Only the employee may determine whether he or she will contest the tentative nonconfirmation.

3. After a tentative nonconfirmation, the Employer will refer employees to SSA field offices only as directed by E-Verify. The Employer must record the case verification number, review the employee information submitted to E-Verify to identify any errors, and find out whether the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security number, or any other corrected employee information that SSA requests, to SSA for verification again if this review indicates a need to do so.

4. The Employer will instruct the employee to visit an SSA office within eight Federal Government work days. SSA will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary.

5. While waiting for case results, the Employer agrees to check the E-Verify system regularly for case updates.

6. The Employer agrees not to ask employees to obtain a printout from the Social Security Administration number database (the "printout") or other written verification of the SSN from the SSA.

B. REFERRAL

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must promptly notify employees in print of the finding and provide them with the notice and letter containing information about the employee's E-Verify case. The Employer also agrees to provide both the English and the translated notice and letter for employees with limited English proficiency to employees. The Employer must allow employees to contest the finding, and not take adverse action against employees if they choose to contest the finding, while their case is still pending.

2. The Employer agrees to obtain the employee's response about whether he or she will contest the tentative nonconfirmation as soon as possible after the Employer receives the tentative nonconfirmation. Only the employee may determine whether he or she will contest the tentative nonconfirmation.

3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will instruct the

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employee to contact DHS through its toll-free hotline (as found on the referral letter) within eight Federal Government work days.

5. If the Employer finds a photo mismatch, the Employer must provide the photo mismatch tentative nonconfirmation notice and follow the instructions outlined in paragraph 1 of this section for tentative nonconfirmations, generally.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo mismatch, the Employer will send a copy of the employee's Form I-551, Form I-766 U.S. Passport, or passport card to DHS for review by:

- a. Scanning and uploading the document, or
- b. Sending a photocopy of the document by express mail (furnish and pay for by the employer).

7. The Employer understands that if it cannot determine whether there is a photo match/mismatch, the Employer must forward the employee's documentation to DHS as described in the preceding paragraph. The Employer agrees to resolve the case as specified by the DHS representative who will determine the photo match or mismatch.

8. DHS will electronically transmit the result of the review to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary.

9. While waiting for case results, the Employer agrees to check the E-Verify system regularly for case updates.

ARTICLE IV SERVICE PROVISIONS

A. NO SERVICE FEES

1. SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access E-Verify, an Employer will need a personal computer with Internet access.

ARTICLE V MODIFICATION AND TERMINATION

A. MODIFICATION

1. This MOU is effective upon the signature of all parties and shall continue in effect for as long as the SSA and DHS operates the E-Verify program unless modified in writing by the mutual consent of all parties.

2. Any and all E-Verify system enhancements by DHS or SSA, including but not limited to E-Verify checking against additional data sources and instituting new verification policies or procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes.

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B. TERMINATION

1. The Employer may terminate this MOU and its participation in E-Verify at any time upon 30 days prior written notice to the other parties.
2. Notwithstanding Article V, part A of this MOU, DHS may terminate this MOU, and thereby the Employer's participation in E-Verify, with or without notice at any time if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established E-Verify procedures and/or legal requirements. The Employer understands that if it is a Federal contractor, termination of this MOU by any party for any reason may negatively affect the performance of its contractual responsibilities. Similarly, the Employer understands that if it is in a state where E-Verify is mandatory, termination of this by any party MOU may negatively affect the Employer's business.
3. An Employer that is a Federal contractor may terminate this MOU when the Federal contract that requires its participation in E-Verify is terminated or completed. In such cases, the Federal contractor must provide written notice to DHS. If an Employer that is a Federal contractor fails to provide such notice, then that Employer will remain an E-Verify participant, and will remain bound by the terms of this MOU that apply to non-Federal contractor participation, and will be required to use the E-Verify procedures to verify the employment eligibility of all newly hired employees.
4. The Employer agrees that E-Verify is not liable for any losses, financial or otherwise, if the Employer is terminated from E-Verify.

ARTICLE VI PARTIES

- A. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as necessary. By separate agreement with DHS, SSA has agreed to perform its responsibilities as described in this MOU.
- B. Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.
- C. The Employer may not assign, directly or indirectly, whether by operation of law, change of control or merger, all or any part of its rights or obligations under this MOU without the prior written consent of DHS, which consent shall not be unreasonably withheld or delayed. Any attempt to sublicense, assign, or transfer any of the rights, duties, or obligations herein is void.
- D. Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.
- E. The Employer understands that its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to,

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Congressional oversight, E-Verify publicity and media inquiries, determinations of compliance with Federal contractual requirements, and responses to inquiries under the Freedom of Information Act (FOIA).

F. The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively. The Employer understands that any inaccurate statement, representation, data or other information provided to DHS may subject the Employer, its subcontractors, its employees, or its representatives to: (1) prosecution for false statements pursuant to 18 U.S.C. 1001 and/or; (2) immediate termination of its MOU and/or; (3) possible debarment or suspension.

G. The foregoing constitutes the full agreement on this subject between DHS and the Employer.

To be accepted as an E-Verify participant, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify at 1-800-164-4222.

Sample

Company ID Number:

Approved by:

Employer	
Name (Please Type or Print)	Title
Signature	Date
Department of Homeland Security – Verification Division	
Name (Please Type or Print)	Title
Signature	Date

Sample

Company ID Number:

Information Required for the E-Verify Program	
Information relating to your Company:	
Company Name	
Company Facility Address	
Company Alternate Address	
County or Parish	
Employer Identification Number	
North American Industry Classification Systems Code	
Parent Company	
Number of Employees	
Number of Employees Verified for	

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State:

Sample

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

[illegible]

[illegible]

State of _____)
County of _____)

CERTIFICATE OF COMPLIANCE WITH THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN
PROTECTION ACT (ACT 2011-535, as amended by ACT 2012-491)

DATE: _____

RE Contract/Grant/Incentive (describe by number or subject):

_____ by and between
_____ (Contractor/Grantee) and
_____ (State Agency, Department or Public Entity)

The undersigned hereby certifies to the State of Alabama as follows:

1. The undersigned holds the position of _____ with the Contractor/Grantee named above, and is authorized to provide representations set out in this Certificate as the official and binding act of that entity, and has knowledge of the provisions of THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535 of the Alabama Legislature, as amended by ACT 2012-491) which is described herein as "the Act."
2. Using the following definitions from Section 3 of the Act, select and initial either (a) or (b), below, to describe the Contractor/Grantee's business structure.

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.

a. Self-employed individuals, business entities filing articles of incorporation, partnerships, limited partnerships, limited liability companies, foreign corporations, foreign limited partnerships, and foreign limited 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, and any business entity that is operating unlawfully without a business license.

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.

____ (a) The Contractor/Grantee is a business entity or employer as those terms are defined in Section 3 of the Act.

____ (b) The Contractor/Grantee is not a business entity or employer as those terms are defined in Section 3 of the Act.

3. As of the date of this Certificate, the Contractor/Grantee does not knowingly employ an unauthorized alien within the State of Alabama and hereafter it will not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama;
4. The Contractor/Grantee is enrolled in E-Verify unless it is not eligible to enroll because of the rules of that program or other factors beyond its control.

Certified this _____ day of _____ 20____.

Name of Contractor/Grantee/Recipient

By: _____

Its _____

The above Certification was signed in my presence by the person whose name appears above, on this _____ day of _____ 20____.

WITNESS: _____

Printed Name of Witness

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS:

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER:

Name and Address of Bidder (include zip code): _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
Yes _____ No _____
2. Compliance reports were required to be filed in connection with such contract or subcontract.
Yes _____ No _____
3. Bidder has filed all compliance reports due under applicable instructions, including Monthly Employment Utilization Report (257).
Yes _____ No _____ None Required _____
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?
Yes _____ No _____

Name and Title of Signer (please print or type)

Signature

Date

BID BOND

The **PRINCIPAL** (*Bidder's company name and address*)

Name:

Address:

The **SURETY** (*Company name and primary place of business*)

Name:

Address:

The **OWNER** (*Entity name and address*)

Name:

Address:

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

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 Documents, 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 form 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
 - (b) 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 _____, _____.

ATTEST:

PRINCIPAL:

By _____

Name and Title

SURETY:

ATTEST:

By _____

Name and Title

This form is provided solely for the purpose of inclusion in the project manual. A Construction Contract for fully locally-funded K-12 projects must be initiated via the appropriate DocuSign link from DCM's Engage Portal at <https://engagealabama-rpm.facilityforce.cloud> by the Lead Design Professional Firm.

DCM Form C-5 (fully locally-funded K-12 school project)
revised October 2024

DCM (BC) Project No.

CONSTRUCTION CONTRACT

- (1) _____
- (2) This Construction Contract is entered into this _____ day of _____ in the year of _____
- (3) between the **OWNER**,
Entity Name: _____
Address: _____
Email & Phone #: _____
- (4) and the **CONTRACTOR**,
Company Name: _____
Address: _____
Email & Phone #: _____
- (5) for the **WORK** of the Project, identified as: _____
- (6) The **CONTRACT DOCUMENTS** are dated _____ and have been amended by _____
- (7) **ADDENDA** _____
- (8) The **ARCHITECT** is
Firm Name: _____
Address: _____
Email & Phone #: _____
- (9) The **CONTRACT SUM** is
Dollars (\$) _____) and is the sum of the Contractor's Base Bid for the Work and the following
- (10) **BID ALTERNATE PRICES:** _____
- (11) The **CONTRACT TIME** is _____ () calendar days.

THE OWNER AND THE CONTRACTOR AGREE AS FOLLOWS: The Contract Documents, as defined in the General Conditions of the Contract (DCM Form C-8), are incorporated herein by reference. The Contractor shall perform the Work in accordance with the Contract Documents. The Owner will pay and the Contractor will accept as full compensation for such performance of the Work, the Contract Sum subject to additions and deductions (including liquidated damages) as provided in the Contract Documents. The Work shall commence on a date to be specified in a Notice to Proceed issued by the Owner (or by the Lead Design Professional on the Owner's behalf), and shall then be substantially completed within the Contract Time.

- (12) **LIQUIDATED DAMAGES** for which the Contractor and its Surety (if any) shall be liable and may be required to pay the Owner in accordance with the Contract Documents shall be equal to six percent interest per annum on the total Contract Sum unless a dollar amount is stipulated in the following space, in which case liquidated damages shall be determined at _____ dollars (\$) _____ per calendar day.

Numbers in margin correspond to "Checklist", DCM Form B-7

- (13) **SPECIAL PROVISIONS** *(Insert any Special Provisions here, such as acceptance or rejection of unit prices. If Special Provisions are continued in an attachment, identify the attachment below):*

- (14) **STATE GENERAL CONTRACTOR'S LICENSE:** The Contractor does hereby certify that Contractor is currently licensed by the Alabama State Licensing Board for General Contractors and that the certificate for such license bears the following:

License No.:

Classification(s):

Bid Limit:

The Owner and Contractor have entered into this Construction Contract as of the date first written above and have executed this Construction Contract in sufficient counterparts to enable each contracting party to have an originally executed Construction Contract each of which shall, without proof or accounting for the other counterparts, be deemed an original thereof.

The Owner does hereby certify that this Construction Contract was let in accordance with the provisions of Title 39, Code of Alabama 1975, as amended, and all other applicable provisions of law, and that the terms and commitments of this Construction Contract do not constitute a debt of the State of Alabama in violation of Article 11, Section 213 of the Constitution of Alabama, 1901, as amended by Amendment Number 26.

(15)

APPROVAL

**ALABAMA STATE DEPARTMENT OF EDUCATION
(SDE)**
(Required for locally-funded, SDE projects.)

By _____ Date: _____
State Superintendent of Education

CONTRACTING PARTIES

Contractor Company

By _____
Signature

Name & Title _____

Owner Entity

By _____
Signature

Name(s) & Title(s) _____

Routing of the Construction Contract to reviewers and e-signers is automated through DocuSign. DocuSign links for fully locally-funded contract documents are available from DCM's Engage Portal at <https://engagealabama-rpm.facilityforce.cloud>

Numbers in margin correspond to second page of "Checklist", DCM Form B-7

(1) **PERFORMANCE BOND**

Do not staple this form; use clips.

SURETY'S BOND NUMBER

(2) The **PRINCIPAL** (*Company name and address of Contractor as appears in the Construction Contract*)

Name:

Address:

(3) The **SURETY** (*Company name and primary place of business*)

Name:

Address:

(4) The **OWNER** (*Entity name and address, same as appears in the Construction Contract*)

Name:

Address:

(5) The **PENAL SUM** of this Bond (the Contract Sum)

Dollars (\$)).

(6) **DATE** of the Construction Contract :

(7) The **PROJECT**: (*Same as appears in the Construction Contract*)

1. WE, THE PRINCIPAL (hereinafter "Contractor") AND THE SURETY, jointly and severally, hereby bind ourselves, our heirs, executors, administrators, successors, and assigns to the Owner in the Penal Sum stated above for the performance of the Contract, and Contract Change Orders, in accord with the requirements of the Contract Documents, which are incorporated herein by reference. If the Contractor performs the Contract, and Contract Change Orders, in accordance with the Contract Documents, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

2. The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. All Contract Change Orders involving an increase in the Contract Sum will require consent of Surety by endorsement of the Contract Change Order form. The Surety waives notification of any Contract Change Orders involving only extension of the Contract Time.

3. Whenever the Architect gives the Contractor and the Surety, at their addresses stated above, a written Notice to Cure a condition for which the Contract may be terminated in accordance with the Contract Documents, the Surety may, within the time stated in the notice, cure or provide the Architect with written verification that satisfactory positive action is in process to cure the condition.
4. The Surety's obligation under this Bond becomes effective after the Contractor fails to satisfy a Notice to Cure and the Owner:
 - (a) gives the Contractor and the Surety, at their addresses stated above, a written Notice of Termination declaring the Contractor to be in default under the Contract and stating that the Contractor's right to complete the Work, or a designated portion of the Work, shall terminate seven days after the Contractor's receipt of the notice; and
 - (b) gives the Surety a written demand that, upon the effective date of the Notice of Termination, the Surety promptly fulfill its obligation under this Bond.
5. In the presence of the conditions described in Paragraph 4, the Surety shall, at its expense:
 - (a) On the effective date of the Notice of Termination, take charge of the Work and be responsible for the safety, security, and protection of the Work, including materials and equipment stored on and off the Project site, and
 - (b) Within twenty-one days after the effective date of the Notice of Termination, proceed, or provide the Owner with written verification that satisfactory positive action is in process to facilitate proceeding promptly, to complete the Work in accordance with the Contract Documents, either with the Surety's resources or through a contract between the Surety and a qualified contractor to whom the Owner has no reasonable objection.
6. As conditions precedent to taking charge of and completing the Work pursuant to Paragraph 5, the Surety shall neither require, nor be entitled to, any agreements or conditions other than those of this Bond and the Contract Documents. In taking charge of and completing the Work, the Surety shall assume all rights and obligations of the Contractor under the Contract Documents; however, the Surety shall also have the right to assert "Surety Claims" to the Owner in accordance with the Contract Documents. The presence or possibility of a Surety Claim shall not be just cause for the Surety to fail or refuse to promptly take charge of and complete the Work or for the Owner to fail or refuse to continue to make payments in accordance with the Contract Documents.
7. By accepting this Bond as a condition of executing the Construction Contract, and by taking the actions described in Paragraph 4, the Owner agrees that:
 - (a) the Owner shall promptly advise the Surety of the unpaid balance of the Contract Sum and, upon request, shall make available or furnish to the Surety, at the cost of reproduction, any portions of the Project Record, and
 - (b) as the Surety completes the Work, or has it completed by a qualified contractor, the Owner shall pay the Surety, in accordance with terms of payment of the Contract Documents, the unpaid balance of the Contract Sum, less any amounts that may be or become due the Owner from the Contractor under the Construction Contract or from the Contractor or the Surety under this Bond.
8. In the presence of the conditions described in Paragraph 4, the Surety's obligation includes responsibility for the correction of Defective Work, liquidated damages, and reimbursement of any reasonable expenses incurred by the Owner as a result of the Contractor's default under the Contract, including architectural, engineering, administrative, and legal services.

Numbers in margin correspond to second page of "Checklist", DCM Form B-7

9. Nothing contained in this Bond shall be construed to mean that the Surety shall be liable to the Owner for an amount exceeding the Penal Sum of this Bond, except in the event that the Surety should be in default under the Bond by failing or refusing to take charge of and complete the Work pursuant to Paragraph 5. If the Surety should fail or refuse to take charge of and complete the Work, the Owner shall have the authority to take charge of and complete the Work, or have it completed, and the following costs to the Owner, less the unpaid balance of the Contract Sum, shall be recoverable under this Bond:
- (a) the cost of completing the Contractor's responsibilities under the Contract, including correction of Defective Work;
 - (b) additional architectural, engineering, managerial, and administrative services, and reasonable attorneys' fees incident to completing the Work;
 - (c) interest on, and the cost of obtaining, funds to supplement the unpaid balance of the Contract Sum as may be necessary to cover the foregoing costs;
 - (d) the fair market value of any reductions in the scope of the Work necessitated by insufficiency of the unpaid balance of the Contract Sum and available supplemental funds to cover the foregoing costs; and
 - (f) additional architectural, engineering, managerial, and administrative services, and reasonable attorneys' fees incident to ascertaining and collecting the Owner's losses under the Bond.
10. All claims and disputes arising out of or related to this bond, or its breach, shall be resolved in accordance with Article 24, General Conditions of the Contract.

(8) **SIGNED AND SEALED** this _____ day of _____, _____.

(9 & 10) **SURETY:**

CONTRACTOR as PRINCIPAL:

Company Name

By _____
Signature

Name and Title

Company Name

By _____
Signature

Name and Title

- (11) **NOTE:** Original power of attorney for the Surety's signatory shall be furnished with each of the original three bond forms to be attached to each of the three contract copies (with original signatures) per project.

Do not staple this form; use clips. Purpose: quickly and efficiently scan thousands of documents into DCM's database.

Numbers in margin correspond to second page of "Checklist", DCM Form B-7

(1) **PAYMENT BOND**

SURETY'S BOND NUMBER

Do not staple this form; use clips.

- (2) The **PRINCIPAL** (Company name and address of Contractor, same as appears in the Construction Contract)

Name:

Address:

- (3) The **SURETY** (Company name and primary place of business)

Name:

Address:

- (4) The **OWNER(s)** (Entity name and address, same as appears in the Construction Contract)

Name:

Address:

- (5) The **PENAL SUM** of this Bond (the Contract Sum)

Dollars (\$)).

- (6) **DATE** of the Construction Contract:

- (7) The **PROJECT**: (Same as appears in the Construction Contract)

1. **WE, THE PRINCIPAL (hereinafter "Contractor") AND THE SURETY**, jointly and severally, hereby bind ourselves, our heirs, executors, administrators, successors, and assigns to the Owner in the Penal Sum stated above to promptly pay all persons supplying labor, materials, or supplies for or in the prosecution of the Contract, which is incorporated herein by reference, and any modifications thereof by Contract Change Orders. If the Contractor and its Subcontractors promptly pay all persons supplying labor, materials, or supplies for or in the prosecution of the Contract and Contract Change Orders, then this obligation shall be null and void; otherwise to remain and be in full force and effect.
2. The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. All Contract Change Orders involving an increase in the Contract Sum will require consent of Surety by endorsement of the Contract Change Order form. The Surety waives notification of any Contract Change Orders involving only extension of the Contract Time.

Numbers in margin correspond to second page of "Checklist", DCM Form B-7

3. Any person that has furnished labor, materials, or supplies for or in the prosecution of the Contract and Contract Change Orders for which payment has not been timely made may institute a civil action upon this Bond and have their rights and claims adjudicated in a civil action and judgment entered thereon. Notwithstanding the foregoing, a civil action may not be instituted on this bond until 45 days after written notice to the Surety of the amount claimed to be due and the nature of the claim. The civil action must commence not later than one year from the date of final settlement of the Contract. The giving of notice by registered or certified mail, postage prepaid, addressed to the Surety at any of its places of business or offices shall be deemed sufficient. In the event the Surety or Contractor fails to pay the claim in full within 45 days from the mailing of the notice, then the person or persons may recover from the Contractor and Surety, in addition to the amount of the claim, a reasonable attorney's fee based on the result, together with interest on the claim from the date of the notice.
4. Every person having a right of action on this bond shall, upon written application to the Owner indicating that labor, material, or supplies for the Work have been supplied and that payment has not been made, be promptly furnished a certified copy of this bond and the Construction Contract. The claimant may bring a civil action in the claimant's name on this Bond against the Contractor and the Surety, or either of them, in the county in which the Work is to be or has been performed or in any other county where venue is otherwise allowed by law.
5. This bond is furnished to comply with Code of Alabama, §39-1-1, and all provisions thereof shall be applicable to civil actions upon this bond.
6. All claims and disputes between Owner and either the Contractor or Surety arising out of or related to this bond, or its breach, shall be resolved in accordance with Article 24, General Conditions of the Contract.

(8) **SIGNED AND SEALED** this _____ day of _____, _____.

(9 & 10) **SURETY:**

CONTRACTOR as PRINCIPAL:

Company Name

Company Name

By _____
Signature

By _____
Signature

Name and Title

Name and Title

- (11) **NOTE:** Original power of attorney for the Surety's signatory shall be furnished with each of the original three bond forms to be attached to each of the three contract copies (with original signatures) per project.

Do not staple this form; use clips. Purpose: quickly and efficiently scan thousands of documents into DCM's database.

GENERAL CONDITIONS of the CONTRACT

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ARTICLE 1 DEFINITIONS

Whenever the following terms, or pronouns in place of them, are used in the Contract Documents, the intent and meaning shall be interpreted as follows:

- A. ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT:** The Technical Staff of the Alabama Division of Construction Management.
- B. ARCHITECT:** The Architect is the person or entity lawfully licensed to practice architecture in the State of Alabama, who is under contract with the Owner as the primary design professional for the Project and identified as the Architect in the Construction Contract. The term "Architect" means the Architect or the Architect's authorized representative. If the employment of the Architect is terminated, the Owner shall employ a new Architect whose status under the Contract Documents shall be that of the former Architect. If the primary design professional for the Project is a Professional Engineer, the term "Engineer" shall be substituted for the term "Architect" wherever it appears in this document.

- C. COMMISSION:** The former Alabama Building Commission, for which the Alabama Division of Construction Management has been designated by the Legislature as its successor.
- D. CONTRACT:** The Contract is the embodiment of the Contract Documents. The Contract represents the entire and integrated agreement between the Owner and Contractor and supersedes any prior written or oral negotiations, representations or agreements that are not incorporated into the Contract Documents. The Contract may be amended only by a Contract Change Order or a Modification to the Construction Contract. The contractual relationship which the Contract creates between the Owner and the Contractor extends to no other persons or entities. The Contract consists of the following Contract Documents, including all additions, deletions, and modifications incorporated therein before the execution of the Construction Contract:
- (1) Construction Contract
 - (2) Performance and Payment Bonds
 - (3) Conditions of the Contract (General, Supplemental, and other Conditions)
 - (4) Specifications
 - (5) Drawings
 - (6) Contract Change Orders
 - (7) Modifications to the Construction Contract (applicable to PSCA Projects)
- E. CONTRACT SUM:** The Contract Sum is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents. The term “Contract Sum” means the Contract Sum stated in the Construction Contract as may have been increased or decreased by Change Order(s) in accordance with the Contract Documents.
- F. CONTRACT TIME:** The Contract Time is the period of time in which the Contractor must achieve Substantial Completion of the Work. The date on which the Contract Time begins is specified in the written Notice To Proceed issued to the Contractor by the Owner or Director. The Date of Substantial Completion is the date established in accordance with Article 32. The term “Contract Time” means the Contract Time stated in the Construction Contract as may have been extended by Change Order(s) in accordance with the Contract Documents. The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.
- G. CONTRACTOR:** The Contractor is the person or persons, firm, partnership, joint venture, association, corporation, cooperative, limited liability company, or other legal entity, identified as such in the Construction Contract. The term “Contractor” means the Contractor or the Contractor’s authorized representative.
- H. DCM:** The Alabama Division of Construction Management.
- I. DCM PROJECT INSPECTOR:** The member of the Technical Staff of the Alabama Division of Construction Management to whom the Project is assigned relative to executing the respective inspections and authorities described in Article 16, Inspection of the Work.
- J. DEFECTIVE WORK:** The term “Defective Work” shall apply to: (1) any product, material, system, equipment, or service, or its installation or performance, which does not conform to the requirements of the Contract Documents, (2) in-progress or completed Work the workmanship of which does not conform to the quality specified or, if not specified, to the quality produced by skilled workers performing work of a similar nature on similar projects in the state, (3) substitutions and deviations not properly submitted and approved or otherwise authorized, (4) temporary

supports, structures, or construction which will not produce the results required by the Contract Documents, and **(5)** materials or equipment rendered unsuitable for incorporation into the Work due to improper storage or protection.

- K. DIRECTOR:** The Director of the Alabama Division of Construction Management.
- L. DRAWINGS:** The Drawings are the portions of the Contract Documents showing graphically the design, location, layout, and dimensions of the Work, in the form of plans, elevations, sections, details, schedules, and diagrams.
- M. NOTICE TO PROCEED:** A proceed order issued by the Owner or Director, as applicable, fixing the date on which the Contractor shall begin the prosecution of the Work, which is also the date on which the Contract Time shall begin.
- N.1 OWNER:** The Owner is the entity or entities identified as such in the Construction Contract and is referred to throughout the Contract Documents as if singular in number. The term “Owner” means the Owner or the Owner’s authorized representative. The term “Owner” as used herein shall be synonymous with the term “Awarding Authority”.
- N.2 AWARDING AUTHORITY:** §39-2-1 (1) of the Code of Alabama, 1975, as amended definition: Any governmental board, commission, agency, body, authority, instrumentality, department, or subdivision of the state, its counties and municipalities. This term includes, but shall not be limited to, the Department of Transportation, the Division of Real Property Management of the Department of Finance, the State Board of Education, and any other entity contracting for public works. This term shall exclude the State Docks Department and any entity exempted from the competitive bid laws of the state by statute.
- O. THE PROJECT:** The Project is the total construction of which the Work required by these Contract Documents may be the entirety or only a part with other portions to be constructed by the Owner or separate contractors.
- P. PROJECT MANUAL:** The Project Manual is the volume usually assembled for the Work which may include the Advertisement for Bids, Instructions to Bidders, sample forms, General Conditions of the Contract, Supplementary Conditions, and Specifications of the Work.
- Q. SPECIFICATIONS:** The Specifications are that portion of the Contract Documents which set forth in writing the standards of quality and performance of products, equipment, materials, systems, and services and workmanship required for acceptable performance of the Work.
- R. SUBCONTRACTOR:** A Subcontractor is a person or entity who is undertaking the performance of any part of the Work by virtue of a contract with the Contractor. The term “Subcontractor” means a Subcontractor or its authorized representatives.
- S. THE WORK:** The Work is the construction and services required by the Contract Documents and includes all labor, materials, supplies, equipment, and other items and services as are necessary to produce the required construction and to fulfill the Contractor’s obligations under the Contract. The Work may constitute the entire Project or only a portion of it.

ARTICLE 2
INTENT and INTERPRETATION of the CONTRACT DOCUMENTS

A. INTENT

It is the intent of the Contract Documents that the Contractor shall properly execute and complete the Work described by the Contract Documents, and unless otherwise provided in the Contract, the Contractor shall provide all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work, in full accordance with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

B. COMPLEMENTARY DOCUMENTS

The Contract Documents are complementary. If Work is required by one Contract Document, the Contractor shall perform the Work as if it were required by all of the Contract Documents. However, the Contractor shall be required to perform Work only to the extent that is consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

C. ORDER of PRECEDENCE

Should any discrepancy arise between the various elements of the Contract Documents, precedence shall be given to them in the following order unless to do so would contravene the apparent Intent of the Contract Documents stated in preceding Paragraph A:

- (1) The Construction Contract.
- (2) Addenda, with those of later date having precedence over those of earlier date.
- (3) Supplementary Conditions (or other Conditions which modify the General Conditions of the Contract).
- (4) General Conditions of the Contract.
- (5) The Specifications.
- (6) Details appearing on the Drawings; large scale details shall take precedence over smaller scale details.
- (7) The Drawings; large scale drawings shall take precedence over smaller scale drawings.

D. ORGANIZATION

Except as may be specifically stated within the technical specifications, neither the organization of the Specifications into divisions, sections, or otherwise, nor any arrangement of the Drawings shall control how the Contractor subcontracts portions of the Work or assigns Work to any trade.

E. INTERPRETATION

- (1) The Contract Documents shall be interpreted collectively, each part complementing the others and consistent with the Intent of the Contract Documents stated in preceding Paragraph A. Unless an item shown or described in the Contract Documents is specifically identified to be furnished or installed by the Owner or others or is identified as "Not In Contract" ("N.I.C."), the Contractor's obligation relative to that item shall be interpreted to include furnishing, assembling, installing, finishing, and/or connecting the item at the Contractor's expense to produce a product or system that is complete, appropriately tested, and in operative condition ready for use or subsequent construction or operation of the Owner or separate contractors. The omission of words or phases

for brevity of the Contract Documents, the inadvertent omission of words or phrases, or obvious typographical or written errors shall not defeat such interpretation as long as it is reasonably inferable from the Contract Documents as a whole.

(2) Words or phrases used in the Contract Documents which have well-known technical or construction industry meanings are to be interpreted consistent with such recognized meanings unless otherwise indicated.

(3) Except as noted otherwise, references to standard specifications or publications of associations, bureaus, or organizations shall mean the latest edition of the referenced standard specification or publication as of the date of the Advertisement for Bids.

(4) In the case of inconsistency between Drawings and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

(5) Any portions of the Contract Documents written in longhand must be initialed by all parties..

(6) Any doubt as to the meaning of the Contract Documents or any obscurity as to the wording of them, shall be promptly submitted in writing to the Architect for written interpretation, explanation, or clarification.

F. SEVERABILITY.

The partial or complete invalidity of any one or more provision of this Contract shall not affect the validity or continuing force and effect of any other provision.

ARTICLE 3
CONTRACTOR'S REPRESENTATIONS

By executing the Construction Contract the Contractor represents to the Owner:

- A. The Contractor has visited the site of the Work to become familiar with local conditions under which the Work is to be performed and to evaluate reasonably observable conditions as compared with requirements of the Contract Documents.
- B. The Contractor shall use its best skill and attention to perform the Work in an expeditious manner consistent with the Contract Documents.
- C. The Contractor is an independent contractor and in performance of the Contract remains and shall act as an independent contractor having no authority to represent or obligate the Owner in any manner unless authorized by the Owner in writing.

ARTICLE 4
DOCUMENTS FURNISHED to CONTRACTOR

Unless otherwise provided in the Contract Documents, twenty sets of Drawings and Project Manuals will be furnished to the Contractor by the Architect without charge. Other copies requested will be furnished at reproduction cost.

ARTICLE 5

OWNERSHIP of DRAWINGS

All original or duplicated Drawings, Specifications, and other documents prepared by the Architect, and furnished to the Contractor are the property of the Architect and are to be used solely for this Project and not to be used in any manner for other work. Upon completion of the Work, all copies of Drawings and Specifications, with the exception of the Contractor's record set, shall be returned or accounted for by the Contractor to the Architect, on request.

ARTICLE 6

SUPERVISION, SUPERINTENDENT, and EMPLOYEES

A. SUPERVISION and CONSTRUCTION METHODS

(1) The term "Construction Methods" means the construction means, methods, techniques, sequences, and procedures utilized by the Contractor in performing the Work. The Contractor is solely responsible for supervising and coordinating the performance of the Work, including the selection of Construction Methods, unless the Contract Documents give other specific instructions concerning these matters.

(2) The Contractor is solely and completely responsible for job site safety, including the protection of persons and property in accordance with Article 14.

(3) The Contractor shall be responsible to the Owner for acts and omissions of not only the Contractor and its agents and employees, but all persons and entities, and their agents and employees, who are performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

(4) The Contractor shall be responsible to inspect the in-progress and completed Work to verify its compliance with the Contract Documents and to insure that any element or portion of the Work upon which subsequent Work is to be applied or performed is in proper condition to receive the subsequent Work.

B. SUPERINTENDENT

(1) The Contractor shall employ and maintain a competent level of supervision for the performance of the Work at the Project site, including a superintendent who shall:

(a) have full authority to receive instructions from the Architect or Owner and to act on those instructions and (b) be present at the Project site at all times during which Work is being performed.

(2) Before beginning performance of the Work, the Contractor shall notify the Architect in writing of the name and qualifications of its proposed superintendent so that the Owner may review the individual's qualifications. If, for reasonable cause, the Owner refuses to approve the individual, or withdraws its approval after once giving it, the Contractor shall name a different superintendent for the Owner's review and approval. Any disapproved superintendent will not perform in that capacity thereafter at the Project site.

C. EMPLOYEES

The Contractor shall permit only fit and skilled persons to perform the Work. The Contractor shall enforce safety procedures, strict discipline, and good order among persons performing the Work. The Contractor will remove from its employment on the Project any person who deliberately or persistently produces non-conforming Work or who fails or refuses to conform to reasonable rules of personal conduct contained in the Contract Documents or implemented by the Owner and delivered to the Contractor in writing during the course of the Work.

ARTICLE 7

REVIEW of CONTRACT DOCUMENTS and FIELD CONDITIONS by CONTRACTOR

- A. In order to facilitate assembly and installation of the Work in accordance with the Contract Documents, before starting each portion of the Work, the Contractor shall examine and compare the relevant Contract Documents, and compare them to relevant field measurements made by the Contractor and any conditions at the site affecting that portion of the Work.
- B. If the Contractor discovers any errors, omissions, or inconsistencies in the Contract Documents, the Contractor shall promptly report them to the Architect as a written request for information that includes a detailed statement identifying the specific Drawings or Specifications that are in need of clarification and the error, omission, or inconsistency discovered in them.
- (1) The Contractor shall not be expected to act as a licensed design professional and ascertain whether the Contract Documents comply with applicable laws, statutes, ordinances, building codes, and rules and regulations, but the Contractor shall be obligated to promptly notify the Architect of any such noncompliance discovered by or made known to the Contractor. If the Contractor performs Work without fulfilling this notification obligation, the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.
- (2) The Contractor shall not be liable to the Owner for errors, omissions, or inconsistencies that may exist in the Contract Documents, or between the Contract Documents and conditions at the site, unless the Contractor knowingly fails to report a discovered error, omission, or inconsistency to the Architect, in which case the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.
- C. If the Contractor considers the Architect's response to a request for information to constitute a change to the Contract Documents involving additional costs and/or time, the Contractor shall follow the procedures of Article 20, Claims for Extra Cost or Extra Work.
- D. If, with undue frequency, the Contractor requests information that is obtainable through reasonable examination and comparison of the Contract Documents, site conditions, and previous correspondence, interpretations, or clarifications, the Contractor shall be liable to the Owner for reasonable charges from the Architect for the additional services required to review, research, and respond to such requests for information.

ARTICLE 8
SURVEYS by CONTRACTOR

- A. The Contractor shall provide competent engineering services to assure accurate execution of the Work in accordance with the Contract Documents. The Contractor shall verify the figures given for the contours, approaches and locations shown on the Drawings before starting any Work and be responsible for the accuracy of the finished Work. Without extra cost to the Owner, the Contractor shall engage a licensed surveyor if necessary to verify boundary lines, keep within property lines, and shall be responsible for encroachments on rights or property of public or surrounding property owners.
- B. The Contractor shall establish all base lines for the location of the principal components of the Work and make all detail surveys necessary for construction, including grade stakes, batter boards and other working points, lines and elevations. If the Work involves alteration of or addition to existing structures or improvements, the Contractor shall locate and measure elements of the existing conditions as is necessary to facilitate accurate fabrication, assembly, and installation of new Work in the relationship, alignment, and/or connection to the existing structure or improvement as is shown in the Contract Documents.

ARTICLE 9
SUBMITTALS

- A. Where required by the Contract Documents, the Contractor shall submit shop drawings, product data, samples and other information (hereinafter referred to as Submittals) to the Architect for the purpose of demonstrating the way by which the Contractor proposes to conform to the requirements of the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect without action.
- B. The Contractor shall be responsible to the Owner for the accuracy of its Submittals and the conformity of its submitted information to the requirements of the Contract Documents. Each Submittal shall bear the Contractor's approval, evidencing that the Contractor has reviewed and found the information to be in compliance with the requirements of the Contract Documents. Submittals which are not marked as reviewed and approved by the Contractor may be returned by the Architect without action.
- C. The Contractor shall prepare and deliver its submittals to the Architect sufficiently in advance of construction requirements and in a sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. In coordinating the Submittal process with its construction schedule, the Contractor shall allow sufficient time to permit adequate review by the Architect.
- D. By approving a Submittal the Contractor represents not only that the element of Work presented in the Submittal complies with the requirements of the Contract Documents, but also that the Contractor has:
 - (1) found the layout and/or dimensions in the Submittal to be comparable with those in the Contract Documents and other relevant Submittals and has made field measurements as necessary to verify their accuracy, and
 - (2) determined that products, materials, systems, equipment and/or procedures presented in the Submittal are compatible with those presented, or being presented, in other relevant Submittals and

with the Contractor's intended Construction Methods.

- E. The Contractor shall not fabricate or perform any portion of the Work for which the Contract Documents require Submittals until the respective Submittals have been approved by the Architect.
- F. In the case of a resubmission, the Contractor shall direct specific attention to all revisions in a Submittal. The Architect's approval of a resubmission shall not apply to any revisions that were not brought to the Architect's attention.
- G. If the Contract Documents specify that a Submittal is to be prepared and sealed by a registered architect or licensed engineer retained by the Contractor, all drawings, calculations, specifications, and certifications of the Submittal shall bear the Alabama seal of registration and signature of the registered/licensed design professional who prepared them or under whose supervision they were prepared. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of such a Submittal, provided that all performance and design criteria that such Submittal must satisfy are sufficiently specified in the Contract Documents. The Architect will review, approve or take other appropriate action on such a Submittal only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria specified in the Contract Documents.

H. DEVIATIONS

(1) The Architect is authorized by the Owner to approve "minor" deviations from the requirements of the Contract Documents. "Minor" deviations are defined as those which are in the interest of the Owner, do not materially alter the quality or performance of the finished Work, and do not affect the cost or time of performance of the Work. Deviations which are not "minor" may be authorized only by the Owner through the Change Order procedures of Article 19.

(2) Any deviation from the requirements of the Contract Documents contained in a Submittal shall be clearly identified as a "Deviation from Contract Requirements" (or by similar language) within the Submittal and, in a letter transmitting the Submittal to the Architect, the Contractor shall direct the Architect's attention to, and request specific approval of, the deviation. Otherwise, the Architect's approval of a Submittal does not constitute approval of deviations from the requirements of the Contract Documents contained in the Submittal.

(3) The Contractor shall bear all costs and expenses of any changes to the Work, changes to work performed by the Owner or separate contractors, or additional services by the Architect required to accommodate an approved deviation unless the Contractor has specifically informed the Architect in writing of the required changes and a Change Order has been issued authorizing the deviation and accounting for such resulting changes and costs.

I. ARCHITECT'S REVIEW and APPROVAL

(1) The Architect will review the Contractor's Submittals for conformance with requirements of, and the design concept expressed in, the Contract Documents and will approve or take other appropriate action upon them. This review is not intended to verify the accuracy and completeness of details such as dimensions and quantities nor to substantiate installation instructions or performance of equipment or systems, all of which remain the responsibility of the Contractor. However, the Architect shall advise the Contractor of any errors or omissions which the Architect

may detect during this review. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

(2) The Architect will review and respond to all Submittals with reasonable promptness to avoid delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time to permit adequate review.

(3) No corrections or changes to Submittals indicated by the Architect will be considered as authorizations to perform Extra Work. If the Contractor considers such correction or change of a Submittal to require Work which differs from the requirements of the Contract Documents, the Contractor shall promptly notify the Architect in writing in accordance with Article 20, Claims for Extra Cost or Extra Work.

J. CONFORMANCE with SUBMITTALS

The Work shall be constructed in accordance with approved Submittals.

ARTICLE 10
DOCUMENTS and SAMPLES at the SITE

A. "AS ISSUED" SET

The Contractor shall maintain at the Project site, in good order, at least one copy of all Addenda, Change Orders, supplemental drawings, written directives and clarifications, and approved Submittals intact as issued, and an updated construction schedule.

B. "POSTED" SET

The Contractor shall maintain at the Project site, in good order, at least one set of the Drawings and Project Manual into which the Contractor has "posted"(incorporated) all Addenda, Change Orders, supplemental drawings, clarifications, and other information pertinent to the proper performance of the Work. The Contractor shall assure that all sets of the Drawings and Project Manuals being used by the Contractor, Subcontractors, and suppliers are "posted" with the current information to insure that updated Contract Documents are used for performance of the Work.

C. RECORD SET

One set of the Drawings and Project Manual described in Paragraph B shall be the Contractor's record set in which the Contractor shall record all field changes, corrections, selections, final locations, and other information as will be duplicated on the "As-built" documents required under Article 11. The Contractor shall record such "as-built" information in its record set as it becomes available through progress of the Work. The Contractor's performance of this requirement shall be subject to confirmation by the Architect at any time as a prerequisite to approval of Progress Payments.

D. The documents and samples required by this Article to be maintained at the Project site shall be readily available to the Architect, Owner, DCM Project Inspector, and their representatives.

ARTICLE 11
“AS-BUILT” DOCUMENTS

- A. Unless otherwise provided in the Contract Documents, the Contractor shall deliver two (2) sets of “As-built” documents, as described herein, to the Architect for submission to the Owner upon completion of the Work. Each set of “As-built” documents shall consist of a copy of the Drawings and Project Manual, in like-new condition, into which the Contractor has neatly incorporated all Addenda, Change Orders, supplemental drawings, clarifications, field changes, corrections, selections, actual locations of underground utilities, and other information as required herein or specified elsewhere in the Contract Documents.
- B. The Contractor shall use the following methods for incorporating information into the “As-built” documents:
- (1) Drawings**
- (a)** To the greatest extent practicable, information shall be carefully drawn and lettered, in ink, on the Drawings in the form of sketches, details, plans, notes, and dimensions as required to provide a fully dimensioned record of the Work. When required for clarity, sketches, details, or partial plans shall be drawn on supplemental sheets and bound into the Drawings and referenced on the drawing being revised.
- (b)** Where a revised drawing has been furnished by the Architect, the drawing of latest date shall be bound into the Drawings in the place of the superseded drawing.
- (c)** Where a supplemental drawing has been furnished by the Architect, the supplemental drawing shall be bound into the Drawings in an appropriate location and referred to by notes added to the drawing being supplemented.
- (d)** Where the Architect has furnished details, partial plans, or lengthy notes of which it would be impractical for the Contractor to redraw or letter on a drawing, such information may be affixed to the appropriate drawing with transparent tape if space is available on the drawing.
- (e)** Any entry of information made in the Drawings that is the result of an Addendum or Change Order, shall identify the Addendum or Change Order from which it originated.
- (2) Project Manual**
- (a)** A copy of all Addenda and Change Orders, excluding drawings thereof, shall be bound in the front of the Project Manual.
- (b)** Where a document, form, or entire specification section is revised, the latest issue shall be bound into the Project Manual in the place of the superseded issue.
- (c)** Where information within a specification section is revised, the deleted or revised information shall be drawn through in ink and an adjacent note added identifying the Addendum or Change Order containing the revised information.
- C. Within ten days after the Date of Substantial Completion of the Work, or the last completed portion of the Work, the Contractor shall submit the “As-built” documents to the Architect for approval. If the Architect requires that any corrections be made, the documents will be returned in a reasonable time for correction and resubmission.

ARTICLE 12
PROGRESS SCHEDULE

(Not applicable if the Contract Time is 60 days or less.)

- A. The Contractor shall within fifteen days after the date of commencement stated in the Notice to Proceed, or such other time as may be provided in the Contract Documents, prepare and submit to the Architect for review and approval a practicable construction schedule informing the Architect and Owner of the order in which the Contractor plans to carry on the Work within the Contract Time. The Architect's review and approval of the Contractor's construction schedule shall be only for compliance with the specified format, Contract Time, and suitability for monitoring progress of the Work and shall not be construed as a representation that the Architect has analyzed the schedule to form opinions of sequences or durations of time represented in the schedule.
- B. If a schedule format is not specified elsewhere in the Contract Documents, the construction schedule shall be prepared using DCM Form C-11, "Sample Progress Schedule and Report", (contained in the Project Manual) or similar format of suitable scale and detail to indicate the percentage of Work scheduled to be completed at the end of each month. At the end of each month the Contractor shall enter the actual percentage of completion on the construction schedule submit two copies to the Architect, and attach one copy to each copy of the monthly Application for Payment. The construction schedule shall be revised to reflect any agreed extensions of the Contract Time or as required by conditions of the Work.
- C. If a more comprehensive schedule format is specified elsewhere in the Contract Documents or voluntarily employed by the Contractor, it may be used in lieu of DCM Form C-11.
- D. The Contractor's construction schedule shall be used by the Contractor, Architect, and Owner to determine the adequacy of the Contractor's progress. The Contractor shall be responsible for maintaining progress in accordance with the currently approved construction schedule and shall increase the number of shifts, and/or overtime operations, days of work, and/or the amount of construction plant and equipment as may be necessary to do so. If the Contractor's progress falls materially behind the currently approved construction schedule and, in the opinion of the Architect or Owner, the Contractor is not taking sufficient steps to regain schedule, the Architect may, with the Owner's concurrence, issue the Contractor a Notice to Cure pursuant to Article 27. In such a Notice to Cure the Architect may require the Contractor to submit such supplementary or revised construction schedules as may be deemed necessary to demonstrate the manner in which schedule will be regained.

ARTICLE 13
EQUIPMENT, MATERIALS, and SUBSTITUTIONS

- A. Every part of the Work shall be executed in a workmanlike manner in accordance with the Contract Documents and approved Submittals. All materials used in the Work shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Work and shall be new except such materials as may be expressly provided or allowed in the Contract Documents to be otherwise.
- B. Whenever a product, material, system, item of equipment, or service is identified in the Contract Documents by reference to a trade name, manufacturer's name, model number, etc.(hereinafter

referred to as “source”), and only one or two sources are listed, or three or more sources are listed and followed by “or approved equal” or similar wording, it is intended to establish a required standard of performance, design, and quality, and the Contractor may submit, for the Architect’s approval, products, materials, systems, equipment, or services of other sources which the Contractor can prove to the Architect’s satisfaction are equal to, or exceed, the standard of performance, design and quality specified, unless the provisions of Paragraph D below apply. Such proposed substitutions are not to be purchased or installed without the Architect’s written approval of the substitution.

- C. If the Contract Documents identify three or more sources for a product, material, system, item of equipment or service to be used and the list of sources is not followed by “or approved equal” or similar wording, the Contractor may make substitution only after evaluation by the Architect and execution of an appropriate Contract Change Order.
- D. If the Contract Documents identify only one source and expressly provide that it is an approved sole source for the product, material, system, item of equipment, or service, the Contractor must furnish the identified sole source.

ARTICLE 14

SAFETY and PROTECTION of PERSONS and PROPERTY

- A. The Contractor shall be solely and completely responsible for conditions at the Project site, including safety of all persons (including employees) and property. The Contractor shall create, maintain, and supervise conditions and programs to facilitate and promote safe execution of the Work, and shall supervise the Work with the attention and skill required to assure its safe performance. Safety provisions shall conform to OSHA requirements and all other federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. Nothing contained in this Contract shall be construed to mean that the Owner has employed the Architect nor has the Architect employed its consultants to administer, supervise, inspect, or take action regarding safety programs or conditions at the Project site.
- B. The Contractor shall employ Construction Methods, safety precautions, and protective measures that will reasonably prevent damage, injury or loss to:
 - (1) workers and other persons on the Project site and in adjacent and other areas that may be affected by the Contractor’s operations;
 - (2) the Work and materials and equipment to be incorporated into the Work and stored by the Contractor on or off the Project site; and
 - (3) other property on, or adjacent to, the Project site, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and other improvements not designated in the Contract Documents to be removed, relocated, or replaced.
- C. The Contractor shall be responsible for the prompt remedy of damage and loss to property, including the filing of appropriate insurance claims, caused in whole or in part by the fault or negligence of the Contractor, a Subcontractor, or anyone for whose acts they may be liable.

- D. The Contractor shall comply with and give notices required by applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety and protection of persons or property, including without limitation notices to adjoining property owners of excavation or other construction activities that potentially could cause damage or injury to adjoining property or persons thereon.
- E. The Contractor shall erect and maintain barriers, danger signs, and any other reasonable safeguards and warnings against hazards as may be required for safety and protection during performance of the Contract and shall notify owners and users of adjacent sites and utilities of conditions that may exist or arise which may jeopardize their safety.
- F. If use or storage of explosives or other hazardous materials or equipment or unusual Construction Methods are necessary for execution of the Work, the Contractor shall exercise commensurate care and employ supervisors and workers properly qualified to perform such activity.
- G. The Contractor shall furnish a qualified safety representative at the Project site whose duties shall include the prevention of accidents. The safety representative shall be the Contractor's superintendent, unless the Contractor assigns this duty to another responsible member of its on-site staff and notifies the Owner and Architect in writing of such assignment.
- H. The Contractor shall not permit a load to be applied, or forces introduced, to any part of the construction or site that may cause damage to the construction or site or endanger safety of the construction, site, or persons on or near the site.
- I. The Contractor shall have the right to act as it deems appropriate in emergency situations jeopardizing life or property. The Contractor shall be entitled to equitable adjustment of the Contract Sum or Contract Time for its efforts expended for the sole benefit of the Owner in an emergency. Such adjustment shall be determined as provided in Articles 19 and 20.
- J. The duty of the Architect and the Architect's consultants to visit the Project site to conduct periodic inspections of the Work or for other purposes shall not give rise to a duty to review or approve the adequacy of the Contractor's safety program, safety supervisor, or any safety measure which Contractor takes or fails to take in, on, or near the Project site.

ARTICLE 15

HAZARDOUS MATERIALS

- A. A Hazardous Material is any substance or material identified as hazardous under any federal, state, or local law or regulation, or any other substance or material which may be considered hazardous or otherwise subject to statutory or regulatory requirements governing its handling, disposal, and/or clean-up. Existing Hazardous Materials are Hazardous Materials discovered at the Project site and not introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable.
- B. If, during the performance of the Work, the Contractor encounters a suspected Existing Hazardous Material, the Contractor shall immediately stop work in the affected area, take measures appropriate to the condition to keep people away from the suspected Existing Hazardous Material, and

immediately notify the Architect and Owner of the condition in writing.

- C. The Owner shall obtain the services of an independent laboratory or professional consultant, appropriately licensed and qualified, to determine whether the suspected material is a Hazardous Material requiring abatement and, if so, to certify after its abatement that it has been rendered harmless. Any abatement of Existing Hazardous Materials will be the responsibility of the Owner. The Owner will advise the Contractor in writing of the persons or entities who will determine the nature of the suspected material and those who will, if necessary, perform the abatement. The Owner will not employ persons or entities to perform these services to whom the Contractor or Architect has reasonable objection.
- D. After certification by the Owner's independent laboratory or professional consultant that the material is harmless or has been rendered harmless, work in the affected area shall resume upon written agreement between the Owner and Contractor. If the material is found to be an Existing Hazardous Material and the Contractor incurs additional cost or delay due to the presence and abatement of the material, the Contract Sum and/or Contract Time shall be appropriately adjusted by a Contract Change Order pursuant to Article 19.
- E. The Owner shall not be responsible for Hazardous Materials introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable unless such Hazardous Materials were required by the Contract Documents.

ARTICLE 16

INSPECTION of the WORK

A. GENERAL

- (1) The Contractor is solely responsible for the Work's compliance with the Contract Documents; therefore, the Contractor shall be responsible to inspect in-progress and completed Work, and shall verify its compliance with the Contract Documents and that any element or portion of the Work upon which subsequent Work is to be applied or performed is in proper condition to receive the subsequent Work. Neither the presence nor absence of inspections by the Architect, Owner, Director, DCM Project Inspector, any public authority having jurisdiction, or their representatives shall relieve the Contractor of responsibility to inspect the Work, for responsibility for Construction Methods and safety precautions and programs in connection with the Work, or from any other requirement of the Contract Documents.
- (2) The Architect, Owner, Director, DCM Project Inspector, any public authority having jurisdiction, and their representatives shall have access at all times to the Work for inspection whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and inspection. All materials, workmanship, processes of manufacture, and methods of construction, if not otherwise stipulated in the Contract Documents, shall be subject to inspection, examination, and test at any and all places where such manufacture and/or construction are being carried on. Such inspections will not unreasonably interfere with the Contractor's operations.
- (3) The Architect will inspect the Work as a representative of the Owner. The Architect's inspections may be supplemented by inspections by the DCM Project Inspector as a representative of the Alabama Division of Construction Management.

(4) The Contractor may be charged by the Owner for any extra cost of inspection incurred by the Owner or Architect on account of material and workmanship not being ready at the time of inspection set by the Contractor.

B. TYPES of INSPECTIONS

(1) **SCHEDULED INSPECTIONS and CONFERENCES.** Scheduled Inspections and Conferences are conducted by the Architect, scheduled by the Architect in coordination with the Contractor and DCM Project Inspector, and are attended by the Contractor and applicable Subcontractors, suppliers and manufacturers, and the DCM Project Inspector. Scheduled Inspections and Conferences of this Contract include:

(a) **Pre-construction Conference.**

(b) **Pre-roofing Conference** (not applicable if the Contract involves no roofing work)

(c) **Above Ceiling Inspection(s):** An above ceiling inspection of all spaces in the building is required before the ceiling material is installed. Above ceiling inspections are to be conducted at a time when all above ceiling systems are complete and tested to the greatest extent reasonable pending installation of the ceiling material. System identifications and markings are to be complete. All fire-rated construction including fire-stopping of penetrations and specified identification above the ceiling shall be complete. Ceiling framing and suspension systems shall be complete with lights, grilles and diffusers, access panels, fire protection drops for sprinkler heads, etc., installed in their final locations to the greatest extent reasonable. Above ceiling framing to support ceiling mounted equipment shall be complete. The above ceiling construction shall be complete to the extent that after the inspection the ceiling material can be installed without disturbance.

(d) **Final Inspection(s):** A Final Inspection shall establish that the Work, or a designated portion of the Work, is Substantially Complete in accordance with Article 32 and is accepted by the Architect, Owner, and DCM Project Inspector as being ready for the Owner's occupancy or use. At the conclusion of this inspection, items requiring correction or completion ("punch list" items) shall be minimal and require only a short period of time for accomplishment to establish Final Acceptance of the Work. If the Work, or designated portion of the Work, includes the installation, or modification, of a fire alarm system or other life safety systems essential to occupancy, such systems shall have been tested and appropriately certified before the Final Inspection.

(e) **Year-end Inspection(s):** An inspection of the Work, or each separately completed portion thereof, is required near the end of the Contractor's one year warranty period(s). The subsequent delivery of the Architect's report of this inspection will serve as confirmation that the Contractor was notified of Defective Work found within the warranty period in accordance with Article 35.

(2) **PERIODIC INSPECTIONS.** Periodic Inspections are conducted throughout the course of the Work by the Architect, the Architect's consultants, their representatives, and the DCM Project Inspector, jointly or independently, with or without advance notice to the Contractor.

(3) **SPECIFIED INSPECTIONS and TESTS.** Specified Inspections and Tests include inspections, tests, demonstrations, and approvals that are either specified in the Contract Documents or required by laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction, to be performed by the Contractor, one of its Subcontractors, or an independent testing laboratory or firm (whether paid for by the Contractor or Owner).

C. INSPECTIONS by the ARCHITECT

- (1) The Architect is not authorized to revoke, alter, relax, or waive any requirements of the Contract Documents (other than “minor” deviations as defined in Article 9 and “minor” changes as defined in Article 19), to finally approve or accept any portion of the Work or to issue instructions contrary to the Contract Documents without concurrence of the Owner.
- (2) The Architect will visit the site at intervals appropriate to the stage of the Contractor’s operations and as otherwise necessary to:
 - (a) become generally familiar with the in-progress and completed Work and the quality of the Work,
 - (b) determine whether the Work is progressing in general accordance with the Contractor’s schedule and is likely to be completed within the Contract Time,
 - (c) visually compare readily accessible elements of the Work to the requirements of the Contract Documents to determine, in general, if the Contractor’s performance of the Work indicates that the Work will conform to the requirements of the Contract Documents when completed,
 - (d) endeavor to guard the Owner against Defective Work,
 - (e) review and address with the Contractor any problems in implementing the requirements of the Contract Documents that the Contractor may have encountered, and
 - (f) keep the Owner fully informed about the Project.
- (3) The Architect shall have the authority to reject Defective Work or require its correction, but shall not be required to make exhaustive investigations or examinations of the in-progress or completed portions of the Work to expose the presence of Defective Work. However, it shall be an obligation of the Architect to report in writing, to the Owner, Contractor, and DCM Project Inspector, any Defective Work recognized by the Architect.
- (4) The Architect shall have the authority to require the Contractor to stop work only when, in the Architect’s reasonable opinion, such stoppage is necessary to avoid Defective Work. The Architect shall not be liable to the Contractor or Owner for the consequences of any decisions made by the Architect in good faith either to exercise or not to exercise this authority.
- (5) “Inspections by the Architect” includes appropriate inspections by the Architect’s consultants as dictated by their respective disciplines of design and the stage of the Contractor’s operations.

D. INSPECTIONS by the DCM PROJECT INSPECTOR

- (1) The DCM Project Inspector will:
 - (a) participate in scheduled inspections and conferences as practicable,
 - (b) perform periodic inspections of in-progress and completed Work to ensure code compliance of the Project and general conformance of the Work with the Contract Documents, and
 - (c) monitor the Contractor's progress and performance of the Work.
- (2) The DCM Project Inspector shall have the authority to:
 - (a) reject Work that is not in compliance with the State Building Code adopted by the DCM, unless the Work is in accordance with the Contract Documents in which case the DCM Project Inspector will advise the Architect to initiate appropriate corrective action, and
 - (b) notify the Architect, Owner, and Contractor of Defective Work recognized by the DCM Project Inspector.

(3) The DCM Project Inspector's periodic inspections will usually be scheduled around key stages of construction based upon information reported by the Architect. As the Architect or Owner deems appropriate, the DCM Project Inspector, as well as other members of the Technical Staff, can be requested to schedule special inspections or meetings to address specific matters. The written findings of DCM Project Inspector will be transmitted to the Owner, Contractor, and Architect.

(4) The DCM Project Inspector is not authorized to revoke, alter, relax, or waive any requirements of the Contract Documents, to finally approve or accept any portion of the Work or to issue instructions contrary to the Contract Documents without concurrence of the Owner. The Contractor shall not proceed with Work as a result of instructions or findings of the DCM Project Inspector which the Contractor considers to be a change to the requirements of the Contract Documents without written authorization of the Owner through the Architect.

E. UNCOVERING WORK

(1) If the Contractor covers a portion of the Work before it is examined by the Architect and this is contrary to the Architect's request or specific requirements in the Contract Documents, then, upon written request of the Architect, the Work must be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

(2) Without a prior request or specific requirement that Work be examined by the Architect before it is covered, the Architect may request that Work be uncovered for examination and the Contractor shall uncover it. If the Work is in accordance with the Contract Documents, the Contract Sum shall be equitably adjusted under Article 19 to compensate the Contractor for the costs of uncovering and replacement. If the Work is not in accordance with the Contract Documents, uncovering, correction, and replacement shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

F. SPECIFIED INSPECTIONS and TESTS

(1) The Contractor shall schedule and coordinate Specified Inspections and Tests to be made at appropriate times so as not to delay the progress of the Work or the work of the Owner or separate contractors. If the Contract Documents require that a Specified Inspection or Test be witnessed or attended by the Architect or Architect's consultant, the Contractor shall give the Architect timely notice of the time and place of the Specified Inspection or Test. If a Specified Inspection or Test reveals that Work is not in compliance with requirements of the Contract Documents, the Contractor shall bear the costs of correction, repeating the Specified Inspection or Test, and any related costs incurred by the Owner, including reasonable charges, if any, by the Architect for additional services. Through appropriate Contract Change Order the Owner shall bear costs of tests, inspections or approvals which become Contract requirements subsequent to the receipt of bids.

(2) If the Architect, Owner, or public authority having jurisdiction determines that inspections, tests, demonstrations, or approvals in addition to Specified Inspections and Tests are required, the Contractor shall, upon written instruction from the Architect, arrange for their performance by an entity acceptable to the Owner, giving timely notice to the architect of the time and place of their performance. Related costs shall be borne by the Owner unless the procedures reveal that Work is not in compliance with requirements of the Contract Documents, in which case the Contractor shall

bear the costs of correction, repeating the procedures, and any related costs incurred by the Owner, including reasonable charges, if any, by the Architect for additional services.

(3) Unless otherwise required by the Contract Documents, required certificates of Specified Inspections and Tests shall be secured by the Contractor and promptly delivered to the Architect.

(4) Failure of any materials to pass Specified Inspections and Tests will be sufficient cause for refusal to consider any further samples of the same brand or make of that material for use in the Work.

ARTICLE 17 **CORRECTION of DEFECTIVE WORK**

- A. The Contractor shall, at the Contractor's expense, promptly correct Defective Work rejected by the Architect or which otherwise becomes known to the Contractor, removing the rejected or nonconforming materials and construction from the project site.
- B. Correction of Defective Work shall be performed in such a timely manner as will avoid delay of completion, use, or occupancy of the Work and the work of the Owner and separate contractors.
- C. The Contractor shall bear all expenses related to the correction of Defective Work, including but not limited to: (1) additional testing and inspections, including repeating Specified Inspections and Tests, (2) reasonable services and expenses of the Architect, and (3) the expense of making good all work of the Contractor, Owner, or separate contractors destroyed or damaged by the correction of Defective Work.

ARTICLE 18 **DEDUCTIONS for UNCORRECTED WORK**

If the Owner deems it advisable and in the Owner's interest to accept Defective Work, the Owner may allow part or all of such Work to remain in place, provided an equitable deduction from the Contract Sum, acceptable to the Owner, is offered by the Contractor.

ARTICLE 19 **CHANGES in the WORK**

A. GENERAL

(1) The Owner may at any time direct the Contractor to make changes in the Work which are within the general scope of the Contract, including changes in the Drawings, Specifications, or other portions of the Contract Documents to add, delete, or otherwise revise portions of the Work. The Architect is authorized by the Owner to direct "minor" changes in the Work by written order to the Contractor. "Minor" changes in the Work are defined as those which are in the interest of the Owner, do not materially alter the quality or performance of the finished Work, and do not affect the cost or time of performance of the Work. Changes in the Work which are not "minor" may be authorized only by the Owner.

- (2) If the Owner directs a change in the Work, the change shall be incorporated into the Contract by a Contract Change Order prepared by the Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract, stating their agreement upon the change or changes in the Work and the adjustments, if any, in the Contract Sum and the Contract Time.
- (3) Subject to compliance with Alabama's Public Works Law, the Owner may, upon agreement by the Contractor, incorporate previously unawarded bid alternates into the Contract.
- (4) In the event of a claim or dispute as to the appropriate adjustment to the Contract Sum or Contract Time due to a directive to make changes in the Work, the Work shall proceed as provided in this article subject to subsequent agreement of the parties or final resolution of the dispute pursuant to Article 24.
- (5) Consent of surety will be obtained for all Contract Change Orders involving an increase in the Contract Sum.
- (6) Changes in the Work shall be performed under applicable provisions of the Contract Documents and the Contractor shall proceed promptly to perform changes in the Work, unless otherwise directed by the Owner through the Architect.
- (7) All change orders require DCM Form C-12: Contract Change Order and DCM Form B-11: Change Order Justification. Only Change Orders 10% or greater of the current contract amount require the Owner's legal advisor's signature on DCM Form B-11: Change Order Justification.

B. DETERMINATION of ADJUSTMENT of the CONTRACT SUM

The adjustment of the Contract Sum resulting from a change in the Work shall be determined by one of the following methods, or a combination thereof, as selected by the Owner:

- (1) **Lump Sum.** By mutual agreement to a lump sum based on or negotiated from an itemized cost proposal from the Contractor. Additions to the Contract Sum shall include the Contractor's direct costs plus a maximum 15% markup for overhead and profit. Where subcontract work is involved the total mark-up for the Contractor and a Subcontractor shall not exceed 25%. **Changes which involve a net credit to the Owner shall include fair and reasonable credits for overhead and profit on the deducted work, in no case less than 5%.** For the purposes of this method of determining an adjustment of the Contract Sum, "overhead" shall cover the Contractor's indirect costs of the change, such as the cost of bonds, superintendent and other job office personnel, watchman, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.
- (2) **Unit Price.** By application of Unit Prices included in the Contract or subsequently agreed to by the parties. However, if the character or quantity originally contemplated is materially changed so that application of such unit price to quantities of Work proposed will cause substantial inequity to either party, the applicable unit price shall be equitably adjusted.
- (3) **Force Account.** By directing the Contractor to proceed with the change in the Work on a "force account" basis under which the Contractor shall be reimbursed for reasonable expenditures incurred by the Contractor and its Subcontractors in performing added Work and the Owner shall receive reasonable credit for any deleted Work. The Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting of the cost of the change together with

sufficient supporting data. Unless otherwise stated in the directive, the adjustment of the Contract Sum shall be limited to the following:

- (a) costs of labor and supervision, including employee benefits, social security, retirement, unemployment and workers' compensation insurance required by law, agreement, or under Contractor's or Subcontractor's standard personnel policy;
- (b) cost of materials, supplies and equipment, including cost of delivery, whether incorporated or consumed;
- (c) rental cost of machinery and equipment, not to exceed prevailing local rates if contractor-owned;
- (d) costs of premiums for insurance required by the Contract Documents, permit fees, and sales, use or similar taxes related to the change in the Work;
- (e) reasonable credits to the Owner for the value of deleted Work, without Contractor or Subcontractor mark-ups; and
- (f) for additions to the Contract Sum, mark-up of the Contractor's direct costs for overhead and profit not exceeding 15% on Contractor's work nor exceeding 25% for Contractor and Subcontractor on a Subcontractor's work. **Changes which involve a net credit to the Owner shall include fair and reasonable credits for overhead and profit on the deducted work, in no case less than 5%.** For the purposes of this method of determining an adjustment of the Contract Sum, "overhead" shall cover the Contractor's indirect costs of the change, such as the cost of insurance other than mentioned above, bonds, superintendent and other job office personnel, watchman, use and rental of small tools, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

C. ADJUSTMENT of the CONTRACT TIME due to CHANGES

(1) Unless otherwise provided in the Contract Documents, the Contract Time shall be equitably adjusted for the performance of a change provided that the Contractor notifies the Architect in writing that the change will increase the time required to complete the Work. Such notice shall be provided no later than:

- (a) with the Contractor's cost proposal stating the number of days of extension requested, or
- (b) within ten days after the Contractor receives a directive to proceed with a change in advance of submitting a cost proposal, in which case the notice should provide an estimated number of days of extension to be requested, which may be subject to adjustment in the cost proposal.

(2) The Contract Time shall be extended only to the extent that the change affects the time required to complete the entire Work of the Contract, taking into account the concurrent performance of the changed and unchanged Work.

D. CHANGE ORDER PROCEDURES

(1) If the Owner proposes to make a change in the Work, the Architect will request that the Contractor provide a cost proposal for making the change to the Work. The request shall be in writing and shall adequately describe the proposed change using drawings, specifications, narrative, or a combination thereof. Within 21 days after receiving such a request, or such other time as may be stated in the request, the Contractor shall prepare and submit to the Architect a written proposal, properly itemized and supported by sufficient substantiating data to facilitate evaluation. The stated time within which the Contractor must submit a proposal may be extended if, within that time, the Contractor makes a written request with reasonable justification thereof.

(2) The Contractor may voluntarily offer a change proposal which, in the Contractor's opinion, will reduce the cost of construction, maintenance, or operation or will improve the cost-effective performance of an element of the Project, in which case the Owner, through the Architect, will accept, reject, or respond otherwise within 21 days after receipt of the proposal, or such other reasonable time as the Contractor may state in the proposal.

(3) If the Contractor's proposal is acceptable to the Owner, or is negotiated to the mutual agreement of the Contractor and Owner, the Architect will prepare an appropriate Contract Change Order for execution. Upon receipt of the fully executed Contract Change Order, the Contractor shall proceed with the change.

(4) In advance of delivery of a fully executed Contract Change Order, the Architect may furnish to the Contractor a written authorization to proceed with an agreed change. However, such an authorization shall be effective only if it:

- (a) identifies the Contractor's accepted or negotiated proposal for the change,
- (b) states the agreed adjustments, if any, in Contract Sum and Contract Time,
- (c) states that funds are available to pay for the change, and
- (d) is signed by the Owner.

