LATHAN · McKEE
ARCHITECTS

Project Manual

Volume 1

ACADEMY STREET
CAREER INNOVATION ACADEMY

for the

Pike County Board of Education

Troy, Alabama

October 9, 2026

Lathan McKee Project No: MKA25-249

Alabama Division of Construction Management No. TBD

STATE OF ALABAMA
WALTER T. McKEE, JR.
No. 1082
MONTGOMERY, ALA.
REGISTERED ARCHITECT

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ADVERTISEMENT FOR BIDS

ACADEMY STREET
CAREER INNOVATION ACADEMY
FOR PIKE COUNTY SCHOOLS
TROY, ALABAMA

MCKEE PROJECT NO. 25-249

Requirements for Bidding: The Pike County Board of Education shall accept proposals only from Contractors who have successfully completed at least 3 similar projects on time for satisfied State, County or City Governmental Agencies. The lowest bidding Contractor shall submit to the Architect within 24 hours after submitting their bid proposal a listing of projects, construction cost, Owner's address, and telephone numbers.

Sealed proposals for this project shall be received by Dr. Mark Bazzell, Superintendent, at the Pike County Board of Education, 101 West Love Street, Troy, AL 36081, **until 2:00 PM, Thursday, October 29, 2026. *Note: Base bids will be received until 2:00 PM and Alternates will be received until 3:00 PM**, after which time sealed proposals will be opened and read aloud.

All General Contractors bidding on this project shall be required to visit the site and examine all existing conditions prior to submitting their proposal. **A Mandatory Pre-Bid Conference** will be held on **Wednesday, October 21, 2026,** at **10:00 AM Central Time** at 720 East Academy Street, Troy, AL**.** Contact Jeremy Knox 334-804-3638 if needed.

All Bidders shall have general liability and workman's compensation insurance. The project shall be bid excluding taxes. Bids must be submitted on proposal forms furnished by the Architect or copies thereof. No bid may be withdrawn after the scheduled closing for receipt of bids for a period of ninety (90) days. The Owner reserves the right to reject any or all proposals and to waive technical errors if, in the Owners judgment, the best interests of the Owner will thereby be promoted.

A certified check or Bid Bond payable to **Pike County Schools** in an amount not less than five percent (5%) of the amount of the bid, but in no event more than $10,000.00 must accompany the bidder's sealed proposal. Performance and statutory labor and material payment bonds will be required at the signing of the Contract.

All bidders bidding in amounts exceeding that established by the State Licensing Board for General Contractors must be licensed under the provisions of Title 34, Chapter 8, Code of Alabama, 1975 and must show evidence of license before bidding or bid will not be received or considered by the Architect. All bidders shall show such evidence by clearly displaying current license number on the outside of sealed envelope in which the proposal is delivered.

PDFs of the project can be reviewed by going to the Lathan McKee website at www.lathanmckee.com and under "Project Bid List" selecting "Montgomery". The documents may be viewed on-line and printed by General Contractors, Sub-Contractors and Suppliers. Documents published through this procedure are the only documents endorsed by the Architect. The Architect is unable to monitor, confirm and maintain other

websites that provide documents. Notices of Addenda being posted will be provided to entities that have *CONFIRMED* bidding for this particular project. The Architect retains ownership and copyrights of the documents. If bidders require printed sets, please submit request to the Architect at mckeeplans@gmail.com. Include your first & last name, company name, address, phone number and the project name and number. Print sets are to be returned in reusable condition within ten days after bid opening.

All RFIs and RFAs regarding the bid documents shall be sent and addressed through emails found on the RFI and RFA forms in the project manual. **NOTE: ONLY THE RFI AND RFA FORMS IN THE PROJECT MANUAL WILL BE ACCEPTED.** The Architect will not accept inquiries via telephone or fax.

Completion Time: See scope of work in Project Manual.

Supervision: Contractor to ensure proper supervision for all work.

Owner: Dr. Mark Bazzell, Superintendent, at the Pike County Board of Education, 101 West Love Street, Troy, AL 36081, Phone: 334-566-1850

Architect: Lathan McKee Architects, 3500 Eastern Blvd., Suite 300, Montgomery, Alabama 36116, Phone: 334-834-9933

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1. BID DOCUMENTS:

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

2. GENERAL CONTRACTOR'S STATE LICENSING REQUIREMENTS:

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

3. QUALIFICATIONS of BIDDERS and PREQUALIFICATION PROCEDURES:

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

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

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

4. PREFERENCE to RESIDENT CONTRACTORS:
(If this project is federally funded in whole or in part, this Article shall not apply.)

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

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

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

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

6. EXPLANATIONS and INTERPRETATIONS:

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

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

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

7. SUBSTITUTIONS:

a. The identification of any product, material, system, item of equipment, or service in the Bid Documents by reference to a trade name, manufacturer's name, model number, etc. (hereinafter referred to as "source"), is intended to establish a required standard of performance, design, and quality and is not intended to limit competition unless the provisions of paragraph "d" below apply.

b. When the Bid Documents identify only one or two sources, or three or more sources followed by "or approved equal" or similar wording, the bidder's proposal may be based on a source not identified but considered by the bidder to be equal to the standard of performance, design and quality as specified; however, such substitutions must ultimately be approved by the Architect. If the bidder elects to bid on a substitution without "Pre-bid Approval" as described below, then it will be understood that proof of compliance with specified requirements is the exclusive responsibility of the bidder.

c. When the Bid Documents identify three or more sources and the list of sources is not followed by "or approved equal" or similar wording, the bidder's proposal shall be based upon one of the identified sources, unless the bidder obtains "Pre-bid Approval" of another source as described below. Under these conditions it will be expressly understood that no product, material, system, item of equipment, or service that is not identified in the Bid Documents or granted "Pre-Bid Approval" will be incorporated into the Work unless such substitution is authorized and agreed upon through a Contract Change Order.

d. If the Bid Documents identify only one source and expressly provide that it is an approved sole source for the product, material, system, item of equipment, or service, the bidder's proposal must be based upon the identified sole source.

e. Procedures for "Pre-bid Approval". If it is desired that a product, material, system, piece of equipment, or service from a source different from those sources identified in the Bid Documents be approved as an acceptable source, application for the approval of such source must reach the hands of the Architect at least ten days prior to the date set for the opening of bids. At the Architect's discretion, this ten day provision may be waived. The application for approval of a proposed source must be accompanied by technical data which the applicant desires to submit in support of the application. The Architect will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed source with previous users, evidence of reputation of the source for prompt delivery, evidence of reputation of the source for efficiency in servicing its products, or any other pertinent written information. The application to the Architect for approval of a proposed source must be accompanied by a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Bid Documents. The burden of proof of the merit of the proposed substitution is upon the proposer. To be approved, a proposed source must also meet or exceed all express requirements of the Bid Documents. Approval, if granted, shall not be effective until published by the Architect in an addendum to the Bid Documents.

8. PREPARATION and DELIVERY of BIDS:

a. DCM Form C-3: Proposal Form:

(1) Bids must be submitted on the Proposal Form as contained in the Bid Documents; only one copy is required to be submitted. A completed DCM Form C-3A: Accounting of Sales Tax must be submitted with the Proposal Form.

(2) All information requested of the bidder on the Proposal Form must be filled in. The form must be completed by typewriter or hand-printed in ink.

(3) Identification of Bidder: On the first page of the Proposal Form the bidder must be fully identified by completing the spaces provided for:

- **(a)** the legal name of the bidder,
- **(b)** the state under which laws the bidder's business is organized and existing,
- **(c)** the city (and state) in which the bidder has its principal offices,
- **(d)** the bidder's business organization, i.e., corporation, partnership, or individual (to be indicated by marking the applicable box and writing in the type of organization if it is not one of those listed), and
- **(e)** the partners or officers of the bidder's organization, if the bidder is other than an individual. If the space provided on the Proposal Form is not adequate for this listing, the bidder may insert "See Attachment" in this space and provide the listing on an attachment to the Proposal Form.

(4) Where indicated by the format of the Proposal Form, the bidder must specify lump sum prices in both words and figures. In case of discrepancy between the prices shown in words and in figures, the words will govern.

(5) All bid items requested in the Proposal Form, including alternate bid prices and unit prices for separate items of the Work, must be bid. If a gross sum of bid items is requested in the Proposal Form, the gross sum shall be provided by the bidder.

(6) In the space provided in the Proposal Form under "Bidder's Alabama License", the bidder must insert his or her current general contractor's state license number, current bid limit, and type(s) of work for which bidder is licensed.

(7) The Proposal Form shall be properly signed by the bidder. If the bidder is:

- **(a)** **an individual**, that individual or his or her "authorized representative" must sign the Proposal Form;
- **(b)** **a partnership,** the Proposal Form must be signed by one of the partners or an "authorized representative" of the Partnership;
- **(c)** **a corporation,** the president, vice-president, secretary, or "authorized representative" of the corporation shall sign and affix the corporate seal to the Proposal Form.

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

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

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

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

c. Bid Guaranty

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

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

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

d. Delivery of Bids:

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

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

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

9. WITHDRAWAL or REVISION of BIDS:

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

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

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

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

10. OPENING of BIDS:

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

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

11. INCOMPLETE and IRREGULAR BIDS:

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

12. BID ERRORS:

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

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

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

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

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

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

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

13. DISQUALIFICATION of BIDDERS:

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

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

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

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

14. CONSIDERATION of BIDS:

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

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

15. DETERMINATION of LOW BIDDER by USE of ALTERNATES:

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

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

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

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

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

16. UNIT PRICES:

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

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

17. AWARD of CONTRACT:

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

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

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

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

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

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

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

END of INSTRUCTIONS TO BIDDERS

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REQUEST FOR INFORMATION (RFI)

Email this form in its entirety to Project Manager listed below.
The Architect reserves the right not to answer any Request For Information received after **2:00 p.m., Two (2) days prior to the bid date**.

To: McKee & Associates, Architects

Lisa Bowen, Project Manager
lbowen@lathanmckee.com
Email

Project: _____

Request For Information Number: _____

From: _____
Name

_____
Company

_____
Email

Project Number: _____

Issue Date: _____

☐ BID PHASE ☐ CONSTRUCTION PHASE

Procedures for "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 or can be accessed by going to the McKee web site - mckeeassoc.com and clicking on the tab "Files" to retrieve the Addendums.** Neither the Architect nor the Owner 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.**

REQUEST FOR INFORMATION DESCRIPTION: *(Fully describe the question or type of information requested.)*

REFERENCES/ATTACHEMENTS: *(List specific documents researched when seeking the information requested.)*

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Drawing Sheet Number: _____ Title: _____

Plan: _____ Elevation: _____ Section: _____ Detail: _____

Other:

RECEIVERS REPLY:

Signed by:_____ Date:_____ Copies to:_____

REQUEST FOR APPROVAL (RFA)
PRIOR APPROVAL/SUBSTITUTION REQUEST

Email this form in its entirety to Project Manager listed below.
All products, materials, systems, equipment and services requested for prior approval must be submitted to the architect for approval **no later than 2:00 p.m., Ten (10) days prior to the bid date**.

To: McKee & Associates, Architects

Lisa Bowen

lbowen@lathanmckee.com
Email

Substitution Request Number: _____

From: _____

Date: _____

Project: _____

A/E Project Number: _____

Re: _____

Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Procedures for "Substitutions" and "Pre-Bid Approval":

a. The identification of any product, material, system, item of equipment, or service in the Bid Documents by reference to a trade name, manufacturer's name, model number, etc. (hereinafter referred to as "source"), is intended to establish a required standard of performance, design, and quality and is not intended to limit competition unless the provisions of paragraph "D" below apply.

b. When the Bid Documents identify only one or two sources, or three or more sources followed by "or approved equal" or similar wording, the bidder's proposal may be based on a source not identified but considered by the bidder to be equal to the standard of performance, design and quality as specified; however, such substitutions must ultimately be approved by the Architect. If the bidder elects to bid on a substitution without "Pre-bid Approval" as described below, then it will be understood that proof of compliance with specified requirements is the exclusive responsibility of the bidder.

c. When the Bid Documents identify three or more sources and the list of sources is not followed by "or approved equal" or similar wording, the bidder's proposal shall be based upon one of the identified sources, unless the bidder obtains "Pre-bid Approval" of another source as described below. Under these conditions it will be expressly understood that no product, material, system, item of equipment, or service that is not identified in the Bid Documents or granted "Pre-Bid Approval" will be incorporated into the Work unless such substitution is authorized and agreed upon through a Contract Change Order.

d. If the Bid Documents identify only one source and expressly provide that it is an approved sole source for the product, material, system, item of equipment, or service, the bidder's proposal must be based upon the identified sole source.

e. **Procedures for "Pre-Bid Approval".** If it is desired that a product, material, system, piece of equipment, or service from a source different from those sources identified in the Bid Documents be approved as an acceptable source, application for the approval of such source must reach the hands of the Architect **at least ten days prior to the date set for the opening of bids**. At the Architect's discretion, this ten day provision may be waived. **The application for approval of a proposed source must be accompanied by technical data which the applicant desires to submit in support of the application.** The Architect will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed source with previous users, evidence of reputation of the source for prompt delivery, evidence of reputation of the source for efficiency in servicing its products, or any other pertinent written information. **The application to the Architect for approval of a proposed source must be accompanied by a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Bid Documents.**

The burden of proof of the merit of the proposed substitution is upon the proposer. To be approved, a proposed source must also meet or exceed all express requirements of the Bid Documents. Approval, if granted, shall not be effective until published by the Architect in an addendum to the Bid Documents.

The undersigned requests consideration of the following product substitution:

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Supporting Data Attached: ☐ Product Description ☐ Drawings ☐ Photographs ☐ Performance & Test Data ☐ Specifications

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 states and certifies the following: (Mark Boxes as Applicable)

☐ Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.

or

☐ Proposed substitution differs from what is specified in the Bid Documents. Submitted Data clearly identifies all differences from what is specified in the Bid Documents.

☐ No changes will be required to the Contract Documents for the proper installation of the proposed product substitution.

or

☐ Changes will be required to the Contract Documents for the proper installation of the proposed product substitution. Submitted Data clearly identifies description of changes.

and

☐ Warranty will be furnished for proposed substitution ☐ Equal to or ☐ Superior to specified product.

☐ Proposed substitution does not affect dimensions shown on the drawings and functional clearances.

☐ No changes will be required to the building design, engineering design or detailing by the proposed substitution.

☐ Proposed substitution will have no adverse effect on other trades and will not affect or delay construction progress schedule.

☐ No maintenance is required by the proposed substitution other than that required for originally specified product.

☐ Other Information:

The undersigned further states that they have read the corresponding specification sections in the project manual and confirms that the function, appearance and quality of the proposed substitution are equivalent to or superior to the originally specified product.

Submitted by: (Print) Signature: Date:

Firm: Address:

Email: Telephone:

A/E REVIEW AND ACTION

☐ Substitution Approved ☐ Substitution Approved as noted ☐ Substitution Rejected

☐ Substitution Request Received to Late

Comments:

Signed by: Date:

PROPOSAL FORM

To: _____ Date: _____
(Awarding Authority)

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

_____
(Legal Name of Bidder)

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

_____

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

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

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

_____

_____

_____

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

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

BASE BID: For construction complete as shown and specified, the sum of _____ _____ Dollars ($ _____)

ALTERNATES: If alternates as set forth in the Bid Documents are accepted, the following adjustments are to be made to the Base Bid:

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

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

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

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

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

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

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

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

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

☐ Bid Bond, executed by _____ as Surety,

☐ a cashier's check on the _____ Bank of _____,

for the sum of _____

Dollars ($ _____) made payable to the Awarding Authority.

BIDDER'S ALABAMA LICENSE:

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

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

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

Legal Name of Bidder _____

Mailing Address _____

* **By (Legal Signature)** _____

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

Telephone Number _____

Email Address _____

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

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

UNIT PRICE ITEM LEGEND

ACADEMY STREET
CAREER INNOVATION ACADEMY
for the
Pike County Board of Education
Troy, Alabama
Lathan McKee Project No: MKA25-249

Legal Name of Bidder _____

Mailing Address _____

The General Contractor shall include the Unit Prices below in their Base Bid Proposal. The quantities assigned below are above and beyond the amounts required to complete the work required by the bid documents. This Unit Price Item Legend shall be submitted with the sealed Proposal.

Note: The Geotechnical Report will be issued via addendum forthcoming during the bid process.

SCHEDULE OF UNIT PRICES:

UNIT PRICES: The Unit Prices below establish Unit Prices so that the Owner can delete/add quantities from the Contract(s) required.

UNIT PRICE #1:
The Contractor shall include in his Base Bid proposal the cost to remove approximately **100 CY** of stone encountered in trench/pit excavations including the cost to install suitable compacted fill material in same quantity.
100 CY @_____ per CY = **$**_____ **Included in Base Bid**

UNIT PRICE #2:
The Contractor shall include in his Base Bid proposal the cost to remove approximately **250 CY** of stone encountered in open excavations including the cost to install suitable compacted fill material in same quantity.
250 cy @_____ per CY = **$**_____ **Included in Base Bid**

UNIT PRICE #3:
The Contractor shall include in his Base Bid proposal the cost to remove approximately **250 CY** of unsuitable soils. Remove and dispose of unsuitable earth, including earth not needed or not suitable for reuse, encountered in open excavations including the cost to install suitable compacted fill material in same quantity.
250 cy @_____ per CY = **$**_____ **Included in Base Bid**

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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) $_____

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.

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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

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SPECIAL INSTRUCTIONS TO BIDDERS

1.1 INTENT OF INSTRUCTIONS

A. The Special Instructions to Bidders are intended to amplify the abbreviated Advertisement and to give other details which shall allow interested parties to prepare bids which accurately reflect the scope of the Work. The Special Instructions to Bidders are meant to be viewed as a complement to the general Instructions to Bidders found in the Project Manual. Should any discrepancy or ambiguity be noted, the Special Instructions to Bidders shall defer to the general Instructions to Bidders.

1.2 EXPLANATION AND INTERPRETATION

A. Should any Bidder or subcontractor find any ambiguity, discrepancy, omission, or error in the Drawings and Project Manual, or insufficient information to provide a complete job, or be in doubt as to the intent and meaning thereof, he should at once report such in writing to Architect and request clarification prior to bidding

B. Clarification shall be made only by written Addenda during the bid period and sent to all perspective Bidders. The Architect and Consultants shall not be responsible for verbal answers regarding intent or meaning of the Contract Documents, or for any verbal instructions, by whomsoever made, prior to the award of the Contract.

C. Additionally, all designed systems and/or assemblies are to be proposed and bid as complete assemblies or operational systems. Drawings are indicating intent and not attempting to fully obtain or detail required work.

1.3 BIDDER REQUIREMENTS

A. All Bidders must honor their bid proposals for a period of 90 calendar days from date of bid opening.

B. The Contractor MUST Field Verify all existing conditions prior to submitting bid proposal.

C. The **Apparent Low Bidder *AND* Apparent Second Lowest Bidder** must submit to the **Architect a direct Contact Name, Phone Number and Email Address for the Bonding Company and a list of the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work.** The list of Subcontractors, Suppliers and Fabricators must be received by the Architect within **24 hours following the Bid Opening** (email to: **rawlinsonk@mckeeassoc.com**). Once the successful bidder has obtained approval from the Owner, no changes in Subcontractors, Suppliers or Fabricators shall be made without the express, written consent of the Owner. Contractor shall request consent in writing from the Owner and Architect and provide specific and reasonable explanation as to the necessity of said change. Should said change be approved by the Owner, the Contractor must submit the desired replacement Subcontractor to the Architect and obtain written approval of the Subcontractor.

1.4 OPENING OF PROPOSALS

A. The Owner shall, according to applicable laws and regulations pertaining to bid openings, receive and review all Proposals submitted, according to the method selected below:

1. Proposals shall be opened and read publicly at the time and place indicated in the Advertisement.

2. Proposals may be rejected if they contain any omissions, alterations of forms, additions not called for, conditional bids, alternate bids unless called for, incomplete bids, erasures, or irregularities of any kind. Proposals in which the unit or lump sum prices bid are obviously unbalanced may be rejected. Additions to or deductions from the Bid amount may be written on the outside of the sealed bid, or by letter enclosed in the sealed bid envelope.

1.5 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 additional funds become available after the bid opening, the Owner may at his option elect to award to the lowest base bid bidder a contract based on the Contractors base bid amount and additional Alternates.**

D. 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.

E. 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.

F. 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.

1.6 AWARD OF CONTRACT

A. The Bidder to whom the award is made shall be notified by letter to the address shown on his Proposal at the earliest possible date. At such time, at the option of the Owner, additional information such as a complete financial statement may be required from the successful Bidder.

1.7 EXECUTION OF CONTRACT

A. The Contract shall be signed by the successful Bidder, in the number of counterparts provided in the Contract Agreement and returned to the Owner with satisfactory Contract Bonds within ten (10) days after the date of Notice of Award.

1.8 PERFORMANCE BOND AND PAYMENT BOND

A. The intent of the Performance Bond is to ensure the faithful performance of each and every condition, stipulation, and requirements of the Contract and to indemnify and save harmless the Owner, Architect, and Consultants from any and all damages, either directly or indirectly (arising out of any failure to perform same). The successful Bidder to whom the Contract is awarded shall furnish at his expense an acceptable Performance Bond in an amount equal to one hundred percent (100%) of the Contract Price of the Contract as awarded. Said Bond shall be made on the approved Bond form, shall be furnished by a surety company duly authorized and qualified to make such bonds in the State of Alabama, shall be countersigned by an authorized agent resident in the State who is qualified for the execution of such instruments, and shall have attached thereto power of attorney of the signing official. In case of default on the part of the Contractor, all expenses incident to ascertaining and collecting losses suffered by the Owner under the Bond, the direct costs of administration, architectural, engineering, and legal services, shall lie against the Contract Bond for Performance of the Work.

B. In addition thereto, the successful Bidder to whom the Contract is awarded shall furnish at his expense a Payment Bond with good and sufficient surety payable to the Owner in an amount not less than one hundred percent (100%) of the Contract Price, with the obligation that the Contractor shall promptly make payment to all persons furnishing him or them with labor, material, feedstuffs, or supplies for or in prosecution of the Work provided for in the Contract and for the payment or reasonable attorneys' fees, incurred by successful claimants or plaintiffs in suits on said Bond.

1.9 APPROVAL OF CONTRACT

A. No Contract is binding upon the Owner until it has been executed by the Owner and the successful Bidder and copies delivered.

1.10 CAD FILES

A. McKee & Associates CAD Files shall not be provided. Should the contractor require CAD Files they are encouraged to seek online PDF to CAD File Conversion vendors and/or software.

1.11 LIST OF SUBCONTRACTORS

A. The **Apparent Low Bidder *AND* Apparent Second Lowest Bidder** must submit to the Architect **a direct Contact Name, Phone Number and Email Address for the Bonding Company and a list of the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work** must be received by the Architect within twenty-four hours following the Bid Opening. Email to **rawlinsonk@mckeeassoc.com.** Once the successful bidder has obtained approval from the Owner, no changes in Subcontractors, suppliers and fabricators shall be made without the express, written consent of the Owner.

1.12 LIST OF SUBCONTRACTORS SUBMITTAL FORM

Email this form in its entirety to contact listed below.

The **Apparent Low Bidder *AND* Apparent Second Lowest Bidder** must submit to the Architect **a direct Contact Name, Phone Number and Email Address for the Bonding Company and** the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work. The list of Subcontractors must be received by the Architect within twenty-four hours following the Bid Opening.

To: McKee & Associates, Architects

Kayla Rawlinson

rawlinsonk@mckeeassoc.com
Email

From: _____
Company

_____
Name

_____
Email

_____
Phone Number

Project Name: _____

Project Number: _____ Issue Date: _____

Bid Date: _____

Category of Work	Name of Sub to Perform Work	Name of Supplier
SURETY		

END OF SECTION

Checklist for Preparation and Approval of Construction Contracts and Bonds Submitted Electronically.

Use with DCM Forms C-5, C-6, & C-7 and DCM Forms 9-A, 9-B, & 9-C

CONSTRUCTION CONTRACT - DCM Form C-5 or DCM Form 9-A (PSCA Projects)

The numbers in the left column below correspond to numbers in the left margin of the Contract form. Construction Contracts must be activated by the Lead Design Professional Firm via DocuSign PowerForm links available from DCM's Engage Portal.

