

UNA BID 2023-02

PROJECT MANUAL

PARKING LOT C EXPANSION

Florence, Alabama

for

The University of North Alabama

(Local Funds)

October 17, 2022

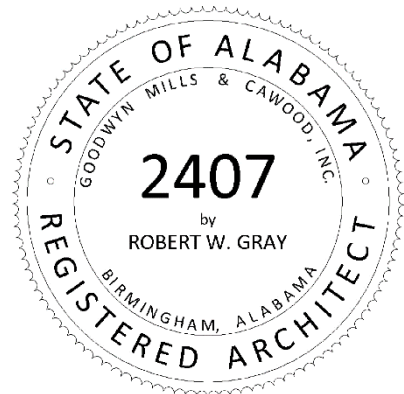
FINAL REVIEW SET

Prepared By

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GMC PROJECT NUMBER: ABHM220004



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Jason B. Lenz, P.E.

END OF SECTION

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ADVERTISEMENT FOR BIDS

SEALED PROPOSALS will be received from previously **PRE-QUALIFIED General Contractors** by (Owner) **University of North Alabama**, located at 1660 Tune Ave. Florence, AL 35630; **until 2:00 PM Local Time, Wednesday, November 9, 2022** for this project:

**Parking Lot Expansion along Wood Avenue
Florence, ALABAMA for
University of North Alabama_**

(LOCALLY FUNDED)

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

A cashiers check or bid bond payable to (Owner) 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; Dodge Data & Analytics; and ConstructConnect.

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.

Site visits may be arranged by contacting Mr. Bob Berry via email: rberry3@una.edu or by phone 256-765-6852. Any answered questions will be published for all bidders.

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."

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.

University of North Alabama
Facilities Department
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Florence, Alabama, 35630

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DCM Form C-1; August 2020.
REVISED (GM&C); February 2021.

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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 exceeds \$50,000, 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".~~ (Not Required)** 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 shall 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 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.



STATE OF ALABAMA
BUILDING COMMISSION

770 WASHINGTON AVE
SUITE444
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 CO

SUBJECT: ACT 2013-205, CERTIFICAT ; IO FRO 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

ST: EXC-01
6/21

SALES AND USE TAX Division
p.o. box 327710 • montgomery, Al 36132-7710

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? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please attach list.	NAME OF PARTY TO THE CONTRACT

JOB DESCRIPTION

WILL ANY POLLUTION CONTROL EXEMPTION BE APPLICABLE? <input type="checkbox"/> Yes <input type="checkbox"/> 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.

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

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.



Kay Ivey
Governor

Bill Poole
Director of Finance

STATE OF ALABAMA
DEPARTMENT OF FINANCE
REAL PROPERTY MANAGEMENT
Division of Construction Management

P.O. Box 301150, Montgomery, AL 36130-1150
770 Washington Avenue, Suite 444, Montgomery, AL 36104
Telephone: (334) 242-4082 Fax: (334) 242-4182



Mickey Allen
Assistant Finance Director
Real Property Management

Frank Barnes, Director
Construction Management

E-Verify Memorandum of Understanding

Instructions for inclusion in project manuals.

Per DCM's May 29, 2012 bulletin *Guidance on Act 2012-491 Amending the Alabama Immigration Law*: "Contractors (including architects and engineers) will ... be required to enroll in the E-Verify program and to provide documentation of enrollment in the E-Verify program with their contracts or agreements."

Upon completing enrollment in the E-Verify program available at <https://www.e-verify.gov/employers/enrolling-in-e-verify>, an E-Verify Memorandum of Understanding (MOU) is issued to the enrolled business. The same E-Verify MOU can be repeatedly used until any information in the business's E-Verify user profile is updated, at which time E-Verify updates the printable Company Information section of the MOU, while the original signatory information remains the same. Typically, an E-Verify MOU is 13-18 pages long depending on business type and number of employees.

DCM requires a copy of the entire current E-Verify MOU document including the completed Department of Homeland Security – Verification Division section (with name, signature and date included) to be submitted as an attachment to each Construction Contract original and to each Agreement Between Owner and Architect original.

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

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

DCM (BC) Project No.

(1) *Do not staple this form and/or attachments; use clips. Print single-sided; do not submit double-side printed documents.*

CONSTRUCTION CONTRACT

(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 the Director, Alabama Division of Construction Management, 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

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

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ce, 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** *(Special Provisions may be inserted 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) -----

Review/Signature flow: Architect/Engineer (prepare documents) > Contractor (review and sign) > Architect/Engineer (review) > Owner (review and sign) > SDE (review, sign and distribute the fully executed Contract to all parties, and forward a copy to the Alabama Division of Construction Management [DCM]). Note: DCM does not sign fully locally-funded SDE project contract documents.

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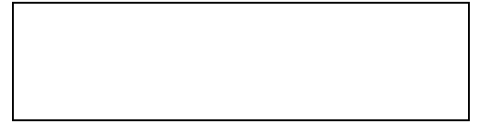
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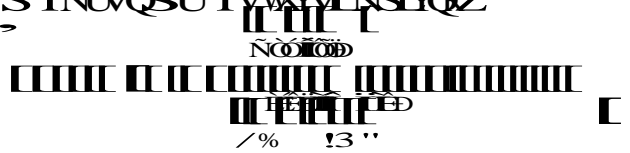
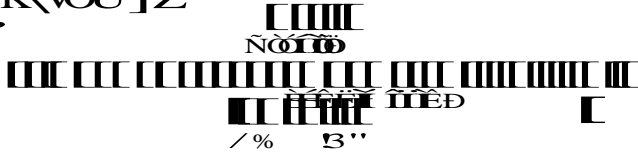
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SCHEDULE OF VALUES (SOV)

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.
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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.

TO OWNER:

OWNER'S NAME
 Owner's Address
 City, State, Zip

PROJECT:

NAME OF PROJECT
 Architect's Project No.

FROM CONTRACTOR:

CONTRACTOR'S NAME
 Contractor's Address
 City, State, Zip

ARCHITECT/ENGINEER:

GOODWYN, MILLS AND CAWOOD, INC.
 2701 1st Avenue South, Ste. 100
 Birmingham, AL 35233

Item	Description of Work Item	Scheduled Value	Previous Billin	Current Billin	Total Billed To Date	% Complete
	GENERAL REQUIREMENTS	\$ 23,100.00	\$ 21,100.00	\$ 1,000.00	\$ 22,100.00	96%
a.	Builders Risk	\$ 2,200.00	\$ 2,200.00	\$	\$ 2,200.00	100%
b.	Bonds	\$ 17,900.00	\$ 17,900.00	\$	\$ 17,900.00	100%
c.	Temporary Facilities	\$ 3,000.00	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	67%
				\$		
2	SITWORK	\$ 282,000.00	\$ 137,000.00	\$ 88,000.00	\$ 225,000.00	80%
a.	Earthwork	\$ 139,000.00	\$ 110,000.00	\$ 15,000.00	\$ 125,000.00	90%
b.	Stone Fill	\$ 16,000.00	\$	\$ 8,000.00	\$ 8,000.00	50%
c.	Paving	\$ 127,000.00	\$ 27,000.00	\$ 65,000.00	\$ 92,000.00	72%
3	CONCRETE	\$ 149,000.00	\$ 89,000.00	\$ 20,000.00	\$ 109,000.00	73%
a.	Reinforcing Steel	\$ 29,000.00	\$ 15,000.00	\$ 3,000.00	\$ 18,000.00	62%
b.	Poly & Vapor Seal	\$ 22,000.00	\$ 12,000.00	\$ 5,000.00	\$ 17,000.00	77%
c.	Slab on Grade	\$ 98,000.00	\$ 62,000.00	\$ 12,000.00	\$ 74,000.00	76%
4	MASONRY	\$ 201,000.00	\$ 113,000.00	\$ 54,500.00	\$ 167,500.00	83%
a.	Block Work	\$ 122,000.00	\$ 98,000.00	\$ 3,000.00	\$ 101,000.00	83%
b.	Brick Work	\$ 62,000.00	\$ 10,000.00	\$ 48,000.00	\$ 58,000.00	94%
c.	Masonry Accessories	\$ 17,000.00	\$ 5,000.00	\$ 3,500.00	\$ 8,500.00	50%
5	METALS	\$ 28,000.00	\$ 6,500.00	\$ 16,000.00	\$ 22,500.00	80%
a.	Structural Steel	\$ 18,000.00	\$ 3,500.00	\$ 12,500.00	\$ 16,000.00	89%
b.	Miscellaneous Steel	\$ 4,000.00	\$ 1,000.00	\$ 2,500.00	\$ 3,500.00	88%
c.	Handrails and Railings	\$ 6,000.00	\$ 2,000.00	\$ 1,000.00	\$ 3,000.00	50%
6	WOOD and PLASTIC	\$ 16,000.00	\$	\$ 4,500.00	\$ 4,500.00	28%
a.	Casework	\$ 16,000.00	\$	\$ 4,500.00	\$ 4,500.00	28%
7	MOISTURE PROTECTION	\$ 64,000.00	\$ 20,500.00	\$ 35,500.00	\$ 56,000.00	88%
a.	Dampproofing	\$ 29,000.00	\$ 4,500.00	\$ 18,000.00	\$ 22,500.00	78%
b.	Masonry Foam Insulation	\$ 5,000.00	\$ 2,000.00	\$ 2,000.00	\$ 4,000.00	80%
c.	Metal Building Insulation	\$ 26,000.00	\$ 13,000.00	\$ 13,000.00	\$ 26,000.00	100%
d.	Joint Sealers	\$ 4,000.00	\$ 1,000.00	\$ 2,500.00	\$ 3,500.00	88%
8	DOORS, WINDOWS and GLASS	\$ 84,000.00	\$ 33,000.00	\$ 21,200.00	\$ 54,200.00	65%

SCHEDULE OF VALUES

** FOR ATTACHMENT TO APPLICATION for PAYMENT **

a.	Door Frames and Hardware	\$	51,000.00	\$	18,000.00	\$	18,000.00	\$	56,000.00	71%
b.	Coiling Doors	\$	5,000.00	\$	5,000.00	\$		\$	5,000.00	100%

ESTIMATE No.: _____

DATE: _____

B.C. No.: _____

SCHEDULE OF VALUES

ESTIMATE No.: _____

** FOR ATTACHMENT TO APPLICATION for PAYMENT **

DATE: _____

B.C. No.: _____

TO OWNER:

OWNER'S NAME
Owner's Address
City, State, Zip

PROJECT:

NAME OF PROJECT
Architect's Project No.

FROM CONTRACTOR:

CONTRACTOR'S NAME
Contractor's Address
City, State, Zip

ARCHITECT/ENGINEER:

GOODWYN, MILLS AND CAWOOD, INC.
2701 1st Avenue South, Ste. 100

		Birmingham, AL 35233			
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Item	Description of Work Item	Scheduled Value	Previous Billin	Current Billin	Total Billed To Date	% Com lete
c.	Glass and Glazing	\$ 28,000.00	\$ 10,000.00	\$ 3,200.00	\$ 13,200.00	47%
9	FINISHES	\$ 225,000.00	\$ 32,000.00	\$ 92,000.00	\$ 124,000.00	55%
a.	Drywall	\$ 45,000.00	\$ 15,000.00	\$ 16,000.00	\$ 31,000.00	69%
b.	Acoustical & Insulation	\$ 15,000.00	\$ 3,000.00	\$ 4,500.00	\$ 7,500.00	50%
c.	Epoxy Flooring	\$ 31,000.00	\$ 14,000.00	\$ 10,500.00	\$ 24,500.00	79%
d.	Wood Flooring	\$ 103,000.00	\$ 26,000.00	\$ 61,000.00	\$ 87,000.00	84%
e.	Resilient Flooring	\$ 7,000.00	\$	\$ 4,200.00	\$ 4,200.00	60%
f.	Painting	\$ 24,000.00	\$	\$ 10,000.00	\$ 10,000.00	42%
10	SPECIALTIES	\$ 61,000.00	\$ 2,500.00	\$ 7,200.00	\$ 9,700.00	16%
a.	Markerboards	\$ 1,000.00	\$	\$	\$	0%
b.	Toilet Partitions	\$ 14,000.00	\$ 2,500.00	\$ 3,200.00	\$ 5,700.00	41%
c.	Lockers	\$ 11,000.00	\$	\$ 4,000.00	\$ 4,000.00	36%
d.	Fire Extinguishers and Cabinets	\$ 1,000.00	\$ 350.00	\$ 650.00	\$ 1,000.00	100%
e.	Toilet Accessories	\$ 16,000.00	\$ 1,000.00	\$ 1,150.00	\$ 2,150.00	13%
f.	Aluminum Canopies	\$ 18,000.00	\$ 3,000.00	\$ 6,700.00	\$ 9,700.00	54%
11	FURNISHINGS	\$ 203,000.00	\$ 41,000.00	\$ 76,500.00	\$ 117,500.00	58%
a.	Desks/Tables/Chairs	\$ 21,000.00	\$ 12,000.00	\$ 7,500.00	\$ 19,500.00	93%
b.	Gym Equipment	\$ 49,000.00	\$ 10,000.00	\$ 12,000.00	\$ 22,000.00	45%
c.	Bleachers	\$ 131,000.00	\$ 19,000.00	\$ 56,000.00	\$ 75,000.00	57%
d.	Misc. Furnishings	\$ 2,000.00	\$	\$ 1,000.00	\$ 1,000.00	50%
12	SPECIAL CONSTRUCTION	\$ 310,000.00	\$ 198,000.00	\$ 112,000.00	\$ 310,000.00	100%
a.	Metal Building	\$ 229,000.00	\$ 165,000.00	\$ 64,000.00	\$ 229,000.00	100%
b.	Building Erection	\$ 81,000.00	\$ 33,000.00	\$ 48,000.00	\$ 81,000.00	100%
13	MECHANICAL	\$ 546,000.00	\$ 139,000.00	\$ 19,000.00	\$ 158,000.00	29%
a.	Exterior Sanitary Sewer & Water	\$ 85,000.00	\$ 65,000.00	\$ 10,000.00	\$ 75,000.00	88%
b.	Below Slab Rough-in	\$ 34,000.00	\$ 34,000.00	\$	\$ 34,000.00	100%
c.	Above Slab Rough-in	\$ 48,000.00	\$ 40,000.00	\$ 8,000.00	\$ 48,000.00	100%
d.	Gas Piping	\$ 6,000.00	\$ 5,000.00	\$ 1,000.00	\$ 6,000.00	100%
e.	Plumbing Fixtures & Equipment	\$ 58,000.00	\$ 43,000.00	\$ 4,000.00	\$ 47,000.00	81%
g.	Sprinkler System	\$ 38,000.00	\$	\$ 10,000.00	\$ 10,000.00	26%
h.	Ductwork	\$ 47,000.00	\$ 35,000.00	\$ 12,000.00	\$ 47,000.00	100%
	HVAC Equipment	\$ 120,000.00	\$ 82,000.00	\$ 15,000.00	\$ 97,000.00	81%

SCHEDULE OF VALUES

** FOR ATTACHMENT TO APPLICATION for PAYMENT **

i. HVAC Rough-in	\$	85,000.00	\$	43,500.00
k. Refrigerant Piping	\$	13,000.00	\$	8,500.00
Trim & T&B	\$	12,000.00	\$	

2

ESTIMATE No.:	41,500.00	\$	85,000.00	100%
DATE:	4,500.00	\$	13,000.00	100%
B.C. No.:		\$		0%

TOOWNER:	OWNER'S NAME Owner's Address City, State, Zip	PROJECT:	NAME OF PROJECT Architect's Project No.
FROMCONTRACTOR:	CONTRACTOR'S NAME Contractor's Address City, State, Zip	ARCHITECT/ENGINEER:	GOODWYN, MILLS AND CAWOOD, INC. 2701 1st Avenue South, Ste. 100 Birmingham, AL 35233

Item	Description of Work Item	Scheduled Value	Previous Billin	Current Billin	Total Billed To Date	% Com lete
14	ELECTRICAL	\$ 284,000.00	\$ 81,000.00	\$ 85,500.00	\$ 166,500.00	59%
a.	Under Slab Rough-in	\$ 36,000.00	\$ 36,000.00	\$	\$ 36,000.00	100%
b.	Above Slab Rough-in	\$ 70,000.00	\$ 35,000.00	\$ 35,000.00	\$ 70,000.00	100%
c.	Lighting Fixtures	\$ 76,000.00	\$ 10,000.00	\$ 48,000.00	\$ 58,000.00	76%
d.	Panels & Power Equipment	\$ 55,000.00	\$ 40,000.00	\$ 2,500.00	\$ 42,500.00	77%
e.	Site Electrical	\$ 17,000.00	\$ 8,000.00	\$ 5,000.00	\$ 13,000.00	76%
f.	Fire Alarm System	\$ 11,000.00	\$	\$ 2,500.00	\$ 2,500.00	23%
h.	Data / Fiber / CCTV	\$ 19,000.00	\$	\$ 2,500.00	\$ 2,500.00	13%
15	ALLOWANCES	\$ 78,750.00	\$ 25,000.00	\$ 5,500.00	\$ 30,500.00	39%
a.	Signage	\$ 3,750.00	\$	\$ 2,000.00	\$ 2,000.00	53%
b.	Public Address System	\$ 50,000.00	\$	\$ 3,500.00	\$ 3,500.00	7%
c.	Unsuitable Soil	\$ 25,000.00	\$ 25,000.00	\$	\$ 25,000.00	100%
16	AID TO CONSTRUCT	\$ 25,000.00	\$ 9,300.00	\$	\$ 9,300.00	37%
a.	Electrical Pole removal and relocate	\$ 3,500.00	\$ 3,500.00	\$	\$ 3,500.00	100%
b.	Gas Line Relocation	\$ 2,600.00	\$ 2,600.00	\$	\$ 2,600.00	100%
c.	Reconnect Sewer Line	\$ 3,200.00	\$ 3,200.00	\$	\$ 3,200.00	100%
17	OWNER'S CONTINGENCY	\$ 25,000.00	\$ 11,262.69	\$	\$ 11,262.69	45%
a.	Mop Sink and Floor Drain	\$ 3,802.69	\$ 3,802.69	\$	\$ 3,802.69	100%
b.	Relocate Fiber / Utility Pole	\$ 2,530.00	\$ 2,530.00	\$	\$ 2,530.00	100%
c.	Relocate Fire Vault	\$ 4,930.00	\$ 4,930.00	\$	\$ 4,930.00	100%
18	CHANGE ORDER NO.1	\$ 23,500.00	\$ 11,500.00	\$	\$ 11,500.00	49%
a.	Additional Sitework to add Driveway Entrance	\$ 9,500.00	\$ 9,500.00	\$	\$ 9,500.00	100%
b.	Additional Pavement / Striping at new Drive Entrance	\$ 14,000.00	\$ 2,000.00	\$	\$ 2,000.00	14%
19	CHANGE ORDER NO. 2	\$ 20,200.00	\$ 15,100.00	\$	\$ 15,100.00	75%
a.	Add Flag Pole at Entry	\$ 12,000.00	\$ 12,000.00	\$	\$ 12,000.00	100%
b.	Revise Handrail Style at Front/ Back Entrances	\$ 8,200.00	\$ 3,100.00	\$	\$ 3,100.00	38%
TOTALS TO DATE		\$ 2,633,831.35	\$ 1,133,437.69	\$ 698,250.00	\$ 1,831,687.69	70%

SCHEDULE OF VALUES

** FOR ATTACHMENT TO APPLICATION for PAYMENT **

ESTIMATE No.: _____

DATE: _____

B.C. No.: _____

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 Description	B Materials Stored Last Period	C Materials Purchased This Period <i>(period noted above)</i>	D Materials Used This Period <i>(period noted above)</i>	E Materials Presently Stored <i>(B + C - D)</i>
TOTALS:				

Instructions :

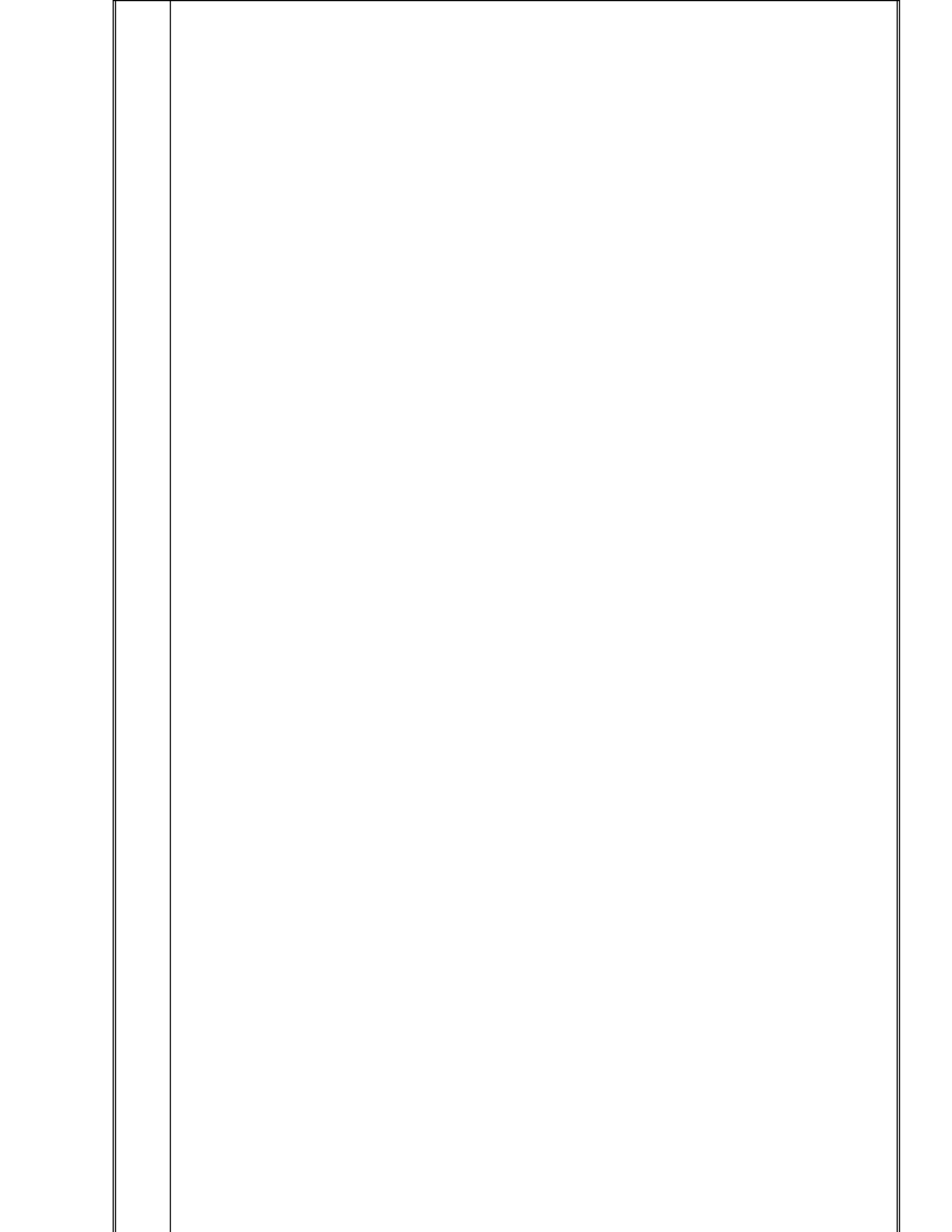
- This Form C-10SM must be submitted as part of the payment application documentation when a Materials Presently Stored amount of anything greater than \$0 is noted on line 2 of DCM Form C-10: Application and Certificate for Payment.
- Receipts must be provided as attachments to this form C-10SM for 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.