(5) If the Contractor and Owner cannot agree on the amount of the adjustment in the Contract Sum for a change, the Owner, through the Architect, may order the Contractor to proceed with the change on a Force Account basis, but the net cost to the Owner shall not exceed the amount quoted in the Contractor's proposal. Such order shall state that funds are available to pay for the change.

(6) If the Contractor does not promptly respond to a request for a proposal, or the Owner determines that the change is essential to the final product of the Work and that the change must be effected immediately to avoid delay of the Project, the Owner may:

- (a) determine with the Contractor a sufficient maximum amount to be authorized for the change and
- (b) direct the Contractor to proceed with the change on a Force Account basis pending delivery of the Contractor's proposal, stating the maximum increase in the Contract Sum that is authorized for the change.

(7) Pending agreement of the parties or final resolution of any dispute of the total amount due the Contractor for a change in the Work, amounts not in dispute for such changes in the Work may be included in Applications for Payment accompanied by an interim Change Order indicating the parties' agreement with part of all of such costs or time extension. Once a dispute is resolved, it shall be implemented by preparation and execution of an appropriate Change Order.

ARTICLE 20

CLAIMS for EXTRA COST or EXTRA WORK

- A. If the Contractor considers any instructions by the Architect, Owner, DCM Project Inspector, or public authority having jurisdiction to be contrary to the requirements of the Contract Documents and will involve extra work and/or cost under the Contract, the Contractor shall give the Architect written notice thereof within ten days after receipt of such instructions, and in any event before proceeding to execute such work. As used in this Article, "instructions" shall include written or

oral clarifications, directions, instructions, interpretations, or determinations.

- B. The Contractor's notification pursuant to Paragraph 20.A shall state: (1) the date, circumstances, and source of the instructions, (2) that the Contractor considers the instructions to constitute a change to the Contract Documents and why, and (3) an estimate of extra cost and time that may be involved to the extent an estimate may be reasonably made at that time.
- C. Except for claims relating to an emergency endangering life or property, no claim for extra cost or extra work shall be considered in the absence of prior notice required under Paragraph 20.A.
- D. Within ten days of receipt of a notice pursuant to Paragraph 20.A, the Architect will respond in writing to the Contractor, stating one of the following:
 - (1) The cited instruction is rescinded.
 - (2) The cited instruction is a change in the Work and in which manner the Contractor is to proceed with procedures of Article 19, Changes in the Work.
 - (3) The cited instruction is reconfirmed, is not considered by the Architect to be a change in the Contract Documents, and the Contractor is to proceed with Work as instructed.
- E. If the Architect's response to the Contractor is as in Paragraph 20.D(3), the Contractor shall proceed with the Work as instructed. If the Contractor continues to consider the instructions to constitute a change in the Contract Documents, the Contractor shall, within ten days after receiving the Architect's response, notify the Architect in writing that the Contractor intends to submit a claim pursuant to Article 24, Resolution of Claims and Disputes

ARTICLE 21

DIFFERING SITE CONDITIONS

A. DEFINITION

"Differing Site Conditions" are:

- (1) subsurface or otherwise concealed physical conditions at the Project site which differ materially from those indicated in the Contract Documents, or
- (2) unknown physical conditions at the Project site which are of an unusual nature, differing materially from conditions ordinarily encountered and generally recognized as inherent in construction activities of the character required by the Contract Documents.

B. PROCEDURES

If Differing Site Conditions are encountered, then the party discovering the condition shall promptly notify the other party before the condition is disturbed and in no event later than ten days after discovering the condition. Upon such notice and verification that a Differing Site Condition exists, the Architect will, with reasonable promptness and with the Owner's concurrence, make changes in the Drawings and/or Specifications as are deemed necessary to conform to the Differing Site Condition. Any increase or decrease in the Contract Sum or Contract Time that is warranted by the changes will be made as provided under Article 19, Changes in the Work. If the Architect determines a Differing Site Condition has not been encountered, the Architect shall notify the

Owner and Contractor in writing, stating the reason for that determination.

ARTICLE 22 **CLAIMS for DAMAGES**

If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time after the discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

ARTICLE 23 **DELAYS**

- A. A delay beyond the Contractor's control at any time in the commencement or progress of Work by an act or omission of the Owner, Architect, or any separate contractor or by labor disputes, unusual delay in deliveries, unavoidable casualties, fires, abnormal floods, tornadoes, or other cataclysmic events of nature, may entitle the Contractor to an extension of the Contract Time provided, however, that the Contractor shall, within ten days after the delay first occurs, give written notice to the Architect of the cause of the delay and its probable effect on progress of the entire Work.
- B. Adverse weather conditions that are more severe than anticipated for the locality of the Work during any given month may entitle the Contractor to an extension of Contract Time provided, however;
 - (1) the weather conditions had an adverse effect on construction scheduled to be performed during the period in which the adverse weather occurred, which in reasonable sequence would have an effect on completion of the entire Work,
 - (2) the Contractor shall, within twenty-one days after the end of the month in which the delay occurs, give the Architect written notice of the delay that occurred during that month and its probable effect on progress of the Work, and
 - (3) within a reasonable time after giving notice of the delay, the Contractor provides the Architect with sufficient data to document that the weather conditions experienced were unusually severe for the locality of the Work during the month in question. Unless otherwise provided in the Contract Documents, data documenting unusually severe weather conditions shall compare actual weather conditions to the average weather conditions for the month in question during the previous five years as recorded by the National Oceanic and Atmospheric Administration (NOAA) or similar record-keeping entities.
- C. Adjustments, if any, of the Contract Time pursuant to this Article shall be incorporated into the Contract by a Contract Change Order prepared by the Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract or, at closeout of the Contract, by mutual written agreement between the Contractor and Owner. The adjustment of the Contract Time shall not exceed the extent to which the delay extends the time required to complete the entire Work of the Contract.

- D. The Contractor shall not be entitled to any adjustment of the Contract Sum for damage due to delays claimed pursuant to this Article unless the delay was caused by the Owner or Architect and was either:
- (1) the result of bad faith or active interference or
 - (2) beyond the contemplation of the parties and not remedied within a reasonable time after notification by the Contractor of its presence.

ARTICLE 24

RESOLUTION of CLAIMS and DISPUTES

A. APPLICABILITY of ARTICLE

- (1) As used in this Article, “Claims and Disputes” include claims or disputes asserted by the Contractor, its Surety, or Owner arising out of or related to the Contract, or its breach, including without limitation claims seeking, under the provisions of the Contract, equitable adjustment of the Contract Sum or Contract Time and claims and disputes arising between the Contractor (or its Surety) and Owner regarding interpretation of the Contract Documents, performance of the Work, or breach of or compliance with the terms of the Contract.
- (2) “Resolution” addressed in this Article applies only to Claims and Disputes arising between the Contractor (or its Surety) and Owner and asserted after execution of the Construction Contract and prior to the date upon which final payment is made. Upon making application for final payment the Contractor may reserve the right to subsequent Resolution of existing Claims by including a list of all Claims, in stated amounts, which remain to be resolved and specifically excluding them from any release of claims executed by the Contractor, and in that event Resolution may occur after final payment is made.

B. CONTINUANCE of PERFORMANCE

An unresolved Claim or Dispute shall not be just cause for the Contractor to fail or refuse to proceed diligently with performance of the Contract or for the Owner to fail or refuse to continue to make payments in accordance with the Contract Documents.

C. GOOD FAITH EFFORT to SETTLE

The Contractor and Owner agree that, upon the assertion of a Claim by the other, they will make a good faith effort, with the Architect’s assistance and advice, to achieve mutual resolution of the Claim. If mutually agreed, the Contractor and Owner may endeavor to resolve a Claim through mediation. If efforts to settle are not successful, the Claim shall be resolved in accordance with paragraph D or E below, whichever applies.

D. FINAL RESOLUTION for STATE-FUNDED CONTRACTS

- (1) If the Contract is funded in whole or in part with state funds, the final Resolution of Claims and Disputes which cannot be resolved by the Contractor (or its Surety) and Owner shall be by the Director, whose decision shall be final, binding, and conclusive upon the Contractor, its Surety, and the Owner.

(2) When it becomes apparent to the party asserting a Claim (the Claimant) that an impasse to mutual resolution has been reached, the Claimant may request in writing to the Director that the Claim be resolved by decision of the Director. Such request by the Contractor (or its Surety) shall be submitted through the Owner. Should the Owner fail or refuse to submit the Contractor's request within ten days of receipt of same, the Contractor may forward such request directly to the Director. Upon receipt of a request to resolve a Claim, the Director will instruct the parties as to procedures to be initiated and followed.

(3) If the respondent to a Claim fails or refuses to participate or cooperate in the Resolution procedures to the extent that the Claimant is compelled to initiate legal proceedings to induce the Respondent to participate or cooperate, the Claimant will be entitled to recover, and may amend its Claim to include, the expense of reasonable attorney's fees so incurred.

E. FINAL RESOLUTION for LOCALLY-FUNDED CONTRACTS

If the Contract is funded in whole with funds provided by a city or county board of education or other local governmental authority and the Contract Documents do not stipulate a binding alternative dispute resolution method, the final resolution of Claims and Disputes which cannot be resolved by the Contractor (or its Surety) and Owner may be by any legal remedy available to the parties. Alternatively, upon the written agreement of the Contractor (or its Surety) and the Owner, final Resolution of Claims and Disputes may be by submission to binding arbitration before a neutral arbitrator or panel or by submission to the Director in accordance with preceding Paragraph D.

ARTICLE 25
OWNER'S RIGHT to CORRECT DEFECTIVE WORK

If the Contractor fails or refuses to correct Defective Work in a timely manner that will avoid delay of completion, use, or occupancy of the Work or work by the Owner or separate contractors, the Architect may give the Contractor written Notice to Cure the Defective Work within a reasonable, stated time. If within ten days after receipt of the Notice to Cure the Contractor has not proceeded and satisfactorily continued to cure the Defective Work or provided the Architect with written verification that satisfactory positive action is in process to cure the Defective Work, the Owner may, without prejudice to any other remedy available to the Owner, correct the Defective Work and deduct the actual cost of the correction from payment then or thereafter due to the Contractor.

ARTICLE 26
OWNER'S RIGHT to STOP or SUSPEND the WORK

A. STOPPING the WORK for CAUSE

If the Contractor fails to correct Defective Work or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work, or any part of the Work, until the cause for the Owner's directive has been eliminated; however, the Owner's right to stop the Work shall not be construed as a duty of the Owner to be exercised for the benefit of the Contractor or any other person or entity.

B. SUSPENSION by the OWNER for CONVENIENCE

- (1) The Owner may, at any time and without cause, direct the Contractor in writing to suspend, delay or interrupt the Work, or any part of the Work, for a period of time as the Owner may determine.
- (2) The Contract Sum and Contract Time shall be adjusted, pursuant to Article 19, for reasonable increases in the cost and time caused by an Owner-directed suspension, delay or interruption of Work for the Owner's convenience. However, no adjustment to the Contract Sum shall be made to the extent that the same or concurrent Work is, was or would have been likewise suspended, delayed or interrupted for other reasons not caused by the Owner.

ARTICLE 27
OWNER'S RIGHT to TERMINATE CONTRACT

A. TERMINATION by the OWNER for CAUSE

- (1) **Causes:** The Owner may terminate the Contractor's right to complete the Work, or any designated portion of the Work, if the Contractor:
- (a) should be adjudged bankrupt, or should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency to the extent termination for these reasons is permissible under applicable law;
 - (b) refuses or fails to prosecute the Work, or any part of the Work, with the diligence that will insure its completion within the Contract Time, including any extensions, or fails to complete the Work within the Contract Time;
 - (c) refuses or fails to perform the Work, including prompt correction of Defective Work, in a manner that will insure that the Work, when fully completed, will be in accordance with the Contract Documents;
 - (d) fails to pay for labor or materials supplied for the Work or to pay Subcontractors in accordance with the respective Subcontract;
 - (e) persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction, or the instructions of the Architect or Owner; or
 - (f) is otherwise guilty of a substantial breach of the Contract.
- (2) **Procedure for Unbonded Construction Contracts (Generally, contracts less than \$100,000):**
- (a) **Notice to Cure:** In the presence of any of the above conditions the Architect may give the Contractor written notice to cure the condition within a reasonable, stated time, but not less than ten days after the Contractor receives the notice.
 - (b) **Notice of Termination:** If, at the expiration of the time stated in the Notice to Cure, the Contractor has not proceeded and satisfactorily continued to cure the condition or provided the Architect with written verification that satisfactory positive action is in process to cure the condition, the Owner may, without prejudice to any other rights or remedies of the Owner, give the Contractor written notice that the Contractor's right to complete the Work, or a designated portion of the Work, shall terminate seven days after the Contractor's receipt of the written Notice of Termination.
 - (c) If the Contractor satisfies a Notice to Cure, but the condition for which the notice was first given reoccurs, the Owner may give the Contractor a seven day Notice of Termination

without giving the Contractor another Notice to Cure.

(d) At the expiration of the seven days of the termination notice, the Owner may:

.1 take possession of the site, of all materials and equipment stored on and off site, and of all Contractor-owned tools, construction equipment and machinery, and facilities located at the site, and

.2 finish the Work by whatever reasonable method the Owner may deem expedient.

(e) The Contractor shall not be entitled to receive further payment under the Contract until the Work is completed.

(f) If the Owner's cost of completing the Work, including correction of Defective Work, compensation for additional architectural, engineering, managerial, and administrative services, and reasonable attorneys' fees due to the default and termination, is less than the unpaid balance of the Contract Sum, the excess balance less liquidated damages for delay shall be paid to the Contractor. If such cost to the Owner including attorney's fees, plus liquidated damages, exceeds the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner. Final Resolution of any claim or Dispute involving the termination or any amount due any party as a result of the termination shall be pursuant to Article 24.

(g) Upon the Contractor's request, the Owner shall furnish to the Contractor a detailed accounting of the Owner's cost of completing the Work.

(3) Procedure for Bonded Construction Contracts (Generally, contracts of \$100,000 or more):

(a) **Notice to Cure:** In the presence of any of the above conditions the Architect may give the Contractor and its Surety written Notice to Cure the condition within a reasonable, stated time, but not less than ten days after the Contractor receives the notice.

(b) **Notice of Termination:** If, at the expiration of the time stated in the Notice to Cure, the Contractor has not proceeded and satisfactorily continued to cure the condition or provided the Architect with written verification that satisfactory positive action is in process to cure the condition, the Owner may, without prejudice to any other rights or remedies of the Owner, give the Contractor and its Surety written notice declaring the Contractor to be in default under the Contract and stating that the Contractor's right to complete the Work, or a designated portion of the Work, shall terminate seven days after the Contractor's receipt of the written Notice of Termination.

(c) If the Contractor satisfies a Notice to Cure, but the condition for which the notice was first given reoccurs, the Owner may give the Contractor a Notice of Termination without giving the Contractor another Notice to Cure.

(d) **Demand on the Performance Bond:** With the Notice of Termination the Owner shall give the Surety a written demand that, upon the effective date of the Notice of Termination, the Surety promptly fulfill its obligation to take charge of and complete the Work in accordance with the terms of the Performance Bond.

(e) **Surety Claims:** Upon receiving the Owner's demand on the Performance Bond, the Surety shall assume all rights and obligations of the Contractor under the Contract. However, the Surety shall also have the right to assert "Surety Claims" to the Owner, which are defined as claims relating to acts or omissions of the Owner or Architect prior to termination of the Contractor which may have prejudiced its rights as Surety or its interest in the unpaid balance of the Contract Sum. If the Surety wishes to assert a Surety Claim, it shall give the Owner, through the Architect, written notice within twenty-one days after first recognizing the condition giving rise to the Surety Claim. The Surety Claim shall then be submitted to the Owner, through the Architect, no later than sixty days after giving notice thereof, but no such Surety Claims shall be considered if submitted after the date upon which final payment

becomes due. Final resolution of Surety Claims shall be pursuant to Article 24, Resolution of Claims and Disputes. The presence or possibility of a Surety Claim shall not be just cause for the Surety to fail or refuse to take charge of and complete the Work or for the Owner to fail or refuse to continue to make payments in accordance with the Contract Documents.

(f) Payments to Surety: The Surety shall be paid for completing the Work in accordance with the Contract Documents as if the Surety were the Contractor. The Owner shall have the right to deduct from payments to the Surety any reasonable costs incurred by the Owner, including compensation for additional architectural, engineering, managerial, and administrative services, and attorneys' fees as necessitated by termination of the Contractor and completion of the Work by the Surety. No further payments shall be made to the Contractor by the Owner. The Surety shall be solely responsible for any accounting to the Contractor for the portion of the Contract Sum paid to Surety by Owner or for the costs and expenses of completing the Work.

(4) Wrongful Termination: If any notice of termination by the Owner for cause, made in good faith, is determined to have been wrongly given, such termination shall be effective and compensation therefore determined as if it had been a termination for convenience pursuant to Paragraph B below.

B. TERMINATION by the OWNER for CONVENIENCE

(1) The Owner may, without cause and at any time, terminate the performance of Work under the Contract in whole, or in part, upon determination by the Owner that such termination is in the Owner's best interest. Such termination is referred to herein as Termination for Convenience.

(2) Upon receipt of a written notice of Termination for Convenience from the Owner, the Contractor shall:

- (a)** stop Work as specified in the notice;
- (b)** enter into no further subcontracts or purchase orders for materials, services, or facilities, except as may be necessary for Work directed to be performed prior to the effective date of the termination or to complete Work that is not terminated;
- (c)** terminate all existing subcontracts and purchase orders to the extent they relate to the terminated Work;
- (d)** take such actions as are necessary, or directed by the Architect or Owner, to protect, preserve, and make safe the terminated Work; and
- (e)** complete performance of the Work that is not terminated.

(3) In the event of Termination for Convenience, the Contractor shall be entitled to receive payment for the Work performed prior to its termination, including materials and equipment purchased and delivered for incorporation into the terminated Work, and any reasonable costs incurred because of the termination. Such payment shall include reasonable mark-up of costs for overhead and profit, not to exceed the limits stated in Article 19, Changes in the Work. The Contractor shall be entitled to receive payment for reasonable anticipated overhead ("home office") and shall not be entitled to receive payment for any profits anticipated to have been gained from the terminated Work. A proposal for decreasing the Contract Sum shall be submitted to the Architect by the Contractor in such time and detail, and with such supporting documentation, as is reasonably directed by the Owner. Final modification of the Contract shall be by Contract Change Order pursuant to Article 19. Any Claim or Dispute involving the termination or any amount due a party as a result shall be resolved pursuant to Article 24.

ARTICLE 28
CONTRACTOR'S RIGHT to SUSPEND or TERMINATE the CONTRACT

A. SUSPENSION by the OWNER

If all of the Work is suspended or delayed for the Owner's convenience or under an order of any court, or other public authority, for a period of sixty days, through no act or fault of the Contractor or a Subcontractor, or anyone for whose acts they may be liable, then the Contractor may give the Owner a written Notice of Termination which allows the Owner fourteen days after receiving the Notice in which to give the Contractor appropriate written authorization to resume the Work. Absent the Contractor's receipt of such authorization to resume the Work, the Contract shall terminate upon expiration of this fourteen day period and the Contractor will be compensated by the Owner as if the termination had been for the Owner's convenience pursuant to Article 27.B.

B. NONPAYMENT

The Owner's failure to pay the undisputed amount of an Application for Payment within sixty days after receiving it from the Architect (Certified pursuant to Article 30) shall be just cause for the Contractor to give the Owner fourteen days' written notice that the Work will be suspended pending receipt of payment but that the Contract shall terminate if payment is not received within fourteen days (or a longer period stated by the Contractor) of the expiration of the fourteen day notice period.

(1) If the Work is then suspended for nonpayment, but resumed upon receipt of payment, the Contractor will be entitled to compensation as if the suspension had been by the Owner pursuant to Article 26, Paragraph B.

(2) If the Contract is then terminated for nonpayment, the Contractor will be entitled to compensation as if the termination had been by the Owner pursuant to Article 27, Paragraph B.

ARTICLE 29
PROGRESS PAYMENTS

A. FREQUENCY of PROGRESS PAYMENTS

Unless otherwise provided in the Contract Documents, the Owner will make payments to the Contractor as the Work progresses based on monthly estimates prepared and certified by the Contractor, approved and certified by the Architect, and approved by the Owner and other authorities whose approval is required.

B. SCHEDULE of VALUES

Within ten days after receiving the Notice to Proceed the Contractor shall submit to the Architect a DCM Form C-10SOV, Schedule of Values, which is a breakdown of the Contract Sum showing the value of the various parts of the Work for billing purposes. The Schedule of Values shall be printable on 8.5" x 11" and shall divide the Contract Sum into as many parts ("line items") as the Architect and Owner determine necessary to permit evaluation and to show amounts attributable to

Subcontractors. The Contractor's overhead and profit are to be proportionately distributed throughout the line items of the Schedule of Values. Upon approval, the Schedule of Values shall be used as a basis for monthly Applications for Payment, unless it is later found to be in error. Approved change order amounts shall be added to or incorporated into the Schedule of Values as mutually agreed by the Contractor and Architect.

C. APPLICATIONS for PAYMENTS

(1) Based on the approved Schedule of Values, each DCM Form C-10, Application and Certificate for Payment shall show the Contractor's estimate of the value of Work performed in each line item as of the end of the billing period. The Contractor's cost of materials and equipment not yet incorporated into the Work, but delivered and suitably stored on the site, may be considered in monthly Applications for Payment. One payment application per month may be submitted. Each DCM Form C-10, Application and Certificate for Payment shall match to the penny and be accompanied by an attached DCM Form C-10SOV, Schedule of Values.

(2) The Contractor's estimate of the value of Work performed and stored materials must represent such reasonableness as to warrant certification by the Architect to the Owner in accordance with Article 30. Each monthly Application for Payment shall be supported by such data as will substantiate the Contractor's right to payment, including without limitation copies of requisitions from subcontractors and material suppliers.

(3) If no other date is stated in the Contract Documents or agreed upon by the parties, each Application for Payment shall be submitted to the Architect on or about the first day of each month and payment shall be issued to the Contractor within thirty days after an Application for Payment is Certified pursuant to Article 30 and delivered to the Owner.

(4) The Applications for Payment of State Agency/Authority projects and Public School and College Authority (PSCA)-funded projects must be activated via the appropriate DocuSign link available from DCM's Engage Portal at <https://engagealabama-rpm.facilityforce.cloud>.

D. MATERIALS STORED OFF SITE

Unless otherwise provided in the Contract Documents, the Contractor's cost of materials and equipment to be incorporated into the Work, which are stored off the site, may also be considered in monthly Applications for Payment under the following conditions:

- (1) the contractor has received written approval from the Architect and Owner to store the materials or equipment off site in advance of delivering the materials to the off site location;
- (2) a Certificate of Insurance is furnished to the Architect evidencing that a special insurance policy, or rider to an existing policy, has been obtained by the Contractor providing all-risk property insurance coverage, specifically naming the materials or equipment stored, and naming the Owner as an additionally insured party;
- (3) the Architect is provided with a detailed inventory of the stored materials or equipment and the materials or equipment are clearly marked in correlation to the inventory to facilitate inspection and verification of the presence of the materials or equipment by the Architect or Owner;
- (4) the materials or equipment are properly and safely stored in a bonded warehouse, or a facility otherwise approved in advance by the Architect and Owner; and
- (5) compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest.

E. RETAINAGE

(1) “Retainage” is defined as the money earned and, therefore, belonging to the Contractor (subject to final settlement of the Contract) which has been retained by the Owner conditioned on final completion and acceptance of all Work required by the Contract Documents. Retainage shall not be relied upon by Contractor (or Surety) to cover or off-set unearned monies attributable to uncompleted or uncorrected Work.

(2) In making progress payments the Owner shall retain five percent of the estimated value of Work performed and the value of the materials stored for the Work; but after retainage has been held upon fifty percent of the Contract Sum, no additional retainage will be withheld.

F. CONTRACTOR’S CERTIFICATION

(1) Each Application for Payment shall bear the Contractor’s certification that, to the best of the Contractor’s knowledge, information, and belief, the Work covered by the Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payments were issued and payments received from the Owner and that the current payment shown in the Application for Payment has not yet been received.

(2) By making this certification the Contractor represents to the Architect and Owner that, upon receipt of previous progress payments from the Owner, the Contractor has promptly paid each Subcontractor, in accordance with the terms of its agreement with the Subcontractor, the amount due the Subcontractor from the amount included in the progress payment on account of the Subcontractor’s Work and stored materials. The Architect and Owner may advise Subcontractors and suppliers regarding percentages of completion or amounts requested and/or approved in an Application for Payment on account of the Subcontractor’s Work and stored materials.

G. PAYMENT ESTABLISHES OWNERSHIP

All material and Work covered by progress payments shall become the sole property of the Owner, but the Contractor shall not be relieved from the sole responsibility for the care and protection of material and Work upon which payments have been made and for the restoration of any damaged material and Work.

ARTICLE 30
CERTIFICATION and APPROVALS for PAYMENT

- A. The Architect’s review, approval, and certification of Applications for Payment shall be based on the Architect’s general knowledge of the Work obtained through site visits and the information provided by the Contractor with the Application. The Architect shall not be required to perform exhaustive examinations, evaluations, or estimates of the cost of completed or uncompleted Work or stored materials to verify the accuracy of amounts requested by the Contractor, but the Architect shall have the authority to adjust the Contractor’s estimate when, in the Architect’s reasonable opinion, such estimates are overstated or understated.

- B.** Within seven days after receiving the Contractor's monthly Application for Payment, or such other time as may be stated in the Contract Documents, the Architect will take one of the following actions:
- (1)** The Architect will approve and certify the Application as submitted and forward it to the Owner as a Certification for Payment for approval by the Owner (and other approving authorities, if any) and payment.
 - (2)** If the Architect takes exception to any amounts claimed by the Contractor and the Contractor and Architect cannot agree on revised amounts, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to certify to the Owner, transmitting a copy of same to the Contractor.
 - (3)** To the extent the Architect determines may be necessary to protect the Owner from loss on account of any of the causes stated in Article 31, the Architect may subtract from the Contractor's estimates and will issue a Certificate for Payment to the Owner, with a copy to the Contractor, for such amount as the Architect determines is properly due and notify the Contractor and Owner in writing of the Architect's reasons for withholding payment in whole or in part.
- C.** Neither the Architect's issuance of a Certificate for Payment nor the Owner's resulting progress payment shall be a representation to the Contractor that the Work in progress or completed at that time is accepted or deemed to be in conformance with the Contract Documents.
- D.** The Architect shall not be required to determine that the Contractor has promptly or fully paid Subcontractors and suppliers or how or for what purpose the Contractor has used monies paid under the Construction Contract. However, the Architect may, upon request and if practical, inform any Subcontractor or supplier of the amount, or percentage of completion, approved or paid to the Contractor on account of the materials supplied or the Work performed by the Subcontractor.

ARTICLE 31 **PAYMENTS WITHHELD**

- A.** The Architect may nullify or revise a previously issued Certificate for Payment prior to Owner's payment thereunder to the extent as may be necessary in the Architect's opinion to protect the Owner from loss on account of any of the following causes not discovered or fully accounted for at the time of the certification or approval of the Application for Payment:
- (1)** Defective Work;
 - (2)** filed, or reasonable evidence indicating probable filing of, claims arising out of the Contract by other parties against the Contractor;
 - (3)** the Contractor's failure to pay for labor, materials or equipment or to pay Subcontractors;
 - (4)** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
 - (5)** damage suffered by the Owner or another contractor caused by the Contractor, a Subcontractor, or anyone for whose acts they may be liable;
 - (6)** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance is insufficient to cover applicable liquidated damages; or
 - (7)** the Contractor's persistent failure to conform to the requirements of the Contract Documents.

- B. If the Owner deems it necessary to withhold payment pursuant to preceding Paragraph A, the Owner will notify the Contractor and Architect in writing of the amount to be withheld and the reason for same.
- C. The Architect shall not be required to withhold payment for completed or partially completed Work for which compliance with the Contract Documents remains to be determined by Specified Inspections or Final Inspections to be performed in their proper sequence. However, if Work for which payment has been approved, certified, or made under an Application for Payment is subsequently determined to be Defective Work, the Architect shall determine an appropriate amount that will protect the Owner's interest against the Defective Work.
 - (1) If payment has not been made against the Application for Payment first including the Defective Work, the Architect will notify the Owner and Contractor of the amount to be withheld from the payment until the Defective Work is brought into compliance with the Contract Documents.
 - (2) If payment has been made against the Application for Payment first including the Defective Work, the Architect will withhold the appropriate amount from the next Application for Payment submitted after the determination of noncompliance, such amount to then be withheld until the Defective Work is brought into compliance with the Contract Documents.
- D. The amount withheld will be paid with the next Application for Payment certified and approved after the condition for which the Owner has withheld payment is removed or otherwise resolved to the Owner's satisfaction.
- E. The Owner shall have the right to withhold from payments due the Contractor under this Contract an amount equal to any amount which the Contractor owes the Owner under another contract.

ARTICLE 32

SUBSTANTIAL COMPLETION

- A. Substantial Completion is the stage in the progress of the Work when the Work or designated portion of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use without disruption or interference by the Contractor in completing or correcting any remaining unfinished Work ("punch list" items). Substantial Completion of the Work, or a designated portion of the Work, is not achieved until so agreed in a Certificate of Substantial Completion signed by the Contractor, Architect, Owner, and Technical Staff of the Alabama Division of Construction Management.
- B. The Contractor shall notify the Architect in writing when it considers the Work, or a portion of the Work which the Owner has agreed to accept separately, to be substantially complete and ready for a Final Inspection pursuant to Article 16. In this notification the Contractor shall identify any items remaining to be completed or corrected for Final Acceptance prior to final payment.
- C. Substantial Completion is achieved and a Final Inspection is appropriate only when a minimal number of punch list items exists and only a short period of time will be required to correct or complete them. Upon receipt of the Contractor's notice for a Final Inspection, the Architect will advise the Contractor in writing of any conditions of the Work which the Architect or Owner is

aware do not constitute Substantial Completion, otherwise, a Final Inspection will proceed within a reasonable time after the Contractor's notice is given. However, the Architect will not be required to prepare lengthy listings of punch list items; therefore, if the Final Inspection discloses that Substantial Completion has not been achieved, the Architect may discontinue or suspend the inspection until the Contractor does achieve Substantial Completion.

D. CERTIFICATE of SUBSTANTIAL COMPLETION

(1) When the Work or a designated portion of the Work is substantially complete, the Architect will prepare (via the appropriate DocuSign link available from DCM's Engage Portal at <https://engagealabama-rpm.facilityforce.cloud>) and sign a Certificate of Substantial Completion to be signed in order by the Contractor, Owner, and Alabama Division of Construction Management.

(2) When signed by all parties, the Certificate of Substantial Completion shall establish the Date of Substantial Completion which is the date upon which:

- (a) the Work, or designated portion of the Work, is accepted by the Architect, Owner, and Alabama Division of Construction Management as being ready for occupancy,
- (b) the Contractor's one-year and special warranties for the Work covered by the Certificate commence, unless stated otherwise in the Certificate (the one-year warranty for punch list items completed or corrected after the period allowed in the Certificate shall commence on the date of their Final Acceptance), and
- (c) Owner becomes responsible for building security, maintenance, utility services, and insurance, unless stated otherwise in the Certificate.

(3) The Certificate of Substantial Completion shall set the time within which the Contractor shall finish all items on the "punch list" accompanying the Certificate. The completion of punch list items shall be a condition precedent to Final Payment.

(4) If the Work or designated portion covered by a Certificate of Substantial Completion includes roofing work, the General Contractor's (5-year) Roofing Guarantee, DCM Form C-9, must be executed by the Contractor and attached to the Certificate of Substantial Completion. If the Contract Documents specify any other roofing warranties to be provided by the roofing manufacturer, Subcontractor, or Contractor, they must also be attached to the Certificate of Substantial Completion. The Alabama Division of Construction Management will not sign the Certificate of Substantial Completion in the absence of the roofing guarantees.

E. The Date of Substantial Completion of the Work, as set in the Certificate of Substantial Completion of the Work or of the last completed portion of the Work, establishes the extent to which the Contractor is liable for Liquidated Damages, if any; however, should the Contractor fail to complete all punch list items within thirty days, or such other time as may be stated in the respective Certificate of Substantial Completion, the Contractor shall bear any expenses, including additional Architectural services and expenses, incurred by the Owner as a result of such failure to complete punch list items in a timely manner.

ARTICLE 33
OCCUPANCY or USE PRIOR to COMPLETION

A. UPON SUBSTANTIAL COMPLETION

Prior to completion of the entire Work, the Owner may occupy or begin utilizing any designated portion of the Work on the agreed Date of Substantial Completion of that portion of the Work.

B. BEFORE SUBSTANTIAL COMPLETION

- (1) The Owner shall not occupy or utilize any portion of the Work before Substantial Completion of that portion has been achieved.
- (2) The Owner may deliver furniture and equipment and store, or install it in place ready for occupancy and use, in any designated portion of the Work before it is substantially completed under the following conditions:
 - (a) The Owner's storage or installation of furniture and equipment will not unreasonably disrupt or interfere with the Contractor's completion of the designated portion of the Work.
 - (b) The Contractor consents to the Owner's planned action (such consent shall not be unreasonably withheld).
 - (c) The Owner shall be responsible for insurance coverage of the Owner's furniture and equipment, and the Contractor's liability shall not be increased.
 - (d) The Contractor, Architect, and Owner will jointly inspect and record the condition of the Work in the area before the Owner delivers and stores or installs furniture and equipment; the Owner will equitably compensate the Contractor for making any repairs to the Work that may subsequently be required due to the Owner's delivery and storage or installation of furniture and equipment.
 - (e) The Owner's delivery and storage or installation of furniture and equipment shall not be deemed an acceptance of any Work not completed in accordance with the requirements of the Contract Documents.

**ARTICLE 34
FINAL PAYMENT**

A. PREREQUISITES to FINAL PAYMENT

The following conditions are prerequisites to Final Payment becoming due the Contractor:

- (1) Full execution of a Certificate of Substantial Completion for the Work, or each designated portion of the Work.
- (2) Final Acceptance of the Work.
- (3) The Contractor's completion, to the satisfaction of the Architect and Owner, of all documentary requirements of the Contract Documents; such as delivery of "as-built" documents, operating and maintenance manuals, warranties, etc.
- (4) Delivery to the Owner of a final Application for Payment, prepared by the Contractor and approved and certified by the Architect. Architect prepares DCM Form B-13: Final Payment Checklist and forwards it to the Owner along with the final Application for Payment.
- (5) Completion of an Advertisement for Completion pursuant to Paragraph C below.
- (6) Delivery by the Contractor to the Owner through the Architect of DCM Form C-18: Contractor's Affidavit of Payment of Debts and Claims, and a Release of Claims, if any, and such other documents as may be required by Owner, satisfactory in form to the Owner pursuant to Paragraph D below.
- (7) Consent of Surety to Final Payment, if any, to Contractor. This Consent of Surety is required for projects which have Payment and Performance Bonds.

- (8) Delivery by the Contractor to the Architect and Owner of other documents, if any, required by the Contract Documents as prerequisites to Final Payment.
- (9) See Manual of Procedures Chapter 7, Section L.7 concerning reconciliation of contract time, if any.

B. FINAL ACCEPTANCE of the WORK

“Final Acceptance of the Work” shall be achieved when all “punch list” items recorded with the Certificate(s) of Substantial Completion are accounted for by either: **(1)** their completion or correction by the Contractor and acceptance by the Architect, Owner, and DCM Project Inspector, or **(2)** their resolution under Article 18, Deductions for Uncorrected Work.

C. ADVERTISEMENT for COMPLETION

(1) If the Contract Sum is less than \$100,000: Advertisement for Completion shall not apply to contractors performing contracts of less than \$100,000.00 in amount. §39-1-1(g)

(2) If the Contract Sum is \$100,000 or more: The Contractor, immediately after being notified by the Architect that all other requirements of the Contract have been completed, shall give public notice of completion of the Contract by having an Advertisement for Completion, similar to the sample contained in the Project Manual, published for a period of three weeks. The contractor can publish a notice in one or more of the following ways:

- (a) In a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done.
- (b) On a website that is maintained by a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done.
- (c) On a website utilized by the awarding authority for publishing notices.
- (d) If no newspaper is published in the county in which the work was done, and if the awarding authority does not utilize a website for the purpose of publishing notices, the notice may be given by posting at the courthouse for 30 days, and proof of the posting of the notice shall be given by the awarding authority and the contractor.

Proof of publication of the notice shall be made by the contractor to the authority by whom the contract was made by affidavit of the publisher or website owner and a printed copy of the notice published. A final settlement shall not be made upon the contract until the expiration of 30 days after the completion of the notice.

D. RELEASE of CLAIMS

The Release of Claims and other documents referenced in Paragraph A(6) above are as follows:

(1) A release executed by Contractor of all claims and claims of lien against the Owner arising under and by virtue of the Contract, other than such claims of the Contractor, if any, as may have been previously made in writing and as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein.

(2) An affidavit under oath, if required, stating that so far as the Contractor has knowledge or information, there are no claims or claims of lien which have been or will be filed by any Subcontractor, Supplier or other party for labor or material for which a claim or claim of lien could be filed.

(3) A release, if required, of all claims and claims of lien made by any Subcontractor, Supplier or other party against the Owner or unpaid Contract funds held by the Owner arising under or related to the Work on the Project; provided, however, that if any Subcontractor, Supplier or others refuse to furnish a release of such claims or claims of lien, the Contractor may furnish a bond executed by Contractor and its Surety to the Owner to provide an unconditional obligation to defend, indemnify and hold harmless the Owner against any loss, cost or expense, including attorney's fees, arising out of or as a result of such claims, or claims of lien, in which event Owner may make Final Payment notwithstanding such claims or claims of lien. If Contractor and Surety fail to fulfill their obligations to Owner under the bond, the Owner shall be entitled to recover damages as a result of such failure, including all costs and reasonable attorney's fees incurred to recover such damages.

E. EFFECT of FINAL PAYMENT

(1) The making of Final Payment shall constitute a waiver of Claims by the Owner except those arising from:

- (a) liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- (b) failure of the Work to comply with the requirements of the Contract Documents;
- (c) terms of warranties or indemnities required by the Contract Documents, or
- (d) latent defects.

(2) Acceptance of Final Payment by the Contractor shall constitute a waiver of claims by Contractor except those previously made in writing, identified by Contractor as unsettled at the time of final Application for Payment, and specifically excepted from the release provided for in Paragraph D(1), above.

ARTICLE 35
CONTRACTOR'S WARRANTY

A. GENERAL WARRANTY

The Contractor warrants to the Owner and Architect that all materials and equipment furnished under the Contract will be of good quality and new, except such materials as may be expressly provided or allowed in the Contract Documents to be otherwise, and that none of the Work will be Defective Work as defined in Article 1.

B. ONE-YEAR WARRANTY

(1) If, within one year after the date of Substantial Completion of the Work or each designated portion of the Work (or otherwise as agreed upon in a mutually-executed Certificate of Substantial Completion), any of the Work is found to be Defective Work, the Contractor shall promptly upon receipt of written notice from the Owner or Architect, and without expense to either, replace or correct the Defective Work to conform to the requirements of the Contract Documents, and repair all damage to the site, the building and its contents which is the result of Defective Work or its replacement or correction.

(2) The one-year warranty for punch list items shall begin on the Date of Substantial Completion if they are completed or corrected within the time period allowed in the Certificate of Substantial Completion in which they are recorded. The one-year warranty for punch list items that are not completed or corrected within the time period allowed in the Certificate of Substantial Completion,

and other Work performed after Substantial Completion, shall begin on the date of Final Acceptance of the Work. The Contractor's correction of Work pursuant to this warranty does not extend the period of the warranty. The Contractor's one-year warranty does not apply to defects or damages due to improper or insufficient maintenance, improper operation, or wear and tear during normal usage.

(3) Upon recognizing a condition of Defective Work, the Owner shall promptly notify the Contractor of the condition. If the condition is causing damage to the building, its contents, equipment, or site, the Owner shall take reasonable actions to mitigate the damage or its continuation, if practical. If the Contractor fails to proceed promptly to comply with the terms of the warranty, or to provide the Owner with satisfactory written verification that positive action is in process, the Owner may have the Defective Work replaced or corrected and the Contractor and the Contractor's Surety shall be liable for all expense incurred.

(4) **Year-end Inspection(s):** An inspection of the Work, or each separately completed portion thereof, is required near the end of the Contractor's one-year warranty period(s). The inspection must be scheduled with the Owner, Architect and DCM Inspector. The subsequent delivery of the Architect's report of a Year-end Inspection will serve as confirmation that the Contractor was notified of Defective Work found within the warranty period.

(5) The Contractor's warranty of one year is in addition to, and not a limitation of, any other remedy stated herein or available to the Owner under applicable law.

C. GENERAL CONTRACTOR'S ROOFING GUARANTEE

(1) In addition to any other roof related warranties or guarantees that may be specified in the Contract Documents, the roof and associated work shall be guaranteed by the General Contractor against leaks and defects of materials and workmanship for a period of five (5) years, starting on the Date of Substantial Completion of the Project as stated in the Certificate of Substantial Completion. This guarantee for punch list items shall begin on the Date of Substantial Completion if they are completed or corrected within the time period allowed in the Certificate of Substantial Completion in which they are recorded. The guarantee for punch list items that are not completed or corrected within the time period allowed in the Certificate of Substantial Completion shall begin on the date of Final Acceptance of the Work.

(2) The "General Contractor's Roofing Guarantee" (DCM Form C-9), included in the Project Manual, shall be executed in triplicate, signed by the appropriate party and submitted to the Architect for submission with the Certificate of Substantial Completion to the Owner and the Division of Construction Management.

(3) This guarantee does not include costs which might be incurred by the General Contractor in making visits to the site requested by the Owner regarding roof problems that are due to lack of proper maintenance (keeping roof drains and/or gutters clear of debris that cause a stoppage of drainage which results in water ponding, overflowing of flashing, etc.), or damages caused by vandalism or misuse of roof areas. Should the contractor be required to return to the job to correct problems of this nature that are determined not to be related to faulty workmanship and materials in the installation of the roof, payment for actions taken by the Contractor in response to such request will be the responsibility of the Owner. A detailed written report shall be made by the General Contractor on each of these 'Service Calls' with copies to the Architect, Owner and Division of Construction Management.

D. SPECIAL WARRANTIES

(1) The Contractor shall deliver to the Owner through the Architect all special or extended warranties required by the Contract Documents from the Contractor, Subcontractors, and suppliers.

(2) The Contractor and the Contractor's Surety shall be liable to the Owner for such special warranties during the Contractor's one-year warranty; thereafter, the Contractor's obligations relative to such special warranties shall be to provide reasonable assistance to the Owner in their enforcement.

E. ASSUMPTION of GUARANTEES of OTHERS

If the Contractor disturbs, alters, or damages any work guaranteed under a separate contract, thereby voiding the guarantee of that work, the Contractor shall restore the work to a condition satisfactory to the Owner and shall also guarantee it to the same extent that it was guaranteed under the separate contract.

**ARTICLE 36
INDEMNIFICATION AGREEMENT**

To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Owner, Architect, Architect's consultants, Alabama Division of Construction Management, State Department of Education (if applicable), and their agents, employees, and consultants (hereinafter collectively referred to as the "Indemnitees") from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of, related to, or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including loss of use resulting therefrom, and is caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether such claim, damage, loss or expense is caused in part, or is alleged but not legally established to have been caused in whole or in part by the negligence or other fault of a party indemnified hereunder.

- A. This indemnification shall extend to all claims, damages, losses and expenses for injury or damage to adjacent or neighboring property, or persons injured thereon, that arise out of, relate to, or result from performance of the Work.
- B. This indemnification does not extend to the liability of the Architect, or the Architect's Consultants, agents, or employees, arising out of (1) the preparation or approval of maps, shop drawings, opinions, reports, surveys, field orders, Change Orders, drawings or specifications, or (2) the giving of or the failure to give directions or instructions, provided such giving or failure to give instructions is the primary cause of the injury or damage.
- C. This indemnification does not apply to the extent of the sole negligence of the Indemnitees.

ARTICLE 37
CONTRACTOR'S and SUBCONTRACTORS' INSURANCE

(Provide entire Article 37 to Contractor's insurance representative.)

A. GENERAL

(1) RESPONSIBILITY. The Contractor shall be responsible to the Owner from the time of the signing of the Construction Contract or from the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from any negligent act or omission or breach, failure or other default regarding the work by the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of who may be the owner of the property.

(2) INSURANCE PROVIDERS. Each of the insurance coverages required below shall be issued by an insurer licensed by the Insurance Commissioner to transact the business of insurance in the State of Alabama for the applicable line of insurance, and such insurer (or, for qualified self-insureds or group self-insureds, a specific excess insurer providing statutory limits) must have a Best Policyholders Rating of "A-" or better and a financial size rating of Class V or larger.

(3) NOTIFICATION ENDORSEMENT. Each policy shall be endorsed to provide that the insurance company agrees that the policy shall not be canceled, changed, allowed to lapse or allowed to expire for any reason until thirty days after the Owner has received written notice by certified mail as evidenced by return receipt or until such time as other insurance coverage providing protection equal to protection called for in the Contract Documents shall have been received, accepted and acknowledged by the Owner. Such notice shall be valid only as to the Project as shall have been designated by Project Name and Number in said notice.

(4) INSURANCE CERTIFICATES. The Contractor shall procure the insurance coverages identified below, or as otherwise required in the Contract Documents, at the Contractor's own expense, and to evidence that such insurance coverages are in effect, the Contractor shall furnish the Owner an insurance certificate(s) acceptable to the Owner and listing the Owner as the certificate holder. The insurance certificate(s) must be delivered to the Owner with the Construction Contract and Bonds for final approval and execution of the Construction Contract. The insurance certificate must provide the following:

- (a) Name and address of authorized agent of the insurance company
- (b) Name and address of insured
- (c) Name of insurance company or companies
- (d) Description of policies
- (e) Policy Number(s)
- (f) Policy Period(s)
- (g) Limits of liability
- (h) Name and address of Owner as certificate holder
- (i) Project Name and Number, if any
- (j) Signature of authorized agent of the insurance company
- (k) Telephone number of authorized agent of the insurance company
- (l) Mandatory thirty day notice of cancellation / non-renewal / change

(5) MAXIMUM DEDUCTIBLE. Self-insured retention, except for qualified self-insurers or group self-insurers, in any policy shall not exceed \$25,000.00.

B. INSURANCE COVERAGES

Unless otherwise provided in the Contract Documents, the Contractor shall purchase the types of insurance coverages with liability limits not less than as follows:

(1) WORKERS' COMPENSATION and EMPLOYER'S LIABILITY INSURANCE

(a) Workers' Compensation coverage shall be provided in accordance with the statutory coverage required in Alabama. A group insurer must submit a certificate of authority from the Alabama Department of Industrial Relations approving the group insurance plan. A self-insurer must submit a certificate from the Alabama Department of Industrial Relations stating the Contractor qualifies to pay its own workers' compensation claims.

(b) Employer's Liability Insurance limits shall be at least:

- .1 Bodily Injury by Accident - \$1,000,000 each accident
- .2 Bodily Injury by Disease - \$1,000,000 each employee

(2) COMMERCIAL GENERAL LIABILITY INSURANCE

(a) Commercial General Liability Insurance, written on an ISO Occurrence Form (current edition as of the date of Advertisement for Bids) or equivalent, shall include, but need not be limited to, coverage for bodily injury and property damage arising from premises and operations liability, products and completed operations liability, blasting and explosion, collapse of structures, underground damage, personal injury liability and contractual liability. The Commercial General Liability Insurance shall provide at minimum the following limits:

<u>Coverage</u>	<u>Limit</u>
.1 General Aggregate	\$ 2,000,000.00 per Project
.2 Products, Completed Operations Aggregate	\$ 2,000,000.00 per Project
.3 Personal and Advertising Injury	\$ 1,000,000.00 per Occurrence
.4 Each Occurrence	\$ 1,000,000.00

(b) Additional Requirements for Commercial General Liability Insurance:

- .1 The policy shall name the Owner, Architect, Alabama Division of Construction Management, State Department of Education (if applicable), and their agents, consultants and employees as additional insureds, state that this coverage shall be primary insurance for the additional insureds; and contain no exclusions of the additional insureds relative to job accidents.
- .2 The policy must include separate per project aggregate limits.

(3) COMMERCIAL BUSINESS AUTOMOBILE LIABILITY INSURANCE

(a) Commercial Business Automobile Liability Insurance which shall include coverage for bodily injury and property damage arising from the operation of any owned, non-owned or hired automobile. The Commercial Business Automobile Liability Insurance Policy shall provide not less than \$1,000,000 Combined Single Limits for each occurrence.

(b) The policy shall name the Owner, Architect, Alabama Division of Construction Management, State Department of Education (if applicable), and their agents, consultants, and employees as additional insureds.

(4) COMMERCIAL UMBRELLA OR COMMERCIAL EXCESS LIABILITY INSURANCE

(a) Commercial Umbrella or Commercial Excess Liability Insurance to provide excess coverage above the Commercial General Liability, Commercial Business Automobile

Liability and the Workers' Compensation and Employer's Liability to satisfy the minimum limits set forth herein.

(b) Minimum Combined Primary Commercial General Liability and Commercial Umbrella or Commercial Excess Limits of:

- .1 \$ 5,000,000 per Occurrence
- .2 \$ 5,000,000 Aggregate

(c) Additional Requirements for Commercial Umbrella or Commercial Excess Liability Insurance:

- .1 The policy shall name the Owner, Architect, Alabama Division of Construction Management, State Department of Education (if applicable), and their agents, consultants, and employees as additional insureds.
- .2 The policy must be on an "occurrence" basis.

(5) BUILDER'S RISK INSURANCE

(a) The Builder's Risk Policy shall be made payable to the Owner and Contractor, as their interests may appear. The policy amount shall be equal to 100% of the Contract Sum, written on a Causes of Loss - Special Form (current edition as of the date of Advertisement for Bids), or its equivalent. All deductibles shall be the sole responsibility of the Contractor.

(b) The policy shall be endorsed as follows:

"The following may occur without diminishing, changing, altering or otherwise affecting the coverage and protection afforded the insured under this policy:

- (i) Furniture and equipment may be delivered to the insured premises and installed in place ready for use; or
- (ii) Partial or complete occupancy by Owner; or
- (iii) Performance of work in connection with construction operations insured by the Owner, by agents or lessees or other contractors of the Owner, or by contractors of the lessee of the Owner."

Exception: projects containing only abatement and/or only demolition do not require Builder's Risk insurance, unless required by the Owner. Note: projects containing any scope of work besides abatement and/or demolition require Builder's Risk insurance.

C. SUBCONTRACTORS' INSURANCE

(1) **WORKERS' COMPENSATION and EMPLOYER'S LIABILITY INSURANCE.** The Contractor shall require each Subcontractor to obtain and maintain Workers' Compensation and Employer's Liability Insurance coverages as described in preceding Paragraph B, or to be covered by the Contractor's Workers' Compensation and Employer's Liability Insurance while performing Work under the Contract.

(2) **LIABILITY INSURANCE.** The Contractor shall require each Subcontractor to obtain and maintain adequate General Liability, Automobile Liability, and Umbrella or Excess Liability Insurance coverages similar to those described in preceding Paragraph B. Such coverage shall be in effect at all times that a Subcontractor is performing Work under the Contract.

(3) **ENFORCEMENT RESPONSIBILITY.** The Contractor shall have responsibility to enforce its Subcontractors' compliance with these or similar insurance requirements; however, the Contractor shall, upon request, provide the Architect or Owner acceptable evidence of insurance for any Subcontractor.

D. TERMINATION of OBLIGATION to INSURE

Unless otherwise expressly provided in the Contract Documents, the obligation to insure as provided herein shall continue as follows:

(1) BUILDER'S RISK INSURANCE. The obligation to insure under Subparagraph B(5) shall remain in effect until the Date of Substantial Completion as shall be established in the Certificate of Substantial Completion. In the event that multiple Certificates of Substantial Completion covering designated portions of the Work are issued, Builder's Risk coverage shall remain in effect until the Date of Substantial Completion as shall be established in the last issued Certificate of Substantial Completion. However, in the case that the Work involves separate buildings, Builder's Risk coverage of each separate building may terminate on the Date of Substantial Completion as established in the Certificate of Substantial Completion issued for each building.

(2) PRODUCTS and COMPLETED OPERATIONS. The obligation to carry Products and Completed Operations coverage specified under Subparagraph B(2) shall remain in effect for two years after the Date(s) of Substantial Completion.

(3) ALL OTHER INSURANCE. The obligation to carry other insurance coverages specified under Subparagraphs B(1) through B(4) and Paragraph C shall remain in effect after the Date(s) of Substantial Completion until such time as all Work required by the Contract Documents is completed. Equal or similar insurance coverages shall remain in effect if, after completion of the Work, the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, returns to the Project to perform warranty or maintenance work pursuant to the terms of the Contract Documents.

E. WAIVERS of SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors performing construction or operations related to the Project, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss. But said waiver shall apply only to the extent the loss or damage is covered by builder's risk insurance applicable to the Work or to other property located within or adjacent to the Project, except such rights as they may have to proceeds of such insurance held by the Owner or Contractor as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors, if any, and the subcontractor, sub-subcontractors, suppliers, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The Policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to the person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. The waivers provided for in this paragraph shall not be applicable to loss or damage that occurs after final acceptance of the Work. **Any provision found herein which attempts to waive or invalidate the subrogation interests of Alabama's State Insurance Fund against any party to this contract or any other person or entity is void and invalid. No such waiver is intended or made by the parties to this agreement with regard to any property insured by the State Insurance Fund.**

ARTICLE 38
PERFORMANCE and PAYMENT BONDS

A. GENERAL

Upon signing and returning the Construction Contract to the Owner for final approval and execution, the Contractor shall, at the Contractor's expense, furnish to the Owner a Performance Bond and a Payment Bond (P&P Bonds), DCM Forms C-6 and C-7 as contained in the Project Manual, each in a penal sum equal to 100% of the Contract Sum. Each bond shall be on the form contained in the Project Manual, shall be executed by a surety company (Surety) acceptable to the Owner and duly authorized and qualified to make such bonds in the State of Alabama in the required amount. The P&P bonds must be signed either on the same day or after the construction contract date. Each P&P Bond shall have attached thereto a power of attorney (POA) of the signing official. The POA signature date must be the same day as the P&P Bond's signature date. All signatures must be present.

The provisions of this Article are not applicable to this Contract if the Contract Sum is less than \$100,000, unless bonds are required for this Contract in the Supplemental General Conditions.

B. PERFORMANCE BOND

Through the Performance Bond, the Surety's obligation to the Owner shall be to assure the prompt and faithful performance of the Contract and Contract Change Orders. The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. In case of default on the part of the Contractor, the Surety shall take charge of and complete the Work in accordance with the terms of the Performance Bond. Any reasonable expenses incurred by the Owner as a result of default on the part of the Contractor, including architectural, engineering, administrative, and legal services, shall be recoverable under the Performance Bond.

C. PAYMENT BOND

Through the Payment Bond the Surety's obligation to the Owner shall be to guarantee that the Contractor and its Subcontractors shall promptly make payment to all persons supplying labor, materials, or supplies for, or in, the prosecution of the Work, including the payment of reasonable attorneys fees incurred by successful claimants or plaintiffs in civil actions on the Bond. Any person or entity indicating that they have a claim of nonpayment under the Bond shall, upon written request, be promptly furnished a certified copy of the Bond and Construction Contract by the Contractor, Architect, Owner, or Alabama Division of Construction Management, whomever is recipient of the request.

D. CHANGE ORDERS

The Penal Sum shall remain equal to the Contract Sum as the Contract Sum is adjusted by Contract Change Orders. All Contract Change Orders involving an increase in the Contract Sum will require consent of Surety by endorsement of the Contract Change Order form. The Surety waives notification of any Contract Change Orders involving only extension of the Contract Time.

E. EXPIRATION

The obligations of the Contractor's performance bond surety shall be coextensive with the

contractor's performance obligations under the Contract Documents; provided, however, that the surety's obligation shall expire at the end of the one-year warranty period(s) of Article 35.

ARTICLE 39 **ASSIGNMENT**

The Contractor shall not assign the Contract or sublet it as a whole nor assign any moneys due or to become due to the Contractor thereunder without the previous written consent of the Owner (and of the Surety, in the case of a bonded Construction Contract). As prescribed by the Public Works Law, the Contract shall in no event be assigned to an unsuccessful bidder for the Contract whose bid was rejected because the bidder was not a responsible or responsive bidder.

ARTICLE 40 **CONSTRUCTION by OWNER or SEPARATE CONTRACTORS**

A. OWNER'S RESERVATION of RIGHT

(1) The Owner reserves the right to self-perform, or to award separate contracts for, other portions of the Project and other Project related construction and operations on the site. The contractual conditions of such separate contracts shall be substantially similar to those of this Contract, including insurance requirements and the provisions of this Article. If the Contractor considers such actions to involve delay or additional cost under this Contract, notifications and assertion of claims shall be as provided in Article 20 and Article 23.

(2) When separate contracts are awarded, the term "Contractor" in the separate Contract Documents shall mean the Contractor who executes the respective Construction Contract.

B. COORDINATION

Unless otherwise provided in the Contract Documents, the Owner shall be responsible for coordinating the activities of the Owner's forces and separate contractors with the Work of the Contractor. The Contractor shall cooperate with the Owner and separate contractors, shall participate in reviewing and comparing their construction schedules relative to that of the Contractor when directed to do so, and shall make and adhere to any revisions to the construction schedule resulting from a joint review and mutual agreement.

C. CONDITIONS APPLICABLE to WORK PERFORMED by OWNER

Unless otherwise provided in the Contract Documents, when the Owner self-performs construction or operations related to the Project, the Owner shall be subject to the same obligations to Contractor as Contractor would have to a separate contractor under the provision of this Article 40.

D. MUTUAL RESPONSIBILITY

(1) The Contractor shall reasonably accommodate the required introduction and storage of materials and equipment and performance of activities by the Owner and separate contractors and shall connect and coordinate the Contractor's Work with theirs as required by the Contract Documents.

(2) By proceeding with an element or portion of the Work that is applied to or performed on construction by the Owner or a separate contractor, or which relies upon their operations, the Contractor accepts the condition of such construction or operations as being suitable for the Contractor's Work, except for conditions that are not reasonably discoverable by the Contractor. If the Contractor discovers any condition in such construction or operations that is not suitable for the proper performance of the Work, the Contractor shall not proceed, but shall instead promptly notify the Architect in writing of the condition discovered.

(3) The Contractor shall reimburse the Owner for any costs incurred by a separate contractor and payable by the Owner because of acts or omissions of the Contractor. Likewise, the Owner shall be responsible to the Contractor for any costs incurred by the Contractor because of the acts or omissions of a separate contractor.

(4) The Contractor shall not cut or otherwise alter construction by the Owner or a separate contractor without the written consent of the Owner and separate contractor; such consent shall not be unreasonably withheld. Likewise, the Contractor shall not unreasonably withhold its consent allowing the Owner or a separate contractor to cut or otherwise alter the Work.

(5) The Contractor shall promptly remedy any damage caused by the Contractor to the construction or property of the Owner or separate contractors.

ARTICLE 41 **SUBCONTRACTS**

A. AWARD of SUBCONTRACTS and OTHER CONTRACTS for PORTIONS of the WORK

(1) Unless otherwise provided in the Contract Documents, when delivering the executed Construction Contract, bonds, and evidence of insurance to the Architect, the Contractor shall also submit a listing of Subcontractors proposed for each principal portion of the Work and fabricators or suppliers proposed for furnishing materials or equipment fabricated to the design of the Contract Documents. This listing shall be in addition to any naming of Subcontractors, fabricators, or suppliers that may have been required in the bid process. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner, after due investigation, has reasonable objection to any Subcontractor, fabricator, or supplier proposed by the Contractor. The issuance of the Notice to Proceed in the absence of such objection by the Owner shall constitute notice that no reasonable objection to them is made.

(2) The Contractor shall not contract with a proposed Subcontractor, fabricator, or supplier to whom the Owner has made reasonable and timely objection. Except in accordance with prequalification procedures as may be contained in the Contract Documents, through specified qualifications, or on the grounds of reasonable objection, the Owner may not restrict the Contractor's selection of Subcontractors, fabricators, or suppliers.

(3) Upon the Owner's reasonable objection to a proposed Subcontractor, fabricator, or supplier, the Contractor shall promptly propose another to whom the Owner has no reasonable objection. If the proposed Subcontractor, fabricator, or supplier to whom the Owner made reasonable objection was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be equitably adjusted by Contract Change Order for any resulting difference if the Contractor has acted promptly and responsively in this procedure.

(4) The Contractor shall not change previously selected Subcontractors, fabricators, or suppliers without notifying the Architect and Owner in writing of proposed substitute Subcontractors, fabricators, or suppliers. If the Owner does not make a reasonable objection to a proposed substitute within three working days, the substitute shall be deemed approved.

B. SUBCONTRACTUAL RELATIONS

(1) The Contractor agrees to bind every Subcontractor and material supplier (and require every Subcontractor to so bind its subcontractors and material suppliers) to all the provisions of the Contract Documents as they apply to the Subcontractor's and material supplier's portion of the Work.

(2) Nothing contained in the Contract Documents shall be construed as creating any contractual relationship between any Subcontractor and the Owner, nor to create a duty of the Architect, Owner, or Director to resolve disputes between or among the Contractor or its Subcontractors and suppliers or any other duty to such Subcontractors or suppliers.

ARTICLE 42
ARCHITECT'S STATUS

- A. The Architect is an independent contractor performing, with respect to this Contract, pursuant to an agreement executed between the Owner and the Architect. The Architect has prepared the Drawings and Specifications and assembled the Contract Document and is, therefore, charged with their interpretation and clarification as described in the Contract Documents. As a representative of the Owner, the Architect will endeavor to guard the Owner against variances from the requirements of the Contract Documents by the Contractor. On behalf of the Owner, the Architect will administer the Contract as described in the Contract Documents during construction and the Contractor's one-year warranty.
- B. So as to maintain continuity in administration of the Contract and performance of the Work, and to facilitate complete documentation of the project record, all communications between the Contractor and Owner regarding matters of or related to the Contract shall be directed through the Architect, unless direct communication is otherwise required to provide a legal notification. Unless otherwise authorized by the Architect, communications by and with the Architect's consultants shall be through the Architect. Unless otherwise authorized by the Contractor, communications by and with Subcontractors and material suppliers shall be through the Contractor.

C. ARCHITECT'S AUTHORITY

Subject to other provisions of the Contract Documents, the following summarizes some of the authority vested in the Architect by the Owner with respect to the Construction Contract and as further described or conditioned in other Articles of these General Conditions of the Contract.

(1) The Architect is authorized to:

- (a) approve "minor" deviations as defined in Article 9, Submittals,
- (b) make "minor" changes in the Work as defined in Article 19, Changes in the Work,
- (c) reject or require the correction of Defective Work,
- (d) require the Contractor to stop the performance of Defective Work,
- (e) adjust an Application for Payment by the Contractor pursuant to Article 30, Certification

and Approval of payments, and

(f) issue Notices to Cure pursuant to Article 27.

(2) The Architect is not authorized to:

- (a) revoke, alter, relax, or waive any requirements of the Contract Documents (other than “minor” deviations and changes) without concurrence of the Owner,
- (b) finally approve or accept any portion of the Work without concurrence of the Owner,
- (c) issue instructions contrary to the Contract Documents,
- (d) issue Notice of Termination or otherwise terminate the Contract, or
- (e) require the Contractor to stop the Work except only to avoid the performance of Defective Work.

D. LIMITATIONS of RESPONSIBILITIES

(1) The Architect shall not be responsible to Contractors or to others for supervising or coordinating the performance of the Work or for the Construction Methods or safety of the Work, unless the Contract Documents give other specific instructions concerning these matters.

(2) The Architect will not be responsible to the Contractor (nor the Owner) for the Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents or for acts or omissions of the Contractor, a Subcontractor, or anyone for whose acts they may be liable. However, the Architect will report to the Owner and Contractor any Defective Work recognized by the Architect.

(3) The Architect will endeavor to secure faithful performance by Owner and Contractor, and the Architect will not show partiality to either or be liable to either for results of interpretations or decisions rendered in good faith.

(4) The Contractor’s remedies for additional time or expense arising out of or related to this Contract, or the breach thereof, shall be solely as provided for in the Contract Documents. The Contractor shall have no claim or cause of action against the Owner, Architect, or its consultants for any actions or failures to act, whether such claim may be in contract, tort, strict liability, or otherwise, it being the agreement of the parties that the Contractor shall make no claim against the Owner or any agents of the Owner, including the Architect or its consultants, except as may be provided for claims or disputes submitted in accordance with Article 24. The Architect and Architect’s consultants shall be considered third party beneficiaries of this provision of the Contract and entitled to enforce same.

E. ARCHITECT’S DECISIONS

Decisions by the Architect shall be in writing. The Architect’s decisions on matters relating to aesthetic effect will be final and binding if consistent with the intent expressed in the Contract Documents. The Architect’s decisions regarding disputes arising between the Contractor and Owner shall be advisory.

**ARTICLE 43
CASH ALLOWANCES**

- A. All allowances stated in the Contract Documents shall be included in the Contract Sum. Items covered by allowances shall be supplied by the Contractor as directed by the Architect or Owner

and the Contractor shall afford the Owner the economy of obtaining competitive pricing from responsible bidders for allowance items unless other purchasing procedures are specified in the Contract Documents.

- B.** Unless otherwise provided in the Contract Documents:
- (1) allowances shall cover the cost to the Contractor of materials and equipment delivered to the Project site and all applicable taxes, less applicable trade discounts;
 - (2) the Contractor's costs for unloading, storing, protecting, and handling at the site, labor, installation, overhead, profit and other expenses related to materials or equipment covered by an allowance shall be included in the Contract Sum but not in the allowances;
 - (3) if required, the Contract Sum shall be adjusted by Change Order to reflect the actual costs of an allowance.
- C.** Any selections of materials or equipment required of the Architect or Owner under an allowance shall be made in sufficient time to avoid delay of the Work.

ARTICLE 44

PERMITS, LAWS, and REGULATIONS

A. PERMITS, FEES AND NOTICES

- (1) Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are customarily secured after award of the Construction Contract and which are in effect on the date of receipt of bids.
- (2) The Contractor shall comply with and give notices required by all laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

B. TAXES

Unless stated otherwise in the Contract Documents, materials incorporated into the Work are exempt from sales and use tax pursuant to Section 40-9-33, Code of Alabama, 1975 as amended. The Owner, Contractor and its subcontractors shall be responsible for complying with rules and regulations of the Sales, Use, & Business Tax Division of the Alabama Department of Revenue regarding certificates and other qualifications necessary to claim such exemption when making qualifying purchases from vendors. The Contractor shall pay all applicable taxes that are not covered by the exemption of Section 40-9-33 and which are imposed as of the date of receipt of bids, including those imposed as of the date of receipt of bids but scheduled to go into effect after that date.

C. COMPENSATION for INCREASES

The Contractor shall be compensated for additional costs incurred because of increases in tax rates imposed after the date of receipt of bids.

D. ALABAMA IMMIGRATION LAW

Per ACT 2011-535 as codified in Title 31, Chapter 13 of the Code of Alabama, 1975, as amended:

The contracting parties affirm, for the duration of the agreement, 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 agreement and shall be responsible for all damages resulting therefrom.

E. ALABAMA TRADE BOYCOTT LAW

Per Act 2016-312as codified in Title 41, Chapter 16, Article 1, of the Code of Alabama, 1975, as amended:

The contracting parties affirm, for the duration of the agreement, that they are not currently engaged in, and will not engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which this state can enjoy open trade.

EE. ALABAMA ECONOMIC BOYCOTT LAW

Per Act 2023-409 as codified in Title 41, Chapter 16, Article 1 of the Code of Alabama, 1975, as amended:

The contracting parties affirm, for the duration of the agreement, that they are not currently engaged in, and will not engage in, economic boycotts.

F. ACCOUNTING OF SALES TAX EXEMPT PROJECTS

Per Act 2013-205 as codified in Title 40, Chapter 9, Article 1, of the Code of Alabama, 1975, as amended:

In bidding the work on a tax exempt project, the bid form shall provide an accounting for the tax savings.

ARTICLE 45
ROYALTIES, PATENTS, and COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend, indemnify and hold harmless the Owner, Architect, Architect's consultants, Alabama Division of Construction Management, State Department of Education (if applicable), and their agents, employees, and consultants from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of, related to, or resulting from all suits or claims for infringement of any patent rights or copyrights arising out of the inclusion of any patented or copyrighted materials, methods, or systems selected by the Contractor and used during the execution of or incorporated into the Work. This indemnification does not apply to any suits or claims of infringement of any patent rights or copyrights arising out of any patented or copyrighted materials, methods, or systems specified in the Contract Documents. However, if the Contractor has information that a specified material, method, or system is or may constitute an

infringement of a patent or copyright, the Contractor shall be responsible for any resulting loss unless such information is promptly furnished to the Architect.