1. **PROJECT NUMBER(S):** DCM will insert the DCM Project Number in the field provided.
    - On DCM Form 9-A, insert the PSCA Project Number in the field provided.
2. **DATE:** Do not select a date beyond today's date.
3. **OWNER:** Insert the full, legal name, address, email, and telephone number of the Owner (Awarding Authority).
    - On DCM Form 9-A, insert the name, address, email, and telephone number of the Local Owner (city or county school board, college, university, etc.) after "Alabama Public School and College Authority"
4. **CONTRACTOR:** Insert the Contractor's company name, correct mailing address, email, and telephone number. For State Agency projects, the Contractor Company name and address must match the name and address registered in the State of Alabama Accounting and Resource System (STAARS) or AL Buys (if registered), used by most State Agencies to pay Vendors. The Contractor Company name and address must be consistent across all documents in the same contract package, in order to avoid Comptroller's Office rejection.
    - On DCM Form 9-A: The Contractor Company name and address must match the name and address registered in STAARS or AL Buys used by the State to pay Vendors. The Contractor Company name and address must be consistent across all documents in the same contract package, in order to avoid Comptroller's rejection.
5. **The WORK:** Insert the complete name of the Project; same as in the Bid Documents.
6. **CONTRACT DOCUMENTS**: Insert the date of the Bid Documents
7. **ADDENDA:** Identify, by number and date, all pre-bid Addenda that were issued to the Bid Documents. If none were issued, insert "None". All Addenda shall be submitted to DCM for review prior to contract issuance.
8. **ARCHITECT:** Insert the full, legal name, address, email, and telephone number of the Project Architectural or Engineering firm.
9. **CONTRACT SUM:** The Contract Sum is the total of the Contract's Base Bid and accepted Bid Alternate Prices, if any. Insert the Contract Sum in words and figures, verifying that this amount corresponds with the CERTIFIED TABULATION OF BIDS.
10. **BID ALTERNATE PRICES**: Identify which, if any, Bid Alternate Prices are accepted and included in the Contract Sum by inserting either (a) "No Alternate Prices Requested in Bid", (b) "No Alternate Prices Accepted", or (c) a listing of the accepted Alternates by number and dollar amount.
11. **The CONTRACT TIME:** State the Contract Time in words and in figures.
12. **LIQUIDATED DAMAGES:** If the Owner has computed a daily rate for liquidated damages, insert the amount in both words and figures in the spaces provided.
13. **PECIAL PROVISIONS:** This space may be used to incorporate Special Provisions into the Contract, such as unit prices, compliance with enacted provisions, and value engineering. If the solicitation for bids required Unit Prices, insert a statement of which Unit Prices, if any, are accepted and incorporated into the Contract. If more space is needed, Special Provisions may be stated on an attachment that is cited in the Special Provisions section.
    - DCM Form 9-A is published bearing Special Provision **"A. Severable Payments"**, which is where the portions of the Contract Sum to be paid by the PSCA and the Local Owner are to be stated. Obtain these amounts from Local Owner and insert them in the spaces provided. Other Special Provisions, such as disposition of Unit Prices, may be inserted below this provision.

14. **STATE GENERAL CONTRACTOR'S LICENSE:** Insert the Contractor's current state general contracting license number, bid limit, and classification in the spaces provided.
15. **SIGNATURES - APPROVING and CONTRACTING PARTIES:** It is the Activator/Form Filler's responsibility to add the names and email addresses of the Owner, Architect, and Contractor Recipients to the DocuSign PowerForm. Routing for e-signatures in sequential order then occurs automatically.

PERFORMANCE BOND, DCM Form C-6 or DCM Form 9-B (PSCA Projects), and PAYMENT BOND, DCM Form C-7 or DCM Form 9-C (PSCA Projects)

Required for contracts of $100,000.0 or more, with surety's power-of-attorney - required per Section 39-2-8 of the Code of Alabama.

1. **SURETY'S BOND NUMBER** should be inserted in the field provided.
2. **PRINCIPAL:** Contractor's name and address is to be the same as appears in the Construction Contract.
3. **SURETY:** The full, legal name and address of the bonding company.
4. **OWNER:** The Owner's name and address is to be the same as appears in the Construction Contract.
5. **PENAL SUM:** The Penal Sum of each Bond is to be the Contract Sum of the Construction Contract and is to be inserted in both words and figures.
6. The **Date** of the Construction Contract**:** The date that appears on the Construction Contract.
7. The **PROJECT:** The same name or description as appears in the Construction Contract.
8. **DATE:** After "SIGNED AND SEALED" is to appear the date upon which Surety signs the Bond. **THIS DATE CANNOT PRECEDE THE DATE OF THE CONSTRUCTION CONTRACT.**
9. **CONTRACTOR'S SIGNATURE:** The Contractor's name must appear beneath "CONTRACTOR", under which the signature of a member or officer of the firm must appear with the name and title of the signing party appearing beneath the signature.
10. **SURETY'S SIGNATURE:** The full, legal name of the bonding company must appear under "SURETY", under which the signature of an individual having power of attorney for the bonding company must appear with the individual's name and title appearing beneath the signature.
11. **ATTACHED POWER OF ATTORNEY:** Attached to each of the Bonds must be a Power of Attorney, signed by an officer of the bonding company, for the individual e-signing the bond on behalf of the bonding company. **The date of the Power of Attorney must not precede the date of the bond.**

ALABAMA VENDOR DISCLOSURE STATEMENT

This Statement is built into the DocuSign Construction Contract document stack and is required per Section 41-16-82 of the Code of Alabama.

ATTACHMENTS

The following documents must be attached to the Construction Contract:

- **Insurance Certificate** (attach copy): It is the responsibility of the design professional to ensure all insurance requirements are discussed with bidders prior to a bid and that Contractor has provided the requirements to their insurance provider. Contractor must obtain all insurance coverage specified in Article 37 of the General Conditions of the Contract - required per Section 39-2-8 of the Code of Alabama.
- **Surety's power-of-attorney: Required for Performance Bond**, which is required for contracts of $100,000.00 or more per Section 39-2-8 of the Code of Alabama.
- **Surety's power-of-attorney: Required for Payment Bond**, which is required for contracts of $100,000.00 or more per Section 39-2-8 of the Code of Alabama.

- Certified Tabulation of Bids (attach copy): Required for all projects including those with informal bids -required per Section 39-2-6 of the Code of Alabama.
- **DCM Form C-3: Proposal Form** (attach copy): If bid proposal was adjusted by notation on outside of envelope, also attach copy of outside of envelope including notation.
- **DCM Form C-3A: Accounting of Sales Tax** (attach copy): Attachment must be of the executed C-3A from the bid -required per Section 40-9-14.1 of the Code of Alabama.
- **E-Verify Memorandum of Understanding** (attach copy): Entire document required - required per Section 31-13-25(b) of the Code of Alabama.

DCM USER FEES:

- **PSCA-Funded Projects & Fully Locally-Funded State Agency Projects:** The Contract Document Administration Fee-CC and the Permit Fee must be paid by the time a Construction Contract for a PSCA-funded project or state agency/authority project is submitted to DCM for review, or when a fully locally-funded project Construction Contract is converted to PSCA. Contract reviews can begin once the fees have been paid.
- **Fully Locally-Funded K-12 Projects:** The Permit Fee must be paid by the time a copy of a fully locally-funded K-12 school project's executed Construction Contract is received at DCM's office from the State Department of Education (SDE). ***** See Permit Fee exception below.
- **General Information:**
  - Basic Contract Document Administration (CDA) Fee: This fee covers review of the Agreement Between Owner and Architect (O/A Agreement) and Construction Contract for state agency projects, and partially or fully PSCA-funded projects of K-12 public schools and universities and the related amendments, change orders, service invoices and pay requests. This fee does not apply to fully locally-funded K-12 public school projects or fully locally-funded university projects. The Basic CDA Fee covers review of the original submitted document and one revision. The total basic CDA fee is 1/3 of 1% of the total construction cost, due in two parts: 1/6.5 of 1% (.15%) of the Project Budget for administration of the O/ A Agreement. 1/6.5 of 1% (.15%) of the Construction Contract Amount for administration of the Construction Contract. The CDA Fee for a PSCA-funded O/A Agreement or Construction Contract is limited by the Project Construction Cost funded by PSCA.
  - Basic Permit Fee: This fee covers required project inspections. The Permit Fee must be paid before a construction contract is reviewed by DCM, or becomes due when a self-performance letter or fully locally-funded K-12 construction contract is received by DCM, and must be paid before a Pre-Construction Conference is scheduled with DCM Inspectors*

    Note: Although DCM does not review the construction contracts of fully locally-funded public K-12 projects, the Permit Fee must be paid before the required Pre-Construction Conference is scheduled with DCM Inspectors for such projects.*****

    ***** Exception: Permit Fees are not owed for fully locally-funded public K-12 projects with an estimated cost of $750,000.00 or Less for capital improvement or alterations, additions, repair, or maintenance of heating, ventilation, and air conditioning systems or any alterations, additions, repair, or maintenance of a roof; all such projects are still subject to DCM pre-construction conferences and inspections.

    Note: Determination of whether or not a project is in the $750,000.00 or Less classification for Permit Fees is based on the cost of the entire project including all phases and bid packages. If total of bids received for all phases and bid packages exceeds $750,000.00 for a fully locally-funded public K-12 project, then a Permit Fee is owed.
- **Fees May Be Paid** online at www.dcm.alabama.gov or paid with a physical check. Make check payable to: "Finance - Construction Management", include the DCM Project #, if assigned, on the check and attach the CDA Fees Calculation Worksheet and/or the Permit Fees Calculation Worksheet (also available on www.dcm.alabama.gov). Mail payment to: Finance - Construction Management, P.O. Box 301150, Montgomery, AL 36130-1150. For payments using Public School and College Authority (PSCA) funds and for state agency inter-fund transfers: contact Jennie Jones at 334-242-4808 or jennie.jones@rpm.alabama.gov.

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This form is provided solely for the purpose of inclusion in the project manual. A Construction Contract for fully locally-funded K-12 projects must be initiated via the appropriate DocuSign link from DCM's webpage https://dcm.alabama.gov/forms_publicK12.aspx by the Lead Design Professional Firm.

(1) **DCM (BC) Project No.**

CONSTRUCTION CONTRACT

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

(2) This Construction Contract is entered into this day of in the year of

(3) between the **OWNER,**
Entity Name:
Address:
Email & Phone #:

(4) and the **CONTRACTOR,**
Company Name:
Address:
Email & Phone #:

(5) for the **WORK** of the Project, identified as:

(6) The **CONTRACT DOCUMENTS** are dated and have been amended by
(7) **ADDENDA**

(8) The **ARCHITECT** is
Firm Name:
Address:
Email & Phone #:

(9) The **CONTRACT SUM** is
Dollars ($) and is the sum of the Contractor's Base Bid for the Work and the following
(10) **BID ALTERNATE PRICES:**

(11) The **CONTRACT TIME** is ( ) calendar days.

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

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

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

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

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

License No.:

Classification(s):

Bid Limit:

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

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

(15)

APPROVAL

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

By_____ Date:_____
State Superintendent of Education

CONTRACTING PARTIES

_____
Contractor Company

By _____
Signature

Name & Title _____

_____
Owner Entity

By _____
Signature

Name(s) & Title(s) _____

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

ARTICLE 37
CONTRACTOR'S and SUBCONTRACTORS' INSURANCE

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

A. GENERAL

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

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

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

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

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

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

B. INSURANCE COVERAGES

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

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

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

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

.1 Bodily Injury by Accident - $1,000,000 each accident

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

(2) COMMERCIAL GENERAL LIABILITY INSURANCE

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

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

(b) Additional Requirements for Commercial General Liability Insurance:

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

.2 The policy must include separate per project aggregate limits.

(3) COMMERCIAL BUSINESS AUTOMOBILE LIABILITY INSURANCE

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

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

(4) COMMERCIAL UMBRELLA OR COMMERCIAL EXCESS LIABILITY INSURANCE

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

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

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

.1 $ 5,000,000 per Occurrence

.2 $ 5,000,000 Aggregate

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

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

.2 The policy must be on an "occurrence" basis.

(5) BUILDER'S RISK INSURANCE

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

(b) The policy shall be endorsed as follows:

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

(i) Furniture and equipment may be delivered to the insured premises and installed in place ready for use; or

(ii) Partial or complete occupancy by Owner; or

(iii) Performance of work in connection with construction operations insured by the Owner, by agents or lessees or other contractors of the Owner, or by contractors of the lessee of the Owner."

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

C. SUBCONTRACTORS' INSURANCE

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

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

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

D. TERMINATION of OBLIGATION to INSURE

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

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

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

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

E. WAIVERS of SUBROGATION

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

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

(1) # PERFORMANCE BOND

SURETY'S BOND NUMBER

Do not staple this form; use clips.

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

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

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

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

Dollars ($).

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

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

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

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

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

3. Whenever the Architect gives the Contractor and the Surety, at their addresses stated above, a written Notice to Cure a condition for which the Contract may be terminated in accordance with the Contract Documents, the Surety may, within the time stated in the notice, cure or provide the Architect with written verification that satisfactory positive action is in process to cure the condition.

4. The Surety's obligation under this Bond becomes effective after the Contractor fails to satisfy a Notice to Cure and the Owner:

(a) gives the Contractor and the Surety, at their addresses stated above, a written Notice of Termination declaring the Contractor to be in default under the Contract and stating that the Contractor's right to complete the Work, or a designated portion of the Work, shall terminate seven days after the Contractor's receipt of the notice; and

(b) gives the Surety a written demand that, upon the effective date of the Notice of Termination, the Surety promptly fulfill its obligation under this Bond.

5. In the presence of the conditions described in Paragraph 4, the Surety shall, at its expense:

(a) On the effective date of the Notice of Termination, take charge of the Work and be responsible for the safety, security, and protection of the Work, including materials and equipment stored on and off the Project site, and

(b) Within twenty-one days after the effective date of the Notice of Termination, proceed, or provide the Owner with written verification that satisfactory positive action is in process to facilitate proceeding promptly, to complete the Work in accordance with the Contract Documents, either with the Surety's resources or through a contract between the Surety and a qualified contractor to whom the Owner has no reasonable objection.

6. As conditions precedent to taking charge of and completing the Work pursuant to Paragraph 5, the Surety shall neither require, nor be entitled to, any agreements or conditions other than those of this Bond and the Contract Documents. In taking charge of and completing the Work, the Surety shall assume all rights and obligations of the Contractor under the Contract Documents; however, the Surety shall also have the right to assert "Surety Claims" to the Owner in accordance with the Contract Documents. The presence or possibility of a Surety Claim shall not be just cause for the Surety to fail or refuse to promptly take charge of and complete the Work or for the Owner to fail or refuse to continue to make payments in accordance with the Contract Documents.

7. By accepting this Bond as a condition of executing the Construction Contract, and by taking the actions described in Paragraph 4, the Owner agrees that:

(a) the Owner shall promptly advise the Surety of the unpaid balance of the Contract Sum and, upon request, shall make available or furnish to the Surety, at the cost of reproduction, any portions of the Project Record, and

(b) as the Surety completes the Work, or has it completed by a qualified contractor, the Owner shall pay the Surety, in accordance with terms of payment of the Contract Documents, the unpaid balance of the Contract Sum, less any amounts that may be or become due the Owner from the Contractor under the Construction Contract or from the Contractor or the Surety under this Bond.

8. In the presence of the conditions described in Paragraph 4, the Surety's obligation includes responsibility for the correction of Defective Work, liquidated damages, and reimbursement of any reasonable expenses incurred by the Owner as a result of the Contractor's default under the Contract, including architectural, engineering, administrative, and legal services.

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

9. Nothing contained in this Bond shall be construed to mean that the Surety shall be liable to the Owner for an amount exceeding the Penal Sum of this Bond, except in the event that the Surety should be in default under the Bond by failing or refusing to take charge of and complete the Work pursuant to Paragraph 5. If the Surety should fail or refuse to take charge of and complete the Work, the Owner shall have the authority to take charge of and complete the Work, or have it completed, and the following costs to the Owner, less the unpaid balance of the Contract Sum, shall be recoverable under this Bond:

(a) the cost of completing the Contractor's responsibilities under the Contract, including correction of Defective Work;

(b) additional architectural, engineering, managerial, and administrative services, and reasonable attorneys' fees incident to completing the Work;

(c) interest on, and the cost of obtaining, funds to supplement the unpaid balance of the Contract Sum as may be necessary to cover the foregoing costs;

(d) the fair market value of any reductions in the scope of the Work necessitated by insufficiency of the unpaid balance of the Contract Sum and available supplemental funds to cover the foregoing costs; and

(f) additional architectural, engineering, managerial, and administrative services, and reasonable attorneys' fees incident to ascertaining and collecting the Owner's losses under the Bond.

10. All claims and disputes arising out of or related to this bond, or its breach, shall be resolved in accordance with Article 24, General Conditions of the Contract.

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

(9 & 10)

SURETY:	**CONTRACTOR as PRINCIPAL:**
_____ Company Name	_____ Company Name
By_____ Signature	By _____ Signature
_____ Name and Title	_____ Name and Title

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

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

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

(1) # PAYMENT BOND

SURETY'S BOND NUMBER

Do not staple this form; use clips.

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

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

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

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

Dollars ($).

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

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

1. **WE, THE PRINCIPAL (hereinafter "Contractor") AND THE SURETY**, jointly and severally, hereby bind ourselves, our heirs, executors, administrators, successors, and assigns to the Owner in the Penal Sum stated above to promptly pay all persons supplying labor, materials, or supplies for or in the prosecution of the Contract, which is incorporated herein by reference, and any modifications thereof by Contract Change Orders. If the Contractor and its Subcontractors promptly pay all persons supplying labor, materials, or supplies for or in the prosecution of the Contract and Contract Change Orders, then this obligation shall be null and void; otherwise to remain and be in full force and effect.

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

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

3. Any person that has furnished labor, materials, or supplies for or in the prosecution of the Contract and Contract Change Orders for which payment has not been timely made may institute a civil action upon this Bond and have their rights and claims adjudicated in a civil action and judgment entered thereon. Notwithstanding the foregoing, a civil action may not be instituted on this bond until 45 days after written notice to the Surety of the amount claimed to be due and the nature of the claim. The civil action must commence not later than one year from the date of final settlement of the Contract. The giving of notice by registered or certified mail, postage prepaid, addressed to the Surety at any of its places of business or offices shall be deemed sufficient. In the event the Surety or Contractor fails to pay the claim in full within 45 days from the mailing of the notice, then the person or persons may recover from the Contractor and Surety, in addition to the amount of the claim, a reasonable attorney's fee based on the result, together with interest on the claim from the date of the notice.

4. Every person having a right of action on this bond shall, upon written application to the Owner indicating that labor, material, or supplies for the Work have been supplied and that payment has not been made, be promptly furnished a certified copy of this bond and the Construction Contract. The claimant may bring a civil action in the claimant's name on this Bond against the Contractor and the Surety, or either of them, in the county in which the Work is to be or has been performed or in any other county where venue is otherwise allowed by law.

5. This bond is furnished to comply with Code of Alabama, §39-1-1, and all provisions thereof shall be applicable to civil actions upon this bond.

6. All claims and disputes between Owner and either the Contractor or Surety arising out of or related to this bond, or its breach, shall be resolved in accordance with Article 24, General Conditions of the Contract.

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

(9 & 10)

SURETY:	**CONTRACTOR as PRINCIPAL:**
_____ Company Name	_____ Company Name
By_____ Signature	By _____ Signature
_____ Name and Title	_____ Name and Title

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

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GENERAL CONDITIONS of the CONTRACT

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ARTICLE 1
DEFINITIONS

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

A. ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT: The Technical Staff of the Alabama Division of Construction Management.

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

C. COMMISSION: The former Alabama Building Commission, for which the Alabama Division of Construction Management has been designated by the Legislature as its successor.

D. CONTRACT: The Contract is the embodiment of the Contract Documents. The Contract represents the entire and integrated agreement between the Owner and Contractor and supersedes any prior written or oral negotiations, representations or agreements that are not incorporated into the Contract Documents. The Contract may be amended only by a Contract Change Order or a Modification to the Construction Contract. The contractual relationship which the Contract creates between the Owner and the Contractor extends to no other persons or entities. The Contract consists of the following Contract Documents, including all additions, deletions, and modifications incorporated therein before the execution of the Construction Contract:

(1) Construction Contract
(2) Performance and Payment Bonds
(3) Conditions of the Contract (General, Supplemental, and other Conditions)
(4) Specifications
(5) Drawings
(6) Contract Change Orders
(7) Modifications to the Construction Contract (applicable to PSCA Projects)

E. CONTRACT SUM: The Contract Sum is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents. The term "Contract Sum" means the Contract Sum stated in the Construction Contract as may have been increased or decreased by Change Order(s) in accordance with the Contract Documents.

F. CONTRACT TIME: The Contract Time is the period of time in which the Contractor must achieve Substantial Completion of the Work. The date on which the Contract Time begins is specified in the written Notice To Proceed issued to the Contractor by the Owner or Director. The Date of Substantial Completion is the date established in accordance with Article 32. The term "Contract Time" means the Contract Time stated in the Construction Contract as may have been extended by Change Order(s) in accordance with the Contract Documents. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

G. CONTRACTOR: The Contractor is the person or persons, firm, partnership, joint venture, association, corporation, cooperative, limited liability company, or other legal entity, identified as such in the Construction Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

H. DCM: The Alabama Division of Construction Management.

I. DCM PROJECT INSPECTOR: The member of the Technical Staff of the Alabama Division of Construction Management to whom the Project is assigned relative to executing the respective inspections and authorities described in Article 16, Inspection of the Work.

J. DEFECTIVE WORK: The term "Defective Work" shall apply to: **(1)** any product, material, system, equipment, or service, or its installation or performance, which does not conform to the requirements of the Contract Documents, **(2)** in-progress or completed Work the workmanship of which does not conform to the quality specified or, if not specified, to the quality produced by skilled workers performing work of a similar nature on similar projects in the state, **(3) s**ubstitutions and deviations not properly submitted and approved or otherwise authorized, **(4)** temporary

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

K. DIRECTOR: The Director of the Alabama Division of Construction Management.

L. DRAWINGS: The Drawings are the portions of the Contract Documents showing graphically the design, location, layout, and dimensions of the Work, in the form of plans, elevations, sections, details, schedules, and diagrams.

M. NOTICE TO PROCEED: A proceed order issued by the Owner or Director, as applicable, fixing the date on which the Contractor shall begin the prosecution of the Work, which is also the date on which the Contract Time shall begin.

N.1 OWNER: The Owner is the entity or entities identified as such in the Construction Contract and is referred to throughout the Contract Documents as if singular in number. The term "Owner" means the Owner or the Owner's authorized representative. The term "Owner" as used herein shall be synonymous with the term "Awarding Authority".

N.2 AWARDING AUTHORITY: §39-2-1 (1) of the Code of Alabama, 1975, as amended definition: Any governmental board, commission, agency, body, authority, instrumentality, department, or subdivision of the state, its counties and municipalities. This term includes, but shall not be limited to, the Department of Transportation, the Division of Real Property Management of the Department of Finance, the State Board of Education, and any other entity contracting for public works. This term shall exclude the State Docks Department and any entity exempted from the competitive bid laws of the state by statute.

O. THE PROJECT: The Project is the total construction of which the Work required by these Contract Documents may be the entirety or only a part with other portions to be constructed by the Owner or separate contractors.

P. PROJECT MANUAL: The Project Manual is the volume usually assembled for the Work which may include the Advertisement for Bids, Instructions to Bidders, sample forms, General Conditions of the Contract, Supplementary Conditions, and Specifications of the Work.

Q. SPECIFICATIONS: The Specifications are that portion of the Contract Documents which set forth in writing the standards of quality and performance of products, equipment, materials, systems, and services and workmanship required for acceptable performance of the Work.

R. SUBCONTRACTOR: A Subcontractor is a person or entity who is undertaking the performance of any part of the Work by virtue of a contract with the Contractor. The term "Subcontractor" means a Subcontractor or its authorized representatives.

S. THE WORK: The Work is the construction and services required by the Contract Documents and includes all labor, materials, supplies, equipment, and other items and services as are necessary to produce the required construction and to fulfill the Contractor's obligations under the Contract. The Work may constitute the entire Project or only a portion of it.

ARTICLE 2
INTENT and INTERPRETATION of the CONTRACT DOCUMENTS

A. INTENT

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

B. COMPLEMENTARY DOCUMENTS

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

C. ORDER of PRECEDENCE

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

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

D. ORGANIZATION

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

E. INTERPRETATION

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

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

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

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

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

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

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

F. SEVERABILITY.

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

ARTICLE 3
CONTRACTOR'S REPRESENTATIONS

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

A. The Contractor has visited the site of the Work to become familiar with local conditions under which the Work is to be performed and to evaluate reasonably observable conditions as compared with requirements of the Contract Documents.

B. The Contractor shall use its best skill and attention to perform the Work in an expeditious manner consistent with the Contract Documents.

C. The Contractor is an independent contractor and in performance of the Contract remains and shall act as an independent contractor having no authority to represent or obligate the Owner in any manner unless authorized by the Owner in writing.