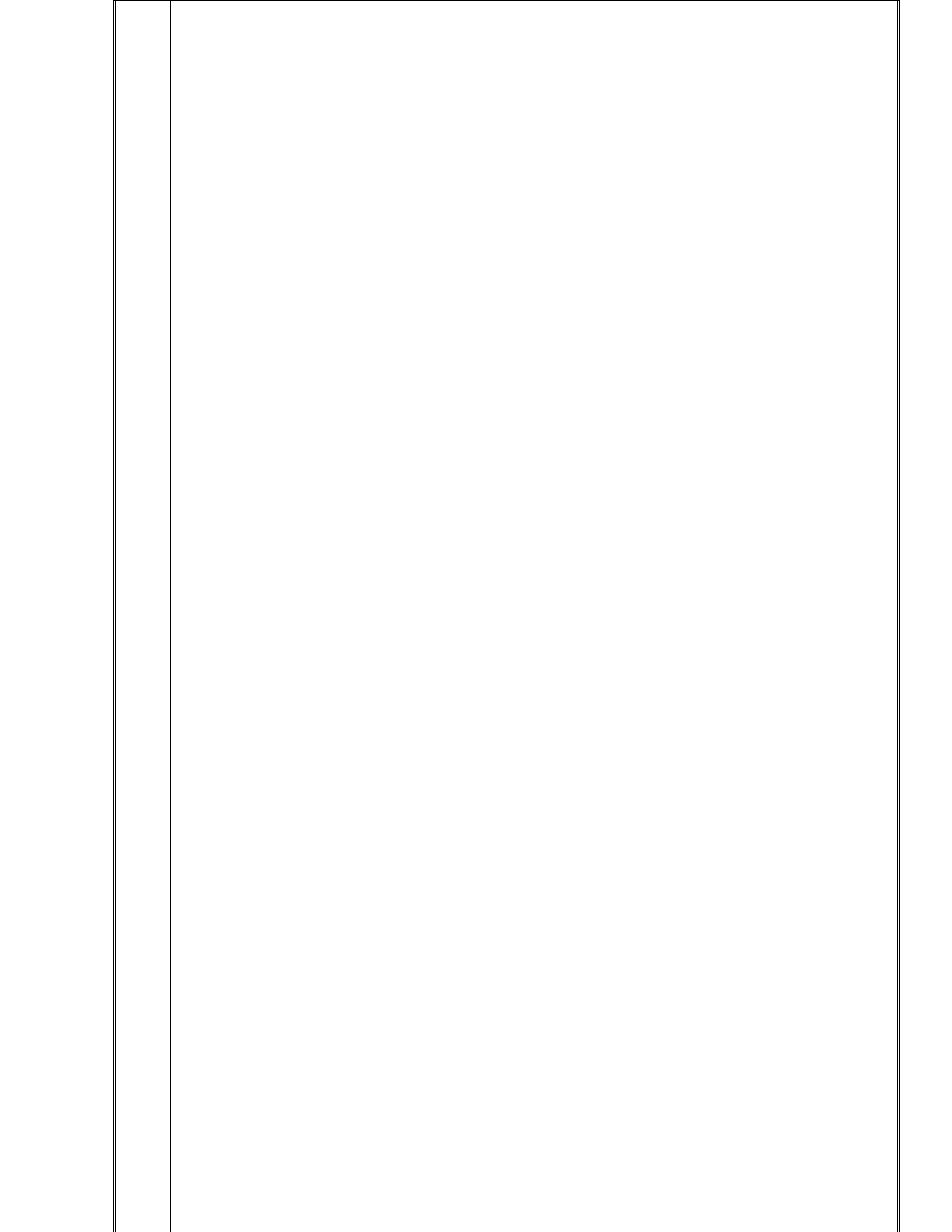
SAMPLE PROGRESS SCHEDULE & REPORT			CONTRACTOR (Contractor may use own form in lieu of Form C-11):				DATE OF REPORT:			
DCM (BC) No.:							PROCEED DATE:			
PSCA projects: PSCA No.:										
PROJECT:			ARCHITECT/ENGINEER:							

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

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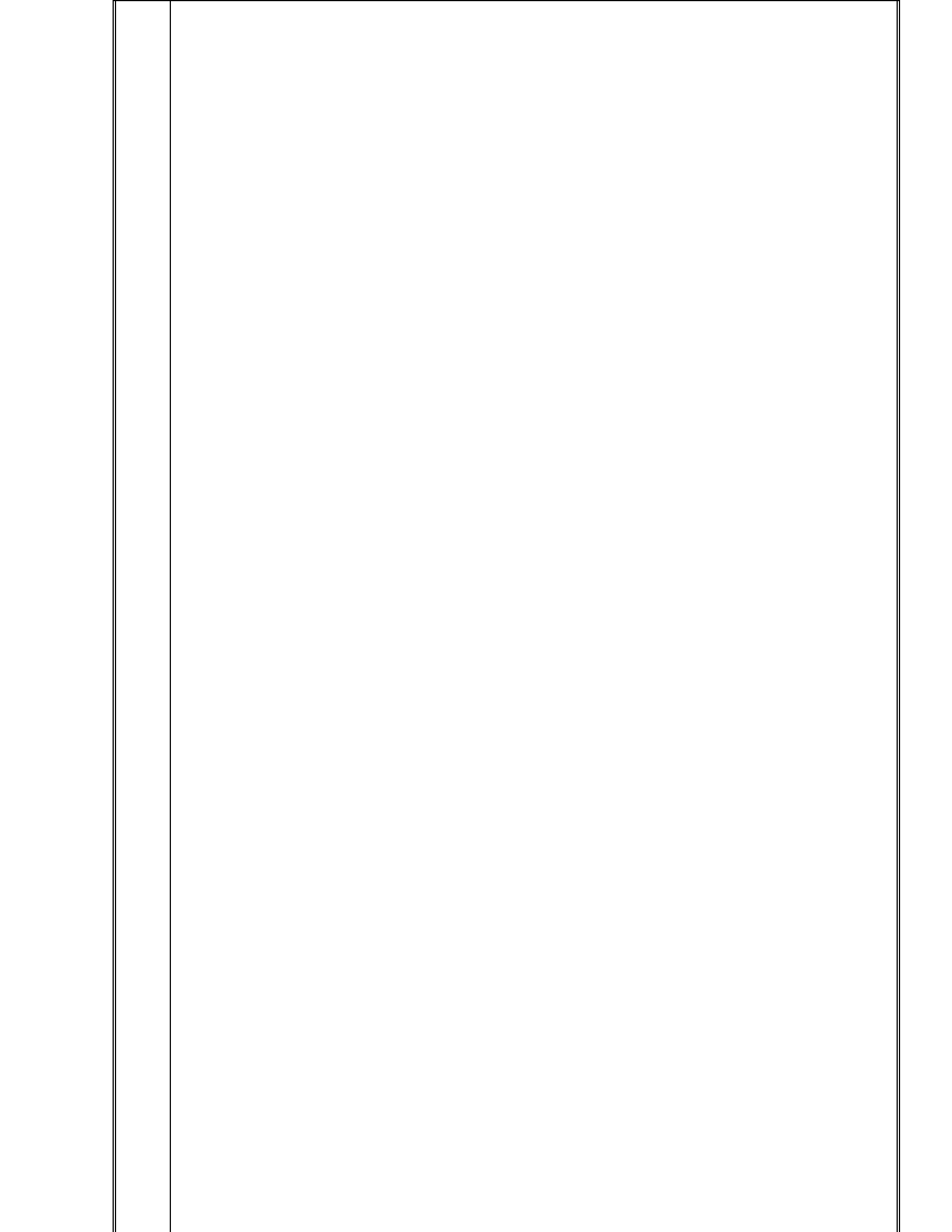
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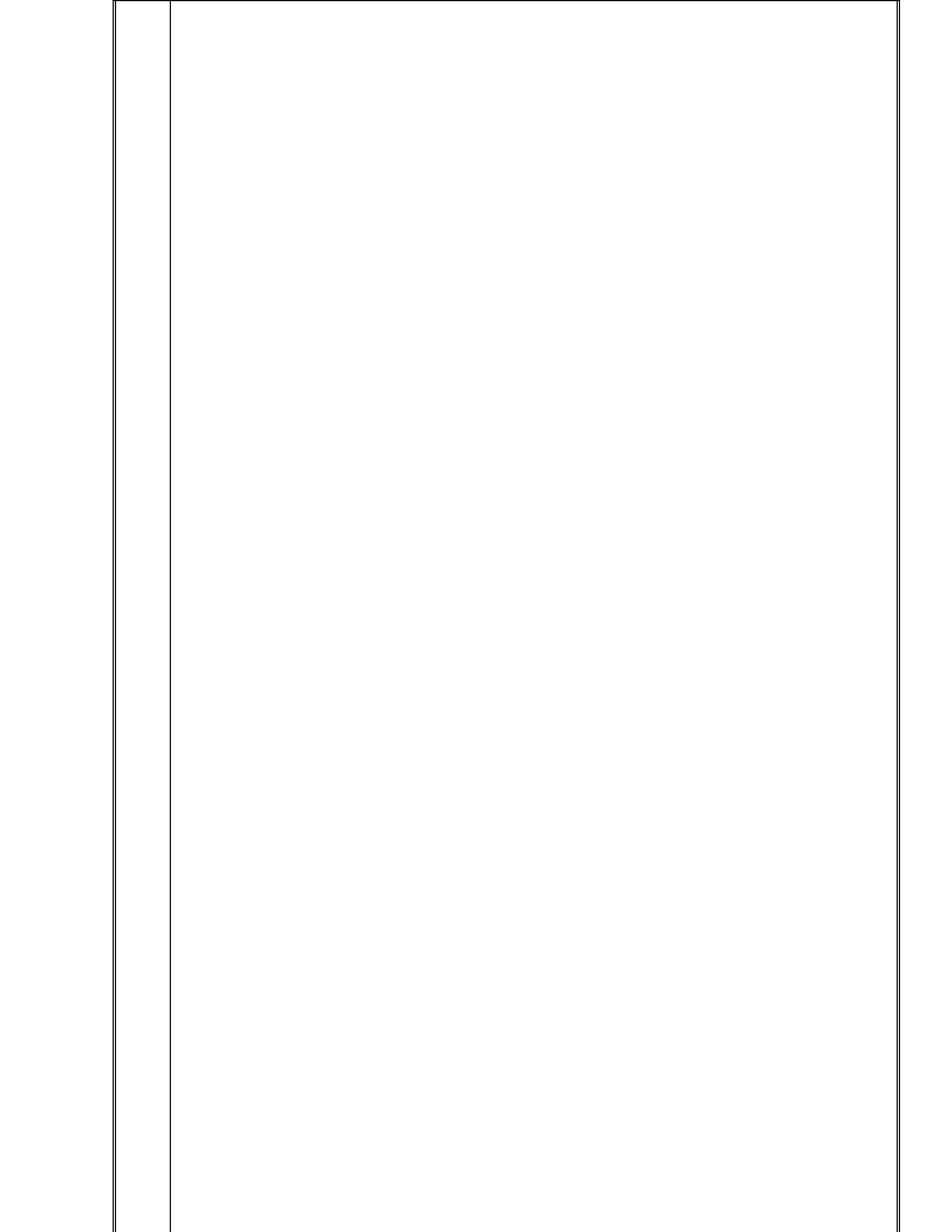
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CONTRACT CHANGE ORDER

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 _____

BB

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.*):

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) <i>(Required for locally-funded, SDE projects.)</i>
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 _____

Review/Signature flow: Architect/Engineer (prepare documents) > Contractor (review and sign) (> Surety for additive \$ change orders only [sign]) > Architect/Engineer (review and sign) > Owner (review and sign) > SDE (review, sign, distribute the fully executed Change Order to all parties and forward a copy to the Alabama Division of Construction Management [DCM]). Note: DCM does not sign fully locally-funded SDE project contract documents.

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: <input type="checkbox"/> ADD <input type="checkbox"/> DEDUCT \$ _____ TIME EXTENSION: _____ CALENDAR DAYS	
(C)	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.**

Date of the Construction Contract: _____

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: _____

Contractor's Affidavit of

Date of the Construction Contract: _____

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: _____

Contractor's Affidavit of

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.

DCM (BC) Number: _____

TO: **Alabama Department of Finance**
Real Property Management
Division of Construction Management
 770 Washington Avenue, Suite 444
 Montgomery, AL 36103
 (334) 242-4082 FAX (334) 242-4182

CERTIFICATE OF SUBSTANTIAL COMPLETION

*'o not stDple tKis Iorm Dnd or DttDcKments; use clips.
Print single-sided; do not submit double-side printed documents.*

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) 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.

ARCHITECT/ENGINEER: Sign and date document, then mail it to Contractor. Provide Owner with DCM Inspector's name & field office address; territories and addresses are available at www.dcm.alabama.gov/staff.aspx.

CONTRACTOR: Sign and date document, then mail it to Owner.

OWNER: Sign and date document, then mail it to DCM Inspector's field office address; DCM Inspector territories and addresses are available at www.dcm.alabama.gov/staff.aspx.

DCM INSPECTOR: Sign and date document, then mail it to DCM Montgomery office.

DCM OFFICE: After review and signature/date by DCM Chief Inspector and DCM Director, DCM office will mail the fully-executed original document to Owner and will email copies to all parties.

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.

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 I Engineer)

(Contractor)

(Business Address)

NOTE: This notice must be run once a week for four successive weeks for projects exceeding \$50,000.00. For projects of \$50,000.00 or less, run one time only. A copy of the publisher's affidavit of publication (including a copy of the advertisement) shall be submitted by the Contractor to the Design Professional for inclusion with DCM Form B-13: Final Payment Checklist for state agencies, PSCA-funded and other bond-funded projects.



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 38 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 completion of the Work shall be within the number of consecutive calendar days or by the date(s) indicated on the Contractor's Proposal Form.
 - 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.
- C. The Work of the Contract shall be Substantially Complete within ____consecutive days from the Owner's official Notice to Proceed.

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 Division of Construction Management Inspector on site that the contractor is not ready for the scheduled inspection, the Division of Construction Management 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

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:

<input type="checkbox"/> Basic Permit Fee. Fee is based on awarded contract sum.	<input type="checkbox"/> ACCS Storm Shelter Permit Fee. AL Community College System (ACCS) storm shelter-related projects started after 07/31/21: Fee is based on total cost estimate of storm shelter (not just fortification upcharge), utilities connecting to storm shelter, and means of egress (including exit passageways/corridors, exit, exit discharges).	<input type="checkbox"/> Permit Re-Inspection Flat Fee.
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Awarded Contract Sum, **or ACCS Storm Shelter Area Estimate:** _____

Email address(es) for Payment Receipt: _____

BASIC PERMIT FEE CALCULATION:

Awarded Contract Sum or ACCS Storm Shelter Area Estimate s less than \$1,000:	N/A
Awarded Contract Sum ACCS Storm Shelter Area Estimate s \$1,001 - \$50,000:	
Contract Sum or Shelter Estimate --- \$1,000=	_____/1,000 - \$5.00= _____ +\$15.00= _____
Awarded Contract Sum ACCS Storm Shelter Area Estimate s \$50,001 - \$100,000:	
Contract Sum or Shelter Estimate --- \$50,000=	_____/1,000 - \$4.00= _____ +\$260.00= _____
Awarded Contract Sum ACCS Storm Shelter Area Estimate s \$100,001 - \$500,000:	
Contract Sum or Shelter Estimate --- \$100,000=	_____/1,000 - \$3.00= _____ +\$460.00= _____
Awarded Contract Sum ACCS Storm Shelter Area Estimate s \$500,001 and up:	
Contract Sum or Shelter Estimate less \$500,000=	_____/1,000 - \$3.00= _____ +\$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.

ACCS Storm Shelter Permit Fee: Covers all required storm shelter pre-construction meetings and construction inspections by the DCM Inspector. This fee is due when a copy of the construction contract and **Notice-to-Proceed** is received by DCM and must be paid before the required Storm Shelter Pre-Construction Meeting 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 **and ACCS Storm Shelter 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 "___RENOVATION TO CUNNINGHAM HALL, for OAKWOOD UNIVERSITY, Huntsville, Alabama", as shown on the Contract Documents prepared by Goodwyn, Mills and Cawood, Inc., dated _____.
- 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 2200
UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for unit prices.
 - 1. A unit price is an amount proposed by Bidders and stated on "Attachment A to Proposal Form", as a price per unit of measurement for materials and/or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased, in accordance the General Conditions and/or other provisions of the Bid and Contract Documents.
 - 2. Unit prices shall include all necessary material, labor, fees, layout, supervision (field and home office), general expenses, insurance, bonds, overhead, profit and applicable taxes, for unit item of work in place.
 - 3. Refer to other Division 1 Sections and individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of approval, verification, measurement and payment for unit prices are specified in those sections.
- B. Related work specified elsewhere includes:
 - 1. Section 01 0150 - Special Conditions.
 - 2. Division 2 - Existing Conditions Sections.
 - 3. Division 3 - Concrete Sections.
 - 4. Division 7 - Thermal and Moisture Protection Sections.
 - 5. Division 8 - Openings Sections.
 - 6. Division 9 - Finishes Sections.
 - 7. Division 10 - Specialties Sections.
 - 8. Division 11 - Equipment Section.
 - 9. Divisions 31-35 - Site Work Divisions.
- C. Schedule:
 - 1. A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
 - 2. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 ITEMIZED UNIT PRICE SCHEDULE

- A. Item No. 1 - Mass Earth Excavation:
 - 1. Description: Remove unsuitable earth, and legally dispose of off-site, including earth not needed, or not suitable for reuse, encountered in open excavations, in accordance with Section 31 2000 - "Earth Moving".
 - 2. Unit of Measure: Cubic yard (CY) of earth excavated.
- B. Item No. 2 - Trench Earth Excavation:
 - 1. Description: Remove unsuitable earth, and legally dispose of off-site, including earth not needed, or not suitable for reuse, encountered in trenches, in accordance with Section 31 2000 - "Earth Moving".
 - 2. Unit of Measure: Cubic yard (CY) of earth excavated.
- C. Item No. 3 - Hand Earth Excavation:
 - 1. Description: Remove unsuitable earth, and legally dispose of off-site, including earth not needed or not suitable for reuse, which must be excavated by hand, in accordance with Section 31 2000 - "Earth Moving".
 - 2. Unit of Measure: Cubic yard (CY) of earth excavated.
- D. Item No. 4 - Additional Soil:
 - 1. Item No. 4a - Topsoil:

- a. Description: Provide additional topsoil from offsite locations, in accordance with Section 31 2000 "Earth Moving", and applicable portions of other sections.
- b. Unit of Measure: Cubic yard (CY) of topsoil, in place.
2. Item No. 4b - General or Open Site Areas (Offsite Source):
 - a. Description: Provide acceptable earth fill in general or open site areas, obtained from offsite locations, compacted to meet requirements specified for the affected area, in accordance with Section 31 2000 "Earth Moving."
 - b. Unit of Measure: Cubic yard (CY) of fill, compacted in place.
3. Item No. 4c - General or Open Site Areas (Onsite Source):
 - a. Description: Provide acceptable earth fill in general or open site areas, obtained from onsite locations, compacted to meet requirements specified for the affected area, in accordance with Section 31 2000 "Earth Moving."
 - b. Unit of Measure: Cubic yard (CY) of fill, compacted in place.
4. Item No. 4d - Trench Backfill:
 - a. Description: Provide acceptable backfill in trenches, compacted to meet requirements specified for the affected area, in accordance with Section 31 2000 "Earth Moving."
 - b. Unit of Measure: Cubic yard (CY) of backfill, compacted in place.
5. Item No. 4e - Select Fill (Offsite Source):
 - a. Description: Provide acceptable select fill obtained from offsite locations, compacted to meet the requirements specified for the affected area, in accordance with Section 31 2000 "Earth Moving."
 - b. Unit of Measure: Cubic Yard (CY) of fill, compacted in place.
6. Item No. 4f - Select Fill (Onsite Source):
 - a. Description: Provide acceptable select fill obtained from onsite locations, compacted to meet the requirements specified for the affected area, in accordance with Section 31 2000 "Earth Moving."
 - b. Unit of Measure: Cubic Yard (CY) of fill, compacted in place.
- E. Item No. 5 - Rock, Masonry, or Concrete Excavation in Trenches and Pits:
 1. Description: Remove rock, masonry, and/or concrete encountered in trenches and pits, below elevations indicated, and legally dispose of offsite, in accordance with Section 31 2000 "Earth Moving".
 2. Unit of Measure: Cubic Yard (CY) of rock, masonry, or concrete excavated.
- F. Item No. 6 - Rock, Masonry, or Concrete Excavation in Open Excavations:
 1. Description: Remove rock, masonry, and/or concrete encountered in open excavations, below elevations indicated, and legally dispose of off-site, in accordance with Section 31 2000 - Earth Moving".
 2. Unit of Measure: Cubic Yard (CY) of rock, masonry, or concrete excavated.
- G. Item No. 7 - Sod:
 1. Description: Provide additional sod as directed, including fine grading, soil amendments, fertilizers, sod, maintenance, etc., as specified in Division 32 Sections relating to "Landscape Work".
 2. Unit of Measure: Square yard (SY) of sod, in place.
- H. Item No. 8 - Concrete Mud Footings:
 1. Description: Provide additional concrete mud footings, in addition to any mud footings indicated on the Drawings, as specified in Section 03 3100 - "Concrete", as directed, where required by the Project Geotechnical Consultant due to any existing unsuitable soils.
 2. Unit of Measure: Cubic yard (CY) of concrete mud footings, in place.
 3. Note: This unit price is not applicable to cost of mud footings that are required due to over-excavation, or due to not pouring footings the same date they are excavated, or other reasons indicated in Section 31 2000 - "Earth Moving," or Section 03 3100 - "Concrete".
- I. Item No. 9 - Undercut & Backfill in Building Control Areas:
 1. Description: Undercutting below planned subgrade in building control areas, and at least 10-feet beyond, as required due to careful inspection by probing, proofrolling, and testing shall be paid on a unit price basis per cubic yard of undercut. Unit price shall include excavation and legal off-site disposal of unsuitable material and replacement with compacted controlled fill back to subgrade elevation in cuts and back to original grade in fills in accordance with Section 31 3200 - "Earth Moving". This shall not apply to previously prepared areas of the site that may become unstable due to construction traffic, rain, etc.

2. Unit of Measure: Cubic Yard (CY) of unsuitable material.
- J. Item No. 10 - Undercut & Backfill in Non-Building Control Areas.
 1. Description: Undercutting below planned subgrade in all areas not included in the building control areas as required due to careful inspection by probing, proofrolling, and testing shall be paid on a unit price basis per cubic yard of undercut. Unit price shall include excavation and legal off-site disposal of unsuitable material and replacement with compacted controlled fill back to subgrade elevation in cuts and back to original grade in fills in accordance with Section 31 2000 - "Earth Moving". This shall not apply to previously prepared areas of the site that may become unstable due to construction traffic, rain, etc.
 2. Unit of Measure: Cubic Yard (CY) of unsuitable material.
- K. Item No. 11 - Crushed Stone.
 1. Description: Provide additional crushed stone, ALDOT 825B or approved equal, as directed by the Owner's Geotechnical Engineer.
 2. Unit of Measure: Ton (TN) of crushed stone in place.
- L. Item No. 12 - Concrete Sidewalk.
 1. Description: Install concrete sidewalk not otherwise shown on drawings, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of sidewalk installed.
- M. Item No. 13 - VCT Flooring.
 1. Description: Provide additional VCT flooring, in accordance with Section 09 6500 - Resilient Flooring, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of VCT Flooring tile, in place.
- N. Item No. 14 - Gypsum Board Ceiling.
 1. Description: Provide additional gypsum board ceiling, in accordance with Section 09 2116 - Gypsum Board Assemblies, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of Gypsum Board Ceiling, in place.
- O. Item No. 13 - Painting Exposed Structure.
 1. Description: Provide additional painting, in accordance with Section 09 9100 - Painting, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of paint, in place.
- P. Item No. 15 - Painting (Wall).
 1. Description: Provide additional painting at walls, in accordance with Section 09 9100 - Painting, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of paint, in place.
- Q. Item No. 16 - Painting (Ceiling).
 1. Description: Provide additional painting at ceiling, in accordance with Section 09 9100 - Painting, in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of paint, in place.
- R. Item No. 17 - Sealed Concrete.
 1. Description: Provide additional sealed concrete floors, in accordance with Section 03 3931 - Curing, Sealing and Hardening Concrete Floors.
 2. Unit of Measure: Square Foot (SF) of sealed concrete floor, in place.
- S. Item No. 18 - FRP Wall Sheet.
 1. Description: Provide additional FRP wall sheets, in accordance with Section 09 7733 - Glass Fiber Reinforced Plastic Panels (FRP), in location directed by Architect.
 2. Unit of Measure: Square Foot (SF) of FRP Wall Panels, in place.
- T. Item No. 19 - Toilet Partition, with Door.
 1. Description: Provide additional toilet partitions, as specified in Toilet Compartment Section, in locations directed by Architect. Include door, with hardware.
 2. Unit of Measure: Each (EA) toilet partition with door, in place.
- U. Item No. 20 - Toilet Partition, with No Door.