ARTICLE 46
USE of the SITE

- A. The Contractor shall confine its operations at the Project site to areas permitted by the Owner and by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials, equipment, employees' vehicles, or debris. The Contractor's operations at the site shall be restricted to the sole purpose of constructing the Work, use of the site as a staging, assembly, or storage area for other business which the Contractor may undertake shall not be permitted.
- B. Unless otherwise provided in the Contract Documents, temporary facilities, such as storage sheds, shops, and offices may be erected on the Project site with the approval of the Architect and Owner. Such temporary buildings and/or utilities shall remain the property of the Contractor, and be removed at the Contractor's expense upon completion of the Work, unless the Owner authorizes their abandonment without removal.

ARTICLE 47
CUTTING and PATCHING

- A. The Contractor shall be responsible for all cutting, fitting, or patching that may be required to execute the Work to the results indicated in the Contract Documents or to make its parts fit together properly.
- B. Any cutting, patching, or excavation by the Contractor shall be supervised and performed in a manner that will not endanger persons nor damage or endanger the Work or any fully or partially completed construction of the Owner or separate contractors.

ARTICLE 48
IN-PROGRESS and FINAL CLEANUP

A. IN-PROGRESS CLEAN-UP

(1) The Contractor shall at all times during the progress of the Work keep the premises and surrounding area free from rubbish, scrap materials and debris resulting from the Work. Trash and combustible materials shall not be allowed to accumulate inside buildings or elsewhere on the premises. At no time shall any rubbish be thrown from window openings. Burning of trash and debris on site is not permitted.

(2) The Contractor shall make provisions to minimize and confine dust and debris resulting from construction activities.

B. FINAL CLEAN-UP

(1) Before Substantial Completion or Final Acceptance is achieved, the Contractor shall have removed from the Owner's property all construction equipment, tools, and machinery; temporary structures and/or utilities including the foundations thereof (except such as the Owner permits in writing to remain); rubbish, debris, and waste materials; and all surplus materials, leaving the site clean and true to line and grade, and the Work in a safe and clean condition, ready for use and operation.

(2) In addition to the above, and unless otherwise provided in the Contract Documents, the Contractor shall be responsible for the following special cleaning for all trades as the Work is completed:

(a) **Cleaning of all painted, enameled, stained, or baked enamel work:** Removal of all marks, stains, finger prints and splatters from such surfaces.

(b) **Cleaning of all glass:** Cleaning and removing of all stickers, labels, stains, and paint from all glass, and the washing and polishing of same on interior and exterior.

(c) **Cleaning or polishing of all hardware:** Cleaning and polishing of all hardware.

(d) **Cleaning all tile, floor finish of all kinds:** Removal of all splatters, stains, paint, dirt, and dust, the washing and polishing of all floors as recommended by the manufacturer or required by the Architect.

(e) **Cleaning of all manufactured articles, materials, fixtures, appliances, and equipment:** Removal of all stickers, rust stains, labels, and temporary covers, and cleaning and conditioning of all manufactured articles, material, fixtures, appliances, and electrical, heating, and air conditioning equipment as recommended or directed by the manufacturers, unless otherwise required by the Architect; blowing out or flushing out of all foreign matter from all equipment, piping, tanks, pumps, fans, motors, devices, switches, panels, fixtures, boilers, sanitizing potable water systems; and freeing identification plates on all equipment of excess paint and the polishing thereof.

C. OWNER'S RIGHT to CLEAN-UP

If the Contractor fails to comply with these clean-up requirements and then fails to comply with a written directive by the Architect to clean-up the premises within a specified time, the Architect or Owner may implement appropriate clean-up measures and the cost thereof shall be deducted from any amounts due or to become due the Contractor.

ARTICLE 49
LIQUIDATED DAMAGES

- A. Time is the essence of the Contract. Any delay in the completion of the Work required by the Contract Documents may cause inconvenience to the public and loss and damage to the Owner including but not limited to interest and additional administrative, architectural, inspection and supervision charges. By executing the Construction Contract, the Contractor agrees that the Contract Time is sufficient for the achievement of Substantial Completion.
- B. The Contract Documents may provide in the Construction Contract or elsewhere for a certain dollar amount for which the Contractor and its Surety (if any) will be liable to the Owner as liquidated damages for each calendar day after expiration of the Contract Time that the Contractor fails to achieve Substantial Completion of the Work. If such daily liquidated damages are provided for, Owner and Contractor, and its Surety, agree that such amount is reasonable and agree to be bound thereby.

- C. 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.
- D. The amount of liquidated damages due under either paragraph B or C, above, may be deducted by the Owner from the moneys otherwise due the Contractor in the Final Payment, not as a penalty, but as liquidated damages sustained, or the amount may be recovered from Contractor or its Surety. If part of the Work is substantially completed within the Contract Time and part is not, the stated charge for liquidated damages shall be equitably prorated to that portion of the Work that the Contractor fails to substantially complete within the Contract Time. It is mutually understood and agreed between the parties hereto that such amount is reasonable as liquidated damages.

ARTICLE 50

USE of FOREIGN MATERIALS

- A. In the performance of the Work the Contractor agrees to use materials, supplies, and products manufactured, mined, processed or otherwise produced in the United States or its territories, if same are available at reasonable and competitive prices and are not contrary to any sole source specification implemented under the Public Works Law.
- B. In the performance of the Work the Contractor agrees to use iron or steel, that are made a permanent part of the structure, produced in the United States if the Contract Documents require the use of iron or steel and do not limit its supply to a sole source pursuant to the Public Works Law. If the Owner decides that the procurement of domestic steel products becomes impractical as a result of national emergency, national strike, or other cause, the Owner shall waive this restriction.
- C. If domestic steel or other domestic materials, supplies, and products are not used in accordance with preceding Paragraphs A and B, the Contract Sum shall be reduced by an amount equal to any savings or benefits realized by the Contractor.
- D. This Article applies only to Public Works projects financed entirely by the State of Alabama or any political subdivision of the state.

ARTICLE 51

PROJECT SIGN

- A. Fully locally-funded State Agency and Public Higher Education projects: DCM Form C-15: Detail of Project Sign must be included in the project manual regardless of expected bid amount. If the awarded contract sum is \$100,000.00 or more, Contractor shall furnish and erect a project sign. Other conditions besides the contract sum may warrant waiver of this requirement, but only with approval of the Technical Staff.
- B. Fully locally-funded K-12 school projects: Project sign is not required unless requested by Owner; if project sign is requested by Owner, include DCM Form C-15: Detail of Project Sign in the project manual.
- C. Partially or fully PSCA-funded projects: DCM Form C-15: Detail of Project Sign must be included in the project manual. Contractor shall furnish and erect a project sign for all PSCA-funded projects, regardless of the contract sum. "Alabama Public School and College Authority" as well as the local owner entity must be included as awarding authorities on the project sign of all PSCA-funded projects.

When required per the above conditions, the project sign shall be erected in a prominent location selected by the Architect and Owner and shall be maintained in good condition until completion of Work. If the Contract involves Work on multiple sites, only one project sign is required, which shall be erected on one of the sites in a location selected by the Architect and Owner. Slogan: The title of the current PSCA Act should be placed on the project sign of all PSCA-funded projects, otherwise the Awarding Authority/Owner's slogan, if any, should be used. If the Awarding Authority/Owner of a fully locally-funded project does not have a slogan, the project sign does not require a slogan.

END of
GENERAL CONDITIONS of the CONTRACT

GENERAL CONTRACTOR'S ROOFING GUARANTEE

DCM Project No. _____

Project Name & Address	Project Owner Entity(ies) Name(s) & Address(es)

General Contractor's Company Name, Address, & Telephone Number	EFFECTIVE DATES OF GUARANTEE
	Date of Acceptance:
	Date of Expiration:

1. The General Contractor does hereby certify that the roofing work included in this contract was installed in strict accordance with all requirements of the plans and specifications and in accordance with approved roofing manufacturers recommendations.
2. The General Contractor does hereby guarantee the roofing and associated work including but not limited to all flashing and counter flashing both composition and metal, roof decking and/or sheathing; all materials used as a roof substrate or insulation over which roof is applied; promenade decks or any other work on the surface of the roof; metal work; gravel stops and roof expansion joints to be absolutely watertight and free from all leaks, due to faulty or defective materials and workmanship for a period of five (5) years, starting on the date of substantial completion of the project. This guarantee does not include liability for damage to interior contents of building due to roof leaks, nor does it extend to any deficiency which was caused by the failure of work which the general contractor did not damage or did not accomplish or was not charged to accomplish.
3. Subject to the terms and conditions listed below, the General Contractor also guarantees that during the Guarantee Period he will, at his own cost and expense, make or cause to be made such repairs to, or replacements of said work, in accordance with the roofing manufacturers standards as are necessary to correct faulty and defective work and/or materials which may develop in the work including, but not limited to: blisters, delamination, exposed felts, ridges, wrinkles, splits, warped insulation and/or loose flashings, etc. in a manner pursuant to the total anticipated life of the roofing system and the best standards applicable to the particular roof type in value and in accordance with construction documents as are necessary to maintain said work in satisfactory condition, and further, to respond on or within three (3) calendar days upon proper notification or leaks or defects by the Owner or Architect.

- A. Specifically excluded from this Guarantee are damages to the work, other parts of the building and building contents caused by: (1) lightning, windstorm, hailstorm and other unusual phenomena of the elements; and (2) fire. When the work has been damaged by any of the foregoing causes, the Guarantee shall be null and void until such damage has been repaired by the General Contractor, and until the cost and expense thereof has been paid by the Owner or by the responsible party so designated.
- B. During the Guarantee Period, if the Owner allows alteration of the work by anyone other than the General Contractor, including cutting, patching and maintenance in connection with penetrations, and positioning of anything on the roof, this Guarantee shall become null and void upon the date of said alterations. If the owner engages the General Contractor to perform said alterations, the Guarantee shall not become null and void, unless the General Contractor, prior to proceeding with the said work, shall have notified the Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate the work, thereby reasonably justifying a termination of this Guarantee.
- C. Future building additions will not void this guarantee, except for that portion of the future addition that might affect the work under this contract at the point of connection of the roof areas, and any damage caused by such addition. If this contract is for roofing of an addition to an existing building, then this guarantee covers the work involved at the point of connection with the existing roof.
- D. During the Guarantee period, if the original use of the roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray cooled surface, flooded basin, or other use of service more severe than originally specified, this Guarantee shall become null and void upon the date of said change.
- E. The Owner shall promptly notify the General Contractor of observed, known or suspected leaks, defects or deterioration, and shall afford reasonable opportunity for the General Contractor to inspect the work, and to examine the evidence of such leaks, defects or deterioration.

IN WITNESS THEREOF, this instrument has been duly executed this _____ day
of _____, _____.

General Contractor's Authorized Signature

Typed Name and Title

DCM (BC) No. _____

PSCA Projects: PSCA No. _____

Application No. _____

Date: _____

APPLICATION and CERTIFICATE for PAYMENT

Attach DCM Form C-10SOV: Schedule of Values

TO OWNER: Entity Name: Address:	PROJECT:
FROM CONTRACTOR: Company Name & Address, which must exactly match co. name & payment address spelling as registered in State of AL Accounting & Resource System (STAARS) or AL Buys to avoid rejection: STAARS or AL Buys Vendor #:	ARCHITECT / ENGINEER: Firm Name: Address:

A. Total Original Contract	\$
B. Fully Executed (fully signed) Change Order(s) Numbers ___ through ___	+\$
C. Total Contract To Date	\$
1. Work Completed to Date per attached Schedule of Values <i>(Form C-10SOV's Column F Total)</i>	\$
2. Materials Presently Stored <i>(When this amount is greater than \$0.00, attach Form C-10SM: Inventory of Stored Materials, or similar list)</i>	+\$
3. Total Work Completed to Date & Materials Presently Stored <i>(_____% of Contract To Date)</i>	\$
4. Less Retainage <i>(If Total Work Completed to Date & Materials Presently Stored (#3) is less than or equal to 50% of Total Contract to Date (C), Retainage = #3 x 0.05. Once #3 exceeds 50% of C and up until project is complete, Retainage = C x 0.025. \$0 is retained on final payment application, see last bullet point below Instructions.)</i>	-\$
5. Total Due	\$
6. Less Total Previous Payments Billed <i>(Must exactly match #5 Total Due from previous payment application. # 6 is \$0.00 if there is no previous payment application)</i>	-\$
7. Balance Due This Estimate	\$

Final pay app?
☐ Yes.

CONTRACTOR'S CERTIFICATION The undersigned Contractor certifies that to the best of his knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by him for Work for which previous Certificates for Payments were issued and payments received from the Owner and that current payment shown herein has not yet been received. By: _____ Date: _____ Contractor's Signature Name & Title _____ Sworn and subscribed before me this _____ day of _____ Seal: _____ Month, Year _____ Notary Public's Signature	ARCHITECT'S / ENGINEER'S CERTIFICATION In accordance with the Contract Documents, the Architect/ Engineer certifies to the Owner that, to the best of the Architect's/ Engineer's knowledge and belief, the Work has progressed to the point indicated herein, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the amount approved. By _____ Architect's / Engineer's Signature Name & Title _____ Date _____

INSTRUCTIONS • PSCA-funded projects, and State Agency-owned projects: Two copies of pay. app., each with original signatures and all attachments required. • Date of first payment application cannot precede the Notice to Proceed's Begin Date. • Pay. app. must exactly match an attached DCM Form C-10SOV: Schedule of Values. • A change order must be fully executed before inclusion on a payment application. • Contractor's signature date cannot precede the payment application date. • Contractor and Notary signee dates must match. • Progress schedules must be included with non-final payment applications. • One payment application per month may be submitted. • On a final payment application, the following is required for release of retainage: all change orders must be fully executed (signed by all parties and approval authorities) and included in B., the Certificate of Substantial Completion for entire work is fully executed, and all other close-out requirements per General Conditions Article 34 are completed.	APPROVAL _____ Owner Entity By _____ Signature Name & Title _____ Date _____

SCHEDULE OF VALUES (SOV)

DCM Form C-10SOV
Revised October 2021

Project:	DCM (BC) Project Number:
	PSCA Project Number, if any:

Contractor Company:	Application Number:
	Application Date:
	Period From: Period To:

A	B	C	D	E	F	G	H	I	J
Item No.	Description of Work	Scheduled Value (including fully executed [signed by all parties] change order amounts)	Work Completed		Total Work Completed to Date (This application SOV's D + E)	Materials Presently Stored (G total greater than \$0 must match C-10SM's column E total. This SOV's G amounts are not in this SOV's D nor E amounts.)	Total Work Completed to Date & Materials Presently Stored (This SOV's F + G)	Percent of Contract Completed to Date (This SOV's H / C)	Retainage (This column's Total's cell formula calculates the applicable variable rate)
			Work Previously Completed (Previous pay app SOV's column F. D is \$0 if this SOV is for first pay app.)	Work Completed This Period (Period as noted above)					
1.					\$ -		\$ -		Retainage Variable Rate: If Total Work Completed to Date & Materials Presently Stored (H) is less than or equal to 50% of Total Scheduled Value (C), Retainage = H x 0.05. Once H exceeds 50% of C and up until project is complete, Retainage = C x 0.025. There will be no retainage on final payment application.
2.					\$ -		\$ -		
3.					\$ -		\$ -		
4.					\$ -		\$ -		
5.					\$ -		\$ -		
6.					\$ -		\$ -		
7.					\$ -		\$ -		
8.					\$ -		\$ -		
9.					\$ -		\$ -		
10.					\$ -		\$ -		
11.					\$ -		\$ -		
12.					\$ -		\$ -		
13.					\$ -		\$ -		
14.					\$ -		\$ -		
15.					\$ -		\$ -		
16.					\$ -		\$ -		
17.					\$ -		\$ -		
18.					\$ -		\$ -		
19.					\$ -		\$ -		
20.					\$ -		\$ -		
21.					\$ -		\$ -		
22.					\$ -		\$ -		
23.					\$ -		\$ -		
24.					\$ -		\$ -		
25.					\$ -		\$ -		
TOTALS:		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -
This pay app SOV's column totals must match amounts in this pay app Form C-10 per the following indicated Form C-10 line #s:		C.	None	None	1.	2.	3.	3.	4.

Note: If this SOV's column G: Materials Presently Stored includes any amounts other than \$0, then DCM Form C-10SM: Inventory of Stored Materials with back-up receipts must be submitted as part of the payment application documentation.

INVENTORY OF STORED MATERIALS				DCM Form C-10SM Revised October 2021	
Project:				DCM (BC) No.:	
				PSCA No, if any:	
Contractor Company:				For Estimate No.:	
				For Period Ending:	
A	B	C	D	E	
Description	Materials Stored Last Period	Materials Purchased This Period (period noted above)	Materials Used This Period (period noted above)	Materials Presently Stored (B + C - D)	
TOTALS:					
Instructions : • This Form C-10SM must be submitted as part of the payment application documentation when a Materials Presently Stored amount of anything greater than \$0 is noted on line 2 of DCM Form C-10: Application and Certificate for Payment. • Receipts must be provided as attachments to this form C-10SM for all amounts placed in Column C: Materials Purchased This Period. • The total \$ amount of this Form C-10SM's column E: Materials Presently Stored must match both Form C-10's line 2: Materials Presently Stored, and Form C-10SOV: Schedule of Values' total \$ amount of Column G: Materials Presently Stored. • The \$ amounts in this current Form C-10SM's Column D: Materials Used This Period are amounts that must all be included in the current payment application's Form C-10SOV's Column E: Work Completed This Period. • The \$ amounts in this current Form C-10SM's Column E: Materials Presently Stored are the amounts that must be listed in the next payment application's Form C-10SM's Column B: Materials Stored Last Period.					

SAMPLE PROGRESS SCHEDULE & REPORT				CONTRACTOR (Contractor may use own form in lieu of Form C-11):								DATE OF REPORT:							
DCM (BC) No.:												ARCHITECT/ENGINEER:				PROCEED DATE:			
PSCA projects: PSCA No.:																PROJECTED COMPLETION DATE:			
PROJECT:																			
WORK DIVISION		%	AMOUNT																
1.	GENERAL REQUIREMENTS																		
2.	SITework																		
3.	CONCRETE																		
4.	MASONRY																		
5.	METALS																		
6.	WOOD AND PLASTIC														100%				
7.	THERMAL AND MOISTURE PROTECTION														90%				
8.	DOORS AND WINDOWS														80%				
9.	FINISHES														70%				
10.	SPECIALTIES														60%				
11.	EQUIPMENT														50%				
12.	FURNISHINGS														40%				
13.	SPECIAL CONSTRUCTION														30%				
14.	CONVEYING SYSTEMS														20%				
15.	MECHANICAL														10%				
16.	ELECTRICAL														0%				
TOTAL ORIG. CONTRACT		100%																	
ANTICIPATED DRAW IN \$1,000																			
ACTUAL DRAW IN \$1,000																			
LEGEND: ANTICIPATED ACTIVITY												ACTUAL ACTIVITY		ANTICIPATED CASH FLOW		ACTUAL CASH FLOW		USE ADDITIONAL SHEETS IF JOB IS SCHEDULED OVER 12 MONTHS.	

DCM Form C-11
August 2021

**Alabama Department of Finance
Real Property Management
Division of Construction Management**

770 Washington Avenue, Suite 444
Montgomery, Alabama 36104
(334) 242-4082 (phone)

DCM Form B-12
Revised July 2022

CHANGE ORDER CHECKLIST

For use with DCM Form C-12 and DCM Form 9-J

WHICH FORM DO YOU USE?

Use **DCM Form C-12** for contracts of state agencies and departments and State Department of Education (SDE) projects. Also use for ACCS projects with Notice-to-Proceeds issued prior to August 1, 2021.

Use **DCM Form 9-J** for contracts of projects partially or fully Public School and College Authority (PSCA)-funded, except for ACCS projects with Notice-To-Proceeds issued after July 31, 2021. Include a completed

DCM Form B-11: Change Order Justification with **each copy of** either DCM Forms C-12 or 9-J.

Verify that the following information is inserted in the spaces provided on the CONTRACT CHANGE ORDER form, or attached to the form where attachments are noted to be acceptable or obviously necessary. Do not staple forms; use clips.

1.	CHANGE ORDER NUMBER: Insert current change order number.
2.	DATE: Insert date.
3.	DCM (BC) PROJECT NUMBER: Insert DCM Project Number in the block provided at top of document.
4.	CONTRACTOR Insert name and address of the Contractor, exactly as they appear on the Construction Contract.
5.	NAME OF PROJECT: Under "Project", insert the complete name of the project as identified in the bid documents. If using DCM Form 9-J, insert the PSCA Project Number in the space provided.
6.	CONTRACTOR'S PROPOSALS: Under "TERMS", identify the change order proposals submitted by the contractor that are being addressed by the Contract Change Order. Identify these proposals by inserting their dates.
7.	DESCRIPTION OF THE CHANGE(S) IN WORK: Fully describe the change or changes to the original contract work for which the Construction Contract is being modified. This description should be written so that a reader of the document who is not directly involved in the project can understand what is being changed. If the space provided on the form is inadequate for such a description, use attachments and cite them.
8.	CONTRACT AND CHANGE ORDER AMOUNTS: Insert the applicable dollar amounts to record the original contract sum, change orders, and the currently revised contract sum.
9.	EXTENSION OF TIME: If the Contract Time is being extended by the Contract Change Order, insert appropriate number of calendar days in the space provided. If the Contract Time is not being extended, insert "NONE".
10.	RESPONSIBILITY FOR CHANGE ORDER FUNDING - DCM Form 9-J ONLY: The authority responsible for funding the change order is to be identified in the following sentence in the form,: "The amount of this Change Order will be the responsibility of _____." Insert whichever is appropriate: (1) "PSCA", (2) name of LEA, or (3) "PSCA" and name of LEA.
11.	SIGNATURES: The signature spaces for State Agency, PSCA and fully locally-funded Alabama Community College System projects are different from each other. Download the appropriate document per Owner/project type from www.dcm.alabama.gov/forms.aspx . Before submitting a Contract Change Order to DCM, the document must be signed by the contractor, surety (for additive change orders only), design professional and owner (local owner or using agency). Signature by the surety is not necessary on deductive change orders or change orders involving only extensions of time. If the cumulative change order amount exceeds 10% of the original contract amount then the Owner's legal consultant must sign DCM Form B-11: Change Order Justification.
12.	ATTACHMENTS: To each of the three (3) copies (with original signatures) of the Contract Change Order form, attach with clips (do not staple): a. Contractor's change order proposals and/or invoices providing a detailed breakdown of change order costs. General Contractors (GC) must include subcontractors' (sub) quotes as backup. All GC and sub quotes must be broken down by labor (hours and rates), materials including quantities and unit prices (with receipts or quotes attached), equipment whether rented or owned (with receipts or quotes attached), and Overhead & Profit (OH&P). 1. Total OH&P can be a maximum of 25% divided between GC and subs; GC can have a maximum of 15% OH&P (in which case a sub could have up to 10% OH&P). See General Conditions- Article #19. 2. Sales tax cannot be included in change orders. 3. Deductive change orders also require backup including breakdown of labor and material, and must also deduct OH&P if included in original bid. Include specification section regarding allowances. b. POWER OF ATTORNEY for the individual signing the Contract Change Order for the surety. c. DCM Form B-11, CHANGE ORDER JUSTIFICATION: completed and signed by the design professional and owner.

This form is provided solely for the purpose of inclusion in the project manual. A Construction Contract for fully locally-funded K-12 projects must be initiated via the appropriate DocuSign link from DCM's Engage Portal at <https://engagealabamapm.facilityforce.cloud> by the Lead Design Professional Firm.

DCM Form C-12 (fully locally-funded K-12 school project)
revised October 2024
A Change Order is not valid without an accompanying completed Change Order Justification (DCM Form B-11).

CONTRACT CHANGE ORDER

Change Order No. _____ **Date** _____ **DCM (BC) No.** _____

TO: (Contractor) Co. Name: Address:	PROJECT:

TERMS: You are hereby authorized, subject to the provisions of your Contract for this project, to make the following changes thereto in accordance with your proposal(s) dated _____.

FURNISH the necessary labor, materials, and equipment to *(Description of work to be done or changes to be made. If the description is continued in an attachment, identify the attachment below; only use an attachment if fields below become full.):*

Description continued from Page 1:

ORIGINAL CONTRACT SUM	\$	_____
NET TOTAL OF PREVIOUS CHANGE ORDERS	\$	_____
PREVIOUS REVISED CONTRACT SUM	\$	_____
THIS CHANGE ORDER WILL INCREASE DECREASE		
THE CONTRACT SUM BY	\$	_____
REVISED CONTRACT SUM, INCLUDING THIS CHANGE ORDER	\$	_____

EXTENSION OF TIME resulting from this Change Order None or _____ Calendar days.

The Owner does hereby certify that this Change Order was executed in accordance with the provisions of Title 39, Code of Alabama, 1975, as amended.

Architectural/Engineering Firm
Recommended By _____
Name & Title _____

APPROVAL
ALABAMA STATE DEPARTMENT OF EDUCATION
(SDE)
(Required for locally-funded, SDE projects.)
By _____ Date: _____
State Superintendent of Education

CONTRACTING PARTIES

Contractor Company
By _____
Name & Title _____

Awarding Authority/Owner Entity
By _____
Name & Title _____
CONSENT OF SURETY (for additive \$ change orders only)

Surety Company
By _____
(Attach current Power of Attorney)
Name & Title _____

Routing of the Construction Contract to reviewers and e-signers is automated through DocuSign. DocuSign links for fully locally-funded contract documents are available from DCM's Engage Portal at <https://engagealabama-rpm.facilityforce.cloud>

TO: **Alabama Department of Finance**
Real Property Management
Division of Construction Management
 770 Washington Avenue, Suite 444
 Montgomery, Alabama 36104
 (334) 242-4082 FAX (334) 242-4182

CHANGE ORDER JUSTIFICATION

Change Order No. _____

Date: _____

DCM (BC) No. _____

Purpose and instructions on next page.

Do not staple this form and/or attachments; use clips.

(A)	PROJECT NAME & LOCATION:	OWNER ENTITY NAME & ADDRESS:						
	CONTRACTOR COMPANY NAME & ADDRESS:	ARCHITECTURAL / ENGINEERING FIRM NAME & ADDRESS:						
(B)	DESCRIPTION OF PROPOSED CHANGE(S): ATTACH CONTRACTOR'S DETAILED COST PROPOSAL(s)							
	AMOUNT: ☐ ADD ☐ DEDUCT \$ _____ TIME EXTENSION: _____ CALENDAR DAYS							
(C)	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">ORIGINAL CONTRACT AMOUNT</td> <td style="width: 33%;">PREVIOUS C.O.'s _____ THRU _____</td> <td style="width: 34%;">CONTRACT AMOUNT PRIOR TO PROPOSED CHANGE ORDER</td> </tr> <tr> <td>\$ _____ + \$ _____</td> <td>=</td> <td>\$ _____</td> </tr> </table>		ORIGINAL CONTRACT AMOUNT	PREVIOUS C.O.'s _____ THRU _____	CONTRACT AMOUNT PRIOR TO PROPOSED CHANGE ORDER	\$ _____ + \$ _____	=	\$ _____
ORIGINAL CONTRACT AMOUNT	PREVIOUS C.O.'s _____ THRU _____	CONTRACT AMOUNT PRIOR TO PROPOSED CHANGE ORDER						
\$ _____ + \$ _____	=	\$ _____						
(D)	JUSTIFICATION FOR NEED OF CHANGE(S):							
(E)	JUSTIFICATION OF CHANGE ORDER vs. COMPETITIVE BID:							
(F)	ARCHITECT / ENGINEER'S EVALUATION OF PROPOSED COST:							
(G)	CHANGE ORDER RECOMMENDED _____ ARCHITECTURAL / ENGINEERING FIRM NAME By: _____ ARCHITECT / ENGINEER'S SIGNATURE By: _____ OWNER'S PROJECT REPRESENTATIVE'S SIGNATURE	CHANGE ORDER JUSTIFIED AND APPROVED _____ LOCAL OWNER ENTITY NAME By: _____ OWNER'S SIGNATURE By: _____ OWNER'S LEGAL COUNSEL'S SIGNATURE						

CHANGE ORDER JUSTIFICATION: PURPOSE and INSTRUCTIONS

PURPOSE

The awarding of work through an existing contract may potentially conflict with, or violate, the "Competitive Bid Laws" of the State of Alabama. **The determination of legality of Change Orders rests with the Awarding Authority and its legal advisor.** In a June 15, 1979, Opinion, the Office of the Attorney General offered guidelines for making such determinations in conjunction with considering the facts and merits of each situation. The purpose of the CHANGE ORDER JUSTIFICATION is to provide a means through which the Awarding Authority considers these guidelines and the intent of the "Competitive Bid Laws" when authorizing Change Orders. Pursuant to these guidelines, the following types of changes meet the criteria for awarding work through Change Orders in lieu of through the Competitive Bid process:

- I. Minor Changes for a monetary value less than required for competitive bidding.
- II. Changes for matters relatively minor and incidental to the original contract necessitated by unforeseeable circumstances arising during the course of the work.
- III. Emergencies arising during the course of the work of the contract.
- IV. Bid alternates provided for in the original bidding where there is no difference in price of the change order from the original best bid on the alternate.
- V. Changes of relatively minor items not contemplated when the plans and specifications were prepared and the project was bid which are in the public interest and which do not exceed 10% of the contract price.

Under these guidelines the cumulative total of Change Orders, including any negotiations to bring the original contract price within the funds available, would become questionable if the total of such changes and negotiations exceed 10% of the original contract price. These guidelines are not intended to interfere with the Awarding Authority's good faith discretion to respond to specific situations in the public's best interest. If the cumulative change order amount exceeds 10% of the original contract amount then the Owner's legal consultant must sign the Change Order Justification prior to submission to the Division of Construction Management (DCM).

INSTRUCTIONS

The CHANGE ORDER JUSTIFICATION is to be prepared by the design professional, who has evaluated the fairness and reasonableness of the proposed cost of the change(s) and recommends that the proposed Change Order be executed. The fully executed Form B-11: CHANGE ORDER JUSTIFICATION must accompany the proposed DCM Form C-12: Change Order. Instructions for completing the B-11 form are:

1. Insert the proposed Change Order Number, date of the Justification, and DCM (BC) Project Number in the spaces provided in the upper right-hand corner.
2. **Section (A):** Insert the complete name and address of the PROJECT, OWNER, CONTRACTOR, AND ARCHITECT/ENGINEER.
3. **Section (B):** Provide a complete description of the proposed changes in work, referring to and attaching revised specifications and/or drawings as appropriate. An attachment may be used if additional space is needed, but insert the proposed amount and time extension of the change(s) in the spaces provided. **Attached a copy of the contractor's detailed cost proposal.**
4. **Section (C):** Insert the Original Contract amount, the net increase or decrease of previous Change Orders, and the Current Contract amount (preceding the currently proposed Change Order).
5. **Section (D):** Explain why it is necessary, or in the public's interest, to make the proposed change(s) to the Work.
6. **Section (E):** Explain why award of the changed work to the existing contractor instead of awarding the work under the competitive bid process is justified.
7. **Section (F):** The design professional must state his evaluation of the reasonableness and fairness of the proposed costs based upon his review of the contractor's proposal.
8. **Section (G):** The design professional must recommend the Change Order to the Owner by signing the document; the Owner may require such recommendation from other individuals. The Owner must sign the document indicating that they believe change order action in lieu of the competitive bid process is justified for the proposed change(s). **Review of the matter and signing of the document by the Owner's legal counsel is highly recommended. If the cumulative change order amount exceeds 10% of the original contract amount then the Owner's legal consultant must sign the Change Order Justification prior to submission to DCM.**

FINAL PAYMENT CHECKLIST (FPC)

To be completed by the Architect/Engineer and submitted to DCM for review via DocuSign link from DCM's [Engage Portal](#); applicable only to state agencies, partially or fully PSCA-funded and other bond-funded projects. The FPC shall include all attachments including the Contractor's Application for Final Payment. If all PSCA funds are expended prior to Final Payment, it is not a requirement to submit the Application & Certificate for Final Payment along with the supporting documentation to DCM.

(For further guidance refer to Article 34/Final Payment of DCM Form C-8: [General Conditions of the Contract](#).)

DCM Project Number:

PSCA Project Number, if applicable:

Project Name:

YES	N/A	Select "YES" or "N/A" as applicable.
☐	☐	Application and Certificate for Final Payment, DCM Form C-10: Attach one copy to FPC. The application must include original signatures of all parties and include all application attachments.
☐	"Yes" is required	Certificate of Substantial Completion, DCM Form C-13: Attach one fully-executed copy to FPC.
☐	"Yes" is required	Affidavit of Advertisement for Completion: Attach one copy of the affidavit of publication, including the image of the advertisement which may be based on DCM Form C-14, to the FPC. An affidavit is a legal document issued by the publisher, which must be requested from the publisher.
☐	☐	Contractor's Affidavit of Payment of Debts & Claims, DCM Form C-18: Attach one copy to FPC.
☐	☐	Contractor's Affidavit of Release of Liens, if required by Owner, DCM Form C-19: Attach one copy to the FPC.
☐	☐	Consent of Surety to Final Payment, if any, To Contractor, DCM Form C-20: Consent is required for projects with P&P Bonds. Original has been delivered to Owner. Attach one copy to FPC.
☐	☐	General Contractor's Roofing Guarantee, DCM Form C-9, and Other Specified Roofing Guarantees, if any: Attached to Certificate of Substantial Completion.
☐	☐	Contractor's One-Year Warranty: Original has been delivered to the Owner. Attach one copy to the FPC.
☐	☐	Other Warranties: All other specified original warranties has been delivered to the Owner. Attach one copy to the FPC.
☐	☐	Record Documents: Specified "As-built" plans and specifications have been delivered to the Owner.
☐	"Yes" is required	O & M Manuals: Specified instructions and O&M Manuals have been delivered to the Owner.
☐	☐	Time Extension: Over-run of Contract Time has been reconciled by: ☐ Change Order ☐ Liquidated Damages ☐ Attached explanation
☐	☐	Additional Documents or Explanations which are attached:

Submitted By (Architectural/Engineering Firm):

Signature:

Date:

Printed Name and Title:

Final Reconciliation of Fees: Between the final change order execution and the year-end inspection, report the final project cost on DCM's [Engage Portal](#) (back-up is not needed unless requested by DCM). DCM will then email a Final Reconciliation of Fees Statement to the Owner. If the Final Statement shows a net payment is owed to DCM, that amount must be paid prior to scheduling the year-end inspection. If the Final Statement shows a net refund is owed then a check will be mailed to the Owner.

DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Contractor's Affidavit of Payment of Debts and Claims

To Owner (<i>Entity name and address</i>):	Project (<i>Same as appears in the Construction Contract</i>):

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied 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 Construction Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

Supporting Documents Attached Hereto:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. DCM Form C-20, Consent of Surety to Final Payment, may be used for this purpose.

Indicate attachment: ☐ Yes ☐ No

The following supporting document should be attached hereto if required by the Owner:

1. Contractor's Release of Waiver of Liens.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment supplies, to the extent required by the Owner, accompanied by the list thereof.
3. Contractor's Affidavit of Release of Liens, DCM Form C-19.

Contractor (*Insert company name and address*):

By: _____
Signature of authorized representative

Name and Title

Sworn to and subscribed before me this _____ day
of _____, _____.

Notary Public's Signature

My commission expires: _____

Seal:

DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Contractor's Affidavit of Release of Liens

To Owner (<i>Entity name and address</i>):	Project (<i>Same as appears in the Construction Contract</i>):

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Construction Contract referenced above.

EXCEPTIONS:

Supporting Documents Attached Hereto:

1. Contractor's Release of Waiver of Liens.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment supplies, to the extent required by the Owner, accompanied by the list thereof.

Contractor (*Insert company name and address*):

By: _____
Signature of authorized representative

Name and Title

Sworn to and subscribed before me this _____ day
of _____, _____.

Notary Public's Signature

My commission expires: _____

Seal:

DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Surety's Bond Number: _____

CONSENT OF SURETY TO FINAL PAYMENT

To Owner (<i>Entity name and address</i>): 	Project (<i>Same as appears in the Construction Contract</i>):

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the

Surety (*Insert name and address of Surety*)

on bond of

Contractor (*Insert name and address of Contractor*)

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to

Owner (*Insert name and address of Entity*):

as set forth in said Surety's bond.

SIGNED AND SEALED this _____ day of _____, _____.

SURETY:

Seal:

Company Name

By _____
Signature of Authorized Representative

Printed Name and Title

Note: Original Power of Attorney for the Surety's signatory shall be furnished with each of the original forms to be attached to each of the four (4) final payment forms.

CERTIFICATE OF SUBSTANTIAL COMPLETION

ROUTING PROCEDURES ON NEXT PAGE

DCM (BC) No. _____

OWNER ENTITY NAME AND ADDRESS: Email to receive executed copy: _____	ARCHITECTURAL / ENGINEERING FIRM NAME AND ADDRESS: Email to receive executed copy: _____
CONTRACTOR COMPANY NAME AND ADDRESS: Email to receive executed copy: _____	BONDING COMPANY NAME AND ADDRESS: Email to receive executed copy: _____
PROJECT: 	

Substantial Completion has been achieved for ☐ the entire Work ☐ the following portion of the Work:

The **Date of Substantial Completion** of the Work covered by this certificate is established to be _____.

"Substantial Completion" means the designated Work is sufficiently complete, in accordance with the Contract Documents, such that the Owner may occupy or utilize the Work for its intended use without disruption or interference by the Contractor in completing or correcting any remaining unfinished Work. The Date of Substantial Completion is the date upon which all warranties for the designated Work commence, unless otherwise agreed and recorded herein.

Punch List: A _____ page list of items to be completed or corrected prior to the Owner's approval of Final Payment is attached hereto, but does not alter the Contractor's responsibility to complete or correct all Work in full compliance with the Contract Documents. The Contractor shall complete or correct all items on the attached list, ready for re-inspection for Final Acceptance, within 30 days after the above Date of Substantial Completion, unless another date is stated here: _____. If completed or corrected within this period, warranties of these items commence on the Date of Substantial Completion, otherwise such warranties commence on the date of Final Acceptance of each item.

Only one (1) originally executed substantial completion form shall be routed for signature. DCM office will mail the fully-executed original to the Owner and email copies to all parties.

RECOMMENDED BY <i>(signature and email address required):</i> ARCHITECT/ENGINEER: _____ CONTRACTING PARTIES: CONTRACTOR: _____ OWNER: _____ APPROVALS: DCM INSPECTOR: _____ DCM CHIEF INSPECTOR: _____ DCM DIRECTOR: _____	DATE: _____ DATE: _____ DATE: _____ DATE: _____ DATE: _____ DATE: _____ DATE: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION ROUTING PROCEDURE

Only one (1) substantial completion form shall be routed for e-signatures, via DocuSign link from DCM's Engage Portal at: <https://engagealabama-rpm.facilityforce.cloud>

NOTICE

THE EXECUTED “GENERAL CONTRACTOR’S ROOFING GUARANTEE” (DCM Form C-9) AND ANY OTHER ROOFING WARRANTY REQUIRED BY THE CONTRACT MUST ACCOMPANY THIS CERTIFICATE TO OBTAIN DCM APPROVAL.

Also, any standard manufacturer's roofing guarantees which contain language regarding the governing of the guarantee 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 guarantees.

SAMPLE FORM OF ADVERTISEMENT FOR COMPLETION

LEGAL NOTICE

In accordance with Chapter 1, Title 39, Code of Alabama, 1975, as amended, notice is hereby given

that _____,
(Contractor Company Name)

Contractor, has completed the Contract for ☐ (Construction) ☐ (Renovation) ☐ (Alteration)
☐ (Equipment) ☐ (Improvement) of _____
(Name of Project):

at _____
(Insert location data in County or City)

for the State of Alabama and the (County) (City) of _____,
Owner(s), and have made request for final settlement of said Contract. All persons having
any claim for labor, materials, or otherwise in connection with this project should immediately
notify

(Architect / Engineer)

(Contractor)

(Business Address)

NOTE: This notice must be run for a minimum of three weeks for projects of \$100,000.00 or more. For acceptable methods of advertisement, see General Conditions of the Contract, Article 34. Proof of publication of the notice shall be made by the contractor to the authority by whom the contract was made by affidavit of the publisher or website owner and a printed copy of the notice published. A final settlement shall not be made upon the contract until the expiration of 30 days after the completion of the notice.



State of Alabama

Disclosure Statement

Required by Article 3B of Title 41, Code of Alabama 1975

ENTITY COMPLETING FORM

ADDRESS

CITY, STATE, ZIP

TELEPHONE NUMBER

STATE AGENCY/DEPARTMENT THAT WILL RECEIVE GOODS, SERVICES, OR IS RESPONSIBLE FOR GRANT AWARD

ADDRESS

CITY, STATE, ZIP

TELEPHONE NUMBER

This form is provided with:

☐ Contract ☐ Proposal ☐ Request for Proposal ☐ Invitation to Bid ☐ Grant Proposal

Have you or any of your partners, divisions, or any related business units previously performed work or provided goods to any State Agency/Department in the current or last fiscal year?

☐ Yes ☐ No

If yes, identify below the State Agency/Department that received the goods or services, the type(s) of goods or services previously provided, and the amount received for the provision of such goods or services.

STATE AGENCY/DEPARTMENT	TYPE OF GOODS/SERVICES	AMOUNT RECEIVED

Have you or any of your partners, divisions, or any related business units previously applied and received any grants from any State Agency/Department in the current or last fiscal year?

☐ Yes ☐ No

If yes, identify the State Agency/Department that awarded the grant, the date such grant was awarded, and the amount of the grant.

STATE AGENCY/DEPARTMENT	DATE GRANT AWARDED	AMOUNT OF GRANT

1. List below the name(s) and address(es) of all public officials/public employees with whom you, members of your immediate family, or any of your employees have a family relationship and who may directly personally benefit financially from the proposed transaction. Identify the State Department/Agency for which the public officials/public employees work. (Attach additional sheets if necessary.)

NAME OF PUBLIC OFFICIAL/EMPLOYEE	ADDRESS	STATE DEPARTMENT/AGENCY

2. List below the name(s) and address(es) of all family members of public officials/public employees with whom you, members of your immediate family, or any of your employees have a family relationship and who may directly personally benefit financially from the proposed transaction. Identify the public officials/public employees and State Department/Agency for which the public officials/public employees work. (Attach additional sheets if necessary.)

NAME OF FAMILY MEMBER	ADDRESS	NAME OF PUBLIC OFFICIAL/ PUBLIC EMPLOYEE	STATE DEPARTMENT/ AGENCY WHERE EMPLOYED

If you identified individuals in items one and/or two above, describe in detail below the direct financial benefit to be gained by the public officials, public employees, and/or their family members as the result of the contract, proposal, request for proposal, invitation to bid, or grant proposal. (Attach additional sheets if necessary.)

Describe in detail below any indirect financial benefits to be gained by any public official, public employee, and/or family members of the public official or public employee as the result of the contract, proposal, request for proposal, invitation to bid, or grant proposal. (Attach additional sheets if necessary.)

List below the name(s) and address(es) of all paid consultants and/or lobbyists utilized to obtain the contract, proposal, request for proposal, invitation to bid, or grant proposal:

NAME OF PAID CONSULTANT/LOBBYIST	ADDRESS

By signing below, I certify under oath and penalty of perjury that all statements on or attached to this form are true and correct to the best of my knowledge. I further understand that a civil penalty of ten percent (10%) of the amount of the transaction, not to exceed \$10,000.00, is applied for knowingly providing incorrect or misleading information.

Signature	Date

Notary's Signature	Date	Date Notary Expires

Article 3B of Title 41, Code of Alabama 1975 requires the disclosure statement to be completed and filed with all proposals, bids, contracts, or grant proposals to the State of Alabama in excess of \$5,000.

**SECTION 01 0150
SPECIAL CONDITIONS**

1.01 TIME FOR COMPLETION OF WORK:

- A. The Contractor may proceed to award sub-contracts, assemble materials, etc., after written "Notice To Proceed" with Work is given by the Owner. The Contractor's official time for construction to start on work shall be the date of the Owner's written "Notice to Proceed" with Work; and Substantial Completion of the Work shall be **75 CONSECUTIVE CALENDAR DAYS**.
 - 1. Properly supervised work, per requirements, will be permitted on Saturdays and Sundays.
- 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 or Architect be liable to the Contractor for damage due to any delay to any portion of the Work of this Contract.
- D. Delays: See Article 23 of General Conditions of the Contract, and Modifications to General Conditions of the Contract..

1.02 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, the following, in addition to 6% per annum of the total contract amount:
 - 1. For each calendar day of delay in completion of any part of the work beyond the number of days specified, the sum of \$250.00.
 - 2. In the event that work on this project is incomplete and ongoing after the contractual completion date, beginning at ten (10) additional days thereafter, the Owner will also charge the Contractor, an additional \$250.00 per day, for the Owner's nominal reimbursement to the Architect for continued work on the project, which charges will continue until "Substantial Completion" is accomplished.
- B. The submittal of a Bid and/or Proposal by any Contractor and their Subcontractors shall be construed as, in part, acknowledgement and acceptance of these provisions.

1.03 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 01 1000 - "Summary of The Work," for additional information and requirements.

1.04 PRE-BID CONFERENCE:

- A. Refer to "Advertisement for Prequalification and Bids" and "Supplementary Instructions to Bidders," for additional information and requirements.

1.05 PRE-CONSTRUCTION CONFERENCES:

- A. Refer to Section 01 3000 - "Administrative Requirements".

1.06 PRE-ROOFING CONFERENCE:

- A. 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, Division of Construction Management Inspector General Contractor, Roofing Contractor, Sheet Metal 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.

- B. 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.
- C. The following are to be accomplished during the conference:
 - 1. Review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
 - 2. Establish trade-related job schedules, including the installation of roof-mounted mechanical equipment.
 - 3. Establish roofing schedule and work methods that will prevent roof damage.
 - 4. Require that all roof penetrations and walls be in place prior to installing the roof.
 - 5. Establish those areas on the job site that will be designated as work and storage areas for roofing operations.
 - 6. Establish weather and working temperature conditions to which all parties must agree.
 - 7. 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.
- D. 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, the Division of Construction Management and the Owner.
- E. Refer to Section 01 3000 - "Administrative Requirements" for additional information and requirements.

1.07 CONTRACTOR ACCESS TO SITE:

- A. The Contractor will have access to the site immediately upon receipt of the Owner's written 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, Architect, and other authorities having jurisdiction. Check site plan for location of work limits. Refer to Section 01 1000 - "Summary of The Work" and Section 01 5000 - "Temporary Facilities," for additional information and requirements.
- B. The Contractor shall be required to coordinate the Work of the project with the Owner's activities, to the extent that the Work of this Contract has little or no effect on normal operations.

1.08 CONTRACTOR'S PLAN FOR CONSTRUCTION OF PROJECT:

- A. Contractor shall prepare and submit within 7 days from award of contract to the Architect for review and approval a Bar Graph, indicating his proposed plan and sequence of operations to complete each phase of this project, on schedule as required by contract. This Bar Graph is not expected to be a Critical Path graph.
 - 1. Schedule should identify project milestones and expected durations.

1.09 CONTRACTOR JOB MEETINGS:

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

- B. Refer to "Pre-construction Conferences" paragraph above, "General Conditions of the Contract", and Section 01 3000 - "Administrative Requirements" for additional information and requirements.

1.10 STORED MATERIALS:

- A. It is recognized that the size of the site is 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 01 6000 - "Product Requirements", for additional information and requirements for any off-site stored materials.

1.11 PROTECTION:

- A. The Contractor shall provide and maintain adequate fencing and barricades, where indicated, and wherever required. Building entrances and exits shall remain unobstructed at all times when buildings are occupied.
- 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, public areas, occupied buildings, right-of-ways, etc., which are to remain.
- C. The Contractor shall avoid damage as a result of their operations, to the existing buildings, walks, pavement, curbs, grass, shrubbery, trees, utilities, adjoining property, etc., and shall at his/her own expense, completely repair any damage thereto caused by his operations. All repair work is subject to Architect's approval, and that of its Owner.
- D. Refer to Section 01 5000 - "Temporary Facilities and Controls" for additional information and requirements.

1.12 WORK LIMITS PROTECTION:

- A. The Contractor shall locate all temporary buildings, storage of equipment, materials, etc., within a protected area to protect the public, students, children, and others from the construction activities. Type and location of such protection shall be as existing at the site, or if not existing or complete, as proposed and furnished by the Contractor, subject to acceptance of the Architect, Owner, and authorities having jurisdiction.
- B. Refer to Section 01 5000 - "Temporary Facilities and Controls" for additional information and requirements.

1.13 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, and Divisions 31-33 (except not utility systems testing) shall be provided by an independent testing agency selected, employed and paid by the Owner.

2. Initial testing required by the Contract Documents for all other testing and Divisions 6 through 26 shall be provided by a testing agency acceptable to the Owner, and selected, employed, and paid by the Contractor from his/her 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 his/her 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 Architect and the accepted testing agency, so as 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.
- D. 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.
- E. Refer to Section 01 4000 - "Quality Requirements" for additional information and requirements.

1.14 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 formaldehyde.

1.15 PROHIBITED EQUIPMENT:

- A. The elevated and framed floor slabs are not designed to accommodate heavy rolling point loads. Scissor lifts are not permitted on any elevated or framed slab during the construction of the project.

1.16 PROJECT SIGNS:

- A. Install and maintain PROJECT SIGN, as per Detail following Section 01 5813 - Project Signs, at location on site as directed by the Owner or Architect. Any statements elsewhere which may omit Project Sign are hereby not withstanding.

1. Sign shall be in place within number of days specified in Section 01 5813, 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
 2. DANGER
 3. CONSTRUCTION AREA"
 4. 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 his/her Construction Office and as needed for delivery directions only.
- E. Subcontractors will not be allowed to post signs.
- F. Refer to Section 01 5813 - "Project Signs" for additional information and requirements.

1.17 PERSONNEL EXPERIENCE AND SUPERINTENDENTS:

- A. Subcontractors shall have no less than 5-years verifiable experience in their trade and no less than 5-years verifiable experience in their business enterprise contracting for work under this project; The type of work subcontracted for this project shall be the principal business of the Subcontractor.
- 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 7-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 Owner and Architect.
 2. If the Superintendent is replaced on the job after work begins, the same qualifications as above apply. Submit for review and acceptance by the Owner and Architect.

1.18 SUBMITTALS:

- A. Submittal requirements are indicated throughout the Contract Documents, and the following supplements those requirements.
 1. Contractor will be required to make submittals for every item and product so indicated; Also upon request, for any additional or other item or products intended for use or incorporation in the Work.
 - a. The Contractor shall submit to the Architect within 30 days of "Notice to Proceed", a complete listing of all required submittals, warranties, guarantees, close-out documents, and materials requiring extra or "attic" stock delivered to the Owner, for review and acceptance. Include for each item, the anticipated date of Submittal to the Architect. Re-submit until accepted or approved.
 2. The Contractor shall review, mark all necessary changes, revisions, and questions; and then stamp, sign, approve, and submit to the Architect, all Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, and shall do so with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner, or of separate contractors.
 - a. The Contractor shall not make submittals to the Architect which they have not reviewed, stamped, signed and approved by the Contractor; or in such case, no action will be taken by the Architect or their Consultants regarding that or those submittals.

3. The Contractor shall submit number of copies for review as indicated in Section 01 3000 - Administrative Requirements.
 4. Review time will be limited to two weeks, except for more complex submittals, such as Structural, and Divisions 21-26.
 5. Colors will not be selected until most or all submittals required have been received and reviewed. Actual color chip samples shall be required along with standard color selection paperwork. No exceptions.
 6. Samples: Submit the number specified in Section 01 3000._____
 7. Submit test reports as required or otherwise requested, in the same quantity as other submittal data.
 8. Contractor shall provide letter from Mechanical Contractor stating the Mechanical Contractor has coordinated all power requirements with the Electrical Contractor. Mechanical submittals will not be reviewed without receipt of this letter.
 9. Contractor shall distribute reviewed submittals to all concerned and appropriate Subcontractors and Suppliers.
 10. Contractor shall maintain 1-set of reviewed and approved submittals at his on-site job office.
- B. Review and/or approval of submittals by the Architect, Owner and/or their Consultants shall not relieve the Contractor of his responsibility to comply with the requirements of the Contract Documents.
1. Any proposed change in the Work shall be submitted separate from any other item during construction, with same documentation as pre-bid requests, or they will not be considered.
 2. No actual or proposed change shall be included in Shop Drawings or other Construction submittals, and none so included will be considered approved under any circumstances.
 3. Shop Drawings are communications between the Contractor and various suppliers, fabricators, and subcontractors. The design professional's role is to review the drawings to answer questions that arise about design intent.
 4. Even if a reviewed Shop Drawing or other Submittal has deviations from the original design and the Contract Documents, it in itself is not a Change Order and it is not, IN ITSELF, an approval of the change. Changes can only be approved by Change Order.
 5. Dimensions, quantities, and coordination remain the Contractor's responsibility.
- C. Refer to Section 01 3000 - "Administrative Requirements" for additional information and requirements.

1.19 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 01 1000, 01 5000, 01 7000 and other locations in the Bid and Contract Documents for additional information and requirements.

1.20 INSURANCE AND SPECIAL PROVISIONS:

- A. The Contractor and their insurer, by execution of the Contract, shall waive all rights of subrogation against "the Owner, 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, 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", as modified by "Supplementary 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, nor 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, 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 Owner, 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 Owner 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 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.

1.21 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., so as to provide full accessibility to people with disabilities, 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. Elevator (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, either the latest edition or latest adopted edition of the locality, and all revisions and amendments thereto:
 - 1. American National Standards Institute (ANSI), ANSI A 117.1.
 - 2. D.O.J. ADA Standards for Accessible Design.
 - 3. International Building Code, as applicable at the project locale.

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 Owner that such testing is consistently on-going, upon Owner'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 of 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 as necessary to accommodate provisions for these items.
 1. Movable furniture, furnishings, office equipment, library equipment, and movable library shelving unless otherwise indicated.
 2. Listed Equipment, residential appliances, and items of Alternate work not accepted at this time, and/or indicated "Not In Contract", "N.I.C.", "Future", and/or similar indication.
 - a. Unless otherwise indicated, coordination, locating, and providing rough-ins for all power, water supply, gas, drains, drain lines, condensate drain outlet, and other utilities required for such equipment, casework, etc., and preparation required for the addition of future finishes (same as level of finish required for the finishes included in Bid, just prior to finishes being added), shall be included in Base Bid;
- B. Refer to Section 01 1000 - "Summary of The Work" for additional information and requirements.

1.24 SELECTIVE DEMOLITION:

- A. Section 02 4100 - "Demolition," is applicable to the entire Work of this project and not just to Division 2 where it occurs.

1.25 INSPECTIONS:

- A. See Section 01 3000 - Administrative Requirements for information on Scheduling of Inspections, and Minimum Requirements for Required Inspections.

1.26 DCM USER FEES:

- A. The Contractor is hereby advised of the State of Alabama Division of Construction Management's "User Fees". Pursuant to Administrative Rule 355-16-1 Collection of User Fees effective January 13, 2020, all projects under the jurisdiction of DCM require payment of fees at various points during the project for plan review, permitting/inspections and, if applicable,

contract document administration.. The Rule for "Collection of User Fees" may be obtained at the following link:

1. <<http://www.alabamaadministrativecode.state.al.us/docs/fin/355-16-1.pdf>>

B. The Contractor is also hereby advised that Alabama Division of Construction Management administrative fees in the form of a Permit Fee shall be paid by the Contractor.

1. See attached Permit Fee Calculation Worksheet.

C. Special Attention is called in part, to Chapter 355-16-1-.03 "Fees Required", (5) Additional Fees, Subparagraph b, below:

1. Any fees incurred under this paragraph will be the sole responsibility of the General Contractor, at no cost to the Owner, with payment made as directed by the Alabama Division of Construction Management.

a. "If the contractor schedules an inspection and it is determined by the Building Commission Inspector on site that the contractor is not ready for the scheduled inspection, the Building Commission shall require an additional fee of \$1500. The additional inspection fee shall be applied to each additional inspection that is required to be rescheduled."

END OF SECTION



ALABAMA DEPARTMENT OF FINANCE
REAL PROPERTY MANAGEMENT
Division of Construction Management

www.dcm.alabama.gov, 334-242-4082, inspections@realproperty.alabama.gov

Revised December 2021

Department Use Only
Invoice # _____
Date Paid _____
Confirmation # _____

PERMIT FEE & PERMIT RE-INSPECTION FEE CALCULATION WORKSHEET

DCM (BC) # _____	Date _____
Project Name; Owner/Architect/Engineer Project # & Phase/Package # _____	
Owner Entity Name _____	
Architect/Engineer Firm Name _____	
Contractor Company Name _____	
Select only ONE of the following:	
☐ Basic Permit Fee. Fee is based on awarded contract sum.	☐ Permit Re-Inspection Flat Fee.
Awarded Contract Sum: _____	
Email address(es) for Payment Receipt: _____	

BASIC PERMIT FEE CALCULATION:

Awarded Contract Sum is less than \$1,000: N/A

Awarded Contract Sum is \$1,001 - \$50,000:

Contract Sum or Shelter Estimate less \$1,000= _____ /1,000 x \$5.00= _____ +\$15.00= _____

Awarded Contract Sum is \$50,001 - \$100,000:

Contract Sum or Shelter Estimate less \$50,000= _____ /1,000 x \$4.00= _____ +\$260.00= _____

Awarded Contract Sum is \$100,001 - \$500,000:

Contract Sum or Shelter Estimate less \$100,000= _____ /1,000 x \$3.00= _____ +\$460.00= _____

Awarded Contract Sum is \$500,001 and up:

Contract Sum or Shelter Estimate less \$500,000= _____ /1,000 x \$2.00= _____ +\$1,660.00= _____

PERMIT RE-INSPECTION FEE:

Flat fee of \$1,500.00 per occurrence

TOTAL DUE: _____

Basic Permit Fee: Covers all required pre-construction conferences, construction inspections and certificate of substantial completion issuance by the DCM Inspector. This fee is due when a construction contract or self-performance letter is received by DCM and must be paid before the required Pre-Construction Conference is scheduled with the DCM Inspector.

Permit Re-Inspection Fee: May be charged if (A) the contractor has not completed the work required for the particular inspection as detailed in DCM Form B-8: Pre-Construction Conference Checklist, or (B) the inspection is canceled or rescheduled without the required minimum 48 hours notice to all parties.

Make check payable to: "Finance - Construction Management," include the DCM (BC) Project # on the check and attach the fee worksheet. Mail payment to: Finance - Construction Management, P.O. Box 301150, Montgomery, AL 36130-1150.

State agency inter-fund transfer and payments using Public School and College Authority (PSCA) funds: contact Jennie Jones at 334-242-4808 or jennie.jones@realproperty.alabama.gov.

Fees may be paid online at www.dcm.alabama.gov (in which case a completed fee worksheet is not required).

The Basic Permit Fee is subject to Final Reconciliation of Fees at the end of construction.

**SECTION 01 1000
SUMMARY OF THE WORK**

PART 1 - GENERAL

1.01 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.

1.02 PROJECT/WORK IDENTIFICATION

- A. General: Project name is "Oxford CREATE Phase II, Oxford, Alabama", as shown on the Contract Documents prepared by Goodwyn Mills Cawood, LLC., dated December 16, 2025.
- B. Contract Documents indicate the work of the Contract and related requirements and conditions that have an impact on the project.
- 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 subsequent to 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.
- D. 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 Work includes renovations of existing construction, and related work, as required to complete the facilities as indicated on the Drawings and in the Project Manual.

1.03 CONTRACTOR USE OF PREMISES

- A. General: During the entire construction period the Contractor shall have the exclusive use of the premises for construction operations, including full use of the site as shown on the Drawings.
1. Limitations of exclusive 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 Owner.
 - 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 Owner, 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. 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 regarding coordination with Owner's activities.
 - 1) Construction equipment shall not come in contact with or swing over existing facilities to remain, public areas, occupied buildings, right-of-ways, etc., which are to remain.
- g. 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.
- h. 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 Owner, Architect, and Contractor at the Pre-Construction Conference.
- i. Smoking or other use of tobacco products shall not be permitted within the Owner's facilities or on roofs.
- j. The use or presence of alcohol and/or other debilitating substances shall not be permitted on the project site.
- k. Firearms and/or other weapons shall not be permitted on the project site.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2100
ALLOWANCES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cash allowances.

1.02 CASH ALLOWANCES

- A. Costs Included in Cash Allowances: Cost of product to Contractor or subcontractor, less applicable trade discounts, less cost of delivery to site , less applicable taxes .
- B. Architect Responsibilities:
1. Consult with Contractor for consideration and selection of products, suppliers , and installers.
 2. Select products in consultation with Owner and transmit decision to Contractor.
 3. Prepare Change Order.
- C. Contractor Responsibilities:
1. Assist Architect in selection of products, suppliers , and installers.
 2. Obtain proposals from suppliers and installers and offer recommendations.
 3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
 4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
 5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- D. Differences in costs will be adjusted by Change Order.

1.03 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. Unit cost 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 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. Include overhead and profit in the Contractor's Allowance.
 3. 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 construed 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 construed 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. Full amount of unused allowances shall be returned to the Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF ALLOWANCES:

- A. **Allowance No. 1 - DOOR HARDWARE:**
1. Allow a lump sum price of \$5,000.00 as an Door Hardware Allowance.
 2. Include overhead and profit in Base Bid and not part of Allowance.

END OF SECTION

**SECTION 01 2900
PAYMENT PROCEDURES**

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.03 DEFINITIONS

- A. Schedule of Values: A statement acceptable to the Owner and Architect furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.04 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Contractor's name and address.
 - c. Date of submittal.
 - 2. Submit draft of Schedule of Values that will accompany Application for Payment.
 - 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
 - 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
10. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.05 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by approving authority and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use Application and Certificate for Payment form stipulated in front-end documents as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Approving authority will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

-
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Products list.
 5. Schedule of unit prices.
 6. Submittals Schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Data needed to acquire Owner's insurance.
 16. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Contractor's Affidavits of Payment of Debts and Claims, Release of Liens, and Consent of Surety to Final Payment.
 5. Evidence that claims have been settled.
 6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Electronic document submittal service.
- B. Requests For Information.
- C. Preconstruction meeting.
- D. Progress meetings.
- E. Submittals for review, information, and project closeout.
- F. Number of copies of submittals.
- G. Requests for Interpretation (RFI) procedures.
- H. Submittal procedures (Including Submittal Numbering/Tracking Guide and form for Transmittal).
- I. Inspections.

1.02 RELATED SECTIONS

- A. Section 01 0150 - Special Conditions: Additional Administrative and Submittal Requirements.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 PROJECT COORDINATION (W/ NO CM)

- A. Project Coordinator: Contractor's Project Manager.
- B. Cooperate with the Owner and Architect in allocation of mobilization areas of site; for field offices and sheds, for traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Owner and Architect.
- D. Comply with Owner and Architect's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Owner and Architect for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Owner and Architect.
- G. Make the following types of submittals to Architect:
 - 1. Schedule of Submittals.
 - 2. Requests for interpretation.
 - 3. Requests for substitution.
 - 4. Shop drawings, product data, and samples.
 - 5. Test and inspection reports.
 - 6. Design data.
 - 7. Manufacturer's instructions and field reports.
 - 8. Applications for payment and change order requests.
 - 9. Progress schedules.
 - 10. Coordination drawings.
 - 11. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 12. Closeout submittals.

13. The Division of Construction Management Fee Proposal worksheet must be submitted with the Construction Contract.
14. Scheduling of Inspections and submitting appropriate Contract Administration Fees to the Division of Construction Management.
15. Final fee reconciliation and payment to the Alabama Division of Construction Management.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
 2. Contractor and Architect are required to use this service.
 3. It is Contractor's responsibility to submit documents in allowable format.
 4. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
 5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
- B. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 REQUEST FOR INFORMATION

- A. All Pre-Bid Questions, or Requests for Information must be submitted through a prequalified General Contractor via email to the Architect's Project Manager, with a copy to Alyssa Martin (alyssa.martin@gmcnetwork.com). Pre-Bid Questions will be accepted up to 48 hours prior to Bid Opening.
- B. Send requests for information (RFI's) to Architect's Project Manager and administrative assistant, following the example form included at the end of this section.
- C. Sequentially number the Requests for Information (RFI), and date accordingly.
- D. Explanations and interpretations will be issued via Addendum.
- E. After award of the Bid, a Request for Information (RFI), when submitted to the Architect, may result in an Architect's Supplemental Instruction (ASI), Request for Proposal (RFP), or Construction Change Directive (CCD) prior to the issuance of a Change Order.

3.03 PRECONSTRUCTION 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 Architect after award of construction contract.

- B. A Pre-Construction meeting shall not be conducted until both (1) the permit fee and (2) the signed Construction Contract have been received by the Alabama Division of Construction Management in accordance with the Code of Alabama 1975, 41-9-141 (a)(8) Alabama Division of Construction Management Administrative Rule 170X-8.
- C. Architect will schedule a meeting after Notice of Award.
- D. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Division of Construction Management Representative.
- E. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract, _____ and Architect.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Scheduling.
 - 8. Other items: To be announced.
- F. 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 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.
- G. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. The Contractor shall record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made. Emails to Project Team are acceptable.
- D. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. Architect.
 - 4. Contractor's superintendent.

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5. Major subcontractors.
- E. Agenda:
1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to work.

3.05 REQUESTS FOR INTERPRETATION (RFI)

- A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 2. Prepare in a format and with content acceptable to Owner.
 3. Prepare using software provided by the Electronic Document Submittal Service.
 4. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - c. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.

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4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
 - E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 2. Owner's, Architect's, and Contractor's names.
 3. Discrete and consecutive RFI number, and descriptive subject/title.
 4. Issue date, and requested reply date.
 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
 - F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
 - G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 2. Note dates of when each request is made, and when a response is received.
 3. Highlight items requiring priority or expedited response.
 4. Highlight items for which a timely response has not been received to date.
 5. Identify and include improper or frivolous RFIs.
 - H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
 - I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.

4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.06 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
 1. Submit at the same time as the preliminary schedule specified in Section - 01 3216 - Construction Progress Schedule.
 2. Coordinate with Contractor's construction schedule and schedule of values.
 3. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
 4. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.07 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
- B. Submit to Architect, using the submittal numbering tracking system, for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.08 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
 1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.

5. Other types as indicated.

B. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS (WHEN ELECTRONIC DOCUMENT SUBMITTAL SERVICE IS USED)

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.

C. Samples: Submit no less than 3-each of any sample or color chart which is required or otherwise requested, unless more are required in individual specification sections; one of which will be retained by Architect.

1. After review, produce duplicates.

2. Retained samples will not be returned to Contractor unless specifically so stated.

D. Refer to Section 01 0150 - "Special Conditions" for additional information and requirements.

3.11 SUBMITTAL PROCEDURES

A. General Requirements:

1. Use a single transmittal for related items.

2. Transmit using approved form.

a. Use Contractor's form, subject to prior approval by Architect.

3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.

4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.

5. Apply Contractor's stamp, signed or initialed certifying that review, approval, 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.

a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.

6. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.

a. Deliver physical submittals to Architect at business address.

b. Send submittals in electronic format via email to Architect.

7. Schedule submittals to expedite the Project, and coordinate submission of related items.

a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.

c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.

8. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.

9. Provide space for Contractor and Architect review stamps.

10. When revised for resubmission, identify all changes made since previous submission.

11. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.

12. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.

13. Submittals not requested will not be recognized or processed.

- B. Product Data Procedures:
 - 1. Submit only information required by individual specification sections.
 - 2. Collect required information into a single submittal.
 - 3. Submit concurrently with related shop drawing submittal.
 - 4. Do not submit (Material) Safety Data Sheets for materials or products.
 - 5. Submit sustainable design reporting submittals under separate cover.
- C. Shop Drawing Procedures:
 - 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 - 2. Do not reproduce Contract Documents to create shop drawings.
 - 3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Transmit each submittal with approved form.
- E. Transmit each submittal. Sequentially number each transmittal form according to the example shown on the sample Transmittal form provided at the end of this Section. Include the date, project number and name along with number of copies submitted.
- F. A Submittal Schedule must be submitted and approved by Architect prior to review of any and all submittals.

3.12 SCHEDULING OF INSPECTIONS (FOR DCM FRONT ENDS)

- A. Contact the design professional by email of the date the project will be ready for an inspection.
- B. The design professional will contact the Building Commission (DCM) Inspector to schedule the first available date for the inspection. Inspections must be requested 14 days in advance.
- C. After DCM. Inspector notifies design professional of time of inspection, design professional will notify Contractor, Owner, and DCM. main office, copying DCM. Inspector.
- D. Cancellations of any scheduled inspection must be received in writing by email no less than 48 hours prior to the scheduled inspection. The email shall be sent to the Contractor, DCM. Inspector, Owner, and DCM. main office. If an inspection is cancelled, it will be rescheduled subject to DCM. Inspector's availability.
- E. If an inspection is cancelled less than 48 hours prior to the scheduled inspection, the re-inspection fee of \$1500 will be charged.