ARTICLE 4
DOCUMENTS FURNISHED to CONTRACTOR

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

ARTICLE 5
OWNERSHIP of DRAWINGS

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

ARTICLE 6
SUPERVISION, SUPERINTENDENT, and EMPLOYEES

A. SUPERVISION and CONSTRUCTION METHODS

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

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

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

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

B. SUPERINTENDENT

(1) The Contractor shall employ and maintain a competent level of supervision for the performance of the Work at the Project site, including a superintendent who shall:
(a) have full authority to receive instructions from the Architect or Owner and to act on those instructions and **(b)** be present at the Project site at all times during which Work is being performed.

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

C. EMPLOYEES

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

ARTICLE 7
REVIEW of CONTRACT DOCUMENTS and FIELD CONDITIONS by CONTRACTOR

A. In order to facilitate assembly and installation of the Work in accordance with the Contract Documents, before starting each portion of the Work, the Contractor shall examine and compare the relevant Contract Documents, and compare them to relevant field measurements made by the Contractor and any conditions at the site affecting that portion of the Work.

B. If the Contractor discovers any errors, omissions, or inconsistencies in the Contract Documents, the Contractor shall promptly report them to the Architect as a written request for information that includes a detailed statement identifying the specific Drawings or Specifications that are in need of clarification and the error, omission, or inconsistency discovered in them.

(1) The Contractor shall not be expected to act as a licensed design professional and ascertain whether the Contract Documents comply with applicable laws, statutes, ordinances, building codes, and rules and regulations, but the Contractor shall be obligated to promptly notify the Architect of any such noncompliance discovered by or made known to the Contractor. If the Contractor performs Work without fulfilling this notification obligation, the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.

(2) The Contractor shall not be liable to the Owner for errors, omissions, or inconsistencies that may exist in the Contract Documents, or between the Contract Documents and conditions at the site, unless the Contractor knowingly fails to report a discovered error, omission, or inconsistency to the Architect, in which case the Contractor shall pay the resulting costs and damages that would have been avoided by such notification.

C. If the Contractor considers the Architect's response to a request for information to constitute a change to the Contract Documents involving additional costs and/or time, the Contractor shall follow the procedures of Article 20, Claims for Extra Cost or Extra Work.

D. If, with undue frequency, the Contractor requests information that is obtainable through reasonable examination and comparison of the Contract Documents, site conditions, and previous correspondence, interpretations, or clarifications, the Contractor shall be liable to the Owner for reasonable charges from the Architect for the additional services required to review, research, and respond to such requests for information.

ARTICLE 8
SURVEYS by CONTRACTOR

A. The Contractor shall provide competent engineering services to assure accurate execution of the Work in accordance with the Contract Documents. The Contractor shall verify the figures given for the contours, approaches and locations shown on the Drawings before starting any Work and be responsible for the accuracy of the finished Work. Without extra cost to the Owner, the Contractor shall engage a licensed surveyor if necessary to verify boundary lines, keep within property lines, and shall be responsible for encroachments on rights or property of public or surrounding property owners.

B. The Contractor shall establish all base lines for the location of the principal components of the Work and make all detail surveys necessary for construction, including grade stakes, batter boards and other working points, lines and elevations. If the Work involves alteration of or addition to existing structures or improvements, the Contractor shall locate and measure elements of the existing conditions as is necessary to facilitate accurate fabrication, assembly, and installation of new Work in the relationship, alignment, and/or connection to the existing structure or improvement as is shown in the Contract Documents.

ARTICLE 9
SUBMITTALS

A. Where required by the Contract Documents, the Contractor shall submit shop drawings, product data, samples and other information (hereinafter referred to as Submittals) to the Architect for the purpose of demonstrating the way by which the Contractor proposes to conform to the requirements of the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect without action.

B. The Contractor shall be responsible to the Owner for the accuracy of its Submittals and the conformity of its submitted information to the requirements of the Contract Documents. Each Submittal shall bear the Contractor's approval, evidencing that the Contractor has reviewed and found the information to be in compliance with the requirements of the Contract Documents. Submittals which are not marked as reviewed and approved by the Contractor may be returned by the Architect without action.

C. The Contractor shall prepare and deliver its submittals to the Architect sufficiently in advance of construction requirements and in a sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. In coordinating the Submittal process with its construction schedule, the Contractor shall allow sufficient time to permit adequate review by the Architect.

D. By approving a Submittal the Contractor represents not only that the element of Work presented in the Submittal complies with the requirements of the Contract Documents, but also that the Contractor has:

(1) found the layout and/or dimensions in the Submittal to be comparable with those in the Contract Documents and other relevant Submittals and has made field measurements as necessary to verify their accuracy, and
(2) determined that products, materials, systems, equipment and/or procedures presented in the Submittal are compatible with those presented, or being presented, in other relevant Submittals and

with the Contractor's intended Construction Methods.

E. The Contractor shall not fabricate or perform any portion of the Work for which the Contract Documents require Submittals until the respective Submittals have been approved by the Architect.

F. In the case of a resubmission, the Contractor shall direct specific attention to all revisions in a Submittal. The Architect's approval of a resubmission shall not apply to any revisions that were not brought to the Architect's attention.

G. If the Contract Documents specify that a Submittal is to be prepared and sealed by a registered architect or licensed engineer retained by the Contractor, all drawings, calculations, specifications, and certifications of the Submittal shall bear the Alabama seal of registration and signature of the registered/licensed design professional who prepared them or under whose supervision they were prepared. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of such a Submittal, provided that all performance and design criteria that such Submittal must satisfy are sufficiently specified in the Contract Documents. The Architect will review, approve or take other appropriate action on such a Submittal only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria specified in the Contract Documents.

H. DEVIATIONS

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

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

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

I. ARCHITECT'S REVIEW and APPROVAL

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

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

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

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

J. CONFORMANCE with SUBMITTALS

The Work shall be constructed in accordance with approved Submittals.

ARTICLE 10
DOCUMENTS and SAMPLES at the SITE

A. "AS ISSUED" SET

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

B. "POSTED" SET

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

C. RECORD SET

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

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

ARTICLE 11
"AS-BUILT" DOCUMENTS

A. Unless otherwise provided in the Contract Documents, the Contractor shall deliver two (2) sets of "As-built" documents, as described herein, to the Architect for submission to the Owner upon completion of the Work. Each set of "As-built' documents shall consist of a copy of the Drawings and Project Manual, in like-new condition, into which the Contractor has neatly incorporated all Addenda, Change Orders, supplemental drawings, clarifications, field changes, corrections, selections, actual locations of underground utilities, and other information as required herein or specified elsewhere in the Contract Documents.

B. The Contractor shall use the following methods for incorporating information into the "As-built" documents:

(1) Drawings

(a) To the greatest extent practicable, information shall be carefully drawn and lettered, in ink, on the Drawings in the form of sketches, details, plans, notes, and dimensions as required to provide a fully dimensioned record of the Work. When required for clarity, sketches, details, or partial plans shall be drawn on supplemental sheets and bound into the Drawings and referenced on the drawing being revised.

(b) Where a revised drawing has been furnished by the Architect, the drawing of latest date shall be bound into the Drawings in the place of the superseded drawing.

(c) Where a supplemental drawing has been furnished by the Architect, the supplemental drawing shall be bound into the Drawings in an appropriate location and referred to by notes added to the drawing being supplemented.

(d) Where the Architect has furnished details, partial plans, or lengthy notes of which it would be impractical for the Contractor to redraw or letter on a drawing, such information may be affixed to the appropriate drawing with transparent tape if space is available on the drawing.

(e) Any entry of information made in the Drawings that is the result of an Addendum or Change Order, shall identify the Addendum or Change Order from which it originated.

(2) Project Manual

(a) A copy of all Addenda and Change Orders, excluding drawings thereof, shall be bound in the front of the Project Manual.

(b) Where a document, form, or entire specification section is revised, the latest issue shall be bound into the Project Manual in the place of the superseded issue.

(c) Where information within a specification section is revised, the deleted or revised information shall be drawn through in ink and an adjacent note added identifying the Addendum or Change Order containing the revised information.

C. Within ten days after the Date of Substantial Completion of the Work, or the last completed portion of the Work, the Contractor shall submit the "As-built" documents to the Architect for approval. If the Architect requires that any corrections be made, the documents will be returned in a reasonable time for correction and resubmission.

ARTICLE 12
PROGRESS SCHEDULE

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

A. The Contractor shall within fifteen days after the date of commencement stated in the Notice to Proceed, or such other time as may be provided in the Contract Documents, prepare and submit to the Architect for review and approval a practicable construction schedule informing the Architect and Owner of the order in which the Contractor plans to carry on the Work within the Contract Time. The Architect's review and approval of the Contractor's construction schedule shall be only for compliance with the specified format, Contract Time, and suitability for monitoring progress of the Work and shall not be construed as a representation that the Architect has analyzed the schedule to form opinions of sequences or durations of time represented in the schedule.

B. If a schedule format is not specified elsewhere in the Contract Documents, the construction schedule shall be prepared using DCM Form C-11, "Sample Progress Schedule and Report", (contained in the Project Manual) or similar format of suitable scale and detail to indicate the percentage of Work scheduled to be completed at the end of each month. At the end of each month the Contractor shall enter the actual percentage of completion on the construction schedule submit two copies to the Architect, and attach one copy to each copy of the monthly Application for Payment. The construction schedule shall be revised to reflect any agreed extensions of the Contract Time or as required by conditions of the Work.

C. If a more comprehensive schedule format is specified elsewhere in the Contract Documents or voluntarily employed by the Contractor, it may be used in lieu of DCM Form C-11.

D. The Contractor's construction schedule shall be used by the Contractor, Architect, and Owner to determine the adequacy of the Contractor's progress. The Contractor shall be responsible for maintaining progress in accordance with the currently approved construction schedule and shall increase the number of shifts, and/or overtime operations, days of work, and/or the amount of construction plant and equipment as may be necessary to do so. If the Contractor's progress falls materially behind the currently approved construction schedule and, in the opinion of the Architect or Owner, the Contractor is not taking sufficient steps to regain schedule, the Architect may, with the Owner's concurrence, issue the Contractor a Notice to Cure pursuant to Article 27. In such a Notice to Cure the Architect may require the Contractor to submit such supplementary or revised construction schedules as may be deemed necessary to demonstrate the manner in which schedule will be regained.

ARTICLE 13
EQUIPMENT, MATERIALS, and SUBSTITUTIONS

A. Every part of the Work shall be executed in a workmanlike manner in accordance with the Contract Documents and approved Submittals. All materials used in the Work shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Work and shall be new except such materials as may be expressly provided or allowed in the Contract Documents to be otherwise.

B. Whenever a product, material, system, item of equipment, or service is identified in the Contract Documents by reference to a trade name, manufacturer's name, model number, etc.(hereinafter

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

C. If the Contract Documents identify three or more sources for a product, material, system, item of equipment or service to be used and the list of sources is not followed by "or approved equal" or similar wording, the Contractor may make substitution only after evaluation by the Architect and execution of an appropriate Contract Change Order.

D. If the Contract Documents identify only one source and expressly provide that it is an approved sole source for the product, material, system, item of equipment, or service, the Contractor must furnish the identified sole source.

ARTICLE 14
SAFETY and PROTECTION of PERSONS and PROPERTY

A. The Contractor shall be solely and completely responsible for conditions at the Project site, including safety of all persons (including employees) and property. The Contractor shall create, maintain, and supervise conditions and programs to facilitate and promote safe execution of the Work, and shall supervise the Work with the attention and skill required to assure its safe performance. Safety provisions shall conform to OSHA requirements and all other federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. Nothing contained in this Contract shall be construed to mean that the Owner has employed the Architect nor has the Architect employed its consultants to administer, supervise, inspect, or take action regarding safety programs or conditions at the Project site.

B. The Contractor shall employ Construction Methods, safety precautions, and protective measures that will reasonably prevent damage, injury or loss to:

(1) workers and other persons on the Project site and in adjacent and other areas that may be affected by the Contractor's operations;

(2) the Work and materials and equipment to be incorporated into the Work and stored by the Contractor on or off the Project site; and

(3) other property on, or adjacent to, the Project site, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and other improvements not designated in the Contract Documents to be removed, relocated, or replaced.

C. The Contractor shall be responsible for the prompt remedy of damage and loss to property, including the filing of appropriate insurance claims, caused in whole or in part by the fault or negligence of the Contractor, a Subcontractor, or anyone for whose acts they may be liable.

D. The Contractor shall comply with and give notices required by applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety and protection of persons or property, including without limitation notices to adjoining property owners of excavation or other construction activities that potentially could cause damage or injury to adjoining property or persons thereon.

E. The Contractor shall erect and maintain barriers, danger signs, and any other reasonable safeguards and warnings against hazards as may be required for safety and protection during performance of the Contract and shall notify owners and users of adjacent sites and utilities of conditions that may exist or arise which may jeopardize their safety.

F. If use or storage of explosives or other hazardous materials or equipment or unusual Construction Methods are necessary for execution of the Work, the Contractor shall exercise commensurate care and employ supervisors and workers properly qualified to perform such activity.

G. The Contractor shall furnish a qualified safety representative at the Project site whose duties shall include the prevention of accidents. The safety representative shall be the Contractor's superintendent, unless the Contractor assigns this duty to another responsible member of its on-site staff and notifies the Owner and Architect in writing of such assignment.

H. The Contractor shall not permit a load to be applied, or forces introduced, to any part of the construction or site that may cause damage to the construction or site or endanger safety of the construction, site, or persons on or near the site.

I. The Contractor shall have the right to act as it deems appropriate in emergency situations jeopardizing life or property. The Contractor shall be entitled to equitable adjustment of the Contract Sum or Contract Time for its efforts expended for the sole benefit of the Owner in an emergency. Such adjustment shall be determined as provided in Articles 19 and 20.

J. The duty of the Architect and the Architect's consultants to visit the Project site to conduct periodic inspections of the Work or for other purposes shall not give rise to a duty to review or approve the adequacy of the Contractor's safety program, safety supervisor, or any safety measure which Contractor takes or fails to take in, on, or near the Project site.

ARTICLE 15
HAZARDOUS MATERIALS

A. A Hazardous Material is any substance or material identified as hazardous under any federal, state, or local law or regulation, or any other substance or material which may be considered hazardous or otherwise subject to statutory or regulatory requirements governing its handling, disposal, and/or clean-up. Existing Hazardous Materials are Hazardous Materials discovered at the Project site and not introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable.

B. If, during the performance of the Work, the Contractor encounters a suspected Existing Hazardous Material, the Contractor shall immediately stop work in the affected area, take measures appropriate to the condition to keep people away from the suspected Existing Hazardous Material, and

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

C. The Owner shall obtain the services of an independent laboratory or professional consultant, appropriately licensed and qualified, to determine whether the suspected material is a Hazardous Material requiring abatement and, if so, to certify after its abatement that it has been rendered harmless. Any abatement of Existing Hazardous Materials will be the responsibility of the Owner. The Owner will advise the Contractor in writing of the persons or entities who will determine the nature of the suspected material and those who will, if necessary, perform the abatement. The Owner will not employ persons or entities to perform these services to whom the Contractor or Architect has reasonable objection.

D. After certification by the Owner's independent laboratory or professional consultant that the material is harmless or has been rendered harmless, work in the affected area shall resume upon written agreement between the Owner and Contractor. If the material is found to be an Existing Hazardous Material and the Contractor incurs additional cost or delay due to the presence and abatement of the material, the Contract Sum and/or Contract Time shall be appropriately adjusted by a Contract Change Order pursuant to Article 19.

E. The Owner shall not be responsible for Hazardous Materials introduced to the Project site by the Contractor, a Subcontractor, or anyone for whose acts they may be liable unless such Hazardous Materials were required by the Contract Documents.

ARTICLE 16
INSPECTION of the WORK

A. GENERAL

(1) The Contractor is solely responsible for the Work's compliance with the Contract Documents; therefore, the Contractor shall be responsible to inspect in-progress and completed Work, and shall verify its compliance with the Contract Documents and that any element or portion of the Work upon which subsequent Work is to be applied or performed is in proper condition to receive the subsequent Work. Neither the presence nor absence of inspections by the Architect, Owner, Director, DCM Project Inspector, any public authority having jurisdiction, or their representatives shall relieve the Contractor of responsibility to inspect the Work, for responsibility for Construction Methods and safety precautions and programs in connection with the Work, or from any other requirement of the Contract Documents.

(2) The Architect, Owner, Director, DCM Project Inspector, any public authority having jurisdiction, and their representatives shall have access at all times to the Work for inspection whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and inspection. All materials, workmanship, processes of manufacture, and methods of construction, if not otherwise stipulated in the Contract Documents, shall be subject to inspection, examination, and test at any and all places where such manufacture and/or construction are being carried on. Such inspections will not unreasonably interfere with the Contractor's operations.

(3) The Architect will inspect the Work as a representative of the Owner. The Architect's inspections may be supplemented by inspections by the DCM Project Inspector as a representative of the Alabama Division of Construction Management.

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

B. TYPES of INSPECTIONS

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

(a) Pre-construction Conference.

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

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

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

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

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

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

C. INSPECTIONS by the ARCHITECT

(1) The Architect is not authorized to revoke, alter, relax, or waive any requirements of the Contract Documents (other than "minor" deviations as defined in Article 9 and "minor" changes as defined in Article 19), to finally approve or accept any portion of the Work or to issue instructions contrary to the Contract Documents without concurrence of the Owner.

(2) The Architect will visit the site at intervals appropriate to the stage of the Contractor's operations and as otherwise necessary to:

(a) become generally familiar with the in-progress and completed Work and the quality of the Work,

(b) determine whether the Work is progressing in general accordance with the Contractor's schedule and is likely to be completed within the Contract Time,

(c) visually compare readily accessible elements of the Work to the requirements of the Contract Documents to determine, in general, if the Contractor's performance of the Work indicates that the Work will conform to the requirements of the Contract Documents when completed,

(d) endeavor to guard the Owner against Defective Work,

(e) review and address with the Contractor any problems in implementing the requirements of the Contract Documents that the Contractor may have encountered, and

(f) keep the Owner fully informed about the Project.

(3) The Architect shall have the authority to reject Defective Work or require its correction, but shall not be required to make exhaustive investigations or examinations of the in-progress or completed portions of the Work to expose the presence of Defective Work. However, it shall be an obligation of the Architect to report in writing, to the Owner, Contractor, and DCM Project Inspector, any Defective Work recognized by the Architect.

(4) The Architect shall have the authority to require the Contractor to stop work only when, in the Architect's reasonable opinion, such stoppage is necessary to avoid Defective Work. The Architect shall not be liable to the Contractor or Owner for the consequences of any decisions made by the Architect in good faith either to exercise or not to exercise this authority.

(5) "Inspections by the Architect" includes appropriate inspections by the Architect's consultants as dictated by their respective disciplines of design and the stage of the Contractor's operations.

D. INSPECTIONS by the DCM PROJECT INSPECTOR

(1) The DCM Project Inspector will:

(a) participate in scheduled inspections and conferences as practicable,

(b) perform periodic inspections of in-progress and completed Work to ensure code compliance of the Project and general conformance of the Work with the Contract Documents, and

(c) monitor the Contractor's progress and performance of the Work.

(2) The DCM Project Inspector shall have the authority to:

(a) reject Work that is not in compliance with the State Building Code adopted by the DCM, unless the Work is in accordance with the Contract Documents in which case the DCM Project Inspector will advise the Architect to initiate appropriate corrective action, and

(b) notify the Architect, Owner, and Contractor of Defective Work recognized by the DCM Project Inspector.

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

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

E. UNCOVERING WORK

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

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

F. SPECIFIED INSPECTIONS and TESTS

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

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

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

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

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

ARTICLE 17
CORRECTION of DEFECTIVE WORK

A. The Contractor shall, at the Contractor's expense, promptly correct Defective Work rejected by the Architect or which otherwise becomes known to the Contractor, removing the rejected or nonconforming materials and construction from the project site.

B. Correction of Defective Work shall be performed in such a timely manner as will avoid delay of completion, use, or occupancy of the Work and the work of the Owner and separate contractors.

C. The Contractor shall bear all expenses related to the correction of Defective Work, including but not limited to: **(1)** additional testing and inspections, including repeating Specified Inspections and Tests**, (2)** reasonable services and expenses of the Architect, and **(3)** the expense of making good all work of the Contractor, Owner, or separate contractors destroyed or damaged by the correction of Defective Work.

ARTICLE 18
DEDUCTIONS for UNCORRECTED WORK

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

ARTICLE 19
CHANGES in the WORK

A. GENERAL

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

(2) If the Owner directs a change in the Work, the change shall be incorporated into the Contract by a Contract Change Order prepared by the Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract, stating their agreement upon the change or changes in the Work and the adjustments, if any, in the Contract Sum and the Contract Time.

(3) Subject to compliance with Alabama's Public Works Law, the Owner may, upon agreement by the Contractor, incorporate previously unawarded bid alternates into the Contract.

(4) In the event of a claim or dispute as to the appropriate adjustment to the Contract Sum or Contract Time due to a directive to make changes in the Work, the Work shall proceed as provided in this article subject to subsequent agreement of the parties or final resolution of the dispute pursuant to Article 24.

(5) Consent of surety will be obtained for all Contract Change Orders involving an increase in the Contract Sum.

(6) Changes in the Work shall be performed under applicable provisions of the Contract Documents and the Contractor shall proceed promptly to perform changes in the Work, unless otherwise directed by the Owner through the Architect.

(7) All change orders require DCM Form C-12: Contract Change Order and DCM Form B-11: Change Order Justification. Only Change Orders 10% or greater of the current contract amount require the Owner's legal advisor's signature on DCM Form B-11: Change Order Justification.

B. DETERMINATION of ADJUSTMENT of the CONTRACT SUM

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

(1) Lump Sum. By mutual agreement to a lump sum based on or negotiated from an itemized cost proposal from the Contractor. Additions to the Contract Sum shall include the Contractor's direct costs plus a maximum 15% markup for overhead and profit. Where subcontract work is involved the total mark-up for the Contractor and a Subcontractor shall not exceed 25%. **Changes which involve a net credit to the Owner shall include fair and reasonable credits for overhead and profit on the deducted work, in no case less than 5%.** For the purposes of this method of determining an adjustment of the Contract Sum, "overhead" shall cover the Contractor's indirect costs of the change, such as the cost of bonds, superintendent and other job office personnel, watchman, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

(2) Unit Price. By application of Unit Prices included in the Contract or subsequently agreed to by the parties. However, if the character or quantity originally contemplated is materially changed so that application of such unit price to quantities of Work proposed will cause substantial inequity to either party, the applicable unit price shall be equitably adjusted.

(3) Force Account. By directing the Contractor to proceed with the change in the Work on a "force account" basis under which the Contractor shall be reimbursed for reasonable expenditures incurred by the Contractor and its Subcontractors in performing added Work and the Owner shall receive reasonable credit for any deleted Work. The Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting of the cost of the change together with

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

(a) costs of labor and supervision, including employee benefits, social security, retirement, unemployment and workers' compensation insurance required by law, agreement, or under Contractor's or Subcontractor's standard personnel policy;

(b) cost of materials, supplies and equipment, including cost of delivery, whether incorporated or consumed;

(c) rental cost of machinery and equipment, not to exceed prevailing local rates if contractor-owned;

(d) costs of premiums for insurance required by the Contract Documents, permit fees, and sales, use or similar taxes related to the change in the Work;

(e) reasonable credits to the Owner for the value of deleted Work, without Contractor or Subcontractor mark-ups; and

(f) for additions to the Contract Sum, mark-up of the Contractor's direct costs for overhead and profit not exceeding 15% on Contractor's work nor exceeding 25% for Contractor and Subcontractor on a Subcontractor's work. **Changes which involve a net credit to the Owner shall include fair and reasonable credits for overhead and profit on the deducted work, in no case less than 5%.** For the purposes of this method of determining an adjustment of the Contract Sum, "overhead" shall cover the Contractor's indirect costs of the change, such as the cost of insurance other than mentioned above, bonds, superintendent and other job office personnel, watchman, use and rental of small tools, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

C. ADJUSTMENT of the CONTRACT TIME due to CHANGES

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

(a) with the Contractor's cost proposal stating the number of days of extension requested, or

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

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

D. CHANGE ORDER PROCEDURES

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

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

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

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

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

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

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

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

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

ARTICLE 20
CLAIMS for EXTRA COST or EXTRA WORK

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

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

B. The Contractor's notification pursuant to Paragraph 20.A shall state: (1) the date, circumstances, and source of the instructions, **(2)** that the Contractor considers the instructions to constitute a change to the Contract Documents and why, and **(3)** an estimate of extra cost and time that may be involved to the extent an estimate may be reasonably made at that time.