1. Description: Provide additional toilet partitions, as specified in Toilet Compartment Section, in locations directed by Architect. These are partition panels without doors.
 2. Unit of Measure: Each (EA) toilet partition with no door, in place.
- V. Item No. 21 - Urinal Screen.
1. Description: Provide additional urinal screens, as specified in Toilet Compartment Section.
 2. Unit of Measure: Each (EA) urinal screen, in place.
- W. Item No. 22- Hollow Metal Doors.
1. Description: Provide additional 3-0 x 7-0 hollow metal doors as specified in Section 08 1113 - Steel Doors and Frames, where directed by Architect. Include hardware.
 2. Unit of Measure: Each (EA) hollow metal door, in place.
- X. Item No. 23 - Hollow Metal Frames.
1. Description: Provide additional hollow metal frames as specified in Section 08 1113 - Steel Doors and Frames, where directed by Architect.
 2. Unit of Measure: Each (EA) hollow metal frame, in place.
- Y. Item No. 25 - Athletic Bench.
1. Description: Provide athletic bench, as specified in Section 10 5100 - Lockers, in location directed by Architect.
 2. Unit of Measure: Each (EA) bench, in place.
- Z. Item No. 26 - Chain Link Fence, Galvanized, 5'-0" Ht:
1. Description: Install chain link fence not otherwise shown on drawings, as specified in Section 32 3113 - "Chain Link Fences and Gates", in location directed by Architect. This fence is galvanized, 5' High.
 2. Unit of Measure: Linear Foot (LF) of fencing, in place.
- AA. Item No. 27 - Chain Link Fence, Galvanized, 12'-0" Ht:
1. Description: Install chain link fence not otherwise shown on drawings, as specified in Section 32 3113 - "Chain Link Fences and Gates", in location directed by Architect. This fence is galvanized, 12' High.
 2. Unit of Measure: Linear Foot (LF) of fencing, in place.
- BB. Item No. 26 - Chain Link Fence, Vinyl Coated, 6'-0" Ht:
1. Description: Install chain link fence not otherwise shown on drawings, as specified in Section 32 3113 - "Chain Link Fences and Gates", in location directed by Architect. This fence is galvanized, with vinyl coating, 6' High.
 2. Unit of Measure: Linear Foot (LF) of fencing, in place.

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

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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 REFERENCE STANDARDS

- A. CSI/CSC Form 12.1A - Submittal Transmittal Current Edition.

1.04 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.

1.05 PROJECT COORDINATION (WITH CM)

- A. Project Coordinator: Construction Manager.
- B. Cooperate with the Project Coordinator 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 Project Coordinator.
- D. Comply with Project Coordinator'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 Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 1000 - Summary.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
 1. Schedule of Submittals.
 2. The Division of Construction Management Fee Proposal worksheet must be submitted with the Construction Contract.
 3. Scheduling of Inspections and submitting appropriate Contract Administration Fees to the Division of Construction Management.
 4. Final fee reconciliation and payment to the 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. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the Contract Sum.
- C. Submittal Service: The selected service is:
 1. Submittal Exchange (tel: 1-800-714-0024): www.submittalexchange.com/#sle.
- D. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.

- E. 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.
 - 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.
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 NUMBER OF COPIES OF SUBMITTALS (IF NO ELECTRONIC DOCUMENT SUBMITTAL SERVICE USED)

- A. Documents for Review:
 - 1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit four copies: the Contractor shall make his own copies from original returned by the Architect; three copies will be retained by the Architect.
 - 2. Larger Sheets, Not Larger Than 36 x 48 inches: Submit four opaque reproductions; the Contractor shall make his own copies from original returned by the Architect; three copies will be retained by the Architect.
- B. Documents for Information: Submit three copies, or a digital copy.
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. 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.
- E. Refer to Section 01 0150 - "Special Conditions" for additional information and requirements.

3.12 SUBMITTAL PROCEDURES

- A. General Requirements:
 - 1. Use a single transmittal for related items.
 - 2. Transmit using approved form.
 - a. Use Form CSI/CSC Form 12.1A.
 - b. Use Contractor's form, subject to prior approval by Architect.
 - c. Use form generated by Electronic Document Submittal Service software.
 - 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 submittals to Architect at business address.
 - b. Deliver submittals to Construction Manager at business address.
 - c. Deliver submittals to [_____] at business address.
 - d. Send submittals in electronic format via email to Architect.
 - e. Upload submittals in electronic form to Electronic Document Submittal Service website.
 - 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.
 14. Submittals not requested will be recognized, and will be returned "Not Reviewed",
- 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. Deliver submittals to Architect at business address to the attention of the Contract Administration Coordinator.
- G. A Submittal Schedule must be submitted and approved by Architect prior to review of any and all submittals.

3.13 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 Division of Construction Management (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.

3.14 SCHEDULING OF INSPECTIONS (FOR AIA 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 Local Building Inspector to schedule the first available date for the inspection. Inspections must be requested 14 days in advance.
- C. After Building Inspector notifies design professional of time of inspection, design professional will notify Contractor, and Owner, copying Building 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, Building Inspector, and Owner. If an inspection

is cancelled, it will be rescheduled subject to Building Inspector's availability.

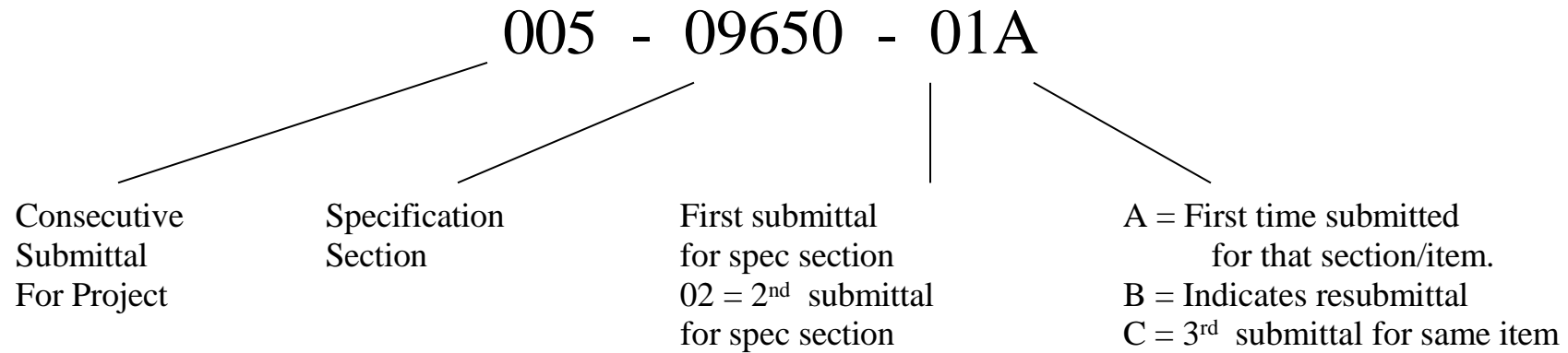
3.15 MINIMUM REQUIREMENTS FOR REQUIRED INSPECTIONS

- 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 BC 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 BC 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: ABHM220004 – PARKING LOT C EXPANSION
for The University of North Alabama
Florence, 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

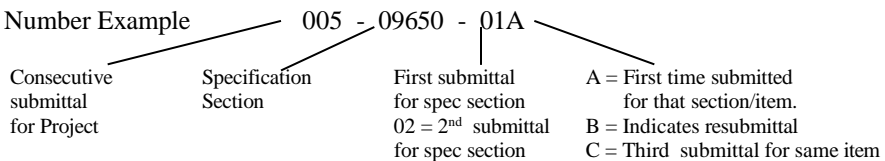
RESPONSE: _____ ROUTING: _____

DATE REC'D: _____

SIGNATURE: _____

DATE RET'D: _____

Shop Drawing / Submittal Number Example



*** 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 2015.

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.
- 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

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SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 N INCLUDES

- A.
- B. y assurance.
- C. g and inspection agencies and services.
- D. l of installation.
- E. -ups.
- F.
- G. ' field services.
- H. t Assessment.

1.02 D REQUIREMENTS

- A. n 01 3000 - Administrative Requirements: Submittal procedures.
- B. n 01 4223 - Reference Standards and Definitions.
- C. n 01 6000 - Product Requirements: Requirements for material and product quality.

1.03

- A. : 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.
 - 2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

1.04 E STANDARDS

- A. M C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2019).
- B. M C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.
- C. M C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2022.
- D. M 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 2019.
- E. M E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.
- F. M E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.
- G. AC89 - Accreditation Criteria for Testing Laboratories 2021.

1.05

- A. e Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. p 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. n 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. e of Submittals.
- E. g 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. e 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. t 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. : 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. 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. 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. n 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

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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 AA -- ALUMINUM ASSOCIATION, INC.

2.02 AGC -- ASSOCIATED GENERAL CONTRACTORS OF AMERICA

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.

2.03 ASME -- THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

- A. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices 2019, with Errata (2021).
- B. ASME A17.2 - Guide for Inspection of Elevators, Escalators, and Moving Walks Includes Inspection Procedures for Electric Traction and Winding Drum Elevators, Hydraulic Elevators, Inclined Elevators, Limited-Use/Limited-Application Elevators, Private Residence Elevators, Escalators, Moving Walks, and Dumbwaiters 2020.

2.04 ASTM A SERIES -- ASTM INTERNATIONAL

- A. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric 2011a (Reapproved 2017).

2.05 ASTM C SERIES -- ASTM INTERNATIONAL

- A. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2022a.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2022.
- C. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2019).

- D. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.
- E. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2022.
- F. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2019.
- G. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets 2022.

2.06 ASTM D SERIES -- ASTM INTERNATIONAL

- A. ASTM D523 - Standard Test Method for Specular Gloss 2014 (Reapproved 2018).
- B. ASTM D714 - Standard Test Method for Evaluating Degree of Blistering of Paints 2002 (Reapproved 2017).
- C. ASTM D822/D822M - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings 2013 (Reapproved 2018).
- D. ASTM D1654 - Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments 2008, with Editorial Revision (2017).
- E. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates 2021.
- F. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact) 1993 (Reapproved 2019).
- G. ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test 2022.

2.07 ASTM E SERIES -- ASTM INTERNATIONAL

- A. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.

2.08 ASTM F SERIES -- ASTM INTERNATIONAL

- A. ASTM F567 - Standard Practice for Installation of Chain-Link Fence 2014a (Reapproved 2019).
- B. ASTM F2408 - Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets 2016.

2.09 AWS -- AMERICAN WELDING SOCIETY

- A. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars 2018, with Amendment (2020).

2.10 CAL -- STATE OF CALIFORNIA

- A. CAL TITLE 24 P6 - California Code of Regulations, Title 24, Part 6 (California Energy Code) 2019.

2.11 CDA -- COPPER DEVELOPMENT ASSOCIATION, INC.

2.12 CISCA -- CEILINGS & INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION

- A. CISCA (AF) - Recommended Test Procedures for Access Floors 2016.

2.13 CLFMI -- CHAIN LINK FENCE MANUFACTURERS INSTITUTE

- A. CLFMI CLF-SFR0111 - Security Fencing Recommendations 2014.

2.14 GANA -- GLASS ASSOCIATION OF NORTH AMERICA

- A. GANA (GM) - GANA Glazing Manual 2008.

2.15 IAS -- INTERNATIONAL ACCREDITATION SERVICE

- A. IAS AC89 - Accreditation Criteria for Testing Laboratories 2021.

2.16 M-H -- MCGRAW-HILL BOOK COMPANY

- A. M-H (CPM) - CPM in Construction Management - Project Management with CPM 2015.

2.17 NEMA -- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

2.18 NFPA -- NATIONAL FIRE PROTECTION ASSOCIATION

- A. NFPA 75 - Standard for the Fire Protection of Information Technology Equipment 2020.

2.19 NRCA -- NATIONAL ROOFING CONTRACTORS ASSOCIATION

A. NRCA (WM) - The NRCA Waterproofing Manual 2021.

2.20 SCAQMD -- SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

A. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2017).

2.21 SMACNA -- SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.

END OF SECTION

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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 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 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.
- 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

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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 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 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 Prime Contractor and major Subcontractors.
- 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 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

SECTION 01 5813
TEMPORARY PROJECT SIGNAGE (INFORMATIONAL SIGNS)

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project informational signs.

1.02 RELATED REQUIREMENTS

- A. Section 01 0150 - Special Conditions: Supplemental sign information.

1.03 QUALITY ASSURANCE

- A. Design sign and structure to withstand 50 miles/hr wind velocity.
- B. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: New or used, wood or metal, structurally adequate.
- B. Rough Hardware: Galvanized.
- C. Paint and Primers: Exterior quality, two coats.
- D. Lettering: Exterior quality paint, contrasting colors; or pre-cut vinyl self-adhesive products.

2.02 PROJECT INFORMATIONAL SIGNS

- A. Painted informational signs of standard products; size lettering to provide legibility at 100 foot 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. Erect at designated locations.
- B. Install sign surface plumb and level, with butt joints. Anchor securely.

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

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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 superseded 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

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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 _____

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 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

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**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 shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all 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 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. 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, 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, 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, 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.
 - 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 - Product Requirements for substitution submission procedures.
- 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

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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.
- 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 three D side ring binders with durable plastic covers; 2 inch 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 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

1.1 SECTION INCLUDES

- A. Selective demolition of built site elements.
- B. Selective demolition of building elements for alteration purposes.
- C. Abandonment and removal of existing utilities and utility structures.

1.2 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 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- C. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- D. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- E. 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.
- F. Section 31 1000 - Site Clearing: Vegetation and existing debris removal.
- G. Section 31 2000 – Earth Moving: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.3 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
 - 3. Include a summary of safety procedures.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.5 QUALITY ASSURANCE

- A. Demolition Firm Qualifications:
 - 1. Company specializing in the type of work required.
- 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. Pre-demolition Conference: Demolition will be reviewed at required Preconstruction Conference for the Project.
 - 1. In addition, conduct pre-demolition 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 Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fill Material: As specified in Section 31 2000 – Earth Moving.

PART 3 - EXECUTION

3.1 SCOPE

- A. Extent of demolition is indicated on the Demolition Plan.
- B. Remove paving and curbs as required to accomplish new work.
- C. Remove all other paving and curbs within site boundaries, unless otherwise noted.
- D. Remove foundation walls and footings in their entirety.
- E. Remove concrete slabs on grade within site boundaries.
- F. Remove underground tanks.
- G. Remove manholes and manhole covers, curb inlets and catch basins, unless otherwise noted.
- H. Remove fences and gates.
- I. Remove other items indicated, for salvage, relocation, and recycling.
- J. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 2000.
- K. Remove items indicated.
- L. Salvage, relocate, or recycle as directed and as applicable.
 - a. The Owner reserves the right of first refusal for any structures, materials, and/or accessory items on site or within the buildings including, but not limited to, fire alarm panels and accessories, door hardware, electrical transformers, copper tubing, onsite trees and shrubs, and other items of value that may or may not be shown on the plans or called out in the project manual. Any items removed from the site without prior approval from the Owner will be paid to the Owner by the contractor at two times (2x) the market value.
- M. 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.
- N. Fill excavations, open pits, and holes in ground areas generated as result of removals, using flowable fill, within the building control area.

3.2 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 permit.
 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 and delivered to a location as directed by the Owner.
- D. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
- E. Protect existing structures and other elements that are not to be 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 discovered during removal operations, stop work and notify Engineer and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
1. Removal of asbestos shall be subject to state and local regulatory requirements.
- 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.
- I. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.3 EXISTING UTILITIES

- A. Coordinate work with utility companies.
 1. The locations of existing underground utilities are shown in an approximate manner only. The Contractor shall determine exact location of all existing utilities before commencing work. The contractor shall be fully responsible for any and all damages which might be occasioned by his failure to exactly locate and preserve any and all underground utilities. The Contractor shall contact Alabama One Call (811) a minimum of 48 hours prior to excavation and University of North Alabama (256-765-4274) a minimum of 5 days prior to excavation in order to give both entities enough time to mark utilities. If no paint is visible, Contractor shall not perform excavation until verifying with University of North Alabama Facilities Administration and Planning that work site is cleared for excavation.
- 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 5 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.

3.4 SELECTIVE DEMOLITION FOR 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 shown.
 2. Report discrepancies to Engineer or Engineers 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; take care to prevent water and humidity damage.

- C. Remove existing work as indicated and as 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 that are to remain in operation; 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 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.
 - 4. Patch as specified for patching new work.

3.5 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash and legally dispose of off-site.
- B. Remove from site all materials not to be reused on site; do not burn or bury.
- 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 DEMOLITION

SECTION 04 2000
UNIT MASONRY

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Concrete block.
- B. Face Brick.
- C. Mortar and grout.
- D. Reinforcement and anchorage.
- E. Flashings.
- F. Accessories.
- G. Water Repellents.

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 2100 - Allowances: Masonry Mortar Coloring, and Face Brick Allowance.
- C. Section 01 4000 - Quality Requirements: Requirements for mock-ups.
- D. Section 03 3543 - Concrete Polishing and Dyeing: Protection of concrete slab during masonry work.
- E. Section 03 3931 - Curing, Sealing and Hardening Concrete Floors: Protection of concrete slab during masonry work.
- F. Section 04 7200 - Cast Stone Masonry.
- G. Section 05 5000 - Metal Fabrications: Loose steel lintels.
- H. Section 07 1113 - Bituminous Dampproofing: Dampproofing masonry surfaces.
- I. Section 07 1400 - Fluid-Applied Air Barrier: Spray-Applied Air Barrier on masonry surfaces.
- J. Section 07 2100 - Thermal Insulation: Insulation for cavity between wythes.
- K. Section 07 8400 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.
- L. Section 07 9005 - Joint Sealers: Backing rod and sealant at control and expansion joints.

1.03 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 2100 - Allowances, for cash allowances affecting this section.

1.04 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- C. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
- D. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- E. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2016, with Editorial Revision (2018).
- F. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- G. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction 2022.
- H. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.
- I. ASTM C91/C91M - Standard Specification for Masonry Cement 2018.

- J. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2017.
- K. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units 2022b.
- L. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- M. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- N. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale) 2022.
- O. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- P. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- Q. ASTM C476 - Standard Specification for Grout for Masonry 2022.
- R. ASTM C1072 - Standard Test Methods for Measurement of Masonry Flexural Bond Strength 2019.
- S. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms 2022.
- T. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017.
- U. ASTM D2822 - Asphalt Roof Cement.
- V. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry 2020.
- W. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- X. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls 2017.
- Y. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- Z. BIA Technical Notes No. 46 - Maintenance of Brick Masonry 2017.
- AA. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.
- BB. UL (FRD) - Fire Resistance Directory Current Edition.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, masonry accessories, and water repellent and other manufactured products indicated, including certifications that each item and type complies with specified requirements. Also, submit product data for flashings and accessories.
- C. Samples: Submit four samples of facing brick, mortar showing full extent of colors available (no less than 15 standard colors), and mortar showing full extent of colors available (no less than 15 standard colors) units to illustrate color, texture, and extremes of color range.
- D. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects.
 - 1. Build sample panels for typical exterior wall in sizes approximately 48 inches long by 48 inches high by full thickness.
 - 2. Clean one-half of exposed faces of panels with masonry cleaner indicated.
 - 3. Protect approved sample panels from the elements with weather-resistant membrane.
 - 4. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.
 - a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels, unless such deviations are specifically approved by Architect in writing.
- E. Samples: Flashings: Submit two 4 x 4 inch samples of masonry flashings.

- F. Shop drawings for reinforcing, if any, detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315(Details and Detailing of Concrete Reinforcing), showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.
- G. Coordination Drawing indicating the locations of proposed CMU control joints.
- H. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- I. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.
- J. 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 Facing Brick units: 500 of each type, size and color combination.

1.07 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
- B. Fire Rated Assemblies: Conform to applicable code for fire performance requirements for fire rated masonry construction. Where indicated, provide materials and construction identical to those of assemblies whose fire resistance has been determined per ASTM E 119 by a testing and inspecting organization, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.
- C. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.
- D. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.
- E. Single-Source Responsibility for Water Repellents: Obtain each type of integral water repellents from a single manufacturer for the entire project.
 - 1. Verify full compatibility with any other coatings, fluid applied waterproofing, etc., prior to application of this and other products. Notify Architect in writing and in detail, of any incompatible products, prior to any application, and await Architect's written direction on how to proceed.
- F. Single-Source Responsibility for Through-Wall Flashings: Self-adhering membrane flashings associated with through-wall flashings in this Section shall be manufactured by the manufacturer of the water/air barrier coating specified in Section 07 1400 - Fluid Applied Air Barrier, for material compatibility and single-source manufacturing responsibility.
- G. Subcontractors: Subcontractors shall have been established in their own firms for at least 5 verifiable years and shall have successfully completed at least 5 verifiable projects of this size, scope, and complexity. Furnish names and telephone numbers of General Contractors for each project submitted for consideration of experience requirements.

1.08 MOCK-UPS

- A. Include Unit Masonry in mock-up as described in Section 01 4000 - Quality Requirements.
- B. Construct a masonry wall as a mock-up panel sized 8 feet high by 12 feet long at a corner condition, turning 2'-0". One side of the mock-up is to include a typical glazed window 2' high for mock-up, cast stone pieces and special brick work at window head and sill. The 2 foot side is to include a typical sealant-filled joint located 1'-4" from the corner. The mock-up is to be full thickness and contain face brick (include flemish bond patterning, as indicated in the drawings), mortar and accessories, structural backup, wall openings, and wall insulation, with accompanying flashing and cavity drainage material, sealants, and waterproofing. Clean exposed faces of mock-up with masonry cleaner specified. Apply post-applied water repellent on half of panel, and not on other half. Label the side with the repellent. This panel will be for the purpose of approving the wall system and its components.
 - 1. Sequence for mock-up construction.
 - a. Construct framing, substate, air barrier, flashings and window unit. Stop, and call for inspection by Architect prior to continuing construction.

- b. Install insulation, masonry, cladding, coping cap, weeps and drainage, sealants, and joint fillers. Clean all exposed faces of mock-up. Apply water repellent as indicated with labling. Stop, and call for inspection by Architect.
- C. Construct two additional separate masonry walls as a mock-up panel sized 4 feet long by 4 feet high, including one (1) vertical control joint, which include mortar and accessories, for the purpose of approving colors and finish.
- D. Build mock-ups to comply with the following requirements, using materials indicated for final unit of Work.
 - 1. Locate where directed.
 - 2. Coordinate with work of other Sections.
 - 3. Mock-up may remain as part of work.
 - 4. Protect mock-ups from the elements with weather-resistant membrane.
 - 5. Retain and maintain mock-ups during construction in undisturbed condition as standard for judging completed unit masonry construction.
 - 6. When directed, demolish and remove mock-ups from Project site.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Store cementitious materials and insulation off the ground, under cover, and in dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.
- E. Store water repellents in strict accordance with manufacturer's written recommendations, off of ground, under cover, and otherwise as required to protect from damage, contamination, etc.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530.1/ASCE 6/TMS 602 or applicable building code, whichever is more stringent.