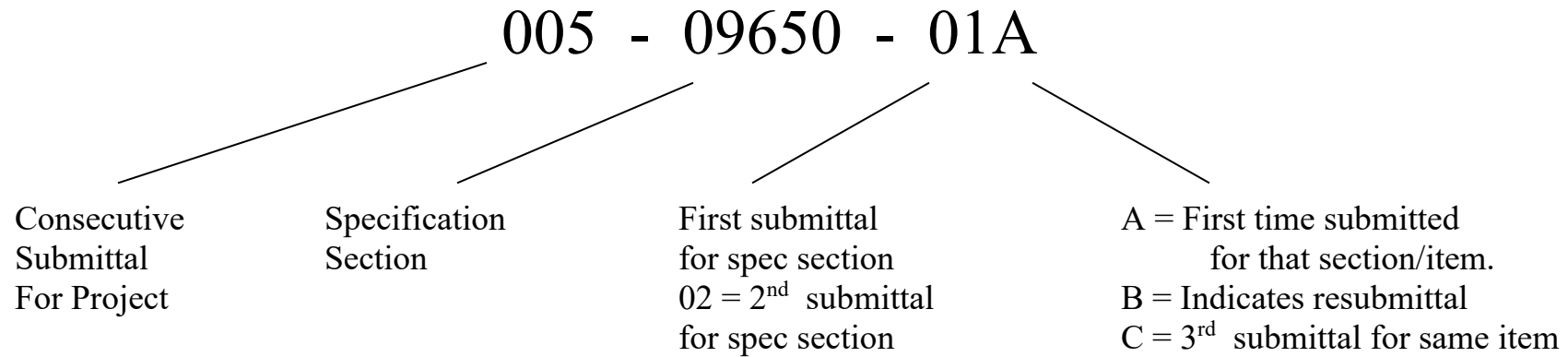
3.13 MINIMUM REQUIREMENTS FOR REQUIRED INSPECTIONS

- A. Use the following minimum requirements to help determine if a project is ready for required inspection:
- B. PRE-CONSTRUCTION CONFERENCE.
 - 1. Required Attendees: Contractor, Owner, Architect, Major Subcontractors.
 - 2. Inspection Requirements:
 - a. Signed construction contract.
 - b. Verification of payment of permit fee.
 - c. Contractor's Statement of Responsibility and Quality Assurance Plan (for storm shelter).
 - d. Fire Alarm Contractor's Certification (from State Fire Marshall).
 - e. ADEM permit, if more than 1 acre of land is disturbed.
- C. PRE-CONSTRUCTION CONFERENCE FOR STORM SHELTER.
 - 1. Required Attendees: Contractor, Owner, Architect, Structural Engineer, Major Subcontractors, Special Inspections Representative.
 - 2. Inspection Requirements:

-
- a. DCM. Inspector must have already received Contractor's Statement of Responsibility and Quality Assurance Plan.
 - D. PRE-ROOFING CONFERENCE.
 - 1. Required Attendees: Contractor, Owner, Architect, Roofing Subcontractor, Roofing Manufacturer's Representative.
 - 2. Inspection Requirements:
 - a. Roofing submittals must be approved by Architect prior to pre-roofing conference.
 - b. Roofing manufacturer must provide documentation that roof design and roofing materials meet code requirements for wind uplift and impact resistance.
 - c. Copy of sample roofing warranty.
 - E. ABOVE-CEILING INSPECTION.
 - 1. Required Attendees: Contractor, Owner, Architect, MEP Engineers, Major Subcontractors.
 - 2. Inspection Requirements:
 - a. All work must be completed except for installation of ceiling tiles and/or hard ceilings.
 - b. Space must be conditioned.
 - c. Permanent power must be connected unless otherwise arranged with the DCM. Inspector.
 - d. Grease duct must be inspected and approved by the DCM Inspector prior to fire wrapping and Above-Ceiling Inspection.
 - F. LIFE SAFETY INSPECTIONS AND FINAL INSPECTIONS.
 - 1. Required Attendees: Contractor, Owner, Architect, Engineers, Major Subcontractors, Local Fire Marshall.
 - 2. Inspection Requirements:
 - a. Fire alarm certification.
 - b. Kitchen hood fire suppression system certification.
 - c. General Contractor's 5-Year Roofing Warranty (DCM Form C-9).
 - d. Roofing manufacturer's guaranty.
 - e. Above ground and below ground sprinkler certifications.
 - f. Completed Certificate of Structural Engineers Observations for storm shelters.
 - g. Emergency and exit lighting tests.
 - h. Fire alarm must be monitored.
 - i. Elevator Inspection completed and Certificate of Operation provided by the State of Alabama Department of Labor.
 - j. Boiler/Vessels Inspection completed and Certificate of Operation provided by the State of Alabama Department of Labor.
 - k. Flush test for underground sprinkler lines (witnessed by local fire marshall, fire chief and/or DCM Inspector).
 - l. Flush/pressure test for new and/or existing fire hydrants.
 - m. Must have clear egress/access and emergency (for first responders) access to building.
 - n. Must have ADA access completed.
 - G. YEAR-END INSPECTIONS.
 - 1. Required Attendees: Contractor, Owner, Architect, Engineers and/or Major subcontractors may also be required to attend.
 - 2. Inspection Requirements:
 - a. Owner's list of documented warranty items.

END OF SECTION

SUBMITTAL NUMBERING / TRACKING



INCLUDE ARCHITECT'S PROJECT NUMBER ON ALL SUBMITTAL TRANSMITTALS

**** Architect's Project No. & Name: ABHM250013 – OXFORD CREATE PHASE II
for Oxford City Schools
Oxford, Alabama**

REQUEST FOR INFORMATION

RFI No. _____

DATE: _____

PROJECT NAME: _____

GM&C PROJECT No. _____

FROM: _____

PROJECT MANAGER: _____

GOODWYN MILLS CAWOOD, LLC.

2400 Fifth Avenue South, Suite 200

Birmingham, AL 35233

REQUEST:

SIGNATURE: _____

SUGGESTION:

RESPONSE: ROUTING: _____

DATE REC'D: _____

SIGNATURE: _____

DATE RET'D: _____

DISTRIBUTION: ☐ Contract Administrator ☐ Consultant ☐ _____ ☐ _____ ☐ _____

*** SEND THIS FORM TO THE CONTRACT ADMINISTRATION COORDINATOR ***

TRANSMITTAL

No. _____

DATE: _____

PROJECT: _____

FROM: _____

GM&C PROJECT No. _____

PROJECT MANAGER: _____

GOODWYN MILLS CAWOOD, LLC.

2400 Fifth Avenue South, Suite 200

Birmingham, AL 35233

Shop Drawing / Submittal No. (see example below)

Description

Copies	Submittal Number	Description

RESPONSE: ROUTING: _____

DATE REC'D: _____

SIGNATURE: _____

DATE RET'D: _____

Shop Drawing / Submittal Number Example

005 - 09650 - 01A

Consecutive submittal for Project Specification Section First submittal for spec section
02 = 2nd submittal for spec section A = First time submitted for that section/item.
B = Indicates resubmittal
C = Third submittal for same item

*** SEND THIS FORM TO THE CONTRACT ADMINISTRATION COORDINATOR ***

**SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, with network analysis diagrams and reports.

1.02 REFERENCE STANDARDS

- A. AGC (CPSM) - Construction Planning and Scheduling Manual; 2004.
- B. M-H (CPM) - CPM in Construction Management - Project Management with CPM; 2016.

1.03 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.
- D. Submit the number of opaque reproductions that Contractor requires, plus two copies that will be retained by Architect.

1.04 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.05 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 22 x 17 inches (560 x 432 mm).
- C. Scale and Spacing: To allow for notations and revisions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a preliminary network diagram.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules to define critical portions of the entire schedule.
- E. Include conferences and meetings in schedule.
- F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- G. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

- H. Indicate delivery dates for owner-furnished products.
- I. Provide legend for symbols and abbreviations used.
- J. Show total float for each construction activity.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
 - 1. Preceding and following event numbers.
 - 2. Activity description.
 - 3. Estimated duration of activity, in maximum 15 day intervals.
 - 4. Earliest start date.
 - 5. Earliest finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Latest start date.
 - 9. Latest finish date.
 - 10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
 - 11. Monetary value of activity, keyed to Schedule of Values.
 - 12. Percentage of activity completed.
 - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
 - 1. By preceding work item or event number from lowest to highest.
 - 2. By amount of float, then in order of early start.
 - 3. By responsibility in order of earliest possible start date.
 - 4. In order of latest allowable start dates.
 - 5. In order of latest allowable finish dates.
 - 6. Contractor's periodic payment request sorted by Schedule of Values listings.
 - 7. Listing of basic input data that generates the report.
 - 8. Listing of activities on the critical path.

3.05 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.06 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.

-
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
 - C. Annotate diagrams to graphically depict current status of Work.
 - D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
 - E. Indicate changes required to maintain Date of Substantial Completion.
 - F. Submit reports required to support recommended changes.
 - G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

3.07 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

**SECTION 01 4000
QUALITY REQUIREMENTS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. Testing and inspection agencies and services.
- D. Control of installation.
- E. Mock-ups.
- F. Tolerances.
- G. Manufacturers' field services.
- H. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 4223 - Reference Standards and Definitions.
- C. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 DEFINITIONS

- A. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

1.04 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).
- B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2024.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2023.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
- G. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2021.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: For integrated exterior and interior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
 - 1. Indicate manufacturer and model number of individual components.

-
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions
 3. Fire Protection: Sprinkler shop drawings shall include PE stamp of Professional Engineer licensed in the state in which the project is located.
- C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- D. Schedule of Submittals.
- E. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- F. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Entity responsible for performing tests and inspections.
 3. Description of test and inspection.
 4. Identification of applicable standards.
 5. Identification of test and inspection methods.
 6. Number of tests and inspections required.
 7. Time schedule or time span for tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- G. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Compliance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- H. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- I. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

- J. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- K. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.06 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 - 1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.

1.07 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. As indicated in individual specification sections, Owner or Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Contractor Employed Agency:
 - 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM C1021, ASTM C1077, ASTM C1093, and ASTM D3740.
 - 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 - 3. Laboratory: Authorized to operate in the State in which the Project is located.
 - 4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
 - 5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.
- D. Refer to Section 01 0150 - "Special Conditions" for additional information and requirements.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.

- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- D. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- E. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
 - 1. Architect will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.
 - 2. Make corrections as necessary until Architect's approval is issued.
- F. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- G. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.
- H. 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. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. 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.
 - 6. Build mock-up in the following 3 phases (minimum). Obtain approval of each phase from Architect before proceeding.
 - a. Substrate construction, and waterproofing.
 - b. Opening installation, and flashing.
 - c. Veneer. (Divide this into multiple phases of mock-up if there are multiple layers.)
 - 7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 8. Protect mock-ups from the elements with weather-resistant membrane.
 - 9. Demolish and remove mockups when directed unless otherwise indicated.
- I. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.
- J. Room Mockups: Construct room mockups incorporating required materials and assemblies, finished according to requirements. Provide required lighting and additional lighting where

required to enable Architect to evaluate quality of the Work. See Drawings for any required Room Mockups.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. See individual specification sections for testing required.
- B. Testing Agency Duties:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
 - 6. Perform additional tests and inspections required by Architect.
 - 7. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 - 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Price.
- F. Refer to Section 01 0150 - "Special Conditions" for additional information and requirements.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment, and _____ as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

**SECTION 01 4216
DEFINITIONS**

PART 1 GENERAL

1.01 SUMMARY

- A. This section supplements the definitions contained in the General Conditions.
- B. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

- A. 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.
- B. Directed: Terms such as “directed,” “requested,” “authorized,” “selected,” “approved,” “required,” and “permitted” mean “directed by the Architect,” “requested by the Architect,” and similar phrases.
- C. 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.
- D. 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.
- E. Furnish: To supply, deliver, unload, and inspect for damage.
- F. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- G. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- H. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.
- I. Provide: To furnish and install.
- J. Supply: Same as Furnish.
- K. 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.
- L. 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.
- M. 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.
- N. 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.
- O. OFOI: Owner Furnished, Owner Installed.
1. Equipment indicated on the drawings with the (OFOI) symbol designates the Owner will supply and deliver to the project site any equipment and finish items specified in these specifications and the Owner install the equipment and finish items in place ready for intended use.
 2. The Owner shall furnish all standard integral parts of the equipment and finishes, and tailgate-deliver items to project site.
 3. Owner shall receive items at site and give written receipt for items at time of delivery, noting visible defects or omissions. If such declaration is not given, the Owner shall assume responsibility for such defects and omissions. Contractor shall be responsible for cooperating with the Owner who shall provide unloading, handling and proper storage of equipment prior to installation at the site. The Owner and the Contractor will coordinate deliveries of equipment and finish items to coincide with construction schedule to minimize storage of equipment before installation.
 4. Owner shall uncrate, assemble, set items in place, and install items in accordance with manufacturer's instructions.
 5. Contractor shall provide utility rough-in for equipment items where required regardless of equipment responsibility designation unless specifically noted otherwise.
 6. Contractor shall be responsible for verification of utility requirements for approved equipment items. Upon request, the Owner shall make available dimensions and power characteristics of the Owner-furnished items.
- P. OFCI: Owner Furnished, Contractor Installed.

1.03 SPECIFICATION FORMAT AND CONTENT EXPLANATION:

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 50-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.

1.04 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., seventh 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.

1.05

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 4219
REFERENCE STANDARDS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements relating to referenced standards.
- B. Reference standards full title and edition date.

1.02 RELATED REQUIREMENTS

1.03 QUALITY ASSURANCE

- A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with the reference standard of date of issue specified in this section, except where a specific date is established by applicable code.
- C. Obtain copies of standards when required by Contract Documents.
- D. Where required elsewhere in the contract documents, maintain copy at project site during submittals, planning, and progress of the specific work, until Date of Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
 - 1. 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.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect shall be altered by Contract Documents by mention or inference otherwise in any reference document.

PART 2 CONSTRUCTION INDUSTRY ORGANIZATION DOCUMENTS

2.01 ASTM E SERIES -- ASTM INTERNATIONAL

- A. ASTM E605/E605M - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members; 2019 (Reapproved 2023).
- B. ASTM E736/E736M - Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members; 2019 (Reapproved 2023).

2.02 BIA -- BRICK INDUSTRY ASSOCIATION

2.03 CISCA -- CEILINGS & INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION

2.04 CLFMI -- CHAIN LINK FENCE MANUFACTURERS INSTITUTE

2.05 ICC -- INTERNATIONAL CODE COUNCIL, INC.

- A. ICC (IBC)-2015 - International Building Code; 2015.

2.06 NFPA -- NATIONAL FIRE PROTECTION ASSOCIATION

2.07 PCI -- PRECAST/PRESTRESSED CONCRETE INSTITUTE

END OF SECTION

**SECTION 01 4533
CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Code-required special inspections.
- B. Testing services incidental to special inspections.
- C. Submittals.

1.02 DEFINITIONS

- A. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
- B. Special Inspections and Tests: Inspections and testing of materials, installation, fabrication, erection, or placement of components and connections mandated by Building Code to safeguard public welfare.
 - 1. Special inspections and tests are separate from and independent of tests and inspections conducted by Owner or Contractor for purposes of quality assurance and contract administration.

1.03 REFERENCE STANDARDS

- A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.
- B. IAS AC89 - Accreditation Criteria for Testing Laboratories; 2021.
- C. IAS AC291 - Accreditation Criteria for Special Inspection Agencies AC291; 2023.
- D. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Fabricator's Qualification Statement: When required by AHJ, submit documentation of fabrication facilities and methods and quality control procedures. Include documentation of AHJ approval.
- C. Special Inspection Reports: After each special inspection, Special Inspector is required to submit at least two copies of report; one to Architect and one to AHJ.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of special inspection.
 - h. Date of special inspection.
 - i. Results of special inspection.
 - j. Compliance with contract documents.
 - 2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.

- D. Test Reports: After each test or inspection, Testing Agency is required to submit report to Architect and to AHJ.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test or inspection.
 - h. Date of test or inspection.
 - i. Results of test or inspection.
 - j. Compliance with contract documents.

1.05 SPECIAL INSPECTION AND TESTING AGENCY

- A. Owner or Architect to employ services of Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by building code.
- B. Special Inspection Agency may delegate to independent testing agency to perform testing and sampling associated with special inspections and required by building code.
- C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of contract documents.

1.06 TESTING AND INSPECTION AGENCIES

- A. Owner or Architect may employ services of independent testing agency to perform additional testing and sampling required by contract documents or associated with special inspections but not required by building code.
- B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of contract documents.

1.07 QUALITY ASSURANCE

- A. Special Inspection Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
 - 2. Accredited by IAS according to IAS AC291.
- B. Testing Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
 - 2. Accredited by IAS according to IAS AC89.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SPECIAL INSPECTIONS AND TESTING

- A. The Code requires special inspections and testing of certain materials, components, assemblies, and connections used in constructing the project. Special inspections and testing will be performed in accordance with the Code.
- B. Special inspections and testing will be performed in accordance with the Code for the following materials and project components:
 - 1. Concrete.
 - 2. Masonry.
 - 3. Wood.

4. Soils.
5. Driven deep foundations.
6. Cast-in-place deep foundations.
7. Helical pile foundations.
8. Vertical masonry foundation elements.
9. Sprayed fire-resistant materials.
10. Mastic and intumescent fire-resistant coatings.
11. Exterior insulation and finish systems (EIFS).
12. Fire-resistant penetrations and joints.
13. Smoke control testing.
14. Seismic resistance.
15. Wind resistance.

3.02 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

- A. Special Inspection Agency shall:
 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 2. Perform specified sampling and testing of products in accordance with specified reference standards.
 3. Ascertain compliance of materials and products with requirements of Contract Documents.
 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
 5. Perform additional tests and inspections required by Architect.
 6. Submit reports of all tests or inspections specified.
- B. Limits on Special Inspection Agency Authority:
 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the work.
- C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.03 TESTING AGENCY DUTIES AND RESPONSIBILITIES

- A. Testing Agency Duties:
 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 2. Perform specified sampling and testing of products in accordance with specified standards.
 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
 5. Perform additional tests and inspections required by Architect.
 6. Submit reports of all tests or inspections specified.
- B. Limits on Testing or Inspection Agency Authority:
 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the work.

- 3. Agency may not assume any duties of Contractor.
- 4. Agency has no authority to stop the work.
- C. On instructions by Architect, perform re-testing required because of non-compliance with specified requirements, using the same agency.
- D. Contractor will pay for re-testing required because of non-compliance with specified requirements.

3.04 CONTRACTOR DUTIES AND RESPONSIBILITIES

- A. Contractor Responsibilities, General:
 - 1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
 - 2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to work to be tested or inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
 - c. To facilitate tests or inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
 - 5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- B. Contractor Responsibilities, Seismic Force-Resisting System, Designated Seismic System, and Seismic Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.
- C. Contractor Responsibilities, Wind Force-Resisting System and Wind Force-Resisting Component: Submit written statement of responsibility for each item listed in the Statement of Special Inspections to AHJ and Owner prior to starting work. Statement of responsibility shall acknowledge awareness of special construction requirements and other requirements listed.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 01 5813 - Temporary Project Signage.

1.03 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- B. Existing facilities may not be used.

1.04 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Telephone Lines: One line, minimum; one handset per line.
 - 2. Internet Connections: Minimum of one; DSL modem or faster.
 - 3. Cellular phones are an acceptable substitute for items 1 & 2, provided they fulfill requirements of same.

1.05 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.06 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.07 FENCING

- A. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks. Provide gates as required by Contractor and/or authorities having jurisdiction, with all related safety and warning signs.

1. Fencing shall be at least 11-1/2 gauge galvanized chain-link fencing, securely held in place by posts, braces, rails, etc.
- B. Fence shall be approximately 30-feet from perimeter of buildings, unless Drawings indicate otherwise. Extent of fencing shall be as required to maintain a secure worksite.
- C. All 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.
- D. 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.

1.08 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.09 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.10 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.11 WASTE REMOVAL

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site periodically.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.12 PROJECT SIGNS - SEE SECTION 01 5813

1.13 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.

- B. Provide space for Project meetings, with table and chairs to accommodate 10 persons.
- C. Locate offices a minimum distance of 30 feet (10 m) from existing and new structures.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet (600 mm).
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5813
TEMPORARY PROJECT SIGNAGE**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project identification sign.
- B. Project informational signs.

1.02 RELATED REQUIREMENTS

- A. Section 01 0150 - Special Conditions: Supplemental sign information.
- B. Project Sign Detail: Included at the end of this Section.

1.03 REFERENCE STANDARDS

- A. FHWA (SHS) - Standard Highway Signs and Markings; 2004, with Supplement (2012).

1.04 QUALITY ASSURANCE

- A. Design sign and structure to withstand 50 miles/hr (80 km/hr) wind velocity.
- B. Sign Painter: Experienced as a professional sign painter for minimum three years.
- C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawing: Show content, layout, lettering, color, foundation, structure, sizes and grades of members.

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: New, wood, structurally adequate.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch (19 mm) thick, standard large sizes to minimize joints.
 - 1. See Project Sign Detail for Options.
- C. Rough Hardware: Galvanized.
- D. Paint and Primers: Exterior quality, two coats; sign background of color as selected.
- E. Lettering: Exterior quality paint, colors as selected.
 - 1. See Project Sign Detail for Options.

2.02 PROJECT IDENTIFICATION SIGN

- A. Painted sign of construction, design, and content shown on Project Sign Detail, and described below.
 - 1. Refer to Detail of Project Sign, following this Section.
- B. Content:
 - 1. Project number, title, logo and name of Owner as indicated on Contract Documents.
 - 2. Names and titles of authorities.
 - 3. Names and titles of Architect.
 - 4. Name of Contractor.
- C. Graphic Design, Colors, Style of Lettering: Designated by Architect.

2.03 PROJECT INFORMATIONAL SIGNS

- A. Painted informational signs of same colors and lettering as Project Identification sign, or standard products; size lettering to provide legibility at 100 foot (30 m) distance.
- B. Provide at each field office, storage shed , and directional signs to direct traffic into and within site. Relocate as Work progress requires.
- C. Provide municipal traffic agency directional traffic signs to and within site.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install project identification sign within 30 days after date fixed by Notice to Proceed.
- B. Erect at location of high public visibility adjacent to main entrance to site.
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Install sign surface plumb and level, with butt joints. Anchor securely.
- E. Paint exposed surfaces of sign, supports, and framing.

3.02 MAINTENANCE

- A. Maintain signs and supports clean, repair deterioration and damage.

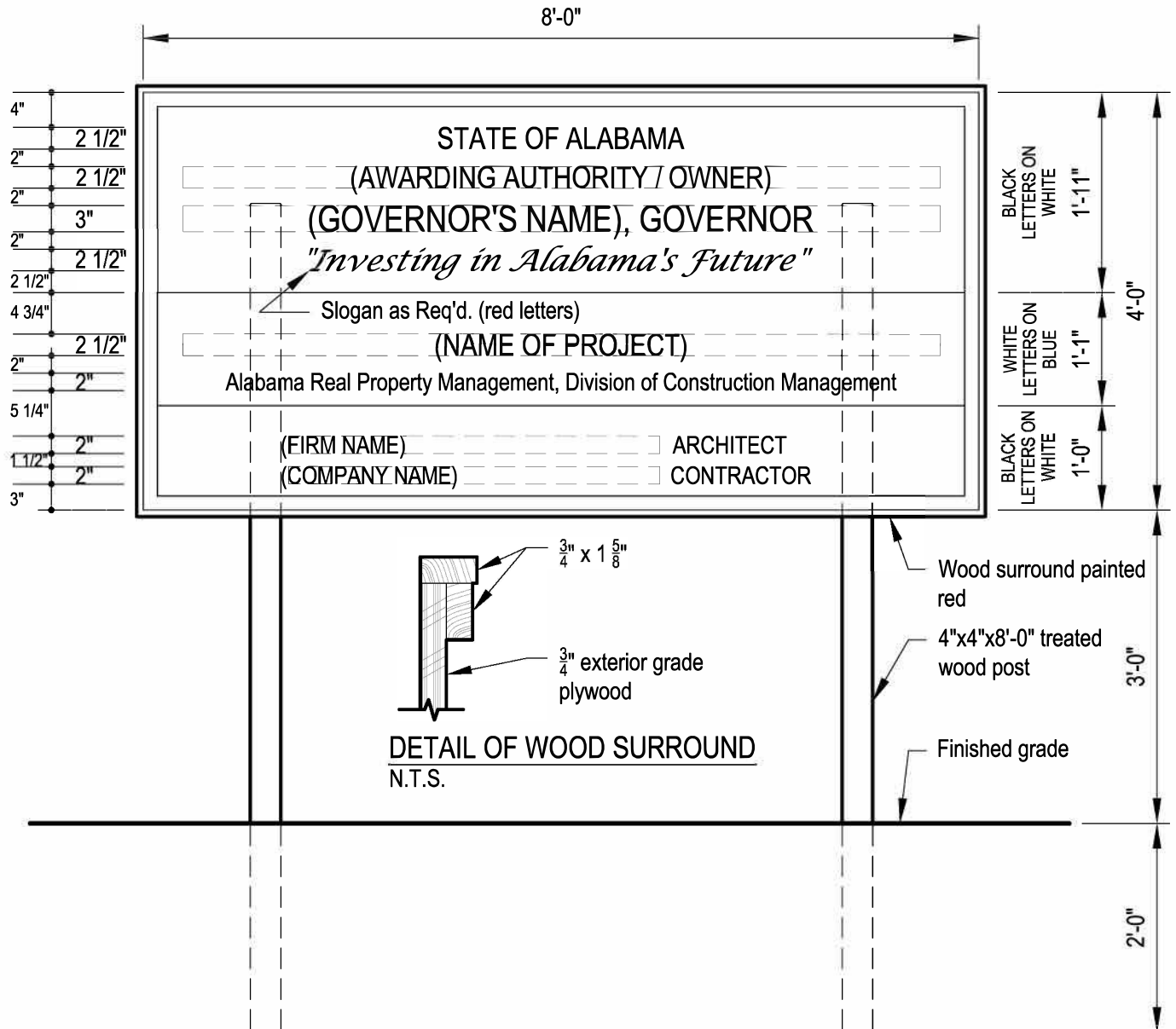
3.03 REMOVAL

- A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

END OF SECTION

DETAIL OF PROJECT SIGN

N.T.S.



Notes:

1. Fully locally-funded State Agency and Public University projects: DCM Form C-15 must be included in the project manual regardless of expected bid amount. If the awarded contract sum is \$100,000.00 or more, Contractor shall furnish and erect a project sign.
Fully locally-funded K-12 school projects: Project sign is not required unless requested by Owner, if project sign is requested by Owner, include DCM Form C-15 in the project manual.
Partially or fully PSCA-funded projects: DCM Form C-15 must be included in the project manual. Contractor shall furnish and erect a project sign for all PSCA-funded projects, regardless of contract sum. "Alabama Public School and College Authority" as well as the local owner entity must be included as awarding authorities on the project sign of all PSCA-funded projects. Exception: Alabama Community College System (ACCS) PSCA-funded projects with Notice-To-Proceeds issued after July 31, 2021 are not submitted to DCM.
Fully locally-funded ACCS projects with Notice-To-Proceeds issued prior to August 1, 2021: DCM Form C-15 must be included in the project manual regardless of expected bid amount. If the awarded contract sum is \$100,000.00 or more, Contractor shall furnish and erect a project sign.
2. Sign to be constructed of 3/4" exterior grade plywood.
3. Paint with two coats best grade exterior paint before letters are painted. Option: In lieu of painted lettering on plywood, a corrugated plastic sign (displaying the same lettering, layout and colors as above) may be secured directly to the unpainted exterior grade plywood.
4. Sign shall be placed in a prominent location and easily readable from existing street or roadway.
5. Sign shall be maintained in good condition until project completion.
6. Slogan: Act 2020-167's title *"Investing In Alabama's Future"* should be placed on the project signs of all PSCA-funded projects, otherwise the Awarding Authority/Owner's slogan, if any, should be used. If the Awarding Authority/Owner of a fully locally-funded project does not have a slogan, the project sign does not require a slogan.

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Procedures for Owner-supplied products.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Instructions To Bidders, and Supplementary Instructions To Bidders: Additional information and requirements concerning Substitutions.
- B. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.
- C. Section 01 4000 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Agreement.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 - PRODUCTS

2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made of wood from newly cut old growth timber.
- C. Where other criteria are met, Contractor shall give preference to products that:
 - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 2. Have longer documented life span under normal use.
 - 3. Result in less construction waste. See Section 01 7419
 - 4. Are made of vegetable materials that are rapidly renewable.

2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the 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.

2.03 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 - EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.
- B. Acceptance of suppliers, manufacturers, and/or products shall be limited to those named, unless others are properly submitted during bidding in accordance with substitution procedures, and subsequently accepted.
- C. Instructions to Bidders specifies time restrictions and procedures for submitting requests for substitutions during the bidding period. These time restrictions and procedures are superceded by any modifications found in Supplementary Instructions to Bidders (or Additions to Instructions to Bidders).
- D. 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.
 - 1. Submittals during construction other than those pre-qualified or pre-accepted will not be reviewed, but instead returned for re-submittal, without exception.
- E. Substitution Submittal Procedure. A proper pre-bid submittal for "pre-qualified" or "pre-accepted" consideration and review, shall be one which includes at least the following:
 - 1. Submit ____ request for substitution for consideration. Limit each request to one proposed substitution.
 - a. Use Substitution Request form attached at end of this Section.
 - 2. Submit with cover letter which outlines the purpose of the submittal, Architect's specifications which apply, and each variation from the original specification.
 - 3. Submit product data (all current and relevant manufacturer's published data), certified test results attesting to the proposed product equivalence, and additional information as required so that a review can be quickly made by comparing the submittal item for item to the original specification. Include samples and other data as requested for the original item. Burden of proof is on proposer.
 - 4. Substitution requests shall be submitted through a qualified General Contractor bidding the project.
- F. After receipt of bids and execution of the Construction Contract, the Owner and the Architect will consider substitutions only under the following conditions:
 - 1. Unavailability of materials if beyond the control of the Contractor and submitted proof that firm orders for the material were placed within ten (10) days after approval of the Subcontractors and Material Suppliers Lists.
 - 2. Other unavailability will be considered only as being due to strikes, lockouts, bankruptcy, or discontinuance of manufacture.

3. Any approved substitutions shall be incorporated into the Contract by Change Order.

3.02 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 - 1. Review Owner reviewed shop drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.

-
- I. Do not store products directly on the ground.
 - J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
 - K. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
 - L. Prevent contact with material that may cause corrosion, discoloration, or staining.
 - M. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 - N. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SUBSTITUTION REQUEST

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____
Attn: _____ A/E Project No.: _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page and Paragraph: _____

Proposed Substitution: _____
Trade Name: _____
Manufacturer: _____ Model No.: _____
Mfg. Address _____ City, State, zip: _____ Phone: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____
Signed by: _____
Firm: _____
Address: _____

Telephone: _____ E-mail: _____

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specifications, Substitution Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specifications Substitution Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____

Date: _____

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

INCOMPLETE INFORMATION WILL BE GROUNDS FOR REJECTION

**SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- G. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- D. Section 02 4100 - Demolition: Selective demolition of building elements for alterations purposes.
- E. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.
 - 2. Limitations on cutting structural members.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.

- d. Description of proposed work and products to be used.
- e. Alternatives to cutting and patching.
- f. Effect on work of Owner or separate Contractor.
- g. Written permission of affected separate Contractor.
- h. Date and time work will be executed.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

- A. For survey work, employ a Professional Land Surveyor licensed in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
- B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.
- C. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.06 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
 - 1. Contractor shall schedule ordering of products, taking lead-times into account, and shall be responsible for any cost associated with expediting delivery of specified items in order to keep project on schedule.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner-occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 - PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
 - 1. Every trade shall examine substrate to determine if it is adequate to receive the work of that section prior to initiating work.
 - 2. Notify Contractor of any deficiencies needing correction.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- G. Utilize Standards of Practice for Professional Land Surveyors.
- H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- I. Periodically verify layouts by same means.
- J. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 - 4. Verify that abandoned services serve only abandoned facilities.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 3. Where a change of plane of 1/4 inch (6 mm) or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
 2. Fit products together to integrate with other work.
 3. Provide openings for penetration of mechanical, electrical, and other services.
 4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove samples of installed work for testing when requested.
 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Patching:

1. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
2. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
3. Match color, texture, and appearance.
4. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Testing, adjusting, and balancing HVAC systems: See appropriate Division 23 Section.

3.11 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Replace filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.12 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Architect.
- B. The Contractor shall generate and provide a punch-list to the Architect prior to requesting inspection for substantial completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Accompany Architect on Contractor's preliminary final inspection.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.13 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

**SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.
- E. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 2500 - Substitution Procedures.
- B. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 01 6000 - Product Requirements: Waste prevention requirements related to product substitutions.
- E. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- F. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
 - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
 - 2. Submit Report on a form acceptable to Owner.
 - 3. Landfill Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
 - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - 4. Incinerator Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
 - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - 5. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.

- c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
- 6. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons or cubic yards (cubic meters).
 - c. Include weight tickets as evidence of quantity.
- 7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS

2.01 PRODUCT SUBSTITUTIONS

- A. See Section 01 6000 and Section 01 2500.
- B. For each proposed product substitution, submit the following information in addition to requirements specified in Section 01 6000:
 - 1. Relative amount of waste produced, compared to specified product.
 - 2. Cost savings on waste disposal, compared to specified product, to be deducted from the Contract Sum.
 - 3. Proposed disposal method for waste product.
 - 4. Markets for recycled waste product.

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

- A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.
- C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
- D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.
 - 4. Job safety meetings.

-
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. As a minimum, provide:
 - a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
 - b. Separate dumpsters for each category of recyclable.
 - c. Recycling bins at worker lunch area.
 - 2. Provide containers as required.
 - 3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
 - 4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
 - 5. Locate enclosures out of the way of construction traffic.
 - 6. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 7. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
 - 8. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
 - F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
 - G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
 - H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
 - I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment. All record documents, warranties and O&M manuals are to be submitted in paper format (1 copy) along with 3 copies of CD's or PDF's of the documents.
- B. At completion of Project, the Contractor shall submit to Architect a complete set of clearly marked-up Project Documents, as follows:
 - 1. One (1) Original Set clearly marked as-built, record drawings and specifications.
 - 2. Three (3) copies of CD's or DVD's: Each with as-built record drawings and as-built record specifications along with O&M Manuals and Warranties.
- C. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit one paper set and three CD's of revised final documents in final form within 10 days after final inspection, each with as-built record drawings and as-built record specifications along with O&M Manuals and Warranties as referenced above.
- D. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
 - 4. Submit CD's with PDF's of as-built record drawings and as-built record specifications along with O&M Manuals and Warranties as referenced above.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- 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 Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish 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. Scan marked-up Record Drawings and Specifications onto three (3) CD's or DVD's (each with as-built record drawings and as-built record specifications).

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports.
- P. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

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- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
 - C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
 - D. Prepare data in the form of an instructional manual.
 - E. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
 - F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
 - G. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
 - H. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
 - I. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
 - J. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
 - K. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
 - L. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
 - M. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
 - 2. 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:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - N. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.
 - O. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 279 mm) three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

**SECTION 02 4100
DEMOLITION**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Building demolition excluding removal of hazardous materials and toxic substances.
- B. Selective demolition of built site elements.
- C. Selective demolition of building elements for alteration purposes.
- D. Abandonment and removal of existing utilities and utility structures.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- D. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- E. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.
- F. Section 31 2000 - Earth Moving: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Site Plan: Indicate:
 - 1. Vegetation to be protected.
 - 2. Areas for temporary construction and field offices.
 - 3. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
 - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
 - 2. Demolition firm qualifications.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications:
 - 1. Company specializing in the type of work required.
 - 2. Minimum of 3 years of documented experience.
 - 3. Engage an experienced firm that has successfully completed at least five verifiable demolition projects similar to that indicated for this Project.

- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
 - 1. Where required by local Health Department or other authorities having jurisdiction, provide certificate of pest and rodent eradication and subsequent inspection completed prior to and after building demolition.
- C. Predemolition Conference: Demolition will be reviewed at required Preconstruction Conference for the Project.
 - 1. In addition, conduct predemolition conferences at Project site with Owner's representatives, to provide final notice to and coordination with Owner's representatives and on-site personnel.
- D. Notices: Contractor shall provide all notices required by Code, applicable regulations, ordinances and/or local and other authorities having jurisdiction.
 - 1. All notices shall be in writing, with copies provided to the Owner and Architect.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Fill Material: As specified in Section 31 2000 - Earth Moving.

PART 3 EXECUTION

3.01 DEMOLITION

- A. Extent of demolition is indicated on Demolition Plan.
- B. Remove items indicated.
- C. Salvage, relocate, or recycle as directed and as applicable.
- D. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 8. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 9. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of Notification To Proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.

- D. Do not begin removal until vegetation to be relocated has been removed and vegetation to remain has been protected from damage.
- E. Protect existing structures and other elements to remain in place and not removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- G. If hazardous materials are encountered during demolition or removal operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- H. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
 - 1. Verify construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect or Engineer before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- C. Remove existing work as indicated and required to accomplish new work.
 - 1. Remove items indicated on drawings.
- D. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.

2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. Verify that abandoned services serve only abandoned facilities before removal.
 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch to match new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash and legally dispose of off-site.
- B. Remove materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

**SECTION 05 5000
METAL FABRICATIONS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated steel and aluminum items.
- B. Ladders.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 03 3000 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.
- C. Section 04 2000 - Unit Masonry: Placement of metal fabrications in masonry.
- D. Section 09 9100 - Painting: Paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.
- E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.
- F. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings; 2018, with Editorial Revision.
- G. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings; 2018, with Editorial Revision.
- H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- J. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.
- K. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- L. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- M. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.
- N. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.
- O. SSPC-SP 2 - Hand Tool Cleaning; 2024.

1.04 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. Ladders.
6. Guard posts (bollards), with concrete fill and matching metal domed cap welded on post.
7. Stair nosings and treads.
8. Anchor plates, channels and/or angles with anchor bolts; galvanized.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Samples: Submit representative samples of materials and finished products as may be requested by Architect.

1.06 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.

1.07 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.

1.08 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.

1.09 WARRANTY

- A. Provide Manufacturer's warranty for aluminum ladder, extending 5 years from date of Substantial completion, covering parts.

PART 2 - PRODUCTS

2.01 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.

2.02 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Stainless Steel: Type 304.
- D. Plates: ASTM A283/A283M.
- E. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- F. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
- G. Structural Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled ASTM A 611, Class 1; of grade required for design loading.
- H. Galvanized Structural Sheet Steel: ASTM A 446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
- I. 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.
- J. Gray Iron Castings: ASTM A 48, Class 30.
- K. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
- L. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
- M. 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
- N. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- O. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- P. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.03 MATERIALS - ALUMINUM

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Sheet Aluminum: ASTM B209 (ASTM B209M), 6063 alloy, T6 temper.
- C. Aluminum-Alloy Sand Castings: ASTM B26/B26M.
- D. Aluminum-Alloy Die Castings: ASTM B85/B85M.

2.04 MATERIALS - ACCESSORIES

- A. 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.
- B. Fasteners:
 - 1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
- C. Paint:
 - 1. Metal Primer Paint: Southern Coating "Heavy Duty RIP Primer 1-0900", Tnemec "10-99 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 09 9100 - 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.

2.05 FABRICATION

- A. Field verify ladder dimensions prior to fabrication.
- B. Fit and shop assemble items in largest practical sections, for delivery to site.
- C. Fabricate items with joints tightly fitted and secured.
- D. Continuously seal joined members by continuous welds.
- E. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Exposed Mechanical Fastenings (if any): Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- G. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.06 FABRICATED ITEMS

- A. Alternating Tread Ladder: Steel;
 1. Performance Requirements:
 - a. Treads shall be capable of withstanding a single concentrated 1000 pound load without permanent deformation; or 100 pounds per square foot or 300 pounds on an area of 4 square inches without exceeding the allowable working stress of the material.
 - b. Handrail/Guard shall be capable of withstanding a single concentrated load of 200 pounds or a uniform load of 50 pounds per linear foot applied in any direction at any point on the rail without exceeding the allowable working stress of the material.
 - c. Stringers shall be capable of withstanding a single concentrated load of 1000 pounds at any point on the stair without permanent deformation; or a uniform live loading of 100 pounds per square foot applied in a downward direction to all tread surfaces or a 300 pound load on an area of 4 square inches without exceeding the allowable working stress of the material.
 2. Design:
 - a. 3-Stringer design.
 - b. Dual safety chain at top of stair.
 - c. Straight handrails: 20" inside dimension.
 3. Welds: Shall be a minimum of 6 welds per tread, and 12 welds each on the landing and mounting base. Each weld shall be quality controlled and be capable of withstanding a minimum of 2800 lbs. in shear.
 4. Pedestrian surfaces shall be punched through with upset non-skid opening.
 5. Riser Spacing: shall be equally spaced to within 3/16" for adjacent risers and to within 3/8" for any two non-adjacent risers on a stair.
 6. Guards and Handrails shall be contoured for body guidance and underarm support and shall be attached to the outside stringers and landings by bolting.
 7. Landing Reinforcement shall be with 1/4" steel angle notched and punched and factory welded to the landing at the points of a guard of handrail attachment.
 8. Rubber Foot Divider shall be affixed to the central portion of the landing. A rubber bumper strip shall be attached or will be provided for field attaching to the central stringer.

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9. Alternating Stair Tread Angle: 68 degrees from horizontal.
 10. Materials:
 - a. Treads: 13 gauge minimum.
 - b. Landings: 11 gauge minimum. Landing reinforcement shall be with 1/4" steel angle notched and punched and factory welded to the landing at the points of a guard or handrail attachment.
 - c. Stringers: 11 gauge minimum, 3" x 1-3/4" U-sections
 - d. Handrails: 1-1/2" OD, unless indicated otherwise.
 - e. Rubber Foot Divider: Solid neoprene. Affixed to central portion of the landing.
 11. Finish: Primed finish, for field painting.
 12. Manufacturer:
 - a. Lapeyre Stair, Inc.; 800-535-7631; www.lapeyrestair.com.
 - b. Vestil Manufacturing Corp.; 800-348-0868; www.vestilmfg.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - B. Bollards: Steel pipe, concrete filled, crowned metal cap, as detailed; galvanized finish.
 - C. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking, joists, and masonry; prime paint finish.
 - D. Lintels: As detailed; galvanized finish.
 - E. Stainless Steel Wall Panels: Wall panels for wall protection, where indicated. Provide panel system, including panels, outside corners, inside corners, corner guards and fastening devices.
 1. Panels: Size: Custom, 4'x8' maximum. Panel thickness: 18 gauge. For adhering with heavy duty adhesive.
 2. Outside and inside corners: 16 gauge, with 2" legs. For adhesive mount or screw mount.
 - F. Stainless Steel fabrication where indicated: #4 Satin Finish, 22 gauge, unless indicated otherwise.
 - G. Downspout Boot: Cast Iron, Shape: Square or rectangular. Length: As indicated. Size: Coordinate with downspout size. Neenah R-4926-29 Series Downspout Shoes [Basis of Design], or approved equal.
 - H. Ribbed Bar Abrasive Nosing & Tread: Nosing type for concrete pour and steel pan stairs. Abrasive bar locked into extruded channels.
 1. Base and nosing: Extruded aluminum type 6063-T5.
 2. Tread abrasive filler: Bar type ribbed. Consisting of aluminum oxide and/or silicon carbide. Binder: UV protected 2-part epoxy continuous throughout tread. Color: Black, unless indicated otherwise, and extending uniformly throughout filler.
 3. Bar width: 1-7/8 inches.
 4. Installation fastening type: Drilled countersunk holes.
 5. Product: Nystrom Model C1.875D, or approved equal. Substitutions: Section 01 6000 - Product Requirements.
 - I. Miscellaneous framing and supports:
 1. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.
 2. 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.
 3. 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.

4. Galvanize exterior miscellaneous frames and supports
- J. Rough hardware:
 1. 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.
 2. 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.

2.07 PREFABRICATED LADDERS

- A. Ships Ladder:
 1. Manufacturer:
 - a. ACL Industries, Inc., (603) 668-1276: www.aclindustries.com.
 - b. L.K Goodwin Co., (800) 343-2478: www.lkgoodwin.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 2. Product: Steel Inclined Ladder.
 - a. Material: Steel.
 - b. Extended Handrail.
 - c. Width: 27", unless indicated otherwise.
 - d. Treads: Heavy duty steel.
 - e. Tread depth: 6" minimum.
 - f. Incline: 68 degrees, unless indicated otherwise.
 - g. Finish: Primed, for field painting.

2.08 FINISHES - STEEL

- A. Prime paint steel items.
 1. Exceptions: Galvanize items to be embedded in concrete or masonry and items specified for exterior finish.
 2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2.
- C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- 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:
 2. Exterior (SSPC Zone 1B): SSPC-SP6 "Commercial Blast Cleaning."
 3. Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning."
- E. Prime Painting: One coat.
- F. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements.
- G. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.
- H. Lintels: Paint after galvanizing. [VERIFY IF TO BE PAINTED!]
- I. Bollards: Paint after installation.
- J. ASTM A 386 for galvanizing assembled steel products.

- K. Stainless Steel: #4 finish, unless indicated otherwise.

2.09 FINISHES - ALUMINUM

- A. Mill finished aluminum.

2.10 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. Alternating Stairs: Carbon Steel: Gas metal arc welded with treads spot welded to stringers and bolt-on handrails with included bolts using the specified materials.

2.11 FABRICATION TOLERANCES

- A. Squareness: 1/8 inch (3 mm) maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch (1.5 mm).
- C. Maximum Misalignment of Adjacent Members: 1/16 inch (1.5 mm).
- D. Maximum Bow: 1/8 inch (3 mm) in 48 inches (1.2 m).
- E. Maximum Deviation From Plane: 1/16 inch (1.5 mm) in 48 inches (1.2 m).

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal and aluminum where site welding is required.
- B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.
- C. 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.
- D. 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.

- E. Coordinate provision of access ladder with provision of roof hatch to ensure height and position of ladder is compatible with roof hatch curb.
- F. Coordinate ladder installation with construction of walls to insure walls are adequately reinforced, cells grouted, blocked, and supported for attachment of brackets and support of ladder.
- G. Insulate dissimilar metals to prevent electrolysis with bituminous paint or non-absorptive isolation pad to prevent contact.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Install manufactured items in accordance with manufacturer's directions. Comply with governing regulations, and industry standards applicable to the work.
 - 1. Use fasteners of type and size recommended by manufacturer.
- C. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- D. Alternating tread stair:
 - 1. Comply with manufacturer's instructions.
 - 2. Install bumper in accordance with manufacturer's instructions.
 - 3. Prepare mounting holes.
 - 4. Position alternating tread stair with top tread at same elevation as upper finished floor.
 - 5. Secure with not less than 2 bolts or studs at top and with not less than 2 bolts or studs at bottom of stair.
 - 6. Touch up with matching paint any chipped or abraded damage to factory finish.
- E. Ship's Ladder:
 - 1. Comply with manufacturer's instructions.
- F. Coordinate ladder installation with construction of walls to ensure adequate support and blocking for attachment of brackets and support of ladder.
- G. Ensure ladder is vertical, plumb, aligned with center of roof hatch, and rigid.
- H. Field weld components as indicated on drawings.
- I. Perform field welding in accordance with AWS D1.1/D1.1M.
- J. Obtain approval prior to site cutting or making adjustments not scheduled.
- K. After erection, prime welds, abrasions and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
- L. Install security door assembly of ladder and adjust for smooth operation.
- M. Safety post extension: Attach to top 2 rungs of ladder and centered between side rails. Adjust post to extend 42 inches above top rail when roof hatch is open and post is fully extended.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch (6 mm) per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch (6 mm).
- C. Maximum Out-of-Position: 1/4 inch (6 mm).

END OF SECTION

**SECTION 06 1000
ROUGH CARPENTRY**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Rough opening framing for doors, windows, and roof openings.
- B. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Communications and electrical room mounting boards.
- E. Concealed wood blocking, nailers, and supports.
- F. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 05 1200 - Structural Steel Framing: Prefabricated beams and columns for support of wood framing.
- C. Section 05 5000 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025.
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.
- C. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2017).
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- E. AWPA U1 - Use Category System: User Specification for Treated Wood; 2024.
- F. PS 1 - Structural Plywood; 2023.
- G. PS 20 - American Softwood Lumber Standard; 2025.
- H. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber; 2019.
- I. SPIB (GR) - Standard Grading Rules; 2021.
- J. WCLIB (GR) - WCLB Standard Grading Rules for West Coast & Imported Softwood Lumber No.18; 2024.
- K. WWPA G-5 - Western Lumber Grading Rules; 2025.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
- C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.
- D. Submit proposed screw pattern layout for roof sheathing attachment, such that designed roof system meets 1-90 Wind Uplift Requirements.

- E. Submit data sheets and samples of all fasteners.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.
- C. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
1. Species: Southern Pine, unless otherwise indicated.
 2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

1.06 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
1. Northeastern Lumber Manufacturer's Association (NeLMA).
 2. National Lumber Grades Authority (NLGA).
 3. Redwood Inspection Service (RIS).
 4. Southern Pine Inspection Bureau (SPIB).
 5. West Coast Lumber Inspection Bureau (WCLIB).
 6. Western Wood Products Association (WWPA).
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Moisture Content: S-dry or MC19.
- D. Stud Framing (2 by 2 through 2 by 6 (50 by 50 mm through 50 by 150 mm)):
1. Species: Allowed under referenced grading rules.
 2. Grade: No. 2.
- E. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):
1. Machine stress-rated (MSR) as follows:
 - a. Fb-single; minimum extreme fiber stress in bending: 1350 psi (9,300 kPa).
 - b. E; minimum modulus of elasticity: 1,300,000 psi (8960 MPa).
 2. Species: Southern Pine, No. 2.
 3. Extent: As required, or indicated.
- F. Roof Sleepers (1 by 4 inches).
1. Species: Southern Yellow Pine.
 2. Grade: Construction or No. 2.
 3. Extent: Roof "Sleepers", and elsewhere as required or indicated.
- G. For Structural Framing, 5 inches and wider, provide the following grade and species:
1. "No. 2" grade, Stress Rated, with the following minimum properties:
 - a. Fb = As indicated in Design Values for Wood Construction - NDS Supplement By The American Wood Council, LATEST Edition.
 - b. E = As indicated in Design Values for Wood Construction - NDS Supplement By The American Wood Council, LATEST Edition.
 2. Species: Southern Yellow Pine.
- H. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:

1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.

1.07 EXPOSED BOARDS

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Moisture Content: Kiln-dry (15 percent maximum).
- C. Surfacing: S4S.
- D. Species: Southern Pine.
- E. Grade: No. 2, 2 Common, or Construction.

1.08 CONSTRUCTION PANELS

- A. Roof Sheathing: APA RATED SHEATHING, Veneer Core Plywood; Tongue and Groove Edges, or Square Edges with Sheathing Panel Clips, and as follows:
 1. Exposure Durability Classification: Exterior.
 2. Span Rating: As required to suit rafter spacing indicated.
 - a. 42/20 minimum, unless otherwise indicated.
 3. Thickness: 3/4-inch.
- B. Roof Sheathing: Fiberglass mat faced gypsum panel, with water resistant gypsum core. ASTM C1177/C1177M, square long edges, 5/8 inch Type X fire-resistant (16 mm Type X fire-resistant), unless otherwise indicated.
 1. GAF; Dens-Deck Prime Roof Board: www.gaf.com.
 2. Georgia-Pacific Gypsum LLC; DensDeck Prime Roof Board: www.densdeck.com.
 3. Substitutions: See Section 01 6000 - Product Requirements.
- C. Communications and Electrical Room Mounting Boards: UL verified fire retardant backboard: A-C plywood; 3/4 inch (19 mm) thick; Coated with UL Classified Fire Retardant Latex (Class "A" Rated). Tested to UL723 (ASTM E84) standards. Color: As selected by Architect from manufacturer's standard colors.
 1. Pre-Manufactured Product:
 - a. WoodBacker "Fire Retardant Backboards"; [Basis of Design]: www.woodbacker.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Other Applications:
 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 3. Other Locations: PS 1, C-D Plugged or better.

1.09 ACCESSORIES

- A. Fasteners and Anchors:
 1. Metal and Finish: AISI Type 304 or 316 Stainless steel for fire-retardant wood and preservative-treated wood locations; hot-dipped galvanized steel per ASTM A 153/ A 153M for rough carpentry exposed to weather, in ground contact, or area of high relative humidity; unfinished steel elsewhere. Acceptable to manufacturer of wood treatment materials and manufacturer of fasteners.
 2. Anchors: Toggle bolt type for anchorage to hollow masonry.
- B. Metal Framing Anchors:
 1. General: Provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:
 - a. Current Evaluation/Research Reports: Provide products for which model code evaluation/research reports exist that are acceptable to authorities having jurisdiction

- and that evidence compliance of metal framing anchors for application indicated with the building code in effect for this Project.
- b. Allowable Design Loads: Provide products for which manufacturer publishes allowable design loads that are determined from empirical data or by rational engineering analysis and that are demonstrated by comprehensive testing performed by a qualified independent testing laboratory.
 - 2. Galvanized Steel Sheet: Steel sheet zinc-coated by hot-dip process on continuous lines prior to fabrication to comply with ASTM A 525 for Coating Designation G90 and with ASTM A 446, Grade A (structural quality); ASTM A 526 (commercial quality); or ASTM A 527 (lock-forming quality); as standard with manufacturer for type of anchor indicated.
 - a. Use galvanized steel framing anchors for rough carpentry exposed to weather, in ground contact, or in area of high relative humidity, and all other locations, and at every point of bearing.
 - b. Minimum Thickness: 18-gauge.
 - C. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing complying with ASTM A653/A653M.
 - D. Panel Sheathing Clips: Provide panel sheathing clips in quantity and location recommended by manufacturer. For use for all unsupported edges. Simpson Strong-Tie Panel Sheathing Clips PSCA, 20 gauge, galvanized. Substitutions: Section 01 6000 - Product Requirements.
 - E. Nails, Wire, and Brads: FS FF-N-105.
 - F. Power Driven Fasteners (screws): National Evaluation Report NER-272.
 - G. Wood Screws: ANSI B18.6.1.
 - H. Lag Bolts: ANSI B18.2.1.
 - I. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers.
 - J. Anchors shall be manufactured by American manufacturer.

1.10 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 - 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Fire Retardant Treatment:
 - 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Do not use treated wood in direct contact with the ground.
 - 2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with

ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.

- a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. All interior rough carpentry items in buildings of Type I or Type II construction are to be fire retardant treated.
 - c. All concealed wood blocking, framing and sheathing in buildings of Type I or Type II construction shall be fire retardant treated.
 - d. Review Life Safety Sheets and provide fire retardant treated wood blocking in all rated walls.
 - e. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Pressure Treatment of Lumber Above Grade: AWP A U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - a. Treat lumber exposed to weather.
 2. Treat lumber in contact with roofing, flashing, or waterproofing.
 3. Treat lumber in contact with masonry or concrete.
 4. Treat lumber less than 18 inches (450 mm) above grade.
 - a. Treat lumber in other locations as indicated.
 5. Preservative Pressure Treatment of Plywood Above Grade: AWP A U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood in contact with roofing, flashing, or waterproofing.
 - c. Treat plywood in contact with masonry or concrete.
 - d. Treat plywood less than 18 inches (450 mm) above grade.
 - e. Treat plywood in other locations as indicated.
- D. Preservative Pressure Treatment of Lumber in Contact with Soil: AWP A U1, Use Category UC4A, Commodity Specification A using waterborne preservative.
1. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush-application in the field.
 2. Restrictions: Do not use lumber or plywood treated with chromated copper arsenate (CCA) in exposed exterior applications subject to leaching.

1.11 ENGINEERED WOOD PRODUCTS

- A. General: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that evidence compliance with building code in effect for Project.
1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that 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.

PART 3 - EXECUTION

2.01 PREPARATION

- A. Coordinate installation of rough carpentry members specified in other sections.

2.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.

- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

2.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Chalkboards and marker boards.
 - 8. Wall paneling and trim.
 - 9. Joints of rigid wall coverings that occur between studs.

2.04 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

2.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. At long edges use sheathing clips where joints occur between roof framing members, unless tongue and groove sheathing is used.
 - 2. Provide sheathing clips at all unsupported edges.
- B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
- C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches (610 mm) on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.

-
4. Size and Location: As indicated on drawings.

2.06 TOLERANCES

- A. Framing Members: 1/4 inch (6 mm) from true position, maximum.
- B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

2.07 CLEANING

- A. Waste Disposal: Comply with the requirements of Section 01 5000.
1. Comply with applicable regulations.
 2. Do not burn scrap on project site.
 3. Do not burn scraps that have been pressure treated.
 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

SECTION 06 4000
CUSTOM ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Laminate clad countertops and cabinets, solid surface countertops and associated components, window sills, trim, similar work, and associated hardware.
- B. Contractor's Option for fabricated Millwork in lieu of Laminate Casework: The General Contractor may, at its option, furnish and install Custom Architectural Woodwork in lieu of the specified Casework units. Where the General Contractor exercises this option, it shall demonstrate that the Custom Architectural Woodwork (Millwork) is in compliance with the requirements of this Section and is materially similar to the corresponding Casework item specified in Section 12 3219 - Laminate Casework.

1.02 SECTION INCLUDES

- A. Laminate clad countertops.
- B. Laminate covered cabinets (Contractor's Option to Section 12 3219 - Laminate Casework).
- C. Wood cabinets, desks, and paneling.
- D. Solid surface countertops, backsplashes, trim, wall caps & window sills, and vertical panels where indicated.
- E. Closet and utility shelving (paint on site, under Section 09 9100 - Painting).
- F. Wood frames, sidelights, panels, base, window sills, and miscellaneous trim (paint on site, under Section 09 9100), stained (transparent finish) or painted (opaque finish) where indicated.
- G. Hardware for architectural woodwork.
- H. Related work and trim for above items.
- I. Extent of each type of architectural woodwork is indicated on drawings and in schedules.
- J. Architectural woodwork and components for opaque finish are intended to be finish painted on-site, under Section 09 9100 - Painting.
- K. Architectural woodwork and components for natural, stained and/or transparent finish are intended to be painted in woodwork fabricator's shop under controlled conditions, under the work of this Section.

1.03 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 06 1000 - Rough Carpentry.
 - 2. Section 06 2000 - Finish Carpentry.
 - 3. Section 07 9005 - Joint Sealers.
 - 4. Section 08 1416 - Flush Wood Doors.
 - 5. Section 09 6623 - Resinous Matrix Terrazzo Flooring.
 - 6. Section 09 9100 - Painting.
 - 7. Section 12 3219 - Laminate Casework - Basis of Design where identified.
 - 8. Division 22 Plumbing Sections: Countertops for sinks.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for Submittal procedures.

- B. Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, attachment devices, blocking requirements and other components.
 - 1. Manufacturer's current and complete product data, for manufactured units of work, including color selection data, samples, anchorage systems, installation method, transition & accessory types.
 - 2. Keying schedule.
- C. Samples: Submit the following samples:
 - 1. Lumber and panel products with or for transparent finish; 6-inches x 3/4-inch x 18-inches, for each species and cut, finished on 1-side and 1-edge. Also submit two 3 by 3 inch samples with finish on 1-side.
 - 2. Cabinet Hardware: One unit of each type and finish, which will be returned for use on the project, upon request by the Contractor.
 - 3. Solid Surfacing Products: Manufacturer's standard samples, approximately 4-inches x 4-inches, with finish as required for this project, and representative color range anticipated.
 - 4. Laminate Products: Manufacturer's standard samples, approximately 4-inches x 4-inches, with finish as required for this project, and representative color range anticipated.

1.05 QUALITY ASSURANCE

- A. AWS: Comply with applicable requirements of "Architectural Woodwork Standards" published by the Architectural Woodwork Standards, 2nd Edition, October, 2014.
- B. Fabricator Qualifications: Fabricators shall be experienced firms specializing in the types of architectural woodwork required for this project for at least 5-verifiable years and on at least 10-verifiable projects of similar size, scope, complexity, and quality as this project.
 - 1. Solid Surfacing Fabricator: 5-years and 10-verifiable projects.
- C. Installer Qualifications: Arrange for installation of architectural woodwork by the fabricator, or by a firm under the control and direction of the fabricator, which can demonstrate at least 5-verifiable years successful experience in installing architectural woodwork items on at least 5-verifiable projects, similar in type and quality to those required for this project.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver woodwork, 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, woodwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.07 PROJECT CONDITIONS

- A. Conditioning: Woodwork Manufacturer and Installer shall advise Contractor of temperature and humidity requirements for woodwork installation and storage areas. Do not install woodwork until required temperature and relative humidity 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 woodwork within a 1.0-percent tolerance of optimum moisture content, from date of installation through remainder of construction period. Require Woodwork Manufacturer to establish optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Laminate Clad and Wood Cabinet Manufacturers: Subject to compliance with requirements, provide premium grade, custom made cabinets and woodwork from a millwork shop complying with requirements of "Quality Assurance" article above.
- B. Plastic Laminate Manufacturer:
 - 1. See Finish Legend for Manufacturers and colors.
- C. Solid-Surfacing Material/Manufacturer: Homogeneous solid sheets of cast, filled acrylic resin complying with material and performance requirements in ANSI Z124.3, for Type 6.
 - 1. Basis of Design: Corian as manufactured by DuPont, full product line.
 - 2. Other Acceptable Manufacturers:
 - a. Avonite: www.avonitesurfaces.com.
 - b. Formica: www.formica.com.
 - c. Wilsonart: www.wilsonart.com.

2.02 PANEL MATERIALS

- A. Paper Composite Material (PCM-1). Cabinet & desk bodies, and structural elements where exposed, and as indicated on drawings.
 - 1. Richlite [Basis of Design, Quality & Warranty]. See Finish Legend for color & style: www.Richlite.com. Info: Patricia.Watkins@alternacorp.com.
- B. Substitutions: Section 01 6000 - Product Requirements.

2.03 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated with dowel, dado, glue and screw construction, with openings and mortises precut, where possible, to receive hardware and other items and work.
 - 1. Ease edges to a 1/16-inch radius, for corners of cabinets and edges of solid wood (lumber) members less than 1-inch in nominal thickness, 1/8-inch radius for edges of rails and similar members over 1-inch in nominal thickness.
- C. Complete fabrication, assembly, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- D. Pre-Cut Openings: Fabricate architectural woodwork with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating.
- E. Measurements: Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit. A tight fit of less than 1/8-inch is expected.
- F. Products in this Section shall be constructed only of materials that are formaldehyde-free.

2.04 FIRE-RETARDANT MATERIALS

- A. Where fire-retardant treated lumber is indicated, provide materials which are pressure impregnated with fire-retardant chemicals and comply with the following requirements:

1. As required to comply with referenced standards and finish classifications necessary as per the Standard Building Code, NFPA 101 - Life Safety Code, authorities having jurisdiction, and acceptable in all respects for indoor use and finish requirements.
 2. Fire-Retardant Chemicals: Use chemicals of type and for applications indicated which do not bleed-through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated lumber from untreated lumber.
- B. Fire Performance Characteristics: Provide materials which are identical to those tested per ASTM methods and time periods indicated, are marked and listed for fire performance characteristics by Underwriters Laboratories, Inc., or other testing and inspecting agency acceptable to authorities having jurisdiction, and comply with the following requirements:
1. Mill lumber after treatment, within limits set for wood removal which does not affect listed fire performance characteristics, using a woodworking plant certified by testing and inspecting agency.
- C. Marking: Identify treated lumber with separable paper classification marking of inspecting and testing agency, unless otherwise indicated.
- D. Surface Burning Characteristics: Not exceeding values required by latest edition of the "Standard Building Code" and "NFPA 101" (with amendments), tested per ASTM E 84 for standard time period.
1. Flame Spread: Per Code.
 2. Smoke Developed: Per Code.
- E. Kiln-dry woodwork after treatment to levels required for non-fire-retardant treated woodwork materials. Maintain moisture content required by kiln drying, before and after treatment.
1. Discard treated lumber which does not comply with requirements of referenced woodworking standard. Do not use twisted, warped, bowed, discolored, or otherwise damaged or defective lumber.

2.05 STANDING AND RUNNING TRIM

- A. Quality Standard: Comply with AWS Section 6 - Interior Millwork.
- B. Rout or groove backs of flat trim members, kerf backs of other wide flat members, except for members with ends exposed in finished work.
- C. Assemble Casings in plant except where limitations of access to place of installation require field assembly.
- D. Interior Trim for Transparent Finish (typical finish unless specifically indicated otherwise): Comply with the following requirements:
1. Grade: Premium, Grade I.
 2. Lumber Species: See Finish Legend.
 3. Cut: See Finish Legend.
 4. Locations: Provide stained transparent finish within rooms which have new woodwork with transparent finish, at indicated areas. Refer to Elevations & Finish Schedule.
- E. Interior Trim for Opaque Finish (only where specifically indicated, if any): Comply with the following requirements:
1. Grade: Custom, Grade II.
 2. Lumber Species: Any closed-grain hardwood listed in referenced woodworking standard.
 3. Cut: Plain or Rotary cut.
 4. Locations: Provide opaque finish within rooms which have new woodwork with opaque finish, unless indicated otherwise. Refer to Elevations and Finish Legend.

2.06 ARCHITECTURAL COUNTER TOPS

- A. Quality Standard: Comply with AWS, Section 11-Countertops.
- B. Type of Top - Laminate Clad:

1. Grade: Premium; Grade I.
 2. Edge Treatment: Refer to Drawings.
 3. Core: Minimum 47-lb. density particle board, except at least 3/4-inch A-B plywood with exterior glue (approved for interior use), at tops with sinks and/or plumbing fixtures.
 4. Minimum Thickness: 1-1/4-inches at tops and 3/4-inch at splashes, unless indicated otherwise on the Drawings.
- C. Types of Top (and/or panel): Solid Surfacing.
1. Colors, Patterns and Finishes: As indicated, or if not indicated, as selected from any of manufacturer's standard finishes and colors.
 2. Edge Treatment: As indicated on the Drawings.
 3. Thickness - Tops and Substrates:
 - a. Tops (and any flat vertical panels): 1/2-inch, 3/4-inch substrate & with 1-1/2-inch built-up edges unless indicated otherwise on the Drawings.
 - b. Backsplash & Sidesplash: 1/2-inch.
 - c. Edge Treatment: As indicated on the Drawings, or if not indicated, ease all exposed edges to 1/16" radius, and seam width of less than 1/8".
 - 1) DuPont-approved adhesive to create color-matched seam.
 - d. Substrates: Refer to the Drawings for thickness of plywood below solid surface tops, splashes, etc., or if not indicated, at least 3/4-inch thick at horizontal and sloped surfaces (and at least 1/2-inch thick at any vertical panels).
 4. Allowable tolerances:
 - a. Flat and true to within 1/8" of a flat surface over a 10' length.
 - b. Allow a minimum of 1/16" to a maximum of 1/8" clearance between surface and each wall.
 - c. Variation in Component Size: 1/8" over a 10' length.
 - d. Location of Openings: 1/8" from indicated location.
 5. Provide manufacturer's 10-year warranty against defects in materials.
 - a. Warranty shall provide material to repair or replace defective materials.
 - b. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.
 - c. The above warranty shall be in addition to, shall be in effect simultaneously with, and shall not limit or alter other project or product warranties or guarantees, nor shall it serve as limitation to other remedies available to the Owner.

2.07 FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

- A. Quality Standard: Comply with AWS Section 5, unless otherwise indicated.
- B. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing of concealed surfaces and similar preparations for finishing of architectural woodwork, as applicable to each unit of work.
- C. Interiors for wood cabinets: To match wood.
- D. Melamine cladded interiors for wood cabinets: To match HPDL.

2.08 ARCHITECTURAL WOOD VENEER CABINETS

- A. Quality Standard:
 1. Comply with AWS Section 10.
 2. Grade: Premium.
 3. Design: Flush Overlay - Type A- Frameless construction.
- B. Wood Veneer Cladding: As follows:
 1. Grade: Premium, Grade I.
 2. Lumber Species: Select White Birch, unless scheduled otherwise.

- 3. Cut: Plain sliced.
- C. Hardboard: AHA A135.4 (tempered).
- D. Core Materials:
 - 1. MR Moisture Resistant Medium Density Fiberboard: Average 47-pound density grade, ANSI A208.2.
 - 2. Grade AB Plywood.