C. Except for claims relating to an emergency endangering life or property, no claim for extra cost or extra work shall be considered in the absence of prior notice required under Paragraph 20.A.

D. Within ten days of receipt of a notice pursuant to Paragraph 20.A, the Architect will respond in writing to the Contractor, stating one of the following:

(1) The cited instruction is rescinded.

(2) The cited instruction is a change in the Work and in which manner the Contractor is to proceed with procedures of Article 19, Changes in the Work.

(3) The cited instruction is reconfirmed, is not considered by the Architect to be a change in the Contract Documents, and the Contractor is to proceed with Work as instructed.

E. If the Architect's response to the Contractor is as in Paragraph 20.D(3), the Contractor shall proceed with the Work as instructed. If the Contractor continues to consider the instructions to constitute a change in the Contract Documents, the Contractor shall, within ten days after receiving the Architect's response, notify the Architect in writing that the Contractor intends to submit a claim pursuant to Article 24, Resolution of Claims and Disputes

ARTICLE 21
DIFFERING SITE CONDITIONS

A. DEFINITION

"Differing Site Conditions" are:

(1) subsurface or otherwise concealed physical conditions at the Project site which differ materially from those indicated in the Contract Documents, or

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

B. PROCEDURES

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

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

ARTICLE 22
CLAIMS for DAMAGES

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

ARTICLE 23
DELAYS

A. A delay beyond the Contractor's control at any time in the commencement or progress of Work by an act or omission of the Owner, Architect, or any separate contractor or by labor disputes, unusual delay in deliveries, unavoidable casualties, fires, abnormal floods, tornadoes, or other cataclysmic events of nature, may entitle the Contractor to an extension of the Contract Time provided, however, that the Contractor shall, within ten days after the delay first occurs, give written notice to the Architect of the cause of the delay and its probable effect on progress of the entire Work.

B. Adverse weather conditions that are more severe than anticipated for the locality of the Work during any given month may entitle the Contractor to an extension of Contract Time provided, however;

(1) the weather conditions had an adverse effect on construction scheduled to be performed during the period in which the adverse weather occurred, which in reasonable sequence would have an effect on completion of the entire Work,

(2) the Contractor shall, within twenty-one days after the end of the month in which the delay occurs, give the Architect written notice of the delay that occurred during that month and its probable effect on progress of the Work, and

(3) within a reasonable time after giving notice of the delay, the Contractor provides the Architect with sufficient data to document that the weather conditions experienced were unusually severe for the locality of the Work during the month in question. Unless otherwise provided in the Contract Documents, data documenting unusually severe weather conditions shall compare actual weather conditions to the average weather conditions for the month in question during the previous five years as recorded by the National Oceanic and Atmospheric Administration (NOAA) or similar record-keeping entities.

C. Adjustments, if any, of the Contract Time pursuant to this Article shall be incorporated into the Contract by a Contract Change Order prepared by the Architect and signed by the Contractor, Owner, and other signatories to the Construction Contract or, at closeout of the Contract, by mutual written agreement between the Contractor and Owner. The adjustment of the Contract Time shall not exceed the extent to which the delay extends the time required to complete the entire Work of the Contract.

D. The Contractor shall not be entitled to any adjustment of the Contract Sum for damage due to delays claimed pursuant to this Article unless the delay was caused by the Owner or Architect and was either:

(1) the result of bad faith or active interference or

(2) beyond the contemplation of the parties and not remedied within a reasonable time after notification by the Contractor of its presence.

ARTICLE 24
RESOLUTION of CLAIMS and DISPUTES

A. APPLICABILITY of ARTICLE

(1) As used in this Article, "Claims and Disputes" include claims or disputes asserted by the Contractor, its Surety, or Owner arising out of or related to the Contract, or its breach, including without limitation claims seeking, under the provisions of the Contract, equitable adjustment of the Contract Sum or Contract Time and claims and disputes arising between the Contractor (or its Surety) and Owner regarding interpretation of the Contract Documents, performance of the Work, or breach of or compliance with the terms of the Contract.

(2) "Resolution" addressed in this Article applies only to Claims and Disputes arising between the Contractor (or its Surety) and Owner and asserted after execution of the Construction Contract and prior to the date upon which final payment is made. Upon making application for final payment the Contractor may reserve the right to subsequent Resolution of existing Claims by including a list of all Claims, in stated amounts, which remain to be resolved and specifically excluding them from any release of claims executed by the Contractor, and in that event Resolution may occur after final payment is made.

B. CONTINUANCE of PERFORMANCE

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

C. GOOD FAITH EFFORT to SETTLE

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

D FINAL RESOLUTION for STATE-FUNDED CONTRACTS

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

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

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

E. FINAL RESOLUTION for LOCALLY-FUNDED CONTRACTS

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

ARTICLE 25
OWNER'S RIGHT to CORRECT DEFECTIVE WORK

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

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

A. STOPPING the WORK for CAUSE

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

B. SUSPENSION by the OWNER for CONVENIENCE

(1) The Owner may, at any time and without cause, direct the Contractor in writing to suspend, delay or interrupt the Work, or any part of the Work, for a period of time as the Owner may determine.

(2) The Contract Sum and Contract Time shall be adjusted, pursuant to Article 19, for reasonable increases in the cost and time caused by an Owner-directed suspension, delay or interruption of Work for the Owner's convenience. However, no adjustment to the Contract Sum shall be made to the extent that the same or concurrent Work is, was or would have been likewise suspended, delayed or interrupted for other reasons not caused by the Owner.

ARTICLE 27
OWNER'S RIGHT to TERMINATE CONTRACT

A. TERMINATION by the OWNER for CAUSE

(1) Causes: The Owner may terminate the Contractor's right to complete the Work, or any designated portion of the Work, if the Contractor:

(a) should be adjudged bankrupt, or should make a general assignment for the benefit of the Contractor's creditors, or if a receiver should be appointed on account of the Contractor's insolvency to the extent termination for these reasons is permissible under applicable law;

(b) refuses or fails to prosecute the Work, or any part of the Work, with the diligence that will insure its completion within the Contract Time, including any extensions, or fails to complete the Work within the Contract Time;

(c) refuses or fails to perform the Work, including prompt correction of Defective Work, in a manner that will insure that the Work, when fully completed, will be in accordance with the Contract Documents;

(d) fails to pay for labor or materials supplied for the Work or to pay Subcontractors in accordance with the respective Subcontract;

(e) persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction, or the instructions of the Architect or Owner; or

(f) is otherwise guilty of a substantial breach of the Contract.

(2) Procedure for Unbonded Construction Contracts (Generally, contracts less than $100,000):

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

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

(c) If the Contractor satisfies a Notice to Cure, but the condition for which the notice was first given reoccurs, the Owner may give the Contractor a seven day Notice of Termination

without giving the Contractor another Notice to Cure.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. TERMINATION by the OWNER for CONVENIENCE

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

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

(a) stop Work as specified in the notice;

(b) enter into no further subcontracts or purchase orders for materials, services, or facilities, except as may be necessary for Work directed to be performed prior to the effective date of the termination or to complete Work that is not terminated;

(c) terminate all existing subcontracts and purchase orders to the extent they relate to the terminated Work;

(d) take such actions as are necessary, or directed by the Architect or Owner, to protect, preserve, and make safe the terminated Work; and

(e) complete performance of the Work that is not terminated.

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

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

A. SUSPENSION by the OWNER

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

B. NONPAYMENT

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

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

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

ARTICLE 29
PROGRESS PAYMENTS

A. FREQUENCY of PROGRESS PAYMENTS

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

B. SCHEDULE of VALUES

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

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

C. APPLICATIONS for PAYMENTS

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

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

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

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

D. MATERIALS STORED OFF SITE

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

(1) the contractor has received written approval from the Architect and Owner to store the materials or equipment off site in advance of delivering the materials to the off site location;

(2) a Certificate of Insurance is furnished to the Architect evidencing that a special insurance policy, or rider to an existing policy, has been obtained by the Contractor providing all-risk property insurance coverage, specifically naming the materials or equipment stored, and naming the Owner as an additionally insured party;

(3) the Architect is provided with a detailed inventory of the stored materials or equipment and the materials or equipment are clearly marked in correlation to the inventory to facilitate inspection and verification of the presence of the materials or equipment by the Architect or Owner;

(4) the materials or equipment are properly and safely stored in a bonded warehouse, or a facility otherwise approved in advance by the Architect and Owner; and

(5) compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest.

E. RETAINAGE

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

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

F. CONTRACTOR'S CERTIFICATION

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

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

G. PAYMENT ESTABLISHES OWNERSHIP

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

ARTICLE 30
CERTIFICATION and APPROVALS for PAYMENT

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

B. Within seven days after receiving the Contractor's monthly Application for Payment, or such other time as may be stated in the Contract Documents, the Architect will take one of the following actions:

(1) The Architect will approve and certify the Application as submitted and forward it to the Owner as a Certification for Payment for approval by the Owner (and other approving authorities, if any) and payment.

(2) If the Architect takes exception to any amounts claimed by the Contractor and the Contractor and Architect cannot agree on revised amounts, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to certify to the Owner, transmitting a copy of same to the Contractor.

(3) To the extent the Architect determines may be necessary to protect the Owner from loss on account of any of the causes stated in Article 31, the Architect may subtract from the Contractor's estimates and will issue a Certificate for Payment to the Owner, with a copy to the Contractor, for such amount as the Architect determines is properly due and notify the Contractor and Owner in writing of the Architect's reasons for withholding payment in whole or in part.

C. Neither the Architect's issuance of a Certificate for Payment nor the Owner's resulting progress payment shall be a representation to the Contractor that the Work in progress or completed at that time is accepted or deemed to be in conformance with the Contract Documents.

D. The Architect shall not be required to determine that the Contractor has promptly or fully paid Subcontractors and suppliers or how or for what purpose the Contractor has used monies paid under the Construction Contract. However, the Architect may, upon request and if practical, inform any Subcontractor or supplier of the amount, or percentage of completion, approved or paid to the Contractor on account of the materials supplied or the Work performed by the Subcontractor.

ARTICLE 31
PAYMENTS WITHHELD

A. The Architect may nullify or revise a previously issued Certificate for Payment prior to Owner's payment thereunder to the extent as may be necessary in the Architect's opinion to protect the Owner from loss on account of any of the following causes not discovered or fully accounted for at the time of the certification or approval of the Application for Payment:

(1) Defective Work;
(2) filed, or reasonable evidence indicating probable filing of, claims arising out of the Contract by other parties against the Contractor;
(3) the Contractor's failure to pay for labor, materials or equipment or to pay Subcontractors;
(4) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
(5) damage suffered by the Owner or another contractor caused by the Contractor, a Subcontractor, or anyone for whose acts they may be liable;
(6) reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance is insufficient to cover applicable liquidated damages; or
(7) the Contractor's persistent failure to conform to the requirements of the Contract Documents.

B. If the Owner deems it necessary to withhold payment pursuant to preceding Paragraph A, the Owner will notify the Contractor and Architect in writing of the amount to be withheld and the reason for same.

C. The Architect shall not be required to withhold payment for completed or partially completed Work for which compliance with the Contract Documents remains to be determined by Specified Inspections or Final Inspections to be performed in their proper sequence. However, if Work for which payment has been approved, certified, or made under an Application for Payment is subsequently determined to be Defective Work, the Architect shall determine an appropriate amount that will protect the Owner's interest against the Defective Work.

(1) If payment has not been made against the Application for Payment first including the Defective Work, the Architect will notify the Owner and Contractor of the amount to be withheld from the payment until the Defective Work is brought into compliance with the Contract Documents.

(2) If payment has been made against the Application for Payment first including the Defective Work, the Architect will withhold the appropriate amount from the next Application for Payment submitted after the determination of noncompliance, such amount to then be withheld until the Defective Work is brought into compliance with the Contract Documents.

D. The amount withheld will be paid with the next Application for Payment certified and approved after the condition for which the Owner has withheld payment is removed or otherwise resolved to the Owner's satisfaction.

E. The Owner shall have the right to withhold from payments due the Contractor under this Contract an amount equal to any amount which the Contractor owes the Owner under another contract.

ARTICLE 32
SUBSTANTIAL COMPLETION

A. Substantial Completion is the stage in the progress of the Work when the Work or designated portion of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use without disruption or interference by the Contractor in completing or correcting any remaining unfinished Work ("punch list" items). Substantial Completion of the Work, or a designated portion of the Work, is not achieved until so agreed in a Certificate of Substantial Completion signed by the Contractor, Architect, Owner, and Technical Staff of the Alabama Division of Construction Management.

B. The Contractor shall notify the Architect in writing when it considers the Work, or a portion of the Work which the Owner has agreed to accept separately, to be substantially complete and ready for a Final Inspection pursuant to Article 16. In this notification the Contractor shall identify any items remaining to be completed or corrected for Final Acceptance prior to final payment.

C. Substantial Completion is achieved and a Final Inspection is appropriate only when a minimal number of punch list items exists and only a short period of time will be required to correct or complete them. Upon receipt of the Contractor's notice for a Final Inspection, the Architect will advise the Contractor in writing of any conditions of the Work which the Architect or Owner is

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

D. CERTIFICATE of SUBSTANTIAL COMPLETION

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

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

(a) the Work, or designated portion of the Work, is accepted by the Architect, Owner, and Alabama Division of Construction Management as being ready for occupancy,

(b) the Contractor's one-year and special warranties for the Work covered by the Certificate commence, unless stated otherwise in the Certificate (the one-year warranty for punch list items completed or corrected after the period allowed in the Certificate shall commence on the date of their Final Acceptance), and

(c) Owner becomes responsible for building security, maintenance, utility services, and insurance, unless stated otherwise in the Certificate.

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

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

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

ARTICLE 33
OCCUPANCY or USE PRIOR to COMPLETION

A. UPON SUBSTANTIAL COMPLETION

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

B. BEFORE SUBSTANTIAL COMPLETION

(1) The Owner shall not occupy or utilize any portion of the Work before Substantial Completion of that portion has been achieved.

(2) The Owner may deliver furniture and equipment and store, or install it in place ready for occupancy and use, in any designated portion of the Work before it is substantially completed under the following conditions:

(a) The Owner's storage or installation of furniture and equipment will not unreasonably disrupt or interfere with the Contractor's completion of the designated portion of the Work.

(b) The Contractor consents to the Owner's planned action (such consent shall not be unreasonably withheld).

(c) The Owner shall be responsible for insurance coverage of the Owner's furniture and equipment, and the Contractor's liability shall not be increased.

(d) The Contractor, Architect, and Owner will jointly inspect and record the condition of the Work in the area before the Owner delivers and stores or installs furniture and equipment; the Owner will equitably compensate the Contractor for making any repairs to the Work that may subsequently be required due to the Owner's delivery and storage or installation of furniture and equipment.

(e) The Owner's delivery and storage or installation of furniture and equipment shall not be deemed an acceptance of any Work not completed in accordance with the requirements of the Contract Documents.

ARTICLE 34
FINAL PAYMENT

A. PREREQUISITES to FINAL PAYMENT

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

(1) Full execution of a Certificate of Substantial Completion for the Work, or each designated portion of the Work.

(2) Final Acceptance of the Work.

(3) The Contractor's completion, to the satisfaction of the Architect and Owner, of all documentary requirements of the Contract Documents; such as delivery of "as-built" documents, operating and maintenance manuals, warranties, etc.

(4) Delivery to the Owner of a final Application for Payment, prepared by the Contractor and approved and certified by the Architect. Architect prepares DCM Form B-13: Final Payment Checklist and forwards it to the Owner along with the final Application for Payment.

(5) Completion of an Advertisement for Completion pursuant to Paragraph C below.

(6) Delivery by the Contractor to the Owner through the Architect of DCM Form C-18: Contractor's Affidavit of Payment of Debts and Claims, and a Release of Claims, if any, and such other documents as may be required by Owner, satisfactory in form to the Owner pursuant to Paragraph D below.

(7) Consent of Surety to Final Payment, if any, to Contractor. This Consent of Surety is required for projects which have Payment and Performance Bonds.

(8) Delivery by the Contractor to the Architect and Owner of other documents, if any, required by the Contract Documents as prerequisites to Final Payment.

(9) See Manual of Procedures Chapter 7, Section L.7 concerning reconciliation of contract time, if any.

B. FINAL ACCEPTANCE of the WORK

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

C. ADVERTISEMENT for COMPLETION

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

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

(a) In a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done.

(b) On a website that is maintained by a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done. (c) On a website utilized by the awarding authority for publishing notices.

(d) If no newspaper is published in the county in which the work was done, and if the awarding authority does not utilize a website for the purpose of publishing notices, the notice may be given by posting at the courthouse for 30 days, and proof of the posting of the notice shall be given by the awarding authority and the contractor.

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

D. RELEASE of CLAIMS

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

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

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

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

E. EFFECT of FINAL PAYMENT

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

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

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

ARTICLE 35
CONTRACTOR'S WARRANTY

A. GENERAL WARRANTY

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

B. ONE-YEAR WARRANTY

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

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

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

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

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

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

C. GENERAL CONTRACTOR'S ROOFING GUARANTEE

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

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

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

D. SPECIAL WARRANTIES

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

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

E. ASSUMPTION of GUARANTEES of OTHERS

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

ARTICLE 36
INDEMNIFICATION AGREEMENT

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

A. This indemnification shall extend to all claims, damages, losses and expenses for injury or damage to adjacent or neighboring property, or persons injured thereon, that arise out of, relate to, or result from performance of the Work.

B. This indemnification does not extend to the liability of the Architect, or the Architect's Consultants, agents, or employees, arising out of **(1)** the preparation or approval of maps, shop drawings, opinions, reports, surveys, field orders, Change Orders, drawings or specifications, or **(2)** the giving of or the failure to give directions or instructions, provided such giving or failure to give instructions is the primary cause of the injury or damage.

C. This indemnification does not apply to the extent of the sole negligence of the Indemnitees.

ARTICLE 37
CONTRACTOR'S and SUBCONTRACTORS' INSURANCE

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

A. GENERAL

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

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

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

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

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

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

B. INSURANCE COVERAGES

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

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

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

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

.1 Bodily Injury by Accident - $1,000,000 each accident

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

(2) COMMERCIAL GENERAL LIABILITY INSURANCE

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

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

(b) Additional Requirements for Commercial General Liability Insurance:

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

.2 The policy must include separate per project aggregate limits.

(3) COMMERCIAL BUSINESS AUTOMOBILE LIABILITY INSURANCE

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

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

(4) COMMERCIAL UMBRELLA OR COMMERCIAL EXCESS LIABILITY INSURANCE

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

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

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

.1 $ 5,000,000 per Occurrence

.2 $ 5,000,000 Aggregate

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

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

.2 The policy must be on an "occurrence" basis.

(5) BUILDER'S RISK INSURANCE

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

(b) The policy shall be endorsed as follows:

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

(i) Furniture and equipment may be delivered to the insured premises and installed in place ready for use; or

(ii) Partial or complete occupancy by Owner; or

(iii) Performance of work in connection with construction operations insured by the Owner, by agents or lessees or other contractors of the Owner, or by contractors of the lessee of the Owner."

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

C. SUBCONTRACTORS' INSURANCE

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

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

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

D. TERMINATION of OBLIGATION to INSURE

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

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

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

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

E. WAIVERS of SUBROGATION

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

ARTICLE 38
PERFORMANCE and PAYMENT BONDS

A. GENERAL

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

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

B. PERFORMANCE BOND

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

C. PAYMENT BOND

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

D. CHANGE ORDERS

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

E. EXPIRATION

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

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

ARTICLE 39
ASSIGNMENT

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

ARTICLE 40
CONSTRUCTION by OWNER or SEPARATE CONTRACTORS

A. OWNER'S RESERVATION of RIGHT

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

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

B. COORDINATION

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

C. CONDITIONS APPLICABLE to WORK PERFORMED by OWNER

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

D. MUTUAL RESPONSIBILITY

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

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

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

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

ARTICLE 41
SUBCONTRACTS

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

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

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

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

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

B. SUBCONTRACTUAL RELATIONS

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

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

ARTICLE 42
ARCHITECT'S STATUS

A. The Architect is an independent contractor performing, with respect to this Contract, pursuant to an agreement executed between the Owner and the Architect. The Architect has prepared the Drawings and Specifications and assembled the Contract Document and is, therefore, charged with their interpretation and clarification as described in the Contract Documents. As a representative of the Owner, the Architect will endeavor to guard the Owner against variances from the requirements of the Contract Documents by the Contractor. On behalf of the Owner, the Architect will administer the Contract as described in the Contract Documents during construction and the Contractor's one-year warranty.

B. So as to maintain continuity in administration of the Contract and performance of the Work, and to facilitate complete documentation of the project record, all communications between the Contractor and Owner regarding matters of or related to the Contract shall be directed through the Architect, unless direct communication is otherwise required to provide a legal notification. Unless otherwise authorized by the Architect, communications by and with the Architect's consultants shall be through the Architect. Unless otherwise authorized by the Contractor, communications by and with Subcontractors and material suppliers shall be through the Contractor.

C. ARCHITECT'S AUTHORITY

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

(1) The Architect is authorized to:

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

and Approval of payments, and
(f) issue Notices to Cure pursuant to Article 27.

(2) The Architect is not authorized to:
(a) revoke, alter, relax, or waive any requirements of the Contract Documents (other than "minor" deviations and changes) without concurrence of the Owner,
(b) finally approve or accept any portion of the Work without concurrence of the Owner,
(c) issue instructions contrary to the Contract Documents,
(d) issue Notice of Termination or otherwise terminate the Contract, or
(e) require the Contractor to stop the Work except only to avoid the performance of Defective Work.

D. LIMITATIONS of RESPONSIBILITIES

(1) The Architect shall not be responsible to Contractors or to others for supervising or coordinating the performance of the Work or for the Construction Methods or safety of the Work, unless the Contract Documents give other specific instructions concerning these matters.
(2) The Architect will not be responsible to the Contractor (nor the Owner) for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents or for acts or omissions of the Contractor, a Subcontractor, or anyone for whose acts they may be liable. However, the Architect will report to the Owner and Contractor any Defective Work recognized by the Architect.

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

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

E. ARCHITECT'S DECISIONS

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

ARTICLE 43
CASH ALLOWANCES

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

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

B. Unless otherwise provided in the Contract Documents:

(1) allowances shall cover the cost to the Contractor of materials and equipment delivered to the Project site and all applicable taxes, less applicable trade discounts;

(2) the Contractor's costs for unloading, storing, protecting, and handling at the site, labor, installation, overhead, profit and other expenses related to materials or equipment covered by an allowance shall be included in the Contract Sum but not in the allowances;

(3) if required, the Contract Sum shall be adjusted by Change Order to reflect the actual costs of an allowance.

C. Any selections of materials or equipment required of the Architect or Owner under an allowance shall be made in sufficient time to avoid delay of the Work.

ARTICLE 44
PERMITS, LAWS, and REGULATIONS

A. PERMITS, FEES AND NOTICES

(1) Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are customarily secured after award of the Construction Contract and which are in effect on the date of receipt of bids.

(2) The Contractor shall comply with and give notices required by all laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

B. TAXES

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

C. COMPENSATION for INCREASES

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

D. ALABAMA IMMIGRATION LAW

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

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

E. ALABAMA TRADE BOYCOTT LAW

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

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

EE. ALABAMA ECONOMIC BOYCOTT LAW

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

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

F. ACCOUNTING OF SALES TAX EXEMPT PROJECTS

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

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

ARTICLE 45
ROYALTIES, PATENTS, and COPYRIGHTS

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

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

ARTICLE 46
USE of the SITE

A. The Contractor shall confine its operations at the Project site to areas permitted by the Owner and by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials, equipment, employees' vehicles, or debris. The Contractor's operations at the site shall be restricted to the sole purpose of constructing the Work, use of the site as a staging, assembly, or storage area for other business which the Contractor may undertake shall not be permitted.

B. Unless otherwise provided in the Contract Documents, temporary facilities, such as storage sheds, shops, and offices may be erected on the Project site with the approval of the Architect and Owner. Such temporary buildings and/or utilities shall remain the property of the Contractor, and be removed at the Contractor's expense upon completion of the Work, unless the Owner authorizes their abandonment without removal.

ARTICLE 47
CUTTING and PATCHING

A. The Contractor shall be responsible for all cutting, fitting, or patching that may be required to execute the Work to the results indicated in the Contract Documents or to make its parts fit together properly.

B. Any cutting, patching, or excavation by the Contractor shall be supervised and performed in a manner that will not endanger persons nor damage or endanger the Work or any fully or partially completed construction of the Owner or separate contractors.