PART 2 - PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depths as indicated on the drawings for specific locations. Furnish 8 inch deep units if depth is not indicated on the drawings.
 - 2. Special Shapes: Provide nonstandard blocks configured for corners.
 - a. Outside Corner Units: Provide square edged units for outside corners unless otherwise indicated.
 - b. Provide one quarter notched foundation block and other preformed shapes, if any, as indicated on the drawings.
 - 3. Load-Bearing Units: ASTM C 90, normal weight.
 - a. Hollow block, as indicated.
 - b. Unit Compressive Strength: Provide units with minimum average net area compressive strength of 1,900 psi.
 - c. Weight Classification at Above Grade Locations: Lightweight, except provide Normal Weight units where required to achieve required fire-ratings according to manufacturer's testing and/or by "calculated fire resistance" as may be allowed by applicable building code.
 - d. Exposed faces: Manufacturer's standard color and texture where indicated.
 - 4. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block, as indicated.
 - b. Unit Compressive Strength: Provide units with minimum average net area compressive strength of 1,900 psi.
 - c. Weight Classification: Lightweight.
 - 5. Units with Integral Water Repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.

- a. Performance of Units with Integral Water Repellent:
 - 1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
 - (a) No water visible on back of wall above flashing at the end of 24 hours.
 - (b) No flow of water from flashing equal to or greater than 0.032 gallons per hour at the end of 24 hours.
 - (c) No more than 25 percent of wall area above flashing visibly damp at end of test.
 - 2) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
 - 3) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
- b. Use only in combination with mortar that also has integral water repellent admixture.
- c. Use water repellent admixtures for masonry units and mortar by a single manufacturer.

2.02 BRICK UNITS

- A. Manufacturers: The following brick products are approved for use on this project:
 - 1. Glen-Gery: www.glengery.com
 - 2. ACME Bricks: www.brick.com
 - 3. Other manufacturers of equal products shall submit for approval prior to bid. Substitutions: See Section 01600 - Product Requirements.
- B. Facing Brick: ASTM C216, Type FBS Smooth, Grade SW.
 - 1. Color and texture:
 - a. Sioux City Brick, Toasted Fine Art Velour by Glen-Gery
 - b. Flemish blend consists of:
 - 1) Sioux City Brick, Toasted Fine Art Velour by Glen-Gery
 - 2) Sioux City Brick, Black Hills Velour by Glen-Gery
 - c. Other: To be selected by Architect after bidding, from products complying with allowance amounts in Section 01 2100 - Allowances.
 - 2. Size: Brick size to be modular, unless noted otherwise.
 - 3. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.
 - 4. For sills, caps and similar applications resulting in exposure to brick surfaces which otherwise would be concealed from view, provide uncored or unfroged units with all exposed surfaces by sawing.

2.03 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91[_____].
 - 1. Colored Mortar: Premixed cement as required to match Architect's color sample.
- B. Portland Cement: ASTM C 150, Type I or II; color as required to produce approved color sample, or white in the absence of an approved color selection.
 - 1. Not more than 0.60 percent alkali.
 - 2. Hydrated Lime: ASTM C207, Type S.
 - 3. Mortar Aggregate: ASTM C144.
 - 4. Grout Aggregate: ASTM C404.
- C. Water: Clean and potable.
- D. Accelerating Admixture: Nonchloride type for use in cold weather.
- E. Water Repellent and Efflorescence Control Mortar Admixture, approved by mortar manufacturer: Water repellent and efflorescence-control mortar admixture demonstrating resistance to moisture migration and wind-driven rain per ASTM E 514.
 - 1. Acceptable product: "MasterPel 240MA" as manufactured by Master Builders Solutions, of BASF Corporation.
 - a. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Extent of water repellent admixture: For use in face brick mortar. (Not for CMU mortar.)

2.04 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers:
 - 1. Dur-O-Wal: www.dur-o-wal.com.

2. Hohmann & Barnard, Inc (including Dur-O-Wal brand): www.h-b.com.
 3. WIRE-BOND; []www.wirebond.com
 4. Sandell and Diedrich: www.sandellmfg.com.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; uncoated.
- C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss or ladder.
 2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
 3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- D. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss, with adjustable ties or tabs spaced at 16 in on center.
 2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
 3. Size: 0.1875 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to provide not less than 5/8 inch of mortar coverage from each masonry face.
 4. Vertical adjustment: Not more than 1 1/4 inches.
- E. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- F. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- G. Steel frame (For anchoring cast stone to frame): Sheet metal plate, 3/4 inch x 6 inch long for welding to frame, 0.105 inch thick equal to H-B 359-FH, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- H. Masonry Veneer Anchors: 2 piece adjustable veneer anchor for cavity wall construction, to accommodate board insulation. Hot dip galvanized. Consists of L-shaped plate with holes for connecting screws and pintle insertion. Equal to HB-213 for metal stud construction, and HB-5213 for concrete, CMU or brick backup.
- I. Anchor Bolts: Steel bolts complying with A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations, as indicated on the Drawings, or if not indicated, as required for the intended use:
1. Headed bolts.
 2. Nonheaded bolts, straight.
 3. Nonheaded bolts, bent in manner indicated.

2.05 FLASHINGS

- A. Self-adhered, rubberized asphalt/polyethylene flashing membrane for cavity wall applications.
1. Self-adhesive cold applied membrane consisting of 0.8 mm (32 mils) of rubberized asphalt integrally bonded to a 0.2 mm (8mil) high density, cross laminated polyethylene film.
 - a. Thickness: 1mm (40 mils).
 - b. Rolls should be inter-wound with disposable silicone-coated release sheet.
 - c. Provide required companion surface conditioner product, and all other materials and components recommended by flashing manufacturer.
 2. Product/Manufacturer:
 - a. "CCW-705-TWF"; Carlisle Coatings & Waterproofing, Inc.: www.carlisle-ccw.com.
 - b. "Polyguard 400 Thru Wall Flashing"; Polyguard Products, Inc.: www.polyguardproducts.com.
 - c. "Perm-A-Barrier Wall Flashing"; W.R. Grace & Co.-Conn., Atlanta, GA: www.na.graceconstruction.com.
 - d. "Textroflash Flashing"; Hohmann & Barnard, Inc.
 3. Application: Use at stud backup locations where flashing is fully concealed in masonry, including in part, wall flashing, below sills, at lintels and heads of openings, above grade weeps at base of exterior walls, etc.

- a. Termination of membrane at dampproofed backup wall must occur 8" above mortar drainage medium, or approximately 16" above shelf angle. Termination shall be accomplished using termination bar specified below.
 - 1) Termination bar shall be encapsulated with sealant compatible with water/air barrier coating. Acrylic latex sealant shall not be used.
- B. Stainless Steel Flashing: Type 304, soft temper; 24 gauge, 0.0250 inches thick for through-wall applications; 26 gauge otherwise; finish 2B to 2D. Comply with ASTM A 666.
 1. Shop-fabricated Metal Flashing (typical below parapet caps and all other tops of walls exposed at the exterior of building and other locations on site), covered with self-adhering flashing to make watertight.
 2. Low-profile concealed through-wall sheet metal flashing, fabricated with ribs at 3-inch intervals along length of material, to provide an integral bond with solid mortar bedding at each side.
 3. Height: 3/8-inch.
 4. Width: 1-inch less than wall thickness (set in-place 1/2-inch back from each exterior wall face).
 5. Product: Shop-fabricated stainless steel, fabricated to specific project requirements. Cover with self-adhered, rubberized asphalt flashing for cavity wall application.
 6. Location: Masonry cavity flashing at relief angles and as noted.
 - a. Waterproofing membrane shall terminate onto stainless steel pan. Termination shall be a minimum of 1" back from face of exterior masonry wall.
 - b. Stainless steel flashing shall be end-dammed at termination between through-wall flashing and dissimilar systems.
 - c. Provide minimum 2" tall back dams, and minimum 2" tall end dams.

2.06 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 1. Manufacturers:
 - a. Dur-O-Wal: www.dur-o-wal.com.
 - b. Hohmann & Barnard, Inc: www.h-b.com.
 - c. WIRE-BOND; [_____]: www.wirebond.com/#sle.
- B. Joint Filler: Closed cell rubber; oversized 50 percent to joint width; self expanding; by maximum lengths available.
 1. Manufacturers:
 - a. Dur-O-Wal: www.dur-o-wal.com.
 - b. Hohmann & Barnard, Inc: www.h-b.com.
 - c. WIRE-BOND; [_____]: www.wirebond.com/#sle.
 - d. Sandell and Diedrich: www.sandellmfg.com.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage. 10" high.
 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
 - a. Manufacturers: (Note: Thickness of mortar diverter shall be suitable for size of cavity.)
 - 1) Advanced Building Products Inc.; "Mortar Break II": www.advancedflashing.com.
 - 2) Hohmann & Barnard, Inc; "Mortar Web": www.h-b.com.
 - 3) Mortar Net USA, Ltd; "Mortar Net": www.mortarnet.com.
 - 4) "Polyguard Mortar Deflector"; Polyguard Products, Inc.: www.polyguardproducts.com.
 - 5) Substitutions: See Section 01 6000 - Product Requirements.
 - b. Location: At the bottom of all masonry drainage cavities, where indicated, and wherever the masonry drainage cavity is interrupted by relief angles, windows, door, or other interruptions. Also provide full height at masonry to flashing conditions at window and door jambs, as indicated.
- D. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.
- E. Termination Bar: Stainless steel bar designed to terminate and seal top of flashing in cavity wall. Bar shall be flat and shall have pre-drilled holes 8" o.c. for attachment to substrate with appropriate non-corrosive fasteners. Bar shall be 3/4" wide by 1/8" thick.

1. Termination bar shall be encapsulated with compatible sealant. Note: The sealant shall be compatible with the water/air barrier coating, and shall be compatible with the waterproofing membrane and adhesives. (Acrylic latex sealant shall NOT be used.)
- F. Weeps: Rectangular plastic with cotton rope and brass or stainless steel screens.
- G. Color(s): As selected by Architect from manufacturer's full range.
 1. Manufacturers:
 - a. CavClear, a Division of Archovations Inc: www.cavclear.com
 - b. Hohmann & Barnard, Inc; "342W/S": [www.h-b.com/slMortar Net Solutions{CH#306566}:
www.mortarnet.com/#sle](http://www.h-b.com/slMortar Net Solutions{CH#306566}:www.mortarnet.com/#sle).
 - c. WIRE-BOND; "3603B/T": www.wirebond.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- H. Cavity Vents: Rectangular plastic with brass or stainless steel screens.
- I. Color(s): As selected by Architect from manufacturer's full range.
 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; "342S": www.h-b.com/sle.
 - b. WIRE-BOND; "3603F/S": www.wirebond.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
- J. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 1. Masonry below grade and in contact with earth: Type M.
 2. Exterior, loadbearing masonry: Type S.
 3. Exterior, non-loadbearing masonry: Type N.
 4. Interior, loadbearing masonry: Type S.
 5. Interior, non-loadbearing masonry: Type N.
- B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
- C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
- D. Mixing: Use mechanical batch mixer and comply with referenced standards.

2.08 WATER REPELLENT:

- A. Provide from a company with minimum five years experience manufacturing water repellent, and by an applicator with minimum five years experience applying water repellent. Post-applied water repellent product shall be equivalent to "Siloxane PD" as manufactured by SureKlean Weather Seal, subsidiary of Prosoco: www.prosoco.com. One Coat, unless otherwise required by Architect, or recommended by Manufacturer.
 1. Other Manufacturers/Products:
 - a. BASF; "Hydrozo 100": www.BuildingSystems.BASF.com.
 - b. Diedrich Technologies; "303S Siloxseal": www.diedrichtechnologies.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 2. Submit for approval prior to application.
 3. Include in Mock-Up walls for approval.
 4. Application rate not to exceed product manufacturer's current written recommendations, but 100% coverage is required.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry, if any.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Do not proceed until all unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- C. Mason is to coordinate with electrical, mechanical, plumbing, and any other trade that will have in-wall work, prior to starting of masonry work.
- D. Where adjacent flooring is to receive concrete sealing or staining, or polishing and dyeing, provide minimum 1/2" plywood protection over floor, as described in Section 03 3931 - Curing, Sealing, and Hardening Concrete Floors.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 1. Mix units from several pallets or cubes as they are placed.

3.05 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement type joints, returns, and offsets. Avoid the use of less than half size units at corners, jambs, and where possible at other locations.
- D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2-inches. Bond and interlock each course of each wythe at corners.
- E. Stopping and Resuming Work: In each course, rack back 1/2 unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.
- F. Built-In Work:
 1. As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
 2. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.
 3. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.

- G. Fill cores in hollow concrete masonry units with grout two cells minimum full height to foundation under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- H. Concrete Masonry Units:
 - 1. Bond: Running, unless indicated otherwise.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave, unless indicated otherwise.
- I. Brick Units:
 - 1. Bond: Running, unless indicated otherwise.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches.
 - 3. Mortar Joints: Concave, unless indicated otherwise.

3.06 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- D. Remove excess mortar and mortar smears as work progresses; both outside and inside the cavity.
- E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.
- F. Interlock intersections and external corners, except for units laid in stack bond. Do not use units with less than nominal 4 inch horizontal face dimensions at corners or jambs.
- G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges. Use wet cutting methods to control dust.
- I. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
- J. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- K. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.07 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

3.08 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
 - 1. Contractor is to keep cavity clean of mortar droppings and not allow for excessive mortar into the cavity.
- B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.
- C. Install cavity mortar diverter at base of cavity, immediately above flashing and obstructions in cavities, and at other flashing locations described in product spec above to prevent mortar droppings from blocking weep/cavity vents.

3.09 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide concrete unit masonry that develops the following installed compressive strengths (f'm): f'm = 1,500 psi.

3.10 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.
- F. Embed tie section in masonry joints. Provide not less than 1 inch air space between back of masonry veneer wythe and face of sheathing.

3.11 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

- A. Reinforce joint corners and intersections with strap anchors 16 inches on center.

3.12 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 32 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 16 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.13 MASONRY FLASHINGS

- A. Install flashings in accordance with Drawings, approved shop drawings, and manufacturer's recommended installation instructions.
- B. Whether or not specifically indicated, install embedded concealed flashing and weep holes in masonry at shelf angles, lintels, ledges, and other obstructions to divert water to exterior at all locations where downward flow of water will be interrupted.
 - 1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.
 - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 - 3. Seal lapped ends and penetrations of flashing with approved mastic or approved equivalent before covering with mortar.
- C. Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape, as recommended by flashing manufacturer before covering with mortar.
 - 1. Where indicated or required by manufacturer, provide continuous seal at top edge, using their recommended materials.
- D. Cover all flashing splices with a third piece of flashing, fully bedded in medium modulus silicone such as Dow 795, Tremco Spectrem 2, Pecora 895, or approved equal.
- E. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.
- F. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 8 inches on back-up wall (at stud walls), and seal top edge with termination bar and sealant; except turned up a minimum of 8 inches at back-up masonry walls and extended through back-up wall to within 1/2-inch of its interior face.
- G. At heads and sills, extend flashing as specified above unless otherwise indicated, but turn up ends not less than 2 inches to form a pan.
- H. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

- I. Install stainless steel metal drip edge when using flexible flashing.
- J. Prior to starting the installation of flashing, an in-place mock-up will be required.
- K. Coordinate step flashing with roof installer.

3.14 LINTELS

- A. Install galvanized loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled in accordance with the Structural drawings.
 - 1. Do not splice reinforcing bars.
 - 2. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
 - 3. Place and consolidate grout fill without displacing reinforcing.
 - 4. Allow masonry lintels to attain specified strength before removing temporary supports.
- C. Maintain minimum 8 inch bearing on each side of opening, unless noted.

3.15 GROUTED COMPONENTS

- A. Lap splices as required by Structural drawings.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.
- D. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.16 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control joints. Install control and expansion joints in unit masonry where existing in floor slabs, walls, and roof, and as otherwise indicated. Build in related items as the masonry progresses.
- B. Horizontal bond beams and reinforcing shall continue through vertical masonry control joints.
- C. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant. Use firestop materials at fire-rated walls, as specified.
- D. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- E. Provide control joints at locations indicated or as approved by Architect, and not to exceed the following at continuous straight runs:
 - 1. Exterior and Interior Walls: 25'-0" o.c. maximum along continuous runs of brick masonry.
 - 2. Walls of concrete masonry units: 25'-0" o.c. maximum along continuous runs of CMU, unless indicated otherwise.
 - 3. Control joints shall not be within 4'-0" from any corner, but shall be within a distance equal to half the control joint spacing.
- F. Size control joint in accordance with Section 07 9005 for sealant performance.
 - 1. Joint width: 3/8" up to 16' spacing; 1/2" for 16'-22' spacing, and 5/8" for 22'-30' spacing.
 - 2. Joints shall be clear of mortar. Seal with silicone sealant, with optional compressible joint filler.

3.17 WATER REPELLENTS

- A. Apply water repellents to all exterior masonry, unless scheduled to receive a coating under another division, after thorough cleaning and rinsing, prior to any backfill or any other concealment.
- B. Install in strict accordance with manufacturer's current written instructions and recommendations. Test for application rate.
- C. Thoroughly clean and rinse all masonry prior to application of water repellents, water-proofing, coatings, paint, etc. Comply with written recommendations of each manufacturer of products to be applied to masonry work.

- D. Do not apply repellents to walls prior to replacing stained or damaged brick(s).

3.18 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.19 TOLERANCES

- A. Maximum Variation from Alignment of Columns: 1/4 inch.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.
- H. Maximum Variation for Vertical Alignment of Head Joints: 1/4 inch in 10 ft, 1/2" maximum.

3.20 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves, and grounds. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.21 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.
- C. Mortar Tests: Test each type of mortar in accordance with ASTM C270 and other standards referenced in ASTM C270. Perform lab tests based on proportion, and use of the approved proportions shall be maintained throughout Project.
- D. Use Volume Boxes.

3.22 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.
 - 1. Clean glass unit masonry as work progresses. Remove mortar fins and smears immediately, using a clean, wet sponge or a scrub brush with stiff fiber bristles. Do not use harsh cleaners, acids, abrasives, steel wool, or wire brushes when removing mortar or cleaning glass unit masonry.
- B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.
- C. Remove all efflorescence from concrete masonry units, exposed and not exposed. Ensure that all masonry walls are dry prior to installation of air and water barriers or other finish materials.
- D. Remove excess mortar and mortar droppings. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match

adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

- E. Replace defective mortar. Match adjacent work.
- F. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 - 4. Saturate wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 - 5. Clean brick by means of bucket and brush hand-cleaning method described in BIA "Technical Note No. 20 Revised", to clean brick masonry made of clay or shale, except use detergent as the masonry cleaner.
 - 6. Clean concrete masonry by means of cleaning method indicated in NCMA TEK 45 applicable to type of stain present on exposed surfaces.
 - 7. Comply with masonry manufacturer's instructions.

3.23 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.
- B. Protection of Masonry:
 - 1. During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 2. Extend cover a minimum of 24-inches down both sides and hold cover securely in place.
 - 3. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24-inches down face next to unconstructed wythe and hold cover in place.
- C. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.
- D. Stain Prevention:
 - 1. Prevent grout, mortar, and soil from staining the face of masonry to be left exposed, painted, and/or to receive any other coatings. Remove immediately any grout, mortar, and soil that come in contact with such masonry.
 - 2. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface, until landscaping or other improvements indicated adjacent to completed masonry work are in place.
 - 3. Protect sills, ledges, and projections from mortar droppings.
 - 4. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings, coatings, water repellents, and/or any other damage.

END OF SECTION

SECTION 07 1300
SHEET WATERPROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Sheet Waterproofing:
 - 1. Butyl rubber sheet membrane.

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 - Concrete: Concrete substrate (floors and walls).
- C. Section 07 6200 - Sheet Metal Flashing and Trim: Metal termination bar.
- D. Section 07 9005 - Joint Sealers: Sealant for joints in substrates.
- E. Section 31 2000 - Earth Moving.
- F. Section 33 4613 - Foundation Drainage.

1.03 REFERENCE STANDARDS

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- B. ASTM D570 - Standard Test Method for Water Absorption of Plastics 1998 (Reapproved 2018).
- C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022.
- D. NRCA (WM) - The NRCA Waterproofing Manual 2021.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.
- C. Samples: Submit representative samples of the following for approval.
 - 1. Sheet Membrane.
 - 2. Protection Board.
 - 3. Prefabricated drainage composite.
- D. Shop Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.
- E. Manufacturer's Installation Instructions: Indicate special procedures and acceptable installation temperatures.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Membrane Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
- C. Single Source Responsibility:
 - 1. Materials: For each type of material required for the work of this Section, provide primary materials which are the products of one manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer's instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather,

excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of membrane on the job site. Provide cover on top and all sides, allowing for adequate ventilation.
 2. Protect mastic and adhesive from moisture and potential sources of ignition.
 3. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.
 4. Protect surface conditioner from freezing.
- B. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 PROJECT/SITE CONDITIONS

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.
- B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.
- C. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until liquid or mastic accessories have cured.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide five year manufacturer's warranty upon completion of the work. , except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 - PRODUCTS

2.01 MANUFACTURERS/PRODUCT

- A. W. R. Grace & Co.-Conn. Bituthene System 4000 Membrane (for below grade walls) [Bases of Design]: www.graceconstruction.com.
- B. Other Acceptable Manufacturers (Subject to meeting specifications):
1. Carlisle Coatings & Waterproofing, Inc: www.carlisle-ccw.com.
 2. W. R. Meadows: www.wrmeadows.com .
 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MEMBRANE MATERIALS

- A. Sheet Waterproofing (for Below Grade Wall): Flexible, pre-formed waterproof composite membrane consisting of 0.056 in. (1.4mm) rubberized asphalt, and 0.004 in. (0.1mm) of cross-laminated, high density polyethylene film (HDPE) with self-adhesive surface, and with removable release sheet.
1. e with water-based surface conditioner formulated to prepare substrate for waterproofing membrane.
- B. Termination Bars: Stainless steel; compatible with membrane and adhesives. (See Section 07 6200.)
- C. Surface Conditioner: Type compatible with membrane.

2.03 ACCESSORIES

- A. Protection Board: Provide type capable of preventing damage to waterproofing due to backfilling and construction traffic.
1. Products:
 - a. W.R. Meadows, Inc; HYDRODUCT 220 Drainage Composite : www.wrmeadows.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Drainage Panel: 0.433 inch thick geocomposite drainage sheet system, comprising a hollow studded polystyrene core, covered on one side with a nonwoven, needle punched polypropylene filter fabric and on the other side with a smooth polymeric film. Drainage panel may serve as protection board if approved by manufacturer. Provide separate protection board if recommended by manufacturer.
- C. Miscellaneous Materials: Surface conditioner, mastic, liquid membrane, terminations, cants, tape and accessories: acceptable to manufacturer of sheet membrane waterproofing.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions are acceptable prior to starting this work.
- B. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.
- C. Verify items that penetrate surfaces to receive waterproofing are securely installed.

3.02 PREPARATION

- A. Protect adjacent surfaces from damage not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.
- C. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer.
- D. Cast-In-Place Concrete Substrate:
 - 1. Do not proceed with installation until concrete has properly cured and dried - minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete.
 - 2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
 - 3. Repair bugholes over 0.5 inch in length and 0.25 inch deep and finish flush with surrounding surface.
 - 4. Remove scaling to sound, unaffected concrete and repair exposed area.
 - 5. Grind irregular construction joints to suitable flush surface.
- E. Seal cracks and joints with sealant using depth to width ratio as recommended by sealant manufacturer.
- F. Treat joints and install flashing as recommended by waterproofing manufacturer.
- G. Surfaces for Adhesive Bonding: Apply surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.