2.09 ARCHITECTURAL LAMINATE CLAD CABINETS

- A. Quality Standard:
 - 1. Comply with AWS Section 10.
 - 2. Grade: Premium.
 - 3. Design: Flush overlay - Type A- Frameless construction.
- B. Laminate Cladding: High pressure decorative laminate complying with NEMA LD 3 and as follows:
 - 1. Colors, Patterns and Finishes: As indicated or, if not otherwise indicated, as selected by Architect from laminate manufacturers' standard products in the following categories: Solid, stippled, textured, wood grain and/or patterned colors; Thru-color type.
 - 2. Provide specific types as scheduled.
 - a. Horizontal Surfaces: HGS, 0.048 inch (1.22 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - b. Vertical Surfaces: VGS, 0.028 inch (0.71 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - c. Post-Formed Horizontal Surfaces: HGP, 0.039 inch (1.0 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - d. Post-Formed Vertical Surfaces: VGP, 0.028 inch (0.71 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - e. Flame Retardant Surfaces: HGF, 0.048 inch (1.22 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - f. Cabinet Liner: CLS, 0.020 inch (0.51 mm) nominal thickness, through color, colors as scheduled, finish as scheduled.
 - g. Laminate Backer: BKL, 0.020 inch (0.51 mm) nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.
- C. Hardboard: AHA A135.4 (tempered).
- D. Melamine cladded interiors in laminate cabinets.
- E. Core Materials:
 - 1. MR Moisture Resistant Medium Density Fiberboard: Average 47-pound density grade, ANSI A208.2.

2.10 INTERIOR FRAMES AND JAMBS

- A. Quality Standard: Comply with AWS Section 10.
 - 1. Grade: Premium.
- B. Wood Species:
 - 1. For Opaque Finish: Any closed-grain hardwood listed in referenced woodworking standard.
 - 2. For Transparent Finish (stained): Match wood doors.
- C. Fire Rated Frames:
 - 1. 20 min and 45 min rated types. Refer to Door Schedule.
- D. Jamb Type: Flat jamb, unless indicated otherwise.

2.11 FASTENERS AND ANCHORS

- A. Screws: Select material, type, size and finish required for each use. Comply with FS FF-S-111 for applicable requirements.
- B. Nails: Select material, type, size and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
- C. Anchors: Select material, type, size and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent woodwork anchorage.

2.12 CABINET HARDWARE AND ACCESSORY MATERIALS

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items which are specified in Section 08 7100 - Finish Hardware.
- B. Hardware Standard: Comply with ANSI/BHMA A156.9 "American National Standard for Cabinet Hardware" for items indicated by reference to BHMA numbers or referenced to this standard.
- C. Hardware Finishes: Comply with BHMA 1301 for finishes indicated by BHMA Code Numbers or if not otherwise indicated, provide finishes complying with requirements indicated.
 - 1. For exposed hardware comply with requirements indicated for finish and base indicated at the end of this Section.
 - 2. For concealed hardware provide manufacturer's standard finishes which comply with product class requirements of ANSI/BHMA A156.9, and which match exposed hardware on same cabinet unit.

2.13 COUNTERTOP SUPPORT

- A. Countertop support brackets, undercounter support frames, legs and miscellaneous metal parts shall be furniture steel, welded, degreased, cleaned, treated and epoxy powder painted. Color shall be as selected by Architect from manufacturer's standard colors.
 - 1. Support brackets shall be equal to Rakks EH Counter Support Bracket unless otherwise noted.
 - a. For concealed support, provide Inside Wall Flush-Mount bracket.

2.14 CABINET HARDWARE

- A. Cabinet Hinges: Equivalent to 5-knuckle exposed self-closing hinges as manufactured by Julius Blum, Inc., Grass or Stanley.
 - 1. Finish shall match hardware finish specified in Section 08 7100 - "Finish Hardware" in room(s) where occurs.
- B. Cabinet Door and Drawer Pulls:
 - 1. Wire pulls, equivalent to Stanley No. 4484, stainless steel (ANSI B12012), 4-inches long, with 1-inch clearance; unless indicated otherwise. Pull design shall comply with the Americans with Disability Act (ADA).
 - a. Finish shall match hardware finish specified in Section 08 7100 - Finish Hardware.
- C. Cabinet Door Catches: Manufacturer's standard 2-screw sill mounted unit made of molded nylon, lipped over sill to form bumper and hold in place, with 2-screw mounted heavy door mounted unit with nylon roller; provide spring-mounted units where required.
 - 1. Acceptable Manufacturers: Any of manufacturers listed for other cabinet hardware.
- D. Cabinet Drawer Slides: Heavy Duty, non-corrosive (galvanized) full extension ball bearing slides rated at 100-pounds, with positive stop, and self-closing and lift-out disconnect features; Model No. 1429, as manufactured by Knappe & Vogt, or equivalent by Blum or Grant.

1. At legal size drawers, use K&V No. 1483 or equivalent, rated at 150-pounds, with same features as noted above.
- E. Cabinet Shelf Standards: Manufacturer's standard steel units with anchors and supports 5/8-inch wide x 3/16-inch high, adjustable on 1/2-inch centers; Series 255, as manufactured by K&V, or equivalent by Grant or Stanley.
 1. Wood Cabinets: Model No. 255 BRN with No. 256 BRN supports and matching fasteners.
 2. Omit standards where fixed shelves are indicated.
 3. All standards to be recess mounted (flush in routed dados), unless specifically indicated otherwise.
- F. Cabinet Locks: Provide cabinet manufacturer's standard 5-disc tumbler, cam type, keyed differently at each room for each file drawer & where indicated on drawings, with metal strike screwed to wood surface, and master keyed.
 1. Furnish 2-keys for each lock.
 2. Furnish 5-master keys
 3. Finish to match Section 08 7100 - Finish Hardware finish in room(s) where occurs.
 4. Location: Where indicated.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.
- B. Pre-Installation Meeting: Meet at project site prior to delivery of architectural woodwork 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 architectural woodwork, wet work such as plastering, other finishes, painting, mechanical work and electrical work; and firms or persons responsible for continued operation (whether temporary or permanent) of HVAC system as required to maintain temperature and humidity conditions. Proceed with woodwork installation only when everyone concerned agrees that required ambient conditions can be maintained.
- C. Deliver concrete inserts and similar anchoring devices to be built into substrates, well in advance of time substrates are to be built.
 1. Coordinate location and placement of concealed treated blocking (by others) prior to finish materials installations.
- D. Prior to installation of architectural woodwork, examine shop fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.02 INSTALLATION

- A. Quality Standard: Install woodwork to comply with AWS Section 2, 6, 10, 11 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Install woodwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8-inch in 8'-0" for plumb and level (including tops); and with no variations in flushness of adjoining surfaces.
- C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
 1. Seal all hardware cuts, routed slots, etc., before installation of hardware.
- D. Anchor woodwork to anchors 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 nails for exposed nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.

- E. Bamboo Flooring (for vertical, and horizontal surfaces): Install in accordance with manufacturer's recommendations.
- F. Standing and Running Trim, and Sills: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners and comply with referenced Quality Standards for joinery.
- G. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Maintain veneer sequence matching (if any) of cabinets with transparent finish.
 - 1. Install cabinets with no more than 1/8-inch in 96-inches sag, bow, or other variation from a straight line.
- H. Tops: Anchor securely to base units and other support systems indicated. Caulk space between backsplash and wall with specified sealant.
 - 1. Install countertops with no more than 1/8-inch in 96-inches sag, bow, or other variation from a straight line.
- I. Wood Panels: Anchor panels to supporting substrate with concealed panel-hanger clips and by blind nailing on backup strips, splined-connection strips, and similar associated trim and framing. Do not face nail unless otherwise indicated.
 - 1. Install flush panels with no more than 1/16-inch in 96-inches vertical cup or bow and 1/8-inch in 96-inches horizontal variation from a true plane.
- J. Install shelf brackets according to manufacturer's written instructions, spaced not more than 32 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
- K. Install standards for adjustable shelf supports according to manufacturer's written instructions. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors. Space fasteners not more than 12 inches o.c.
- L. Install standards for adjustable shelf brackets according to manufacturer's written instructions, spaced not more than 36 inches o.c. and within 6 inches of ends of shelves. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
- M. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled. Install shelves, fully seated on brackets, and supports.
 - 1. Fasten shelves to brackets to comply with bracket manufacturer's written instructions.
- N. Install rod flanges for rods as indicated. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors. Install rods in rod flanges.
- O. Refer to Section 09 9100 - Painting, for final finishing of installed architectural woodwork which is indicated to be painted on-site.

3.03 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

- A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.
- D. Complete the finishing work specified as work of this section, to whatever extent not completed at shop or prior to installation of woodwork.

- E. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural woodwork being without damage or deterioration at time of substantial completion.

END OF SECTION

**SECTION 07 8400
FIRESTOPPING**

PART 1 - GENERAL

1.01 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.

1.02 DESCRIPTION OF WORK

- A. Work described in this Section includes:
 - 1. Through penetration firestopping in fire rated construction.
 - 2. Construction-gap firestopping at connections of the same materials and different materials in fire rated construction.
 - 3. Construction-gap fire stopping occurring within fire rated wall, floor, floor-ceiling, and/or roof-ceiling assemblies.
 - 4. Construction-gap firestopping at the top of fire rated walls.
 - 5. Through-penetration smoke-stopping in smoke partitions.
 - 6. Construction-gap smoke-stopping in smoke partitions.
- B. Related work Specified elsewhere includes:
 - 1. For structural, finish, and fire protection materials: Refer to the appropriate Specifications Sections.
 - 2. Fire dampers and manufactured devices: Refer to Divisions 21-23.
 - 3. Raceway seals and manufactured electrical devices: Refer to Division 26.
- C. Unless specifically indicated otherwise, the party, trade, or subcontractor whose work penetrates fire-rated construction and/or fire-rated assemblies, shall be responsible for firestopping around their own penetrations.
- D. In the event the General Contractor employs a Specialty Subcontractor for the required firestopping work, they shall notify all prospective Bidders, so as to avoid duplication in pricing.
 - 1. The Specialty Subcontractor shall provide coordination of requirements and the related work of other trades in advance of and as the Work progresses.

1.03 REFERENCED STANDARDS

- A. Underwriters Laboratories - U.L. Fire Resistant Directory:
 - 1. Through-penetration fire stop devices (XHCR); Firestop Devices (XHJI).
 - 2. Fire resistant ratings (BXUV) (BXRH).
 - 3. Through-penetration firestop systems (XHEZ).
 - 4. Fill, void, or cavity material (XHHW).
 - 5. Joint Systems (XHBN) & Perimeter Fire Containment Systems (XHDG).
- B. American Society for Testing and Materials Standards:
 - 1. ASTM E 814: Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
 - 2. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 3. ASTM E 1966: Standard Test Method for Fire Resistive Joints Systems.
 - 4. ASTM E 2307: (Perimeter).
- C. Underwriters Laboratories, Inc.:
 - 1. UL 1479: Fire Tests of Through-Penetration Firestops.
 - 2. UL 2079: Tests for Fire Resistance of Building Joint Systems.
 - 3. UL 723: Surface Burning Characteristics of Building Materials.
- D. NFPA 101 - Life Safety Code / NFPA 70 - National Electrical Code.

1.04 DEFINITIONS

- A. Assembly: Particular arrangement of materials specific to given type of construction described or detailed in referenced documents.
- B. Barriers: Time rated fire walls, smoke barrier walls, time rated floor-ceiling and roof-ceiling assemblies, and structural floors and walls.
- C. Firestopping: Methods and materials applied in penetrations and unprotected openings to limit spread of heat, fire, gasses, and smoke.
- D. Penetration: Opening or foreign material passing through or into barrier or structural floor such that full thickness of rated materials is not obtained.
- E. Construction Gaps: Gaps between adjacent sections of walls, exterior walls, at wall tops between top of wall and ceiling, and structural floors or roof decks; and gaps between adjacent sections of structural floors.
- F. System: Specific products and applications, classified and numbered by Underwriters Laboratories, Inc., to close specific barrier penetrations.
- G. Sleeve: Metal fabrication or metal pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.

1.05 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Fire Rated Construction: Maintain barrier and structural floor fire ratings including resistance to cold smoke at all penetrations, connections with other surfaces and/or types of construction, at separations required to permit building movement and sound and/or vibration absorption, and at other construction gaps.
 - 2. Smoke Barrier Construction: Maintain barrier and structural floor resistance to cold smoke at all penetrations, connections with other surfaces and types of construction and at all separations required to permit building movement and sound and/or vibration absorption, and at other construction gaps.

1.06 SUBMITTALS

- A. Submit in accordance with General Conditions, Division 1, and Section 01 0150 - "Special Conditions," unless specifically indicated otherwise.
- B. Product Data: Manufacturer's written specifications and technical data including the following:
 - 1. Detailed specifications of construction and fabrication.
 - 2. Manufacturer's current written installation instructions.
 - 3. Summary of test data for each product intended for use and limitations. Include name and address of the required independent testing laboratory and compliances obtained.
- C. Shop Drawings: Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures, plus the following specific requirements.
 - 1. Details of each proposed assembly identifying intended products and applicable UL System number or UL Classified devices.
 - 2. Manufacturer or manufacturers representative shall provide qualified engineering judgments and drawings relating to non-standard applications as needed.
- D. Quality Control Submittals: Statement of qualifications.
- E. Applicators' Qualifications Statement: List past projects indicating required experience.

1.07 QUALITY ASSURANCE

- A. Specialty Contractor's Qualifications: Firm experience in installation or application of systems similar in complexity to those required for this project, plus the following:
 - 1. Acceptable to or licensed by manufacturer, and to State, Local, and/or other authority having jurisdiction, where applicable.
 - 2. At least 2-years experience with systems intended for use.
 - 3. Successfully completed at least five projects of similar size, scope, and complexity using the systems intended for use.
- B. Local and State Regulatory Requirements: Submit forms or acceptance for proposed assemblies not conforming to specific UL Firestop System Numbers or UL classified devices and/or systems. Engineering judgment documents must follow requirements set forth by the International Firestop Council.
- C. Materials shall have been tested to provide fire rating at least equal to that of the construction.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping:
 - 1. Deliver products in original unopened packaging with legible manufacturer's identification.
 - 2. Coordinate delivery with scheduled installation date, so as to allow minimum storage at site.
- B. Storage and Protection: Store materials in a clean, dry, ventilated interior location. Store materials off of floor, and protect from soiling, abuse, moisture, and freezing. Follow manufacturer's written instructions when more stringent.
- C. Remove damaged and/or contaminated materials immediately, legally dispose of off site, and Replace, at Contractor's expense.

1.09 PROJECT CONDITIONS

- A. Existing Conditions:
 - 1. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding with work.
 - 2. Proceed with installation only after penetrations of the substrate and supporting brackets have been installed.
- B. Environmental Requirements:
 - 1. Furnish adequate ventilation if using solvents.
 - 2. Furnish forced air ventilation during installation if required by manufacturer and/or authorities having jurisdiction.
 - 3. Keep Flammable materials away from sparks or flame.
 - 4. Provide masking or drop cloths to prevent contamination of adjacent surfaces by firestopping materials.
 - 5. Comply with manufacturer's written recommendations for temperature and humidity conditions before, during, and after installation of firestopping.

1.10 GUARANTEE

- A. Submit copies of written guarantee agreeing to repair or replace joint sealers which fail in joint adhesion, co-adhesion, abrasive resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, and/or general durability, and/or which appear to deteriorate in any other manner not clearly specified by submitted manufacturer's data as an inherent quality or characteristic of the material for the exposure indicated. The guarantee period shall be for 1-year from the date of "Substantial Completion."

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS AND PRODUCTS

- A. Use only those listed in the UL Fire Resistance Directory for the UL System involved.
- B. Products shall be as manufactured by one of the following , or pre-approved equivalent:
 - 1. Dow Corning.
 - 2. HILTI.
 - 3. 3M Fire Protection Products.
 - 4. Nelson Firestop Products.
 - 5. Rector Seal Corp.; "Bio Fireshield", "Biostop", "Biotherm", "Metacaulk", "Track-Safe", [Basis of Design]: www.rectorseal.com.
 - 6. Specified Technologies, Inc.
 - 7. Tremco, Div. of RPM Corporation.
- C. All firestopping products must be from a single manufacturer.
- D. All trades shall use products from the same manufacturer.

2.02 THROUGH-PENETRATION FIRESTOPPING OF FIRE-RATED CONSTRUCTION

- A. Systems or devices listed in the UL Fire Resistance Directory under categories XHCR (XHJI) and XHEZ may be used, providing that they conform to the construction type, penetrant type, annular space requirements, and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos-free.
 - 1. Additional requirements: Withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the UL system or device, and designated to perform this function.

2.03 CONSTRUCTION-GAP FIRE STOPPING OF FIRE-RATED CONSTRUCTION

- A. Firestopping at construction gaps between edges of floor slabs and exterior wall construction.
- B. Firestopping at construction gaps between tops of partitions and under side of structural systems.
- C. Firestopping at construction gaps between tops of partitions and underside of fire-rated ceiling or ceiling assembly.
- D. Firestopping of control joints in fire rated masonry partitions.
- E. Firestopping expansion joints.
- F. Acceptable manufacturers and products: Use only those listed in the UL Fire Resistant Directory for the UL System involved.

2.04 SMOKE STOPPING AT SMOKE PARTITIONS

- A. Through-penetration smoke-stopping: Any system complying with the requirements for through-penetration firestopping in fire-rated construction, as specified in the "Referenced Standards" is acceptable, provided that the system includes the specified smoke seal or will provide a smoke seal. The length of time of the fire resistance may be disregarded, as applicable.
- B. Construction-gap smoke-stopping: Any system complying with the requirement for construction-gap firestopping in fire-rated construction, as specified in the "Referenced Standards" is acceptable, provided that the system includes the specified smoke seal or will provide the smoke seal. The length of time of the fire resistance may be disregarded, as applicable.

2.05 ACCESSORIES

- A. Fill, void, and cavity materials: As classified under category XHHW in the UL Fire Resistance Directory.

- B. Forming materials: As classified under category XHKU in the UL Fire Resistance Directory.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion. Notify the General Contractor of such conditions.
1. Verify barrier penetrations are properly sized and in suitable conditions for application of materials.
 2. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 PREPARATION AND CLEANING

- A. Clean surfaces to be in contact with penetration seal materials, of dirt, grease, oil, loose materials, rust or other substances, that may effect proper fitting, adhesion, or the required fire resistance.

3.03 INSTALLATION

- A. Install penetration seal materials in accordance with printed instructions of the UL Fire Resistance Directory and in accordance with manufacturer's written instructions and recommendations.
- B. Seal holes or voids made by penetrations to ensure an effective smoke barrier.
- C. Where floor openings without penetrating items are more than 4-inches in width and subject to traffic or loading, install firestopping materials capable of supporting same loading as required for floor system.
- D. Protect materials from damage on surfaces subject to traffic.
- E. Place firestopping in annular space around fire dampers before installation of damper's anchoring flanges, which are to be installed in accordance with fire damper manufacturer's written recommendations, unless specifically indicated otherwise.
- F. Where large openings are created in walls, or floors to permit installation of pipes, ducts, cable tray, bus duct, or other items, close unused portions of opening with firestopping material tested for the application.
- G. Install smoke firestopping as specified for firestopping.
- H. Where rated walls are constructed with horizontally continuous air space, double width masonry, or double stud frame construction, provide vertical, 12-inch wide fiber dams for full thickness and height of air cavity at maximum intervals of 15'-0" on center.

3.04 FIELD QUALITY CONTROL

- A. Examine penetration sealed areas to ensure proper installation before concealing or enclosing areas.
- B. Keep areas of work accessible until inspection by the Architect, building inspector, fire inspector, and/or other authority having jurisdiction.
- C. Perform under this Section patching and repairing of firestopping caused by cutting or penetration by other trades, and/or by any other cause.

3.05 ADJUSTING AND CLEANING

- A. Immediately clean-up spills of liquid components.
- B. Neatly cut and trim materials as required.
- C. Remove equipment, materials and debris, leaving area in undamaged and clean condition.
- D. Legally dispose of excess materials, trash, debris, etc., off of site.

END OF SECTION

**SECTION 07 9005
JOINT SEALERS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.
- B. Precompressed foam sealers.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 07 1400 - Fluid-Applied Air Barrier: Sealants required in conjunction with substrates for fluid-applied waterproofing.
- C. Section 07 8400 - Firestopping: Firestopping sealants.
- D. Section 08 8000 - Glazing: Glazing sealants and accessories.

1.03 REFERENCE STANDARDS

- A. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2022.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- D. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Samples: Submit two samples, 6 by 6 inch (____x____ mm) in size illustrating sealant colors for selection.
- D. Submit results of field sealant adhesion testing to Architect prior to start of work.
- E. Manufacturer's Installation Instructions: Indicate special procedures.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.
- C. Verify sealant system is compatible with substrate before installation.
- D. Mock-Up: Include Joint Sealers in mock-up as described in Section 01 4000 - Quality Requirements.

1.07 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 - PRODUCTS

2.01 SEALANT PRODUCTS/MANUFACTURERS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. Use silicone sealants at all exterior joints.
- C. Verify sealant system is compatible with substrate.
- D. Verify sealant system is compatible with fluid-applied waterproofing system.
- E. Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water-repellent;
 - 1. Color: Black.
 - 2. Size as required to provide weathertight seal when installed.
 - 3. Provide product recommended by manufacturer for traffic-bearing use.
 - 4. Applications: Use for:
 - a. Exterior wall expansion joints.
 - 5. Products:
 - a. EMSEAL Joint Systems, Ltd: www.emseal.com.
 - b. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
 - c. Dayton Superior Corporation: www.daytonsuperior.com.
 - d. Tremco Global Sealants; "Illmod 600": www.tremcosealants.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- F. Type 1 - Silicone Sealant: Ultra low-modulus, high-performance, one-part, moisture-curing silicone joint sealant. ASTM C920, Type S, Grade NS, Class 100/50, Uses NT, A, G, M, O; single component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Applications: Use for: Masonry-to-masonry, or masonry-to-stone joints.
 - 3. Products:
 - a. Dow Corning Corporation; Product 790: www.dowcorning.com.
 - b. Pecora Corporation; 890NST Ultra Low Modulus Architectural Silicone Sealant - Class 100: www.pecora.com.
 - c. Tremco Global Sealants; Product Spectrem 1: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- G. Type 2 - Silicone Sealant: Medium modulus, one-part, high-performance, neutral-cure silicone sealant. ASTM C920, Type S, Grade NS, Class 50, Uses NT, A, G, M, O; single component.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Applications: Use for: Metal-to-metal, or Window/louvers-to-masonry joints.
 - 3. Products:
 - a. Dow Corning Corporation; Product 795: www.dowcorning.com.
 - b. Pecora Corporation; 895NST Medium Modulus Structural Glazing & Weatherproofing Silicone Sealant - Class 50: www.pecora.com.
 - c. Tremco Global Sealants; Product Spectrem 2: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- H. Type 3 - Polyurethane Sealant: ASTM C920, Type M, Grade NS, Class 50, Uses NT, I, (Class 2), M, A ; multi component, chemical curing, capable of continuous water immersion, non-sagging type.
 - 1. Color: To be selected by Architect from manufacturer's standard range.

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2. Applications: Use for: Concrete block-to-concrete block, or concrete block-to-poured in place concrete in cavity wall construction. Joints and penetrations in vertical and horizontal surfaces of concrete, and between metal and concrete, mortar or stone; overhead or ceiling joints; perimeters of metal frames; vertical expansion and control joints in masonry and concrete; and at all miscellaneous locations requiring a joint sealant.
 3. Sealant used behind fluid-applied waterproofing shall be compatible with fluid-applied waterproofing system.
 4. Products:
 - a. Sika Corporation; Product Sika Flex 2C: usa.sika.com.
 - b. Sonneborn by BASF; Product Sonolastic NP-2: www.buildingsystems.basf.com.
 - c. Tremco; Dymeric 240FC: www.tremcosealants.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- I. Two-Part Pourable Urethane Sealant (Horizontal): 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. "Vulkem 45SSL"; Tremco, Inc.
 - b. "Pourthane"; W. R. Meadows, Inc.
 - c. "NR-200 Urexpan"; Pecora Corp.
 - d. "Sonolastic Paving Joint Sealant"; BASF Building Products Div.,
 - e. "THC-900/901"; Tremco, Inc.
 - f. Substitutions: See Section 01 6000 - Product Requirements.
 2. Locations for Use: Exterior and interior expansion, control and construction joints in horizontal surfaces; and joints subject to pedestrian and light vehicular traffic.
 3. Equivalent 1-part sealants will be acceptable for joints in exterior concrete paving only by one of the above named manufacturers.
- J. Acoustic Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
1. Applications: Use for concealed locations only:
 - a. Sealant bead between top stud runner and structure, and between bottom stud track and floor.
- K. Acrylic Sealants (ASTM C920):
1. Tremco Global Sealants: www.tremcosealants.com.
 2. Red Devil; Siliconized Acrylic Construction Grade (35 Year) Sealant: www.reddevil.com.
 3. Sherwin-Williams Company; Shermax Urethanized Elastomeric Sealant: www.sherwin-williams.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.
- L. Butyl Sealants:
1. Bostik Inc: www.bostik-us.com.
 2. Pecora Corporation: www.pecora.com.
 3. Sherwin-Williams Company; Storm Blaster All Season Sealant: www.sherwin-williams.com.
 4. Tremco Global Sealants: www.tremcosealants.com.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- M. Acrylic-Emulsion Latex Joint 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 + 7.5%.
1. Products: Subject to compliance with requirements, provide with one of the following:
 - a. "Chem-Calk 600"; Bostik Construction Products Div.
 - b. "AC-20"; Pecora Corp.

- c. "Sonolac"; Sonneborn Building Products Div; Rexnord Chemical Prod., Inc.
 - d. "Tremflex 834"; Tremco Inc.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
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.

2.02 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- C. Joint Backing For Exterior Silicone Sealants: Jacketed, bi-cellular polyolefin "soft-rod" backer rods, as manufactured by ITP, Nomaco, or approved equal.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

2.03 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.
- D. Expansion Joint Filler: Multi-purpose, Expansion-Contraction Joint Filler for slab joints. Thickness: 1/2 inch, unless indicated otherwise. Equal to W.R.Meadows Fibre Expansion Joint.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.
- E. Exposed Concrete Floor Joints: Test joint filler in inconspicuous area of floor slab. Verify specified product does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.
- H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch (3 to 6 mm) below adjoining surface.
- I. Concrete Floor Joint Filler: Install concrete floor joint filler per manufacturer's written instructions. After floor joint filler is fully cured, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. Perform field sealant testing for all exterior sealants that affect watertightness.
 - 1. Test each material scheduled as a substrate for silicone sealants to verify substrate priming and preparation requirements.
 - 2. Field sealant adhesion testing shall be performed by authorized representative of selected sealant manufacturer.
 - 3. Submit results of field sealant adhesion testing to Architect prior to start of work.
 - 4. Coordinate results of testing so that substrate preparation and priming requirements are known at time when needed by sealant applicator before sealant installation.

3.05 CLEANING

- A. Clean adjacent soiled surfaces.

3.06 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

**SECTION 08 1211
HOLLOW METAL FRAMES**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated steel frames.
- B. Steel frames for wood doors.
- C. Fire-rated steel frames.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 08 1416 - Flush Wood Doors.
- C. Section 09 9000 - Painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2013.
- F. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014. (ANSI/BHMA A156.115)
- G. ICC A117.1 - Accessible and Usable Buildings and Facilities; International Code Council; 2009 (ANSI).
- H. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute; 2000 (ANSI/DHI A115 Series).
- I. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2007.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any. Show anchorage and accessory items.
- D. Provide schedule of frames using same reference numbers for details and openings as those on contract drawings.
- E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- F. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Provide frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.
- C. Provide steel frames from a single manufacturer.
- D. Fire-Rated Door 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.
 - 3. Provide units listed and labeled by UL.
 - 4. Attach fire rating label to each fire-rated unit.
 - 5. Fire rating label must be accessible, permanent (embossed on metal label), and be kept legible at all times.
 - 6. Labels on frames with transoms or sidelights must identify that the opening assembly includes same.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in accordance with NAAMM HMMA 840.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.
- C. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage.
- D. 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.
- E. Store 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 frame becomes wet, remove carton immediately. Provide 1/4-inch spaces between stacked frames to promote air circulation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Steel Frames, (General):
 - 1. De La Fontaine Inc: www.delafontaine.com.
 - 2. Ceco Door: www.cecodoor.com.
 - 3. Curries, Mason City, Iowa: www.curries.com.
 - 4. Mesker Industries, Inc.
 - 5. Republic Builders Products Corp./Subs. Republic Steel.
 - 6. Steelcraft, an Allegion brand: www.allegion.com/us.
- B. Substitutions: Section 01600 - Product Requirements.

2.02 FRAMES - GENERAL

- A. Requirements for All Frames:
 - 1. Accessibility: Comply with ICC A117.1 and ADA Standards.

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2. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
 3. Galvanizing for Units in Wet Areas: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness
 4. Finish: Factory primed, for field finishing.
- B. Materials:
1. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
 2. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM SA 568.
 3. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, with ASTM A 525, G60 zinc coating, mill phosphatized.
 4. Supports and Anchors: Fabricate of galvanized sheet steel of gage not less than that of door frame.
 5. 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.
- C. Fabrication:
1. Fabricate steel 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.
 2. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).
 3. Fabricate exterior panels and frames from galvanized sheet steel.
 - a. Use galvanizing repair paint for surfaces damaged by fabrication or welding.
 4. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.
 5. Finish Hardware Preparation:
 - a. Prepare 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.
 - b. Reinforce frames to receive surface applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.
 - c. 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.
 6. Shop Painting:
 - a. Clean, treat and paint exposed surfaces of steel frame units, including galvanized surfaces.
 - b. Clean steel surfaces of mill scale, rust, oil, grease, dirt and other foreign materials before application of paint.
 - c. Use galvanizing repair paint for surfaces damaged by fabrication or welding, prior to prime coat.
 - d. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.
 - e. Do not paint fire labels on doors or frames.
- D. Combined Requirements: If a particular frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an

exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL FRAMES

A. General:

1. Comply with the requirements of grade specified for corresponding door, except:
 - 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 for interior door frames; 14-gauge cold-rolled furniture steel for exterior door frames.
 - 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.
2. Finish: Factory primed, for field finishing.
3. 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.
4. 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.
5. Reinforcements of adequate gauge shall be provided for strikes, closers and brackets and other surface applied hardware for field drilling and tapping.
6. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
7. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high (100 mm high) to fill opening without cutting masonry units.
8. Frames Wider than 48 Inches (1219 mm): Reinforce with steel channel fitted tightly into frame head, flush with top.
9. Frames Installed Back-to-Back: Reinforce with steel channels anchored to floor and overhead structure.

B. Exterior Door Frames: Fully welded.

1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
2. Weatherstripping: Integral, recessed into door edge or frame.

C. Interior Door Frames, Non-Fire-Rated: Fully welded type.

D. Interior Door Frames, Fire-Rated: Fully welded type.

1. Fire Rating: Same as door, labeled.

2.04 ACCESSORY MATERIALS

- A. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.
- B. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
 1. Provide additional door silencers at doors over 3'-0" wide or 7'-0" in height.

2. Provide silencers equivalent to "GJ64" silencers as manufactured by Glenn-Johnson Corp., for metal frames, when not provided under the work of Section 08 7100 - "Finish Hardware."

C. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

2.05 FINISH MATERIALS

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating. This coating shall be factory installed on all interior of all hollow metal frames. Field application is not acceptable.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. General: Install standard steel frames and accessories in accordance with final shop drawings and manufacturer's data, and as herein specified.
- B. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Placing Frames:
 1. Comply with provisions of SDI-1-06 "Recommended Erection Instructions for Steel Frames," unless otherwise indicated.
 2. Remove before installation all spreader bars and braces used for shipping.
 3. 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 leaving surfaces smooth and undamaged.
 4. 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.
 5. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.
 6. 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 paragraphs above.
 7. Install fire-rated frames in accordance with NFPA Std. No. 80
- F. Install silencers after all painting of doors and frames has been completed
- G. Coordinate installation of hardware.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: As indicated in ANSI/SDI A250.8 (SDI-100).

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- B. Maximum Diagonal Distortion: 1/16 in (1.5 mm) measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.
- B. 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.
- C. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.
- D. Repair all dents, bends, and prying prior to painting.

3.06 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

**SECTION 08 1416
FLUSH WOOD DOORS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Flush wood doors; flush configuration; fire rated and non-rated.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 08 1113 - Hollow Metal Doors and Frames.
- C. Section 08 7100 - Finish Hardware.
- D. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2005, 8th Ed., Version 2.0.
- C. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria, identify cutouts for glazing.
- D. Samples: Submit two samples of stain colors, 6 x 6 inches minimum - on actual veneer chosen, for Architect to use to select stain color.
- E. Verification Samples: Submit two samples of door veneer, minimum 24 x 24 inches in size illustrating wood grain, stain color, and sheen.
- F. Manufacturer's Installation Instructions: Indicate special installation instructions.
- G. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Haley Brothers: www.haleybros.com/#sle.
 - 2. Forte Opening Solutions; Aspiro Select Wood Veneer Doors: www.forteopenings.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS

- A. Doors: See drawings for locations and additional requirements.
 - 1. Quality Level: Premium Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS).
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Wood veneer facing with factory transparent finish.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), 5-ply, and faces as indicated.
- B. Fire Rated Doors if shown: Mineral core, Type FD, plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware. Coordinate with submitted hardware package.

2.04 DOOR FACINGS

- A. Wood Veneer Facing for Transparent Finish: Plain sliced Select White birch, veneer grade as specified above for Door Quality Level, book veneer match, center balance assembly match; unless otherwise indicated.
 - 1. Vertical Edges: Any option allowed by quality standard for grade.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified.
 - 1. Transparent Finish: Transparent catalyzed polyurethane, Premium quality, minimal sheen.
 - 2. Stain color shall be selected by Architect from manufacturer's full range.

2.07 ACCESSORIES

- A. Glazing: See Section 08 8000.
- B. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

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- C. Door Hardware: See Section 08 7100.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.
- F. Install door louvers plumb and level.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE

- A. Refer to Door Schedule on drawings.

END OF SECTION

SECTION 08 4313
ALUMINUM-FRAMED STOREFRONTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Aluminum-framed storefront, with vision glass.
- B. Interior storefront.
- C. Infill panels of metal and glass.
- D. Aluminum doors and frames.
- E. Weatherstripping.
- F. Perimeter sealant.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 05 5000 - Metal Fabrications: Steel attachment devices.
- C. Section 07 8400 - Firestopping: Firestop at system junction with structure.
- D. Section 07 9005 - Joint Sealers: Perimeter sealant and back-up materials.
- E. Section 08 7100 - Door Hardware: All door hardware, except weatherstripping.
- F. Section 08 8000 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems; 2015.
- C. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- F. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- G. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details.

- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- F. Samples: Submit two samples 12 by 12 inches (____x____ mm) in size illustrating finished aluminum surface, glass, infill panels, glazing materials.
- G. Submit all storefront materials and accessory products to glazing manufacturer to verify materials compatibility with glazing.
- H. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 MOCK-UP

- A. Include Aluminum-Framed Storefront in Mock-Up as described in Section 01 4000 - Quality Requirements.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.09 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C). Maintain this minimum temperature during and 48 hours after installation.

1.10 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- D. Warranty shall include language relating to watertightness and air tightness.
- E. Provide twenty year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

2.02 MANUFACTURERS

- A. Manufacturers:
 - 1. Coral Architectural Products, a division of Coral Industries, Inc: www.coralap.com.
 - 2. Kawneer North America [Basis of Design]: www.kawneer.com.
 - 3. Manko Window Systems, Inc.: www.mankowindows.com.
 - 4. Oldcastle BuildingEnvelope: www.oldcastlebe.com.

5. Trulite Glass & Aluminum Solutions, LLC: www.trulite.com.
6. Tubelite, Inc.: www.tubeliteinc.com.
7. Vitro Architectural Products: www.vitroamerica.com.
8. YKK AP America, Inc. : www.ykkap.com.

2.03 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 1. Include structural reinforcing in mullions as required.
 2. Include solid back frame closure at end of storefront runs, sides and top of storefront.
 3. Glazing Rabbet: For 1 inch (25 mm) insulating glazing for exterior applications. As indicated for interior applications.
 4. Glazing Position:
 - a. Exterior: Outside glazed, center plane, unless indicated otherwise.
 - b. Interior: Outside glazed, center plane, unless indicated otherwise.
 5. Provide miscellaneous framing as indicated on drawings.
 6. Water Leakage Test Pressure Differential: 12 lbf/sq ft (575 Pa).
 7. Air Infiltration Test Pressure Differential: 6.24 psf (300 Pa).
 8. Finish: Superior performing organic coatings.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
 - c. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 9. Finish Color: As selected by Architect from manufacturer's full range of colors (minimum 150 RAL colors).
 10. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 11. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 12. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 13. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F (95 degrees C) over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
 14. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 15. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.

2.04 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
 1. Framing members for interior applications need not be thermally broken.
 2. Glazing Stops: Flush.
 3. Cross-Section: 2 x 4-1/2 inch (____x____ mm) nominal dimension, unless noted otherwise.
- B. Swing Doors: Glazed aluminum.
 1. Thickness: 1-3/4 inches (43 mm).

2. Top Rail: 5 inches (____ mm) wide, nominal.
 3. Middle Rail: 5 inches wide, nominal.
 4. Vertical Stiles: 5 inches (____ mm) wide, minimum.
 5. Bottom Rail: 10 inches (____ mm) wide, minimum.
 6. Glazing: Double glazed.
 7. Finish: Same as storefront.
- C. Provide filler panel to close back of frame.
- D. Sub-Sill: At all sill locations (whether or not indicated on the Drawings) provide matching extruded aluminum sub-sill with end dams.
- E. Muntins:
1. Between-the-Glass:
 - a. Material: Extruded aluminum profile, 6063-T6 alloy.
 - b. Size: 11/16 inch.
 - c. Pattern: As shown on drawings.
 - d. Color: Match interior and exterior storefront window finish.
 2. Application: Muntin bars shall be provided and adhered to the glass by the window manufacturer and covered under the warranty against delamination. Muntins from third party sources or muntins adhered to the glass in the field are not acceptable.

2.05 PERFORMANCE REQUIREMENTS

- A. Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E 330, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
1. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
- B. Movement: Accommodate movement between storefront and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
- C. Air Infiltration: Limit air infiltration through assembly to 0.06 cu ft/min/sq ft (0.3 L/s/sq m) of wall area, measured at specified differential pressure across assembly in accordance with ASTM E 283.
- D. Water Leakage: None, when measured in accordance with ASTM E 331 at specified pressure differential.
- E. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- F. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F (95 degrees C) over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.

2.06 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Stainless steel.
- C. Perimeter Sealant: Type specified in Section 07 9005.
- D. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- E. Glazing Accessories: See Section 08 8000.

2.07 FINISHES

- A. Superior Performing Organic Coatings: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride (PVDF) system.
 - 1. Polyvinylidene fluoride (PVDF) multi-coat thermoplastic fluoropolymer coating system, including minimum 70 percent PVDF color topcoat and minimum total dry film thickness of 0.9 mil (0.023 mm); color and gloss as selected from manufacturer's full range of colors.
- B. Color:
 - 1. Exterior: To be selected by Architect from manufacturer's full range.
 - 2. Interior: To be selected by Architect from manufacturer's full range.

2.08 HARDWARE

- A. For each door, include weatherstripping.
- B. Balance of Door Hardware: As specified in Section 08 7100.
- C. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.

2.09 FABRICATION

- A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
- E. Arrange fasteners and attachments to conceal from view.
- F. Reinforce components internally for door hardware.
- G. Increase gauge or reinforce framing members as required for imposed loads and span conditions.
- H. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies.
 - 1. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.
- I. Fit and seal primary frame joints prior to installing filler panel.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- I. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- J. Install hardware using templates provided.
- K. Install glass and infill panels using glazing method required to achieve performance criteria; see Section 08 8000.
- L. Install perimeter sealant in accordance with Section 07 9005.
- M. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet (1.5 mm per m) non-cumulative or 0.06 inch per 10 feet (1.5 mm per 3 m), whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch (0.8 mm).

3.04 FIELD QUALITY CONTROL

- A. Water-Spray Test: Provide water spray quality test of installed storefront components in accordance with AAMA 501.2 during construction process and before installation of interior finishes.
 - 1. Perform a minimum of two tests in each designated area as indicated on drawings.
 - 2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
 - 3. Extent: 10% of installed storefront units. If a storefront unit fails water testing, then the unit shall be repaired and re-tested at contractor's expense. For every storefront unit that fails AAMA 501.2 testing, an additional unit shall be added to testing schedule.
- B. Test installed storefront additionally in accordance with ASTM E1105-00 Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference. Testing shall include elements of storefront system, and air and watertight transitions between storefront and water/air barrier coating behind adjacent veneer/claddings.
 - 1. Perform this testing after installation of water/air barrier coating on sheathing behind veneer/claddings, but before veneer/claddings are installed.
 - 2. Static pressure differential testing shall be performed at not less than 2/3 of the pressure differential scheduled for ASTM E331 testing.

3.05 ADJUSTING

- A. Adjust operating hardware and sash for smooth operation.

3.06 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Remove excess sealant by method acceptable to sealant manufacturer.

3.07 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

**SECTION 08 8000
GLAZING**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. .
- B. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 08 1113 - Steel Doors and Frames : Glazed doors and borrowed lites.
- C. Section 08 1416 - Flush Wood Doors: Glazed doors.
- D. Section : Glazing furnished by storefront manufacturer.
- E. Section 10 2800 - Toilet, Bath, and Laundry Accessories: Framed Mirrors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- F. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2019.
- G. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- H. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.
- I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.
- J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- K. GANA (GM) - GANA Glazing Manual; 2022.
- L. GANA (SM) - GANA Sealant Manual; 2008.
- M. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. See Section , for submittal procedures.
- B. Product Data on Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

- D. Provide compatibility testing of IGU edge seal with glazing compounds and setting blocks, and submit results of testing.
- E. Samples: Submit two samples 12x12 inch (___ x ___ mm) in size of glass units, showing coloration and design, for selection purposes.
- F. Certificates: Certify that meet or exceed .
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section , for additional provisions.
 - 2. Extra Insulating Glass Units: of each glass size .

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with for .
- B. Labeling: Furnish each pane of fire resistance-rated glazing and each pane of safety glazing with a permanent identification which meets the requirements of the latest approved edition of the International Building Code.
- C. Glazing Standards: Comply with recommendations of Glass Association of North America (GANA) "Glazing Manual" and "Sealant Manual", and SIGMA TM-3000, "Vertical Glazing Guidelines", except where more stringent requirements are indicated. Refer to those publications for definitions of glass and glazing terms not otherwise defined in this section or other referenced standards.
- D. Safety Glazing Standard: Where safety glass is indicated or required by authorities having jurisdiction, provide type of products indicated which comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.
- E. Fire Resistance Rated Glass: Provide glass products that meet CPSC 16 CFR 1201, Category II requirements for fire-rated glass and are labeled and listed by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
- F. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers or at least one component pane of units with appropriate certification label of the inspecting and testing organization indicated below.
 - 1. Insulating Glass Certification Council (IGCC).
 - a. ASTM E 2190.
- G. Installer Qualifications: Company specializing in performing the work of this section with minimum years experience.

1.07 MOCK-UP

- A. Include Glazing in Mock-Up as described in Section 01 4000 - Quality Requirements.

1.08 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than .
- B. Maintain minimum ambient temperature before, during and hours after installation of glazing compounds.

1.09 WARRANTY

- A. See Section , for additional warranty requirements.
- B. Sealed Insulating Glass Units: Provide a year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
- C. Replacements Under Warranties: Provide same warranty as original glass and glazing, beginning from date of replacement completion for glass units replaced under Warranty provisions.

PART 2 - PRODUCTS

2.01 INSULATING GLASS UNITS

- A. Type IG-1 - Sealed Insulating Glass Units: Vision glazing, low-E.
 - 1. Application:
 - 2. Basis of Design: PPG Solarban 70XL (2) Starphire + Clear Glass.
 - 3. Outboard Lite: , thick.
 - a. Tint: As selected.
 - b. Coating: , on #2 surface.
 - 4. Inboard Lite: float glass, thick.
 - a. Tint:
 - 5. Edge Spacer: See "Sealed Insulating Glass Units" Article below.
 - 6. Edge Spacer Color: See "Sealed Insulating Glass Units" Article below.
 - 7. Total Thickness: 1 inch (25 mm), or as indicated.
 - 8. Total Visible Light Transmittance: 64 percent, nominal.
 - 9. Total Solar Heat Gain Coefficient: 0.27 percent, nominal.
 - 10. Thermal Resistance (U-Value): 0.28, nominal.
 - 11. Glazing Method:
- B. Type IG-2 - Sealed Insulating Glass Units: Safety glazing:
 - 1. Applications: Provide this type of glazing in the following locations:
 - a. Glazed lites in exterior doors.
 - b. Glazed sidelights and panels next to doors.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on the drawings.
 - 2. Type: Same as other vision glazing except use fully tempered float glass for both outboard and inboard lites.
 - 3. Edge Spacer: See "Sealed Insulating Glass Units" Article below.
 - 4. Edge Spacer Color: See "Sealed Insulating Glass Units" Article below.
- C. Type IG-3 - Sealed Insulating Glass Units: Spandrel glazing.
 - 1. Outboard Lite: float glass, thick.
 - a. Tint:
 - b. Coating: , on #2 surface.
 - 2. Inboard Lite: float glass, thick.
 - a. Tint:
 - b. Opacifier: , on .
 - c. Opacifier Color:
 - 3. Total Thickness:
 - 4. Glazing Method:
- D. Type IG-4 - Sealed Insulating Glass Units: Spandrel Safety glazing:
 - 1. Applications: Provide this type of glazing in the following locations, if spandrel glazing is indicated for these locations:
 - a. Glazed lites in exterior doors.
 - b. Glazed sidelights and panels next to doors.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on the drawings.
 - 2. Type: Same as other spandrel glazing except use fully tempered float glass for both outboard and inboard lites.
 - 3. Tint and opacifier: As scheduled for other spandrel glazing.
- E. Single Exterior Vision Glazing:
 - 1. Application:

-
2. Type: float glass.
 3. Tint: Tinted to match other exterior vision glazing.
 4. Thickness:
 5. Glazing Method:
- F. Type E-2 - Single Exterior Vision Glazing: Safety glazing.
1. Applications: Exterior glazing not indicated to be Insulating Glass Units, but required to be safety glazed.
 - a. Glazed lites in exterior doors.
 - b. Other locations required by applicable federal, state, and local codes and regulations.
 2. Type: Fully tempered float glass.
 3. Tint: Tinted to match other exterior vision glazing.
 4. Thickness: 1/4 inch (6 mm).
 5. Glazing Method: Gasket glazing.
- G. Single Vision Glazing:
1. Application:
 2. Type: float glass.
 3. Tint:
 4. Thickness:
 5. Glazing Method:
- H. Fire-Protection-Rated Glazing:
1. IBC Fire Protection Rating:
 2. Safety Certification: 16 CFR 1201 Category II.
 3. Application: Provide this type of glazing in the following locations:
 - a. Glazed lites in fire doors.
 - b. Fire windows.
 - c. Sidelights, borrow lites, and other glazed openings in partitions indicated as having an hourly fire rating.
 - d. Other locations indicated on the drawings.
 4. Fire Rating: As indicated on the drawings.
 5. Type: Glass-ceramic safety glazing.
 6. Thickness:
 7. Glazing Method: As required for fire rating.
- I. Single Safety Glazing: Non-fire-rated.
1. Application: Provide this type of glazing in the following locations:
 - a. Glazed lites in doors, except fire doors.
 - b. Glazed sidelights to doors, except in fire-rated walls and partitions.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on the drawings.
 2. Type: glass as specified.
 3. Tint:
 4. Thickness:
 5. Glazing Method:
- J. Security Glazing: Laminated glass/plastic glazing.
1. Application: Locations indicated on the drawings.
- K. Mirror Glass: Where indicated.

2.02 EXTERIOR GLAZING ASSEMBLIES

- A. Performance Criteria: Select type and thickness of glass to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of glass.

1. Design Pressure: Calculated in accordance with .
2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Glass thicknesses listed are minimum.

2.03 GLASS MATERIALS

- A. Float Glass Manufacturers:
 1. AGC Glass Company North America, Inc: www.us.agc.com.
 2. Guardian Industries Corp: www.sunguardglass.com.
 3. Pilkington North America Inc: www.pilkington.com/na.
 4. PPG Industries, Inc: www.ppgideascape.com.
 5. Substitutions:
- B. Float Glass: Provide float glass based glazing unless noted otherwise.
 1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Class 2 tinted, Quality Q3 (glazing select).
 2. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and Kind FT.
 3. Tinted Types: ASTM C1036, Class 2 - Tinted, color and performance characteristics as indicated.
 4. Thicknesses: As indicated; for exterior glazing comply with requirements indicated for wind load design regardless of thickness indicated.
- C. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
 1. Laminated Safety Glass: Comply with 16 CFR 1201 test requirements for Category II.
- D. Fire-Protection-Rated Glazing: Type, thickness, and configuration as required to achieve indicated ratings.
 1. IBC Fire Protection Rating:
 2. Provide products listed by .
 3. Labeling: Provide permanent label on each piece giving the IBC rating and other information required by the applicable code.
- E. High Impact-Resistant Tempered Safety Glazing: Complying with 16 CFR 1201 test requirements for Category II.
- F. Glass-Ceramic Safety Glazing: UL- or WH-listed as fire-protection-rated glazing and complying with 16 CFR 1201 test requirements for Category II without the use of a surface-applied film.
- G. Mirror Glass : ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality Q1 (mirror select); silvering, protective coating and physical characteristics complying with ASTM C1503; 6 mm minimum thick.
 1. Sizes noted on Drawings.

2.04 SEALED INSULATING GLASS UNITS

- A. Manufacturers:
 1. Any of the manufacturers specified for float glass.
 2. Fabricator certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.
 3. Substitutions:
- B. Sealed Insulating Glass Units: Types as indicated.
 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 2. Edge Spacers: , corners.
 3. Edge Spacer Color: As selected by Architect.
 4. Edge Seal: Primary seal - Polyisobutylene. Secondary seal - Silicone.
 5. Purge interpane space with dry hermetic air.

2.05 GLAZING COMPOUNDS

- A. Manufacturers:
 - 1. Bostik Inc: www.bostik-us.com.
 - 2. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 5. Substitutions:
- B. Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; grey color.
- C. Butyl Sealant: Single component; ASTM C920, Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.
- D. Acrylic Sealant: Single component, solvent curing, non-bleeding; ASTM C920, Type S, Grade NS, Class 12-1/2, Uses M and A; with cured Shore A hardness range of 15 to 25; color as selected.
- E. Polysulfide Sealant: Two component; chemical curing, non-sagging type; ASTM C920, Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.
- F. Polyurethane Sealant: Single component, chemical curing, non-staining, non-bleeding; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.
- G. Silicone Sealant: Single component; chemical curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.06 GLAZING ACCESSORIES

- A. Setting Blocks: , Shore A durometer hardness. Length of of glazing or minimum x width of glazing rabbet space minus x height to suit glazing method and pane weight and area.
- B. Spacer Shims: , Shore A durometer hardness. Minimum long x one half the height of the glazing stop x thickness to suit application.
- C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; color as selected.
- E. Glazing Clips: Manufacturer's standard type.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.
- D. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.
- E. Install sealants in accordance with manufacturer's instructions.

3.03 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

- A. Place setting blocks at points with edge block no more than from corners.
- B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.04 INSTALLATION - EXTERIOR DRY METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Cut glazing to length; install on glazing pane. Seal corners by butting tape and sealing junctions with sealant.
- B. Place setting blocks at points with edge block no more than from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- D. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- E. Trim protruding tape edge.

3.05 INSTALLATION - EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- A. Cut glazing tape to length and set against permanent stops, below sight line. Seal corners by butting tape and dabbing with sealant.
- B. Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at points with edge block no more than from corners.
- D. Rest glazing on setting blocks and push against tape with sufficient pressure to attain full contact at perimeter of pane or glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops below sight lines.
 - 1. Place glazing tape on glazing pane of unit with tape sight line.
- F. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line. (Install removable stops, with spacer strips inserted between glazing and applied stops, ____ mm below sight line.) Place glazing tape on glazing pane or unit with tape flush with sight line.
- G. Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.
- H. Apply cap bead of sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.06 INSTALLATION - EXTERIOR BUTT GLAZED METHOD (SEALANT ONLY)

- A. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.
- B. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.
- C. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- D. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- E. Remove masking tape.

3.07 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting above sight line.
- B. Place setting blocks at points with edge block no more than from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

3.08 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting above sight line.
- B. Place setting blocks at points with edge block no more than from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at intervals, below sight line.
- E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

3.09 INSTALLATION - INTERIOR WET METHOD (COMPOUND AND COMPOUND)

- A. Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at centers, kept below sight line.
- B. Locate and secure glazing pane using .
- C. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

3.10 INSTALLATION - MIRRORS

- A. Install mirrors in accordance with GANA recommendations.
- B. Install mirrors in correctly sized openings, using setting blocks (neoprene 80 to 90 Shore A durometer hardness), spacer shims, stainless steel clips, and adhesive compatible with mirror coating and wall substrate.
- C. Set mirrors plumb and level, free of optical distortion.
- D. Set mirrors with edge clearance free of surrounding construction including countertops or backsplashes.

3.11 FIELD QUALITY CONTROL

- A. product manufacturers to provide field surveillance of the installation of their products.
- B. Monitor and report installation procedures and unacceptable conditions.

3.12 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.13 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

**SECTION 09 2116
GYPSUM BOARD ASSEMBLIES**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Metal stud wall framing.
- B. Metal channel ceiling framing.
- C. Shaft wall system.
- D. Fire rated area separation walls.
- E. Gypsum wallboard.
- F. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.
- B. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.
- C. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- D. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- E. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.
- F. Section 07 9005 - Joint Sealers: Acoustic sealant.

1.03 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- D. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- F. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).
- G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- I. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- J. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2017.
- K. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2018.
- L. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; 2018 (Reapproved 2023).
- M. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.

- N. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- O. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.
- P. GA-226 - Application of Gypsum Board to Form Curved Surfaces; 2019.
- Q. GA-238 - Guidelines for the Preventions of Mold Growth on Gypsum Wallboard; 2003.
- R. GA-253 - Recommended Specifications for the Application of Gypsum Sheathing; Gypsum Association; 1999.
- S. GA-600 - Fire Resistance and Sound Control Design Manual; 2024.
- T. GA-801 - Handling and Storage of Gypsum Panel Products: A Guide For Distributors, Retailers, and Contractors; 2007.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
- C. Test Reports: For stud framing products that do not comply with AISI S220 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.05 QUALITY ASSURANCE

- A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.
 - 1. Maintain one copy of standards at project site.
 - 2. Where indicated, provide materials and construction which are identical with those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.
- B. Single Source Responsibility: Comply with one of the following:
 - 1. Obtain all steel framing and all metal trim from a single manufacturer.
 - 2. Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.
 - 3. Provide a confirmation letter from both the gypsum board manufacturer and the joint compound manufacturer that their products are compatible and warrantable if used together.
- C. Pre-Construction Conference: Prior to beginning work associated with roof system, the Contractor and appropriate subcontractors shall meet to discuss coordination of the work of the trades associated with the installation of the roof system, suspended acoustical and gypsum board ceiling, suspended mechanical ductwork, suspended light fixtures, etc. This work shall be planned and coordinated to provide hanger attachments needed by the various trades in a manner that will minimize conflict with installation of the roof system.

1.06 MOCK-UP

- A. Include Gypsum Board Assemblies in Mock-Up as described in Section 01 4000 - Quality Requirements.

1.07 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire rated assemblies as indicated on drawings.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

- B. Store materials inside, under cover, and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.
- C. When materials are moved into the building, distribute pallets and loads evenly around work areas so as to avoid overloading structure, causing damage to any materials, interfering with work of other trades, etc.
- D. Handle gypsum boards to prevent damage to edges, ends and surfaces. Do not bend or otherwise damage metal corner beads, trim, etc.

PART 2 - PRODUCTS

2.01 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. Aegis Metal Framing, LLC.
 - 2. ClarkDietrich Building Systems: www.clarkdietrich.com.
 - 3. Marino/WARE Industries, Corp.: www.marinoware.com.
 - 4. MBA Metal Framing: www.mbastuds.com.
 - 5. SEMCO, Southeastern Metals, Div of Gibraltar Industries.
 - 6. Steel-Con; Div. of Steel Construction Systems.
 - 7. Telling Industries, LLC.
- C. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf (L/240 at 240 Pa). Install with flange edges bent back 90 deg. and doubled over to form 3/16-inch minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and minimum depth as follows:
 - 1. Metal studs at interior partitions shall have web depth of 3-5/8-inches or 6-inches at locations indicated on the drawings, and a minimum base metal thickness of 0.0296-inches, spaced at 16-inches o.c., unless indicated otherwise below or otherwise shown on drawings or required by project conditions. EQ studs allowed for spans up to 16'-0" vertically when 3rd party test data (e.g. ICC-ES report) is provided.
 - 2. Jamb studs shall be no less than 20 gauge.
 - a. Studs shall be joined together at 4'-0" intervals.
 - 3. Use double studs or 6-inch studs, as indicated or as otherwise required, for chase walls, piping, conduits, or etc.
 - 4. Special stud tracks for curved walls shall be equivalent to "Flex-C Trac" galvanized flexible segmented track with slidable side straps, as manufactured by Flex-Ability Concepts, Inc.; Oklahoma City, OK.
 - 5. Runners: U shaped, sized to match studs.
 - 6. Ceiling Channels: C-shaped.
 - 7. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).
 - 8. Resilient Furring Channels: 1/2 inch (12 mm) depth, 25 gauge minimum, for attachment to substrate through one leg only.
- D. Exterior Non-Loadbearing Studs and Furring for Application of Gypsum Board: As specified in Section 05 4000.
- E. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05 4000.
 - 1. Studs: C-shaped with knurled or embossed faces.

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2. Any interior load-bearing studs shall be at least 6-inches depth x 18 gauge, or 8-inches x 18 gauge, unless otherwise indicated on Drawings - galvanized C-studs spaced at 16-inches o.c.
- F. Shaft Wall Studs and Accessories: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
1. Metal shaft wall studs at interior shaft walls shall be 2-1/2 inches x 25 gauge, 4 inches x 20 gauge, or 6 inches x 20 gauge at locations indicated on the Drawings, spaced in compliance with the required UL Assembly Number, unless otherwise shown on drawings or required by project conditions. C-H and C-T shaftwall studs are acceptable.
- G. Steel Framing Components for Suspended and Furred Ceilings:
1. General: Provide components which comply with ASTM C 754 for materials and sizes, unless otherwise indicated.
 2. Wires for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.
 3. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
 4. Steel Studs for Furring Channels: ASTM C 645, with flange edges bent back 90 deg. and doubled over to form 3/16-inch minimum lip (return), minimum thickness of base (uncoated) metal and minimum depth as follows:
 - a. Thickness: 20 gauge, unless otherwise indicated.
 - b. Depth: As indicated.
 - c. Spacing: As indicated in referenced standard and on drawings, but no less than at all edges and 24-inches o.c.
 5. Steel Rigid Furring Channels: ASTM C645, hat-shaped, depth of 7/8-inch, and minimum thickness of base (uncoated) metal as follows:
 - a. Thickness: 20 gauge at interior and 18 gauge at exterior, unless otherwise indicated.
 - b. Spacing: As indicated in referenced standard and on drawings, but not less than at all edges and 16-inches o.c.
 - 1) At ceilings and soffits indicated to receive more than a single layer of gypsum board, spacing shall be not less than at all edges and 16-inches o.c.
 6. Grid Suspension System: ASTM C 645, manufacturer's standard grid suspension system composed of main beams and cross furring members which interlock to form a modular supporting network.
 - a. Locations for Use: Provide grid type suspension systems for sloped and horizontal ceiling applications of interior gypsum board products which are not attached directly to primary framing system; Minimum 4-feet x 4-feet grid and cross tees at 2-feet o.c., with minimum installation requirements as required by manufacturer's current written instructions, referenced standards, and as indicated in this Section and Section 09 5100 - "Suspended Acoustical Ceilings". Provide and comply with manufacturer's published requirements for accessories, trim and hanger wire, and as otherwise required to provide flat ceilings without deflection or sag.
 - b. Product/Manufacturer: Provide suspended modular grid furring system equivalent to standard drywall suspension system for flat ceilings, with 1-1/2-inch grid faces, and as follows:
 - 1) Equivalent to "Drywall Suspension System", as manufactured by USG Interiors, or one of the other above named manufacturers.
- H. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and screwed to secondary deflection channel set inside but unattached to top track.
1. Bottom Track: Unless otherwise indicated or required by project conditions, fire-ratings, etc., provide manufacturer's standard Deep Leg Tracks, unpunched unless otherwise indicated, of size, shape and gauge indicated, with 1-5/16-inch flange.

2. Deflection Track: Typical at stud walls up to slab or similar fixed structure at top of walls: Provide for no less than 1" of vertical movement, equivalent to one of the following:
 - a. Deep Leg Track System
 - b. Track-Over-Track System
 - c. Slotted Track System
3. Special stud tracks for all curved walls shall be equivalent to "Flex-C Trac" galvanized flexible segmented track with slidable side straps, as manufactured by Flex-Ability Concepts, Inc.; Oklahoma City, OK.
4. Special stud tracks for all arched walls shall be equivalent to "Flex-C Arch" galvanized flexible segmented track with slidable straps, as manufactured by Flex-Ability Concepts, Inc.; Oklahoma City, OK.
5. Provide deflection track at exterior wall and floor-to-floor walls - typical.
- I. Continuous Horizontal Bridging/bracing:
 1. 1-1/2-inch cold-rolled channels (galvanized); 0.0538-inch minimum bare metal G60.
 2. Spacing: 4'-0" or 4'-6" o.c. vertically, through pre-punched slots in studs.
 3. Splice Plates: 16 gauge at all splices.
 4. Anchors (bridging channels to studs): 1-1/2-inches x 2-inches x 16 gauge clip angle, 1/4-inch less than stud width, secured with four (4) 5/8-inch S-14 screws. (Anchors required at ends of runs, where snap-in fit to stud slots is not snug or allows stud to move/slide on channels, and at studs on each side of splices in bridging channels).
- J. Strap Bracing/Blocking: 16 gauge steel flat strapping/blocking, minimum 6" width. Provide with manufacturer's recommended attachment.

2.02 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 1. CertainTeed Corporation: www.certainteed.com/#sle.
 2. Georgia-Pacific Corp.
 3. Gold Bond Building Products Div., National Gypsum Company.
 4. Lafarge Gypsum.
 5. United States Gypsum Company.
- B. Impact Resistant Wallboard:
 1. Application: High-traffic areas indicated.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 3. Paper-Faced Type: Gypsum wallboard, as defined in ASTM C1396/C1396M.
 4. Type: Fire-resistance-rated Type X, UL or WH listed.
 5. Thickness: 5/8 inch (16 mm).
 6. Edges: Tapered.
 7. Products:
 - a. National Gypsum Company; Gold Bond Hi-Impact Brand XP Wallboard.
 - b. Sheetrock brand Mold Tough VH1 Firecode gypsum panels.
 - c. Temple-Inland Building Product by Georgia-Pacific, LLC; ComfortGuard IR Impact Resistant.
- C. Gypsum Wallboard: Paper-faced as defined in ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut, and as follows:
 1. Application: Use for vertical surfaces and horizontal surfaces, unless otherwise indicated.
 2. Fire Resistant Type: Type X board (UL or WH listed) at all locations, unless other type is required by indicated tested assembly.
 3. Thickness (unless indicated otherwise):
 - a. Vertical Surfaces: 5/8 inch (16 mm).
 - b. Ceilings: 1/2 inch (13 mm).

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4. Edges: Tapered.
- D. Moisture and Mold-Resistant Paper-Faced Products:
1. Core Type: Type X.
 2. Thickness: 5/8 inch (16 mm).
 3. Edges: Tapered.
 4. Application: At rooms with toilet fixtures and/or service sinks, entire wall behind sinks, and elsewhere as indicated or wherever water-resistant gypsum board is indicated.
 5. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
 6. Product:
 - a. Georgia Pacific ToughRock Mold-Guard.
 - b. USG Sheetrock brand "Mold Tough" gypsum panels.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- E. Backing Board For Tile:
1. Fiber-Reinforced Gypsum Panels: As defined in ASTM C1278, mold-resistant, and with water-resistant core. No paper face.
 2. Thickness: 5/8 inch.
 3. Product:
 - a. Georgia Pacific "DensShield Tile Backer".
 - b. USG Fiberock brand "Aqua-Tough" Tile backerboard.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 4. Application: Wall surfaces behind tile.
- F. Gypsum Exterior Sheathing Board: Glass Mat gypsum sheathing board consisting of noncombustible gypsum core incorporating a water-resistant material, surfaced on face, back and long edges with glass mats; complying with ASTM C 1177 and requirements indicated below:
1. Type: Type X at all locations. (Noncombustible.)
 2. Edge and End Configuration: Square.
 3. Thickness: 5/8-inch, unless indicated otherwise.
 4. Size: 4'-0" x 8'-0" or 9'-0" as required for coordination with framing.
 5. Products:
 - a. Georgia Pacific "DensGlass Sheathing".
 - b. CertainTeed Gypsum "GlasRoc Sheathing".
 - c. Continental Building Products: www.continental-bp.com "Weather Defense Platinum Type X".
 - d. Gold Bond "eXP Extended Exposure Sheathing".
 - e. USG "Securock Exterior Sheathing".
 6. Joints: Sealed and facing-taped joints. Polyurethane joint sealant reinforced with fiberglass mesh tape encapsulated in the sealant. Sheathing fastener heads shall be encapsulated with polyurethane sealant. Fiberglass reinforcement is not needed at sheathing fastener heads. NO acrylic latex sealant shall be used.
 7. Extent: For Exterior sheathing, where plywood or other wood sheathing is not indicated.

2.03 GYPSUM BOARD ACCESSORIES

- A. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
1. Types: As detailed or required for finished appearance.
 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.

- B. Extruded Moldings and Reveal Moldings: Provide manufacturer's standard alloy 6063-T5 extruded units with 70% resin 2-coat "Kynar 500" baked enamel finish, and as follows:
 - 1. Design: Provide shapes and configurations as indicated on the Drawings.
 - a. Form reveal moldings to cover at least two sides and rear of reveal.
 - b. At drywall (or plaster) edge, provide continuous expanded metal edge, designed for mudding-in.
 - c. At ceiling grid edge, provide continuous edge designed for compatibility with lay-in ceiling grid.
 - d. Wall to gypsum ceiling reveal: provide continuous reveal molding equal to Fry Reglet "Z" reveal: with 1/2" wide reveal. Paint to match ceiling.
 - 2. Color: To match ceiling grid in same room where occurs, unless indicated otherwise, and color as selected by Architect at any exterior locations.
- C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners of glass-mat faced boards, and where recommended by manufacturer. Joint material shall be compatible with and approved by air barrier manufacturer, where applicable.
 - 2. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners of paper faced boards, and where recommended by manufacturer.
- D. Level 5 Surface System Options:
 - 1. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
 - 2. Factory-Applied Skim-Coated Drywall with matching Joint Compound: Rapid Deco Level 5 System by Lafarge.
- E. Fasteners: Provide fasteners of type, material, size, corrosion resistance, holding power and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum drywall manufacturers for applications indicated.
- F. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- G. Adhesive for Attachment to Wood, ASTM C557.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.
 - 1. Environmental Requirements, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840, with gypsum board manufacturer's recommendations, and with adhesive manufacturer's recommendations, for before, during, and after installation.
 - 2. Minimum Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40°.
 - 3. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

3.02 SEQUENCING AND SCHEDULING

- A. Sequence installation of gypsum board and sheathing with installation of exterior cladding and roofing to comply with requirements indicated below:

1. Do not leave gypsum sheathing board exposed to weather after its application for more than one month or, if protected as indicated below, for more than 6 months, unless otherwise warranted by manufacturer:
 - a. Cover exterior surface of sheathing with a temporary air infiltration barrier equivalent to 6-mil polyethylene film. Apply covering immediately after sheathing is installed.
 - b. Remove covering just prior to installation of asphalt felt, face brick, and similarly applied exterior materials.

3.03 SHAFT WALL INSTALLATION

- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
 1. Fasten runners to structure with short leg to finished side, using appropriate power-driven fasteners at not more than 24 inches (600 mm) on center.
 2. Install studs at spacing required to meet performance requirements.
- B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.
 1. On walls over sixteen feet high, screw-attach studs to runners top and bottom.
 2. Seal perimeter of shaft wall and penetrations with acoustical sealant.

3.04 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C1007/AISI S220 and manufacturer's instructions.
- B. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members or as indicated.
- C. Suspended Ceilings and Soffits: Space framing and furring members at 16 inches on center (at 400 mm on center) minimum.
 1. Level ceiling system to a tolerance of 1/1200.
 2. Laterally brace entire suspension system.
 3. Suspend ceiling hangers from building structural members and as follows:
 - a. 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, counter splaying, or other equally effective means.
 - b. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapeze or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
 - c. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye screws, or other devices and fasteners 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.
 - d. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure 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.
 - e. Secure hangers to structural support by connecting directly to structure where possible; otherwise, connect to anchorage devices or fasteners as indicated or required.
 - f. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.