ARTICLE 48
IN-PROGRESS and FINAL CLEANUP

A. IN-PROGRESS CLEAN-UP

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

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

B. FINAL CLEAN-UP

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

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

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

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

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

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

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

C. OWNER'S RIGHT to CLEAN-UP

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

ARTICLE 49
LIQUIDATED DAMAGES

A. Time is the essence of the Contract. Any delay in the completion of the Work required by the Contract Documents may cause inconvenience to the public and loss and damage to the Owner including but not limited to interest and additional administrative, architectural, inspection and supervision charges. By executing the Construction Contract, the Contractor agrees that the Contract Time is sufficient for the achievement of Substantial Completion.

B. The Contract Documents may provide in the Construction Contract or elsewhere for a certain dollar amount for which the Contractor and its Surety (if any) will be liable to the Owner as liquidated damages for each calendar day after expiration of the Contract Time that the Contractor fails to achieve Substantial Completion of the Work. If such daily liquidated damages are provided for, Owner and Contractor, and its Surety, agree that such amount is reasonable and agree to be bound thereby.

C. If a daily liquidated damage amount is not otherwise provided for in the Contract Documents, a time charge equal to six percent interest per annum on the total Contract Sum may be made against the Contractor for the entire period after expiration of the Contract Time that the Contractor fails to achieve Substantial Completion of the Work.

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

ARTICLE 50
USE of FOREIGN MATERIALS

A. In the performance of the Work the Contractor agrees to use materials, supplies, and products manufactured, mined, processed or otherwise produced in the United States or its territories, if same are available at reasonable and competitive prices and are not contrary to any sole source specification implemented under the Public Works Law.

B. In the performance of the Work the Contractor agrees to use iron or steel, that are made a permanent part of the structure, produced in the United States if the Contract Documents require the use of iron or steel and do not limit its supply to a sole source pursuant to the Public Works Law. If the Owner decides that the procurement of domestic steel products becomes impractical as a result of national emergency, national strike, or other cause, the Owner shall waive this restriction.

C. If domestic steel or other domestic materials, supplies, and products are not used in accordance with preceding Paragraphs A and B, the Contract Sum shall be reduced by an amount equal to any savings or benefits realized by the Contractor.

D. This Article applies only to Public Works projects financed entirely by the State of Alabama or any political subdivision of the state.

ARTICLE 51
PROJECT SIGN

A. Fully locally-funded State Agency and Public Higher Education projects: DCM Form C-15: Detail of Project Sign must be included in the project manual regardless of expected bid amount. If the awarded contract sum is $100,000.00 or more, Contractor shall furnish and erect a project sign. Other conditions besides the contract sum may warrant waiver of this requirement, but only with approval of the Technical Staff.

B. Fully locally-funded K-12 school projects: Project sign is not required unless requested by Owner; if project sign is requested by Owner, include DCM Form C-15: Detail of Project Sign in the project manual.

C. Partially or fully PSCA-funded projects: DCM Form C-15: Detail of Project Sign must be included in the project manual. Contractor shall furnish and erect a project sign for all PSCA-funded projects, regardless of the contract sum. "Alabama Public School and College Authority" as well as the local owner entity must be included as awarding authorities on the project sign of all PSCA-funded projects.

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

END of
GENERAL CONDITIONS of the CONTRACT

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SUPPLEMENT TO THE GENERAL CONDITIONS OF THE CONTRACT

1.1 The following supplements shall modify, delete and/or add to the General Conditions of the Contract. Where any article, paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such article, paragraph or subparagraph not so amended, voided or superseded shall remain in effect.

A. **Refer to Article 2.A; Definition**:

1. Architect: Construction documents for this project have been developed by Lathan Mckee, Architects, 3500 Eastern Blvd., Suite 300, Montgomery, Alabama, 36116, (334) 834-9933 `commissioned by the Owner.

2. Owner: **Pike County Schools.** Unless otherwise stated, all papers required to be delivered to the Owner shall be forwarded through the Architect.

B. **Refer to Article 3:**

1. Add the following:

a. **Contractor's Qualification's:** The Roofing Contract shall possess the following, or stringent, minimum qualifications: the roofing contractor must be a firm of not less than five (5) years of successful experience in installation of roof systems similar to those specified for the project and which is acceptable to or licensed by the manufacturer of the primary roofing materials.

b. **Manufacturer's Qualifications:** In specifying acceptable manufacturers or minimum quality qualifications of manufacturers, the following, or more stringent criteria should be used: The manufacturer shall have a minimum of five (5) years of experience in the manufacture of the roofing system and must also be the **original material manufacturer** of the primary roofing material.

C. **Refer to Article 6**;

1. Add the following to Paragraph B:

a. The lowest bidding Contractor shall submit to the Architect within five (5) calendar days after the bid date the name(s) of the Superintendent(s) who will be in charge at the work site, along with the qualifications and experience.

b. NOTE: By submission of a Proposal the Bidder agrees that the Owner or Architect may reject a proposed Superintendent with or without a stated reason with no recourse to the Contractor.

D. **Refer to Article 6;**

1. Add the following to Paragraph C:

a. All labor shall be performed in the best and most workmanlike manner by persons skilled in their respective assignments or trades. Workmen whose work is unsatisfactory to the Architect or the Owner, or who are considered unfit or unskilled, or otherwise objectionable, shall be dismissed upon notice from the Architect or Owner.

E. **Refer to Article 9, Paragraph D**;

1. Add the following:

a. All submittals for color selections, to be made by the Architect for the entire project shall be submitted at the same time within 45 days from the "Notice to Proceed". Piece-meal submittals for color selection will not be permitted.

b. Provide as follows unless otherwise specified:

1) All submittals shall be sent to the Architect no later **than 45 calendar days** from "**Notice To Proceed**" to: **Submittal Exchange**. A **Submittal Log** must accompany each submittal.

2) Refer to Article 41, paragraph A "Subcontracts", section (1):
1. As required by the Supplemental General Conditions, the Contractor must provide the total cost for each of the following divisions:
a. Civil
b. Plumbing
c. Mechanical
d. Electrical
e. These submissions shall have the above requested costs and Architectural Project Number provided in a single document and emailed prior to the full execution of the project.

3) For projects requiring the use of Submittal Exchange, logs for the project shall be set up to mimic the Architectural Project numbered 22-192 and must include the following:

- Submittal
- Closeout
- RFI
- RFP
- ASI
- Meeting Minutes
- * Drawings
- * Photos
- * Punchlist/Issue Management
- * COR
- * Pay Application

F. **Refer to Article 13;**

1. Add the following:

a. "If the bidder desires to substitute an "equal", he must secure written approval by the Architect of qualification to bid ten (10) days prior to date.

b. On all items specified as or equal substitutions must be submitted to the Architect ten (10)
days prior to bid opening and Architect will act on substitution five (5) days prior to bids and

notify all Contractors.

c. The request for substitutions are to be filled out completely and must be received prior to bid. Any subcontractor and/or material supplier that was not "approved" and their price is used at bid time will be the Contractors problem to absorb any cost associated with the use of a "non-approved material or equipment. If the "approval" is not listed in the addendum, then the "approval" is not accepted.

G. **Refer to Article 15**:

1. The General Contractor shall be solely responsible for all requirements under this Article.

H. **Refer to Article 16:**

1. Add the following: Article 16; General, (5)

a. **Single-Ply Roofs:** Should design or economic restrictions require the use of a single-ply elastomeric roofing system, ballasted systems of any type should be avoided.

b. **Interior Gutters:** The use of interior gutters should be avoided at all times.

c. **Protection During Application:** At no time during construction should the surface of the asphalt or coal tar pitch roofing system to be left unprotected. A glaze coat of asphalt or pitch must be applied to the surface of the membrane if the top pour or cap sheet cannot be applied during the same day.

d. **Contractor's Qualification's:** The Roofing Contract shall possess the following, or stringent, minimum qualifications: the roofing contractor must be a firm of not less than

five (5) years of successful experience in installation of roof systems similar to those specified for the project and which is acceptable to or licensed by the manufacturer of the primary roofing materials.

e. **Manufacturer's Qualifications:** In specifying acceptable manufacturers or minimum quality qualifications of manufacturers, the following, or more stringent criteria should be used: The manufacturer shall have a minimum of five (5) years of experience in the manufacture of the roofing system and must also be the **original material manufacturer** of the primary roofing material.

I. Refer to Article 19:

1. In conjunction with Division of Construction Management Change Order documents provide all data required for Lathan Mckee Architects Form 0825 when submitting a Change Order Proposal

J. **Refer to Article 29, PROGRESS PAYMENTS**, paragraph "B", Schedule of Values:

1. Amend Paragraph as follows:

a. "Within ten days after receiving the Notice to Proceed the contractor shall submit to the Architect a DCM Form C-10SOV, Schedule of Values, which is a breakdown of the Contract Sum showing the value '**and category of Work with Subcontractor name(s)'** of the various parts of the Work for billing purposes."

2. Add the following:

a. The Contractor shall list the Category of Work with the Subcontractor name(s) attributable to each line item value in the column "B", "Description of Work" line(s) of the DCM Form C-10SOV, Schedule of Values.

3. Add the following:

a. Values shall be broken down within principal contracts in amounts not greater than $30,000, but in no case greater than 5 percent of the Contract Sum.

K. **Refer to Article 32, SUBSTANTIAL COMPLETION**

1. Add the following:

a. All manufacturers' warranties shall commence on the date as set forth on the Substantial Completion Form, no exceptions.

b. Contractor shall furnish to the Architect a written letter of "notification" that all "Punch List" items have been completed prior to re-inspection.

L. **Refer to Article 35**, paragraph "D", Special Warranties:

1. Change as follows:

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

M. **Refer to Article 37**:

1. The Architect shall not be liable for any damage or injury to property or any person or persons arising from the presence of/or effects of any hazardous materials or hazardous elements in any state of form in connection with the work under this Contract. All such liability shall lie with the Contractor.

N. **Refer to Article 44**;

1. Add the following: All work on this project shall be performed in accordance with the following codes:

a. 2010 ADA Standards For Accessible Design

b. 2021 International Building Code

c. 2021 International Plumbing Code

d. 2021 International Mechanical Code

e. 2021 International Fuel Gas Code

f. 2021 International Fire Code

g. 2020 National Electrical Code

h. 2019 National Fire Alarm and Signaling Code

i. ANSI/ASHRAE/IESNA Standard 90.1-2013 Energy Standard for Buildings Except Low-Rise Residential

O. **Refer to Article 49**:

1. Liquidated damages will be assessed at a rate of 6% per annum.

2. If this contract extends thirty (30) days past Schedule Completion Date, Owner shall deduct from the Contractor's final payment, a sum equal to the additional expense incurred by the Owner for the Architect for contract administration past scheduled completion date.

END OF SECTION

This flat form is for project manual purposes only and is not intended to be used for direct submittal purposes.

State of Alabama
Disclosure Statement

Required by Article 3B of Chapter 16 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 penalty of perjury (in the jurisdiction in which it is executed) that all statements on or attached to this form are true and correct to the best of my knowledge. I further understand that a person who knowingly violates this article shall be subject to civil penalty in an amount of ten thousand dollars ($10,000), or 10 percent of the amount of the contract, whichever is less, to be deposited in the State General Fund. Also, the contract or grant shall be voidable by the awarding agency.

Authorized Signatory Date Jurisdiction in which this Disclosure Statement is executed

The disclosure statement is required to be completed and filed with grant proposals in excess of $25,000 and contracts that meet or exceed the threshold for bid or other formal solicitations under Article 5 of Chapter 4 of Title 41 or any other law that requires formal solicitation procedures for awarding public contracts.

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

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 Agreement Between Owner and Architect original and to each Construction Contract original.

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LATHAN · McKEE
ARCHITECTS

E-Verify Memorandum of Understanding

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 per Alabama Immigration Law.

Lathan McKee Architects 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.

Refer to State of Alabama E-Verify Memorandum of Understanding Instructions (Revised August 2021) with ABC Bulletin (May 29, 2012) and Revised Alabama Immigration Law Guidance for School Boards (Revised May 2012).

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This flat form is for project manual purposes only and is not intended to be used for direct submittal purposes.

ST: EXC-01
6/21

ALABAMA DEPARTMENT OF REVENUE
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? ☐ Yes ☐ No If yes, please attach list.	**NAME OF PARTY TO THE CONTRACT**

JOB DESCRIPTION

WILL ANY POLLUTION CONTROL EXEMPTION BE APPLICABLE? ☐ Yes ☐ No	ESTIMATED POLLUTION CONTROL COST
	$

TOTAL PROJECT BID AMOUNT (APPLICANT'S PORTION OF PROJECT)	LABOR COST (APPLICANT'S PORTION OF PROJECT)	MATERIAL COST (APPLICANT'S PORTION OF PROJECT)
$	$	$

REVENUE DEPARTMENT USE ONLY

PENDING DOCUMENTATION / INFORMATION:

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

Contact Dates: _____ Received Date: _____

_____ Forwarded for Denial: _____

PROJECT NAME	PROJECT OWNER'S FEIN (EXEMPT ENTITY)

FORM OF OWNERSHIP:

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

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

OWNERSHIP INFORMATION:

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

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

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

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

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

NAME *(PLEASE PRINT)* _____ SIGNATURE _____

TITLE _____ DATE _____

REVENUE DEPARTMENT USE ONLY

PENDING OTHER:

☐ Government Entity ☐ General Contractor ☐ Not on LOS

Contact Dates: _____ Received Date: _____

_____ Forwarded for Denial: _____

Examiner's Remarks _____

Examiner _____ Date _____

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

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

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

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

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

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

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

General contractors and subcontractors:
- Any additions and/or deletions to the list of subcontractors working on a project must be submitted to the Department within 30 days of occurrence.
- If an extension is needed for a project, please contact the Department of Revenue at the address, number, or email listed below. Extension requests should be submitted no more than 30 days after expiration date.
- Subcontractor's Estimated Start Date should be the date they will begin working on the project and ordering materials instead of the General Contractor's Estimated Start Date for the project.

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

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

Fax: (334) 353-7867

Email: STExemptionUnit@revenue.alabama.gov

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

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

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

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

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

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

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

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

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

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

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

This flat form is for project manual purposes only and is not intended to be used for direct submittal purposes.
A version with fillable fields is available at www.dcm.alabama.gov.

ALABAMA DEPARTMENT OF FINANCE
REAL PROPERTY MANAGEMENT
Division of Construction Management
www.dcm.alabama.gov, 334-242-4082, inspections@rpm.alabama.gov

DCM Department Use Only
Invoice # _____

PERMIT FEE CALCULATON WORKSHEET

DCM Project Number _____ Date _____

Project Name; Owner/Architect/Engineer Project Number & Phase/Package Number

_____

Owner Entity Name _____

Architect/Engineer Firm Name _____

Contractor Company Name _____

Awarded Contract Sum: _____

Email address(es) for Payment Receipt: _____

BASIC PERMIT FEE CALCULATION:

Awarded Contract Sum Range	Calculation	Total Due
Up to $100,000	No calculation (For this range, $200.00 would be due).	
$100,001 - $250,000	No calculation (For this range, $400.00 would be due).	
$250,001 - $1,000,000	Sum less $250,000 / 1,000 x $0.80 + $200.00 x 2	
$1,000,001 - $10,000,000	Sum less $1,000,000 / 1,000 x $0.60 + $800.00 x 2	
$10,000,001 - $50,000,000	Sum less $10,000,000 / 1,000 x $0.40 + $6,200.00 x 2	
$50,000,001 and up	Sum less $50,000,000 / 1,000 x $0.20 + $22,200.00 x 2	

Note: Permit fees are not owed for fully locally funded K-12 and 4-year public University projects for capital improvement or alterations with estimated cost of $750,000.00 or Less. Determination of whether a project is subject to the Locally-Funded $750,000.00 or Less exception for inspections is based on the total of bids received for all phases and bid packages for the project. Inspections are still required for such projects.

Basic Permit Fee: Covers all required pre-construction conferences, construction inspections and certificate of substantial completion issuance by the DCM Inspector. This fee is due when a construction contract or self-performance letter is received by DCM and must be paid before the required Pre-Construction Conference is scheduled with the DCM Inspector.

Permit Re-Inspection Fee: A fee of $1,500.00 per occurrence 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.

Pay fee online at www.dcm.alabama.gov.

Fee may be paid with physical check; make check payable to: "Finance - Construction Management", include the DCM Project number 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 DCM Accounting at 334-242-4082 or accountservices@rpm.alabama.gov.

The Basic Permit Fee is subject to Final Reconciliation of Fees at the end of construction.

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

P.O. Box 301150, Montgomery, AL 36130-1150. (334) 242-4082 (phone), inspections@rpm.alabama.gov

PRE-CONSTRUCTION CONFERENCE CHECKLIST

The following are recommended topics to be covered during the required Pre-Construction Conference. Contact the DCM Project Inspector via DCM's Engage Portal at least fourteen (14) days prior to scheduling the conference.

**Shall be discussed while owner is present*

	CHECKLIST ITEMS
	*1. Name and relationship to job of local Owner personnel
	2. Public officials involved
	3. Names of architect/engineer personnel involved
	4. Provide e-mail addresses on Pre-Construction Sign-in sheet
	5. Construction sets of plans available to contractor
	6. Verify alternates accepted, etc.
	7. Approved list of sub-contractors
	*8. Point of contact for project. Project Manager Job Superintendent
	9. Approved cost breakdown (DCM Form C-10SOV) & Progress Schedule (DCM Form C-11)
	*10. Method of approving monthly payment requests • All State Agency, PSCA-funded University, and PSCA-funded K-12 projects: payment applications must be submitted via DocuSign PowerForm links available from DCM's Engage Portal. • Fully locally-funded University and fully locally-funded K-12 projects: submit payment applications per Owner requirements.
	*11. Time Extensions
	*12. Overall phasing of job
	• 13. Project limits
	14. Shop drawings, time to process
	*15. Sales tax savings (Alabama Department of Revenue)
	*16. Project sign and other job signs
	17. ADEM permit, if more than one acre of land is disturbed. • Coordinate offsite storm water drainage with the authority having jurisdiction when applicable.
	18. DCM Inspection Minimum Requirements.
	19. Advance notice for required DCM inspections The contractor will notify the architect by email of the date the project will be ready for an inspection by the Division of Construction Management. Inspections must be requested via DCM's Engage Portal 14 days in advance. When the DCM Inspector confirms the inspection date and time, the architect will send an email confirming the inspection date and time to all parties as well as a copy to inspections@rpm.alabama.gov. An Outlook calendar invite is also suggested for all inspections. Cancellations of any scheduled inspection must be received in writing no later than 48 hours prior to the scheduled inspection. If the inspection is canceled, it will be rescheduled subject to the DCM Inspector's availability. Cancellations received less than 48 hours in advance shall incur a $1,500.00 re-inspection fee. If the project is not ready for the scheduled inspection, the General Contractor shall incur a $1,500.00 re-inspection fee.

20. **Pre-Construction Conference**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, Major Subs
    - Fully-executed construction contract and Notice to Proceed
    - Verification of permit fee payment (Exception: fully locally-funded K-12 & public four-year University capital improvement, HVAC, or roof projects with an estimated cost of $750,000.00 or Less, are exempt from DCM Fees.)
    - Fire alarm contractor and fire sprinkler contractor certification (from State Fire Marshal)
    - ADEM permit, if more than one acre of land is disturbed.
    - The General Contractor to perform and furnish all work, labor, services, supervision, materials, equipment, tools, scaffolds, appliances, insurance, taxes, and other things necessary to complete the work in strict accordance with all plans, specifications, and GENERAL CONDITIONS. The Contractor shall be liable for any omissions in contractors bid proposal or any other interpretations made by contractor. All items of Work related to each are to be provided so that no gaps, omissions, or conflicts arise that prevents a complete and functioning result.
    - Contractor's duty to coordinate work of separate contractors.

21. **Pre-Construction Conference for Storm Shelter**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, Structural Engineer, Major Subs, Special Inspections Representative
    - The completed & signed DCM Form B-15: Owner's Statement of Responsibility for Tornado Storm Shelter (Hurricane Shelter Where Applicable) must be submitted to the DCM Inspector at Pre-Construction Conference. Must be kept with Owner's storm shelter records.
    - The completed & signed DCM Form C-17: Contractor's Statement of Responsibility for Construction of Tornado Storm Shelter (Hurricane Shelter Where Applicable) along with required Quality Assurance Plan (QAP) must be submitted to DCM Inspector at Pre-Construction Conference.
    - The completed and signed DCM Form B-14: Certification of Structural Observations from the Structural Engineer of Record must be attached to the Certificate of Substantial Completion form via DocuSign link available from DCM's Engage Portal.
    - Storm Shelter Impact-protective systems Listing and labeling: Impact-protective systems shall be listed and labeled.
      Marking: The following function and performance characteristics shall be provided on the label for each impact protective system tested:
      1. Manufacturer's identification reference or listing number for the assembly.
      2. Type of impact-protective system, such as window assembly, door assembly shutter assembly or louver.
      3. Hazard: hurricane, tornado, or both.
      4. Missile weight and speed.
      5. Design wind pressure.
      6. Edition of ICC 500.

22. **Pre-Roofing Conference**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, Roofing Sub, Roofing Manufacturer's Representative
    - This conference shall be conducted by the design professional as described in Chapter 5, Section C.4 of the DCM Manual of Procedures.
    - Roofing submittals must be approved by the architect prior to pre-roofing conference.
    - Roofing manufacturer must provide documentation that roof design and roofing materials meet code requirements for wind uplift and impact resistance.
    - Copy of sample roof warranty – Note: Standard manufacturer's roofing guarantees which contain language regarding the governing of the guarantee by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such guarantees.
    - Contractor shall video existing building interior and exterior prior to roofing operations and provide copy to owner.
    - General Contractor's Roofing Guarantee and Manufacturer's Roofing Warrantees must be presented to DCM Inspector at Final Inspection and submitted with Certificate of Substantial Completion for all projects via DocuSign PowerForm links available from DCM's Engage Portal.

	23. **Above Ceiling Inspections**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, MEP Engineers, Major Subs • All work must be completed except for installation of ceiling tiles, and/or hard ceilings. • Space must be conditioned. • Permanent power must be connected unless otherwise arranged with the DCM Inspector. • Grease duct must be inspected and approved by the DCM Inspector prior to fire wrapping and above-ceiling inspection.
	24. **Life Safety Inspections and Final Inspection**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, Engineers, Major Subs, Local Fire Marshal • Fire alarm certification • Kitchen hood fire suppression system certification • General contractor's 5-year roofing guarantee (DCM Form C-9) • Roofing manufacturer's warranty • Above ground and below ground sprinkler certifications • Completed certificate of structural engineer's observations (for storm shelter) • Emergency and exit lighting tests. • Fire alarm must be monitored. • Elevator inspection completed and certificate of operation provided by the State of Alabama Department of Labor • Boiler/vessels inspection completed, and certificate of operation provided by the State of Alabama Department of Labor • Pressure test/Flush test for underground sprinkler lines (witnessed by local fire marshal, fire chief and/or DCM Inspector) • Flush/pressure test for new and/or existing fire hydrants • Must have clear egress/access and emergency (for first responders) access to building • Must have ADA access completed. • Comply with ADA requirements: plumbing fixture heights, toilet partition widths, turnaround, signage, parking lot striping and signage, etc. • Emergency Responder Radio Coverage
	25. **Year-End Inspection**: Required Attendees: DCM Inspector, Contractor, Owner, Architect, Engineers and/or Major Subs may be required. • Owner's list of documented warranty items • Reconciliation of user fees with DCM shall be completed prior to inspection
	26. Other inspections required before work is covered
	27. Third-party inspections/special inspections. Structural components, Roofing, Geotechnical, Commissioning, lab tests, etc.
	28. Procedure if bad soil or rock is encountered: Geotech and special inspections
	29. Inspection report distribution – weekly per Owner-Architect Agreement. All site inspections and observations are to be recorded and transmitted to the DCM Inspector via DCM's Engage Portal. The design professional must also concisely report any deficiencies encountered, problems or questions raised by the contractor, instructions or answers given to the contractor, and administrative or construction delays observed. The design professional must endeavor to write his or her reports utilizing descriptions of components and areas that are consistent with descriptions contained in the plans and specifications so that the "third-party reader" can understand what is being discussed and where it is located in the project. Photographs may be included for clarity. Keep photos to a minimum. Each report shall also be distributed by the design professional to the Owner and contractor promptly after conducting an inspection so that all parties are kept current regarding events on the project.
	30. Ready mix plant, file delivery tickets, slump tests, cylinders. Quality of concrete work; concrete testing
	31. Light gauge metal roof framing and/or wood truss framing to be inspected by the structural engineer.