3.03 INSTALLATION - MEMBRANE

- A. Install membrane waterproofing in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.
- B. Apply surface conditioner at rate recommended by manufacturer. Recoat areas not waterproofed if contaminated by dust. Mask and protect adjoining exposed finish surfaces to protect those surfaces from excessive application of surface conditioner.
- C. Delay application of membrane until surface conditioner is completely dry. Dry time will vary with weather conditions.
- D. Roll out membrane, and minimize wrinkles and bubbles.
- E. Overlap edges and ends, minimum 3 inches, seal permanently waterproof by method recommended by manufacturer, and apply uniform bead of sealant to joint edge.
- F. Reinforce membrane with multiple thickness of membrane material over joints, whether joints are static or dynamic.
- G. Weather lap joints on sloped substrate in direction of drainage, and seal joints and seams.
- H. Ensure plastic release liner is removed from underslab waterproofing before pouring concrete is poured.
- I. Pour concrete over underslab waterproofing within time recommended by manufacturer from date membrane is placed.
- J. Place and compact concrete over underslab waterproofing carefully to avoid damage to the membrane. Avoid use of sharp objects to consolidate concrete.
- K. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.
- L. Seal daily terminations with troweled bead of mastic.
- M. Install termination bar at top of waterproofing.

- N. Seal membrane and flashings to adjoining surfaces.
- O. Installation shall be according to manufacturer's details to satisfy warranty requirements.

3.04 INSTALLATION - DRAINAGE PANEL AND PROTECTION BOARD

- A. Apply protection board and related materials in accordance with manufacturer's recommendations.
- B. Adhere protection board to substrate with compatible adhesive.

3.05 CLEANING

- A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the completed work.

3.06 PROTECTION

- A. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

END OF SECTION

SECTION 07 1400
FLUID-APPLIED AIR BARRIER

PART 1 - GENERAL

1.01 N INCLUDES

- A. d applied vapor permeable membrane air barrier:
 - 1. For application on exterior side of exterior sheathing where used in vertical and other non-horizontal applications.
 - 2. For application on exterior side of CMU walls.
- B. s for substrates of fluid-applied air barrier.
- C. t strips and other Accessories.

1.02 D REQUIREMENTS

- A. s and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. n 04 2000 - Unit Masonry: Masonry joints prepared to receive flashings.
- C. n 07 1300 - Sheet Waterproofing: Sheet membrane waterproofing for below grade slab and walls.
- D. n 07 9005 - Joint Sealers: Sealant for joints other than substrates for air barrier in this Section.
- E. n 09 2116 - Gypsum Board Assemblies: Exterior sheathing receiving fluid-applied air barrier.

1.03 E STANDARDS

- A. CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. M C836/C836M - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course 2018 (Reapproved 2022).
- C. M E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022.
- D. M E 2178 Standard Test Method for Air Permeance of Building Materials.

1.04

- A. e Section 01 3000 - Administrative Requirements for submittal procedures.
- B. t Data: Provide data for air barrier system(s) specified.
- C. p Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.
- D. s Certificate: Certify that products meet or exceed specified requirements.
- E. s Installation Instructions: Indicate special procedures and acceptable installation temperatures.
- F. : Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 Y ASSURANCE

- A. e Manufacturer Qualifications: Company specializing in fluid-applied air barrier membranes with ten years experience.
- B. Qualifications: Company specializing in installation of fluid-applied air barrier with minimum five years documented experience.
- C. -Up: Include Fluid-Applied Air Barrier in Mock-Up as described in Section 01 4000 - Quality Requirements.
- D. y with ALL special requirements and inspections of air barrier system manufacturer, as required to obtain the required 5-year labor and materials warranty.
- E. -Source Responsibility: Obtain primary air barrier materials of each type required from a single manufacturer.

F. t for Substrate Surfaces: Sealant shall be manufactured by same manufacturer as fluid-applied air barrier.

1.06 D CONDITIONS

A. n range of ambient and substrate temperatures recommended by air barrier manufacturer. Do not apply product to wet substrate or during snow, rain, fog, or mist.

1.07

- A. e Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. e five (5) year manufacturer warranty for air barrier failing to resist penetration of water , except where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Fluid-Applied Waterproofing Vapor Permeable Air Infiltration Barrier System (for CMU, Sheathing, and as indicated):
1. GE "Elemax 2600 AWB" 100% Silicone Air and Water-Resistive Barrier system; [Basis of Design]: www.siliconeforbuilding.com/AWB/.
 2. Dow Corning "DefendAir 200" Silicone Liquid Applied Air & Weather Barrier: www.dowcorning.com.
 3. Pecora "XL-Perm Ultra VP" Air, Vapor & Water Barrier System: www.pecora.com.
 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FLUID APPLIED WATERPROOFING MATERIALS

- A. Fluid-Applied Air Barrier - General: Cold-applied elastomeric fluid-applied membrane.
1. General: Provide fluid-applied air barrier system that is watertight and complies with performance requirements specified, as demonstrated by testing performed by a nationally recognized independent testing laboratory of manufacturer's standard systems according to test methods indicated.
 2. Fluid-applied air barrier system shall be compatible with specified substrate.
- B. Liquid Air Infiltration Barrier, Vapor Permeable, Cold-Applied Elastomeric Membrane:, complying with ASTM C 836, one component. (For CMU, Sheathing, and as indicated).
1. Cured Thickness: Comply with manufacturer's recommendation to meet performance specified.
 2. Suitable for installation over concrete, and sheathing substrates.
 3. UV Resistant.
 4. Membrane Air Permeance ASTM E2178: Not to exceed 0.004 cfm/sq. ft. of surface area (at specified thickness) at test pressure of 0.3 in. water (75 Pa) on CMU block.
 5. Membrane Vapor Transmission per ASTM E96, Method B: Not less than 10 perms.
 6. Product shall withstand weather exposure up to 6 months.
- C. Flexible Flashings: Type recommended by membrane manufacturer.

2.03 ACCESSORIES

- A. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Joint Reinforcing/Transition Strip: 2" wide glass fiber tape, self-adhesive polymeric air/vapor barrier membrane (30 mil minimum), or other material applicable for application, which is approved by air barrier manufacturer.
- C. Surface Conditioner: Compatible with membrane compound; as recommended by membrane manufacturer.
- D. Sealant for Substrate Surfaces: As recommended by membrane manufacturer.
- E. Liquid Membrane for details and terminations: As recommended by membrane manufacturer.
- F. Detail Membrane: Flexible, fully-adhered membrane for detail flashing areas: As recommended by membrane manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter, including efflorescence, detrimental to adhesion or application of air barrier system.
- C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of air barrier materials.
- D. Verify that items that penetrate surfaces to receive air barrier are securely installed.

3.02 PREPARATION

- A. Protect adjacent surfaces not designated to receive air barrier.
- B. Do not apply air barrier to surfaces unacceptable to manufacturer.
- C. Caulk sheathing joints prior to application of water/air barrier coating. Caulk with manufacturer-recommended joint sealant reinforced with fiberglass mesh tape encapsulated in sealant. Encapsulate fastener heads with manufacturer-recommended sealant. Fiberglass reinforcement is not required for sheathing fastener heads.
 - 1. Verify that Fluid-Applied air barrier is compatible with sealant used.
- D. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- E. All surfaces must be sound and free from spalled areas, loose aggregate, loose nails or screws, sharp protrusions or other matter that will hinder the adhesion or regularity of the membrane installation. The surface must also be free from frost, dirt, grease, oil or other contaminants. Clean loose dust and dirt from the surface by brushing or wiping with a clean, dry cloth.
- F. Concrete and other monolithic cementitious surfaces: Pretreat surface irregularities and large voids with liquid membrane, or repair with lean mortar mix or nonshrinking grout.
- G. CMU surfaces: Strike joints full and flush to face of concrete block. Ensure surface is smooth and free from projections. Fill voids and holes with lean mortar mix or nonshrinking grout.
- H. Sheathing panels: Fasten corners and edges with appropriate screws. Drive fasteners flush with panel surface (not countersunk). Tape panel butt joints with 2 in. wide sheathing tape recommended by manufacturer.
- I. Complete detailing prior to applying air barrier.
- J. Fill and seal cracks and joints between exterior sheathing panels or adjacent substrates, or in masonry, with trowel application of air barrier product and reinforce with strip of 2" (minimum) wide glass fiber tape. Follow manufacturer's instructions if other joint treatment is recommended. Allow recommended cure time before proceeding.
- K. Proceed with applying air barrier only after substrate cleaning, sealing, and other preparation and sealing of joints and penetrations have been completed.

3.03 INSTALLATION

- A. Apply air barrier in accordance with manufacturer's instructions to specified minimum thickness.
- B. Apply surface conditioner (if required) at a rate recommended by manufacturer. Protect conditioner from rain or frost until dry.
- C. Apply by spray a complete and continuous unbroken film of liquid air and water barrier membrane.
- D. Apply air barrier in accordance with manufacturer's instructions to uniform wet film thickness in order to dry to thickness recommended by manufacturer to achieve performance specified.
 - 1. Apply more than one coat, if recommended by manufacturer.
- E. Roll the air barrier after spray application to fill all pin holes.
- F. Do not cover air barrier until it has been tested and inspected by Owner's testing agency.

- G. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Owner will provide testing services and Contractor to provide temporary construction and materials for testing.
- C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.05 CLEANING AND PROTECTION

- A. Do not inhibit damp substrate from drying out. Do not expose the backside of the substrate to moisture or rain.
- B. Protect air barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.
- C. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. Remove and replace air barrier exposed for more than 180 days.
- D. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
- E. Remove masking materials after installation.

END OF SECTION

SECTION 07 1616
CRYSTALLINE WATERPROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Crystalline waterproofing, at elevator pit, and elsewhere as noted.
- B. Preparation of surfaces to be waterproofed, including plugging active water leaks.

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: Concrete work to be waterproofed.

1.03 REFERENCE STANDARDS

- A. COE CRD-C 48 - Handbook for Concrete and Cement Standard Test Method for Water Permeability of Concrete 1992.
- B. NRCA (WM) - The NRCA Waterproofing Manual 2021.

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. Test data showing hydraulic permeability.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.
 - 5. Details for waterproofing at joints, intersections, and other special conditions.
- C. Specimen warranty.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacture of products of the type specified and providing technical representatives to visit project site.
- B. Installer Qualifications: Acceptable to manufacturer, with documented experience on at least five projects of similar nature within last five years.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Take necessary precautions to keep cementitious materials dry.

1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results; do not install products under environmental conditions outside manufacturer's absolute limits.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide installer's warranty agreeing to correct leaking waterproofing for two years from Date of Substantial Completion, unless leakage is caused by structural failure, movement of the structure, or other causes beyond the installer's control.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Crystalline Waterproofing:
 - 1. Gemite Products Inc; [____]: www.gemite.com/#sle.

2. Tremco, Inc.; "Permaquik Super 200": www.tremcosealants.com.
3. W.R. Meadows, Inc; CEM-KOTE CW PLUS: www.wrmeadows.com/#sle.
4. Xypex Chemical Corporation; XYPEX Concentrate: www.xypex.com/#sle.

2.02 APPLICATIONS

- A. Crystalline Waterproofing for Building Surfaces:
1. Negative (interior side) of elevator pits.
 2. Surfaces as indicated on drawings.

2.03 MATERIALS

- A. Crystalline Waterproofing: Portland cement, quartz or silica sand, and other active chemicals that when applied to surface of concrete forms insoluble crystals in capillary pores preventing passage of liquids, while having no adverse effect on normal properties of concrete.
1. Hydraulic Permeability of Applied Concrete: No measurable leakage or water flow at pressure ranging from 175 psi to 200 psi when tested in accordance with COE CRD-C 48, using at least 2 inch thick sample, and with applied surface preparation and installation in accordance with NRCA (WM).
 2. Toxicity: Non-toxic.
 3. Color: Gray.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under project conditions, and use sand blasting, water blasting, or acid etching as recommended.
- C. Plug water leaks.
- D. Patch holes, construction joints, and cracks; remove defective concrete.
- E. Obtain approval of manufacturer's field representative before beginning installation.

3.03 INSTALLATION

- A. Install in strict accordance with manufacturer's instructions, maintain environmental conditions required and recommended by manufacturer, and keep a copy of manufacturer's instructions on site.
- B. Coordinate installation with installation of products that must penetrate waterproofed surfaces.
- C. Prevent excessive drying of surface.
1. Cure waterproofing for at least three days, or length of time required by manufacturer, with water spray and adequate air circulation.
 2. Do not use chemical curing agents unless explicitly approved by waterproofing manufacturer.
- D. Do not backfill, fill water or liquid holding structures, or apply finish coatings until time period recommended by manufacturer has passed.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Flood test waterproofing application by filling water holding structures to capacity and allowing to stand for not less than 24 hours.
- C. If any leaks appear, notify Architect and drain.
1. Repair leaks at no additional cost to Owner.
 2. Repeat flood test until any leakage is eliminated.

3.05 PROTECTION

- A. Protect from damage by weather; do not cover with impermeable (plastic) sheeting unless air circulation is provided.
- B. Touch-up, repair or replace damaged waterproofing after Date of Substantial Completion.

END OF SECTION

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SECTION 07 4291
PREFORMED ALUMINUM SOFFIT AND FASCIA SYSTEM

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:
 - 1. Aluminum soffit systems, with hold-down clips, trim and accessories.
 - 2. Aluminum fascia system.
- B. Related Sections include the following:
 - 1. Division 7 Section "Flashing and Sheet Metal" for elastic and metal flashing.
 - 2. Division 7 Section "Manufactured Roof Specialties" for coping.
 - 3. Division 7 Section "Joint Sealants" for field-applied sealants.
 - 4. Division 9 Section "Painting" for painting of framing and decking above perforated soffits.

1.03 SUBMITTALS:

- A. Product Data: For each type of product specified. Include identification of materials; dimensions of individual components; installation instructions; and available profiles, textures, and colors.
- B. Shop Drawings: Showing layout, dimensions, material thickness, details, joints, supports, trim, and accessories.
- C. Samples for Initial Selection: Manufacturer's sample finishes showing the full range of colors, profiles, and textures available.
- D. Samples for Verification: Full-size units of each type of wall panel, fascia, soffit, and trim indicated; in sets for each color, texture, and pattern specified.
 - 1. 12-inch-long-by-actual-width sample of soffit.
- E. Research/Evaluation Reports: Evidence of wall panel, soffit and fascia systems' compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

1.04 QUALITY ASSURANCE:

- A. Installer Qualifications: Engage an experienced installer who has completed soffit and fascia installations similar in material, design, and extent to that indicated for Project that has resulted in construction with a record of successful in-service performance.
 - 1. Refer to Division 1 Section "Special Conditions" for additional information and minimum experience requirements.
- B. Source Limitations for System and Accessories: Obtain each color, texture, pattern, and type of wall panel, soffit, fascia, and related accessories from one source, with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.

1.05 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver materials to Project site in manufacturer's unopened packages or bundles with labels intact.
- B. Store materials in a dry, well-ventilated, weathertight place. Do not store even temporarily on the ground. Comply with manufacturer's written instructions for storage, handling, and protection.
 - 1. Refer to Division 1 Sections "Summary of Work" and "Special Conditions", for additional information and requirements regarding stored materials.

1.06 PROJECT CONDITIONS:

- A. Weather Limitations: Proceed with soffit and fascia system installation only if existing and forecasted weather conditions permit the systems to be installed according to manufacturer's current written instructions and if substrate is completely dry.

1.07 WARRANTY:

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Project Warranty: Submit a written warranty, executed by wall panel, soffit and fascia system manufacturer, agreeing to repair or replace soffit, fascia and siding systems that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, cracking, deforming, fading, or otherwise deteriorating beyond normal weathering. Fading is defined as loss of color, after cleaning with product recommended by manufacturer, of more than 4 color-difference units as measured according to ASTM D 2244.
 - 1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS/PRODUCT:

- A. Manufacturer/Product: Peterson Aluminum Corp., Kennesaw, GA; "PAC-750" Soffit [Basis of Design]: www.pac-clad.com.
- B. Other Manufacturers: Subject to compliance with these specifications and other requirements as indicated, provide products by one of the following:
 - 1. ATAS Aluminum, Allentown, PA "Wind-Lock" Panel only.
 - 2. IMETCO, Tucker, GA, Soffit Panel only.

2.02 MATERIALS:

- A. ASTM B-209 quality Aluminum, 3105 H-14 Alloy and Temper material. Aluminum shall be tension leveled (temper passed and stretcher leveled) with camber a maximum of 1/4 inch in 20 feet, manufactured in the USA, and be 0.032" thick Aluminum U.S. standard gauge.

2.03 SOFFIT:

- A. Formed Aluminum Soffit: Aluminum soffit complying with AAMA 1402 shall meet the requirements of this section, fabricated from aluminum sheet in alloy recommended in writing by soffit and fascia system manufacturer, and as follows:
 - 1. Pattern: 12-inch exposure (unless otherwise noted) in pattern indicated. Vee-groove 6" center-to-center.
 - 2. Depth: 1/2 inch.
 - 3. Ventilation: Provide perforated soffit where venting is indicated.
 - 4. Finish: Fluoropolymer (Kynar) finish: AAMA 2605, three coat.
 - a. Color: As selected by Architect from manufacturer's full range of colors.
 - 5. Provide manufacturer's standard metal channel supports, trim, accessories, and hold-down clips at 24-inches o.c. maximum, and as otherwise required to prevent wind blow-out of soffit material.

2.04 FASCIA:

- A. Formed Aluminum Fascia: Aluminum fascia complying with AAMA 1402 shall meet the requirements of this section, fabricated from aluminum sheet in alloy recommended by soffit and fascia system manufacturer, and as follows:
 - 1. Pattern and Configuration: As indicated.
 - 2. Finish: Fluoropolymer (Kynar) finish: AAMA 2605, three coat.
 - a. Color: As selected by Architect from manufacturer's full range of colors.
 - 3. Provide manufacturer's standard metal channel supports, trim, accessories, fasteners, and hold-down clips as required or recommended by manufacturer to prevent wind blow-off.

2.05 ACCESSORIES:

- A. Trim shall be fabricated of same material and finish to match the profiled sheeting and press broked in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer or approved dealer. Trim to be erected in overlapped condition. Miter conditions shall be factory welded materials to match the sheeting.
- B. Decorative Accessories: Provide the following types of decorative accessories as indicated:

1. Moldings and trim.
- C. Fasteners shall be 400 Series stainless steel, dished washers stainless steel with bonded neoprene.
- D. Zees: Where required by design of primary structural framing system shall be used to span between beams and/or joists. Thermally responsive base and top clips shall be fastened to the zees on 12" centers.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Examine substrates for compliance with requirements for substrates, flashings, vapor/moisture barrier completion, water-tightness, installation tolerances, completed painting of framing and decking above perforated soffits, and other conditions affecting performance of soffit systems and accessories.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION:

- A. Clean substrates of projections and substances detrimental to application.
- B. Coordinate installation with flashings and other adjoining construction to ensure proper sequencing.

3.03 INSTALLATION:

- A. General: Comply with soffit and fascia system manufacturer's current written installation instructions applicable to products and applications indicated, unless more stringent requirements apply. Center nails in elongated nailing slots without binding soffits, trim and siding to allow for thermal movement. Overlap joints to shed water away from direction of prevailing wind.
- B. Install aluminum fascia, soffit, and accessories according to AAMA 1402.
- C. Where perforations in soffit material allow viewing through perforations, install with that side of perforations toward building wall.
- D. Isolate dissimilar metals by separating from soffit, fascia and aluminum siding with rubber gaskets, elastomeric sealant, or rubber washers where fasteners penetrate soffits, fascia and siding. Dissimilar metals behind soffit and fascia systems may be isolated by covering with polyethylene film, except where use of plastic film would restrict air flow of ventilated soffit systems.
- E. Remove all strippable coating and provide a dry wipe-down cleaning of the panels as they are erected.
- F. Panels attached to any treated lumber must have an appropriate vapor barrier installed over the treated lumber prior to installing any soffit panels or related flashings. Do not allow any metal products to come into direct contact with treated lumber.

3.04 ADJUSTING AND CLEANING:

- A. Remove and replace damaged, improperly installed, or otherwise defective soffit and fascia materials with new materials complying with specified requirements.
- B. Clean finished surfaces according to soffit and fascia manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION

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SECTION 07 4292
VINYL SOFFIT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Vinyl soffit and trim.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Water-resistive barrier under siding.
- B. Section 06 1920 - Prefabricated Metal-Plate-Connected Wood Trusses.
- C. Section 07 9005 - Joint Sealers.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Showing layout, dimensions, material thickness, details, joints, supports, trim, and accessories.
- D. Samples: Provide samples in colors specified, not less than 12 inches in length.
- E. Color Charts: Where colors are not specified, provide samples of manufacturer's entire color line for selection.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Not less than three years of experience with products specified.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General Requirements:
 - 1. Soffit: Comply with ASTM D 4477.
 - 2. Wind Resistance: Capable of withstanding minimum of 30 psf negative pressure, when tested in accordance with ASTM D 5206.
 - 3. Horizontal Flammability, when tested in accordance with ASTM D 635:
 - a. Burn distance: 20 mm, maximum.
 - b. Burn time: Less than 5 seconds.
- B. Vinyl Soffit :
 - 1. Thickness: 0.038 inch, minimum.
 - 2. Vented.
 - 3. Nailing Hem: Single layer, with 1-1/8 inch long nail holes at maximum 18 inches on center.
 - 4. Finish: Smooth, unless indicated otherwise.
 - 5. Color: As selected from manufacturer's full range of available colors.
- C. Accessories: Provide coordinating accessories made of same material as required for complete and proper installation whether or not specifically shown on the drawings.
 - 1. Color: Match adjacent soffit.
 - 2. Length:
 - a. Trim: 12.5 feet, minimum.
 - 3. Profiles: Provide types as indicated on the drawings.

- D. Fasteners: Aluminum nails, alloy 5056 or 6110, with minimum tensile strength of 63,000 pounds per square inch; length as required to penetrate framing at least 3/4 inch.
- E. Joint Sealers: As specified in Section 07 9005.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.
- B. Do not proceed with installation until unacceptable conditions have been corrected.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install soffit, and trim in accordance with manufacturer's printed installation instructions .
- B. Attach securely to framing, not sheathing, with horizontal components true to level providing a weather resistant installation.
- C. Install joint sealers between siding/soffit/trim and adjacent construction, using procedures specified in Section 07 9005.
- D. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings.
- E. Clean dirt from surface of installed products, using mild soap and water.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 4623
WOOD SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board siding for Walls with batten strips.
- B. Trim, flashings, accessories, and fastenings.

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.
- C. Section 07 1400 - Fluid-Applied Air Barrier: Water-resistive barrier over sheathing.
- D. Section 07 2100 - Thermal Insulation: Insulation board under siding.
- E. Section 07 9005 - Joint Sealers: Sealing joints between siding and adjacent construction and fixtures.
- F. Section 09 2116 - Gypsum Board Assemblies: Sheathing.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's data on materials, component profiles, fastening methods, jointing details, sizes, surface texture, finishes, accessories, and [_____]; showing compliance with requirements, including:
 - 1. Physical characteristics of components shown on shop drawings.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions and recommendations.
- C. Samples: Submit two samples 12 inches by 12 inches in size illustrating surface texture.