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- g. Do not attach hangers to steel deck tabs.
 - h. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - i. Do not connect or suspend steel framing from ducts, pipes or conduit.
 - j. Keep hangers and braces 2-inches clear of ducts, pipes and conduits.
 - k. Sway-brace suspended steel framing with hangers used for support.
 - l. Install suspended steel framing components in sizes and at spacing indicated but not less than that required by referenced steel framing installation standard
 - 1) Wire Hangers: 12 gauge, 4-feet on center. Install supplementary hangers as necessary at ceiling fixtures to provide a hanger at each corner of each fixture, diffuser, grille, and other ceiling-mounted equipment.
 - m. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross furring members to each other and butt-cut to fit into wall track.
4. Install bracing as required at exterior locations to resist wind uplift.
- D. Studs: Space studs at 16 inches on center (at 406 mm on center).
- 1. Extend partition framing to structure in all locations unless otherwise indicated.
 - 2. Installation Tolerances: Install each steel framing and furring member so that fastening surface does not vary more than 1/8-inch from plane of faces of adjacent framing.
 - 3. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 4. Extend non-bearing wall partition framing to 6 inches above adjacent ceiling heights, except where partitions are indicated to terminate at suspended ceilings.
 - a. Provide studs up to tie to structure at 4'-0" o.c. minimum, from partitions terminating below ceilings
 - 5. Install steel studs and furring in sizes and at spacings, indicated but not less than that required by referenced steel framing installation standard.
 - 6. Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flange.
 - 7. Install horizontal steel bridging/bracing in all walls, and the additional strap bracing at curved walls as steel framing progresses. Install in compliance with stud manufacturer's recommendations, at spacing indicated
 - a. Galvanized steel strap bracing shall be provided continuous at top and bottom runner tracks and at bridging locations at all curved stud walls.
 - 8. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below to comply with details shown on Drawings:
 - a. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetration of structural elements.
 - b. Where partition and wall framing abuts overhead structure:
 - 1) Unless framing is specifically indicated to terminate below ceilings, all framing and gypsum board shall extend up to bottom of structure above.
 - 9. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
 - 10. Install runners (tracks) at floors, ceilings and structural walls and columns, where gypsum drywall stud system abuts other construction.
- E. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- 1. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at

- jamb with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
- a. Extend vertical jamb studs (double studs-typical) through suspended ceilings and attach to underside of floor or roof structure above, unless otherwise indicated.
 2. Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.
 3. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32-inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.
- F. Standard Wall Furring: Install at concrete walls scheduled to receive gypsum board, not more than 4 inches (100 mm) from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches (600 mm) on center.
1. Orientation: Horizontal.
 2. Spacing: At 16 inches on center (At 400 mm on center) minimum.
- G. Furring for Fire-Resistance Ratings: Install as required for fire-resistance ratings indicated and to GA-600 requirements.
- H. Blocking: Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, wood frame openings, toilet accessories, hardware, and heavy trim, shelving, furnishings and equipment services. Attach metal blocking to studs using manufacturer's recommended method. Bolt or screw steel channels to studs. Utilize 16 gauge flat strapping/blocking minimum 6" width. For all other trades, comply with Section 06 1000 for wood blocking.

3.05 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. General application and finishing of gypsum Board:
1. Cut boards as recommended by manufacturer.
 2. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24-inches in alternate courses of board.
 3. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, and which avoids end joints in the central area of each ceiling. Stagger end joints at least 24- inches.
 4. Install wall/partitions boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible. At high walls, install boards horizontally with end joints staggered over studs.
 5. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16-inch open space between boards. Do not force into place.
 6. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
 7. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.
 8. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.
 - a. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except inside double or chase walls which are required to be braced internally.

- 1) Except where concealed application is required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area, and may be limited to not less than 75% of full coverage.
- 2) Fit gypsum board around ducts, pipes, and conduits.
- 3) Where partitions intersect open concrete coffer, concrete joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffer, joists, and other structural members; allow 1/4-to-1/2-inch-wide joints to install sealant.
- b. Fire-stop around penetrations as required by Codes and authorities having jurisdiction. Refer to Section 07 8400 for additional information and requirements
9. Where interior partitions are indicated to extend to the structure above, the drywall shall also extend to the structure with the same number of layers as required below the ceiling.
10. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4-inch to 1/2-inch space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.
11. Gypsum panels applied to walls shall be applied with the bottom edge spaced a minimum of 1/4-inch above the floor.
12. At all interior walls, seal construction at perimeters of partition, partition intersections, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim, and close off sound-flanking paths around or through construction, including sealing of partitions above acoustical ceilings.
 - a. Offset boxes and similar openings minimum of one stud space, and insulate behind openings.
 - b. Openings cut into wall for boxes shall leave maximum gap of 1/4" around box.
 - c. Seal around box completely with acoustical sealant, or gasket recommended by manufacturer for acoustic isolation.
13. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations
- C. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 1. Install gypsum wallboard as follows:
 - a. On ceilings apply gypsum board prior to wall/partition board application to the greatest extent possible.
 - b. On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated or required for fire or smoke resistive rated assemblies. Provide maximum length panels, to minimize end joints.
 - c. On partitions/walls 8'-1" or less in height apply gypsum board horizontally (perpendicular to framing); use maximum length sheets possible to minimize end joints.
 2. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:
 - a. Fasten with screws
- D. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
 1. Install gypsum backing board for base layer and gypsum wallboard for face layer.
 2. On ceilings apply base layer(s) prior to base layer application on walls/partitions; apply face layers in same sequence. Offset joints between layers at least 10-inches. Apply base layers at right angles to supports unless otherwise indicated.

3. On partitions/walls apply base layer(s) and face layers vertically (parallel to framing) with joints of base layers over supports and face layer joints offset at least one stud or furring member space from base layer joints.
4. Multi-Layer Fastening Methods:
 - a. Apply base layer(s) of gypsum board and face layer to base layer(s) as follows:
 - b. Fasten both base layer(s) and face layer separately to supports with screws
- E. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- F. Exterior Sheathing: Comply with ASTM C 1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
 1. Fasteners spaced approximately 8-inches o.c. and set back 3/8-inch minimum from edges and ends of boards.
 2. Cut boards at penetrations, edges and other obstructions of the work; fit tight against abutting work, except provide 3/8-inch setback where non-loadbearing work abuts structural elements at head and jambs.
 3. Coordinate installation of sheathing with installation of flashing and joint sealers so that these combined materials are installed in the sequence and manner which prevents exterior moisture from passing through complete exterior wall assembly to the interior.
 4. Apply fasteners so that screw heads bear tightly against face of gypsum sheathing boards but do not cut into face paper.
 5. Do not bridge building expansion joints with gypsum sheathing; cut and space edges to match spacing of structural support elements
- G. Fiber-Reinforced Gypsum Panels: Install in strict accordance with manufacturer's instructions.
- H. Glass Mat Faced Gypsum Board: Install in strict accordance with manufacturer's instructions.
- I. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.
- J. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
 1. Single-Layer Applications: Adhesive application.
 2. Double-Layer Application: Install base layer using screws. Install face layer using adhesive.
- K. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.
- L. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

- A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.
- B. Control Joints: Place control joints consistent with lines of building spaces, as indicated on drawings or as follows:
 1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.
 2. At exterior soffits, not more than 30 feet (10 meters) apart in both directions.
 3. Install control joints at spacings and locations required by referenced gypsum board application and finish standard, and approved by the Architect for visual effect.
- C. Corner Beads: Install at external corners, using longest practical lengths.
- D. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.07 JOINT TREATMENT

- A. General: Apply treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.
- B. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.
 - 1. Joint tape and joint compound shall be compatible with waterproofing subsequently applied.
- C. Fiber Reinforced Gypsum and Cement Board: Use alkali-resistant glass fiber tape, recommended by manufacturer, embedded in latex-fortified mortar or latex-based Type 1 mastic over the joint. Use same material as specified for tile setting.
- D. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
 - 5. Level 0: Temporary partitions.
- E. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).
 - 2. Taping, filling, and sanding are not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
 - 3. Taping, filling, and sanding are not required at base layer of double-layer applications.
- F. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.
- G. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
- H. Finish interior gypsum wallboard by applying the following joint compounds in 3 coats (not including prefill of openings in base), and sand between coats and after last coat:
 - 1. Embedding and First Coat: Ready-mix drying-type all-purpose or taping compound.
 - 2. Fill (Second) Coat: Ready-mix drying-type all-purpose or topping compound.
 - 3. Finish (Third) Coat: Ready-mix drying-type all-purpose or topping compound.
- I. Water-Resistant Gypsum Board and Exterior Gypsum Board: Finish joints between water-resistant backing board with tape and setting-type joint compound to comply with gypsum board manufacturer's written recommendations and installation standards referenced in related sections.
- J. Partial Finishing: Omit third coat and sanding on concealed drywall construction which is indicated for drywall finishing, except where finishing is required to achieve fire-resistance rating, sound rating or to act as air or smoke barrier
- K. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
 - 1. Option: Rapid Deco Level 5 System by Lafarge North America.

3.08 CLEANING AND PROTECTION OF WORK

- A. Promptly remove any joint compound and adhesives and similar residue from adjacent surfaces, as it may occur.

-
- B. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction remain without damage or deterioration at time of Substantial Completion.

3.09 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

3.10 FINISH LEVEL SCHEDULE

- A. Level 1: Above finished ceilings concealed from view.
- B. Level 2: Utility areas and areas behind cabinetry.
- C. Level 3: Walls scheduled to receive textured wall finish.
- D. Level 4: Walls and ceilings scheduled to receive flat or eggshell paint finish.
- E. Level 5: Walls and ceilings scheduled to receive semi-gloss or gloss paint finish.

END OF SECTION

**SECTION 09 5100
ACOUSTICAL CEILINGS**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.
- C. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.
- D. Perimeter Trim.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 07 2100 - Thermal Insulation: Acoustical insulation.
- C. Section 07 9005 - Joint Sealers: Acoustical sealant.

1.03 REFERENCE STANDARDS

- A. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low Alloy with Improved Formability.
- B. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
- C. ASTM A 653 (Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- D. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- E. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- F. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019 (Reapproved 2025).
- G. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- H. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- I. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material.
- J. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2024a.
- K. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
- L. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
- M. ASTM C 1264 Classification for Acoustical Ceiling Products.
- N. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.
- C. Product Data: Provide data on suspension system components and acoustical units.
- D. Samples: Submit two samples 6x6 inch (____x____ mm) in size illustrating material, edge detail and finish of acoustical units.
- E. Samples: Submit two samples each, 8 inches (____ mm) long, of suspension system main runner, cross runner, and perimeter molding.
- F. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.
- G. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.06 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
- B. Fire-Resistive Assemblies: Complete assembly listed and classified by UL (FRD) for the fire resistance indicated.
 - 1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.
 - 3. Fire Resistance: As follows tested per ASTM E 119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory.
- C. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- E. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.07 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 damaged units in any way.

1.08 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.
- B. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and

ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

1.09 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
 1. Acoustical Panels: Sagging and warping
 2. Grid System: Rusting and manufacturer's defects
- B. Warranty Period:
 1. Acoustical panels and grid systems with HumiGuard Plus or HumiGuard Max performance supplied by one source manufacturer is Thirty (30) years from date of substantial completion.
 2. Acoustical panels and grid systems with Humidity/Sag Resistant Treatment supplied by one source manufacturer shall be warranted for Thirty (30) years from date of substantial completion.
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.10 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5.0 percent of amount installed.
 2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.
- B. See Section 01 6000 - Product Requirements, for additional provisions.
- C. Deliver extra stock to Owner's representative.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 1. Armstrong World Industries, Inc; [Basis of Design]: www.armstrong.com.
 2. USG Corporation: www.usg.com/ceilings/#sle.
 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Suspension Systems:
 1. Armstrong World Industries, Inc; [Basis of Design]: www.armstrong.com.
 2. USG Corporation: www.usg.com/ceilings/#sle.
 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACOUSTICAL UNITS

- A. Acoustical Panels:
 1. As indicated on Ceiling Finish Legend.
- B. -----
- C. ASTM E1264 Type A, Form A3 - Mineral fiber with scrubbable finish, typical in commercial kitchen/food prep areas.

- D. _____
- E. _____
- F. ASTM E1264 Type A, Form A4 - Mineral base with plastic or aluminum faced overlay; cleanroom classified option.
- G. _____
- H. _____
- I. ASTM E1264 Types C and D - Metal-faced acoustical panels (Type C) and planks (Type D).
- J. _____
- K. _____
- L. ASTM E1264 Type F - Wood with a mineral or glass fiber backing, Forms F1 (perforated) and F2 (non-perforated).
- M. _____
- N. _____
- O. ASTM E1264 Type G - Gypsum, Forms G1 (perforated) and G2 (non-perforated).
- P. _____
- Q. _____
- R. ASTM E1264 Type J - Melamine foam tiles, planks, and panels.
- S. _____

2.03 SUSPENSION SYSTEMS

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold-down clips, stabilizer bars, clips, and splices as required.
- B. Components: Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
1. Structural Classification: ASTM C 635 Intermediate Duty
 2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
- C. Attachment Devices: Size for five 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 annealed, with a yield stress load of at least three times design load, but not less than 12 gauge.
- E. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; heavy-duty.
1. Products: 9/16-inch Exposed Tee Grid, equal to Suprafine by Armstrong.
 2. +
 - 3.

2.04 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.
- C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with

seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
- D. Perimeter Moldings: Same metal and finish as grid.
- E. Acoustical Sealant For Perimeter Moldings: Specified in Section 07 9005.
- F. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.02 PREPARATION

- A. 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. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
 1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions, with authorities having jurisdiction, and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 1. Use longest practical lengths.
- E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.
- I. Do not eccentrically load system or induce rotation of runners.

- J. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch (25 mm) movement. Maintain visual closure.
- K. Suspend main beam from overhead construction with hanger wires spaced 4'-0" on center along the length of the main runner. Install hanger wires plumb and straight.
- L. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

3.04 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions. Comply with ASTM C 636 and with authorities having jurisdiction.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units with pattern parallel to longest room axis, unless indicated otherwise.
- D. Fit border trim neatly against abutting surfaces.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
 - 3. Double cut and field paint exposed reveal edges.
- G. Where round obstructions occur, provide preformed closures to match perimeter molding.
- H. Install hold-down clips on each panel to retain panels tight to grid system; comply with fire rating requirements.
- I. Install hold-down clips on panels within 20 ft (6 m) of an exterior door.
- J. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
- K. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.05 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. 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 any ceiling products that cannot be successfully cleaned and or repaired. Replace with new product to eliminate evidence of damage.

END OF SECTION

**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

1.03 REFERENCE STANDARDS

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2025.
- B. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.
- C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021 (Reapproved 2025).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plans and floor patterns.
- D. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- E. Verification Samples: Submit one sample, 9 by 9 inch (____by____ mm) in size illustrating color and pattern for each resilient flooring product specified, and two 3 by 3 inch samples.
- F. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.
- G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Flooring Material: Provide minimum of 5% of each type and color.
 - 3. Extra Wall Base: Provide minimum of 5% of each type and color.
 - 4. Extra Stair Materials: Quantity equivalent to 5 percent of each type and color.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
- B. Pre-Installation Testing: Conduct pre-installation testing as follows: Moisture tests, Bond test, and pH test.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
 - 1. Material should be stored in areas that are fully enclosed and weathertight. The permanent HVAC should be fully operational, controlled and set at a minimum of 68° F (20° C) for at least 48 hours prior to the installation.

1.08 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

1.09 WARRANTY

- A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
- C. Warranty Period: Five (5) year limited warranty commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 RESILIENT TILE FLOORING

- A. Luxury Vinyl Tile (LVT):
 - 1. Minimum Requirements: Comply with ASTM F 1700 Class III, Type B - Embossed Surface.
 - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
 - 3. Smoke Developed: 450 or less, when in accordance with ASTM E 662.
 - 4. Static Load Limit: 250 psi, when tested in accordance with ASTM F 970 (modified).
 - 5. Size: See Finish Legend.
 - 6. Wear Layer Thickness: 0.020 inch (nominal).
 - 7. Total Thickness: See finish legend.
 - 8. Durability: 0.125 inch - Very Good.
 - 9. Maintainability: 0.125 inch - Excellent.
 - 10. Resilience: 0.125 inch - Excellent.
 - 11. Manufacturer/ Style/ Color: See Finish Legend.
- B. Rubber Tile: Homogeneous, color and pattern throughout thickness.
 - 1. Manufacturers: See Finish Legend
 - 2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
 - 3. Size: See Finish Legend.
 - 4. Total Thickness: See Finish Legend ____ inch (____ mm).

2.02 STAIR COVERING

2.03 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TS, rubber, vulcanized thermoset; style as scheduled.
 - 1. Thickness: 0.125 inch (3.2 mm).
 - 2. Finish: As selected by Architect.
 - 3. Length: Roll.
 - 4. Manufacturers:
 - a. Johnsonite, a Tarkett Company; [Basis of Design]: www.johnsonite.com.
 - b. Substitutions: See Section 01 6000-Product Requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 - 1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- D. Verify that concrete sub-floor surfaces are dry enough and ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- E. Verify that required floor-mounted utilities are in correct location.
- F. Confirm tiles are square and true. Cull all non-conforming tiles.

3.02 PREPARATION

- A. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is fully cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's instructions. See finish plans for pattern and tile layout.
- C. Fit joints tightly. Window panes in tiles are not acceptable.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.
- C. General Requirement: All resilient tile shall be from one manufacturer.
- D. Installation of resilient tile:

1. Installer shall dry lay all waterjet designs prior to final installation.
2. Installer shall notify waterjet company of any concerns prior to final installation.
3. Install according to manufacturer's recommendations.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 72 inches (____ mm) between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax resilient flooring in accordance with manufacturer's instructions, and also upon coordination with manufacturer's representative and Architect.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

3.08 SCHEDULE

- A. See Drawings.

END OF SECTION

**SECTION 09 7200
WALL COVERINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall coverings.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with minimum 3 years of documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Inspect roll materials for damage upon arrival.
- B. Protect packaged adhesive from temperature cycling and cold temperatures.
- C. Do not store roll goods on end.

1.05 FIELD CONDITIONS

- A. Maintain adhesive and wall covering manufacturer's recommended temperature ranges 24 hours before, during, and after installation.

PART 2 PRODUCTS

2.01 WALL COVERINGS

- A. Wall Covering - WG-1: Fabric-backed vinyl roll stock.
 - 1. Comply with ASTM E-84, Class A.
 - 2. Total Weight: 13.2 oz/sq yd (442 g/sq m).
 - 3. Fabric Weight: 2.5oz/LY (85 G/LM)
 - 4. Vinyl Weight: 17.5 oz/LY (520 G/LM)
 - 5. Roll Width: 53/54 inches (134/137 mm).
 - 6. Backing: Poly Cotton Osnaburg fabric.
 - 7. Color: See Finish Legend.
 - 8. Pattern: As indicated on drawings.
 - 9. Surface Texture: Smooth.
 - 10. Manufacturers:
 - a. See Finish Legend..
- B. Wall Covering - Type WG-2: Fabric-backed vinyl roll stock.
 - 1. Total Weight: 13.2 oz/sq yd (457 g/sq m).
 - 2. Fabric Thickness: 0.017in to 0.027in
 - 3. Color: See Finish Legend.
 - 4. Pattern: As indicated on drawings.
 - 5. Surface Texture: Smooth.
 - 6. Manufacturers:
 - a. See Finish Legend..
- C.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify substrate surfaces are primed and meet manufacturer's requirements to receive work.

- B. Measure moisture content of substrates with electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.
- C. Verify flatness tolerance of surfaces does not vary more than 1/8 inch in 10 feet (3 mm in 3 m) or at rate greater than 1/16 inch/ft (5 mm/m).
- D. Notify Architect of detrimental conditions affecting wall covering installation.
- E. Correct detrimental conditions before starting installation.

3.02 PREPARATION

- A. Remove wall plates and accessories impeding wall covering installation.
- B. Wash impervious surfaces with tetra-sodium phosphate; rinse and neutralize; wipe dry.
- C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings before preparing surfaces or finishing.
- D. Correct surface defects affecting work of this section and clean surfaces. Remove existing coatings exhibiting loose surface defects.
- E. Vacuum surfaces to remove loose particles.

3.03 INSTALLATION

- A. Apply adhesive and wall covering in accordance with manufacturer's instructions.
- B. Apply adhesive to wall immediately before applying wall covering.
- C. Use wall covering in roll number sequence.
- D. Razor trim edges of wall covering. Do not razor trim on gypsum board surfaces.
- E. Smoothly apply wall covering without wrinkles, gaps, or overlaps. Eliminate air pockets and ensure full bond to substrate surface.
- F. Horizontal seams are not permitted.
- G. Do not seam within 2 inches (51 mm) of internal corners or within 6 inches (152 mm) of external corners.
- H. Cover spaces above and below windows and above doors in pattern sequence from roll.
- I. Where wall covering tucks into reveals, metal wallboard, or plaster stops, use contact adhesive within 6 inches (152 mm) of wall covering termination. Ensure complete contact bond.
- J. Remove excess adhesive from seams while wet and before proceeding to next wall covering sheet.
- K. Reinstall wall plates and accessories removed to accommodate work of this section.

3.04 CLEANING

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Clean wall coverings of dust, dirt, excess adhesive, and other contaminants.

3.05 PROTECTION

- A. Protect installed products from damage until mm-dd-yyyy.

END OF SECTION

**SECTION 09 9100
PAINTING**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints and other coatings.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Exposed surfaces of steel lintels and ledge angles.
 - 3. Mechanical and Electrical:
 - a. In all areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. In all areas, paint shop-primed items.
 - c. Paint interior surfaces of air ducts that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
 - d. Paint dampers exposed behind louvers, grilles, to match face panels.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Non-metallic roofing and flashing.
 - 6. Stainless steel, anodized aluminum, bronze, terne, and lead items.
 - 7. Marble, granite, slate, and other natural stones.
 - 8. Floors, unless specifically so indicated.
 - 9. Ceramic and other tiles.
 - 10. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
 - 11. Brick, and cast stone.
 - 12. Exterior insulation and finish system (EIFS).
 - 13. Glass.
 - 14. Acoustical materials, unless specifically so indicated.
 - 15. Concealed pipes, ducts, and conduits.
 - 16. Door hinges, hardware, or fire door labels.
 - 17. Rusty or corroded surfaces until sandblasted or wire-brushed free of corrosion, and wiped clean.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 03 3931 - Curing, Sealing, and Hardening Concrete Floors: Floor sealer, hardener, and densifier.
- C. Section 04 2000 - Unit Masonry Assemblies: Faces to be painted in this section.
- D. Section 05 5000 - Metal Fabrications: Shop-primed items.

- E. Section 08 1113 - Steel Doors and Frames: Shop-primed steel doors and frames.
- F. Section 09 2116 - Gypsum Board Assemblies.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2012.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.

1.04 DEFINITIONS

- A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products and special coatings, including VOC content.
 - 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/coating manufacturer intended for use.
- D. Samples: Submit two paper chip samples, 4x8 inch in size illustrating range of colors available for each surface finishing product scheduled.
- E. 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.
- F. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.
- G. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.
- H. Applicator certifications that are required to be in writing.
- I. Submit Manufacture Representative reports as outlined in Field Quality Control below.
- J. Coating Maintenance Manual: Upon conclusion of the Project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as S-W "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product / color / finish was used, product data pages, Material Safety Data Sheet (MSDS), care and cleaning instructions, and Touch-up procedures.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.

- C. 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.
- D. 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.
- E. 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.
- F. Mock-Up: Provide mock-up at least 3 ft x 3 ft of general wall paint and trim for Architect's and Owner's review. Mock-Up guidelines as described in Section 01 4000 - Quality Requirements.
- G. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
- H. Lead content in pigments or other painting materials and components is not allowed.

1.07 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, pigment and vehicle constituents by volume, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
- D. 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.

1.09 PROJECT CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
 - 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.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for solvent-thinned Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.10 EXTRA MATERIALS

- A. See Section 01 6000 - Product Requirements, for additional provisions.
- B. Supply 1 gallon of each color and type; store where directed.
- C. Label each container with color, type, and room locations in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
- B. Paints:
 - 1. Sherwin-Williams [Basis of Design]: www.sherwin-williams.com.
 - 2. Benjamin Moore & Co: www.benjaminmoore.com.
 - 3. PPG Architectural Finishes, Inc: www.ppgaf.com.
- C. Block Fillers: Same manufacturer as top coats.
- D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
 - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 4. Supply each coating material in quantity required to complete entire project's work from a single production run.
 - 5. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Architectural coatings VOC limits of State in which the project is located.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Colors: As indicated on drawings
 - 1. In all areas, finish pipes, ducts, conduit, and equipment the colors as indicated on drawings. Refer to Finish Legend.

2.03 PAINT SYSTEMS - INTERIOR

- A. Concrete, Poured and Precast, Acrylic, 3 coats.
 - 1. One Coat: S-W: Loxon Concrete & Masonry Primer, A24W8300 (<100 g/l voc).

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2. Two Coats: S-W: ProMar 200 Zero VOC Interior Latex Semi-Gloss Enamel, B31-2600 (0 g/l voc).
 - B. Concrete, Epoxy 3 Coat System, (Pre-Catalyzed Water Based), (for Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings. Inside Face of Single-Wythe Exterior Concrete Block Walls; Rest Rooms, Laundry Rooms and other Wet Areas):
 1. One coat: S-W Loxon Concrete & Masonry Primer Sealer, A24W8300 (8 mils wet, 3.2 mils dry).
 2. Semi-Gloss: Two coats of S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-Series. (4 mils wet, 1.5 mils dry per coat).
 - C. Concrete - Smooth, Epoxy 2 Coat System, (Water Based Catalyzed), (for Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place, Toilets and other Wet Areas):
 1. Gloss: Two coats: S-W Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat). -or-
 2. Eg-Shel: Two coats: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - D. Concrete - Smooth, Epoxy 2 Coat System, (Solvent Base), (for Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place; Showers, etc.):
 1. Gloss: Two coats: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - E. Masonry, Opaque, Latex, 3 Coat:
 1. One Coat: S-W: Pro Industrial Heavy Duty Block Filler, B42W150. (Required to be pin-hole free).
 2. Two Coats: ProMar 200 Zero VOC Interior Latex Semi-Gloss Enamel, B31-2600 (0 g/l voc).
 - F. Masonry, Epoxy System, (Pre-Catalyzed Water Based), 3 Coat, (CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, Stucco). Location: Inside Face of Single-Wythe Exterior Concrete Block Walls, and in Rest Rooms, Laundry Rooms, and other Wet Areas):
 1. One coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 2. Semi-Gloss/High Luster Finish: Two coats: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - G. Masonry, Epoxy 3 Coat System, (Water Based Catalyzed), (for CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, Stucco; Toilets and other Wet Areas):
 1. One coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 2. Gloss: Two coats: S-W Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat). -or-
 3. Eg-Shel/Low Luster Finish: Two coats: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat)
 - H. Masonry, Epoxy 3 Coat System, (Solvent Base), (for CMU - Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, Stucco; Showers and other Wet Areas):
 1. One coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 2. Gloss: Two coats: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - I. Ferrous Metals, Unprimed, Acrylic, 3 Coat:
 1. One Coat: S-W: Pro Industrial Pro-Cryl Universal Acrylic Primer, B66-310 (<100 g/l voc).

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2. Two Coats: S-W: ProMar 200 Zero VOC Interior Latex Semi-Gloss Enamel, B31-2600 (0 g/l voc).
- J. Ferrous Metals, Acrylic Primed, Acrylic-Alkyd Finish, 2 Coat:
1. One Coat: Touch up with primer: S-W: Pro Industrial Pro-Cryl Universal Acrylic Primer, B66-310 (<100 g/l voc).
 2. Two Coats: S-W ProMar 200 Interior Waterbased Acrylic-Alkyd Semi-Gloss B34-8200 Series.
- K. Galvanized Metals, Acrylic, 3 Coat:
1. One Coat: S-W: Pro Industrial Pro-Cryl Universal Primer, B66-310 (<100 g/l voc).
 2. Two Coats: S-W: ProMar 200 Zero VOC Interior Latex Semi-Gloss Enamel, B31-2600 (0 g/l voc).
- L. Gypsum Board/Plaster, Latex-Acrylic, 3 Coat (for Offices, etc.):
1. One Coat: S-W: ProMar 200 Zero VOC Interior Latex Primer, B28-2600 (0 g/l voc).
 2. Two Coats: S-W: ProMar 200 Zero VOC Interior Latex EgShel, B20-2600 (0 g/l voc).
(Where Sheen is indicated "Gloss", provide Pro Industrial™ High Performance Acrylic, B66-600 Series, <50 g/l voc).
- M. Gypsum Board, Polyurethane/Acrylic Pattern, 3 Coat (where noted):
1. One Coat: Primemaster Primer/Sealer, or primer recommended by manufacturer.
 2. One Coat: Water-based polyurethane/acrylic base coat: "Scuffmaster MC100" by Master Coating Technologies: www.scuffmaster.com
 3. One Coat: Water-based polyurethane/acrylic metallic pattern coat. "Scuffmaster AC1200M" by Master Coating Technologies: www.scuffmaster.com
 4. Miscellaneous Materials: Surface patching compounds and other materials necessary for application of finish system shall be of high quality and compatible with coating system.
- N. Gypsum Board, Epoxy 3 Coat System, (Pre-Catalyzed Water-Based), (for Toilets, Laundry Rooms, Weight Rooms, etc.):
1. One coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).
 2. Semi-gloss: Two coats of S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss, K46- Series. (4 mils wet, 1.5 mils dry per coat). -or-
 3. Eg-Shel: Two coats of S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy Eg-Shel, K46-Series. (4 mils wet, 1.5 mils dry per coat).
- O. Gypsum Board, Epoxy 3 Coat System, (Water Based Catalyzed), (for Kitchens, Rest Rooms, Wet Areas, etc.):
1. One coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).
 2. Gloss Finish: Two coats of S-W Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat). -or-
 3. Eg-Shel Finish: Two coats of S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- P. Gypsum Board, Epoxy 3 Coat System, (Solvent Based), (for Showers and other Wet Areas, etc., where indicated):
1. One coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).
 2. Gloss Finish: Two coats S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 3. Note: Where used in shower bays, use epoxy block filler S-W Kem-Cati Coat, or Cement-Plex 875 to ensure pinhole-free surface prior to painting with Tile-Clad HS Epoxy product.
- Q. Wood, Opaque, Acrylic Latex, 3 Coat:

1. One Coat: S-W: Multi-Purpose Interior / Exterior Latex Primer /Sealer, B51-450 Series (<50 g/l voc).
 2. Two Coats: S-W: ProMar 200 Zero VOC Interior Latex EgShel Enamel, B20-2600 (0 g/l voc).
- R. Wood, Opaque, Acrylic-Alkyd, 3 Coat:
1. One Coat: Primer - As recommended by manufacturer.
 2. Two Coats: S-W ProMar 200 Interior Waterbased Acrylic-Alkyd.
- S. Wood, Transparent, Varnish, Stain:
1. Filler coat: S-W: As required.
 2. One coat of stain; S-W: WoodClassics "250" Interior Wood Stain, A49-800 Series (<250 g/l voc). Option: S-W: MinWax "250" VOC Stain (<250 g/l voc).
 3. Two coats; S-W: WoodClassics Waterbased Polyurethane, A68 Series (<350 g/l voc). Option: MinWax Waterbased Polyurethane Varnish: Satin (710337), Semi-Gloss (710320), Gloss (710313) (<350 g/l voc).

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Gypsum Wallboard: 12 percent.
 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
 4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
- E. All surfaces to be pinhole free.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

- G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- J. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-PC 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).
- K. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- L. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- M. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
- N. Interior Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
- O. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

- A. Identify fire walls, smoke barriers, etc., in accessible concealed floor, floor-ceiling or attic spaces, by stenciling "X-HOUR FIRE AND/OR SMOKE BARRIER" in 3-inch high contrasting letters, 3/8-inch minimum stroke. Locate within 15 feet of end of wall, and at intervals not exceeding 30 feet measured horizontally along the wall or partition.
- B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- C. Apply products in accordance with manufacturer's instructions.
- D. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- F. Apply each coat to uniform appearance.
- G. All surfaces shall be pinhole-free.
- H. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
- I. Sand wood and metal surfaces lightly between coats to achieve required finish.
- J. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- K. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

- L. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to Division 23 and 26 Sections for scheduling of color coding of equipment, duct work, piping, and conduit.
- B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- C. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.05 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.
- B. Architect shall approve surface prior to finish coats being applied.
- C. Manufacturers Representative shall visit the site a minimum of 3 times. These visits shall be at the beginning, middle and completion of work.
 - 1. The beginning visit shall review the substrate for compliance prior to installation and for appropriate use of products.
 - 2. The middle visit shall review the progress and performance of the installer.
 - 3. The final visit shall review the quality of the final product.
 - 4. The manufacturer shall submit reports to the Contractor and the Architect within 72 hours of each visit. The letter shall document observations, instructions to Contractor, and any remediations required and/or completed.

3.06 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean paint from all electrical devices, mechanical devices, door hardware, architectural items, and other permanent materials.

3.07 PROTECTION

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

3.08 SCHEDULE - SURFACES TO BE FINISHED

- A. Paint the surfaces described in PART 2, Paint Systems Articles.

3.09 SCHEDULE - PAINT SYSTEMS

- A. Concrete, Poured and Precast: Finish all surfaces exposed to view, unless indicated otherwise.
 - 1. Exterior: Acrylic house paint, 3-coat, Finish - As selected, or scheduled.
 - 2. Interior: Acrylic latex enamel, 3-coat, Semi-gloss.
 - 3. Interior: Epoxy (Pre-Catalyzed), 3-coat, Semi-gloss.
 - 4. Interior: Epoxy (Water-based Catalyzed), 2-coat, Finish - As selected or scheduled.
 - 5. Interior: Epoxy (Solvent-based), 2-coat, Gloss.
- B. Masonry (Concrete Block): Finish all surfaces exposed to view.
 - 1. Exterior: Acrylic, Block filler & House paint, 3-coat, Gloss.
 - 2. Interior: Latex, Block filler & Enamel, 3-coat, Finish - As selected or scheduled.
 - 3. Interior: Epoxy (Pre-Catalyzed), 3-coat, Semi-gloss.
 - 4. Interior: Epoxy (Water-based Catalyzed), Finish - As selected or scheduled.
 - 5. Interior: Epoxy (Solvent-based), 3-coat, Gloss.
- C. Steel Doors and Frames: Finish all surfaces exposed to view.

1. Exterior: Acrylic, Primer & 2-coat, Gloss or Semi-gloss.
 2. Interior: Acrylic, Primer & 2-coat, Semi-gloss.
- D. Steel Fabrications: Finish all surfaces exposed to view.
1. Exterior: Acrylic, Primer & 2-coat, Gloss or Semi-gloss, as selected; finish all surfaces, including concealed surfaces, before installation.
 2. Interior: Acrylic, Primer & 2-coat, Semi-gloss.
- E. Galvanized Steel: Finish all surfaces exposed to view.
1. Exterior: Acrylic, Primer & 2-coat, Semi-gloss.
 2. Interior: Acrylic, Primer & 2-coat Enamel, Semi-gloss.
- F. Gypsum Board: Finish all surfaces exposed to view.
1. Exterior: Glass mat faced soffit: Acrylic, 3-coat, Finish - As selected or scheduled.
 2. Interior Ceilings and Walls: Latex Acrylic, 3-coat, Eggshell (Except gloss, where indicated).
 3. Interior Walls and Gyp Bd Ceilings in Wet Areas: Epoxy (Pre-Catalyzed) , 3-coat, Finish - As selected or scheduled.
 4. Interior Walls and Gyp Bd Ceilings in Wet Areas: Epoxy (Water-based Catalyzed), 3-coat, Finish - As selected or scheduled.
 5. Interior Walls and Gyp Bd Ceilings in Wet Areas: Epoxy (Solvent-based), 3-coat, Gloss.
- G. Fiber Cement Board: Acrylic, 3-coat, Finish - As selected or scheduled (Gloss or Satin).
- H. Wood: Finish all surfaces exposed to view.
1. Exterior: Semi-Transparent Stain, 2-coats.
 2. Interior trim and frames: Opaque, Acrylic Latex Enamel, 3-coat, Eggshell.
 3. Interior trim: Transparent, Polyurethane Varnish Stain, 3-coat, Finish - As selected or scheduled.

END OF SECTION

**SECTION 10 1100
VISUAL DISPLAY UNITS**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 04 2000 - Unit Masonry.
 - 2. Section 06 1000 - Rough Carpentry: Wood blocking.
 - 3. Section 09 2116 - Gypsum Board Assemblies.

1.02 SUMMARY:

- A. This Section includes the following types of factory-built visual display boards:
 - 1. Porcelain Enamel Steel Finish Markerboards.
- B. All markerboards and tackboards shall be 4'-0" in height by lengths indicated on the Drawings.

1.03 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.
 - 1. Product Data: Include manufacturer's data substantiating that tackboard materials comply with requirements indicated.
 - 2. Shop Drawings: Provide shop drawings for each type of markerboard, and tackboard required. Include sections of typical trim members and dimensioned elevations. Show anchors, grounds, reinforcement, accessories, layout, and installation details.
 - 3. Samples: Provide the following samples of each product for selection of colors, patterns, and textures, as required, and for verification of compliance with requirements indicated.
 - a. Markerboards: Manufacturer's standard color charts consisting of actual sections of markerboard material and finish required, and where colors are not pre-selected, also showing the full range of colors available for each type of markerboard required.
 - 4. Certificates: In lieu of laboratory test reports, when permitted by the Architect, submit the manufacturer's certification that cork tackboard materials furnished comply with requirements specified for flame spread ratings.
 - 5. Warranty: Provide manufacturer's sample warranty for each product proposed to be furnished. Upon acceptance, furnish actual executed warranty to the Contractor for submittal with Project Closeout Documents.

1.04 QUALITY ASSURANCE:

- A. Design Criteria: The drawings indicate size, profiles, and dimensional requirements of visual display boards and are based on the specific type and model indicated.
 - 1. Substitutions: Other visual display boards having equivalent performance characteristics by other manufacturers may be considered provided that deviations in dimensions and profiles are minor and do not change the design concept or intended performance as judged by the Architect. The burden of proof of equality is on the proposer.
 - 2. Refer to Section 01 6000 - "Product Requirements", for requirements and time limits for submitting requests for substitutions.
- B. Toxin-Free: Provide tackboard and markerboard products and assemblies which are free of any toxins, asbestos, harmful by-products, and carcinogens, including in part, all adhesives and glues.
- C. Single Source Responsibility: Provide all markerboards, tackboards, trim, and accessories by one manufacturer for the entire project, unless otherwise accepted by Architect in writing.

1.05 PROJECT CONDITIONS:

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting; Coordinate with the work of other trades. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay.
 - 1. Allow for trimming and fitting wherever taking field measurements before fabrication might delay the Work.

1.06 WARRANTY:

- A. Provide manufacturer's standard written warranty for each markerboard and tackboard product furnished.

PART 2 - PRODUCTS

2.01 MANUFACTURERS/PRODUCTS:

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Porcelain Enamel Steel Finish Markerboards:
 - a. Best-Rite Chalkboard Co.
 - b. Carolina Chalkboard Co.
 - c. Claridge Products and Equipment, Inc.
 - d. Greensteel, Inc.
 - e. Lemco, Inc.
 - f. Marsh Chalkboard Co.
 - g. Nelson Adams Co.
 - h. Newline Products, Inc. (501) 472-2479
- B. Products: Subject to compliance with requirements, provide equivalent to the following products by one of the above named manufacturers.
 - 1. Porcelain Enamel Steel Finish Markerboards (24-gage; color: White):
 - a. Equivalent to Claridge Products and Equipment, Inc.; "LCS."
 - 2. Equivalent Products by those manufacturers named above, and/or other manufacturers properly submitted (refer to Section 01 6000 - "Product Requirements") at least 10 days prior to original Bid Date and subsequently accepted by Architect in writing or by Addendum will be acceptable.
 - 3. Colors: As selected by Architect.
 - 4. Sizes: Refer to Drawings.

2.02 MATERIALS:

- A. Markerboard Core: Provide the manufacturer's standard 7/16-inch thick medium density fiberboard (MDF), or reclaimed or recycled wood fiber, or particle board material.
- B. Backing Sheet: Provide the manufacturer's standard 0.005-inch thick aluminum foil backing.
- C. Laminating Adhesive: Provide the manufacturer's standard moisture-resistant thermoplastic-type adhesive.
- D. Porcelain Enamel Steel Finish Markerboards: Provide 7/16-inch-thick panel surfaced with the manufacturer's 24-gage steel sheet and porcelain enamel finish formulated for matte marker-receptive finish and for use of magnetic devices.
 - 1. Provide with 0.005-inch thick aluminum foil backing.

2.03 ACCESSORIES:

- A. Metal Trim and Accessories: Fabricate frames and trim of not less than 0.062-inch-thick aluminum alloy, size and shape as indicated, to suit type of installation. Provide straight,

single-length units wherever possible; keep joints to a minimum. Miter corners to a neat, hairline closure.

- B. Marker/Chalktray: Furnish manufacturer's standard continuous box-type aluminum marker/chalktray with slanted front and cast aluminum end closures for each markerboard.
- C. Map Rail: Furnish continuous map rail at the top of each markerboard unit, complete with the following accessories:
 - 1. Display Rail: Provide continuous cork display rail approximately 1-inch wide, integral with the map rail.
 - 2. End Stops: Provide one end stop at each end of the map rail.
 - 3. Map Hooks: Provide two metal map hooks with flexible metal clips for each three feet of map rail or fraction thereof.
 - 4. Flag Holder: Provide one flag holder in each classroom, at location as directed.

2.04 FABRICATION:

- A. Assembly: Provide factory-assembled markerboard and tackboard units, except where field-assembled units are required.
 - 1. Make joints only where total length exceeds maximum manufactured length. Fabricate with the minimum number of joints, balanced around the center of the board, as acceptable to the Architect.
 - 2. Provide manufacturer's standard mullion trim at joints between contiguous markerboard and tackboard.

2.05 FINISHES:

- A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.
- B. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.
- C. Class II Clear Anodized Finish: AA-M12C22A31 (Mechanical Finish: as fabricated, nonspecular; Chemical Finish: etched, medium matte; Anodic Coating: Class II Architectural, clear film thicker than 0.4 mil).
 - 1. Provide color anodized in lieu of clear, upon request by Architect.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Deliver factory-built markerboard and tackboard units completely assembled in one piece without joints, wherever possible. Where dimensions exceed panel size, provide 2 or more pieces of equal length as acceptable to the Architect. When overall dimensions require delivery in separate units, prefabricate components at the factory, disassemble for delivery, and make final joints at the site. Use splines at joints to maintain surface alignment.
- B. Install units in locations and at mounting heights indicated and in accordance with the manufacturer's instructions. Keep perimeter lines straight, plumb, and level. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for a complete installation.
 - 1. Mounting Height: Top of markerboard and tackboard units shall align and be at 7'-0" above finished floor, unless otherwise indicated.
 - 2. Mounting Height: Top of visual display rail: Mount as indicated.

3.02 ADJUST AND CLEAN:

- A. Verify that accessories required for each unit have been properly installed and that operating units function properly.

-
- B. Clean units in accordance with the manufacturer's instructions. Break in markerboards only if and as recommended by the manufacturer.

END OF SECTION

**SECTION 10 2600
WALL AND DOOR PROTECTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Corner guards.
- B. Protective wall covering.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Blocking for wall and corner guard anchors.
- B. Section 08 7100 - Door Hardware: Standard protection plates and trim.
- C. Section 09 2116 - Gypsum Board Assemblies: Placement of supports in stud wall construction.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2023, with Editorial Revision.
- C. ASTM D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents; 2021.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- E. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2024.
- F. ASTM F476 - Standard Test Methods for Security of Swinging Door Assemblies; 2023.
- G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.
- C. Samples: Submit samples illustrating component design, configurations, joinery, color and finish.
 - 1. Submit one sections of corner guards, 12 inches (____ mm) long.
- D. Manufacturer's Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project:
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Stock Materials: Five of each kind of corner guards.
- G. Maintenance Data: Manufacturer's instructions for care and cleaning of each type of product. Include information about both recommended and potentially detrimental cleaning materials and methods.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wall and door protection items in original, undamaged protective packaging. Label items to designate installation locations.

- B. Protect work from moisture damage.
- C. Protect work from UV light damage.
- D. Do not deliver products to project site until areas for storage and installation are fully enclosed, and interior temperature and humidity are in compliance with manufacturer's recommendations for each type of item.
- E. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 5-year manufacturer warranty for Corner Guards. Complete forms in Owner's name and register with manufacturer.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures or internal connection failures.
 - b. Deterioration of materials beyond that expected of normal use, as intended by manufacturer.
- C. Installer Warranty: Provide 5-year warranty for corner guards commencing on Date of Substantial Completion. Complete forms in Owner's name and register with installer.
 - 1. Failures include, but are not limited to, the following:
 - a. Detachment of rail system from substrate.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Corner Guards:
 - 1. Basis of Design: Inpro 160BN high impact corner guard: www.inprocorp.com/#sle.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Protective Wall Covering:
 - 1. Inpro; _____: www.inprocorp.com/#sle. - Refer to Finish Legend.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PERFORMANCE CRITERIA

- A. Impact Strength: Unless otherwise noted, provide protection products and assemblies that have been successfully tested for compliance with applicable provisions of ASTM D256 and/or ASTM F476.
- B. Chemical and Stain Resistance: Unless otherwise noted, provide protection products and assemblies with chemical and stain resistance complying with applicable provisions of ASTM D543.
- C. Fungal Resistance: Unless otherwise noted, provide protection products and assemblies which pass ASTM G21 testing.

2.03 PRODUCT TYPES

- A. Corner Guards - Flush Mounted:
 - 1. Material: High impact vinyl with full height extruded aluminum retainer.
 - 2. Fire Resistance: Where fire rating is specified for the wall in which the guard is mounted, provide assemblies that have been tested in accordance with ASTM E119 for the same rating as the wall.
 - 3. Surface Burning Characteristics: Provide assemblies with flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
 - 4. Width of Wings: 2 inches (51 mm).

- 5. Corner: Square.
- 6. Length: 8' high.
- B. Protective Wall Covering:
 - 1. Thickness: 0.040 inch (1.02 mm).
 - 2. Color: As selected from manufacturer's standard colors.

2.04 FABRICATION

- A. Fabricate components with tight joints, corners and seams.

2.05 SOURCE QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Provide wall and door protection systems of each type from a single source and manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.
- B. Verify that field measurements are as indicated on drawings.
- C. Verify that substrate surfaces for adhered items are clean and smooth.
 - 1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer. Follow adhesive manufacturer's recommendations for remedial measures at locations and/or application conditions where adhesion test's results are unsatisfactory.
- D. Start of installation constitutes acceptance of project conditions.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to supporting construction.
- B. Position corner guard 4 inches (102 mm) above finished floor to ceiling
- C. Position protective wall covering no less than 1 inch (25.4 mm) above finished floor to allow for floor level variation.
 - 1. Apply adhesive with 1/8 inch (3.2 mm) V-notch trowel to an area of wall surface that can be completed within cure time of the adhesive.

3.03 TOLERANCES

- A. Maximum Variation From Required Height: 1/4 inch (6 mm).
- B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch (6 mm).

3.04 CLEANING

- A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

END OF SECTION

**SECTION 10 5613
METAL STORAGE SHELVING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Four post shelving.
- B. Industrial metal heavy duty storage shelving.
- C. Shelving accessories.

1.02 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 03 3100 - Cast-In-Place Concrete: Floor anchorage.
- C. Section 06 1000 - Rough Carpentry: Blocking and reinforcement in walls for anchoring shelving units.
- D. Section 09 2116 - Gypsum Board Assemblies: Blocking and reinforcement in walls for anchoring shelving units.

1.03 REFERENCE STANDARDS

- A. SMA.
- B. ANSI MH 28.1-1982

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Rated uniform shelf loads.
 - 2. Details of shelving assemblies, including reinforcement.
 - 3. Accessories.
 - 4. Substrate preparation instructions and recommendations.
 - 5. Storage and handling requirements and recommendations.
 - 6. Installation methods.
 - 7. Specimen warranty.
- C. Test Reports: Provide independent agency test reports documenting compliance with specified structural requirements.
 - 1. In lieu of test reports, detailed drawings stamped and sealed by a Professional Engineer licensed in the State in which the Project is located will be acceptable.
- D. Shop Drawings: Indicate location, type, and layout of shelving, including lengths, heights, and aisle layout, and relationship to adjacent construction.
 - 1. Indicate methods of achieving specified anchoring requirements.
- E. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and finishes.
- F. Executed warranty.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Shelves: Two of each size with shelf brackets.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

- B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of documented experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Inspect for dents, scratches, or other damage. Replace damaged units.
- B. Store in manufacturer's unopened packaging until ready for installation.
- C. Store under cover and elevated above grade.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Manufacturer Warranty: Provide 1-year manufacturer warranty for rust, corrosion, and manufacturing defects. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Four Post Shelving:
 - 1. Hallowell, Div. of List Industries, Inc: www.hallowell-list.com.
 - 2. Penco Products, Inc; "Clipper" [Basis of Design]: www.pencoproducts.com.
 - 3. SpaceSaver Corporation: www.spacesaver.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SHELVING - GENERAL

- A. See drawings for layout and sizes.
- B. Anchors: Provide anchoring hardware to secure each shelving unit to floor and wall.
 - 1. Provide hardware of type recommended by manufacturer for substrate.
- C. Shelving shall comply with SMA, and ANSI MH 28.1-1982.

2.03 FOUR POST SHELVING

- A. Four Post Shelving: Steel post-and-beam type with sway bracing, shelving brackets, shelving surfaces, and accessories as specified.
 - 1. Unit Width: As indicated in drawings and specialty equipment schedule.
 - 2. Heavy Duty Shelf Capacity: Uniform distributed load of 100 psf (4.8 kPa), minimum.
 - 3. Shelf Deflection: L/140, maximum, under specified uniform load.
 - 4. Adjustability of Shelving: At intervals of 1 inches (___ mm) on center, minimum.
 - 5. Shelf Depth: As indicated on plans.
 - 6. Shelves per Unit: Six shelves.
 - 7. Unit Height: 87 inches (___ mm), overall , unless indicated otherwise.
 - 8. Finish: Baked enamel, medium gloss.
 - 9. Color: As selected by Architect from manufacturer's standard range.
 - 10. Number of Units: As indicated on drawings.
 - 11. Product: Penco "Clipper - Open Configuration".
- B. Posts and Beams: Formed sheet members; perforations exposed on face of members are not acceptable.
 - 1. Post Shape: Tee intermediate posts, angle end posts forming corners.
 - 2. Post Face Width: 2 inches (51 mm), maximum.
 - 3. Connecting Hardware: Manufacturer's standard.
- C. Bracing: Formed sheet members.
 - 1. Back Sway Bracing: Either strap or panel; at back of each unit; 3/4" x 12 gauge.
 - 2. Side Sway Bracing: Either strap or panel; at each side of each unit; 3/4" x 12 gauge.
 - 3. See drawings for additional details of bracing.

- D. Shelves: Formed sheet, finished on all surfaces . Heavy Duty.
 - 1. Shelf Edge Profile: Extending 1-1/4 inch (___ mm), maximum, below top surface of shelf.
 - 2. Shelf Connection to Posts: Manufacturer's standard.

2.04 ACCESSORIES

- A. Label Holders: Steel, attached to front face of shelf.
 - 1. Size: 2-1/4 by 3/4 inches (56 by 20 mm).
 - 2. Finish: Manufacturer's standard.
 - 3. Mounting: Slide-on.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate is level and that clearances are as specified.
- B. Verify that walls are suitable for shelving attachment.
- C. Do not begin installation until substrates have been properly prepared.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Coordinate location with Owner prior to installation.
- B. Install in accordance with manufacturer's instructions.
- C. Anchor and reinforce as specified, as indicated on drawings, and as recommended by manufacturer.
- D. Install shelving with shelf surfaces level and vertical supports plumb; adjust feet and bases as required.
- E. Out-Of-Square Tolerance - Four Post Shelving: Maximum of 1/8 inch (3 mm) difference in distance between bottom shelf and canopy top, measured along any post in any direction.

3.03 CLEANING

- A. Clean shelving and surrounding area after installation.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

**SECTION 11 6623
GYMNASIUM EQUIPMENT**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

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

1.02 SUMMARY:

- A. This Section includes the following gymnasium equipment:
 - 1. Wall-mounted and post column safety pads.

1.03 DEFINITIONS:

- A. FIBA: International Basketball Federation (Federation Internationale de Basketball Amateur).
- B. FIVB: International Volleyball Federation (Federation Internationale de Volleyball).
- C. NAGWS: National Association for Girls and Women in Sport.
- D. NCAA: National Collegiate Athletic Association.
- E. NFHS: National Federation of State High School Associations.
- F. USAV: United States of America Volleyball (formerly, USVBA: U.S. Volleyball Association).

1.04 PERFORMANCE REQUIREMENTS:

- A. Seismic Performance: Provide basketball backstops capable of withstanding the effects of earthquake motions determined according to the building code in effect for this Project or ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 9, "Earthquake Loads," whichever is more stringent.

1.05 SUBMITTALS:

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, features, and finishes. Include details of anchors, hardware, and fastenings. If applicable, include assembly, disassembly, and storage instructions.
- B. Shop Drawings: Show location and extent of fully assembled gymnasium equipment. Show location and extent of disassembled equipment and components and transport and storage accessories. Include elevations, sections, and details not shown in Product Data. Show method of field assembly, connections, installation details, mountings, floor inserts, attachments to other Work, operational clearances, and relationship to adjoining work.
 - 1. Blocking and Reinforcement: Show locations of blocking and reinforcement required for support of gymnasium equipment.
 - 2. Setting Drawings: For cast-in floor insert sleeves for post standards.
 - 3. Design Calculations: Upon request, submit signed and sealed design calculations by a qualified professional engineer. Calculate requirements for supporting gymnasium equipment and for seismic restraint. Verify capacity of members and connections to support loads and verify loads, point reactions, and locations for attachment of gymnasium equipment to structure with those indicated on Drawings.
- C. Coordination Drawings: Court layout plans and elevations drawn to scale and coordinating oversized recesses for deferred installation of floor insert sleeves, and/or floor-insert penetrations, and game lines and markers applied to finished flooring.
- D. Samples for Initial Selection: For each type of gymnasium equipment indicated.
- E. Samples for Verification: For the following products:

1. Pad Fabric: Not less than 3 inches (80 mm) square, with specified treatments applied. Mark face of material.
- F. Product Certificates: For each type of gymnasium equipment, signed by product manufacturer.
- G. Manufacturer Certificates: Signed by manufacturers certifying that they comply with requirements. Include evidence of manufacturing experience.
- H. Qualification Data: For installer and for professional engineer.
- I. Maintenance Data: For gymnasium equipment and gymnasium equipment operator to include in maintenance manuals.

1.06 QUALITY ASSURANCE:

- A. Installer Qualifications: A qualified installer employing workers trained and approved by manufacturer.
 1. Refer to Section 01 0150 - "Special Conditions", for additional information regarding minimum experience requirements.
- B. Source Limitations: Obtain each type of gymnasium equipment through one source from a single manufacturer.
- C. Standards: Provide gymnasium equipment complying with or exceeding requirements of the Alabama High School Athletic Association, and the above referenced standards.

1.07 PROJECT CONDITIONS:

- A. Environmental Limitations: Do not install gymnasium equipment until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Field Measurements: Verify position and elevation of floor inserts and layout for gymnasium equipment. Verify dimensions by field measurements.

1.08 COORDINATION:

- A. Coordinate installation of floor inserts with structural floors and finish flooring installation and with court layout and game lines and markers on finish flooring.
- B. Coordinate layout and installation of overhead-supported gymnasium equipment and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression-system components, and partition assemblies.

1.09 WARRANTY:

- A. Special Warranty: Manufacturer agrees to repair or replace components of gymnasium equipment that fail in materials or workmanship within specified warranty period.
 1. Warranty Period:
 - a. Basketball equipment: 25 years from date of substantial completion.
 - b. Volleyball equipment: 10 years from date of substantial completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Wall-Mounted and Post Column Safety Pads:
 - a. AALCO.[Basis of Design]
 - b. AL, Inc.; ADP Lemco, Inc.
 - c. Alabama Contract Sales
 - d. American Athletic, Inc.

- e. Arizona Courtlines
- f. Draper
- g. Garner
- h. Institutional Products, Inc.
- i. Jaypro Sports, Inc.
- j. Performance Sports Systems, Inc.
- k. Porter Athletic Equipment Co.
- l. Spalding

2.02 MATERIALS, GENERAL:

- A. Equipment Mounting Pads: Wood, transparent painted finish, size, and quantity as required to mount gymnasium equipment according to manufacturer's current written recommendations.
- B. Anchors, Fasteners, Fittings and Hardware: Manufacturer's standard corrosion-resistant or noncorrodible units; concealed tamperproof, vandal and theft resistant. Provide as required for gymnasium equipment assembly, mounting, and secure attachment.

2.03 BASKETBALL EQUIPMENT:

- A. General: Provide equipment complying with requirements in the Alabama High School Athletic Association's and NFHS's Basketball Rule Books. Protruding fasteners or exposed bolt heads on front face of backboards are not permitted.
- B. Safety Pads: Provide safety pads, complying with referenced standards, designed for backboard thickness indicated and extending continuously along bottom and up sides of backboard and over goal mounting and backboard supports as required by referenced rules. *For exterior use, provide manufacturer's standard outdoor usage crash pad.*
 - 1. Safety Pad Attachment: Bolt-on.
 - 2. Color: As selected by Architect from manufacturer's full range of standard colors. (15 minimum color options)

2.04 SAFETY PADS:

- A. Wall Safety Pads in Gym as indicated on drawings: Padded wall wainscot panels designed to be attached in a continuous row; each panel section consisting of fill laminated to backer board with visible surfaces fully covered by seamless fabric cover, free from sag and wrinkles and firmly attached to back of backer board.
 - 1. Backer Board: Not less than 3/8-inch- (9.5-mm-) thick exterior-grade plywood, mat-formed, or composite panel.
 - 2. Fill: Multiple-impact-resistant foam not less than 2-inch- (50-mm-) thick bonded polyurethane foam, 6-lb (2.7-kg) density.
 - 3. Size: Each panel section, 24 inches (600 mm) wide by not less than 72 inches (1800 mm) long.
 - 4. Number of Panel Sections:
 - a. Not less than 40'-0" total length for Main and Side Court end pads, as indicated on the Drawings.
 - b. 2-sided pads flush-mounted against and installed directly on each outside building corner exposed around basketball courts when bleachers are retracted from open position (24-inches x 24-inches sections wrapping corners); and
 - c. 3-sided pads flush-mounted against and installed directly on each building column which protrudes from face of interior walls, following the contour and taper of columns up to the required 72-inch pad heights.
 - 5. Installation Method: Concealed mounting Z-clips, or manufacturer's standard mounting method, when acceptable to the Architect and Owner.
 - 6. Fabric Cover Colors: As selected by Architect and Owner from manufacturer's full range of colors, minimum fifteen (15) standard colors; Two colors may be selected.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for play court layout, alignment of mounting substrates, installation tolerances, operational clearances, and other conditions affecting performance.
 - 1. Verify critical dimensions.
 - 2. Examine supporting structure and below finished floor for subfloors and footings.
 - 3. Examine wall assemblies, where reinforced to receive anchors and fasteners, to verify that locations of concealed reinforcements have been clearly marked for installers. Locate reinforcements and mark locations if not already done.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL:

- A. General: Comply with manufacturer's current written installation instructions and competition rules indicated for each type of gymnasium equipment. Complete equipment field assembly, where required.
- B. Unless otherwise indicated, install gymnasium equipment after other finishing operations, including painting, have been completed.

3.03 ADJUSTING:

- A. Adjust movable components of gymnasium equipment to operate safely, smoothly, easily, and quietly, free from binding, warp, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware and moving parts.

3.04 CLEANING AND PROTECTION:

- A. After completing gymnasium equipment installation, inspect components. Remove spots, dirt, and debris and touch up damaged shop-applied finishes according to manufacturer's written instructions.
- B. Provide final protection and maintain conditions acceptable to manufacturer and Installer that ensure gymnasium equipment is without damage or deterioration at time of Substantial Completion.
- C. Replace gymnasium equipment and finishes that cannot be cleaned and repaired, in a manner approved by Architect, before time of Substantial Completion.

3.05 DEMONSTRATION:

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain gymnasium equipment. Refer to Division 1 Section "Project Closeout".

END OF SECTION

SECTION 260000

COVER - RCR

DIVISION 26/27/28

ELECTRICAL SPECIFICATIONS

PREPARED BY



11/21/2025

SECTION 260500

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. General Conditions:
 - 1. The accompanying General Conditions (front-end specifications) shall apply to and form a part of this section.
- B. General Requirements:
 - 1. Carefully examine General Conditions, other specification sections, and other drawings (in addition to Electrical) in order to be fully acquainted with their effect on electrical work.
 - 2. Do all work in compliance with all applicable codes, laws, and ordinances, the National Electrical Safety Code, the National Electrical Code (hereinafter referred to as "Code"), applicable energy codes, and the regulations of the local utility companies. Obtain and pay for any and all required permits, inspections, certificates of inspections and approval, and the like.
 - 3. Cooperate with other trades and contractors at job. Perform work in such manner and at such times as not to delay work of other trades. Complete all work as soon as the structure and installations of equipment will permit. Patch, in a satisfactory manner and by the proper craft, any work damaged by electrical workmen.
- C. Electrical Contractor Experience Requirements:
 - 1. Electrical contracting firm shall be licensed as an electrical contractor in the state where work will be performed.

1.2 GENERAL SCOPE OF ELECTRICAL WORK (REFER TO DRAWINGS FOR OTHER SPECIFIC SCOPE ITEMS)

- A. Furnish all labor and materials to complete electrical work as shown on drawings and/or herein specified.
- B. Remove all existing electrical equipment and wiring made obsolete by this project and remove or relocate all electrical services located on or crossing through the project property, either above or below grade, which would obstruct the construction of the project or conflict in any manner with the completed project or any code pertaining thereto. Dispose of salvageable materials as directed by the Architect. Contractor shall schedule meeting to review scope of electrical demolition and to confirm scope and phasing of proposed demolition with the owner in the presence of the prime consultant prior to start of any electrical demolition.
- C. Furnish and install complete power, telephone and other electrical services as shown on drawings and/or specified herein.
- D. Pay all electrical utility company service charges (if any) in connection therewith, including permanent meter deposit. Meter deposits will be refunded to Contractor at time of Owner's acceptance.
- E. Furnish and install complete power distribution system as shown on drawings and/or specified

herein.

- F. Furnish and install medium voltage power distribution system components as shown on drawings and/or specified herein.
- G. Furnish and install a complete Power Generation and Automatic Transfer Switch System as shown on drawings and/or specified herein.
- H. Furnish and install disconnect switches for motors as shown on drawings and/or specified herein.
- I. Furnish and install complete electrical grounding systems as shown on drawings and/or specified herein.
- J. Install and connect electrical equipment mentioned in Division 26/27/28 Specifications or noted in drawings, whether furnished by electrical contractor or by others.
 - 1. Where shown or specified, equipment furnished by others shall be installed and connected under this Contract.
 - 2. Where shown or specified, Contractor shall receive, unpack, check and assume custody of equipment furnished by Others. Contractor shall assume responsibility for care and safekeeping of this equipment, when delivered into his custody. He shall protect it from moisture, dust and damage during construction and until Owner acceptance of project.
- K. Furnish and install complete electrical lighting systems as shown on drawings and/or specified herein.
- L. Furnish and install all electrical items shown on drawings and/or herein specified, unless shown or specified otherwise.
- M. Furnish and install complete controls & auxiliary systems as shown on drawings and/or specified herein.
- N. Furnish and install complete telephone/data raceway (including all outlet boxes, face plates, conduit raceways, telephone backboards, terminal cabinets, etc.), wiring and devices system as shown on drawings and/or specified herein.
- O. Furnish and install a complete Fire Alarm System as shown on drawings and/or specified herein.
- P. Furnish and install a complete Surge Protection System as shown on drawings and/or specified herein.
- Q. Procure and pay for permits and certificates as required by local and state ordinances and fire underwriter's certificate of inspection.
- R. Balance loads as equally as practicable on services, distribution feeders, circuits and buses. Provide typewritten directory for each panel.
- S. Unless specifically indicated or required otherwise, terminate all circuitry/cabling provided within this contract at associated equipment/devices/etc. in accordance with all applicable codes, standards and supplier requirements, whether associated equipment/device/etc. is

furnished within this contract or by others.

- T. Complete field testing, adjustment & startup of all systems listed above as shown on drawings and/or specified herein.

PART 2 - PRODUCTS

2.1 APPROVED MATERIALS AND DEVICES

- A. Where not otherwise specified, provide only new, standard, first-grade materials/systems throughout, conforming to standards established by Underwriter's Laboratories, Inc., and so marked or labeled, together with manufacturer's brand or trademark. All equipment/systems subject to approval of Architect before installation. All like items and associated equipment/systems shall be of one manufacturer.
- B. To ensure proper coordination, it is intended that all electrical equipment and materials specified in Division 26/27/28 of these specifications and shown on the electrical drawings be furnished and installed by the electrical sub-contractor. It will not be permissible for any of these items to be furnished directly by the general contractor without the electrical contractor's coordination.
- C. To ensure commonality of spare parts, it is required that the electrical contractor provide the same brand for all circuit breakers, starters, power equipment, etc. provided under the following divisions of these specifications:
 - 1. SECTION 260573: POWER DISTRIBUTION SYSTEM ELECTRICAL STUDIES
 - 2. SECTION 262200: DRY TYPE TRANSFORMERS
 - 3. SECTION 262416: POWER PANELBOARDS - CIRCUIT BREAKER TYPE
 - 4. SECTION 262417: LIGHTING PANELBOARDS
 - 5. SECTION 262816: SAFETY SWITCHES AND FUSES

2.2 SUBMITTALS

- A. All submittals to the design team shall be accompanied by a letter summarizing all proposed deviations from specified products or pre-approved substitutions. The absence of such a letter shall be understood to indicate that the contractor intends to meet all contract requirements, regardless of cut-sheets/data-sheets provided within the submittal.
- B. Submit to Architect ten (10) days prior to bid date three (3) copies of any items and/or manufacturers which are proposed as substitutes for those specified.
- C. Submit to Architect promptly after award of Contract and prior to purchasing, the number of copies required by the contract. All drawings of a specific item or system shall be made in one submittal, and within thirty (30) days after award of Contract. Shop drawings of all power equipment shall contain exact details of device placement, phasing and numbering, in form of elevations, for each major piece of equipment. Shop drawings shall be submitted on the following:
 - 1. SECTION 260513: POWER CABLES, 601V-38kV
 - 2. SECTION 260573: POWER DISTRIBUTION SYSTEM ELECTRICAL STUDIES
 - 3. SECTION 260943: LIGHTING CONTROL SYSTEM
 - 4. SECTION 261200: PADMOUNT TRANSFORMERS
 - 5. SECTION 262200: DRY TYPE TRANSFORMERS

6. SECTION 262416: POWER PANELBOARDS - CIRCUIT BREAKER TYPE
 7. SECTION 262417: LIGHTING PANELBOARDS
 8. SECTION 262816: SAFETY SWITCHES AND FUSES
 9. SECTION 263213: GENERATOR SETS
 10. SECTION 263623: AUTOMATIC TRANSFER SWITCHES
 11. SECTION 264100: LIGHTNING PROTECTION SYSTEM
 12. SECTION 264300: SURGE PROTECTIVE DEVICES
 13. SECTION 265000: LIGHTING MATERIALS AND METHODS
 14. SECTION 271000: STRUCTURED CABLING SYSTEM
 15. SECTION 283100: FIRE ALARM SYSTEM
 16. SECTION 287800: EMERGENCY RESPONDER COMMUNICATIONS
ENHANCEMENT SYSTEM
 17. ALL POWER DISTRIBUTION EQUIPMENT (i.e. SWITCHBOARDS, PANELBOARDS,
DRY TYPE TRANSFORMER, ETC.)
 18. ALL ELECTRICAL AND TELECOMMUNICATION EQUIPMENT LAYOUTS -
Submittals shall include ¼" = 1'-0" CAD drawings (hand drawn sketches will not be
accepted) of each electrical room, IT room, electrical equipment stand, generator area, or
any other similar area with electrical equipment. Drawings shall indicate all panelboards,
transformers, switchboards, generators, equipment racks, control panels, HVAC equipment,
etc. that are located in each electrical/IT area. Layouts shall show that each piece of
electrical equipment has the clearances, working space and dedicated equipment space
required by applicable codes. No conduits to equipment within these areas shall be installed
until submittals have been provided and returned without exception by the design team.
- D. The contractor shall fully review, comment upon and correct all shop drawings as required to assure compliance with contract documents prior to submittal to Architect. The failure of the contractor to properly review and correct shop drawings prior to submittal will result in rejection of shop drawings by the engineer. Review by the Architect will be for general conformance with contract documents. The contractor shall be fully responsible for correctness of all submitted dimensions, details, quantities and locations.
- E. None of the above items shall be installed until shop drawings or catalog data have been reviewed by Architect without rejection or required resubmittal. Any listed item not submitted, even if specified, shall be considered not acceptable and shall be removed if directed.
- F. Any required resubmittal will be reviewed by the Architect for conformance with previously issued comments only. The contractor shall be responsible for verifying that all items not specifically requiring resubmittal have not been altered from the previously reviewed submittal.
- G. Material proposed for substitution shall be of the same quality, perform the same functions, conform to such physical dimensions and appearance as are required by the Architect. All material proposed for substitution is subject to the approval of the Architect and his authority for approval is final. No material proposed for substitution will be considered unless all submittal data complies with the drawings and specifications of Section 16 as to time of submission, number of copies of submittal, and detail requirements.
- H. Samples of material shall be furnished where required by drawings or Division 26/27/28 Specification, or as requested by the Architect on items proposed as substitutes.
- I. Submit to Architect a certificate of final inspection from local inspection department.