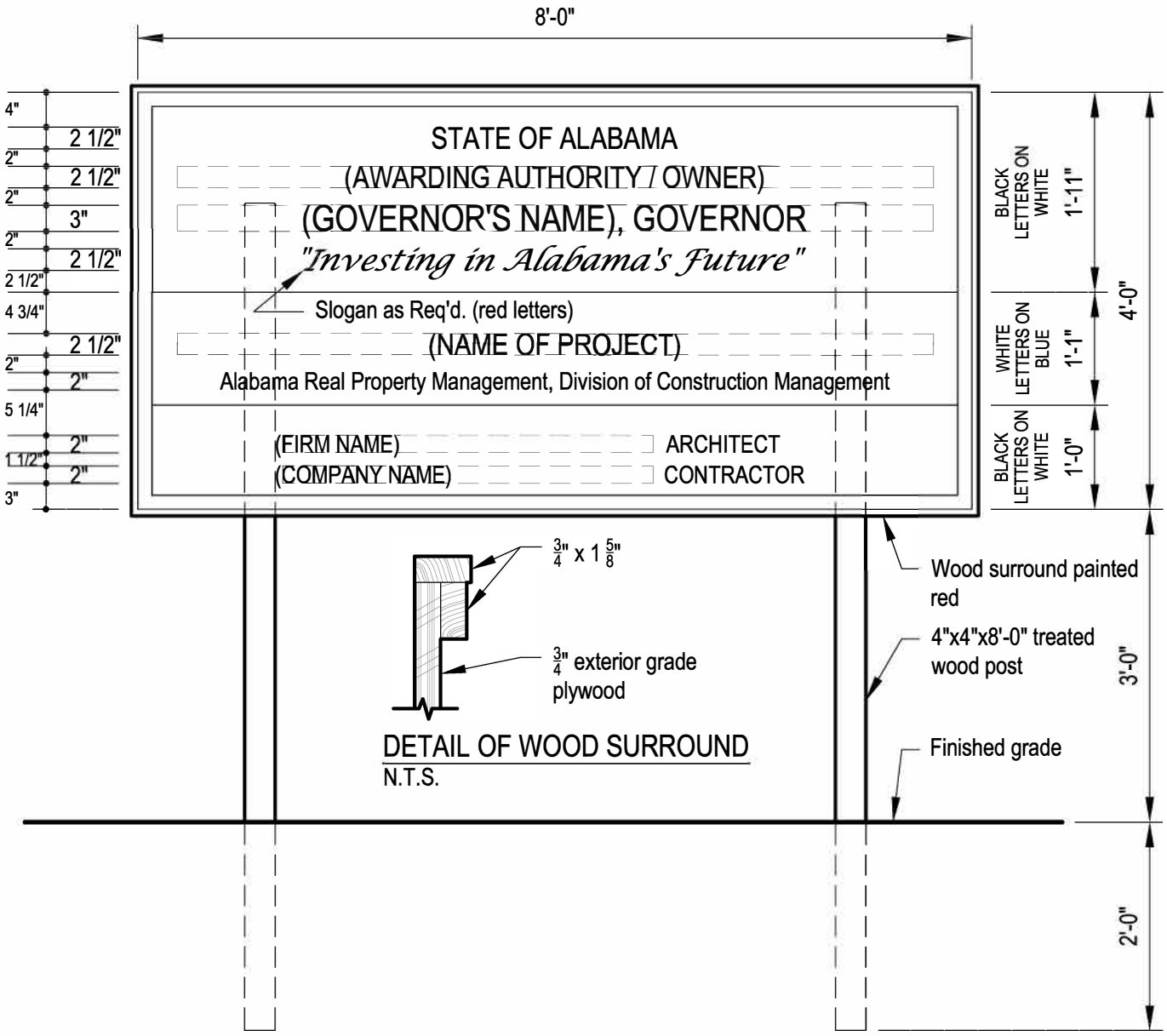
	32. Record Drawings and As-Built Drawings: Contractor will maintain a set of drawings designated solely for As-Built Drawings to satisfy its closeout requirements. Contractor/Subcontractor shall, on a weekly basis, record all changes, revisions, modifications, additions, etc. to accurately reflect its completed work.
	33. Protection Of the Work: The General Contractor shall carefully secure and protect the work and all materials, equipment, or work of Sub-Contractors and others in the vicinity of the work and shall be liable for any loss or damage that results from Contractor`s failure to do so.
	*34. Use of site and existing building, access drive, signs
	*35. Conduct of contractor's personnel: No interaction with staff and/or students. No foul language, no smoking or use of tobacco products, no drugs, and no firearms on school property.
	*36. Use of existing toilets
	*37. Coordinate any utilities supplied by Owner
	*38. Coordinate outages and work in existing building with Owner
	*39. Keeping existing exit paths open
	*40. Routine job clean-up to be perform daily. Clean-up areas where work is performed including paths of access/egress utilized by Contractor's personnel and equipment. All generated waste and debris will be placed in dumpsters or other containment boxes.
	41. O.S.H.A. - Report all accidents - safety General Contractor's responsibility
	42. Contractor is reminded of obligation to comply with the Alabama Child Labor Law and E-Verify
	43. Building location relative to critical property line, easement, setback, etc.
	44. Surveyor to check foundation wall if location critical
	45. Verify sanitary outfall before committing floor level
	46. Stockpiling topsoil
	47. Protecting trees
	48. Soil Treatment, mix on site in presence of Job Superintendent
	49. What is expected of masonry work, mortar additive
	50. Problems with hollow metal - install proper fire labels
	51. Potential conflict of mechanical and electrical equipment; shop drawings
	52. Return air plenums (no combustibles)
	53. Fire damper installation issues
	54. Kraft-faced insulation is not to be installed exposed.
	55. Coordinate with local fire authority to assure access to the building for firefighting equipment during construction and before final acceptance. Provide fire extinguishers as required.
	56. Comply with fire hydrant requirement; coordinate with local Fire Authority or State Fire Marshal.
	*57. Certificate of Substantial Completion/Final Inspection All projects: Certificate must be activated via DocuSign link after final inspection and receipt of DCM Inspector's report. The correct DocuSign link is available from DCM's Engage Portal.
	58. Release of retainage – 30 days to complete punch list and closeout
	*59. Project Closeout - precedes Final Payment a. Warranties b. Operating and Maintenance Manuals c. As-built Drawings d. Other requirements

	60. Advertisement of Completion - start ad after substantial completion a. for projects less than $100,000.00, Advertisement of Completion is not required. b. for projects $100,000.00 or more, Contractor advertises for 3 weeks. The contractor can publish a notice using one or more of the following methods: • In a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done. • On a website that is maintained by a newspaper of general circulation in the county or counties in which the work, or some portion thereof, has been done. • On a website utilized by the awarding authority for publishing notices. • If no newspaper is published in the county in which the work was done, and if the awarding authority does not utilize a website for the purpose of publishing notices, the notice may be given by posting at the courthouse for 30 days, and proof of the posting of the notice shall be given by the awarding authority and the contractor.

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DETAIL OF PROJECT SIGN

N.T.S.



DETAIL OF WOOD SURROUND

N.T.S.

Notes:

1. Fully locally-funded State Agency and Public University projects: DCM Form C-15 must be included in the project manual regardless of expected bid amount. If the awarded contract sum is $100,000.00 or more, Contractor shall furnish and erect a project sign.
   Fully locally-funded K-12 school projects: Project sign is not required unless requested by Owner, if project sign is requested by Owner, include DCM Form C-15 in the project manual.
   Partially or fully PSCA-funded projects: DCM Form C-15 must be included in the project manual. Contractor shall furnish and erect a project sign for all PSCA-funded projects, regardless of contract sum. "Alabama Public School and College Authority " as well as the local owner entity must be included as awarding authorities on the project sign of all PSCA-funded projects. Exception: Alabama Community College System (ACCS) PSCA-funded projects with Notice-To-Proceeds issued after July 31, 2021 are not submitted to DCM.
   Fully locally-funded ACCS projects with Notice-To-Proceeds issued prior to August 1, 2021: DCM Form C-15 must be included in the project manual regardless of expected bid amount. If the awarded contract sum is $100,000.00 or more, Contractor shall furnish and erect a project sign.
2. Sign to be constructed of ¾" exterior grade plywood.
3. Paint with two coats best grade exterior paint before letters are painted. Option: In lieu of painted lettering on plywood, a corrugated plastic sign (displaying the same lettering, layout and colors as above) may be secured directly to the unpainted exterior grade plywood.
4. Sign shall be placed in a prominent location and easily readable from existing street or roadway.
5. Sign shall be maintained in good condition until project completion.
6. Slogan: Act 2020-167's title *"Investing In Alabama's Future"* should be placed on the project signs of all PSCA-funded projects, otherwise the Awarding Authority/Owner's slogan, if any, should be used. If the Awarding Authority/Owner of a fully locally-funded project does not have a slogan, the project sign does not require a slogan.

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DCM Form C-10
Revised July 2022

DCM (BC) No. _____

PSCA Projects: PSCA No. _____

Application No. _____

Date: _____

APPLICATION and CERTIFICATE for PAYMENT

Attach DCM Form C-10SOV: Schedule of Values

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

A. Total Original Contract	$
B. Fully Executed (fully signed) Change Order(s) Numbers __ through __	+$ _____
C. Total Contract To Date	$

1. Work Completed to Date per attached Schedule of Values *(Form C-10SOV's Column F Total)*		$
2. Materials Presently Stored *(When this amount is greater than $0.00, attach Form C-10SM: Inventory of Stored Materials, or similar list)*		+$ _____
3. Total Work Completed to Date & Materials Presently Stored *(_____% of Contract To Date)*		$
4. Less Retainage *(If Total Work Completed to Date & Materials Presently Stored (#3) is less than or equal to 50% of Total Contract to Date (C), Retainage = #3 x 0.05. Once #3 exceeds 50% of C and up until project is complete, Retainage = C x 0.025. $0 is retained on final payment application, see last bullet point below Instructions.)*	Final pay app? ☐ Yes.	−$ _____
5. Total Due		$
6. Less Total Previous Payments Billed *(Must exactly match #5 Total Due from previous payment application. # 6 is $0.00 if there is no previous payment application)*		−$ _____
7. Balance Due This Estimate		$

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that to the best of his knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by him for Work for which previous Certificates for Payments were issued and payments received from the Owner and that current payment shown herein has not yet been received.

By: _____ Date: _____
Contractor's Signature

Name & Title _____

Sworn and subscribed before me this _____ day of _____
Day Month, Year

Seal:

_____
Notary Public's Signature

ARCHITECT'S / ENGINEER'S CERTIFICATION

In accordance with the Contract Documents, the Architect/ Engineer certifies to the Owner that, to the best of the Architect's/ Engineer's knowledge and belief, the Work has progressed to the point indicated herein, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the amount approved.

By _____
Architect's / Engineer's Signature

Name & Title _____

Date _____

INSTRUCTIONS

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

APPROVAL

_____
Owner Entity

By _____
Signature

Name & Title _____

Date _____

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SCHEDULE OF VALUES (SOV)

DCM Form C-10SOV, Rev. Oct. 2021

Project:						DCM 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 Number	**Description of Work**	**Scheduled Value** (including fully executed [signed by all parties] change order amounts)	**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)**	**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 automatically calculates the applicable variable rate. Do not type anything in this column J.)
1.					$ -		$ -		Retainage Variable Rate:
2.					$ -		$ -		
3.					$ -		$ -		
4.					$ -		$ -		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. No retainage on final payment application.
5.					$ -		$ -		
6.					$ -		$ -		
7.					$ -		$ -		
8.					$ -		$ -		
9.					$ -		$ -		
10.					$ -		$ -		
11.					$ -		$ -		
12.					$ -		$ -		
13.					$ -		$ -		
14.					$ -		$ -		
15.					$ -		$ -		
16.					$ -		$ -		
17.					$ -		$ -		
18.					$ -		$ -		
19.					$ -		$ -		
20.					$ -		$ -		
21.					$ -		$ -		
22.					$ -		$ -		
23.					$ -		$ -		
24.					$ -		$ -		
25.					$ -		$ -		
No data	**TOTALS:**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**		**$ -**
This pay app SOV's column totals must match amounts in this pay app Form C-10 per the following Form C-10 line numbers:		No data. C.	No data. None	No data. None	No data. 1.	No data. 2.	No data. 3.	No data. 3.	No data. 4.

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

End of Worksheet

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INVENTORY OF STORED MATERIALS

DCM Form C-10SM
Revised October 2021

Project:	DCM Number:
	PSCA Number, if any:
Contractor Company:	Estimate Number:
	For Period Ending:

A	B	C	D	E
Description	**Materials Stored Last Period**	**Materials Purchased This Period (period noted above)**	**Materials Used This Period (period noted above)**	**Materials Presently Stored (B + C - D)**
TOTALS:				
Instructions:	No data.	No data.	No data.	No data.

· 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.

End of Worksheet.

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SAMPLE PROGRESS SCHEDULE & REPORT

DCM Form C-11 August 2021

DCM Project Number:	CONTRACTOR (May use own form in lieu of Form C-11):	DATE OF REPORT:
PSCA projects: PSCA Number:		
PROJECT:		PROCEED DATE:
	ARCHITECT/ENGINEER:	PROJECTED COMPLETION DATE:

	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 ORIGINAL 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.

End of Worksheet

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

P.O. Box 301150, Montgomery, AL 36130-1150. (334) 242-4082 (phone)

ELECTRONIC CHANGE ORDER CHECKLIST

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

Change Orders must be activated by the Lead Design Professional Firm via DocuSign PowerForm links available from DCM's Engage Portal. Verify the following information is inserted in spaces provided on the CONTRACT CHANGE ORDER form in DocuSign, or attached to the form where attachments are noted to be acceptable or obviously necessary.

Number	Description
1.	**CHANGE ORDER NUMBER:** Insert current change order number.
2.	**DATE:** Insert date.
3.	**DCM PROJECT NUMBER:** Insert DCM Project Number in the block provided at top of document. • On DCM Form 9-J, insert the PSCA Project Number in the field provided.
4.	**CONTRACTOR** Insert name and address of the Contractor, exactly as they appear on the Construction Contract.
5.	**NAME OF PROJECT:** Under "Project", insert the complete name of the project as identified on the Construction Contract. If using DCM Form 9-J, insert the PSCA Project Number in the space provided.
6.	**CONTRACTOR'S PROPOSALS:** Under "TERMS", identify the change order proposals submitted by the contractor that are being addressed by the Contract Change Order. Identify these proposals by inserting their dates.
7.	**DESCRIPTION OF THE CHANGE(S) IN WORK:** Fully describe the change or changes to the original contract work for which the Construction Contract is being modified. This description should be written so that a reader of the document who is not directly involved in the project can understand what is being changed. If the space provided on the form is inadequate for such a description, use attachments and cite them.
8.	**CONTRACT AND CHANGE ORDER AMOUNTS:** Insert the applicable dollar amounts to record the original contract sum, change orders, and the currently revised contract sum.
9.	**EXTENSION OF TIME:** If the Contract Time is being extended by the Contract Change Order, insert appropriate number of **calendar days** in the space provided. If the Contract Time is not being extended, insert "NONE".
10.	**RESPONSIBILITY FOR CHANGE ORDER FUNDING - DCM Form 9-J ONLY:** The authority responsible for funding the change order is to be identified in the following sentence in the form,: "The amount of this Change Order will be the responsibility of _____." Insert whichever is appropriate: (1) "PSCA", (2) name of LEA, or (3) "PSCA" and name of LEA.
11.	**SIGNATURES:** It is the Activator/Form Filler's responsibility to add the names and email addresses of the Owner, Architect, and Contractor Recipients to the DocuSign PowerForm. Routing for e-signatures in sequential order then occurs automatically.
12.	**ATTACHMENTS** to each Change Order: a. Contractor's change order proposals and/or invoices providing a detailed breakdown of change order costs. General Contractors (GC) must include subcontractors' (sub) quotes as backup. All GC and sub quotes must be broken down by labor (hours and rates), materials including quantities and unit prices (with receipts or quotes attached), equipment whether rented or owned (with receipts or quotes attached), and Overhead & Profit (OH&P). 1. Total OH&P can be a maximum of 25% divided between GC and subs; GC can have a maximum of 15% OH&P (in which case a sub could have up to 10% OH&P). See General Conditions- Article #19. 2. Sales tax cannot be included in change orders. 3. Deductive change orders also require backup including breakdown of labor and material, and must also deduct OH&P if included in original bid. Include specification section regarding allowances. b. **POWER OF ATTORNEY** for the individual signing the Contract Change Order for the surety. c. **DCM Form B-11, CHANGE ORDER JUSTIFICATION:** completed and signed by the design professional and owner.

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

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

CONTRACT CHANGE ORDER

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

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

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

_____.

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

Description continued from Page 1:

ORIGINAL CONTRACT SUM $ _____

NET TOTAL OF PREVIOUS CHANGE ORDERS $ _____

PREVIOUS REVISED CONTRACT SUM $ _____

THIS CHANGE ORDER WILL INCREASE DECREASE THE CONTRACT SUM BY $ _____

REVISED CONTRACT SUM, INCLUDING THIS CHANGE ORDER $ _____

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

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

_____
Architectural/Engineering Firm

Recommended By _____

Name & Title _____

APPROVAL

ALABAMA STATE DEPARTMENT OF EDUCATION (SDE)

(Required for locally-funded, SDE projects.)

By _____ Date: _____
State Superintendent of Education

CONTRACTING PARTIES

_____
Contractor Company

By _____

Name & Title _____

_____
Awarding Authority/Owner Entity

By _____

Name & Title _____

CONSENT OF SURETY (for additive $ change orders only)

_____
Surety Company

By _____
(Attach current Power of Attorney)

Name & Title _____

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

This flat form is for project manual purposes only and is not intended to be used for direct submittal purposes.

DCM Form B-11
August 2021

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

Purpose and instructions on next page.
Do not staple this form and/or attachments; use clips.

Change Order No. _____

Date: _____

DCM (BC) No. _____

(A)

PROJECT NAME & LOCATION:	OWNER ENTITY NAME & ADDRESS:
CONTRACTOR COMPANY NAME & ADDRESS:	ARCHITECTURAL / ENGINEERING FIRM NAME & ADDRESS:

(B) **DESCRIPTION OF PROPOSED CHANGE(S):** **ATTACH CONTRACTOR'S DETAILED COST PROPOSAL(s)**

AMOUNT: ☐ **ADD** ☐ **DEDUCT $_____** **TIME EXTENSION: _____ CALENDAR DAYS**

(C)

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	CHANGE ORDER JUSTIFIED AND APPROVED
_____ ARCHITECTURAL / ENGINEERING FIRM NAME	_____ LOCAL OWNER ENTITY NAME
By: _____ ARCHITECT / ENGINEER'S SIGNATURE	By: _____ OWNER'S SIGNATURE
By: _____ OWNER'S PROJECT REPRESENTATIVE'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.**

CHANGE PROPOSAL RECAP SHEET

Project Name : _____ Date : _____

Arch# Project Number : _____

Contractor Name : _____ Initiated By : (Check One) Owner/Architect ☐ Contractor ☐ Subcontractor ☐

Reference Change Proposal Request Number : _____

Brief Description of Proposed Change : _____

GENERAL CONTRACTOR Direct Cost Summary (Attach Supplemental Sheets as necessary)

Item / Description *	Quantity	Unit	Amount					
			Unit $	Material	Unit $	Labor	Unit $	Equipment
			Sub Totals :	$ -		$ -		$ -

Material : $ -
Labor : $ -
Equipment : $ -
General Contractor Subtotal : $ -

SUBCONTRACTOR Direct Cost Summary (Attach Supplemental Sheets as necessary)

Item / Description *	Quantity	Unit	Amount							
			Unit $	Material	Unit $	Labor	Unit $	Equipment	Unit $	Sub-sub
			Sub Totals :	$ -		$ -		$ -		$ -

Material : $ -
Labor : $ -
Equipment : $ -
Sub-sub : $ -
Subcontractor Subtotal : $ -

UNIT PRICE Cost Summary (Attach Supplemental Sheets as necessary)

Item / Description *	Quantity	Unit	Amount	
			Unit $	Total Unit Price
			Sub Totals :	$ -

Unit Price Subtotal : $ -

Mark-up Calculations

Subcontractors Subtotal :	$ -		
General Contractor Subtotal :	$ -		
Unit Price Subtotal :	$ -		
TOTAL Direct Cost :	$ -		
** General OH&P on Own Work :	$ -	15%	Amount not to exceed 15%, see Article 19 of the General Conditions
** Total OH&P on Sub Work :	$ -	25%	Amount not to exceed 25%, see Article 19 of the General Conditions

TOTAL COST CHANGE $ - Add ☐ Deduct ☐

*** **TOTAL TIME CHANGE** _____ Calendar Days (Critical paths impact only)

* Materials permanently installed in the building shall be sales tax free.
** "Overhead" shall cover the Contractor's indirect costs of the change, such as the cost of bonds, superintendent and other job office personnel, watchman, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.
*** Any requests for additional time are only considered if the critical path of the project is extended. Attach additional pages with explanation of how the change affects the critical path of the project.

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GENERAL CONTRACTOR'S ROOFING GUARANTEE

DCM Project No. _____

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

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

1. The General Contractor does hereby certify that the roofing work included in this contract was installed in strict accordance with all requirements of the plans and specifications and in accordance with approved roofing manufacturers recommendations.

2. The General Contractor does hereby guarantee the roofing and associated work including but not limited to all flashing and counter flashing both composition and metal, roof decking and/or sheathing; all materials used as a roof substrate or insulation over which roof is applied; promenade decks or any other work on the surface of the roof; metal work; gravel stops and roof expansion joints to be absolutely watertight and free from all leaks, due to faulty or defective materials and workmanship for a period of five (5) years, starting on the date of substantial completion of the project. This guarantee does not include liability for damage to interior contents of building due to roof leaks, nor does it extend to any deficiency which was caused by the failure of work which the general contractor did not damage or did not accomplish or was not charged to accomplish.

3. Subject to the terms and conditions listed below, the General Contractor also guarantees that during the Guarantee Period he will, at his own cost and expense, make or cause to be made such repairs to, or replacements of said work, in accordance with the roofing manufacturers standards as are necessary to correct faulty and defective work and/or materials which may develop in the work including, but not limited to: blisters, delamination, exposed felts, ridges, wrinkles, splits, warped insulation and/or loose flashings, etc. in a manner pursuant to the total anticipated life of the roofing system and the best standards applicable to the particular roof type in value and in accordance with construction documents as are necessary to maintain said work in satisfactory condition, and further, to respond on or within three (3) calendar days upon proper notification or leaks or defects by the Owner or Architect.

A. Specifically excluded from this Guarantee are damages to the work, other parts of the building and building contents caused by: (1) lightning, windstorm, hailstorm and other unusual phenomena of the elements; and (2) fire. When the work has been damaged by any of the foregoing causes, the Guarantee shall be null and void until such damage has been repaired by the General Contractor, and until the cost and expense thereof has been paid by the Owner or by the responsible party so designated.

B. During the Guarantee Period, if the Owner allows alteration of the work by anyone other than the General Contractor, including cutting, patching and maintenance in connection with penetrations, and positioning of anything on the roof, this Guarantee shall become null and void upon the date of said alterations. If the owner engages the General Contractor to perform said alterations, the Guarantee shall not become null and void, unless the General Contractor, prior to proceeding with the said work, shall have notified the Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate the work, thereby reasonably justifying a termination of this Guarantee.

C. Future building additions will not void this guarantee, except for that portion of the future addition that might affect the work under this contract at the point of connection of the roof areas, and any damage caused by such addition. If this contract is for roofing of an addition to an existing building, then this guarantee covers the work involved at the point of connection with the existing roof.

D. During the Guarantee period, if the original use of the roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray cooled surface, flooded basin, or other use of service more severe than originally specified, this Guarantee shall become null and void upon the date of said change.

E. The Owner shall promptly notify the General Contractor of observed, known or suspected leaks, defects or deterioration, and shall afford reasonable opportunity for the General Contractor to inspect the work, and to examine the evidence of such leaks, defects or deterioration.

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

_____
General Contractor's Authorized Signature

_____
Typed Name and Title

TO: **Alabama Department of Finance**
Real Property Management
Division of Construction Management
770 Washington Avenue, Suite 444
Montgomery, AL 36130-1150
(334) 242-4082

DCM Form C-13
Revised March 2025
(Must be activated via DocuSign link from DCM's Engage Portal)

DCM No. _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

OWNER ENTITY NAME AND ADDRESS:	**ARCHITECTURAL / ENGINEERING FIRM NAME AND ADDRESS:**
CONTRACTOR COMPANY NAME AND ADDRESS:	**BONDING COMPANY NAME AND ADDRESS:**
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" or "Partially Substantially Complete" means the designated Work, or portion of 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.

Attach Architect/Engineer's DCM Form B-10: Statement of Observations from Final Inspection with List of Attendees (required), and Punch List (if applicable). 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.