PART 2 PRODUCTS

2.01 SIDING

- A. Board Siding: Thermally modified wood: Thermally modified poplar, by Cambia of Northland Forest Products, or approved equal.
 - 1. Substitutions: Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

- A. Screws: Corrosion resistant type; non-staining, of size and strength to securely and rigidly retain the work ; prefinished to match siding finish.
 - 1. Crackless screws, with serrated threads, recommended by siding manufacturer. Brown color, unless indicated otherwise.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrates are ready to receive work.
- B. Do not begin until unacceptable conditions have been corrected.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Fasten siding in place, level and plumb.
 - 1. Arrange for orderly nailing pattern, blind nail except over trim.
 - 2. Install siding for natural shed of water.
 - 3. Position cut ends over bearing surfaces, and sand cut edges smooth and clean.
- B. Install panel siding sheets horizontally with edges and ends over firm bearing.

C. Sand work smooth and set exposed nails and screws.

3.03 TOLERANCES

A. Maximum Variation From Plumb and Level: 1/4 inch per 10 feet.

B. Maximum Offset From Joint Alignment: 1/16 inch.

END OF SECTION

SECTION 07 4633
PLASTIC SIDING

PART 2 PRODUCTS

1.01 MATERIALS

A. General Requirements:

END OF SECTION

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SECTION 07 4646
FIBER CEMENT SIDING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Wood-fiber cement siding.

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 054000 - Cold-Formed Metal Framing: Siding substrate.
- C. Section 079005 - Joint Sealers.

1.03 REFERENCE STANDARDS

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2008.
- B. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's requirements for related materials to be installed by others.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods, including nail patterns.
- C. Shop Drawings: Showing layout, dimensions, material thickness, details, joints, supports, trim, and accessories.
- D. Test Report: Applicable model code authority evaluation report (e.g. ICC-ES).
- E. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.
- F. Warranty: Submit copy of manufacturer's warranty, made out in Owner's name, showing that it has been registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum 3 years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products under waterproof cover and elevated above grade, on a flat surface.

PART 2 - PRODUCTS

2.01 SIDING

- A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
 - 1. Style: Standard lap style.
 - 2. Texture: Smooth.
 - 3. Length: 12 ft, nominal.
 - 4. Width (Height): 5-1/4 inches.
 - 5. Thickness: 5/16 inch, nominal.
 - 6. Finish: Factory applied topcoat.
 - 7. Warranty: 30 year limited; transferable.
 - 8. Lap Siding Manufacturers:
 - a. CertainTeed Corporation : www.certainteed.com.

- b. James Hardie Building Products, Inc : www.jameshardie.com.
 - c. Nichiha USA, Inc : www.nichiha.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Soffit & Fascia Panels: Panels made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
- 1. Texture: Smooth.
 - 2. Length: 96 inches, nominal.
 - 3. Width: 48 inches.
 - 4. Thickness: 5/16 inch, nominal.
 - 5. Finish: Factory applied topcoat.
 - 6. Color: As selected by Architect from manufacturers full range of available colors.
 - 7. Manufacturers:
 - a. CertainTeed Corporation : www.certainteed.com.
 - b. James Hardie Building Products, Inc : www.jameshardie.com.
 - c. Nichiha USA, Inc : www.nichiha.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

- A. Trim: Same material and texture as siding.
- B. Fasteners: Galvanized or corrosion resistant; length as required to penetrate minimum 1-1/4 inch.
- C. Exterior Soffit Vents: One piece, perforated, ASTM B221 6063 T5 alloy aluminum, with edge suitable for direct application to gypsum board and manufactured especially for soffit application. Provide continuous vent, unless indicated otherwise.
- D. Joint Sealer: As specified in Section 07 9005, and recommended by manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Examine substrate and clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Do not begin until unacceptable conditions have been corrected.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions and recommendations.
 - 1. Read warranty and comply with all terms necessary to maintain warranty coverage.
 - 2. Install in accordance with conditions stated in model code evaluation report applicable to location of project.
 - 3. Use trim details indicated on drawings.
 - 4. Touch up all field cut edges before installing.
 - 5. Pre-drill nail holes if necessary to prevent breakage.
- B. Over Steel Studs: Use hot-dipped galvanized self-tapping screws, with the points of at least 3 screws penetrating each stud the panel crosses and at panel ends.
- C. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- D. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.
- E. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings. Provide vent area shown on drawings.
- F. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings and counterflashings.
- B. Self-Adhered Membrane Flashing.

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 4000 - Quality Requirements: General requirements for mock-ups.
- C. Section 04 2000 - Unit Masonry Assemblies: Through-wall flashings in masonry.
- D. Section 06 1000 - Rough Carpentry: Wood nailers for sheet metal work.
- E. Section 07 1300 - Sheet Waterproofing: Termination bar specified herein used.
- F. Section 07 3113 - Asphalt Shingles: Shingle roofing and related flashings, other than underlayment specified in this Section.
- G. Division 7 Membrane Roofing Sections: Termination bar specified herein used at membrane roofing turning up vertical surfaces.
- H. Section 07 5300 - Elastomeric Membrane Roofing: Roofing system.
- I. Section 07 5400 - Thermoplastic Membrane Roofing: Roofing system.
- J. Section 07 7100 - Roof Specialties: Manufactured copings and manufactured expansion joint covers, and roof edge flashings.
- K. Section 07 7123 - Manufactured Gutters and Downspouts.
- L. Section 07 9005 - Joint Sealers.
- M. Section 09 9100 - Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. CDA A4050 - Copper in Architecture - Handbook current edition.
- C. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Samples: Submit two samples 8 by 10 inch in size illustrating metal finish color.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.
- C. Single-Source Responsibility: Self-adhering flashings at rough openings shall be manufactured by manufacturer of water/air barrier coating specified in Section 07 1400 - Fluid-Applied Air Barrier, for material compatibility and single-source manufacturing responsibility.

- D. Coordination with Metal Roof Panels: Coordinate product selection of self-adhered membrane flashing used for underlayment at metal roof, with metal roofing supplier to assure compatibility.
- E. Mock-Up: Include Sheet Metal Flashing and Trim in mock-up as described in Section 01 4000 - Quality Requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

- A. Aluminum-zinc alloy coated steel sheet ("Galvalume") conforming to ASTM A792/ A 792M; minimum AZ50 coating, with minimum 50,000 p.s.i. yield.
 - 1. Finish: 3-coat full strength (70-percent) Kynar 500 resin (20 year) finish.
 - a. Color: As selected by Architect from Manufacturer's standard colors.
 - 2. Thickness: minimum 24-gauge.
- B. Self-Adhering Flashing - Around Windows, Doors, and Critical Wall Penetrations: Self-adhesive, rubberized asphalt bonded to polyethylene film, cold applied tape, with silicone-coated release sheet; 40 mil thickness; 12" wide roll, or as required. Provide primer when recommended by flashing manufacturer.
 - 1. Carlisle Coatings & Waterproofing, Inc.; CCW-705-TWF, : www.carlisle-ccw.com.
 - 2. Grace, W. R. & Co.; Perm-A-Barrier Wall Flashing: www.na.graceconstruction.com.
 - 3. Tremco, ExoAir 110: www.tremcosealants.com.
 - 4. Substitutions: Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

- A. Sealant: Type specified in Section 07 9005.
- B. Termination Bar: Stainless steel bar designed to terminate and seal top or edge of flashing on vertical surfaces. Bar shall be flat and shall have pre-drilled holes 8" o.c. for attachment to substrate with appropriate non-corrosive fasteners. Bar shall be 3/4" wide by 1/8" thick.
 - 1. Termination bar shall be encapsulated with compatible sealant. Note: The sealant shall be compatible with the water/air barrier coating, and shall be compatible with the waterproofing membrane and adhesives. (Acrylic latex sealant shall NOT be used.)

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.

2.04 SELF-ADHERED MEMBRANE FLASHING

- A. Self-Adhered Membrane Flashing: Used as underlayment under Shingle Roofs and Metal Siding (Occuring Over Solid Substrates): Self-Adhering, Rubberized Asphalt bonded to Polyethylene-Film, 40 mils (1.0 mm) thick minimum, consisting of slip-resisting polyethylene-film reinforcing and top surface laminated to SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer. Thermal stability: Unaffected at -20 deg. F.; ASTM D 1970.
 - 1. Carlisle Coatings & Waterproofing, Inc.; Dri-Start "A": www.carlisle-ccw.com.
 - 2. Grace, W. R. & Co.; Ice and Water Shield [Basis of Design]: www.na.graceconstruction.com.
 - 3. Johns Manville International, Inc.; Roof Defender: www.jm.com.

4. Owens Corning; WeatherLock Flex: www.owenscorning.com.
- B. Self-Adhered Membrane Flashing - High Temperature: Used as underlayment under Metal Roof or horizontal applications of metal (Occuring Over Solid Substrates): Provide primer recommended by underlayment manufacturer.
 1. Material: Slip-resisting top surface laminated to layer of rubberized asphalt adhesive, with disposable release sheet. Self-adhering, cold-applied.
 2. Thermal stability: Stable after testing at 240 deg. F. (ASTM D1204); and flexibility unaffected at -20 deg. F. (ASTM D1970).
 3. Weight: 0.22 pounds/sq. ft., installed.
 4. Permeance: 0.05 perms maximum (ASTM E96).
 5. Exposure: Can be left exposed maximum of 120 days from date of installation per ASTM G90 - EMMAqua test.
 6. Thickness: 40 mils thick, minimum.
 7. Manufacturers/Product:
 - a. Carlisle Coatings & Waterproofing, Inc., : www.carlisle-ccw.com.
 - b. CertainTeed Corporation: www.certainteed.com.
 - c. Grace, W.R. & Co.; "Ice and Water Shield HT" [Basis of Design]: www.na.graceconstruction.com.
 - d. Henry Company: www.henry.com.
- C. Install 1-layer over substrate surface at the following locations:
 1. 36-inches wide in all valleys, over all hips and ridges (18-inches on each side of each valley, hip ridge, and top ridge), and at perimeter edges of shingle roof planes.
 2. Below all metal roofing, and behind any non-insulated metal wall panels and metal siding.
 3. Where roofing planes intersect vertical walls and planes, turn edges up at least 8-inches.
 4. Cover sheathing at corners.
 5. Wrap head, jambs, and sill of all punched openings.
- D. Coordinate with, and refer to Division 7 Roofing and Siding Sections for additional information and requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted.
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Seal metal joints watertight.
- E. Install continuous through-wall flashing and sub-sill flashing with interior end dam prior to setting doors and windows. Typical at head and sill conditions. Jamb flashing to terminate in sub-sill flashing. Install metal head flashing at all window and door heads per manufacturer's standard detail.
- F. Where sloping roof abutts a wall, integrate metal step flashing into the shingleroofing in accordance with best industry standards to provide weathertight joint.
- G. Apply Self-Adhered Membrane Flashing used as underlayment in accordance with manufacturer's recommendations.

1. Lap in shingled manner.
 2. Flash perimeter of wall openings.
 3. Cover internal and external corners with additional layer of self-adhered membrane flashing.
- H. Apply self-adhered flashing in accordance with manufacturer's recommendations.

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.
- D. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2017).

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 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. fungus resistant,
 - 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.
 - 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 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

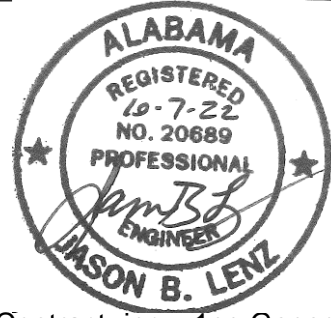
- A. Clean adjacent soiled surfaces.

3.06 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

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SECTION 26 0000 - ELECTRICAL

PART 1 - GENERAL

- 1.1 Related Documents: Drawings and general provisions of Contract, inc 1ng General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.
- 1.2 Description of Work:
- A. This section of the specifications is coordinated with and complimentary to certain sections of the General Specifications. Specifically, the Contractor shall refer to "Instructions", "General Conditions", "Special Conditions", and all other relevant divisions of work. Applicable provisions of the General Conditions shall govern work under this heading as if written in full herein.
 - B. The Electrical Specifications shall be considered to be all inclusive in their individual divisions of work and shall refer to and be a part of all applicable parts of the General Specifications whether bound with these Specifications or whether handled as a separate document.
 - C. These Specifications are intended to provide for a complete electrical system. Any item(s) indicated on the Drawings and not specified or vice-versa, or any detail omitted which is necessary for the proper installation of the system, shall be supplied and installed by the Contractor without additional cost.
 - D. The Drawings and Specifications shall be considered complimentary one to the other so that materials or labor indicated, called for or implied by one and not the other shall be supplied as though called for by both.
 - E. The Electrical Contractor shall keep clean plans on the job and mark all changes (changes by addenda, change orders, re-routing of conduits or circuits to meet field conditions, etc.) made in the field. These changes shall be marked on the plans when they are made and not when the job is finished. This set of plans shall be turned over to the Architect or the Engineer through the General Contractor to be included in as-built plans.
- 1.3 Scope. Work Included:
- A. The Electrical Contractor shall purchase and furnish all materials, wire, fixtures and equipment shown on the Electrical Drawings and covered by this section of the Specifications. The General Contractor or another subcontractor shall not be used to purchase materials with the intent to circumvent bid laws or to overcome poor credit on the part of the Electrical Contractor.
 - B. The Contractor shall:
 - 1. Install complete system of electrical wiring to each lighting fixture.
 - 2. Install all lighting fixtures and other electrical equipment covered by this section of Specifications and Electrical Drawings.
- 1.4 Work By Others:
- A. All patching and finishing, painting of conduits, etc.
 - B. All furring for spaces in which conduit and other electrical work may be installed.

Provisions

All electrical work shall comply with national electrical code state and local provisions. In cases of differences between building codes state and local provisions and utility regulations and the contract or the most stringent shall govern. The contractor shall promptly notify the engineer and architect in writing of any such difference. Hold the contractor to perform any work that does not comply with these provisions he shall bear all costs arising in obtaining the efficiencies.

Performance of Work

The electrical contracting shall be the primary business of business in this section of the specifications and the contractor shall have installed at least three similar type and size poles.

The contractor shall submit proof of similar poles when estimated by the architect or engineer. Proof shall include all of the following:

- a copy of pole
- date of completion
- general description of electrical work
- appropriate local code of electrical installation
- name of electrical design and inspecting engineer

The contractor shall have an affidavit by the local authority electrical contractor as an electrical contractor shall submit proof of license when estimated local business permit local electrical contracting license will not be considered sufficient. The electrical contractor shall not have "provisional" licenses and any such licenses will cause the licensee to be ineligible for the pole.

Regardless of the building or the electrical contractor shall be a fully licensed by the state of Alabama as a general contractor with specialty in electrical. An electrical contractor who is licensed only as a subcontractor type "S" license is ineligible to bid through a license. The general contractor

The contractor shall have a paid electrical contractor in his general business name for a minimum of three consecutive years.

The electrical contractor shall provide substantiating proof of these provisions a minimum of days prior to bid date to the electrical engineer. Substantiating proof is not sufficient and approval the electrical contractor will not be allowed to bid or perform work on the pole.

When performance of electrical subcontractors see the prior to bidding each potential subcontractor shall disclose in his performance affidavit or the company's latest audited financial statement or a recent letter of reference from his bank or primary lending institution in writing good financial standing.

The engineer reserves the right to disqualify any contractor that he feels does not have sufficient performance record quality of work or will not be in the best interest of the project.

Responsibility of Contractor

Before submitting proposal each contractor shall evaluate all conditions and specifications and permit space allocated on site of work to determine hazard of work. Construction will be given at a later date to allege is necessary as to the provisions of work materials to be furnished on conditions specified by nature of site.

the contractor shall be responsible for the installation and testing of the equipment by the contractor. The contractor shall be responsible for the installation and testing of the equipment by the contractor. The contractor shall be responsible for the installation and testing of the equipment by the contractor.

This contract shall pay a additional cost that may be incurred by the contractor for the installation of the equipment. The contractor shall be responsible for the installation and testing of the equipment by the contractor. The contractor shall be responsible for the installation and testing of the equipment by the contractor.

fees and permits

This contract shall secure all licenses and permits and pay all fees and charges for the completion of the work under this section of the contract.

This contract shall be licensed by the State of Alabama as an electrical contractor. The contractor shall be responsible for the installation and testing of the equipment by the contractor.

protection

This contract shall be held strictly responsible for the proper installation of the complete electrical system. The contractor shall keep a competent person on the job site throughout the progress of the work. The contractor shall not be held responsible for the protection of the property by the contractor.

The contractor shall as a minimum have a minimum of one year of experience in the type of electrical work and shall hold a minimum of one year of experience in the type of electrical work and shall hold a minimum of one year of experience in the type of electrical work.

changes and additional work Changes shall be made before the work as allowed by these specifications and drawings except on written order of the architect. No change order will be allowed unless a change order has been authorized by a written order of the architect stating the change to be made.

warranty

In addition to the standard warranty on materials this contract shall guarantee all materials and equipment furnished by the contractor for a period of one year following the date of final inspection and approval. Any defective material or workmanship which becomes apparent during the one year period shall be replaced by the contractor at no additional cost to the owner.

It is understood that the contractor shall be responsible for the installation and testing of the equipment by the contractor. The contractor shall be responsible for the installation and testing of the equipment by the contractor.

All ballasts shall be provided by the contractor and any ballast that fails during the first year shall be replaced by this contract at no cost to the owner.

emergency repairs The contractor reserves the right to make emergency repairs as needed to keep the equipment in operation without incurring the cost of a guarantee bond. The contractor shall be responsible for the installation and testing of the equipment by the contractor.

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PART 2 — PRODUCTS

Installation of Panelboards

The existing panelboards are to be replaced by the addition of one or more of its type. The new panelboards shall be of the type to accommodate any changes in the number of breakers. The panelboards shall be of the type to accommodate any changes in the number of breakers.

The electrical connections and plastic ties shall be used for the management of the panelboards.

The sign shall be located at each panel to indicate the location of potential electrical flash hazards.

The electrical connections shall be coordinated with the available short circuit interrupting ratings.

The height of the installation shall be as specified in the breaker bolt-on type.

The pole breakers shall be designed such that an overload in any phase will trip all poles simultaneously.

Conduit Installations

The conduit in the raceway shall be plastic conduit. The conduit shall be installed in a raceway with all electrical conduits of the same type.

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The conduit size shall be Type T or T.

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PART 3 — EXECUTION

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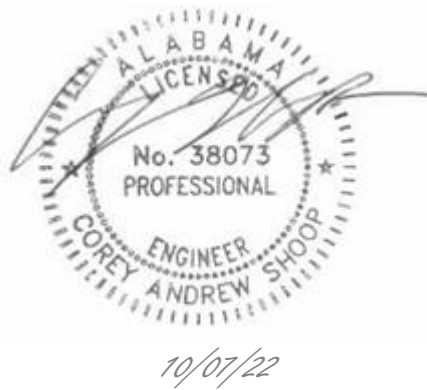
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END OF SECTION 26 00 00



Applicable for Sections: 02 4100, 31 1000, 31 2000, 31 2500, 32 1216, 32 1313, 32 1613,
32 1723, 33 4001

SECTION 31 1000

SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes Sections:
 - .. Section 31 2000 - "Earth Moving"
 - .. Section 02 4100 - "Demolition"

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Protection of existing trees and landscaping to remain, if any, and boundary and property line markers, bench marks, survey control points, and existing structures and improvements which are to remain.
 - 2. Environmental and erosion control measures, as indicated and as otherwise required by applicable codes, regulations, and authorities having jurisdiction.
 - 3. Removal of trees and other vegetation, as indicated, and within "controlled areas."
 - 4. Topsoil stripping, and stockpiling, as indicated, and within "controlled areas."
 - 5. Removing above-grade improvements as indicated, and as required to accommodate new construction.
 - 6. Removing below-grade improvements as indicated, and as required to accommodate new construction.

1.3 PROJECT CONDITIONS

- A. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction, unless specifically indicated elsewhere in contract documents.
- B. Protection of Existing Improvements:
 - 1. Provide protection necessary to prevent damage to existing improvements indicated to remain in place. Clearing, demolition and any excavation within 5'-0" of existing buildings and structures to remain shall be performed by hand.

2. Protect improvements on adjoining properties and on Owner's property.
3. Protect boundary and property line markers, bench marks, and survey control points.
4. Restore damaged improvements and markers to their original condition, as acceptable to property owners.

PART 2 - PRODUCTS

- A. Not applicable to this Section.

PART 3 - EXECUTION

3.1 SITE CLEARING

- A. General:
1. Remove trees, shrubs, grass and other vegetation, improvements, or obstructions as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated.
- B. Topsoil:
1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 6 inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
 2. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
 - a. Remove heavy growths of grass from areas before stripping.
 3. Stockpile topsoil in storage piles in areas as indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, as required, to prevent wind erosion, or seed and mulch if left undisturbed for a period of time greater than 14 consecutive days.
 4. Legally dispose of off-site unsuitable soil, excess topsoil not to be stockpiled, and waste material debris.
 5. Fill depressions caused by site clearing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
 - a. Place fill material in horizontal layers not exceeding 8 inches loose depth, and thoroughly compact to a density equal to adjacent original ground, unless specific compaction is otherwise indicated in Section 31 2000 "Earth Moving", or, as directed in the geotechnical investigation.

3.2 DISPOSAL OF WASTE MATERIALS

- A. Burning on Owner's Property: Burning will not be permitted on Owner's property.
- B. Removal from Owner's Property: Remove waste materials, trash and debris, and legally dispose of same off site.

END OF SITE CLEARING

SECTION 31 2000

EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - .. Section 01 2200 - "Unit Prices"
 - .. Section 01 7800 - "Closeout Submittals"
 - .. Section 02 3213 - "Subsurface Investigation"
 - .. Section 31 1000 - "Site Clearing", "Report of Geotechnical Investigation"
 - .. Section 32 1313 - "Concrete Paving"
 - .. Section 03 3100 - "Concrete"
 - .. Division 22 - "Plumbing"
 - .. Division 23 - "Heating, Ventilating, and Air Conditioning"
 - .. Division 26 - "Electrical"

1.2 SUMMARY

- A. This Section includes unclassified excavation, grading and fill as follows:
 - 1. Preparing of subgrade for building slabs, walks, and pavements; and additional work indicated on the Drawings and in the Project Manual.
 - a. Comply with recommendations in the Owner's "Report of Geotechnical Exploration", this Section, and other Division 31 Sections; Refer also to Civil and Structural Drawings for additional information and requirements.
 - b. Perform excavation by hand within 5'-0" of existing buildings and structures to remain. Design and provide all necessary supports, shoring, etc., as required to prevent settlement, collapse, and/or other damage to existing buildings and structures to remain.
 - 1) DO NOT EXCAVATE BELOW THE EFFECTIVE BEARING AREA OF FOUNDATIONS OF EXISTING BUILDINGS AND STRUCTURES. In the event of conflict during construction, notify Architect prior to proceeding with work in the effected area.
 - c. Compaction of backfill at any basement and below grade walls shall only be by hand-directed compaction equipment. Heavy construction equipment and/or heavy trucks shall not be allowed within 10-feet of any basement walls, and within 5-feet of foundation walls.
 - 2. Excavating and backfilling of trenches within building control areas and on site.

3. Stripping and stockpiling of topsoil (if any) is specified in Section 31 1000 - Site Clearing.
 4. The extent of earthwork is indicated on the Drawings. This earthwork is to be included in the base bid as unclassified excavation, regardless of material encountered. All work required in delivering the undercut and rock free zone, as indicated on the drawings, shall also be unclassified and in the base bid.
 5. Removal of existing improvements may also be specified under various Division 31 Sections.
- B. Excavating and Backfilling for Plumbing, HVAC, and Electrical Work: Refer to Divisions 22, 23, and 26 sections for excavation and backfill required in conjunction with underground mechanical and electrical utilities and buried mechanical and electrical appurtenances, not work of this Section.
1. However, construction materials and execution for Plumbing, HVAC, and Electrical work shall comply with requirements of this Section, and related Division 31 Sections, when the work and/or materials required are not indicated or only partially indicated in Divisions 22, 23, and 26.
- C. Placement and compaction of at least 4-inches of topsoil up to finish grades is included in the work of this Section.
1. Allow for thickness of topsoil and sod.