PART 3 - EXECUTION

3.1 SITE VISIT

- A. The Contractor shall visit the site to determine existing dimensions and conditions affecting electrical work. Failure to do so in no way relieves Contractor of his responsibility under Contract.

3.2 CLEARANCE WITH UTILITIES

- A. It shall be the responsibility of this Contractor, prior to bid, to reaffirm with the utility companies involved, that the locations, arrangement (and with power company voltage, phase, and metering required) and connections to utility service are in accordance with their regulations and requirements. If their requirements are at variance with these drawings and specifications, the Contract price shall include any additional cost necessary to meet those requirements without extra cost to Owner after a contract is entered into.
- B. On many projects the utility company may levy charges due to locations, size or type service involved. The Contractor shall be responsible for these charges (including permanent meter deposit), unless such charges are not available prior to bid and Contractor so documents as described below. The meter deposit will be refunded to the contractor at time of Owner's acceptance.
- C. Should above cost not be available, prior to bid, Contractor must submit a letter signed by a responsible utility company person so stating with his bid and in turn must be submitted by Prime Contractor with his bid to Owner. The cost will then be deleted from the Contract and become responsibility of the Owner.
- D. Arrange with utility companies for such services as shown or herein specified and installation of meter where shown. Furnish with shop drawings a signed document from utility companies describing the location and type of services to be furnished and any requirements they may have. This document shall be signed for each utility company by a person responsible for granting such service.

3.3 WORKMANSHIP

- A. All work shall be in accordance with the latest editions of NFPA 70 (National Electrical Code), NFPA 101 (Life Safety Code), National Electric Safety Code, International Building Code, applicable NECA standards and the rules and regulations of State and Local Authorities Having Jurisdiction.
- B. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance upon completion.
- C. All equipment, devices, etc. shall be installed in accordance with manufacturer's recommendations.
- D. All items shall be installed straight and plumb in a workmanlike manner and care shall be exercised so that like items are mounted the same position, heights and general location.
- E. Keep site clean of accumulation of cartons, trash and debris.

3.4 SAFETY

- A. The contractor is solely responsible for all job safety. Architect assumes no responsibility for job safety. Maximum consideration shall be given to job safety and only such methods as will reasonably ensure the safety of all persons shall be employed. The codes and regulations of OSHA shall be given strict compliance as well as such other codes, laws, and regulations as may be applicable.

3.5 CONTRACT DOCUMENTS

- A. Contract documents indicate diagrammatically, extent, general character and approximate location of work. Where work is indicated but minor details omitted, furnish and install it complete so as to perform its intended functions. For details and mechanical equipment, follow drawings provided by other disciplines (Architectural, Mechanical, Structural, Civil, etc.) and fit electrical work thereto.
- B. Contract documents consist only of the hardcopy documents issued by the Prime Architect. Electronic documents issued directly by the electrical engineer to the contractor and/or its sub-contractors/vendors are issued for convenience only (electronic documents are not formal contract documents).
- C. If the contractor and/or one of its suppliers require a one-time transfer of electronic files of the current electrical construction documents to prepare shop drawings (or for another similar purpose), it shall:
 - 1. Sign a waiver prepared by the electrical engineer prior to the transmittal of these files.
 - 2. Agree to pay the electrical engineer a fee of \$50.00 per drawing, up to a maximum of \$400 per transfer, payable upon receipt of the files.
 - 3. To the fullest extent permitted by law, indemnify, hold harmless, and defend JRA from all claims, damages, losses and expenses, including attorneys' fees arising out of or resulting from the use of the CAD files.
- D. Take finish dimensions at job in preference to scaled dimensions.
- E. Except as above noted, make no changes in or deviations from work as shown or specified except on written order of Architect.

3.6 UNDERGROUND UTILITY/EQUIPMENT COORDINATION

- A. Prior to commencement of work, verify exact locations of all existing or proposed underground utilities and/or underground equipment and verify that proposed electrical installation does not conflict with these items. Notify Architect immediately if any conflict is found.

3.7 EQUIPMENT STORAGE

- A. Store all electrical equipment in dry, covered locations as directed by equipment manufacturers. Contractor shall be responsible for replacing or repairing improperly-stored equipment as directed by Architect.

3.8 EXCAVATION, CUTTING AND PATCHING

- A. Perform all cutting and excavating as necessary for installation of electrical systems, unless specifically covered under another section. After Architect's observation, complete all excavation, filling and backfilling as directed under specifications for preparation of site and earthwork. Foundations for equipment shall be as specified under concrete section. Concrete pads shall be minimum of 6" thick; unless greater thickness required by equipment

manufacturer. Obtain specific approval of Architect before cutting into any structural members.

- B. For all such work employ competent workmen, and finish up in neat and workmanlike manner, equal to quality and appearance to adjacent work.

3.9 PENETRATIONS

- A. All penetrations in water tight barriers shall be made so that barrier rating is not compromised. Furnish roof flashing for all equipment installed under Division 26/27/28 that penetrates through the roof. Appropriate flashing is specified under roofing and sheet metal section. Supply these flashings for installation under roofing and sheet metal section.
- B. All fire/smoke barrier penetrations shall be made in accordance with a U.L. listed assembly to maintain the fire/smoke rating of the associated membrane.
- C. Where penetrations are required through structural elements, verify penetration locations and sizes with structural engineer. In no case shall the structural integrity be compromised without written approval from structural engineer.

3.10 INSTALLATION OF EQUIPMENT - GENERAL

- A. Care shall be exercised in exact routing and location of all items so as not to obstruct access to equipment, personnel walkways, or expose it to potential mechanical damage.
- B. Items shall be securely anchored and/or fastened. Provide proper support for all equipment, devices, conduits, boxes, panels, etc. as required by code and for a workmanlike installation. Provide guy wiring for wood poles where required to prevent leaning.
- C. All wall, pole or frame-mounted electrical equipment shall be mounted to metal unistrut (or similar) frames of same material as electrical equipment. For example, pole-mounted painted or galvanized steel disconnect switches shall be mounted to galvanized steel unistrut frames.
- D. All electrical equipment, furnished by Contractor or by others shall be covered and protected during construction.
- E. All control cabinets, panels, motor control centers and other electrical cabinets and enclosures shall have all trash removed and be vacuumed clean. All foreign paint, etc., shall be removed from exterior and all scratches in finish touched up with same color and material as original. Any rusted areas shall be sanded, primed and repainted.
- F. All relays, starters, push-button and other control devices shall be cleaned and if necessary, lubricated with CRC 2-26 to assure free operation.

3.11 SEISMIC BRACING REQUIREMENTS

- A. All construction shall meet the seismic design requirements of the building code. This building is a **SEISMIC DESIGN CATEGORY C**. All life-safety equipment shall be listed and supported/braced in accordance with ASCE requirements for Seismic Design Category C

3.12 MOTORS, STARTERS AND CONTROLS

- A. Unless otherwise specified or shown, all motors will be furnished and installed under other sections of this specification.
- B. Electrical Contractor shall install all starters and all electrical power wiring and connections to motors and starters.
- C. Unless otherwise specified or shown, all control items for motors shall be furnished, installed and wired in conduit under other divisions of this specification.

3.13 CIRCUITS AND BRANCH CIRCUITS

- A. Outlets shall be connected to branch circuits as indicated on drawings by circuit numbers. No more outlets than are indicated shall be connected to a circuit.
- B. Branch circuit homeruns shall be installed as shown on drawings. Multiple homerun conduits shall not be combined by contractor into larger, single homerun conduits unless specific permission is granted by the Engineer.

3.14 LUG/TERMINAL RATINGS

- A. All lug/terminal ratings, sizes, locations, types, etc. shall be coordinated with the associated conductor sizes, types, routings, etc. by the contractor.
- B. All lugs/terminals/etc. shall be rated for 75 degree C terminations (minimum, unless specified otherwise).

3.15 EQUIPMENT FAULT CURRENT RATINGS

- A. All equipment and breakers shall meet the minimum RMS symmetrical interrupting capacity ratings shown on plans for the associated distribution equipment. All interrupting ratings shall be full ratings. Where new devices or breakers are added to existing distribution equipment, the new devices/breakers shall have interrupting ratings matching or exceeding that of the existing distribution equipment.

3.16 OUTLET LOCATION

- A. Symbols shown on drawings and mounting heights indicated on drawings and in specifications are approximate only. The exact locations and mounting height must be determined on the job and it shall be the Contractor's responsibility to coordinate with other trades to ensure correct installation.

3.17 IDENTIFICATION

- A. Each panel shall have each circuit identified. Panels without branch circuit nameplates shall have typewritten directories.
- B. Each individually mounted switch, circuit breaker, starter and/or any other control or protective device shall identify equipment fed and fuse size, if any, by engraved plastic nameplate, white with black letters, screw attached.
- C. See Specification Section 260553 for additional requirements.

3.18 GROUNDING

- A. All equipment shall be grounded and bonded in accordance with all state/local regulations, The National Electrical Code and as specified herein.

3.19 TELEPHONE WORK

- A. Provide telephone raceways, outlets and backboards, as shown. Provide additional work as described in Specification Section 271000 and/or shown on drawings. Bond all raceways together at backboards and provide No. 6 ground wire extending from raceway bonds to cold water pipe, in 1/2 inch raceway. Carefully ream ends of all raceways.

3.20 PAINTING

- A. Refer to Painting/Finishing specifications for requirements regarding field painting of exposed conduit. Any scratches, dents or rust spots in conduit electrical enclosures, panels, motor control or any other electrical items shall have the dents removed, and they, along with any rust spots or scratches, sanded and touched up with the same exact color paint as original finish.

3.21 ACCEPTANCE TESTING

- A. Upon completion of work, the entire electrical system installed within this project shall be tested and shall be shown to be in perfect working condition, in accordance with the intent of the specifications and drawings. It shall be the responsibility of the Electrical Contractor to have all systems ready for operation and to have an electrician available to operate same in accordance with and under the supervision of the observation representative(s) of the Architect. The Electrician shall be available to assist in removal of panel fronts, etc., to permit inspection as required.
- B. The electrical sub-contractor shall include in bid price start-up assistance and training from a certified representative of the manufacturer for the following systems:
 - 1. SECTION 260943: LIGHTING CONTROL SYSTEM
 - 2. SECTION 263213: GENERATOR SETS
 - 3. SECTION 263623: AUTOMATIC TRANSFER SWITCHES
 - 4. SECTION 271000: STRUCTURED CABLING SYSTEM
 - 5. SECTION 283100: FIRE ALARM SYSTEM
 - 6. SECTION 287800: EMERGENCY RESPONDER COMMUNICATIONS
ENHANCEMENT SYSTEM

3.22 OPERATION AND MAINTENANCE DATA

- A. One set of marked "AS BUILT" drawings, three (3) sets of all equipment catalog and maintenance data and three (3) sets of all final shop drawings, on all equipment requiring same shall be turned over to owner. These items shall be bound in hard back book. Contractor shall explain and demonstrate all systems to Owner's representative.

3.23 GUARANTY-WARRANTY

- A. Furnish a written Guarantee-Warranty, countersigned and guaranteed by General Contractor, stating:
 - 1. That all work executed under this section will be free from defects of workmanship and materials for a period of one (1) year from date of final acceptance of this work.
 - 2. Above parties further agree that they will, at their own expense, repair and replace all such defective work, and all other work damaged thereby, which becomes defective during the term of the Guaranty-Warranty.

END OF SECTION 260500

SECTION 260519

POWER CONDUCTORS AND CABLES 51V-600V

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Power Wires and Cables
- B. Low Voltage Wires and Cables

PART 2 - PRODUCTS

2.1 POWER WIRES AND CABLES - 600 VOLT

- A. General: Conductors shall have current carrying capacities as per N.E.C. and with 600 volt insulation, #12 minimum except for controls and fixture wire. Conductors shall be copper.
- B. General Application (see below for exceptions):
 - 1. At or Below Grade (including within slab-on-grade):
 - a. #8 or larger conductors:
 - 1) XHHW or RHH/RHW/USE stranded (in conduit).
 - b. #10 or smaller conductors for circuits terminating at motors:
 - 1) THHN/THWN or XHHW stranded (in conduit).
 - c. #10 or smaller conductors (excluding circuits terminating at motors):
 - 1) THHN/THWN or XHHW solid (in conduit).
 - 2. Above Grade:
 - a. #8 or larger conductors:
 - 1) THHN/THWN, XHHW or RHH/RHW/USE stranded (in conduit).
 - b. #10 or smaller conductors for circuits terminating at motors:
 - 1) Where Exposed within Electrical Rooms OR Concealed in Wall/Ceiling Cavities (not concrete encased, etc.):
 - a) THHN/THWN, XHHW or RHH/RHW/USE stranded (in conduit) or
 - b) Metal-Clad (MC) cabling with THHN/THWN stranded conductors (conduit not required).
 - 2) Other Locations (where exposed outside electrical rooms or concrete encased): THHN/THWN, XHHW or RHH/RHW/USE stranded (in conduit).
 - c. #10 or smaller conductors (excluding circuits terminating at motors):
 - 1) Where Exposed within Electrical Rooms OR Concealed in Wall/Ceiling Cavities (not concrete encased, etc.):
 - a) THHN/THWN, XHHW or RHH/RHW/USE solid (in conduit) or
 - b) Metal-Clad (MC) cabling with THHN/THWN solid conductors (conduit not required).
 - 2) Other Locations (where exposed outside electrical rooms or concrete encased): THHN/THWN, XHHW or RHH/RHW/USE solid (in conduit).
 - 3. Metal-Clad (MC) cabling shall be rated for redundant grounding where installed in patient care areas per N.E.C. Article 517.
 - 4. Power Wire and cable shall be as manufactured by Southwire, Rome, Encore Wire, American Insulated Wire, Okonite, Phelps-Dodge, Americable, Aetna or approved equal.

- C. Emergency Feeder Wiring
 - 1. Where specifically required by NEC articles 700, 701, or other similar sections, feeder-circuit wiring for emergency systems and legally-required standby systems shall be a listed electrical circuit protective system consisting of 2-hour fire-rated, mineral insulated, copper-sheathed wiring cable (Pyrotenax System 1850 or equal).
- D. Class 1 Control Cabling (120VAC Control Circuits, Etc.)
 - 1. Unless specified otherwise, Class 1 control cabling shall:
 - a. Be rated for exposed cable tray installation.
 - b. Be plenum rated.
 - c. Be UL-rated for the proposed application.
 - d. Be multi-conductor with overall outer sheath as required by the application. The insulation of each conductor within the overall multi-conductor cable shall be uniquely color-coded. Ground conductors (when provided) within the multi-conductor cable shall have green insulation. Conductors with green insulation shall not be used for conductors other than ground.
 - e. Utilize copper conductors.
 - f. Have wire gauge as required to limit voltage drop to acceptable limits determined by the system supplier and to meet all applicable code requirements.
 - g. Where installed underground, within slab-on-grade or in exterior locations, be rated for wet locations.
 - h. Where required for specific systems, meet the specific requirements (conductor quantity, wire gauge, insulation type, shielding, etc.) of the system supplier.
 - i. Be rated for 600V.
 - j. Be industrial grade.
 - k. Have stranded conductors.
 - l. Have sunlight/oil-resistant PVC/Nylon insulation and jacket with ripcord.
 - 2. Control cabling shall be as manufactured by Belden, AlphaWire or General Cable.
- E. Fixture Wiring
 - 1. Conductor Types:
 - a. Type TFFN or XFF.
 - 2. Minimum Sizes:
 - a. For fixtures up to 300 watts: #16.
 - b. For fixtures over 300 watts up to 1500 watts: #14.
 - c. For fixtures over 1500 watts: as required.
 - d. Conductors to concrete pour fixtures: #12.
 - 3. Fixture wire shall extend only from fixture to first junction, and not over 6 feet, except for concrete pour units.

2.2 WIRE CONNECTIONS:

- A. All connector types:
 - 1. Shall be properly rated for the proposed application by UL and per the manufacturer.
- B. At Motor Connections (within motor terminal boxes):
 - 1. On Unshielded Wire:
 - a. Single conductor per phase: shall be made with insulated set screw connectors or 3M 5300 Series 1kV Motor Lead Connections kits with mechanical lugs as required.
 - b. Multiple conductors per phase: shall be made with insulated mechanical lugs, rated for the associated motor cable types, by Polaris or Ilsco.

2. On Shielded Power Wire:
 - a. The braided shields and internal grounding conductors of shielded power (not instrumentation) cables shall be grounded at BOTH ends (at VFD/starter and at motor) with a termination kit provided by the cable supplier. This termination kit shall include a connection ring that makes contact around the full circumference of the braided shield, and connects all internal grounds to a common external ground point.
 3. Cabling within motor terminal boxes shall be trained such as to prevent any splice/termination/connection kits from contacting inside edge(s) of the motor terminal boxes (to prevent chaffing of the insulation/splice/wiring which could lead to faults). Contractor shall carefully coordinate all required motor terminal box sizes to ensure proper capacity for all required conductors/splices.
- C. Other Dry locations:
1. On Wire larger than #10: shall be made with solderless, non-insulated compression-type connectors meeting requirements of Federal Specification WS-610e for Type II, Class 2 and shall be covered with Scotch #33 electrical tape so that insulation is equal to 150% of conductor insulation.
 2. On Wire #10 and smaller: shall be made with one of the following:
 - a. Ideal Wing Nuts or equal by 3M .
 - b. Ideal Push-In Wire Connectors (for #12 and smaller only).
- D. Other Wet/Damp locations:
1. On Wire larger than #10: shall be made with underground/direct-burial, waterproof rated EPDM or TPE-insulated connectors by IlSCO, Burndy or T&B.
 2. On Wire #10 and smaller: shall be made with one of the following:
 - a. Ideal Weatherproof or Underground Wire Connectors pre-filled with 100% silicone sealant as required by the application.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

- A. All wires and cables shall be installed in conduit unless specifically noted otherwise.
- B. Metal-clad (MC) cabling (not required to be installed within conduit) may be used for above-grade, concealed branch circuits where allowed by code. MC cable installation shall:
1. NOT be installed exposed except in electrical rooms.
 2. be provided with dedicated neutrals for all multi-wire circuits. Conductors shall be color coded as described below.
 3. be run orthogonal with the building structure.
 4. be supported per N.E.C. requirements. At a minimum MC cabling shall be supported on six foot intervals and within 12" of all outlet/junction boxes.
 5. be supported independently from the building structure and shall not come into contact with other building systems (ductwork, piping, conduits, etc.).
 6. be rated for redundant grounding where installed in patient care areas per N.E.C. Article 517.
- C. All joints and splices on wire shall be made with solderless connectors, and covered so that insulation is equal to conductor insulation.
- D. No splices shall be pulled into conduit.

- E. No conductor shall be pulled until conduit is cleaned of all foreign matter.
- F. Wire and cable shall be neatly formed, bundled and tied in all panelboards, wireways, disconnect switches, pullboxes, junction boxes, cabinets and other similar electrical enclosures.
- G. All wires and cables installed in underground or other wet locations shall be rated by the manufacturer for wet locations.
- H. Network cabling shall be continuous from endpoint to endpoint and shall not be spliced unless specifically noted otherwise.
- I. All conductors/cabling (including spare conductors) shall be properly terminated unless specifically directed otherwise. See above for general termination hardware requirements.

3.2 POWER WIRE AND CABLE INSTALLATION:

- A. No power conductor shall be smaller than #12 except where so designated on the drawings or hereinafter specified.
- B. Multi-wire lighting branches shall be used as indicated.
- C. Where more than three current-carrying conductors are installed in a single raceway or cable, conductors shall be derated as indicated in NEC Table 310.15(B)(3)(a).
- D. Raceways/cables shall generally not be installed exposed to sunlight on roofs unless specifically required. Where raceways or cables are installed exposed to sunlight on roofs, conductors shall be derated with ampacities adjusted per NEC Table 310.15(B)(3)(c).
- E. In installing parallel power conductors, it is mandatory that all conductors making up the feeder be exactly the same length, the same size, the same type of conductor with the same insulation. Each group of conductors making up a phase or neutral must be bonded at both ends in an approved manner.
- F. In installing overhead main power services, a minimum of 5'-0" of cable per run shall be extended beyond the weatherhead(s) for connection to service drop. Confirm exact requirements with local utility company.

3.3 WIRE CONNECTIONS

- A. See Part 2 above for material types.
- B. Aluminum Wire Connections:
 - 1. Where aluminum wiring is allowed, connections shall utilize compression fittings, no exceptions (Anderson Versa Crimp or equal).
- C. Any stranded wire connection to wiring devices shall be made with crimp type terminals.
- D. All electrical connections and terminals shall be tightened according to manufacturer's published torque-tightening values with calibrated torque wrenches as required to clearly indicate final torque value to the contractor. Where manufacturer's torque values are not provided, those specified in UL 486A & 486B shall be used.

- E. All connections and connector types shall be installed in strict compliance with all requirements of the connector manufacturer.
- F. Under no condition shall the specified conductors be connected to terminals rated less than 75°C. Where conductors sized #1 or smaller are shown to be terminated at equipment and the terminals of that equipment are rated for less than 75°C, contractor shall install junction box near equipment to capture the specified conductors, splice with compression connections (rated for a least 75°C) and extend conductors with ampacity rating as required by NEC (based on terminal temperature rating) to equipment terminals. The length of the conductors to be terminated shall be as directed by the AHJ but not less than 48 inches.

3.4 LOW VOLTAGE (LESS THAN 50V) CONTROL AND NETWORK CABLE INSTALLATION:

- A. All wires and cables shall be installed in conduit unless specifically noted otherwise. Low voltage control and/or network cabling located within concealed, accessible ceiling spaces (such as above lay-in ceilings) may be run without conduit if the following requirements are met:
 1. Cabling shall be plenum-rated, multi-conductor.
 2. Cabling shall be supported by cable tray or with J-hook supports on intervals not to exceed 5'-0" on center. Cabling shall be supported solely from the cable tray or j-hooks supported from the building structure, without using piping, ductwork, conduit or other items as supports.
 3. Cabling shall be properly bundled with plenum-rated Velcro straps on intervals not to exceed 30" on center.
 4. Properly-sized conduit(s) shall be provided wherever cabling enters an inaccessible or exposed area (such as above gyp board ceilings or through walls). End bushings shall be provided on both ends of all raceway terminations. All fire/smoke barrier penetrations shall be made in accordance with a U.L. listed assembly.

3.5 CIRCUITS AND BRANCH CIRCUITS

- A. Outlets shall be connected to branch circuits as indicated on drawings by circuit number adjacent to outlet symbols, and no more outlets than are indicated shall be connected to a circuit.

3.6 LABELING AND COLOR CODING OF WIRE AND CABLE

- A. Refer to Specification Section 260553 for all labeling requirements.
- B. A color coding system as listed below shall be followed throughout the network of branch power circuits as follows:

PHASE	120/208/240/ COLOR	120/240 HIGH LEG DELTA COLOR	277/480 VOLT COLOR
A	BLACK	BLACK	BROWN
B	RED	ORANGE (FOR HI- LEG)	ORANGE
C	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN
Comments:	120/208/240/ COLOR	120/240 HIGH LEG DELTA COLOR	277/480 VOLT COLOR

PHASE

NEUTRAL A	WHITE W/ BLACK TRACER	WHITE W/ BLACK TRACER	GRAY W/ BROWN TRACER
NEUTRAL B	WHITE W/ RED TRACER	WHITE W/ ORANGE TRACER (FOR HI-LEG NEUTRAL)	GRAY W/ ORANGE TRACER
NEUTRAL C	WHITE W/ BLUE TRACER	WHITE W/ BLUE TRACER	GRAY W/ YELLOW TRACER

- C. Control Conductors: Shall be color coded by use of colored “tracers”. No control circuit shall contain two identical conductors. For example, a set of five (5) control conductors for a pushbutton station represents one (1) control circuit which would require five (5) uniquely-colored control conductors.

3.7 TESTING

- A. The insulation resistance of all feeder conductors (feeding electrical distribution equipment such as switchboards, panelboards, transfer switches, transformers, etc.) shall be tested at the load side of the feeder breaker with a 1000-volt DC Megger Tester prior to energization or final termination. Any feeder conductor with an insulation resistance less than the recommended minimums in the latest version of NETA Acceptance Testing Specification (“ATS”) standard shall be replaced by the contractor at the contractor’s expense. All final test results shall be clearly documented (with date, time, feeder, results, test equipment, etc.), and the final test results shall be submitted to the design team for review.

END OF SECTION 260519

SECTION 260526

GROUNDING

PART 1 - GENERAL

1.1 GENERAL

- A. THE WORK UNDER THIS SECTION INCLUDES BUT IS NOT LIMITED TO GROUNDING OF THE FOLLOWING:
 - 1. Service Equipment.
 - 2. Transformers.
 - 3. Non-current carrying conductive surfaces of equipment.
 - 4. Metal Buildings.
 - 5. Structures.
 - 6. Other Equipment.

1.2 GENERAL REQUIREMENTS

- A. All equipment, building steel, and main service shall be effectively and permanently grounded with a conductor cross section as required by the National Electrical Code and of capacity sufficient to ensure continued effectiveness of the ground connections for fault current. Ground conductors shall be as short and straight as possible, protected from mechanical injury and, if practicable, without splice or joint.
- B. All grounding connections shall be installed in accordance with the National Electrical Code and all local codes and requirements. Such codes shall be considered minimum requirements and the installation of the grounding system shall ensure freedom from dangerous shock voltage exposure and provide a low impedance ground fault path to permit proper operation of overcurrent and ground fault protective devices.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. All grounding conductors shall be insulated with green colored, 600 volt insulation unless noted otherwise.
- B. Motors having power supplied by single conductor wire in conduit shall be grounded through the conduit system. Flexible conduit shall be "jumped" by an appropriate bonding conductor.

2.2 GROUNDING ELECTRODES

- A. Grounding electrodes shall be copper-clad steel rods 3/4 inch in diameter and ten feet long. Where longer electrodes are necessary to reduce the ground resistance, Contractor shall provide sectional rods, connectors, drive heads, etc.

2.3 CONNECTIONS

- A. All conductor-to-conductor, conductor-to-ground rod, conductor-to-structure, conductor-to-fence connections of #6 and larger sized conductors and underground ground connections shall be permanent exothermic welded connections (Cadweld or equal) unless otherwise noted on

applicable drawings.

- B. Connections to equipment shall be by bolted compression type lugs (except for motors). When the conductor is #6 and larger, the lug shall be joined to the conductor by an exothermic weld (Cadweld or equal).
- C. Motors to be grounded by the grounding conductors run with the power conductors shall have a split-post grounding stud installed in the connection box.
- D. Each cast pull box or junction box shall have a ground lug, connected to largest ground conductor to enter box.
- E. Ground connections at conduit terminations shall be made by approved grounding bushings (see Raceways Specification Section for additional requirements).

2.4 MANUFACTURERS

- A. Conduit clamps and connectors shall be manufactured by Raco, OZ., or Ercon.
- B. Lugs shall be as manufactured by Square "D", Burndy, or T and B.
- C. Exothermic weld connections shall be as manufactured by Cadweld, or approved equal.
- D. Ground rods shall be as manufactured by Joslyn or McGraw Edison.
- E. Split post grounding shall be as manufactured by Burndy or T and B.

PART 3 - EXECUTION

3.1 MAIN SERVICE GROUND

- A. The main service grounding electrode system shall consist of the following items bonded together by the grounding electrode conductor:
 - 1. The main underground cold water pipe (metal).
 - 2. The metal frame of the building.
 - 3. Driven ground rods. Ground rods shall be embedded at the lowest point in the building and below the permanent moisture level. Ground rods shall be spaced a minimum of ten (10) feet apart and connected in parallel until resistance to ground does not exceed five (5) ohms.
- B. The grounding electrode system shall be connected to the grounded conductor (neutral) on the supply side of the service disconnecting means by a grounding electrode conductor not smaller than that shown in Table 250.66 of the N.E.C. The main service equipment grounding conductor shall be connected to the grounding conductor on the supply side of the service disconnecting means in accordance with Table 250.122 of the N.E.C. for the ampere rating of the service entrance equipment. Where in a service entrance switchboard, the equipment grounding conductor shall not be less than 25% of the main bus rating. These connections shall be made inside the service entrance equipment enclosure.

3.2 TRANSFORMER GROUNDS

- A. Dry type insulation transformers with a grounded conductor in the secondary shall be grounded in accordance with N.E.C. Section 250-30.

3.3 EXPOSED NON-CURRENT-CARRYING METAL PARTS

- A. General: Ground connections to equipment or devices shall be made as close to the current carrying parts as possible, that is, to the main frame rather than supporting structures, bases or shields. Grounding connections shall be made only to dry surfaces that are clean and dry. Steel surfaces shall be ground or filed to remove all scales, rust, grease, and dirt. Copper and galvanized steel shall be cleaned to remove oxide before making welds or connections. Code size ground conductors shall be run in all power conduits and properly terminated at each end.
- B. Ground conductors shall be routed as straight as possible. Where possible, ground conductors shall be routed such as to avoid bends exceeding 90 degrees or with a radius of less than 8”.
- C. Motors: Exposed non-current-carrying metal parts, shall be grounded by a grounding conductor either run with power conductors, and/or separate grounding conductors. Drawings will show method(s) to be used. The ground conductors with all motor conductors shall be connected to the ground buss in the motor connection box. Jumper connections shall be installed between frames and rigid conduit for equipment having flexible conduit connections (sealtight). All AC motor grounds shall provide a low impedance path to ground.
- D. Raceways & boxes: All raceways, conduits, armored or shielded cable and all exposed non-current carrying metal parts shall be grounded. Such items shall be bonded together and permanently grounded to the equipment ground buss. Metallic conduits shall be connected by grounding or clamps to ground buss. Flexible “jumpers” shall be provided around all raceway expansion joints. Bonding straps for steel conduit shall be copper. Jumper connections shall be provided to effectively ground all sections or rigid conduit connected into plastic pipe. No metallic conduit shall be left ungrounded. In conduit systems interrupted by junction or switch boxes where locknuts and bushings are used to secure the conduit in the box, the sections of conduit and box must be bonded together. If conduit, couplings or fittings have a protective coating or non-conductive material, such as enamel, such coating must be thoroughly removed from threads of both couplings and conduit and the surface of conduit or fitting where the ground clamp is secured.
- E. Enclosures: Metal conduits entering free standing motor control centers, switchboards or other free standing equipment shall be grounded by bare conductors and approved clamp. Any conduits entering low voltage (480 volts or below) equipment through sheet metal enclosure and effectively grounded to enclosure by double locknut or hub need not be otherwise bonded.
- F. Equipment: In addition to equipment grounding provisions mandated by code requirements, additional equipment grounding provisions (including local ground rods, connections, etc.) shall be provided by the contractor as directed by equipment suppliers.
- G. Both ends of ground busses in motor control centers, switchboards, etc., shall be separately connected to the main ground buss to form two separate paths to ground.
- H. Fences and Grills: Fences and metal grills around equipment carrying voltage above 500 volts between phases shall be bonded together and to ground. Fences and grill work shall be grounded at every post, column, or support, and on each side of every gate.

3.4 ACCEPTANCE DOCUMENTATION AND TESTING

- A. Contractor shall take and store photographs of all underground grounding system connections

prior to burial of connections, for review by Engineer.

- B. Upon completion of work, the entire ground system shall be shown to be in perfect working condition, in accordance with the intent of the Specifications.
- C. Contractor shall measure the resistance between the main ground bonding jumper to true earth ground using the Fall of Potential method as described by ANSI/IEEE Standard 81 (“Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of an Earth System”). If the measured value is greater than five ohms, additional grounding electrodes shall be installed as described in Part 3.1 above. The final ground resistance value shall be submitted in writing, and documented via picture of the meter reading from the Fall of Potential test, to the Architect prior to the final observation, and shall be included in final O&M documentation.

END OF SECTION 260526

SECTION 260533

RACEWAYS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. THE WORK UNDER THIS SECTION INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
 - 1. Conduits
 - 2. Conduit Fittings
 - 3. Couplings & Connectors
 - 4. Bushings
 - 5. Raceway Hardware, Conduit Clamps & Supports
 - 6. Watertight Entrance Seal Devices

PART 2 - PRODUCTS

2.1 CONDUITS

- A. Rigid Galvanized Steel and I.M.C.:
 - 1. Shall be galvanized outside and inside by hot dipping.
 - 2. Shall be as manufactured by Republic, Wheatland, Pittsburg Standard, Youngstown, Allied or equal.
- B. E.M.T.:
 - 1. Shall be Electro-Galvanized.
 - 2. Shall be as manufactured by Republic, Wheatland, Pittsburg Standard, Youngstown, Allied or equal.
- C. Rigid Aluminum:
 - 1. Shall be manufactured of 6063 Alloy, T-1 temper.
 - 2. Shall be manufactured by Republic (Nucor), Wheatland, Allied (Atkore), Penn or equal.
- D. Schedule 40 and 80 PVC:
 - 1. Shall be composed of polyvinyl chloride and shall be U.L. rated type 40 or 80 for use with 90 degree rated conductors. Conduit shall conform to NEMA Standards and applicable sections of N.E.C.
 - 2. The conduit manufacturer shall have had a minimum of 5 years experience in the manufacture of the products. Non-metallic raceways shall be as manufactured by Carlon, Triangle, Can-Tex, Allied or equal.
- E. HDPE Innerduct
 - 1. Shall be composed high density polyethylene and shall be orange in color, unless noted otherwise.
 - 2. Shall be corrugated unless noted otherwise.
 - 3. Shall be manufactured by Carlon, Ipex or equal.
- F. Flexible Metallic Conduit:

1. Shall be continuous spiral wound and interlocked galvanized material, code approved for grounding.
- G. Liquidtight Flexible Metallic Conduit:
 1. Shall be galvanized steel-core sealtite, code approved for grounding.
 2. Shall have an outer liquidtight, nonmetallic, sunlight-resistant jacket over an inner flexible metal core.
 3. Shall be as manufactured by Electric-Flex, Anaconda or equal.

2.2 FITTINGS, COUPLINGS & CONNECTORS

- A. Rigid Galvanized Steel and I.M.C. couplings and connectors shall be standard threaded type, galvanized outside and inside by hot dipping. Threadless and clamp type are not acceptable. Couplings/connectors shall be as manufactured by Racor, Efcor, or Appleton or equal.
- B. All rain tight connectors shall be threaded Myers or approved equal, rated for outdoor application.
- C. E.M.T. couplings and connectors shall be set screw, or steel compression type. All couplings and connectors shall be 720B, 730, 750B, or 760 series of Efcor or equal series of Racor. Pressure indented type connectors or cast metal will not be approved for any location. E.M.T. couplings and connectors shall be as manufactured by O-Z/Gedney, T&B, Efcor, Racor, Midwest or equal. E.M.T. fittings, couplings and connectors located within concrete (where allowed) shall be compression type and shall be adequately sealed with tape to ensure a concrete-tight seal.
- D. Rigid Aluminum couplings and connectors shall be standard threaded type, of the same alloy as the associated conduit. Threadless and clamp type are not acceptable. Fittings shall be as manufactured by Thomas & Betts, Crouse-Hinds, Appleton, Pyle-National or equal.
- E. All PVC couplings, adapters, end bells, reducers, etc., shall be of same material as conduit.
- F. Liquidtight Flexible Metallic Conduit connectors shall be liquidtight with insulating throat or end bushing, designed for application with Liquidtight Flexible Metallic Conduit. Fittings shall be as manufactured by Efcor, Racor, Midwest or equal.
- G. All LB unilets sizes 1 1/4" or larger shall have rollers.
- H. Miscellaneous conduit fittings shall be as manufactured by Appleton, Crouse-Hinds, Pyle-National, Russell & Stoll or equal.

2.3 BUSHINGS

- A. All non-grounding rigid bushings 1-1/4" and larger shall be the insulating type (O-Z/Gedney type "BB" or equal by T&B, Midwest Electric or Penn Union).
- B. All non-grounding rigid bushings 1" and smaller shall be threaded malleable iron with integral noncombustible insulator rated for 150°C. Non-grounding rigid conduit bushings shall be O-Z/Gedney type "B" or equal by T&B, Midwest Electric or Penn Union.
- C. All grounding rigid bushings shall be threaded malleable iron with integral noncombustible insulator rated for 150°C. All grounding rigid conduit bushings shall be O-Z/Gedney type

“BLG” or equal by T&B, Midwest Electric or Penn Union.

2.4 HARDWARE, CONDUIT CLAMPS AND SUPPORTS

- A. All hardware such as expansion shields, machine screws, toggle bolts, “U” or “J” bolts, machine bolts, conduit clamps and supports shall be of corrosion resistant materials (stainless steel, aluminum, galvanized or plated steel, or other approved materials).
- B. Hardware in contact with aluminum handrails, plates or structural members and all hardware in exterior, wet or corrosive areas shall be type 316 stainless steel or aluminum (with bitumastic paint coating to isolate aluminum from contact with concrete where necessary) unless specifically noted otherwise.
- C. Supports in exterior, **%%IndStart%%**process, **%%IndEnd%%**wet or corrosive locations shall be type 316 stainless steel or aluminum (with bitumastic paint coating to isolate aluminum from contact with concrete where necessary) unless specifically noted otherwise.
- D. Supports in extremely corrosive environments (such as chlorine or fluoride storage rooms) shall be PVC-Coated aluminum unless specifically noted otherwise.
- E. Hardware and conduit clamps shall be as manufactured by Efcor, Steel City, G.A., Tinnerman or equal.

2.5 WATERTIGHT ENTRANCE SEAL DEVICES

- A. For new construction, seal devices shall consist of oversized sleeve and malleable iron body with sealing rings, pressure rings, sealing grommets and pressure clamps as required (O-Z/Gedney type FSK/WSK or equal).
- B. For cored-hole applications, seal devices shall consist of assembled dual pressure disks with neoprene sealing rings and membrane clamps as required (O-Z/Gedney type CSM or equal).

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Minimum Diameter: 1/2-inch.
- B. Raceway Type: Raceway types shall be as specified below, unless indicated otherwise on drawings:
 - 1. Exterior, Exposed: Rigid Galvanized Steel or I.M.C. unless otherwise noted.
 - 2. Other Exterior (Concrete-Encased or Direct Earth Buried): Schedule 40 PVC. PVC conduit shall convert to metallic conduit prior to exiting concrete-encasement or direct earth burial. See “transition” items below for additional requirements. Conduits shall be left exposed until after Architect’s observation.
 - 3. Interior, Exposed:
 - a. Hazardous Locations: Rigid Galvanized Steel .
 - b. Wet Locations (including, but not limited to, Pump Rooms, Wet Wells, Underground Vaults, and other similar locations): Rigid Galvanized Steel or I.M.C. .
 - c. Dry Locations Where Subject to Mechanical Damage (including, but not limited to, below 10’-0” A.F.F. in shop, storage, warehouse and other similar areas): Rigid Galvanized Steel or I.M.C..

- d. Extremely Corrosive Locations (Chlorine Storage Rooms, Fluoride Storage Rooms and other similar areas): Schedule 80 PVC.
- e. Other Dry Locations: E.M.T.
- 4. Interior, Concealed:
 - a. Embedded inside Poured Concrete Walls, Ceilings or Floors, with a minimum of 2" of concrete between finished surface and outer wall of conduit on all sides, where no anchor bolts, screws or other similar items will be installed: Schedule 40 PVC. PVC conduit shall convert to metallic conduit (exact type as specified elsewhere within this section) prior to exiting poured concrete-encasement of wall, ceiling, floor or ductbank. See "transition" items below for additional requirements.
 - b. Other Raceways Embedded inside Poured Concrete Walls, Ceilings or Floors (not meeting requirements above): Rigid Galvanized Steel or I.M.C. (coated with two (2) spiral-wrapped layers of 3M Scotchrap 50 PVC tape or two coats of asphaltum paint where below grade or within concrete).
 - c. Other Raceways: E.M.T.
- 5. Terminations at motors, transformers and other equipment which has moving or vibrating parts:
 - a. Exterior or Wet Locations (including, but not limited to, Pump Rooms, Wet Wells, Underground Vaults, and other similar locations): Liquidtight Flexible Metallic Conduit (shall generally not exceed 24 inches in length) with watertight fittings.
 - b. Dry, Interior Locations: Flexible Metallic Conduit (shall generally not exceed 24 inches in length).
- 6. Terminations at fixtures mounted in grid-type ceilings:
 - a. Flexible Metallic Conduit or MC cabling (shall generally not exceed 72 inches in length and shall run from junction box to fixture, not from fixture to fixture).
- 7. Transition from underground or concrete-encased to exposed:
 - a. Convert PVC to Rigid Galvanized Steel (coated with two (2) spiral-wrapped layers of 3M Scotchrap 50 PVC tape or two coats of asphaltum paint where below grade or within concrete) utilizing Rigid Galvanized Steel 90 degree bends (and vertical conduits as required by application) prior to exiting concrete/grade (except at outdoor pull boxes and under freestanding electrical equipment, where terminations shall be by PVC end bells installed flush with top of slab). Exposed portions of these coated conduits shall extend a minimum of 6" above floor level, and shall be installed at uniform heights.

3.2 RACEWAY INSTALLATION

A. General:

- 1. Follow methods which are appropriate and approved for the location and conditions involved. Where not otherwise shown, specified, or approved in a particular case, run all wiring concealed.
- 2. Where conduit crosses a structural expansion joint an approved conduit expansion fitting shall be installed.
- 3. A non-conductive polypropylene pull string, properly tied/secured at either end, shall be installed in all empty conduits.
- 4. Metal conduit field-cuts shall be cut square with a hacksaw and the ends reamed after threading.
- 5. PVC conduit field-cuts shall be made with hacksaw, and ends shall be deburred.
- 6. All PVC joints shall be made as follows:
 - a. Clean the outside of the conduit to depth of the socket, and the inside of socket with an approved cleaner.

- b. Apply solvent cement as recommended by the conduit manufacturer to the interior of the socket and exterior of conduit, making sure to coat all surfaces to be joined.
- c. Insert conduit into the socket and rotate 1/4 to 1/2 turn and allow to dry.
- 7. All metallic conduit installed below grade or within concrete shall be coated with two (2) spiral-wrapped layers of 3M Scotchrap 50 PVC tape or two coats of asphaltum paint prior to installation.
- 8. Install ground wire sized per N.E.C. Table 250.122 in all conduits.
- 9. Use of running threads is absolutely prohibited. Conduit shall be jointed with approved threaded conduit couplings. Threadless and clamp type not acceptable.
- 10. Conduits shall be sized in accordance with latest National Electrical Code except when size shown on drawings. 1/2-inch conduit shall not contain conductors larger than No. 12 or more than four (4) No. 12 conductors.
- 11. Exposed, field-cut threads on all metal conduits shall be painted with zinc primer (for Galvanized Rigid or I.M.C.) .

B. Routing/Locating:

- 1. Exposed conduit runs shall be run level and plumb and shall, on interior of buildings, be run parallel and/or at right angles to building walls and/or partitions.
- 2. Conduit with an external diameter larger than 1/3 the thickness of a concrete slab shall not be placed in the slab. Conduits in slab shall not be spaced closer than 3 diameters on center.
- 3. Conduit run in ceiling spaces shall be run as high as possible, all at same level, and shall be supported from building structure. Do not support conduit from any other installation.
- 4. Conduit run within exterior CMU, concrete or other similar walls shall be run within the CMU cells / concrete structure / etc. Conduits shall not be run on the outside surface of CMU cells / concrete structure / etc. underneath exterior veneers / etc., which could cause a thermal break in the wall insulation or a future water intrusion problem.
- 5. Install conduit runs to avoid proximity to steam or hot water pipes. In no place shall a conduit be run within 6" of such pipes except where crossing is unavoidable, then conduit shall be kept at least 3" from the covering of the pipe crossed.
- 6. Before installing raceways for motors, HVAC equipment and other fixed equipment, check location of all equipment connections/terminal boxes with equipment supplier and locate and arrange raceways appropriately.
- 7. A minimum of 12" of clearance (or more as required by associated utility companies) shall be provided between the finished lines of exterior, underground conduit runs and exterior, underground utilities (gas, water, sewer, etc.).
- 8. Where any portion of raceway is installed in a wet environment (such as below grade) and located at a higher elevation than the raceway termination point in a dry environment, install watertight compound inside raceway at termination around cabling to prevent transfer of water through conduit system. Watertight compound shall be rated for the potential water head pressure, based on the assumption that ground water level would be at grade level.

C. Bends:

- 1. Do not make bends (in any raceway, including flexible conduits) that exceed allowable conductor bending radius of cable to be installed or that significantly restrict conductor flexibility.
- 2. All bends within concrete-encased ductbanks installed in exterior locations shall be long radius bends (24" minimum bending radius – varies with conduit diameter).
- 3. Where numerous exposed bends or grouped together, all bends shall be parallel, with same center and shall be similar in appearance

4. All PVC elbows, bends, etc., shall be either factory bends or made with an approved heat bender.

D. Support:

1. Anchor conduit securely in place by means of approved conduit clamps, hangers, supports and fastenings. Arrangement and methods of fastening all conduits shall be subject to Engineer's direction and approval. All conduits shall be rigidly supported (wire supports may not be used in any location). Use only approved clamps on exposed conduit.
2. Conduit in riser shafts shall be supported at each floor level by approved clamp hangers.
3. Right angle beam clamps and U bolts shall be specially formed and sized to snugly fit the outside diameters of conduits.
4. Where installed in seismic zones, suspended raceways shall be braced in two (2) directions as required to prevent swaying and excessive movement.
5. Raceways installed on top of flat roofing shall be supported a minimum of 3 ½" above roof with rubber block supports (Cooper B-Line Dura-Blok or equal). Installation shall be in strict accordance with support manufacturer's instructions and recommendations.

E. Terminations:

1. All conduit connections to sheet metal cabinets or enclosures located in exterior or wet locations shall terminate by use of rain tight (Meyers) hubs.
2. Where rigid or I.M.C. conduits enter sheet metal boxes, they shall be secured by approved lock nuts and bushings.
3. Where metal conduits enter outdoor pull boxes, manholes, under freestanding electrical equipment or other locations where direct metal-to-metal contact does not exist between enclosure and conduit, grounding bushings shall be installed. Each grounding bushing shall be connected to the enclosure ground and all other grounding bushings with properly sized grounding conductors.
4. Where E.M.T. enters sheet metal boxes they shall be secured in place with approved insulating fittings.
5. Where PVC enters outdoor pull boxes, manholes or under freestanding electrical equipment, PVC end bells shall be installed.
6. Contractor shall be responsible for coordinating required conduit sizes with equipment hubs/conduit entry provisions (such as at motor tap boxes) prior to installation of conduit systems. Contractor shall field adjust final conduit sizes at terminations where so required (only as allowed by code) from those indicated on plans to coordinate with equipment hubs/conduit entry provisions.
7. Where conduit terminates in free air such that associated cabling/circuitry becomes exposed (such as at cable trays, etc.), conduit shall generally terminate in a horizontal orientation (to prevent dust/debris/etc. from entering conduit system). Where vertical conduit termination is necessary, the termination shall be provided with cord-grip conduit terminations to seal the conduit system.
8. Conduit ends shall be carefully plugged during construction.
9. Permanent, removable caps or plugs shall be installed on each end of all empty raceways with fittings listed to prevent water and other foreign matter from entering the conduit system.

F. Penetrations:

1. All fire/smoke barrier penetrations shall be made in accordance with a U.L. listed assembly. Refer to drawings and other specifications for additional requirements.
2. All penetrations shall be at right angles unless shown otherwise.

3. Structural members (including footings and beams) shall not be notched or penetrated for the installation of electrical raceways unless noted otherwise without specific approval of the structural engineer.
 4. Dry-packed non-shrink grout or watertight seal devices shall be used to seal openings around conduits at all penetrations through concrete walls, ceilings or aboveground floors.
 5. All raceways entering structures, or where water is otherwise capable of entering equipment/devices through the raceway system, shall be sealed (at the first box or outlet) with foam duct sealant to prevent the entrance of gases or liquids from one area to another or into equipment/devices.
 - a. Where the elevation of the raceway penetration (into the structure) is no more than 15' below the other (higher) end of the same raceway, Polywater FST sealant (rated to hold back up to 22' of continuous water head pressure), or pre-approved equal, shall be used.
 - b. Where the elevation of the raceway penetration (into the structure) is between 15' and 75' below the other (higher) end of the same raceway, Polywater PHRD Custom Mechanical Seals (rated to hold back up to 36psi or 83' of continuous water head pressure), or pre-approved equal, shall be used.
 - c. Where the elevation of the raceway penetration (into the structure) is more than 75' below the other (higher) end of the same raceway, the contractor shall propose a custom solution designed to hold back or to drain the possible water within the associated raceway. Submittals shall be provided to the engineer for review/approval, including a summary of the anticipated elevations/PSIs, details of the proposed installation, cut-sheets of devices/materials, etc.
 6. Additionally, where necessary to ensure that water does not enter equipment/devices through the raceway system (where raceways extend to equipment/devices from wet areas), junction boxes with drain assemblies in bottom shall be located at low point of raceway system near equipment/devices (to drain water out of raceway system before it enters equipment/devices). Contractors shall provide drains in raceway systems where so necessary to prevent water entry into equipment/devices.
 7. All raceways passing through concrete roofs or membrane-waterproofed walls or floors shall be provided with watertight seals as follows:
 - a. Where ducts are concrete encased on one side: Install watertight entrance seal device on the accessible side of roof/wall/floor as directed by equipment manufacturer.
 - b. Where ducts are accessible on both sides: Install watertight entrance seal device on each side of roof/wall/floor as directed by equipment manufacturer.
 8. All raceways passing through walls of rooms containing/storing noxious chemicals (chlorine, ammonia, etc.) or through hazardous locations shall be sealed with conduit seals (Crouse-Hinds type EYS or equal).
 9. All raceways terminating into electrical enclosures/devices/panels/etc. located in hazardous locations shall be sealed with conduit seals (Crouse-Hinds type EYS, EZS or equal) within 18" of the termination.
- G. Exterior Electrical Ductbanks:
1. Where exterior electrical concrete-encased ductbanks are indicated on drawings, conduit runs between buildings or structures shall be grouped in concrete-encased ductbanks as follows:
 - a. A minimum of 3" of concrete shall encase each side of all ductbanks.
 - b. A minimum of 1 1/2" of separation shall be provided between each conduit within ductbanks. PVC spacers shall be installed at the necessary intervals prior to placement of concrete to maintain the required spacing and to prevent bending or displacement of the conduits.

- c. Top of concrete shall be a minimum of 30" below grade. A continuous magnetic marking tape shall be buried directly above each ductbank, 12" below grade.
- d. Exact routing of ductbanks shall be field verified and shall be modified as necessary to avoid obstruction or conflicts.
- e. Underground electrical raceways shall be installed to meet the minimum cover requirements listed in NEC Table 300.5. Refer to drawings for more stringent requirements.

END OF SECTION 260533

SECTION 260534

OUTLET BOXES, JUNCTION BOXES, WIREWAYS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Outlet and Junction Boxes
- B. Pull Boxes
- C. Wireways

PART 2 - PRODUCTS

2.1 OUTLET BOXES & JUNCTION BOXES (THROUGH 4-11/16")

- A. Sheet Metal: Shall be standard type with knockouts made of hot dipped galvanized steel as manufactured by Steel City, Raco, Appleton, Bowers or equal.
- B. Cast: Shall be type FS, FD, JB, GS, or SEH as required for application as manufactured by O-Z/Gedney, Appleton, or equal.
- C. Nonmetallic: Shall be type Polycarbonate/ABS construction as required for application with non-metallic quick-release latches as manufactured by Hoffman, O-Z/Gedney, Appleton, or equal.

2.2 JUNCTION AND PULL BOXES (LARGER THAN 4-11/16")

- A. Oil-Tight JIC: Shall be Hoffman Type CH box or approved equal.
- B. Galvanized Cast Iron or Cast Aluminum: Shall be O-Z/Gedney or approved equal.
- C. Stainless Steel: Shall be as manufactured by O-Z/Gedney, Hoffman or approved equal. Boxes shall have continuous hinges, seamless foam-in-place gaskets and screw-down clamps.
- D. Nonmetallic: Shall be type Polycarbonate/ABS construction as required for application with non-metallic quick-release latches as manufactured by Hoffman, O-Z/Gedney, Appleton, or equal. Boxes shall have hinged covers and screw-down clamps.
- E. Wireways: Shall be standard manufacturer's item as manufactured by Hoffman, Square "D", Burns, B & C or equal. Wireways shall have hinged covers and screw-down clamps.
- F. Pre-cast Polymer Concrete Below-Grade Hand Holes & Pull Boxes:
 - 1. Enclosures, boxes and cover are required to be UL Listed and conform to all test provisions of ANSI/SCTE 77 "Specifications For Underground Enclosure Integrity" for Tier 15 applications (15,000lb design load and 22,500lb test load) unless noted otherwise.
 - 2. All covers shall have a minimum coefficient of friction of 0.05 in accordance with ASTM C1028 and the corresponding Tier level shall be embossed on the top surface.

3. Cover shall be bolt-down include factory-labeling to read "Electric", "Communications" or other as directed.
 4. Hardware shall be stainless steel.
 5. Shall be Quazite PG/LG Style or approved equal.
- G. Galvanized Cast Iron Below-Grade Pull Boxes:
1. Enclosures, boxes and cover are required to conform to AASHTO H-20 requirements for deliberate vehicular traffic applications unless noted otherwise.
 2. Cover shall be checkered, bolt-down include factory-labeling to read "Electric", "Communications" or other as directed.
 3. Hardware shall be stainless steel.
 4. Shall be furnished with grounding kit.
 5. Shall be O-Z/Gedney Type YR or approved equal.
 - a.

PART 3 - EXECUTION

3.1 APPLICATION

- A. General
1. All boxes and wireways shall be of sufficient size to provide free space for all enclosed conductors per NEC requirements. Fill calculations shall be performed by contractor per NEC requirements.
- B. Outlet Boxes & Junction Boxes (through 4-11/16")
1. Sheet metal boxes shall be used on concealed work in ceiling or walls and exposed work in dry, interior locations
 - a. Exception: Where exposed and installed within finished/public spaces such as offices, corridors, lobbies, etc., cast boxes shall be used for wiring device outlets. Cast boxes are not required in back-of-house areas such as electrical rooms, mechanical rooms, etc.
 2. Cast boxes shall be used wherever Rigid or I.M.C. conduits are installed.
 3. All boxes installed in extremely corrosive areas (such as chlorine and fluoride storage rooms) where non-metallic raceways are used shall be non-metallic.
 4. Except when located in exposed concrete block, switch and receptacle boxes shall be 4" square for single gang installation. Appropriate gang boxes shall be used for mounting ganged switches.
 5. When installed in exposed concrete block, switch and receptacle boxes shall be square type designed for exposed block installation.
 6. Ceiling outlet boxes shall be 4" octagon 1-1/2" deep or larger required due to number of wires.
 7. Boxes installed in hazardous locations shall be explosion-proof rated for the associated application, constructed of copper-free cast aluminum.
- C. Junction & Pull Boxes (larger than 4-11/16")
1. For all below grade exterior use and elsewhere as shown:
 - a. In areas subject to future vehicular traffic: shall be galvanized cast iron (rated AASHTO H-20 Loading unless noted otherwise).
 - b. In areas not subject to vehicular traffic: shall be galvanized cast iron or pre-cast polymer concrete (rated for Tier 15 Loading unless noted otherwise).

2. All boxes installed exposed in exterior or wet areas shall be powder-coated galvanized steel (NEMA 3R).
3. All boxes installed exposed in corrosive areas shall be stainless steel (NEMA 4X).
4. All boxes installed in extremely corrosive areas (such as chlorine and fluoride storage rooms) where non-metallic raceways are used shall be non-metallic.
5. Boxes installed in hazardous locations shall be explosion-proof rated for the associated application, constructed of copper-free cast aluminum.
6. All others shall be oil tight JIC box not less than 16 gauge.

3.2 INSTALLATION

- A. General
 1. All boxes and wireways shall be securely anchored.
 2. All boxes shall be properly sealed and protected during construction and shall be cleaned of all foreign matter before conductors are installed.
 3. All boxes and wireways shall be readily accessible. Contractor shall be responsible for furnishing and installing access panels per architect's specifications. Locations shall be as directed by the architect as required to make boxes, wireways, electrical connections, etc. accessible where above gypsum board ceilings or in other similar locations.
 4. All metallic boxes and wireways shall be properly grounded.
 5. Refer to Specification Section 260553 for identification requirements.
- B. Outlet Boxes & Junction Boxes (through 4-11/16")
 1. Boxes shall be provided with approved 3/8" fixture studs were required.
 2. Recessed boxes for wiring devices, surface fixtures, or connections, shall be set so that the edge of cover comes flush with finished surface.
 3. There shall be no more knockouts opened in any sheet metal box than actually used.
 4. Any unused opening in cast boxes shall be plugged.
 5. Back to back boxes to be staggered at least 3 inches.
 6. Under no circumstances shall through-the-wall boxes be used.
- C. Junction & Pull Boxes (larger than 4-11/16")
 1. Pull boxes shall be installed as indicated on plans and/or as required due to number of bends, distance or pulling conditions.
 2. Boxes to be imbedded in concrete shall be properly leveled and anchored in place before the concrete is poured.
 3. All pull boxes and/or junction boxes installed exterior below grade, shall have their tops a minimum of 1-1/2 inches above surrounding grade and sloped so that water will not stand on lid. A positive drain shall be installed, to prevent water accumulation inside.
 4. Above grade pull boxes shall be installed on concrete anchor bases as shown on Plans.
- D. Wireways and/or wall-mounted equipment
 1. Mount each wireway to channels of the same metal type as the wireway.
 2. Conductors serving a wireway shall be extended without reduction in size, for the entire length of the wireway. Tap-offs to switches and other items served by the wireway shall be made with ILSCO type GTA with GTC cap.

END OF SECTION 260534

SECTION 260553

ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Wire and cable identification.
- B. Pullbox & Junction Box Identification
- C. Electrical distribution & utilization equipment identification.
- D. Emergency and Standby Power receptacle identification.

PART 2 - PRODUCTS

2.1 WIRE AND CABLE IDENTIFICATION

- A. Intermediate Locations:
 - 1. Wires and cable labels shall be white, thermal transfer, halogen-free, flame-retardant marker plates (sized to accommodate three lines of text) permanently affixed to the associated cable with UV-resistant plastic wire ties. Labels shall be Panduit #M200X/300X series or equal.
- B. Circuit/Cable Termination Locations:
 - 1. Wires and cable labels shall be non-ferrous identifying tags or pressure sensitive labels unless noted otherwise.

2.2 ELECTRICAL DISTRIBUTION & UTILIZATION EQUIPMENT IDENTIFICATION

- A. Labels on electrical distribution & utilization equipment shall be black-on-white engraved Bakelite nameplates permanently affixed to the equipment with rivets or silicone adhesive unless noted otherwise.
- B. Text used on labels on electrical distribution & utilization equipment shall be sufficiently sized to allow user to quickly/easily read labels while standing a normal/reasonable distance from the equipment. Text sizes shall be adjusted based on types of equipment (large switchgear would require larger labels than small toggle-type disconnect switches). If there is any question about what is reasonable, contractor may submit typical physical sample label(s) for each major application to the engineer for review/approval, at its discretion.

2.3 EMERGENCY AND STANDBY POWER RECEPTACLE IDENTIFICATION

- A. Receptacles fed from emergency or standby power sources (such as emergency generators) shall be provided with factory-marked engraved coverplates as follows:
 - 1. Emergency System source: Red engraved lettering to read "EMERGENCY".
 - 2. Legally-Required or Optional Standby Generator source:
 - a. If only part of facility is fed with generator backup: Black engraved lettering to read "FED FROM GENERATOR".
 - b. If entire facility is fed with generator backup: No "...GENERATOR..." label required.

PART 3 - EXECUTION

3.1 GENERAL

- A. Any proposed deviation in identification methods and materials from those described herein shall be submitted to Architect for review and comment prior to installation.
- B. Contractor shall provide all labeling or identification required by applicable local, state and national codes. These specifications do not intend to itemize all code-required labeling or identification requirements.
- C. All labels/identification shall be positioned such as to be readable from the normal perspective without adjusting wiring/cables/labels. For example, labels/identification of wires/cables within cable trays shall be positioned to point towards the viewer (typically downward for overhead cable trays, or upward for cable trays within trenches).
- D. All labels/identification (except for handwritten labels on concealed pullbox/junction box covers as noted below) shall be typewritten/printed/engraved in a neat, workmanlike, permanent, legible, consistent and meaningful manner. Labels shall not be handwritten unless specific approval is granted by engineer.

3.2 WIRE AND CABLE IDENTIFICATION

- A. General:
 - 1. Where cabling is exposed (such as within cable trays), provide two wire ties per cable (one on either end of marker plate to provide a flush installation). Where cabling is concealed (such as within pullboxes/wireways), one wire tie per cable will be acceptable.
- B. Intermediate Locations:
 - 1. Thermal transfer labels shall be securely fastened to all wiring and cabling in the following locations:
 - a. Wireways
 - b. Pullboxes/Junction boxes larger than 4-11/16"
 - c. Pullboxes/Junction boxes through 4-11/16" where wires and cables are not easily identifiable via the color coding and box labeling
 - d. Vaults & Manholes
 - e. Approximately every 50 feet within cable trays (especially at locations where cables exit or diverge). Labels within cable trays shall be grouped (rather than being pre-labeled on cables and pulled into cable trays).
 - f. Other similar intermediate locations.
 - 2. Labels shall be stamped or printed with the following data so that the feeder or cable can be readily identified and traced:
 - a. From where the circuit originates (including panel designation and circuit number):
 - 1) Ex: "FROM: PP-A CIR. 3 (IN MAIN ELEC ROOM)"
 - b. To where the circuit extends (using the common name of the equipment):
 - 1) Ex: "TO: RTU-6 (ON ROOF)"
 - c. The purpose of the circuit:
 - 1) Ex: "POWER"
 - d. The set number (If parallel power feeds are used).
 - 1) Ex: "SET NO. 3 OF 4"
- C. Circuit/Cable Termination Locations:

1. Where multiple termination points exist within a circuit origination point (panelboard, switchboard, MCC, starter, etc.) or other similar circuit endpoint (control panel, etc.), labels shall be securely fastened to all ungrounded and neutral conductors to clearly identify the terminal and/or circuit number associated with each conductor. For example, within lighting panels, each phase and neutral conductor shall be labeled near the terminals at a clearly visible location with the associated circuit number(s), so that if all conductors were unterminated, the labels would clearly indicate which conductor was associated with each circuit.

D. Refer to Specification Section 260519 for all color-coding requirements of wires and cables.

3.3 PULLBOX & JUNCTION BOX IDENTIFICATION

- A. Concealed pullboxes/junction boxes:
 1. Front surface of all pullbox/junction box covers in concealed areas (such as above lay-in ceilings) or within mechanical/electrical rooms (and other similar areas where appearance of boxes is not an issue) shall be neatly marked with the ID of circuits/cables contained with permanent black marker on cover of box (Ex: "RP-1A Cir. 1, 2 & 3"). Additionally, front surface of box shall be painted red where box contains fire alarm system cabling.
- B. Exposed pullboxes/junction boxes:
 1. Interior surface of all pullbox/junction box covers in exposed areas shall be labeled "Power", "Telecommunications", "Fire Alarm" or with other similar general text neatly with permanent black marker to indicate function of box. Circuit/cable labeling within box (see above) shall identify specific cables contained. Additionally, interior surface of cover shall be painted red where box contains fire alarm system cabling.
- C. Where pullboxes/junction boxes are named on contract documents (Ex: "PULLBOX #3"), an engraved nameplate shall be installed on the front surface of the box to identify the name.

3.4 ELECTRICAL DISTRIBUTION & UTILIZATION EQUIPMENT IDENTIFICATION

- A. General:
 1. All new and existing equipment modified by this project shall include arc-flash warning labels in accordance with NEC article 110.16.
- B. All Panels, Motor Control Centers, Switchboards, Switchgear, Transformers, Etc.:
 1. Engraved nameplates identifying name of equipment, nominal voltage and phase of the equipment and where the equipment is fed from shall be installed on front surface of all panels, motor control centers, switchboards, switchgear, transformers, etc.:
 - a. Ex: First Line: "NAME: RP-A", Second Line: "120/208V-3Ø-4W", Third Line: "FED FROM: PP-A CIR. 4 (IN MAIN ELEC ROOM)"
 2. Refer to Panelboard Specification Sections for additional labeling requirements (circuit directory cards, permanent circuit labels, permanent circuit numbers, etc.) required inside panelboards.
- C. Safety/Disconnect Switches and Utilization Equipment (HVAC Equipment, Pumps, Powered Valves, Control Panels, Starters, Etc.):
 1. Engraved nameplates identifying equipment being fed and where the equipment is fed from shall be installed on front surface of all disconnect switches (including both visible blade type switches and toggle-type switches) and on utilization equipment (where not clearly identified by immediately adjacent local disconnect switch):

- a. Ex: First Line: "RTU-6", Second Line: "FED FROM: PP-A CIR. 5"
2. Where safety/disconnect switches are installed on the load side of variable frequency drives, the safety/disconnect switch shall be furnished with an additional engraved nameplate to read: "WARNING: TURN OFF VFD PRIOR TO OPENING THIS SWITCH".
3. Safety/Disconnect switches feeding equipment that is fed from multiple sources (such as motors with integral overtemperature contacts that are monitored via a control system) and Utilization Equipment fed from multiple sources shall be furnished with an additional BLACK-ON-YELLOW engraved nameplate to read: "WARNING: ASSOCIATED EQUIPMENT FED FROM MULTIPLE SOURCES – DISCONNECT ALL SOURCES PRIOR TO OPENING COVER".

D. Emergency Systems:

1. A sign shall be placed at the service entrance equipment (and at any remote shunt trip operators, or similar, for service equipment) indicating the type and location of on-site emergency power sources (such as generators, central battery systems, etc.) per NEC requirements.
2. All boxes and enclosures (including transfer switches, generators, power panels, junction boxes, pullboxes, etc.) dedicated for emergency circuits shall be permanently marked with white-on-red engraved nameplates so they will be readily identified as a component of an emergency circuit or system.
3. Where an Essential Electrical System (EES) is installed, all enclosures, raceways and equipment that are components of the EES shall be readily identified as such. Raceway shall be identified at intervals not exceeding 25 ft.

E. Services:

1. All Service Equipment:
 - a. Engraved nameplates identifying maximum available fault current, including date the fault current calculation was performed, in accordance with NEC article 110.24.
 - 1) Ex: First Line: "AVAILABLE FAULT CURRENT: 16,154 AMPS", Second Line: "DATE CALCULATED: JULY 8, 2013"
 - b. All service entrance equipment shall be clearly labeled as being service entrance rated.
2. Where a building or structure is supplied by more than one service (or any combination of branch circuits, feeders and services), a permanent plaque or directory shall be installed at each service disconnect location denoting all other services, feeders & branch circuits supplying that building or structure and the area served by each, per NEC requirements.

F. Generators:

1. Generators shall be labeled with engraved nameplates identifying name of equipment.

3.5 EMERGENCY AND STANDBY POWER RECEPTACLE IDENTIFICATION

- A. Receptacles fed from emergency or standby power sources (such as emergency generators) shall be provided with factory-marked engraved coverplates as described above.

3.6 INSTRUMENT AND CONTROL DEVICE IDENTIFICATION

- A. New Instruments and control devices (whether furnished by contractor or not) shall be labeled with black-on-white engraved nameplates permanently affixed to the equipment or to the adjacent, readily-visible mounting surface with silicone adhesive or stainless steel wire ties.
 1. Instruments and process control devices (float switches, etc.) shall be labeled with instrument name and, where available, instrument ID number.