	RECOMMENDED BY: ARCHITECT/ENGINEER: _____ **CONTRACTING PARTIES:** CONTRACTOR:
DCM INSPECTOR: _____	_____
DCM CHIEF INSPECTOR: _____	OWNER:
DCM DIRECTOR: _____	_____

Attachments

All DCM Forms required as attachments are available from https://dcm.alabama.gov/forms_DocuSignCOSC.aspx

- The Lead Design Professional's (LDP's) report from Final Inspection on DCM Form B-10: Statement of Observations with list of attendees (required), and punch list (if applicable); attached by the LDP Firm Signer using the first page's Attach button which is only available to the LDP Firm Signer.

Other attachments required when applicable to the project; can be attached by either the Form Filler or the LDP Firm Signer:

The optional attach buttons are available to the Form Filler and the LDP Firm's Signer during their respective turns to attach the following items. Do not duplicate attachments. Please attach documents in the order listed below (documents are attached in the order as you select them from your device):

- Roof Warranty(s): Attach the executed DCM Form C-9: General Contractor's Roofing Guarantee and any other roofing warranty required by the contract. Also, any standard manufacturer's roofing guarantees which contain language regarding the governing of the guarantee by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such guarantees.

- Engineer final observation reports.

- Fire Alarm Record of Completion.

- Any additional documents requested by the DCM Inspector at Final Inspection.

- DCM Form B-14: Certification of Structural Observations (for storm shelter) (the Engineer's Seal must show on the copy) for the following projects:
  - All new buildings constructed on the grounds of new public K-12 schools.
  - All new buildings containing classrooms or dorm rooms constructed on the grounds of public 2-year or 4- year institutions of higher education.

- DCM Form C-17: Contractor’s Statement of Responsibility for Construction of Tornado Storm Shelter (Hurricane Shelter Where Applicable) for the following projects:
  - All new buildings constructed on the grounds of new public K-12 schools.
  - All new buildings containing classrooms or dorm rooms constructed on the grounds of public 2-year or 4- year institutions of higher education.
  - State Agency/Authority projects when assigned to DCM.

- DCM Form B-15: Owner’s Statement of Responsibility for Tornado Storm Shelter (Hurricane Shelter Where Applicable) for the following projects:
  - All new buildings constructed on the grounds of new public K-12 schools.
  - All new buildings containing classrooms or dorm rooms constructed on the grounds of public 2-year or 4- year institutions of higher education.
  - State Agency/Authority projects when assigned to DCM.

Do NOT attach:

- Un-flattened drawings (If needed, attach drawings that are formatted to display as letter-size, and are flattened; the pdfs must not include layers nor PDF comments. PDFs that are not flattened may not be viewable on DCM equipment).

- Excessive photos.

- Duplicate documents.

- Close-out documents unless requested.

FINAL PAYMENT CHECKLIST (FPC)

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

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

DCM Project Number: **PSCA Project Number, if applicable:**

Project Name:

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

Submitted By (Architectural/Engineering Firm):

Signature: **Date:**

Printed Name and Title:

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

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DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Contractor's Affidavit of Payment of Debts and Claims

To Owner (*Entity name and address*)**:**	**Project** (*Same as appears in the Construction Contract*)**:**

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:

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DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Contractor's Affidavit of Release of Liens

To Owner (*Entity name and address*)**:**	**Project** (*Same as appears in the Construction Contract*)**:**

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:

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DCM (BC) Number: _____

PSCA Projects: PSCA Number: _____

Date of the Construction Contract: _____

Surety's Bond Number: _____

CONSENT OF SURETY TO FINAL PAYMENT

To Owner (*Entity name and address):*	**Project** (*Same as appears in the Construction Contract*)**:**

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.

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SAMPLE FORM OF ADVERTISEMENT FOR COMPLETION

LEGAL NOTICE

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

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

at _____

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

_____

_____
(*Architect / Engineer*)

_____
(Contractor)

_____
(Business Address)

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

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CERTIFICATE OF ASBESTOS FREE BUILDING MATERIALS

The undersigned hereby states that all building materials incorporated, installed, and used during the construction process for the below listed project by the Contractor or its Subcontractors of any tier are 100% asbestos free. **Asbestos Free means containing 0% asbestos in any form.** Refer to Section 01600, Product Requirements.

McKee Project Name: _____

McKee Project Number: _____

CERTIFICATION: The undersigned certifies that he or she is authorized to execute contracts and legal documents on behalf of the General Contractor as legally named, that this certification is submitted in good faith without fraud or collusion with any other person, that the information indicated in this document is true and complete, and that the document is made in full legal agreement.

To: _____

(Owner / Awarding Authority of Construction Contract)

Date _____

Legal Name of General Contractor _____

General Contractor State License No. _____

(Exactly as appears on license including designation letters)

General Contractor Mailing Address _____

_____

By (Legal Signature) _____

Name & Title (print) _____

Telephone Number _____

E-Mail Address _____

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SECTION 01000 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF REQUIREMENTS

A. Definition: An Alternate is an amount proposed by bidders and stated on the Proposal Form that will be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents.

B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted Alternate is complete and fully integrated into the project.

C. Notification: Immediately following award of Contract, prepare and distribute to each party involved notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates, if any.

D. Schedule: A “Schedule of Alternates” is included at the end of this section. Specification section referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each Alternate.

E. Include as part of each Alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

1.3 SCHEDULE OF ALTERNATES

A. **ADDITIVE BID ALTERNATE #1**: This alternate shall include all work related to the construction of the New Culinary Arts Addition – not including Alternate #2

B. **ADDITIVE BID ALTERNATE #2** – This alternate shall include all work related to the Food Service equipment as shown in Food Service drawings and related specifications.

C. **ADDITIVE BID ALTERNATE #3**: This alternate shall include all work related to the construction of the new Lower Parking Lot.

D. **ADDITIVE BID ALTERNATE #4**: This alternate shall include all work related to the construction of the new Amphitheatre and Stairs. The stairs at west side of Amphitheater shall be in the Base Bid.

PART 2 - NOT APPLICABLE

PART 3 - NOT APPLICABLE

END OF SECTION

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SECTION 01010 - SCOPE OF THE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS AND GENERAL INFORMATION

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

1.2 SUMMARY

A. This Section includes the following:

1. Type of the Contract.
2. Work Under This Contract.
3. Completion Times.
4. Division of Construction Management User Fees.
5. Project Work Identification.
6. Owner-furnished products.
7. Supervision.
8. Contractor Use of premises.
9. Definitions.
10. Work Under Other Contracts.
11. Building and Site Construction.
12. General Issues.
13. Temporary Electrical Power and Jobsite Utilities.
14. Site Security and Insurance Requirements.
15. Protection of Work in Place.
16. Work restrictions.
17. Owner's occupancy requirements.
18. Specification formats and conventions.

B. Related Sections include the following:

1. Division 1 Section 01500 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 TYPE OF CONTRACT

A. Construction Contract (DCM Form C-5, October 2024).

1.4 WORK UNDER THIS CONTRACT

A. Sealed Proposal shall be received as follows:

1. One (1) Sealed Envelope MUST include the following:
    a. General Contractor’s Name and State General Contractor’s License number MUST be legible on the front of the envelope.
    b. One (1) Bid Proposal for all work as indicated on drawings and specifications.
    c. Unit Price Attachment Sheet MUST be included if document is included in the project manual.
    d. One (1) Bid Bond or certified check.

e. One (1) Sales Tax Form.

1.5 COMPLETION TIMES

A. All work shall be completed no later than **15 months after issuance of Notice to Proceed.** Owner wants to occupy facility by June 7, 2028. Note: Grant monies to be spent by Sept. 30, 2028.

1.6 DIVISION OF CONSTRUCTION MANAGEMENT USER FEES & OTHER FEES

A. The Contractor **MUST Include** all costs for permits and fees per the General Conditions of the Contract DCM Form C-8; Article 44 "Permits, Laws and Regulations", Paragraph A Permits, Fees and Notices Sub Paragraphs (1) and (2).

B. The Contractor shall be responsible for all "Re-Inspection Fees".

1. If the contractor schedules an inspection and it is determined by the Owner, Architect or Owner Representative that the contractor has not met required benchmarks or the inspection is cancelled without 48-hours' notice, the Owner, Architect or Owner Representative shall require a fee of $1500. This additional inspection fee shall be applied to each additional inspection that is required to be rescheduled.

1.7 PROJECT / WORK IDENTIFICATION

A. General: Project name is as indicated in the Advertisement For Bids and as shown on the Contract Documents prepared by McKee & Associates, 631 S. Hull Street Montgomery, Alabama 36104.

B. Contract Documents: Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not limited to the following:

1. Existing site conditions and restrictions on use of the site including ingress and egress to the site.

2. Grading operations at the site.

3. The Contractor shall be responsible to secure the site during the execution of the work and provide proof of insurance including but not limited to General Liability, W/C, Auto, Equipment, etc.

C. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, 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 the above. It is recognized that the Work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions, and other forces outside the contract documents.

1.8 OWNER FURNISHED PRODUCTS

A. None

1.9 SUPERVISION

A. Supervision: The Contractor shall provide adequate supervision of the project to ensure proper supervision for all work.

1.10 CONTRACTOR USE OF PREMISES

A. General: During the entire cleanup period the Contractor shall have the exclusive use of the premises for cleanup operations, including full use of the site as shown on the Drawings.

B. Limitations of exclusive use of the site:

1. 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 performance. See site plan for ingress and egress to the site, or if not indicated, same shall be as designated by the

Architect.

2. 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.
3. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds and or designated storage areas as indicated.
4. 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.
5. 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. All Contractors shall assist in such accessibility, to at least the point of providing and maintaining accessible dry paths to work in progress.
6. Furnish and install by contractor temporary barricades, fencing, etc., as indicated or otherwise required, to restrict pedestrian and vehicular traffic from construction operations, including in part, Owner's staff, the public, students, children, and residents of the adjacent residential neighborhoods.
7. Construction operations shall not affect 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, etc.
8. 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.
9. All contractors 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.
10. 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 Architect and Contractor at the Pre-Construction Conference.
11. Smoking or other use of tobacco products shall not be permitted within the structure of the Building, Owner's facilities or on roofs.
12. The use or presence of alcohol and/or other debilitating substances shall not be permitted in the construction of the building and or on the project site.
13. Firearms and/or other weapons shall not be permitted on the project site.
14. The Contractor shall furnish necessary temporary toilets for all work forces on the job site.

PART 2 - SCOPE OF THE WORK

2.1 DEFINITIONS

A. The Scope of the Work of the Contract is meant to be viewed as a successor to the General Special Conditions of the Contract. Should any discrepancy or ambiguity be noted, the Scope of the Work of the Contract shall apply and the General Special Conditions of the Contract shall defer to Scope of the Work of the Contract Documents. The scope of the work shall be taken in its entirety by all contractors. In signing the contract all contractors have read and understand that the Scope of the Work and the General Special Conditions are taken in their entirety.

1. The term "Design Consultant" shall be construed to mean "Architect".
2. The terms "Owner" shall mean “Pike County Board of Education “.

2.2 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

B. Concurrent Work: Owner will award separate contract(s) for the following construction operations at the Project site. Those operations will be conducted simultaneously with work under this Contract.

1. Work done by others or by Owner.

a. Any items noted N.I.C.

b. Construction Testing as defined in applicable sections of the project manual.

2.3 BUILDING AND SITE CONSTRUCTION

A. The Contractor shall maintain the entire site, provide dust control and keep the streets clean at all times and or as directed by the Architect. The Contractor shall call for and be responsible for the locating of all utilities prior to start of work. Use extreme care when working in close proximity to the existing water lines to prevent movement and damage to the water lines.

B. The Contractor shall install and or replace all fencing including furnish and install all temporary fencing as required for all work including safety barriers, signs, traffic directional signals, temporary stripping, flagman, temporary road plates and any temporary roads around any obstruction and or work being constructed. The Contractor shall make all provisions to keep the public and or temporary access roads open during the duration of the work.

C. The Contractor shall maintain & level, all temporary roads and temporary lay down and storage areas using same stone base material. Roads must have no potholes, dips, or rises and provide access to and from the site and other locations on site. The Contractor shall maintain the temporary roads used to move material on the site. Temporary roads are existing and the Contractor shall maintain these temporary roads throughout the duration of construction activity while Contractor is onsite.

2.4 GENERAL ISSUES

A. The Contractor shall be responsible for their own on-site safety requirements within the site per OSHA regulations.

B. Only an approved company owned and insured vehicle shall be allowed on to the construction site. Vehicles shall be clearly marked and identified with the company logo and or name.

2.5 TEMPORARY ELECTRICAL POWER AND JOBSITE UTILITIES

A. The Contractor is responsible for the all costs associated with temporary electrical requirements for performance of the work. The Contractor shall be responsible for the all costs associated with temporary water required for the performance of the work. The Contractor is responsible for all other utility costs as required for the performance of the work.

2.6 SITE SECURITY / INSURANCE REQUIREMENTS

A. The Contractor shall have care custody and control of the site. Contractor shall be responsible for the replacement of their material, equipment and any loss of such. Contractor shall be responsible for securing all material and equipment. If there is a loss and or damage of material and equipment, that loss shall go against the Contractor's insurance coverage.

2.7 PROTECTION OF WORK IN PLACE

A. The Contractor shall protect all completed work and any rework shall be the responsibility of the contractor **at** no additional cost to the owner.

2.8 WORK RESTRICTIONS

A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of the proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's and Owner's written permission.

B. Nonsmoking Building: Smoking and smokeless tobacco will not be permitted within the new construction after floor slabs are poured.

2.9 OWNER'S OCCUPANCY REQUIREMENTS

A. Owner Occupancy: Owner will occupy adjacent parking lots during entire construction period. Cooperate with Owner during construction operations adjacent to or near the existing building and parking to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.

B. Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from Owner and authorities having jurisdiction. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

C. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to place and install equipment in completed areas of building, before Substantial Completion, provided such does not interfere with completion of the Work. Such placement of equipment shall not constitute acceptance of the total Work.

D. The existing exit stairs at 2 Story CR building at west end shall remain accessible during school year. Contractor shall provide temporary separation below to separate from construction

2.10 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications another Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the

   Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 3 - NOT APPLICABLE

END OF SECTION

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SECTION 01011 - CONTINGENCY ALLOWANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS AND GENERAL INFORMATION

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

PART 2 - CONTINGENCY ALLOWANCES

2.1 BASE BID PROPOSAL

A. The General Contractor shall include the following sums:

1. **Fifty Thousand Dollars ($50,000.00)** as a contingency to cover unforeseen conditions or minor changes that are necessary to correct or supplement the work as detailed in the Contract Documents.
2. **Thirty Thousand Dollars ($30,000)** as a contingency for emergency two-way radio system.
3. **Twenty-Five Thousand Dollars ($25,000)** as a contingency for Landscaping and Irrigation.

2.2 COSTS INCLUDED IN CONTINGENCY ALLOWANCES

A. The Contractor shall include in the bid proposal(s) all overhead and profit on these Contingency Allowances, because no such costs will be paid to the Contractor for work performed under these Contingency Allowances. Overhead, as defined in Article 19 of the DCM General Conditions of the Contract (DCM Form C-8) shall cover the Contractor's indirect costs, such as the cost of bonds, superintendent and other job office personnel, watchman, job office, job office supplies and expenses, temporary facilities and utilities, and home office expenses.

B. Only the direct costs of performing work under this provision shall be paid under and charged against the Contingency Allowance; such cost includes costs of materials and delivery, installation labor, payroll taxes and insurance, equipment expense, and the cost of subcontracted work (subcontractor's cost may include a maximum of **15%** mark-up for overhead and profit).

C. The following requirements apply to the Contingency Allowance in lieu of the allowance cost provisions of Article 43, Cash Allowances, of the DCM General Conditions of the Contract the direct costs listed in Paragraph B, including installation labor and subcontracted work, shall be charged against the Contingency Allowance, and the Contractor's overhead and profit shall be included in the Contract Sum as stated in Paragraph A. When requested by the Architect or Owner, the Contractor shall obtain competitive pricing from responsible Subcontractors or suppliers for work to be charged against the Contingency Allowance.

PART 3 - AUTHORIZATION OF CONTINGENCY ALLOWANCES

3.1 AUTHORIZATION PROCEDURE

A. After unknown conditions are identified and examined and the scope of work and method of repair determined, or request for a proposal to cover additional work has been issued by the Owner, the Contractor shall submit a proposal for such work to the Architect for the Owner's approval. If the Owner approves of such proposal, he will issue written authorization to the Contractor to perform the work and charge the related costs to the Contingency Allowance.

B. At the Owner's option, work performed under this provision may be ordered done on a time and material basis, in which case; the Contractor shall keep accurate records of all time and materials used and submit such records to the Architect for his approval at the end of each day's work.

C. Notwithstanding the purposes stated in Part 2, the Owner may, at the Owner's discretion, use any portion of the Contingency Allowance for other items of work within the Project. Such use shall be authorized in accordance with this Article and documented on a Contingency Allowance Authorization Form.

3.2 ACCOUNTING

A. An accounting of the costs charged against this Contingency Allowance shall be mutually maintained by the Contractor, Architect, and Owner throughout the course of the project. Any of this Contingency Allowance not spent shall be credited to the Owner by Change Order at close out of the project. Refer to Contingency Allowance Form attached to this Section.

3.3 PAYMENT

A. The Contractor shall include a line item in the *Schedule of Values* entitled “Contingency Allowance”. The estimated value of work completed pursuant to fully executed Contingency Allowance Authorizations may be included in the Contractor’s monthly Applications for Payment. Payments under this Contingency Allowance shall not exceed the net total of fully executed Contingency Allowance Authorizations.

CONTINGENCY ALLOWANCE AUTHORIZATION FORM

Form to be filled in its entirety.

To: Lathan Mckee Architects

From: _____
Company

Project: _____

_____
Address

_____

_____
Contact and Email

Project Number _____

Date: _____

DCM Number: _____

Authorization Number: _____

In accordance with Specification Section 01011 – CONTINGENCY ALLOWANCE, the Contractor [ ] is hereby authorized to proceed with the changes in Work as are described below and is to be paid for the performance of these changes as provided in Specification Section 01011. This Authorization shall become effective when it is signed by the Contractor and the Owner's representative and it is understood and agreed that the amount(s) stipulated below constitute full compensation for these changes in Work.

TOTAL AMOUNT OF THIS AUTHORIZATION	$

ORIGINAL AMOUNT OF THE CONTINGENCY ALLOWANCE	$
NET TOTAL OF PREVIOUS AUTHORIZATIONS	$
PREVIOUS REMAINING CONTINGENCY ALLOWANCE	$
TOTAL AMOUNT OF THIS AUTHORIZATION	$
CONTINGENCY ALLOWANCE REMAINING AFTER THIS CONTINGENCY	$

Recommended By:	Authorized By:	Accepted By:
_____	_____	_____
Architect	Owner	Contractor

END OF SECTION

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SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Section 01600 "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, that may or may not involve an adjustment to the Contract Sum or the Contract Time, as an Architect’s Supplemental Instructions, “ASI”.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time in the form of an ASI. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. ASIs issued by Architect, if adjustments to contract sum or contract time are involved, are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

2. Within time specified in ASI after receipt of ASI, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

b. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.

c. Include costs of labor and supervision directly attributable to the change.

d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Include data as needed to validate material costs

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Change Order, Architect will issue a Change Order for signatures as required.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive, “CCD”: Architect may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Construction Change Directive contains a complete description of change in the Work.

PART 2 - NOT APPLICABLE

PART 3 - NOT APPLICABLE

END OF SECTION

SECTION 01290 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement 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.

1.4 SCHEDULE OF VALUES

A. At the discretion of the Architect, the contractor shall provide separate Schedule of Values for work on projects involving multiple locations, campuses, sites, buildings etc. and/or multiple scopes of work. Additional line items may be required within each separate Schedule of Values (i.e. separate line items for multiple buildings located on same site).

B. 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.

C. 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. Name of Architect.
    c. Architect's project number.
    d. Contractor's name and address.
    e. Date of submittal.
2. Submit draft of DCM Form C-11.
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.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

6. Provide a separate listing on Application and Certificate for Payment (Standard ABC Form C-10) 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 evidence of bonded warehousing.

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. Unit Costs: Provide a separate line item in the Schedule of Values for each unit cost. Line-item to show 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.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: Progress payments shall be submitted to Architect by the 25th of the month. The period covered by each Application for Payment is one month, ending on the 23rd of the month.

C. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.

2. Include amounts of Change Orders issued before last day of construction period covered by application only after all agency approvals.

D. Transmittal: Submit 6 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

E. 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.

F. 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.

G. 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. Certificate of Substantial Completion (DCM Form C-13)
5. Form of Advertisement for Completion (DCM Form C-14)
6. Evidence that claims have been settled.
7. 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.
8. Final, liquidated damages settlement statement.

PART 2 - NOT APPLICABLE

PART 3 - NOT APPLICABLE

END OF SECTION

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SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Material location reports.
5. Field condition reports.
6. Special reports.

B. Related Sections include the following:

1. Division 1 Section 01290 "Payment Procedures" for submitting the Schedule of Values.
2. Division 1 Section 01330 "Submittal Procedures" for submitting schedules and reports.
3. Division 1 Section 01322 "Photographic Documentation" for submitting construction photographs.

1.3 SUBMITTALS

A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

C. Daily Construction Reports: Submit two copies at weekly intervals.

D. Material Location Reports: Submit two copies at monthly intervals.

E. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

F. Special Reports: Submit two copies at time of unusual event.

G. Pre-scheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Verify availability of qualified personnel needed to develop and update schedule.
2. Discuss any constraints.

3. Review time required for review of submittals and re-submittals.
4. Review requirements for tests and inspections by independent testing and inspecting agencies.
5. Review time required for completion and startup procedures.
6. Review and finalize list of construction activities to be included in schedule.
7. Review submittal requirements and procedures.
8. Review procedures for updating schedule.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Initial Submittal: Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 30 days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
3. Submittal Review Time: Include review and re-submittal times indicated in Division 1 Section 01330 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

4. Startup and Testing Time: Include not less than 14 days for startup and testing.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions, if any, and show how the sequence of the Work is affected.

E. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

1. Refer to Division 1 Section 01290 "Payment Procedures" for cost reporting and payment procedures.
2. Contractor shall assign cost to construction activities on the CPM schedule. Costs shall not be assigned to submittal activities unless specified otherwise but may, with Architect's approval, be assigned to fabrication and delivery activities. Costs shall be broken down within principal contracts in amounts typically not greater than $30,000, but in no case greater than 5 percent of the Contract Sum.
3. Each activity cost shall reflect an accurate value subject to approval by Architect.
4. Total cost assigned to activities shall equal the total Contract Sum.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the time effect, if any, of the proposed change on the overall project schedule.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Preliminary Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, cost-and resource-loaded, time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
    a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    a. Preparation and processing of submittals.

b. Mobilization and demobilization.

c. Purchase of materials.

d. Delivery.

e. Fabrication.

f. Utility interruptions.

g. Installation.

h. Work by Owner that may affect or be affected by Contractor's activities.

i. Testing and commissioning.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

a. Sub-networks on separate sheets are permissible for activities clearly off the critical path.

E. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.

2. Description of activity.

3. Principal events of activity.

4. Immediately preceding and succeeding activities.

5. Early and late start dates.

6. Early and late finish dates.

7. Activity duration in workdays.

8. Total float or slack time.

9. Average size of workforce.

10. Dollar value of activity (coordinated with the Schedule of Values).

F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.

2. Changes in early and late start dates.

3. Changes in early and late finish dates.

4. Changes in activity durations in workdays.

5. Changes in the critical path.

6. Changes in total float or slack time.

7. Changes in the Contract Time.

G. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.

1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.

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

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site.
    1. List of subcontractors at Project site.
    2. Approximate count of personnel at Project site by trade.
    3. Equipment at Project site.
    4. Material deliveries.
    5. High and low temperatures and general weather conditions.
    6. Accidents.
    7. Meetings and significant decisions.
    8. Unusual events (refer to special reports).
    9. Stoppages, delays, shortages, and losses.
    10. Meter readings and similar recordings.
    11. Emergency procedures.
    12. Orders and requests of authorities having jurisdiction.
    13. Change Orders received and implemented.
    14. Construction Change Directives and Architect Supplemental Interpretations (Instructions) received and implemented.
    15. Services connected and disconnected.
    16. Equipment or system tests and startups.
B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request For Interpretation (RFI). Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

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

and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor must employ skilled personnel with experience in scheduling and reporting techniques or must employ a scheduling consultant. Submit qualifications and examples of previous scheduling for evaluation (and approval) by the Architect.