1.3 DEFINITIONS

- A. "Excavation" consists of removal of materials and existing improvements encountered to subgrade elevations indicated, and subsequent disposal of materials removed.
- B. "Unauthorized" excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Owner's Geotechnical Engineer. Unauthorized excavation, as well as remedial work directed by Owner's Geotechnical Engineer, shall be at Contractor's expense.
1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to Owner's Geotechnical Engineer.
 2. In locations other than those above, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Owner's Geotechnical Engineer.
- C. "Additional Excavation": When excavation has reached required subgrade elevations, notify Owner's Geotechnical Engineer, who will make an inspection of conditions. If Owner's Geotechnical Engineer determines that bearing materials at required subgrade elevations are unsuitable, continued excavation may be required. If additional excavation is required, replace excavated material as directed by Owner's Geotechnical Engineer.

1. The Contract Sum will be adjusted by Change Order, or as provided in General Conditions, for additional excavation and its replacement appropriately authorized in writing prior to beginning the work, and for which the Contractor is due payment from the Owner.
- D. “Subgrade”: The undisturbed earth or the compacted soil layer immediately below pavement base course, select drainage fill, bottom of indicated undercut areas, or topsoil materials.
- E. “Structure”: Buildings, foundations, slabs, tanks, curbs, or other man-made stationary features occurring above or below ground surface.
- F. “Building Control Area” and/or “Controlled Area”: Below and at least 10-feet beyond building foot print or exterior walls, and below roofs, to include covered porches and canopies, and below and at least 5-feet beyond all walks and pavements subject to bearing vehicular traffic.
- G. “Mud Footings” (if any): The at least 2-inches to 4-inches of lean 2,500 psi (minimum) concrete placed in the bottom of footing and foundation trenches and excavations, which is required if permanent or structural concrete cannot be placed the same day they are excavated.
 1. Unless mud footings are indicated on Structural Drawings, their depth shall be compensated for by over-excavation.
 2. Mud footings (if any) shall be completely clean prior to placement of any reinforcing and/or permanent or structural concrete.
 3. Refer to the Owner’s “Geotechnical Investigation” Report, and Structural Drawings for additional information and requirements for other “mud footings” (or “mud mats”, or “mud seals”).
- H. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 cu. yd. (0.76 cu. m) for bulk excavation or 3/4 cu. yd. (0.57 cu. m) for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- (1065-mm-) wide, short-tip-radius rock bucket; rated at not less than 120-hp (89-kW) flywheel power with bucket-curling force of not less than 25,000 lbf (111 kN) and stick-crowd force of not less than 19,000 lbf; measured according to SAE J-1179.
 2. Bulk Excavation: Late-model, track-mounted dozer equipped with a single tooth ripper; rated at not less than 250-hp flywheel power and developing a minimum of 45,000-lbf (200-kN) breakout force; measured according to SAE J-732.
 3. Refer to “Owner’s Report of Geotechnical Exploration” for additional information regarding recommendations when rock is encountered.

1.4 SUBMITTALS

- A. Test Reports: Submit the following reports directly to Architect, Civil Engineer, Structural Engineer, and the Owner, directly from the testing service, with copy to Contractor:
 - 1. Test reports on fill and borrow material.
 - 2. Verification of suitability of each foundation, floor slab and subgrade condition and material, in accordance with specified requirements.
 - 3. Field reports; and in-place soil density tests.

1.5 QUALITY ASSURANCE

- A. Codes and Standards: Perform excavation work on site and in right-of-ways in compliance with applicable requirements of authorities having jurisdiction.
- B. Testing and Inspection Service: All required soil testing and inspection services during earthwork operations shall be performed by a qualified independent geotechnical testing laboratory.
 - 1. Refer to Section 01 0150 - “Special Conditions”, for additional information and requirements.

1.6 PROJECT CONDITIONS

- A. Site Information: Refer to Section 31 1000 - “Site Clearing”, and Civil Drawings, for additional information and recommendations.
- B. Existing Utilities: Locate existing underground utilities in areas of excavation work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations in the vicinity, and as may also be required for other construction work.
 - 1. Notify the Alabama Line Location Center at 1-800-292-8525 at least 2-full working days (48 hours), excluding weekends and holidays, prior to any excavation work. This organization will contact its member utility companies to locate and mark all of their own underground facilities.
 - a. Notify non-member companies directly, for them to perform this service.
 - b. Contractor shall notify University of North Alabama Facilities Administration and Planning (256-765-4274) a minimum of 5 days prior to excavation.
 - 2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions and record locations on as-built record drawings. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

3. Do not interrupt existing utilities serving facilities occupied by Owner or others, during occupied hours, except when permitted in writing by Architect and then only after acceptable temporary utility services have been provided.
 - a. Provide minimum of 48-hour notice to Owner and copy Architect, and receive written notice to proceed before interrupting any utility.
 4. Demolish and completely remove from the site any existing underground utilities to be removed, and all existing underground utilities in “controlled areas”. Coordinate with utility companies for shutoff of services if lines are active.
- C. Use of Explosives: **Use of explosives is not permitted.**
- D. Protection of Persons and Property:
1. Barricade open excavations occurring as part of this work and post with warning lights.
 2. Operate warning lights as recommended by authorities having jurisdiction.
 3. Comply with requirements of current regulations of OSHA, applicable Codes, ordinances, and authorities having jurisdiction.
 4. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 5. Perform excavation by hand within 5'-0" of existing buildings and structures to remain, and within dripline of large trees to remain. Protect root systems from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with moistened burlap. Paint root cuts of 1-inch and larger with emulsified asphalt tree paint.
 - a. Do not under-mine or excavate below footings and/or foundations which are to remain.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS - DEFINITIONS

- A. Satisfactory soil materials are defined as clean, non-saturated, non-organic sections of earth taken from acceptable sources, and complying with ASTM D2487 soil classification groups included in recommendations of the Owner’s “Report of Geotechnical Exploration”, or if not included, as directed at the time of earthwork operations and/or acceptance resulting from acceptable test results obtained on soil materials proposed by the Contractor and tested by the project Geotechnical Engineer, as required by the Bid and Contract Documents.

Liquid Limit (LL)	Less than 50%
Plasticity Index (PI)	Less than 40%
Maximum Dry Density (ASTM D-698)	Greater than 95 pcf

Maximum Particle Size	3 inches or less
Organic Matter	Less than 5%

- B. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups other than those indicated above.
- C. Drainage Fill (or “porous fill” or “drainage aggregate”): Clean, washed, evenly graded mixture of free-draining pea gravel, coarse sand, or crushed stone, with not more than 50 percent passing a No. 50 sieve and not more than 5 percent passing a No. 200 sieve, and subject to approval by the project geotechnical engineer and testing laboratory; **Minimum 4- inches compacted completed thickness.**
- D. Backfill and Fill Materials (Grassed areas only; Cuts and fills outside “controlled areas”, during general grading): Satisfactory soil materials from on-site excavations, free of clay, rock or gravel larger than 2-inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious material.
 - 1. All fill soils must be compatible with existing soils, so they can bond together.
- E. Topsoil: Refer to Section 31 1000 - “Site Clearing.”
- F. Rock Fill: Refer to Owner’s “Report of Geotechnical Investigation” for recommendations regarding placement and compaction requirements.

PART 3 - EXECUTION

3.1 PROOFROLLING

- A. Areas throughout significant slopes and beneath and 10'-0" beyond new building and covered areas, and beneath and 5'-0" beyond new pavement areas (back-of-curb or other paving edge termination) shall be designated as “controlled areas.” Prior to placement of fill earth and following removal of cut earth, the controlled areas shall be proofrolled. Areas to be filled shall be proofrolled prior to any fill placement; cut areas shall be proofrolled after they are brought to subgrade level. Proofrolling shall be performed with a loaded tandem axle dump truck or similar approved equipment. The proofroller shall make at least two passes over each section in perpendicular directions over the “controlled areas”. If any areas fail the proofroll, repair these areas as directed by the Owner’s Geotechnical Engineer.
 - 1. Proofrolling shall be conducted in the presence of testing lab’s Geotechnical Engineer.
 - 2. Do not proofroll when the ground surface is wet or saturated with water.

3.2 EXCAVATION

- A. Earth Excavation includes excavation of pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as structures, foundations, rock or unauthorized excavation.

- B. Perform excavation by hand within 5'-0" of existing buildings and structures to remain.
 - 1. Do not under-mine or excavate below footings and/or foundations which are to remain.
- C. Refer to "Definitions" paragraph above for any "mud footings" required.

3.3 STABILITY OF EXCAVATIONS

- A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.
- B. Slope sides of excavations to comply with local codes, ordinances, and requirements of agencies having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- C. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross braces, in good serviceable condition. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.

3.4 DEWATERING

- A. Prevent surface water and Geotechnical or ground water from flowing into excavations and from flooding project site and surrounding area.
 - 1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Contractor to provide and maintain, at their expense, pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - 2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or runoff areas. Do not use trench excavations as temporary drainage ditches.
 - 3. Due to the types of soil that exist on site, seepage and/or springs may occur. If excessive seepage or springs are discovered, notify Owner's Geotechnical Engineer and Architect immediately.

3.5 STORAGE OF EXCAVATED MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill only within the limits of the area under construction. No stockpiling will be allowed in areas that are not under construction. If there is not room for stockpiling, then the contractor will be responsible for legally disposing of the material and will not get additional compensation for the replacement of that material if fill is needed. Place, grade, and shape stockpiles for proper drainage.
 - 1. Locate and retain soil materials away from edge of excavations.

2. Dispose of excess excavated soil material by removal and legal disposal off-site.

3.6 EXCAVATION FOR STRUCTURES

- A. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 foot, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, and other construction and for inspection.
 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
 2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Structures: Conform to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot; plus, a sufficient distance to permit placing and removal of concrete formwork, installation of services, and other construction and for inspection. Do not disturb bottom of excavations, intended for bearing surface.

3.7 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Cut surface under pavements to comply with cross-sections, elevations and grades as indicated.

3.8 EXCAVATION FOR UTILITY TRENCHES

- A. Contractor shall excavate soft soils from existing soft trench backfill as directed by Owner's Geotechnical Engineer.

3.9 COLD WEATHER PROTECTION

- A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.10 BACKFILL AND FILL

- A. General: Place soil material in layers to required subgrade elevations, for each area classification listed below, using materials specified in Part 2 of this Section.
 1. Under all areas, use satisfactory excavated or borrow material. Refer to Owner's "Report of Geotechnical Exploration", and this Section, for minimum testing requirements.
 2. Under building slabs, use drainage fill material of compacted and finished depth indicated, or if not indicated, **at least 4-inches** compacted and completed thickness.
 3. Backfill trenches with concrete where trench excavations pass within 18-inches of column or wall footings and that are carried below bottom of such footings or that pass under wall footings. Place concrete to level of bottom of adjacent footing.
 - a. Concrete is specified in Division 3.

- b. Do not backfill trenches until inspections and any required testing have been made and backfilling is authorized by Architect based on test results. Use care in backfilling to avoid damage or displacement of pipe systems.
 4. Trenches of demolished utilities shall be backfilled with flowable fill concrete, as specified in the Owner's Geotechnical Investigation.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, etc.
 2. Inspections, testing, approval, and recording locations of underground utilities have been performed and recorded.
 3. Removal of concrete formwork, if any.
 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
 - a. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 5. Removal of trash and debris from excavation.
 6. Permanent or temporary horizontal bracing is in place on horizontally supported walls, where necessary.

3.11 PLACEMENT AND COMPACTION - GENERAL

- A. Ground Surface Preparation:
 1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow strip, or break up sloped surfaces steeper than 1-vertical to 4-horizontal so that fill material will bond with existing surface.
 2. Prior to placement of fill earth and following removal of cut earth, the controlled areas shall be proofrolled. Areas to be filled shall be proofrolled prior to any fill placement; cut areas shall be proofrolled after they are brought to subgrade level. Proofrolling shall be performed with a loaded tandem axle dump truck or similar approved equipment. The proofroller shall make at least two passes over each section in perpendicular directions over the "controlled areas". If any areas fail the proofroll, repair these areas as directed by the Owner's Geotechnical Engineer.
 - a. Proofrolling shall be conducted in the presence of testing lab's Geotechnical Engineer.
 - b. Do not proofroll when the ground surface is wet or saturated with water.

- B. Place backfill and fill materials in layers not more than 8-inches in loose depth for material compacted by heavy compaction equipment, and not more than 4-inches in loose depth for material compacted by hand-operated tampers.
- C. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- D. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.
- E. General Fill Embankment Construction
 - 1. Embankment construction shall commence at the toe of the proposed slope and continue upwards as additional fill is placed. The engineered fill placed shall be benched into the natural slopes.
 - 2. The embankment is to be overfilled and then cut back to the required geometry to remove the uncompacted material that is usually present on the face of fill slopes.
 - 3. The face of slopes shall be promptly vegetated according to the Erosion Control Plan, and the CBMPP to prevent erosion after construction. Prior to vegetation 4" minimum topsoil is to be placed and tracked in by a dozer moving up and down the slope to create horizontal track lines.
- F. Rock Fill:
 - 1. Rock Fill is not to be used unless acceptable to the Owner's Geotechnical Engineer. Break larger particles down to 4" or less and treat as soil fill.
 - 2. Fills containing abundant rock shall be constructed of sound, durable rock. If weathered rock is integrated into structural fills, it is to be broken down to form a dense fill arrangement.
 - 3. A sufficient amount of compacted soil fines shall surround the rock fragments, particularly when shale is placed as structural fill. All voids between the larger rock fragments shall be completely filled with compacted gravel-size rock and soil during the fill placement and compaction process. Fills containing rock shall contain a minimum of 40 percent soil fines (passing #4 sieves). The soils are to be blended with the rock, or created by the blasting or compaction process.
 - 4. The majority of the rock shall be reduced to a maximum size of 6 inches (depending on the fill area) to be incorporated in to a dense fill. Filling in lifts must be maintained and shall be conducted under the observation of the Owner's Geotechnical Engineer or his representative.
 - 5. It is not permissible to place isolated large boulders (in excess of 12 inches).

6. The rock/soil fill shall be placed in layers, sufficiently worked, and moisture conditioned to create a tight, stable fill. The entire lift shall be moisture conditioned, not just the surface of the lift. Adequate moisture conditioning of rocky fills will require a piece of equipment that is dedicated to blending added water with the fill in order to achieve uniform moisture conditioning of the entire fill lift.
 7. The soil between the individual rock fragments shall be compacted and moisture conditioned to the project fill requirements. Provisions for the addition of water to the rock/soil fill is necessary to “lubricate” any edge-to-edge contacts, making it easier for the rock to assume a denser particle arrangement. In addition, repeated passes by large placement and compaction equipment (such as a Caterpillar 815 or 825 compactor) will be required to adequately work the fill and crush the rock fragments into a dense arrangement.
 8. The upper layer of rock fills shall be topped with a layer of compacted soil not less than 48 inches beneath the proposed building and pavement areas (compacted depths). The soil cap shall be compacted to no less than 98 percent of the Standard Proctor maximum dry density (ASTM D698). Careful materials management will be required to ensure that sufficient material is available to construct the soil “cap” above rock fills.
- G. Control soil and fill compaction, providing minimum percentage of density specified for each area classification indicated below. Correct improperly compacted areas or lifts as directed by Owner's Geotechnical Engineer if soil density tests indicate inadequate compaction.
1. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density, in accordance with ASTM D 698 A:
 - a. Under structures, building foundations and slabs, and 10' beyond those perimeters, compact full depth of fill placement and scarify, moisture condition and re-compact in accordance with the recommendations made in the Owner’s “Report of Geotechnical Exploration”.
 - 1) Cut areas shall be proof rolled prior to and during scarification efforts and observed by the Owner’s Geotechnical Engineer.
 - b. Under steps, covered areas, sidewalks, mechanical/utility and in all "controlled areas", compact in accordance with the recommendations made in the Owner’s “Report of Geotechnical Investigation”.
 - c. Under pavements and at least 5-feet beyond (measured from back-of-curb or edge of paving, where occurs), remove loose soils as described in this and replace with suitable material that is compacted to 98% standard proctor.
 - d. Under lawn or unpaved areas beyond “controlled areas”, compact each layer of backfill or fill material in accordance with the recommendations made in the Owner’s “Report of Geotechnical Investigation”.
 - e. On-site Borrow (where allowed): In accordance with the recommendations made in the Owner’s “Report of Geotechnical Investigation”.

- f. Select and/or Structural Fill: In accordance with the recommendations made in the Owner's "Report of Geotechnical Investigation".
 - g. Porous Fill (drainage course): In accordance with the recommendations made in the Owner's "Report of Geotechnical Investigation".
 - h. Basement area of former building beneath new building control area should be backfilled with a dense graded base in accordance with the recommendations made in the Owner's "Report of Geotechnical Investigation".
2. Moisture Control:
- a. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.
 - b. Remove and replace, or scarify and moisture condition, soil material that is too wet to permit compaction to specified density.
 - c. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist moisture conditioning by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.
 - d. At the time of densification, the moisture content of "engineered fill", "structural fill", and "select fill" should be within -3% to +3% of the materials' ASTM D-698 optimum moisture content.
 - e. Structural fill areas exposed to excessive wetting, drying or otherwise disturbed by the construction following acceptance for moisture and density should be retested followed by the correction of deficient areas just prior to the installation of additional fill or structures.
 - f. In no instance should placement of structural fill or ground supported structures be permitted if the ground surface soils contain a moisture content in excess of 2% of the material's optimum moisture content.
 - g. In no case shall porous drainage backfill (except as specifically indicated at foundation drains only) or masonry sand material be used adjacent to foundations. Care shall be taken to prevent masonry brick/block debris from falling or being pushed into foundation excavations.

3.12 GRADING

- A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated or between such points and existing grades.

- B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes and as follows:
 - 1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10-foot above-or-below required subgrade elevations.
 - 2. Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 0.10-foot above-or-below required subgrade elevation.
 - 3. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than 1/2-inch above or below required subgrade elevation.
 - 4. Connection of Existing and New Work: Provide flush transition, unless specifically indicated otherwise.
- C. Grading Surface of Fill under Building Slabs and “Building Control Areas”: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/2-inch when tested with a 10-foot straightedge.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.13 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction:
 - 1. Allow testing service to inspect and approve each subgrade and fill layer before further backfill or construction work is performed.
 - 2. Perform field density tests in accordance with ASTM D 698 (sand cone method), or acceptable ASTM methods or nuclear testing method, as applicable.
 - 3. New Paved Areas, New Building Slab and “Building Control Areas” Subgrade: Perform at least one field density test of subgrade for every 5,000-square feet of fill area for each foot of vertical thickness of fill placed in “controlled areas”, with a minimum of one (1) test per lift.
 - 4. Foundation Wall Backfill: Perform at least 2-field density tests at locations and elevations as directed.
 - 5. Trenches: Perform at least one field density test for every 50-linear feet for each 8 inches of vertical thickness of fill placed in utility or similar trenches, which extend through the “controlled areas”.
 - a. Retaining walls, if any, same as for “Trenches”, as indicated above.
 - 6. A laboratory soil particle size, Atterberg limit, and Proctor moisture density relationship test shall be performed on each different type of fill soil used in the “controlled areas”.

7. Based on the Project Geotechnical Engineer's testing reports, inspections, and recommendations, subgrade or fills that are below specified density, additional earthwork, compaction, and/or other operations, and re-testing, shall be performed until specified density is obtained.

3.14 EROSION CONTROL

- A. Provide erosion control methods in accordance with requirements of authorities having jurisdiction.

3.15 MAINTENANCE

- A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.
- C. Repair edges of existing pavements, sidewalks, etc., and other existing and/or new improvements flush with and to match existing materials and thicknesses, subject to acceptance by Owner and Architect.
- D. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- E. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Removal from Owner's Property:
 1. Remove excess and waste materials, including unacceptable excavated material, trash, debris, and waste materials, and legally dispose of off Owner's property.

END OF EARTHWORK

SECTION 31 2500

EROSION AND SEDIMENTATION CONTROL

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Temporary and permanent erosion control systems.
- B. Slope Protection Systems.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary and Division 1 Specification Sections, apply to this Section.
 - 1. Section 31 1000 - Site Clearing
 - 2. Section 31 2000 - Earthmoving
 - 3. The Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, March 2014 edition or most recent edition.
 - 4. Erosion and Sediment Control Plan

1.3 ENVIRONMENTAL REQUIREMENTS

- A. The Contractor shall protect adjacent properties and water resources from erosion and sediment damage throughout the life of the contract.
 - 1. The Contractor shall be responsible for the removal of sediments and debris escaping the project site, the remediation and/or repair of any damage that may occur as a result to adjoining and/or downstream affected properties or offsite structures and any fines or penalties levied against the project by regulatory agencies due to deficiencies of control measures.
- B. The Contractor will designate, by name, a Qualified Credentialed Professional (QCP) or equivalent person responsible for monitoring of all erosion control measures for this project. Specific responsibilities will include:
 - 1. Assuring and certifying the Contractor's construction sequence is in conformance with the specified schedule. In addition, a weekly certification stating compliance, any deviations, and corrective measures shall be filed with the Owners by this person. A copy of the certification form may be obtained from the Alabama Department of Environmental Management (ADEM) or the consulting Engineer who obtained the permit.
 - 2. Inspection of all erosion control measures and drainage inlets within 24-hours after any significant rainfall. A significant rainfall shall be defined as over 3/4 inch of precipitation in any consecutive 24 hour period.
 - 3. Inspect areas for catch of grass. A minimum catch of 75 percent is required prior to warrant

removal of erosion control measures.

4. Obtain the NPDES permit. All fees associated with the correspondence with ADEM and inspections as part of the maintenance of the permit are the responsibility of the contractor.
- C. Other than the land clearing activities required to install the appropriate erosion and sediment control measure in accordance with the erosion and sediment control plans, any down slope erosion and sediment control measures, on-site stream channel protection and upslope diversion of drainage required by site conditions, shall be in place and functional before any clearing or earth moving operations begin and shall be constructed and maintained throughout the construction period.
1. Temporary measures may be removed at the beginning of the workday but shall be replaced at the end of the workday.
- D. The angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures. Any slope or fill which has been graded shall, within thirteen (13) days of the completion of such grading or the completion of any phase of grading, be planted or otherwise be provided with ground cover, materials, devices, or structures sufficient to retain erosion. The devices, structures, and measures shall remain in place until the graded slope or fill is stabilized.
- E. All hazardous substances used for this project shall be stored in accordance with current Spill Prevention Control and Countermeasures (SPCC) regulations.
1. Store substances away from storm drains, ditches, and gutters in water-tight containers.
 2. Dispose of substances in accordance with ADEM regulations.
 3. Provide adequate trash containers on-site for the disposal of material waste.
 4. Prevent trash and debris from entering storm drainage system.
- F. All construction materials shall be properly stored, not exposed to rain, and stockpiled. All containers shall be stored closed or under cover. All excess or waste material shall be disposed of properly.
1. Provide a construction waste dumpster or trailer on-site for disposal of construction waste.
 2. Dispose of trash and waste to an acceptable offsite facility every week at a minimum.
 3. Prevent trash and debris from entering storm drainage system.
- G. There shall be no distinctly visible floating scum, oil, or other matter contained in the storm water discharge to a receiving water, must not cause an unnatural color (except dyes or other substances discharged for the purpose of environmental studies and which do not have a harmful effect on the receiving water) or odor in the receiving waters. The storm water discharge to receiving water must result in no material in concentration sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving water.
1. Ensure all materials are handled appropriately.
 2. No pollutants are allowed to be disposed of on-site or allowed to enter the storm drainage system.
- H. Upon completion of the land disturbing activity and stable vegetation or other permanent controls have

been established on all remaining exposed soil, the Contractor shall notify the Owner of this and request a final inspection.