2. Pushbutton stations shall be labeled with equipment being controlled. Labels shall be installed on front surface (or adjacent mounting surface) of all pushbutton stations.
3. Thermostats and other similar HVAC control devices installed in process areas shall be labeled with equipment being controlled. Labels shall be installed on front surface (or adjacent mounting surface) of all thermostats and other similar HVAC control devices.

3.7 RACEWAY IDENTIFICATION

- A. Each exposed raceway shall be labeled at the point where it becomes concealed, such as where it enters a concrete floor slab, a concrete wall, the ground, etc.
- B. Each raceway entering in-grade or on-grade pullboxes/junction boxes, where the conduits are only visible inside the box, shall be labeled within the box at the point where the raceway becomes concealed.
- C. Raceway nameplates shall identify:
 1. The location of the other end of the raceway ("TO MCC-1" or similar). If the other end of the raceway is at an intermediate, named pullbox ("INSTRUMENTATION PULLBOX #4" or similar), that pullbox name shall be labeled rather than the endpoint of the circuitry.

3.8 OTHER IDENTIFICATION

- A. Factory-engraved coverplates identifying functions of light switches and other similar devices shall be installed where so required by plans/specifications.

END OF SECTION 260553

SECTION 262417

LIGHTING PANELBOARDS

PART 1 - GENERAL

1.1 GENERAL

- A. The work under this section includes but is not limited to the following:
 - 1. Lighting Panelboards
 - 2. Circuit Breakers

PART 2 - PRODUCT

2.1 PANELBOARDS

- A. Enclosure:
 - 1. Panelboards shall be dead front type and shall be in accordance with Underwriter's Laboratories, Inc., standard of panelboards and enclosing cabinets and so labeled.
 - 2. Panelboards installed in dry locations shall have enclosures fabricated from sheet steel and shall be finished in ASA #49. Panelboards installed in exterior or wet locations shall have NEMA 3R enclosures.
 - 3. The door shall have a cylinder type lock. Lock shall be held in place by concealed screw to a captive nut, welded to inside of door. All locks shall be keyed alike.
 - 4. A metal framed circuit directory card holder with clear plastic covering shall be factory-mounted on the inside of door.
 - 5. Panels for 20 or more circuits, including spares and spaces, shall be 20 inches wide.
 - 6. Panelboards enclosures shall be as shown on panel schedule on plans for surface, flush or motor control center mounting.
 - 7. Provide hinged trim with piano-hinge down full length of one side to allow access to wiring without complete removal of outer trim.
 - 8. Each section of multi-section panelboards shall be of matching heights and depths.
- B. Bussing/Lugs:
 - 1. Ampacity and service voltage of main buss, lugs or main breakers and branch circuit breakers shall be as shown on drawings.
 - 2. All bussing and associated connectors shall be tin-plated aluminum or tin-plated copper.
 - 3. All panelboards shall contain ground buss.
 - 4. Entire panelboard shall be capable of withstanding a short circuit not less than the interrupting capacity of any breaker in the panel. When a power distribution system electrical study (including short circuit stud, etc.) is a part of the project, contractor shall further verify that all proposed equipment is properly rated (per the results of the study) prior to submitting shop drawings. Interrupting ratings shall be full ratings. Series ratings will not be allowed unless shown otherwise on drawings.
 - 5. Buss connectors shall be for distributed phase arrangement.
 - 6. Top/bottom feed arrangement and lug sizes/quantities shall be coordinated by the contractor.
 - 7. Entire panelboard assembly, including all bussing, shall have SCCR ratings meeting or exceeding the minimum AIC ratings listed on the plans for the panel. When a power distribution system electrical study (including short circuit stud, etc.) is a part of the project, contractor shall further verify that all proposed equipment is properly rated (per the results

of the study) prior to submitting shop drawings. All ratings shall be full ratings. Series ratings will not be allowed unless shown otherwise on drawings.

8. Service entrance panelboards shall be provided with barrier such that no uninsulated, ungrounded service busbar or service terminal is exposed to inadvertent contact by persons or maintenance equipment while servicing load terminations

C. Breaker arrangement and numbering:

1. Panelboards shall be factory assembled with branch breakers arranged exactly as indicated on plans.
2. Breakers shall be numbered vertically beginning top left. Multi-section panelboards shall be numbered consecutively through all sections.
3. Breaker numbers shall be permanently attached to trim.
4. Main breakers shall be vertically-mounted (branch-mounted or back-fed main breakers will not be acceptable unless specifically so shown on plans).

2.2 CIRCUIT BREAKERS

- A. Circuit breakers shall be quick break, quick make, thermal magnetic type, for alternating current. Breakers shall trip free for the handle and tripping shall be indicated by the handle assuming a position between OFF and ON.
- B. Circuit breakers shall be of the bolt-on type.
- C. Multi-pole breakers shall be internal common trip with single operating handle; external handle ties are not acceptable, unless specifically noted otherwise (such as for multi-wire branch circuits described below).
- D. Circuit breakers feeding multiwire branch circuits (as defined by NEC) consisting of separate single phase loads sharing a common neutral shall be provided with multi-pole breakers or handle ties to simultaneously disconnect all ungrounded conductors per NEC Article 210.4(B). The necessary locations of these multi-pole breakers or handle ties shall be coordinated by the contractor. Where necessary, the contractor may rearrange circuit breakers (as minimally as possible) as required to meet this requirement.
- E. All breakers shall meet the minimum RMS symmetrical interrupting capacity ratings shown on plans for the associated panel. All interrupting ratings shall be full ratings. Series ratings will not be allowed unless shown otherwise on drawings.
- F. All branch circuit breakers shall be listed to UL489 or shall be specially-tested to be HACR listed.

2.3 SPECIAL REQUIREMENTS

- A. Any special requirements on the drawings, such as for increased interrupting rating, ground fault protection, etc., shall supersede these specifications, but only insofar as that particular requirement is concerned.
- B. Lighting panels larger than 400A shall conform to the requirements for power panels.

2.4 MANUFACTURER

- A. Panelboards shall be as manufactured by Square D, ABB, Cutler Hammer, or Siemens.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All panelboard dimensions and clearances shall be carefully checked and coordinated with the proper trades to ensure proper mounting space and support prior to roughing in equipment. In no case shall any circuit breaker be located above 6'-7" A.F.F..
- B. Wiring in panelboard wireways shall be done in a neat and workmanlike manner. Wiring shall be grouped into neat bundles and secured with approved tie wraps.
- C. For all flush-mounted panelboards, a minimum of three (3) one-inch empty conduits shall be stubbed out above the nearest accessible ceiling space for future use.

3.2 PANEL IDENTIFICATION

- A. Refer to Specification Section 260553.

END OF SECTION 262417

SECTION 262726

WIRING DEVICES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Wiring Devices
- B. Plates
- C. Finishes

PART 2 - PRODUCTS

2.1 WIRING DEVICES AND PLATES

- A. Switches shall be AC type, extra-heavy duty industrial grade (unless otherwise shown) of ratings shown on drawings. Switches shall be as manufactured by Hubbell, P & S, Sierra, Bryant, GE, Arrow Hart or equal.
- B. Receptacles shall have blade configuration and shall be heavy duty industrial grade (unless otherwise shown) of current and voltage rating as shown on drawings. Receptacles shall be as manufactured by Hubbell, P & S, Sierra, Bryant, GE, Arrow Hart or equal.
- C. All GFCI-type receptacles shall continuously self-test and shall trip/deny power if the receptacle does not provide proper GFCI protection or if the line/load terminations are miswired and shall provide visual indication of power status, trip conditions, ground fault conditions and end-of-life status.
- D. Each wiring device shall have a plate (see "Finishes" section below for specific requirements).

2.2 FINISHES

- A. All wiring devices (switches, receptacles, etc.) shall be colored to match the coverplates described below. For instance, all items covered by stainless steel, aluminum or malleable iron plates shall be gray in color.
 - 1. Exceptions:
 - a. Emergency wiring devices shall be red.
 - b. Isolated ground wiring devices shall be orange.
- B. Coverplates for recessed, wall-mounted electrical items (switches, receptacles, telephone outlets, etc.) shall be stainless steel unless shown otherwise.
- C. Coverplates, trim rings, etc. for recessed, floor-mounted electrical items (floor outlets, underfloor duct junctions, etc.) shall match finish of building hardware (302/304 stainless steel, brass, etc.) in area installed.
- D. Coverplates for exposed electrical items (switches, receptacles, telephone outlets, etc.) shall be of same material as exposed boxes (see Outlet Box Specification for required material type) and

shall have beveled edges.

- E. Coverplates for receptacles in wet locations shall be metallic, extra-duty, in-use type, rated for wet locations per NEC requirements unless noted otherwise.
- F. See "Electrical Identification" specification section for coverplate labeling requirements.

PART 3 - EXECUTION

3.1 GENERAL MOUNTING

- A. Symbols on drawings and mounting heights are approximate. The exact locations and mounting heights shall be determined on the job, and it shall be the Contractor's responsibility to coordinate with all trades to secure correct installation. For example, Contractor shall coordinate exact mounting heights over counters, in or above backsplashes, in block walls, and at other specific construction features.
- B. Verify all door swings with Architectural. Locate boxes for light switches within four inches of door trim on swing side (not hinge side) of door.
- C. Devices and associated plates shall not be used as support; outlet boxes shall be rigidly supported from structural members.
- D. Mount all straight-blade receptacles vertically with ground pole up, unless specifically noted otherwise.
- E. Unless otherwise shown or required by local handicap codes, outlet boxes shall be the following distances above the finished floor unless otherwise noted.
 - 1. Receptacles and telephone outlets in offices and other finished areas: 1'-6" to the center of the box.
 - 2. Receptacles and telephone outlets in equipment rooms and other unfinished areas: 4'-0" to the center of the box.
 - 3. Receptacles over counters: As Noted
 - 4. Switches, general: 4'-0" to the top of the box.
 - 5. Fire Alarm Pull Stations: 4'-0" to the top of the box.
 - 6. Fire Alarm Audio/Visual Devices: As shown on fire alarm shop drawings (Entire lens shall be above 80" and below 96" per NFPA 72).
 - 7. Push-button, etc., general: 4'-0" to the top of the box.
 - 8. Other device types: verify with engineer prior to rough-in.

END OF SECTION 262726

SECTION 265000

LIGHTING MATERIALS AND METHODS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Lighting Fixtures
- B. Drivers

1.2 SUBMITTALS

- A. Complete submittals shall be provided identifying all lighting fixture types and options, all lamp types (where applicable) and compliance with all contract requirements. The absence of clear submittal information specifically listing exceptions/deviations from detailed contract requirements will be understood to indicate that the contractor/supplier intends to meet all contract requirements. Refer to specification section 260500 for additional requirements.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Lighting fixtures shall be furnished as shown on plans and specified herein. It shall specifically be the responsibility of Contractor to verify exact types ceilings, walls, etc. and recessing depth of all recessed fixtures and furnish the specific mounting trims and accessories of the specified and/or accepted fixture specifically for the ceiling, wall etc. in which each fixture is to be installed.
- B. Base bid manufacturers are listed on the lighting fixture schedule. Manufacturers listed without accompanying catalog numbers are responsible for meeting the quality standards, efficiency, maximum wattages and photometric distributions set by the specified product.
- C. All lighting fixtures shall be so designed and shall have drivers and other similar items so installed as to function without interruptions or failures when operating in the environment in which they are proposed to be installed. Special attention shall be given to environments with potentially high ambient temperatures such as attic spaces, exterior soffits, confined interior soffits, coves, unconditioned spaces, etc. and shall be addressed by providing fixtures with suitable high ambient temperature ratings, remote mounting of drivers/ballasts, providing approved ventilation, etc. as directed by fixture manufacturer and approved by engineer, at contractor's expense.
- D. All fixtures installed such as to create penetrations through fire rated ceiling or wall assemblies shall be labeled as suitable for that purpose or installed with covers, tenting or other means as required to maintain the fire rating of the assembly.

2.2 LED LUMINAIRES

- A. For the purpose of these specifications, LED Luminaires shall be defined as the entire LED fixture assembly including LED array, drivers, housing, electronics, etc. that compose the lighting fixture.

- B. Furnish and install LED Luminaire of proper size, type, efficacy, delivered lumen output, color temperature, distribution pattern, operational life, and CRI as shown on drawings.
- C. LED Luminaires shall be tested in accordance with LM-79 and LM-80 standards.
- D. LED drivers shall comply with NEMA 410 standards for inrush current, etc.
- E. Exterior, pole mounted LED Luminaires shall be provided with an easily-serviceable, UL recognized surge protection device that meets a minimum 10kA Category C Low operation (IECC C62.41.2-2002). Device shall be wired in front of light engine(s) and driver(s) and shall fail "open" such as to prevent fixture operation after a surge protection failure.
- F. LED Luminaires shall have a guarantee-warranty of at least five years unless specifically noted otherwise on contract documents.
- G. LED Luminaire assembly shall comply with ambient temperature requirements specified in General section above.

2.3 STEMS/PENDANTS

- A. Hangers shall be approved ball aligner type swivel, 30 degrees from vertical with swivel below canopy.
- B. Stems/Pendants shall be provided as required to prevent swaying of fixtures due to HVAC system airflow or other similar occurrences.
- C. Shall be painted the same color as the fixture trim unless noted otherwise.

2.4 MANUFACTURER

- A. Fixtures and stems shall be manufactured as shown in fixture schedule or approved equals.
- B. Drivers shall be as manufactured by Philips/Advance, GE, Lutron, Magnatec, Motorola, EldoLED or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION OF LIGHTING FIXTURES

- A. Support:
 - 1. Support of all lighting fixtures shall be responsibility of electrical contractor. All lighting fixture supports shall be installed in accordance with lighting fixture supplier's recommendations.
 - 2. Contractor shall coordinate installation requirements for all wall-mounted fixtures (especially for wall-mounted fixtures on uneven wall surfaces, etc.) as required to assure a level/flat mounting surface and level/plumb/secure finished installation. Contractor shall provide flat mounting plates or other mounting provisions where necessary. Any proposed mounting plates, etc. shall be submitted to and approved by project architect prior to ordering materials.
 - 3. Fixtures shall be supported independent of ceiling from structural members of building.

4. Lay-in fixtures shall be supported by four (4) taut 12 gauge hanger wires connected from each corner of the fixture to the structure above so that fixture is supported independent of the ceiling.
 5. Other recessed light fixtures (including recessed downlights) shall be supported with two (2) taut 12 gauge hanger wires connected from opposing corners of the light fixture to the structure above so that fixture is supported independent of the ceiling.
 6. Pendant mounted fixtures shall be directly supported from the structure above using a 9 gauge hanger wire or an approved alternate support without using the ceiling suspension system for direct support.
 7. Tandem fixtures may utilize common hanger wires.
 8. All lay-in fixtures shall be attached to ceiling grid by means of approved clips and in accordance with the N.E.C.
 9. Contractor shall submit typical hanging detail to Engineer before installing any fixtures.
- B. Connections:
1. All grid fixtures shall be wired by flex individually to junction and not wired fixture to fixture.
 2. All flex shall contain 3 conductors (3rd wire ground). Ground wire shall be securely grounded at each end. Other conductors shall be connected by approved connectors.
- C. Row-Mounted fixtures:
1. All stems on row-mounted fluorescent fixtures shall be installed as follows (except fixtures with slide grip hangers):
 - a. One stem shall be installed in the first fixture knockout from end of row (on the first and last fixture of the row).
 - b. One stem shall be installed between each two fixtures. Stem shall center joint where fixtures join and shall attach by use of "joining plates".
 2. All fixtures in continuous rows other than recessed grid type shall be connected by nipples with locknuts bushings.
- D. Coordination:
1. Contractor shall coordinate all dimensions & locations of light fixtures prior to rough-in to ensure proper fit and coordination with other trades.
 2. Contractor shall verify exact location of light fixture with Reflected Ceiling Plan. If there are any discrepancies, verify exact location with architect.
 3. Contractor shall verify exact ceiling types being installed and shall adjust fixture trim types accordingly (prior to submitting light fixture shop drawings).

END OF SECTION 265000

SECTION 270500

AUXILIARY SYSTEM CABLES, 0-50V

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Cables rated for 0V-50V application

PART 2 - PRODUCTS

2.1 GENERAL

- A. Unless specified otherwise, all cables within the scope of this specification section shall:
1. Be rated for exposed cable tray installation.
 2. Be plenum
 3. Be UL-rated for the proposed application.
 4. Be multi-conductor with overall outer sheath as required by the application. The insulation of each conductor within the overall multi-conductor cable shall be uniquely color-coded. Ground conductors (when provided) within the multi-conductor cable shall have green insulation. Conductors with green insulation shall not be used for conductors other than ground.
 5. Utilize copper conductors.
 6. Have wire gauge as required to limit voltage drop to acceptable limits determined by the system supplier and to meet all applicable code requirements.
 7. Where installed underground, within slab-on-grade or in exterior locations, be rated for wet locations.
 8. Where required for specific systems, meet the specific requirements (conductor quantity, wire gauge, insulation type, shielding, etc.) of the system supplier.

2.2 CLASS 1 CONTROL CABLING (120VAC CONTROL CIRCUITS, ETC.)

- A. In addition to above requirements, and unless specified otherwise, Class 1 control cabling shall:
1. Be rated for 600V.
 2. Be industrial grade.
 3. Have stranded conductors.
 4. Have sunlight/oil-resistant PVC/Nylon insulation and jacket with ripcord.
 5. Be manufactured by Belden, AlphaWire or General Cable.

2.3 CLASS 2 & 3 CONTROL CABLING (FED FROM CLASS 2 OR 3 POWER SUPPLIES)

- A. In addition to above requirements, and unless specified otherwise, Class 2 & 3 control cabling shall:
1. Be rated for 300V.
 2. Be shielded if so recommended by the system supplier/integrator.
 3. Have twisted conductors.
 4. Have plenum-rated insulation/jacket with ripcord.
 5. Be manufactured by AlphaWire, Belden, General Cable, Superior Essex or West Penn.

2.4 NETWORK CABLING

- A. Furnish and install all Ethernet, Fiber Optic and Backbone Copper Telephone cabling in accordance with all BICSI requirements and in accordance with other applicable specification sections.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

- A. Routing:
1. All wires and cables shall be installed in conduit unless specifically noted otherwise. Where conduit is not otherwise required by contract documents, 0-50V Cabling located within concealed, accessible ceiling spaces (such as above lay-in ceilings) may be run without conduit if the following requirements are met:
 - a. Cabling is plenum-rated, multi-conductor.
 - b. Cabling is supported by cable tray or with J-hook supports on intervals not to exceed 5'-0" on center. Cabling shall be supported solely from the cable tray or j-hooks supported from the building structure, without using piping, ductwork, conduit or other items as supports.
 - c. Cabling is neatly formed, bundled and tied with plenum-rated Velcro straps on intervals not to exceed 30" on center.
 - d. Properly-sized conduit(s) are provided wherever cabling enters an inaccessible or exposed area (such as above gyp board ceilings, within walls or through walls).
 - e. Cabling is not a part of a Fire Alarm System, Smoke Control System, Emergency Generator Control System or other life-safety related system.
 2. End bushings shall be provided on both ends of all raceway terminations.
 3. No splices shall be pulled into conduit.
 4. No cabling shall be pulled until conduit is cleaned of all foreign matter.
- B. Penetrations:
1. All fire/smoke barrier penetrations shall be made in accordance with a U.L. listed assembly.
 2. For cabling not installed in conduit:
 - a. Fire/smoke barrier penetrations shall be sealed utilizing an enclosed fire-rated pathway device (STI EZ Path or equal) containing a built-in fire sealing system sufficient to maintain the hourly fire rating of the barrier being penetrated. The self-contained sealing system shall automatically adjust to the installed cable loading and shall permit cables to be installed, removed or retrofitted without the need to remove or reinstall firestop materials. The pathway shall be UL Classified and tested to the requirements of applicable ASTM/UL1479 standards.
 3. For cabling installed within conduit from endpoint to endpoint:
 - a. Fire/smoke barrier penetrations shall be sealed utilizing fire caulk or other equivalent firestop systems around perimeters of conduits per UL requirements.
 4. For cabling installed within cable trays:
 - a. Fire/smoke barrier penetrations shall be sealed with one of the following methods:
 - 1) Continuous cable tray through the penetration, with a combination of large firestop pillows and small firestop pillows contained, supported and secured (to prevent unauthorized removal) on both sides by aluminum wire mesh and firestop putty. Firestop pillows shall be STI Series SSB or equal and Firestop putty shall be STI Spec Seal or equal.
 - 2) Cable tray broken at the penetration, with fire/smoke barrier penetrations sealed utilizing an enclosed fire-rated pathway device (STI EZ Path or equal) containing

a built-in fire sealing system sufficient to maintain the hourly fire rating of the barrier being penetrated. The self-contained sealing system shall automatically adjust to the installed cable loading and shall permit cables to be installed, removed or retrofitted without the need to remove or reinstall firestop materials. The pathway shall be UL Classified and tested to the requirements of applicable ASTM/UL1479 standards.

- C. Excess Cabling:
 - 1. Excess cabling shall be neatly coiled within all junction boxes, pullboxes, wireways, etc. and at all terminations as required to allow future re-termination of cabling.
- D. Terminations:
 - 1. All conductors/cabling (including spare conductors) shall be properly terminated unless specifically directed otherwise. See below for general termination hardware requirements.
 - 2. Cabling shall be neatly formed, bundled and tied at all terminations.

3.2 SPLICES/CONNECTIONS/TERMINATIONS:

- A. Network Cabling:
 - 1. Network and fiber optic cabling shall be continuous from endpoint to endpoint and shall not be spliced unless specifically noted otherwise.
- B. Control Cabling:
 - 1. Connections shall be made with T & B Sta-Kon wire joints EPT66M, complete with insulating caps. To be installed with WT161 Tool or C nest of WT11M Tool, Ideal Super - Nuts (not wire nuts), Ideal Wing Nuts, or Buchanan Elec. Products B Cap or Series 2000 Pressure connectors complete with nylon snap on insulators to be installed with C24 pressure tool.
- C. Shielded cabling:
 - 1. Unless directed otherwise by the system supplier, 0-50V cable shielding shall be grounded at the PLC/control panel end only (not at the field device end) with a termination kit as directed by the PLC/control panel supplier.
 - 2. Shielded cabling shall be continuous from endpoint to endpoint and shall not be spliced without prior written approval from the Engineer.

3.3 LABELING

- A. Refer to Specification Section 260553 for all labeling requirements.

END OF SECTION 270500

SECTION 271000

STRUCTURED CABLING SYSTEM

PART 1 - GENERAL

1.1 SCOPE:

- A. This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling. Backbone and Horizontal cabling comprised of copper and fiber cabling, and support systems are covered under this document.
- B. All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the structured cabling contractor as detailed in this document.
- C. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types are indicated on the plans. If the bid documents are in conflict, this specification shall take precedence.
- D. Refer to Specification Section 260553 (Electrical Identification) for additional identification requirements.
- E. Refer to Specification Section 270500 (Auxiliary System Cables, 0-50V) for additional material and installation requirements.

1.2 REGULATORY REFERENCES:

- A. All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association, the National Electrical Code, local ordinances and present manufacturing standards.
- B. All materials shall be UL Listed and shall be marked as such. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label, the entire system shall be so labeled.
- C. All modular jacks, patch cords, consolidation point, and patch cords shall be ETL Verified (not just tested) to be category 6 component and channel compliant.
- D. The cabling system described in this specification is derived from the recommendations made in recognized telecommunications industry standards. The following documents are incorporated by reference:
 - 1. ANSI/TIA/EIA - 568-B.1, Commercial Building Telecommunications Cabling Standard Part 1: General Requirements, April, 2001
 - 2. ANSI/TIA/EIA - 568-B.2, Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components, April, 2001
 - 3. ANSI/TIA/EIA - 568-B.2-1, Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted Pair Cabling Components, Addendum 1 – Transmission Performance Specifications for 4-pair 100 Ω Category 6 Cabling

4. ANSI/TIA/EIA - 568-B.3, Commercial Building Telecommunications Cabling Standard Part 3: Optical Fiber Cabling Components, March, 2000
 5. ANSI/TIA/EIA – 569-E, Commercial Building Standard for Telecommunications Pathways and Spaces, 2019
 6. ANSI/TIA/EIA – 606-A, Administration Standard for Telecommunications Infrastructure of Commercial Buildings, February, 2002
 7. ANSI/TIA/EIA – 607-AJ, Commercial Building Grounding and Bonding Requirements for Telecommunications, August 1994
 8. ANSI/ TIA/EIA – 758, Customer-Owned Outside Plant Telecommunications Cabling Standard, April 1999
 9. BICSI - TDMM, Building Industries Consulting Services International, Telecommunications Distribution Methods Manual (TDMM) 10TH edition.
 10. National Fire Protection Agency (NFPA – 70), National Electrical Code (NEC) –2002
 11. ANSI/TIA/EIA – 45-B, Test Procedures for Fiber Optic Connections.
 12. ANSI/TIA/EIA – 526-14, Power Test for Fiber Runs.
 13. FCC 47 CFR 68
 14. NEMA 250
 15. NEC Articles 770 and 800
 16. ADA, Americans with Disabilities Act
- E. If this document and any of the documents listed above are in conflict, then the more stringent requirement shall apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release.
- F. This document does not replace any code, either partially or wholly. The contractor must be aware of local codes that may impact this project. All local State and federal codes are to be followed.

1.3 APPROVED CONTRACTOR:

- A. The Structured Cabling Contractor must meet the following requirements:
1. Contractor must have a certified RCDD on staff. The project manager for this project shall have an RCDD certification, and RCDD shall be responsible for reviewing all aspects of the design, submittals and installation of all products.
 2. All required submittal information shall be stamped by the RCDD.
 3. Contractor must have a minimum of 3 years experience with projects of similar size and scope to this project.
 4. The company performing the work must have been in business for a minimum of 3 years.
 5. The company must have an office within 75 miles of the job site.
- B. The Structured cabling contractor is responsible for workmanship and installation practices in accordance with the requirements of the standards described in these specifications and manufacturer's requirements.

1.4 WORK INCLUDED:

- A. The work included under this specification consists of furnishing all labor, equipment, materials, and supplies and performing all operations necessary to complete the installation of this structured cabling system in compliance with the specifications and drawings. The structured cabling contractor will provide and install all of the required material to form a complete system whether specifically addressed in the technical specifications or not.

- B. The work shall include, but not be limited to the following:
 - 1. Furnish and install a complete telecommunications wiring infrastructure.
 - 2. Furnish, install, and terminate all UTP and Optical Fiber cable
 - 3. Furnish and install all wall plates, jacks, patch panels, and patch cords at equipment racks and at work outlets (unless shown otherwise on plans).
 - 4. Furnish and install all required cabinets and/or racks as required and as indicated.
 - 5. Furnish any other material required to form a complete system.
 - 6. Perform channel testing (100% of horizontal and/or backbone links/channels) and certification of all components.
 - 7. Furnish test results of all cabling to the owner on disk and paper format, listed by each closet, then by workstation ID.
 - 8. Provide owner test results and documentation. (Testing documentation and As-built drawings)

1.5 SUBMITTALS:

- A. Within thirty (30) days of notice to proceed the structured cabling contractor shall submit the following items:
 - 1. Submit copies of the certification of the company and names of staff that will be performing the installation and termination of the installation to provide proof of compliance of this spec.
 - 2. Submit proof from manufacturer of contractor's good standing in manufacturer's certification program.
 - 3. Submit copy of contractor's RCDD certification.
 - 4. Submit listing of five (5) projects of similar size and scope to this project that have been completed within the last five years. Include in this submittal owner's contact information for each project.
 - 5. Submit letter from the manufacturer stating that the manufacturer will provide a twenty-five year (25) warranty in accordance with the requirements paragraph 1.03 (B) of these specifications.
 - 6. Submit appropriate cut sheets and samples for all products, hardware and cabling.
 - 7. Submit 1/8" = 1'-0" drawings of floor plans indicating all work outlets and the labeling designation for each jack.
 - 8. Submit 1/2" = 1'-0" drawings of each MDF and each IDF showing all racks, patch panels, 110 blocks, etc.
- B. Work shall not proceed without the engineer's approval of the submitted items.
- C. The structured cabling contractor shall receive approval from the engineer on all substitutions of material. No substituted materials shall be installed except by written approval from the engineer.

1.6 DRAWINGS:

- A. It shall be understood that the electrical details and drawings provided with the specification package are diagrammatic. They are included to show the intent of the specifications and to aid the structured cabling contractor in bidding the job. The structured cabling contractor shall make allowance in the bid proposal to cover whatever work is required to comply with the intent of the plans and specifications.
- B. The structured cabling contractor shall verify all dimensions at the site and be responsible for their accuracy.

PART 2 - PRODUCTS

2.1 EQUIVALENT PRODUCTS:

- A. Due to the nature and type of communications all products, including but not limited to faceplates, jacks, patch panels, racks, 110 blocks, and patch cords, for the purpose of this document, shall be manufactured by Hubbell, Ortronix, Panduit, Amp or Systimax. See below for acceptable cable manufacturers.

2.2 WORK AREA OUTLETS:

- A. Work area cables shall each be terminated at their designated work area location in the connector types described in the subsections below. Included are modular telecommunication jacks. These connector assemblies shall snap into a faceplate.
- B. The Telecommunications Outlet Assembly shall accommodate:
 - 1. A minimum of two (2) modular jacks
 - 2. Additional accommodations for specific locations as noted in the plans for optical fiber and/or additional copper cables as necessary
 - 3. A blank filler will be installed when extra ports are not used.
 - 4. A dust cap shall be provided on all modular jacks with the circuit number on the identifier strip.
 - 5. Multiple jacks will be placed as documented on the plans.
 - 6. The same orientation and positioning of jacks and connectors shall be utilized throughout the installation. Prior to installation, the structured cabling contractor shall submit the proposed configuration for each outlet assembly for review by the architect.
 - 7. The modular jack shall incorporate printed label strip on the dust cap module for identifying the outlet. Printed labels shall be permanent and compliant with ANSI/TIA/EIA-606-A standard specifications. Labels shall be printed using a printer such as a Brady hand held printer. Hand printed labels shall not be accepted.
- C. Faceplates: The faceplates shall:
 - 1. be UL listed and CSA certified.
 - 2. be constructed of stainless steel (except where noted otherwise). All faceplate colors/materials in public areas shall be approved by the architect. In all cases the material and color of the faceplate shall match the adjacent electrical faceplate.
 - 3. (where plastic faceplates are specifically allowed by the architect/engineer) shall match the faceplate color used for other utilities in the building or match the color of the raceway if installed in surface raceway.
 - 4. be compliant with the above requirements along with the following when incorporating optical fiber:
 - a. be a low profile assembly,
 - b. incorporate a mechanism for storage of cable and fiber slack needed for termination,
 - c. position the fiber optic couplings to face downward or at a downward angle to prevent contamination and,
 - d. incorporate a shroud that protects the optical couplings from impact damage.
 - 5. be available as single-gang or dual-gang.
 - 6. possess recessed designation windows to facilitate labeling and identification.
 - 7. shall include a clear plastic cover to protect labels in the designation window.
 - 8. have mounting screws located under recessed designation windows.
 - 9. comply with ANSI/TIA/EIA-606-A work area labeling standard.

10. allow for the UTP modules to be inverted in place for termination purposes.
11. be manufactured by an ISO 9001 registered company.

D. Voice / Data Jacks

1. Voice/Data jacks shall be 8-position modular jacks and shall be Category 6 performance as defined by the references in this document including ANSI/TIA/EIA-568-B.2-1. All pair combinations must be considered, with the worst-case measurement being the basis for compliance. Modular jack performance shall be third-party verified by a nationally recognized independent testing laboratory including, but not limited to, ETL.
2. The wiring scheme shall be T568A or T568B as directed by the owner.
3. The modular jack shall use dual reactance modular contact array.
4. The modular jack shall have low emission IDC contacts.
5. The modular jack shall use standard termination practice using 110 impact tool
6. The modular jack shall be backwards compatible to Category 3 and 5.
7. The modular jack shall be center tuned to category 6 test specifications.
8. Dust cover shall be used on each termination.

2.3 110 COPPER TERMINATION BLOCK:

- A. The voice cross connect shall be a passive connection between the horizontal termination blocks and the backbone termination blocks. The wall mount frames shall be field terminated kits including all blocks, connecting blocks, and designation strips. Management rings shall be mounted between vertical columns of blocks to provide management of cross-connect wire. Backbone and horizontal blocks shall use 4-pair connecting blocks. Blocks shall be oriented so that backbone terminations are located on the left and horizontal frames are located on the right of the termination field when facing the frame assembly.
- B. 110 Block Kits shall
1. include both the wiring block and connecting block in a 50, 100 and 300 pair footprint as required
 2. be manufactured using fire retardant molded plastic.
 3. include 4-pair 110C connecting blocks for field termination.
 4. support termination of 22-24 AWG solid conductor
 5. wiring blocks shall contain back openings for the feed through of cable
 6. meet category 6 component compliance and be verified by a third-party nationally recognized independent testing laboratory
 7. have color-coded tips on the wiring block and color coding on the connector blocks for installation identification.
 8. shall use standard termination practice requiring a single conductor 110 impact tool
 9. Termination hardware shall maintain the paired construction of the cable to facilitate minimum untwisting of the wires.
 10. be backwards compatible to category 3 and 5.
 11. be labeled in compliance with ANSI/TIA/EIA-606-A labeling specifications using permanent labels and label printer.
 12. be manufactured by an ISO 9001 registered company.

2.4 MODULAR PATCH PANELS:

- A. The Modular Patch Panels shall
1. be modular design.

2. meet category 6 component compliance and be verified by a third-party nationally recognized independent testing laboratory
3. use low emission IDC contacts
4. use dual reactance technology to enhance the signal-to-noise ratio
5. require standard termination practices using a 110 impact tool
6. use a single piece IDC housing designed to accept larger Category 6 conductors
7. support both T568B and T568A wiring
8. include easy to follow wiring labels
9. include label fields
10. allow for the use of icons
11. include full length metal rear cable management
12. be available in standard or high density
13. be backward compatible to category 3 and 5.
14. be center tuned to category 6 test specifications
15. be sized to accommodate number of data or data and phone cables (where phone cables are terminated on patch panels in lieu of 110 blocks) served by each equipment room plus 30% spare capacity.
16. be separated by horizontal cable management sections.

2.5 RACKS:

- A. Utilize existing equipment racks.

2.6 HORIZONTAL DISTRIBUTION CABLE:

- A. Horizontal Distribution Cabling shall meet the following requirements:
 1. Shall be 100 Ohm Enhanced Category 6 Unshielded Twisted Pair (UTP) Cable.
 2. Physical Characteristics:
 - a. Unless directed otherwise by owner (contractor shall verify with owner), Cat6 cable coloring shall be based on system type as follows, unless specifically approved otherwise:
 - 1) Data (or IP Voice): Blue
 - 2) Analog Voice: Grey
 - 3) Lighting Control System: White
 - 4) Fire Alarm or other Life-Safety System: Red
 - 5) CCTV Surveillance Cameras: Yellow
 - 6) Other: As directed by owner
 - b. Shall be plenum-rated.
 - c. Shall meet applicable requirements of ANSI/ICEA S-80-576.
 - d. The diameter of the insulated conductor shall be .023 in. maximum.
 - e. Shall consist of (4) 22-26 AWG twisted pairs.
 - f. The overall diameter of the cable shall be no larger than 0.240 inches.
 - g. The ultimate breaking strength measured in accordance with ASTM D 4565 shall be 400 N minimum.
 - h. Cable shall withstand a bend radius of 1 inch at -20 degrees Celsius without jacket or insulation cracking.
 - i. Cable shall be third party verified to meet ANSI/TIA/EIA-568-B.2-1.
 - j. Where installed underground, within slab-on-grade or in exterior locations, be gel-filled and rated for wet locations.
 3. Transmission Characteristics:

- a. DC resistance of any conductor shall not exceed 9.38 Ohms per 100m max. at 20° C. Measured in accordance with ASTM D 4566.
 - b. The mutual capacitance of any pair at 1 kHz for 100m of cable shall not exceed 4.4 nF nominal.
 - c. DC resistance unbalance any two conductors of any pair shall not exceed 5% when measured at or corrected to 20° C in accordance with ASTM D 4566.
 - d. Structural return loss swept measurement for 100m or longer shall meet or exceed Category 6 requirements.
4. Shall be manufactured by Amp NetConnect, Berk-Tek, Leviton, General Cable, Mohawk or Superior Essex.

2.7 COPPER CABLE SURGE PROTECTION DEVICES:

- A. All copper circuits routed between or outside of buildings shall be provided with a surge protection device at each end. The surge protection device shall be labeled as meeting the requirements of the latest edition of UL 96A (exact requirements shall be coordinated with the lightning protection system supplier, where applicable).
- B. The surge protection device shall be connected with a #6 AWG copper bonding conductor between the protector ground lug and the TC ground point.

2.8 PATCH CORDS:

- A. The structured cabling contractor shall provide factory terminated and tested UTP and optical fiber patch cords and equipment cords for the complete cabling system. Patch cords shall be provided by the structured cabling contractor to connect patch panels to owner furnished electronics. The UTP patch cables shall meet the requirements of ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-568-B.2-1 for patch cord testing. Provide one set of optical fiber patch cables per fiber run that terminates on fiber patch panel and provide one category 6 patch cord for each category 6 work outlet that terminates on patch panel.
- B. Copper (UTP) patch cords shall:
 1. Be furnished to connect each patch panel jack to owner supplied electronics.
 2. Be furnished for each work outlet jack.
 3. Be a Category 6 patch cord manufactured by Panduit, Amp or Systimax.
 4. Use 8 position connector with impedance matched contacts and designed using dual reactance.
 5. Be constructed of 100 ohm, 4 pair, 24 AWG, stranded conductor, unshielded twisted pair copper per the requirements of the ANSI/TIA/EIA-568-B.2 and ANSI/TIA/EIA-568-B.2-1 standard.
 6. Meet TIA category 6 component specifications in ANSI/TIA/EIA-568-B.2-1 100% factory tested to meet category 6 performance and ETL or any other nationally recognized 3rd party verification
 7. Be capable of universal T568A or T568B wiring schemes.
 8. Have modular connector that shall maintain the paired construction of the cable to facilitate minimum untwisting of the wires.
 9. Have a performance marking indelibly labeled on the jacket (by the manufacturer).
 10. Have the ability to accept color-coded labels and icons to comply with ANSI/TIA/EIA-606-A labeling specifications.
 11. Have “snagless” protection for the locking tab to prevent snagging and to protect locking tab in tight locations and provide bend relief

- 12. Be available in three standard colors
- 13. Be available in 3 foot, 5 foot, 7 foot, 10 foot, and 14 foot standard lengths
- 14. Be backwards compatible to Category 3, 5 and 5e

2.9 GROUNDING AND BONDING:

- A. The facility shall be equipped with a Telecommunications Bonding Backbone (TBB). This backbone shall be used to ground all telecommunications cable shields, equipment, racks, cabinets, raceways, and other associated hardware that has the potential to act as a current carrying conductor. The TBB shall be installed independent of the building's electrical and building ground and shall be designed in accordance with the recommendations contained in the ANSI/TIA/EIA-607 Telecommunications Bonding and Grounding Standard.
- B. The main entrance facility/equipment room in each building shall be equipped with a telecommunications main grounding bus bar (TMGB). Each telecommunications room shall be provided with a telecommunications ground bus bar (TGB). Each grounding bus shall be 12"W x 4"H x ¼"THK and be mounted to the backboard with porcelain isolators.
- C. All wires used for telecommunications grounding purposes shall be identified with a green insulation. Non-insulated wires shall be identified at each termination point with a wrap of green tape. All cables and bus bars shall be identified and labeled in accordance with the System Documentation Section of this specification.

2.10 FIRESTOP:

- A. A firestop system is comprised of the item or items penetrating the fire rated structure, the opening in the structure and the materials and assembly of the materials used to seal the penetrated structure. Firestop systems comprise an effective block for fire, smoke, heat, vapor and pressurized water stream.
- B. All penetrations through fire-rated building structures (walls and floors) shall be sealed with an UL listed firestop system. This requirement applies to through penetrations (complete penetration) and membrane penetrations (through one side of a hollow fire rated structure). Any penetrating item i.e., riser slots and sleeves, cables, conduit, cable tray, and raceways, etc. shall be properly firestopped.

2.11 INNERDUCT:

- A. Innerduct, shall be:
 - 1. Non-metallic, corrugated with pre-installed pull tape.
 - 2. Plenum-rated, where installed within buildings.
 - 3. UL listed for the application.
 - 4. Size as required by the application.
 - 5. Orange in color in concealed areas or within telecommunications or electrical rooms. Color shall be custom as selected by owner in exposed areas (such as within cable trays overhead in areas without ceilings outside telecommunications/electrical rooms).

PART 3 - EXECUTION

3.1 PRE-INSTALLATION SITE SURVEY:

- A. Prior to start of work, meet at the project site with the owner's representative and

representatives of trades performing related work to coordinate efforts. Review areas of potential interference and resolve conflicts before proceeding with the work. Facilitation with the General Contractor will be necessary to plan the crucial schedule completions of the equipment rooms and telecommunication closets.

- B. Examine areas and conditions under which the system is to be installed. Do not proceed with work until satisfactory conditions have been achieved.

3.2 WORK AREA OUTLETS:

- A. Cables shall be coiled in the in-wall or surface-mount boxes if adequate space is present to house the cable coil without exceeding the manufacturer's bend radius. In hollow wall installations where box-eliminators are used, excess wire can be stored in the wall. No more than 12" of UTP and 36" of fiber slack shall be stored in an in-wall box, modular furniture raceway, or insulated walls. Excess slack shall be loosely coiled and stored in the ceiling above each drop location when there is not enough space present in the outlet box to store slack cable.
- B. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B.1 document, manufacturer's recommendations and best industry practices.
- C. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- D. Bend radius of the horizontal cable shall not be less than 4 times the outside diameter of the cable.
- E. The cable jacket shall be maintained to within 25mm (one inch) of the termination point.
- F. Data jacks, unless otherwise noted in drawings, shall be located in the bottom position(s) of each faceplate. Data jacks in horizontally oriented faceplates shall occupy the right-most position(s).
- G. Voice jacks shall occupy the top position(s) on the faceplate. Voice jacks in horizontally oriented faceplates shall occupy the left-most position(s).

3.3 HORIZONTAL DISTRIBUTION CABLE INSTALLATION:

- A. All horizontal voice and data cabling shall be terminated on modular patch panels except for horizontal voice cables serving life safety related functions (fire alarm systems, security systems, elevator communications, etc.). All horizontal voice cabling serving life safety related functions shall be terminated on 110 blocks.
- B. The voice and data cables shall be installed in separate patch panels.
- C. All wiring above ceilings shall be installed in cable tray or open top cable hangers or in provided conduit.
- D. Cable above accessible ceilings shall be supported 60" on center from cable support attached to building structure.
- E. Do not untwist cable pairs more than 0.5 in. when terminating.

- F. The Contractor shall be responsible for replacing all cables that do not pass Category 6 requirements for data and 5e for the voice applications.
- G. Maximum horizontal cable length shall be 90 meters.
- H. Cable shall have no physical defects such as cuts, tears or bulges in the outer jacket. Cables with defects shall be replaced.
- I. Install cable in neat and workmanlike manner. Neatly bundle and tie all cable in closets. Leave sufficient cable for 90° sweeps at all vertical drops.
- J. Do not install Category 6 cable with more than 110N (25 lbs) pull force, as specified in ANSI/TIA/EIA and BICSI TDDM practices. Utilize appropriate cable lubricant in sufficient quantity to reduce pulling friction to acceptable levels on long pulls inside conduit, pulls of multiple cables into a single small bore conduit, on conduit runs greater than 100 lineal feet with bends of opposing directions, and in conduit runs that exceed 180 degrees of accumulated bends. Use of tensile rated cords (i.e. fishing line) should be used for difficult or questionable pulls - to judge to go/no-go condition of the conduit and pulling setup.
- K. Cables jackets that are chaffed or burned exposing internal conductor insulation or have any bare copper ("shiners") shall be replaced.
- L. Test, label and document as called for in contract documents.
- M. Firestop all openings where cable is installed through a fire barrier.

3.4 HORIZONTAL CROSS CONNECT INSTALLATION:

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-B standard, manufacturer's recommendations and best industry practices.
- B. Pair untwist at the termination shall not exceed 13 mm (0.5 inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained as close as possible to the termination point.
- F. Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

3.5 OPTICAL FIBER TERMINATION HARDWARE:

- A. Fiber slack shall be neatly coiled within the fiber splice tray or enclosure. No slack loops shall be allowed external to the fiber panel.
- B. Each cable shall be individually attached to the respective splice enclosure by mechanical

means. The cables strength member shall be securely attached the cable strain relief bracket in the enclosure.

- C. Each fiber bundle shall be stripped upon entering the splice tray and the individual fibers routed in the splice tray.
- D. Each cable shall be clearly labeled at the entrance to the splice enclosure. Cables labeled within the bundle shall not be acceptable.
- E. A maximum of 12 strands of fiber shall be spliced in each tray
- F. All spare strands shall be installed into spare splice trays.

3.6 COPPER TERMINATION HARDWARE:

- A. Cables shall be dressed and terminated in accordance with the recommendations made in the ANSI/TIA/EIA-568-A/B standard, manufacturer's recommendations and best industry practice.
- B. Pair untwist at the termination shall not exceed 12 mm (one-half inch).
- C. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
- D. Cables shall be neatly bundled and dressed to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame.
- E. The cable jacket shall be maintained to within 25 mm (one inch) of the termination point.
- F. Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

3.7 FIRESTOP SYSTEM:

- A. All firestop systems shall be installed in accordance with the manufacturer's recommendations and shall be completely installed and available for inspection by the local inspection authorities prior to cable system acceptance.

3.8 GROUNDING SYSTEM:

- A. The TMGB in the MDF shall be connected to the building electrical entrance grounding facility with a #6 AWG ground. Each TBB in each IDF shall be connected to a ground bus in the MDF with #4/0 AWG minimum ground. The intent of this system is to provide a grounding system that is equal in potential to the building electrical ground system. Therefore, ground loop current potential is minimized between telecommunications equipment and the electrical system to which it is attached.
- B. All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering or residing in the TR or ER shall be grounded to the respective TGB or TMGB using a minimum #6 AWG stranded copper bonding conductor and compression connectors.

- C. The TBB shall adhere to the recommendations of the ANSI/TIA/EIA-607 standard, and shall be installed in accordance with best industry practice.
- D. Installation and termination of the main bonding conductor to the building service entrance ground shall be performed by the electrical contractor.

3.9 IDENTIFICATION AND LABELING:

- A. The contractor shall develop and submit for approval a labeling system for the cable installation. The Owner will negotiate an appropriate labeling scheme with the successful structured cabling contractor. At a minimum, the labeling system shall clearly identify all components of the system: racks, cables, panels and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme. Labeling shall follow the guidelines of ANSI/TIA/EIA-606-A.
- B. All label printing will be machine generated by Panduit software (or other) using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on, or in, the space provided on the device.

3.10 TESTING AND ACCEPTANCE:

- A. General
 - 1. All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA/EIA-568-B. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.
 - 2. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards, the Panduit Certification Program Information Manual and best industry practice. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.
- B. Copper Channel Testing
 - 1. All twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below. Additional testing is required to verify Category performance. Horizontal cabling shall be tested using a Level III test unit for category 6 performance compliance, respectively.
 - 2. Continuity - Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
 - 3. Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the

maximum distances set forth in the ANSI/TIA/EIA-568-B.1 Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.

4. Category 6 Performance:
 - a. Follow the Standards requirements established in:
 - 1) ANSI/TIA/EIA-568-B .1, B.2 and B.2-1
 - b. A Level III test unit is required to verify category 6 performance. The basic tests required are:
 - 1) Wire Map
 - 2) Length
 - 3) Attenuation
 - 4) NEXT (Near end crosstalk)
 - 5) Return Loss
 - 6) ELFEXT Loss
 - 7) Propagation Delay
 - 8) Delay skew
 - 9) PSNEXT (Power sum near-end crosstalk loss)
 - 10) PSELFEXT (Power sum equal level far-end crosstalk loss)

C. Fiber Testing

1. All fiber testing shall be performed on all fibers in the completed end to end system. There shall be no splices unless clearly defined in an RFP. Testing shall consist of an end to end power meter test performed per EIA/TIA-455-53A. The system loss measurements shall be provided at 850 and/or 1300 nanometers for multimode fibers and 1310 and/or 1550 nanometers for single mode fibers. These tests also include continuity checking of each fiber.
2. Backbone multimode fiber cabling shall be tested at both 850 nm and 1300 nm (or 1310 and 1550 nm for singlemode) in both directions.
3. Test set-up and performance shall be conducted in accordance with ANSI/EIA/TIA-526-14 Standard, Method B.
4. Where links are combined to complete a circuit between devices, the structured cabling contractor shall test each link from end to end to ensure the performance of the system. ONLY LINK TEST IS REQUIRED. The structured cabling contractor can optionally install patch cords to complete the circuit and then test the entire channel. The test method shall be the same used for the test described above. The values for calculating loss shall be those defined in the ANSI/TIA/EIA Standard.
5. Attenuation testing shall be performed with an approved hand held tester from an industry recognized test equipment manufacturer.

3.11 SYSTEM DOCUMENTATION:

- A. Upon completion of the installation, the structured cabling contractor shall provide three (3) full documentation sets to the owners for approval. Documentation shall include the items detailed in the sub-sections below.
- B. Documentation shall be submitted within ten (10) working days of the completion of each testing phase (e.g. subsystem, cable type, area, floor, etc.). This is inclusive of all test result and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 working days of the completion of each testing phase. At the request of the Engineer, the structured cabling contractor shall provide copies of the original test results.

- C. The Engineer may request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests shall be a repeat of those defined above. If findings contradict the documentation submitted by the structured cabling contractor, additional testing can be requested to the extent determined necessary by the Engineer, including a 100% re-test. This re-test shall be at no additional cost to the Owner.

3.12 TEST RESULTS:

- A. Test documentation shall be provided on disk within three weeks after the completion of the project. The disk shall be clearly marked on the outside front cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). The results shall include a record of test frequencies, cable type, conductor pair and cable (or outlet) I.D., measurement direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, an annual calibration cycle is anticipated on all test equipment used for this installation. The test document shall detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.
- B. The field test equipment shall meet the requirements of ANSI/TIA/EIA-568-A/B including applicable TSB's and amendments. The appropriate Level III tester shall be used to verify Category 6 cabling systems.
- C. Test results generated for each cable by the wire (or fiber) test instrument shall be submitted as part of the documentation package. The structured cabling contractor must furnish this information in electronic form (CD-ROM).
- D. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.

3.13 AS-BUILT DRAWINGS:

- A. The drawings are to include cable routes and outlet locations. Outlet locations shall be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. The Owner will provide floor plans in paper and electronic (DWG, AutoCAD rel. 2002) formats on which as-built construction information can be added. These documents will be modified accordingly by the structured cabling contractor to denote as-built information as defined above and returned to the Owner.
- B. The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and electronic (AutoCAD DWG) form.

3.14 WARRANTY:

- A. The manufacturer shall provide a 25 year extended product warranty with a 25 year applications assurance warranty. Manufacturer shall provide the warranty directly to the end user.
- B. An Extended Product Warranty shall be provided which warrants functionality of all components used in the system for 25 years from the date of registration. The Extended Product Warranty shall warrant the installed horizontal copper and the backbone optical fiber

portions of the cabling system.

- C. The Application Assurance Warranty shall cover the failure of the wiring system to support current or future applications that are designed for the link/channel specifications of ANSI/TIA/EIA-568-B.1. These applications include, but are not limited to, 10BASE-T, 100BASE-T, 1000BASE-T, and 155 Mb/s ATM.
- D. The contractor shall provide a warranty on the physical installation.

3.15 FINAL ACCEPTANCE & SYSTEM CERTIFICATION:

- A. Completion of the installation, in-progress and final inspections, receipt of the test and as-built documentation, and successful performance of the cabling system for a two week period will constitute acceptance of the system. Upon successful completion of the installation and subsequent inspection, the end user shall be provided with a numbered certificate, from the manufacturer, registering the installation.

END OF SECTION 271000

SECTION 283100

FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 SCOPE

- A. The Contractor shall extend the existing low voltage, automatic and manual fire alarm system as specified herein and indicated on the drawings.
- B. The system shall include a central control panel, power supply, signal initiating devices, audible and visual alarm devices, a conduit and wiring system and all necessary accessories required to provide a complete operating system.
- C. The system shall be completely addressable.
- D. The system shall comply with the applicable provisions of the National Fire Protection Association Standard Number 72 (National Fire Alarm Code) for fire alarm systems; N.E.C. Article 760; and meet all requirements of the local authorities having jurisdiction.
- E. The system shall be provided by a local service organization located within 50 miles of the job site.

1.2 DESCRIPTION OF SYSTEM

- A. Conduit, outlet boxes, cabinets, devices and wiring installation for complete fire detection and alarm system.
- B. Each and every item of the Fire Alarm System shall be listed as a product of a SINGLE fire alarm system manufacturer under the appropriate category by Underwriter's Laboratories, Inc. (UL), and shall bear the "UL" label. All control equipment shall be listed under UL category UOBZ as a single control unit. Partial listing shall not be acceptable. System controls shall be UL listed for Power Limited Applications per N.E.C. Article 760. All circuits shall be marked in accordance with N.E.C. 760-23.
- C. Wiring shown is diagrammatic to define system and is not intended to show every wire. Review drawings prior to bidding and inform Contractor of any additional wiring necessary for installation of systems. Wiring shall comply with pathway survivability requirements defined in NFPA 72. Include cost of all wiring in bid.
- D. After completion of work, submit one set of record mylar sepias with items for Owner described above. Typical type drawings will not be accepted.
- E. Manufacturer's trained technical representative shall supervise installation, connections and tests. The authority having jurisdiction shall be notified prior to installation or alteration of equipment or wiring. Before acceptance, manufacturer's representative will test and certify in writing that system is installed and functioning properly as intended by drawings and specifications. Test includes operation of all devices in entire system.
- F. Guarantee entire system in writing for one year from date of acceptance by Owner. Guarantee

will cover completely all components, equipment, wiring, etc. Repair any defects found in the system within the guarantee period without cost to owner.

- G. Submit with bid a guaranteed price for complete maintenance and service of system for one year beginning at expiration of guarantee period. Price shall be guaranteed for acceptance by Owner until date of substantial completion of system.

1.3 SUBMITTALS

- A. Submit complete shop drawings of system for review per minimum requirements of NFPA 72 and local AHJ including the following:
 - B. Product data cutsheets for all propose equipment with complete descriptive information on each item of equipment including UL listing for all system components
 - C. Fire alarm NICET designer information and fire alarm contractor permit information
 - D. Legend, notes, sheet index, wiring schedule
 - E. To-scale floor plans showing all devices and room names
 - F. Terminal-to-terminal connection diagrams for system components and associated equipment interfaces. Identify color code and terminal numbers on shop drawings.
 - G. System input/output matrix
 - H. Unique device identification numbers
 - I. Conduit diagrams
 - J. Battery calculations and voltage drop calculations
 - K. Typical device installation details
 - L. Any other information required by Architect to describe system.

1.4 SYSTEM OPERATION

- A. Actuation of any alarm initiating device shall cause all audible alarm signals to sound, all visual indicating appliances to flash, activate an alarm LED and local tone-alert at control panel/annunciator, cause an LCD read-out of point in alarm including type of alarm (smoke detector, manual station, etc.), provide a signal to the mechanical controls to shut down or re-route air handling systems according to established plans. This shall include a suitable addressable relay at each air handling unit to shut down all air handlers in a given zone when system goes into alarm.
- B. The general alarm devices may be silenced by authorized personnel only, by entering a locked cabinet and operating the proper silencing switch. A subsequent zone alarm shall reactivate the signals. Operation of the silencing switch shall be indicated by a trouble light and audible signal.
- C. Operation of any sprinkler monitoring switch, power failure, opens, grounds, or any

disarrangement of the system wiring or components shall be indicated by a visual and audible trouble signal. The audible trouble signal may be silenced; however, the trouble LED shall remain lit until the system has been returned to normal operating condition.

D. Analog Smoke Sensor Operation

1. The smoke sensor shall be a smoke density measuring device having no self contained alarm set-point. The alarm decision for each sensor shall be determined by the control panel. The control panel shall determine the condition of each sensor by comparing the sensor value to stored values.
2. The control panel shall maintain a moving average of the sensors smoke chamber value. Systems that do not automatically maintain a constant smoke obscuration sensitivity for each sensor by compensating for environmental factors and are deemed unacceptable.
3. The system shall automatically indicate when an individual sensor needs cleaning. When a sensor's average value reaches a predetermined value, a "Dirty Sensor" trouble condition shall be audibly and visually indicated at the control panel for the individual sensor. Additionally, the LED on the sensor base shall glow steady giving a visible indication at the sensor location.
4. If a "Dirty Sensor" is left unattended, and its average value increases to a second predetermined value, an "Excessively Dirty Sensor" trouble condition shall be indicated at the control panel for the individual sensor.
5. The control panel shall automatically perform a daily self-test on each sensor. Checking the electronics in the sensor's base ensures the accuracy of the values being transmitted to the control panel. A sensor which fails the self-test will cause a "Self Test Abnormal" trouble condition at the control panel. A sensor self-test which must be manually initiated by the operator shall not be acceptable.

1.5 SYSTEM FEATURES

A. The fire alarm system shall include the following features as a minimum:

1. Supervision of all field wiring.
2. Microprocessor based solid state modular construction.
3. Ground fault detection and ground fault isolating & supervising circuitry.
4. 80 character LCD display to indicate alarms, supervisory service conditions and troubles.
5. Simultaneous test of all LED's and LCD's from a central point.
6. "Dead Front" design control panel/annunciator with field programmable LED alarm, status and trouble indicators, and all control switches located behind a locked tempered glass door.
7. Fully automatic battery charger and lead alkaline batteries. Batteries shall have capacity to maintain system operation for 24 hours in normal supervisory mode and shall have sufficient capacity remaining to operate in alarm mode for 15 minutes at conclusion of supervisory period. Batteries shall be supervised for connection to the system and for low voltage threshold. Ammeter and voltmeter shall be provided to indicate battery voltage and charging current.
8. Two (2) sets of 2 amp form C auxiliary alarm contacts fused with feedback.
9. One (1) set of 2 amp form C auxiliary trouble contacts.
10. Standard with 99 addressable points (expandable to 250 points) and four input/output (I/O) circuits (expandable to 20 circuits).
11. Basic four (4) amp power supply (expandable as required).
12. 600 event historical logging.
13. System shall be field programmable for offsite monitoring by remote station reverse polarity, local energy master box or shunt master box types.

14. System shall be field programmable for signal circuit type of operation; march time code, temporal code, selective code, zone code, general alarm, time limit cutout and alarm silence inhibit.
 15. System shall be field programmable for waterflow/sprinkler supervisory operation on distinct zones as required.
 16. Transient suppression protection shall be provided on the system power supply and on the municipal protection circuit to comply with UL 864 requirements. Additionally, surge suppression shall be provided within the control panel on all circuits that extend outside the building (including to roof-mounted HVAC units).
 17. Supervised remote annunciator connection circuit.
 18. System shall incorporate an alarm/trouble walk test.
 19. Resident non-volatile programmable operating system memory for all operating requirements.
- B. Control panel shall be furnished with one-way voice communication and tone generating capabilities.
1. A central audio control shall be provided for the necessary alarm message/tone generation, main and remote microphone connections and mixer/pre-amplifier circuits. Continuous supervision shall be provided. Audio outputs shall have individual gain control.
 2. A hand held, push-to-talk microphone shall be provided recessed within a protective panel mounted enclosure. The microphone shall be a dynamic communication type with a frequency range of 200HZ to 4000Hz and shall be equipped with a self-winding five foot coiled cable. An LED indicator shall be provided to indicate microphone push-to-talk button has been pressed and speaker circuits are ready for transmission. Microphone shall be supervised from disconnection.
 3. An audio control switch module shall be furnished to provide manual switches to the audio functions. Switches and associated LED indicators shall be supervised for disarrangement or failure.
 4. Audio power amplifiers shall be furnished with self-contained filtered 24VDC power supply, transformer and amplifier monitor circuits. Amplifiers shall provide a 25VRMS output with a frequency response of 120 Hz to 12KHz. Provide a sufficient quantity of amplifiers to operate all system speakers simultaneously plus ten (10) percent space capacity. Amplifiers shall be sized to accommodate all speakers tapped at two watts. Provide one (1) back-up amplifier capable of automatically replacing any failed amplifier.
 5. Speaker circuits shall be supplied which are capable of supplying audio signals at 25VRMS supplied by the system amplifiers. Supervision for open, short or ground fault conditions shall be provided. Individual and distinct trouble indications shall be provided for each fault.
 6. Digitized tones for alarm or auxiliary requirements shall be provided.
 7. A remote microphone/annunciator (LCD type) command location as shown on plans shall be provided to duplicate the manual voice transmission capability of the fire alarm control panel.
 8. The system shall be configured to allow selective voice paging. If any manual control switches are activated, the control panel operator shall be able to make announcements via the paging microphone over the pre-selected speakers. Facility for total building evacuation and paging shall be provided to allow for activation of speakers. This shall be accomplished by an "All Call" switch.

PART 2 - PRODUCTS

2.1 FIRE ALARM CONTROL PANELS/ANNUNCIATORS

- A. Control panel for this project is existing.

2.2 ALARM SIGNALS (AUDIBLE)

- A. Speakers:
1. The speakers shall be polarized and shall be operated by 25VRMS. Each speaker assembly shall include separate wire leads for in/out wiring for each leg of the associated signal circuit. T-tapping of signal device conductors to signal circuit conductors shall NOT be accepted. Where speakers are shown as a combination audible-visual assembly, they shall be mounted as a combination unit in a single back box (4906 series) . Speakers shall be capable of producing 88db. All speakers shall be to comply with NFPA 72 requirements for audibility.
- B. Devices installed in areas subject to mechanical damage (ie. gymnasiums) shall be furnished with suitable wire guards as indicated on plans.

2.3 ALARM SIGNALS (VISUALS)

- A. Visual Flashing Lamps (Xenon Strobe):
1. Furnish and install per plans and specs visible appliance for fire alarm system notification. The appliance shall be 1HZ synchronized (15cd, 30cd, 110cd) with polar distribution or 75 cd illumination as required by the Americans with Disabilities Act (ADA). The appliance shall be U.L. listed to Standard 1971 and have a circumpolar light output allowing mounting in either vertical or horizontal positions or on the ceiling.
 2. The light unit shall be of ABS polycarbonate and the lens of high grade, optical quality LEXAN. For optimized light distribution, the xenon flash tube shall be installed perpendicular to the appliance's back plane. A special compound reflector shall be utilized to maximize and best distribute the light pattern in key axis directions.
 3. The effect of the illuminated visible appliance shall be observable in a circumpolar pattern. The visible appliance shall be labeled with the word "FIRE" in a contrasting color and the height of each character shall be a minimum of 5/8 inches. In its quiescent state, the word "FIRE" shall be visible.
 4. Mounting heights of visual appliances shall in all respects comply with the Americans with Disabilities Act.
 5. Visual indicating appliances shall be comprised of a Xenon flashtube and be entirely solid state. These devices shall be U.L. listed and be capable of either ceiling or wall mounting. The LEXAN lens shall be pyramidal in shape to allow better visibility. Visual units shall be of the stand alone type.

2.4 FIRE ALARM CABLING

1. All fire alarm cabling shall:
 - a. Have red outer insulation/jacket with ripcord.
 - b. Be listed and labeled for the intended use in Fire Alarm systems.
 - c. Where Level 2 or Level 3 pathway survivability is required by NFPA 72, cabling shall be 2-hour fire rated circuit integrity (CI) type.
 - d. Be manufactured by West Penn, Allied, Belden or Superior Essex.

2.5 FIRE ALARM SYSTEM MANUFACTURER

- A. All equipment shall be listed by UL. All panels and peripheral devices shall be the standard

equipment of a single manufacturer and shall display the manufacturer's name on each component. Manufacturer's numbers specified in this section are those of Simplex Time Recorder Company to denote type, quality, material and desired operating features to be furnished.

- B. Equipment shall be compatible with manufacturer of the existing fire alarm system

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations.
- B. The contractor shall provide 120VAC power to all remote booster power supplies, control panels, transponder cabinets or other similar items as required. Where the project is provided with emergency power from an emergency generator, all power supplies shall be connected to an emergency source. Dedicated branch circuit(s) shall be provided to supply primary power to the fire alarm system. The associated branch circuit breakers shall be furnished with lock-on hardware and shall be identified with red marking as a fire alarm circuit. The location of the circuit disconnecting means shall be permanently identified at the fire alarm control unit.
- C. All wiring shall be installed in strict compliance with all the provisions of NEC - Article 760 Parts I and III, Power-Limited Fire Protective Signaling Circuits or if required may be reclassified as non-power limited and wired in accordance with NEC-Article 760 Parts I and II.
- D. All wiring shall be installed in strict compliance with pathway survivability requirements of applicable codes including NFPA 72.
- E. Upon completion, the contractor shall so certify in writing to the owner and general contractor.
- F. Front surface of all junction box covers in concealed areas (such as above lay-in ceilings) or within mechanical/electrical rooms (and other similar areas where appearance of boxes is not an issue) shall be sprayed red and labeled "Fire Alarm" or "F/A". Covers in exposed areas shall be labeled "F/A" on interior of front cover. Wiring color code shall be maintained throughout the installation.
- G. All fire alarm wiring shall be installed in conduit. Conduit shall be sized per manufacturer's recommendations, but in no case shall conduit be smaller than 3/4".
- H. Installation of equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate subcontractors.
- I. All raceways shall be concealed unless specifically shown or approved otherwise.
- J. The contractor shall clean all dirt and debris from the inside and the outside of the fire alarm equipment after completion of the installation.
- K. Install System Record Document cabinet adjacent to control panel unless alternate location is approved.

- L. The manufacturer's authorized representative shall provide on-site supervision of installation and shall provide all system setup and programming services.
- M. The manufacturer's authorized representative shall have as a minimum, a NICET LEVEL III certification. The fire alarm contractor shall have a technician with a minimum Nicet Level III certification working in a position of responsibility. All technicians working for the certified contractor shall have a minimum Nicet Level II certification. Any fire alarm contractor wishing to bid on the fire alarm work shall show evidence of certifications at the pre-bid conference.
- N. The fire alarm contractor shall be licensed as a certified fire alarm contractor by the state in which the work is to be performed in compliance with all requirements of state fire marshall or other AHJ's as applicable.
- O. The drawing/specifications included herein are to indicate contract intent only. The Fire Alarm contractor shall provide final design documents to include plans specifying exact device types/locations, circuitry, battery calculations, circuit/voltage drop calculations, etc. in accordance with all applicable code requirements. These final design documents shall be prepared under the supervision of an engineer licensed in the state where the work is to be performed, engaged/employed by the Fire Alarm contractor, and must bear the engineer's licensure seal with signature and date.

3.2 TESTING

- A. The completed fire alarm system shall be fully tested in accordance with NFPA-72H by the contractor in the presence of the owner's representative and the Local Fire Marshal. Upon completion of a successful test, the contractor shall so certify in writing to the owner and general contractor, and shall submit final testing results with O&M documentation..
- B. The contractor shall test and demonstrate proper operation of all smoke detection equipment and associated HVAC controls to the satisfaction of the authority-having-jurisdiction and fire marshal.

3.3 WARRANTY

- A. The contractor shall warrant the completed fire alarm system wiring and equipment to be free from inherent mechanical and electrical defects for a period of one (1) year from the date of the completed and certified test or from the date of first beneficial use.
- B. The equipment manufacturer shall make available to the owner a maintenance contract proposal to provide a minimum of two (2) inspections and tests per year in compliance with NFPA-72H guidelines.

3.4 CERTIFICATION & ACCEPTANCE

- A. A factory trained representative of the manufacturer shall supervise final testing of the system in accordance with N.F.P.A. Standard 72H-1984 in the presence of a representative of the authority having jurisdiction. Manufacturer's representative shall be NICET trained and shall have a level III NICET certificate. It shall be subject to the approval and acceptance of the responsible engineer. On completion of the acceptance tests, the Owner or his representative shall be instructed in the operation and testing of the system.
- B. The fire alarm system shall be free from defects in workmanship and materials, under normal

use and service, for a period of one year from the date of acceptance or beneficial occupancy whichever is earlier. Any equipment shown to be defective in workmanship or material shall be repaired, replaced, or adjusted free of charge.

- C. The equipment manufacturer shall be represented by a local service organization, and the name of this organization shall be furnished to the Architect and Owner. The service organization shall be located within 50 miles of the job site. The service organization shall furnish, gratis to the Owner, a one year maintenance warranty contract, effective from the date of final acceptance.

END OF SECTION 283100