1. The Owner, or his authorized agent, will inspect the site within 5 working days after receipt of notice.
- I. The Contractor shall prevent the tracking of mud and debris onto paved roadways from construction areas.
1. Provide a construction exit pad in accordance with the erosion and sediment control plans and in accordance with the approved installation procedures, and maintain it on a daily basis.
 - a. Provide a spray hose for the washing of tires and equipment
 - b. Rework or supplement the construction exit pad stone as required to ensure its continued effectiveness throughout the duration of the construction period.
 2. Remove any sediments tracked offsite or deposited on the adjacent roadways.
 - a. Utilize a mechanically operated street sweeper to remove any mud and sediment deposited on the adjacent roadways.
- J. The Contractor shall be responsible for keeping dust to a minimum through the use of water trucks or other dust controlling methods throughout the construction duration.

PART 2 - PRODUCTS

1.1 MATERIALS

- A. Quick growing grasses for temporary seeding (see seed mixes contained in CBMPP and in Plans).
- B. Fencing for siltation control as specified on the plans.
- C. Temporary mulches such as loose hay, straw, netting, wood cellulose or agricultural silage.
- D. Fence stakes shall be metal stakes a minimum of 54 inches in length.
- E. Stone check dams shall be spaced according to the Plans.
- F. Stone Sediment Barriers or SiltSacks™, or approved equal for inlet protection.
- G. High Density Poly-Ethylene (HDPE) Filters or Silt-Saver™, or approved equal for inlet protection.
- H. A stabilized construction entrance shall be constructed temporarily.
- I. Riprap for slopes, culvert, storm drain inlet, and outlet aprons.
- J. Water for dust control.
- K. Wattle check dams shall be spaced according to plans.

- L. Erosion control blankets and/or turf reinforcement mats to protect seed and prevent erosion on slopes.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Review site erosion and sediment control plan attached to this section of the specifications.
- B. Deficiencies or changes in the erosion control plan as it is applied to current conditions will be brought to the attention of the Engineer for remedial action.

3.2 IMPLEMENTATION

- A. Provide catalog cuts and information concerning the erosion control products which will be used for construction for review by the Engineer.
- B. Provide information concerning the installation of the erosion and sedimentation control including anchorage trench provisions and anchorage devices and spacing for review by the Engineer.
- C. Provide construction exit pad in accordance with the erosion and sediment control plan and in accordance with the approved installation procedures.
- D. Place erosion control systems in accordance with the erosion and sediment control plan and in accordance with approved installation procedures.
- E. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations. The Owner has the authority to direct the Contractor to provide immediate permanent or temporary pollution control measures. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practical time to minimize the need for temporary controls. Cut slopes shall be permanently seeded and mulched as the excavation proceeds to the extent considered desirable and practical.
- F. The temporary erosion control systems installed by the Contractor shall be maintained as directed by the Engineer to control siltation at all times during the life of the Contract. The Contractor must respond to any maintenance or additional work ordered by the Engineer within a 48 hour period.
- G. Slopes that erode easily shall be temporarily seeded as the work progresses according to the ALDOT seeding schedule or according to the seeding schedule contained in the plans.
- H. Remove and properly dispose of accumulated silt and sediment from all erosion control measures on a daily basis off site unless material is reusable.
- I. Remove and properly dispose of all trash and sediments accumulated in existing and new storm drainage inlets, structures, and pipes on a daily basis off site unless material is reusable.
- J. Provide temporary diversion berms and ditches as required during construction to protect work areas from up-slope runoff and/or to divert sediment-laden water to appropriate sediment control devices, traps, or stabilized outlets.

- K. Provide water trucks or other adequate method for controlling dust throughout the construction period.

END OF SECTION

SECTION 32 1216

ASPHALT PAVING

PART 1 - GENERAL

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
- B. Related work described elsewhere includes:
 - .. Section 31 2000 - "Earth Moving"
 - .. Section 32 1313 - "Concrete Paving"
 - .. Section 32 1613 - "Curbs and Gutters"

1.2 DESCRIPTION OF WORK

- A. Work described in this section includes new bituminous paving, a new base, and otherwise as indicated on drawings.
- B. Work shall also include pavement patching for any utility trenches under existing paving and this Contract, with prepared subgrade, 8" crushed aggregate base, 6 inch thick 3,000 psi concrete, prime coat, and 1-1/2 inches bituminous concrete overlay, and as indicated on the Drawings.
 - 1. Pavement patch shall extend 9" to 1'-0" beyond each side or edge of trench, and to abut flush with edge where existing paving was cut out.

1.3 QUALITY CONTROL

- A. Certifications: The Contractor shall submit to the Architect copies of certificates from suppliers of bituminous materials and other manufactured items, certifying that these products comply with specifications and standards listed hereinafter.
 - 1. All asphalt used for pavement shall be produced by a plant certified by the Alabama Department of Transportation (ALDOT).
- B. Standard Specifications: Unless otherwise noted, all specifications referred to shall be the "Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction", latest edition.
- C. Testing: All laboratory and field testing required to ensure compliance with these specifications will be performed by an independent testing laboratory. Refer to Section 01 0150 - "Special Conditions," for additional information.

1.4 JOB CONDITIONS

- A. Any base or sub-base areas damaged by weather or construction operations shall be scarified, remixed and recompactd in accordance with requirements before application of the prime coat.
- B. Special care and attention shall be given to be certain that paving operations and/or equipment do not cause damage to any existing and/or new buildings, structures, or improvements which are to remain.

PART 2 - PRODUCTS

1.4 MATERIALS

- A. Provide the paving system(s) indicated on the Drawings, installed in accordance with Part 3 of this Section, and referenced standards.

PART 3 - EXECUTION

1.5 PRIME COAT

- A. Application rates and construction requirements shall be as specified in ALDOT Section 401, Bituminous Surface Treatments, for a Bituminous Treatment Type "A" which is a prime coat.

3.2 TACK COAT

- A. Construction requirements, including preparation of the existing surface or substrate and maximum application rates, are specified in ALDOT Article 405.03.

3.3 PLANT MIX BITUMINOUS CONCRETE BINDER LAYER AND BITUMINOUS CONCRETE WEARING SURFACE

- A. Construction requirements, including finished surface tolerance, density requirements, and maintenance and protection shall be as specified in ALDOT Articles 410.03 through 410.07, 327.03 and 424.04, as applicable. Rate of application shall be not less than the number of pounds per square yard for a 1-inch wearing surface or pavement patching layer, pro-rated for other thicknesses, as required by referenced ALDOT Specifications.

3.4 CRUSHED AGGREGATE BASE

- A. Construction requirements shall comply with the ALDOT Specifications for the materials indicated, including in part, applicable portions of Section 825, Type B and ALDOT Section 301; compacted in accordance with the recommendations made in the geotechnical investigation.

3.5 COMPACTION EQUIPMENT

- A. Compaction equipment shall be self-propelled, capable of compacting the mixture throughout the depth of the layer while it is still in a workable condition without damage to the material.
 - 1. Self-propelled rollers shall have a minimum weight of 10 tons.

3.6 PAVEMENT PATCH

- A. Saw cut perimeter of existing paving to a neat straight line where removal is indicated and/or required.
 - 1. Protect edges of paving and base exposed to prevent cracking, breaking-up, wash-out, erosion, and/or other damage; apply prime coat as specified and at all such vertical edges prior to placing new pavement.
- B. Patch pavement with components stated in Paragraph 1.2-B above, in compliance with each component's specified requirements, and as per details and sections on Drawings, if any.

END OF HOT-MIXED ASPHALT PAVING

**SECTION 32 1313
CONCRETE PAVING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - .. Section 31 2000 - "Earth Moving"
 - .. Section 03 3100 - "Concrete"
 - .. Section 07 9000 - "Joint Sealers"

1.2 DESCRIPTION OF WORK:

- A. Extent of portland cement concrete paving is shown on drawings, including exterior walks, paving, entry pads, dumpster pads, and mechanical equipment pads.

1.3 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with "Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction," latest edition, and local governing regulations if more stringent than herein specified.
- B. Testing: All laboratory and field testing required to ensure compliance with these specifications will be performed by a qualified independent testing laboratory. Refer to Section 01 0150 - "Special Conditions", for additional information and requirements.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Forms:
 - 1. Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
 - 2. Use flexible spring steel forms or laminated boards to form radius bends as required.
 - 3. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.

- B. Welded Wire Mesh:
 - 1. Welded plain cold-drawn steel wire fabric, ASTM A 185.
 - a. Size: 6" x 6" #6#6, unless indicated otherwise.
 - 2. Furnish in flat sheets, not rolls, unless otherwise acceptable to Engineer, for all concrete paving subject to possibility of bearing the weight of vehicular traffic.
 - 3. Furnish in rolls for all concrete paving accessible only to pedestrian traffic, unless indicated otherwise on structural drawings.
 - 4. Locations for Use: All concrete pads and paving, at 1/3 of total depth of concrete from top of slab.
- C. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 40 or 60.
- D. Concrete Materials: Comply with requirements of Section 03 3100 - "Concrete", for concrete materials, admixtures, bonding materials, and other materials as required.
- E. Expansion Joint Materials: Comply with requirements of Section 07 9000 - "Joint Sealers" for preformed and pourable expansion joint fillers and sealers.
- F. Curing and Sealing Compound: Conform to TT-C-800, with 30% solids content minimum.

2.2 CONCRETE MIX, DESIGN AND TESTING:

- A. Comply with requirements of Section 03 3100 - "Concrete", for concrete mix design, sampling and testing, and quality control, and as herein specified.
- B. Design mix to produce normal-weight concrete consisting of portland cement, aggregate, water-reducing or high-range water-reducing admixture (super-plasticizer), air-entraining admixture and water to produce the following properties:
 - 1. Sidewalks, curbs and gutters, entry pads, and mechanical equipment pads subject only to pedestrian traffic:
 - a. Compressive Strength: 3,000 psi, minimum at 28 days.
 - b. Maximum Slump: 4".
 - c. Air Content: 4%. to 6%
 - d. Thickness: 4", unless indicated otherwise.
 - e. Compacted Subgrade: 4" crushed aggregate base on compacted subgrade (98% S.P.D.).
 - 2. Paving and pads subject to vehicular traffic, valley gutters, dumpster pads, and where indicated:

- a. Compressive Strength: 4,000 psi, minimum at 28 days (minimum 650 psi flexural strength) in accordance with ALDOT Section 450 – "Portland Cement Concrete Pavement", of the Alabama Department of Transportation, Standard Specifications for Highway Construction, most current edition.
- b. Slump: Less than 4".
- c. Air Content: 4-6%
- d. Thickness: 6", unless greater thickness is indicated on the Drawings.
- e. Subgrade: Unless otherwise indicated on the Drawings, 6" dense graded aggregate base, ALDOT Section 825, Type B (98% M.P.D.), installed in accordance with construction requirements for the materials indicated, including in part, applicable portions of Section 825 and Section 301.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION:

- A. Remove loose material from compacted subbase surface immediately before placing concrete.
- B. Proof-roll prepared subbase surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- C. Subgrade shall be approved by the Owner's Geotechnical Engineer before paving begins.

3.2 FORM CONSTRUCTION:

- A. Set forms to required grades and lines, rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork for grade and alignment to following tolerances:
 1. Top of forms not more than 1/8" in 10'.
 2. Vertical face on longitudinal axis, not more than 1/4" in 10'.
- C. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

3.3 REINFORCEMENT:

- A. Locate, place and support reinforcement as specified in Section 03 3100 – "Concrete", unless otherwise indicated. Install welded wire fabric in as long lengths as practicable, lapping at least on mesh.

3.4 CONCRETE PLACEMENT:

- A. Comply with requirements of Section 03 3100 - "Concrete", for mixing and placing concrete, and as herein specified.
- B. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase, if required, to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- C. Place concrete using methods which prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with core to prevent dislocation of reinforcing, dowels, and joint devices.
 - 1. Deposit and spread concrete in a continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2-hour, place a construction joint.

3.5 JOINTS:

- A. General: Construct expansion, weakened-plane (contraction), and construction joints true-to-line with face perpendicular to surface of concrete. Construct transverse joints at right angles to the centerline, unless otherwise indicated.
- B. Weakened-Plane (Contraction) Joints:
 - 1. Provide weakened-plane (contraction) joints, sectioning concrete into areas as shown on drawings. Construct weakened-plane joints for a depth equal to at least 1/4 concrete thickness, as follows below.
 - 2. Tooled Joints: Form weakened-plane joints in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a jointer.
 - 3. Sidewalks shall be scored at 5-foot intervals unless otherwise indicated.
- C. Construction Joints: Place construction joints at end of placements and at locations where placement operations are stopped for a period of more than 1/2-hour, except where such placements terminate at expansion joints.
- D. Expansion Joints:
 - 1. Provide expansion joints with premolded joint filler at locations abutting concrete curbs, catch basins, manholes, inlets, structures, walks and other fixed objects, unless otherwise indicated.
 - 2. Extend joint fillers full-width and depth of joint.
 - 3. Furnish joint fillers in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.

4. Expansion joints for sidewalks shall be placed at 30-foot maximum intervals and along all intersections with other walks, steps, curbs, or other vertical surfaces.
- E. Fillers and Sealants: Comply with the requirements of Section 07 9000 - "Joint Sealers", for preparation of joints, materials, installation and performance.

3.6 CONCRETE FINISHING:

- A. After striking-off and consolidating concrete, smooth surface by screeding and floating. Using hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
- B. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.
- C. Work edges of slabs and formed joints with an edging tool, and round to 1/4" radius, unless otherwise indicated. Eliminate tool marks on concrete surface.
- D. After completion of floating and troweling, when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
 1. Light and smooth broom finish, by drawing a fine-hair broom across concrete surface, perpendicular to line of traffic. Repeat operation as required to provide a fine line texture acceptable to Architect.
- E. On inclined slab surfaces, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
- F. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Architect.
 1. Provide rubbed finish for exposed edges of concrete work, and apply light and smooth broom finish.

3.7 CURING:

- A. Protect and cure finished concrete paving, complying with applicable requirements of Section 03 3100 - "Concrete". Use curing and sealing compound or approved moist-curing methods.
- B. Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protections as required to prevent damage to exposed concrete surfaces.

3.8 REPAIRS AND PROTECTIONS:

- A. Repair or replace broken or defective concrete, as directed by Architect.
- B. Drill test cores where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy resin grout.
- C. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
 - 1. Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

END OF SECTION

**SECTION 32 1613
CURBS AND GUTTERS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division I Specification Sections, apply to this section.
- B. Related work specified elsewhere includes:
 - .. Section 31 2000 - "Earth Moving"
 - .. Section 32 1313 - "Concrete Paving"
 - .. Section 03 3100 - "Concrete"
 - .. Section 07 9000 - "Joint Sealers"

1.2 DESCRIPTION OF WORK

- A. Work described in this section includes the construction of new concrete curbs and gutters, and/or straight curbs where indicated, and patching between any existing paving and new curb and gutters, sidewalks, etc., to match existing pavement.
- B. Refer to Drawings and Owner's Subsurface Investigation Report, for additional information and base requirements.
- C. Refer to Section 31 2000 - "Earth Moving" for subgrade requirements below and beyond curbs and gutters.
- D. Refer to Section 32 1313 - "Concrete Paving", for valley gutters, turn-outs, and paving.

1.3 QUALITY CONTROL

- A. Certifications: The Contractor shall submit to the Architect copies of certificates from suppliers of ready-mix concrete, reinforcing steel, curing material, joint fillers, and other manufactured items, certifying that these products comply with the specifications and standards listed hereinafter.
- B. Standard Specifications: Unless otherwise noted, all specifications referred to shall be the Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction, latest edition.
- C. Testing: All laboratory and field testing as required to ensure compliance with these specifications shall be performed by a qualified independent testing laboratory. Refer to Section 01 0150 - "Special Conditions", for additional information.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete shall be Class “A”, Type 4 (3,000 psi), in accordance with Section 501, “Structural Portland Cement Concrete”, of the Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction, latest edition. A modified mix shall be used if optional machine laid curb and gutter is constructed.
- B. Reinforcing steel, where called for on the drawings, shall meet the requirements of Section 502, “Steel Reinforcement”.
- C. Curing material shall be either burlap cloth, waterproof paper, polyethylene sheeting, or impervious membrane specified in ALDOT Articles 830.01 and 830.02.
- D. Joint filler and sealer for expansion and construction joints shall meet the appropriate requirements of ALDOT Section 832, and Section 07900 - “Joint Sealers” herein.
- E. Asphalt for repairs shall comply with referenced ALDOT Specifications, and city requirements, and shall match existing pavement at location(s) requiring patching.

PART 3 - EXECUTION

3.1 CURBS AND GUTTERS

- A. Comply with requirements of Section 32 1313 - “Concrete Paving,” Section 03 3100 - “Concrete,” and the following:
 - 1. Construction requirements, including foundation, forms, sections, joints, placing and finishing concrete, curing and protection, and backfilling shall be as specified in Article 623.03. Curbs and gutters shall match the profile of existing adjoining curb and gutter, if any, and otherwise as detailed.
 - 2. Curb and gutter shall be constructed in sections having a maximum length of 10-feet. Transverse expansion joints with filler and joint sealer shall be installed at all curb returns and in curb and gutter at intervals not exceeding 40-feet. Similar joints shall be installed behind the curb where sidewalks adjoin the curb and gutter, and at all fixed objects which adjoin or extend through the curb and gutter.
 - 3. Care shall be exercised that “tilt-out” curb and gutter is installed where pavement slopes away from the curb, and that 10-foot long transition sections are used where required to transition between “standard” and “tilt-out” curb and gutter.

3.2 REPAIRS AND PROTECTIONS

- A. Repair or replace broken or defective concrete, as directed by Architect.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14-days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
 - 1. Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

END OF CONCRETE CURBS AND GUTTERS

SECTION 32 1723

PAVEMENT MARKING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work described in this section includes marking of graphic symbols, lane separations, parking stripes, and lettering on concrete and asphalt pavements, if any, at locations indicated and as shown on the Drawings.
- B. Related work specified elsewhere includes:
 - .. Section 32 1216 - "Asphalt Paving"
 - .. Section 32 1313 - "Concrete Paving"

1.2 QUALITY CONTROL

- A. Certifications: The Contractor shall submit to the Architect copies of certificates from suppliers of materials, certifying that these products comply with specifications and standards listed hereinafter.
- B. Standard Specifications: Unless otherwise noted, all specifications referred to shall be Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction, most current edition.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Paint for pavement marking shall be, traffic marking paint complying with Section 856, of the ALDOT specifications, and as follows:
 - 1. Class 1, Type A (reflective) in public Right-of-Ways.
 - 2. Class 1, Type B (non-reflective) within property lines of this project's site, 2 coats.

PART 3 - EXECUTION

3.1 PAVEMENT MARKING:

- A. Each individual painted parking stripe shall be 4-inches wide, and shall be laid out as indicated on the drawings. Construction requirements shall conform to the applicable parts of Article 701.03 of the ALDOT Specifications for Class 1, Type as specified, traffic stripe.
 - 1. Color shall be white for asphalt, yellow for concrete pavement, and international blue for striping and graphics for parking spaces for people with disabilities.

2. Use same materials and construction methods for any arrows and symbols indicated on paved areas.
3. Mark paving at each space for the people with disabilities with acceptable international graphics symbol, unless otherwise indicated, approximately 4' x 4' in size. Locate centered in space width and approximately 2'-0" from end of space where vehicle enters.

END OF PAVEMENT MARKING

SECTION 33 4001

STORM DRAINAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - .. Section 31 2000 - "Earthmoving"
 - .. Section 03 3000 - "Cast-In-Place Concrete"

1.2 DESCRIPTION OF WORK:

- A. Work described in this section includes the construction of new storm drainage pipe and structures as shown on the Drawings

1.3 QUALITY CONTROL:

- A. Certifications: The Contractor shall submit to the Architect copies of certificates from suppliers of pipe, gaskets, reinforcing steel, cast iron downspout boots, cast iron frames, covers and grates, ready-mix concrete and other manufactured items, certifying that these products comply with the specifications and standards listed hereinafter.
- B. Standard Specifications: Unless otherwise noted, all specifications referred to shall be the Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction, 2014 Edition or most current edition.
- C. Testing: All laboratory and field testing as required to ensure compliance with these specifications will be performed by an independent testing laboratory.
- D. Comply with requirements of the International Plumbing Code, the American Concrete Pipe Association, and authorities having jurisdiction, when more stringent than specified or otherwise indicated

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Where indicated, pipe smaller than 12-inches in diameter shall be Schedule 80 PVC, Contech A2000 PVC (or approved equal), or ADS N-12 HP HDPE, unless otherwise indicated on the drawings.
 - 1. Where indicated on the Drawings for "french drain" or "perforated underdrain", pipe shall be equivalent to ADS N-12 (perforated) corrugated HDPE pipe with smooth

interior or perforated Contech A2000 PVC, complete with filter fabric “sock” and all required or necessary system accessories, fittings, and components, as specified in Article 853.13.

- B. Pipe larger than 12-inches (or equivalent area in arch pipe) shall be Class 3, minimum reinforced concrete pipe (RCP) as specified in Article 850, or as indicated on the Drawings.
- C. Concrete and reinforcing steel for headwalls, inlets, manholes, and other storm drainage structures shall comply with Alabama Department of Transportation Specification Section 501, and Section 502. Concrete shall be Class “A”, Type 2 (3,000 psi).
- D. Masonry materials and precast concrete units shall conform to Article 621.02.
- E. Castings for frames, covers and grates in drainage structures shall comply with ALDOT Section 836, with particular attention directed to ALDOT Article 836.04, 836.05, 836.06, and 836.07.
 - 1. All manhole covers shall be round.
- F. Identification for Underground Plastic Pipe:
 - 1. Plastic Underground Warning Tapes: Polyethylene plastic tape with metallic core, 6 inches wide by 4 mils thick, solid yellow in color with continuously printed caption in black letters “CAUTION – STORM SEWER LINE BURIED BELOW.”
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allen Systems, Inc.; Reef Industries, Inc.
 - b. Brady (W.H.) Co.; Signmark Div.
 - c. Calpico, Inc.
 - d. Carlton Industries, Inc.
 - e. EMED Co., Inc.
 - f. Seton Name Plate Co.

PART 3 - EXECUTION

3.1 STORM DRAIN PIPE:

- A. Construction requirements, including excavation of trench, placing pipe, and backfilling around pipe shall conform to the applicable portions of Article 530.03 of the Alabama Department of Transportation specifications.
- B. Bedding for storm pipe shall be as shown on the Drawings and as per the pipe manufacturer’s requirements, Type 3 or better installation. Open graded stone, such as #57 stone, is not allowed as backfill.
- C. Compaction requirements for backfill shall be the same as specified for type of surface constructed over the trench, paved or planted areas as described in Section 31 2000 - “Earthmoving.”

- D. Properly coordinate with elevations of grades, footings, other below grade work, and etc.

3.2 INSTALLATION OF IDENTIFICATION:

- A. Install continuous plastic underground warning tape during back-filling of trench for underground water service piping. Locate 6 to 8 inches below finished grade, directly over piping.

3.3 STRUCTURES:

- A. Inlets, manholes, cleanouts and other storm drainage structures shall be installed or constructed in accordance with applicable portions of the following sections of the Alabama Highway Department Standard Specifications:
 - 1. Section 501 - Structural Portland Cement Concrete.
 - 2. Section 502 - Steel Reinforcement.
 - 3. Section 613 - Brick and Concrete Block Masonry.
 - 4. Section 620 - Minor Structure Concrete.
 - 5. Section 621 - Inlets, Junction Boxes, Manholes and Miscellaneous Drainage Structures.
 - 6. Section 622 - Resetting Gratings and Covers and for Catch Basins, Inlets, and Manholes.

END OF STORM DRAINAGE