B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule three (3) work days before each regularly scheduled progress meeting or Contractor may update schedule at the monthly progress meeting.

1. The revised schedule should be updated immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting, no later than three days after the progress meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

C. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

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

END OF SECTION

SECTION 01322 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Preconstruction digital video.
2. Periodic construction photographs.

1.3 SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each digital photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.

B. Digital Construction Photographs: Submit one print of each digital photographic view within seven days of taking photographs.

1. Format: Digital.
2. Identification: The following information is required on each CD submitted:
    a. Name of Project.
    b. Name of Architect.
    c. Name of Contractor.
    d. Date photograph was taken if not date stamped by camera.
    e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    f. Unique sequential identifier.
3. Digital Images: Submit a complete set of digital image electronic files as a Project Record document on USB Drives. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, uncropped.

C. Digital Video: Submit one copy of each digital video with protective sleeve or case within seven days of recording.

1. Identification: On each copy, provide an applied label with the following information:
    a. Name of Project
    b. Name of Architect.
    c. Name of Contractor.
    d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    e. Date digital video was recorded.
    f. Weather conditions at time of recording.
2. Transcript: To include an audio narrative with the following information as a minimum.
    a. Name of Project.
    b. Date digital video was recorded.
    c. Weather conditions at time of recording.

d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

PART 2 - EXECUTION

2.1 CONSTRUCTION PHOTOGRAPHS

A. Film Images:

1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Architect.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in filename for each image.

2. Field Office Images: Maintain one set of images on USB Drives in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Architect.

C. Preconstruction Photographs: Before starting construction, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Flag construction limits before taking construction photographs.

2. Take eight photographs to show existing conditions adjacent to property before starting the Work.

3. Take eight photographs of existing buildings either on or adjoining property in order to accurately record physical conditions at start of construction.

4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 12 color, digital photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

2.2 CONSTRUCTION DIGITAL VIDEO

A. Narration: Describe scenes on digital video by audio narration by microphone while video is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.

2. Begin each digital video with name of Project, Contractor's name, and Project location.

B. Preconstruction Digital Video: Before starting construction, provide digital video of the Project site and surrounding properties from different vantage points, as needed to properly record all preexisting site conditions and adjacent conditions of all roadways, drives, structures that will incur construction traffic.

1. Flag construction limits before recording construction video.

2. Show existing conditions adjacent to Project site before starting the Work.

3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.

4. Show protection efforts by Contractor.

PART 3 - NOT APPLICABLE

END OF SECTION

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SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. The General Contractor shall use website software "**Submittal Exchange**" to conduct all submittal reviews in electronic format. **Paper format submittals will NOT be accepted**. All recordkeeping, date stamping, access controls, shall be **paid for by the Contractor** with access given to the entire Project Team. The software shall be capable of the following:

B. Costs:

1. The General Contractor shall include the full cost of Submittal Exchange project subscription in their proposal. **The Contractor shall cover the full cost of Submittal Exchange project subscription for the project. The Contractor contractually, shall be fully responsible for all costs required to maintain full functionality through the acceptance of ALL project closeout requirements and documents. *NO OTHER SOFTWARE WILL BE CONSIDERED.***
2. **Contact Submittal Exchange at subex-sales_ww@oracle.com or call 1-800-633-0738 to verify costs prior to bid.**
3. At the Contractor's option, training is available from **Submittal Exchange** regarding use of website and PDF submittals. Contact Submittal Exchange at 1-800-714-0024 ext. 2
4. Internet Service and Equipment Requirements:
   a. Email address and Internet access at the Contractor's main office.
   b. Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu (www.bluebeam.com), or other similar PDF review software for applying electronic stamps and comments.
5. The General Contractor is responsible for maintaining and keeping Submittal Exchange active throughout the entire project, including closeout documents.

C. Procedures:

1. Shop drawing and product data submittals shall be transmitted to Architect in electronic (PDF) format using **Submittal Exchange**, a website service designed specifically for transmitting submittals between construction team members.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The electronic submittal process is not intended for color samples, color charts, or physical material samples.
4. Submittal Preparation – the Contractor may use any or all of the following options:
   a. Subcontractors and Suppliers provide electronic (PDF) submittals to the Contractor via the **Submittal Exchange** website.
   b. Subcontractors and Suppliers provide paper submittals to the General Contractor who electronically scans and converts to PDF format.
   c. Subcontractors and Suppliers provide paper submittals to Scanning Service which electronically scans and converts to PDF format.
5. The Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.

6. The Contractor shall transmit each submittal to Architect using the Submittal Exchange website, www.submittalexchange.com.
7. The Architect / Engineer review comments will be made available on the Submittal Exchange website for downloading. Contractor will receive email notice of completed review.
8. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
9. Submit paper copies of reviewed submittals at project closeout for record purposes in accordance with Section 01770 - Closeout Procedures.

D. Related Sections include the following:

1. Division 1 Section 01290 "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 1 Section 01320 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
3. Division 1 Section 01322 "Photographic Documentation" for submitting construction photographs and construction videotapes.
4. Division 1 Section 01770 "Closeout Procedures" for submitting warranties.
5. Division 1 Section 01781 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
6. Division 1 Section 01782 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
7. Division 1 Section 01820 "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
8. Divisions 2 through 16 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will, under certain circumstances described hereinafter, be provided by Architect for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section 01320 "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the

Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow **14** business days for initial review of each digital submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Re-submittal Review: Allow **10** business days for review of each re-submittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow **10** business days for initial review of each submittal.
    a. Structural, mechanical, plumbing, electrical, civil, audio/visual, sound system, and kitchen equipment components are examples of the Work that require sequential review. Architect will advise if there are others.

E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings. Provide another area of this same size for the Architect to affix his stamp. Stamp includes the following four categories: Reviewed, Furnish as Noted, Rejected, Revise and Resubmit; the Architect will mark one or more of these categories and return submittal to Contractor.
3. Include the following information on label for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.
        i. Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.D.2.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 06100.D.2.R1 (R2, R3 etc. if necessary).
    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

F. Deviations: Encircle or otherwise specifically identify deviations and list the deviations from the Contract Documents on submittals and list the deviations on the transmittal form accompanying submittal.

G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Use AIA Document G810 or equivalent with at least the following information.

a. Project name.

b. Date.

c. Destination (To:).

d. Source (From:).

e. Names of subcontractor, manufacturer, and supplier.

f. Category and type of submittal.

g. Submittal purpose and description.

h. Specification Section number and title.

i. Drawing number and detail references, as appropriate.

j. Transmittal number, numbered consecutively.

k. Submittal and transmittal distribution record.

l. Remarks.

m. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

H. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.

3. Resubmit submittals until they are marked "Reviewed" or "Furnished as Noted".

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Use only final submittals with mark indicating "Reviewed" or "Furnished as Noted".

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: McKee & Associates CAD Files shall not be released.

1. Should the Contractor require CAD Files they are encouraged to seek PDF to CAD Conversion vendors and/or software.

PART 2 - PRODUCTS

2.1 DIGITAL ACTION SUBMITTALS

A. General: Prepare and submit Digital Action Submittals required by individual Specification Sections.

B. All submittals shall be sent to the Architect no later than 45 calendar days from “Notice To Proceed”.

1. Submittals shall be sent to the following email address: **subex-sales_ww@oracle.com** or **1-800-714-0024 ext. 1**

C. Product Data: Collect information into a single digital submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each the digital submittal to show which products and options are applicable.
3. Include the following information, as applicable:
    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Standard color charts.
    e. Manufacturer's catalog cuts.
    f. Wiring diagrams showing factory-installed wiring.
    g. Printed performance curves.
    h. Operational range diagrams.
    i. Mill reports.
    j. Standard product operation and maintenance manuals.
    k. Compliance with specified referenced standards.
    l. Testing by recognized testing agency.
    m. Application of testing agency labels and seals.
    n. Notation of coordination requirements.
4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit digital copy of the Product Data, unless otherwise indicated. Mark up and retain returned digital copy as a Project Record Document.

D. Digital Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    a. Dimensions.
    b. Identification of products.
    c. Fabrication and installation drawings.
    d. Roughing-in and setting diagrams.
    e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    f. Shopwork manufacturing instructions.
    g. Templates and patterns.
    h. Schedules.
    i. Design calculations.
    j. Compliance with specified standards.
    k. Notation of coordination requirements.
    l. Notation of dimensions established by field measurement.
    m. Relationship to adjoining construction clearly indicated.
    n. Seal and signature of professional engineer if specified.
    o. Wiring Diagrams: Differentiate between manufacturer-installed and field installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Digital Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
3. Number of Copies:
    a. Submit each original digital drawing submittal (specifically prepared for the project). Do not include MSDS documentation in any submittal. Architect will retain marked-up copy for his records and will return 1 (one) digital marked-up copy to the Contractor.
    b. Submit digital copy (bound in sets) of hardware submittals, fixture schedules, manufacturers' data and all other submittals that have been prepared in an 11 inch by 17 inch or smaller format. The Architect will return 1 (one) digital copy set to the Contractor.
        i. Upon receipt of his digital marked up shop drawings/submittals, the Contractor shall make as many copies for distribution as he deems necessary, however he shall retain one copy to mark-up further to show any and all construction changes that modify the submittal in any form. This document(s) shall be turned over to the Owner at the end of the Project along with the Record Documents.

E. Color code: On all digital shop drawings submittals, schedules, etc., the Contractor's marks shall be in red, the Architect's in green and the Engineer's (if any involved) in blue. All comments shall be initialed by a responsible party within each organization.

F. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of appropriate Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available. **Colors will not be approved until all color submittals are received by the architect.**
    a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.
    b. All color submittals are due within 45 days of the Notice to Proceed.
    c. The architect will be allowed 15 days from the date of the receipt of the last color submittal to approve colors.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample set and one will be returned. Mark up returned Sample set as a Project Record Sample.

i. Construct a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

ii. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

G. Interior Color Selections: Any submittals that are associated with the aesthetics of the interior design shall not be approved until all submittals associated with the interior design are in the Architect's possession.

H. Submittals Schedule: Comply with requirements specified in Division 1 Section 01320 "Construction Progress Documentation."

I. Application for Payment: Comply with requirements specified in Division 1 Section 01290 "Payment Procedures."

J. Schedule of Values: Comply with requirements specified in Division 1 Section 01290 "Payment Procedures."

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit digital copy of each submittal, unless otherwise indicated.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section 01400 "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section, 01310 "Project Management and Coordination."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other specified information.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

L. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

M. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

N. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section 01782 "Operation and Maintenance Data."

P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufactures. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

R. Manufacturer's Field Reports: Prepare written information documenting factory authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance comply with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

T. Construction Photographs and Videotapes: Comply with requirements specified in Division 1 Section 01322 " Photographic Documentation."

U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
1. Architect will not review submittals that include MSDSs and will return the entire submittal for re-submittal.

2.3 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit one copy of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each digital submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each digital submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review digital submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each digital submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each digital submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
1. REVIEWED–Indicates that reviewed submittal is satisfactory.

2. REJECTED–Indicates submittal is not satisfactory and another properly prepared submittal of same or another product must be prepared and resubmitted.
3. FURNISH AS NOTED–Indicates submittal is satisfactory if the changes, modifications, notes, etc. marked by the Architect are made a part of the submittal.
4. REVISE AND RESUBMIT–Indicates although parts of the submittal are satisfactory, there are enough significant modifications that must be made to require the Contractor, subcontractor, supplier, and/or manufacturer to provide additional essential information to his submittal and then resubmit it to the Architect.

C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:

1. Division 1 Section 01100 "Summary" for limitations on utility interruptions and other work restrictions.
2. Division 1 Section 01330 "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
3. Division 1 Section 01700 "Execution Requirements" for progress cleaning requirements.
4. Divisions 2 through 16 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
5. Division 2 Section 02282 "Termite Control" for pest control.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Sewer connections will not be in place for most if not all of the duration of the project. When and if the off-site sewer is installed by others and sewer piping under this contract is installed, should the contractor decide to connect to the sewer he must pay all sewer use charges until the project is turned over to the Owner.

C. Water Service: Pay water service use charges for water used by all entities for construction operations.

D. Electric Power Service: Pay electric power service use charges for electricity used by all entities for construction operations.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use

as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

1. Minimum Requirement: One (1) 10 foot wide x 44 foot long unit required.

B. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- square tack board.
3. Drinking water and private toilet.
4. Coffee machine and supplies.
5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Sanitary Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

2. Connect temporary sanitary sewer from construction office to a submerged temporary holding tank, as directed by authorities having jurisdiction.
3. Provide erosion control structures to drain storm water from site.

B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction from existing water lines in the street. Contractor shall pay for any metering costs and associated fees required by the City Water Department.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
1. Toilets: Use of Owner’s existing toilet facilities will not be permitted.

D. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

F. Electric Power Service: Provide temporary electric meter power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Contractor shall be responsible for any charges associated with said service.
1. Install electric power service overhead, unless otherwise indicated.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

H. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line for each field office.
1. Provide additional telephone lines for the following:
a. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
2. At each telephone, post a list of important telephone numbers.
a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Architect's office.
e. Engineers' offices.
f. Owner's office.
g. Principal subcontractors' field and home offices.
3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

I. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail, in common-use facilities, or other suitable high speed internet connection.
1. Provide DSL in primary field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area with good visibility of construction. Comply with NFPA 241.

2. Maintain support facilities until near Substantial Completion. Remove before Substantial

   Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.

2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.

D. Project Identification and Temporary Signs: Erect Project identification, General Contractor's sign, Architect's sign and other signs as approved. Install signs where directed to inform public and individuals seeking entrance to Project. Subcontractor signs are not permitted.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

F. Temporary Stairs: Until permanent stairs are available, provide one temporary stair between floors, located near the center of the building.

G. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Division 1 Section "Summary."

B. Temporary Erosion and Sedimentation Control: Comply with requirements specified in Division 2 02100 Section "Site Preparation."

C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in construction areas.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Carefully remove and turn over Architect’s sign to the Architect.

2. Where area is intended for landscape development, in an area that has been used as a compacted temporary road bed, remove soil and aggregate fill that do not comply with requirements for landscaping fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section 01770 "Closeout Procedures."

END OF SECTION

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SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and equal products.

B. Related Sections include the following:

1. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3. Equal Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

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

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating equal products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.

2. Form: Tabulate information for each product under the following column headings:

a. Specification Section number and title.

b. Generic name used in the Contract Documents.

c. Proprietary name, model number, and similar designations.

d. Manufacturer's name and address.

e. Supplier's name and address.

f. Installer's name and address.

g. Projected delivery date or time span of delivery period.

h. Identification of items that require early submittal approval for scheduled delivery date.

3. Completed List: Within 60 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.

4. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified materials or products cannot be provided.

b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

j. Cost information, including a proposal of change, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: Change Order.

b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

c. If Contractor’s Substitution Requests are repeatedly (i.e. 3 times) submitted incomplete, i.e., no definitive response to items “a” through “l”, the Architect will not consider any further Substitution Requests.

C. Equal Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of an equal product request. Architect will notify Contractor of approval or rejection of proposed equal product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Use product specified if Architect cannot make a decision on use of an equal product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section 01330 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

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

B. The Contractor MUST provide the Owner with a Certificate of Asbestos Free Building Materials at the end of the project certifying that all building materials incorporated, installed, and used during the construction process of the project by the Contractor or its Subcontractors of any tier are 100% asbestos free. Asbestos Free means containing 0% asbestos in any form. The Certificate of Asbestos Free Building Materials form is included in the project manual.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
9. Materials Stored Off Site: Unless otherwise provided in the Contract Documents, the

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

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

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

   1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Warranty start for mechanical and electrical equipment being date of substantial completion.

D. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Equal Products" Article to obtain approval for use of an unnamed product.

E. Product Selection Procedures:

1. Products and Manufacturers: In particular instances there may only be a single product or manufacturer appropriate for use on the project, in which case where Specifications name a single product and manufacturer and say “no equal”, provide the named product.
2. Products and Manufacturers: When one or two products or manufacturers are specified and have the words “or approved equal”, the Contractor may propose to provide alternatives in the form of a Substitution Request which once reviewed by the Architect will be either accepted or rejected. If Substitution Request is submitted for approval 7 days prior to the receipt of bids and approved by the Architect, said approvals will be included in Addenda. Only those Substitution Requests listed as approved in Addenda may bid the project.
3. Products and Manufacturers: Where Specifications include a list of three (3) or more names of both products and manufacturers, provide one of the products listed that complies with requirements. No substitutions will be accepted.
4. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or an equal product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
5. Visual Matching Specification: Where Specifications require matching an established Sample, product must comply with all requirements and must match Architect's sample. Architect's decision will be final on whether a proposed product matches.
    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product
6. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

1.8 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution under the conditions set forth in this section under Product Selection Procedures, if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution under the conditions set forth in this section under Product Selection Procedures and when the following conditions are satisfied. If the following conditions are not satisfied,

C. Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution requires no or only very minor revisions (as determined by the Architect), to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - NOT APPLICABLE

PART 3 - NOT APPLICABLE

END OF SECTION

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections include the following:

1. Division 1 Section 01310 "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section 01330 "Submittal Procedures" for submitting surveys.
3. Division 1 Section 01770 "Closeout Procedures" for submitting Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

A. Qualification Data: For professional engineer.

B. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.

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

D. Certified Surveys: Submit two copies signed by professional engineer.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - EXECUTION

2.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction

indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

2.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on RFI, "Request for Interpretation."

2.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings,

in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a professional engineer to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

2.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

D. Final Property Survey: Submit a final property survey certifying exact locations of site improvements including building(s), parking lots, roadways and utilities including structure elevations, top and invert, distances from property lines, and with any variation from the original civil staking and layout and utility drawings identified.

2.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling unless shown otherwise on drawings.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results.

D. Maintain conditions required for product performance until Substantial Completion.

E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

2.6 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

2. Pre-installation Conferences: Include Owner's construction forces at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

2.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste.

   Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

2.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section 01400 "Quality Requirements."

2.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

2.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

PART 3 - NOT APPLICABLE

END OF SECTION

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

B. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section 01290 "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Mark the Architect’s punch-list so-as-to identify those items that are still outstanding and uncorrected at the time of submission.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

A. MAINTENANCE MANUALS, WARRANTIES, AND GUARANTEES:

A. Unless indicated otherwise, furnish **one (1) original and one (1) copy of each item** required by the Project Manual.

B. Furnish to Architect for review, and then to Owner, in **two (2) separate sets bound in three-ring binders**, permanently and clearly identifying the project and contents on front and edge.

C. Additionally, furnish **two (2) sets of digital copies** in latest edition of ISO/Adobe compliant "Portable Document Format" ("PDF") saved as "Read Only" on thumb drives, clearly and permanently labeled as to their contents. MINIMUM RESOLUTION shall be 300 dpi for small format documents and 600 dpi for large format documents ("large format" is defined as larger than 11" x 17"). Original documents which include color, colored markings, etc., shall be scanned and saved as color documents. Documents may be saved in a non-proprietary ISO compliant self-extracting compressed file format, and no documents shall be password protected.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for Project.

   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

   c. Remove tools, construction equipment, machinery, and surplus material from Project site.

   d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

   e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

   f. Remove labels that are not permanent.

   g. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

      i. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

   h. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

   i. Replace parts subject to unusual operating conditions.

   j. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

   k. Clean ducts, blowers, and coils if units were operated without filters during construction.

   l. Leave Project clean and ready for occupancy.

END OF SECTION

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SECTION 01781 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

B. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Digital Record Drawings.
2. Digital Record Specifications.
3. Digital Record Product Data.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of digitally scanned marked-up Record Prints.

B. Record Specifications: Submit one copy of digitally scanned Project Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one digitally scanned copy of each Product Data submittal.

D. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one clean set of blue- or black-line white prints of the Contract Drawings and Shop Drawings and one copy of the project manual (specification) at the job site for the sole purpose of recording changes to the drawings and specifications.

B. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
2. Accurately record information in an understandable drawing technique.
3. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

C. Content: Types of items requiring marking include, but are not limited to, the following:

1. Dimensional changes to Drawings.
2. Revisions to details shown on Drawings.
3. Locations and depths of underground utilities.
4. Revisions to routing of piping and conduits.
5. Revisions to electrical circuitry.
6. Actual equipment locations.
7. Duct size and routing.

8. Locations of concealed internal utilities.
9. Changes made by Change Order or Construction Change Directive. (Posted on Documents.)
10. Changes made following Architect's written orders, i.e. ASIs. (Posted on Documents.)
11. Details not on the original Contract Drawings. (Posted on Documents.)
12. Field records for variable and concealed conditions.
13. Record information on the Work that is shown only schematically.
14. Changes made in response to Contractor’s questions, i.e. RFIs. (Posted on Documents.)

D. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

E. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

F. Mark important additional information that was either shown schematically or omitted from original Drawings.

G. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable. Where posting is required, post on Drawing Set and in Specifications on sheets or pages adjacent to or on top of where modification applies.

H. Attachment method shall be taped at top only, so as to access original underneath.

I. Digitally scan all documents and provide on CD Rom to Architect.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications. Maintain one clean copy of the project manual (specification) at the job site for the sole purpose of recording changes to the drawings and specifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Digitally scan all documents and provide on CD Rom to Architect.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

B. Maintain one clean set at the job site for the sole purpose of recording changes to the drawings and specifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications and Record Drawings where applicable.

C. Digitally scan all documents and provide on CD Rom to Architect.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours. Architect’s representative will review Record Documents with the project superintendent each month to determine to his satisfaction whether or not Record Documents are being kept up to date. Failure to do so will result in the delay of processing pay request until Record Documents are brought up to date.

END OF SECTION

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SECTION 01782 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Maintenance manuals for the care and maintenance of products, materials, finishes, systems and equipment.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

A. Submittal: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit three copies of each corrected manual within 15 days of receipt of Architect's comments.

1.5 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE

Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

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

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

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

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

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

2.5 PRODUCT MAINTENANCE MANUAL

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

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

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

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

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

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.

3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

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

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

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

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

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training videotape, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service: Some equipment and products require maintenance by the manufacturer, supplier or subcontractor, i.e., an authorized service representative, as part of the warranty. The General Contractor shall ensure that said maintenance work is done and provide copies of service reports to the Owner.

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

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.

2. Comply with requirements of Record Drawings in Division 1 Section 01781 "Project Record Documents."

G. Comply with Division 1 Section 01770 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 01820 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training digital media.

1.3 SUBMITTALS

A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. At completion of training, submit one complete training manual for Owner's use.

1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section 01400 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Instructor: Engage a qualified instructor to prepare instruction program and training modules, and

to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Instructor shall demonstrate to Owner's personnel how to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days' advance notice.

END OF SECTION

SECTION 02000 – CIVIL ENGINEER SHEET



10/9/2026

FOR SPECIFICATION SECTIONS

02220, 02230, 02314, 02370, 02511, 02530,

02634, 02740, 02751, 02753, 02765

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SECTION 02220 - DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. Selective demolition of built site elements.

B. 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 01100 – Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 01500 – Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 01600 – Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 01700 – 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 02230 – Site Clearing: Vegetation and existing debris removal.

G. Section 02300 – Earthwork: 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 01330 – Submittal Procedures, 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 02300 – Earthwork.

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 underground tanks.

E. Remove manholes and manhole covers, curb inlets and catch basins, unless otherwise noted.

F. Remove other items indicated, for salvage, relocation, and recycling.

G. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 02300.

H. Remove items indicated.

I. 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.

J. 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.

K. 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.

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 in order to give enough time to mark utilities. If no paint is visible, Contractor shall not perform excavation until verifying with all applicable utilities 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 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

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SECTION 02230- 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 02314 - “Earthwork”

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 Owner and other authorities having jurisdiction.

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.

C. Protection of Existing Trees and Vegetation:

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary fencing, barricades, and/or other precautions as necessary to protect trees and vegetation to be left standing.

2. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.

3. Provide protection for roots over 1-1/2-inch diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

4. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Architect. Employ a licensed arborist to repair damages to trees and shrubs.

5. Replace trees which cannot be repaired and restored to full-growth status, as determined by arborist.

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. “Removal” includes digging out and off-site disposing of stumps and roots.

2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, where such roots and branches obstruct installation of new construction.

B. Topsoil:

1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 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.

   a. Sift, rake, and/or hand work as required in order to ensure acceptable top soil properties.

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.

b. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.

3. Stockpile topsoil in storage piles in areas 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 unsuitable or excess topsoil and waste material off site.

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 6 inches loose depth, and thoroughly compact to a density equal to adjacent original ground, unless specific compaction is otherwise indicated in Section 02314.

C. Removal of Improvements:

1. Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.

2. Abandonment or removal of certain underground pipe or conduits may be indicated on mechanical or electrical drawings, and is included under work of related Division 15 and 16 sections. Removal of abandoned underground piping or conduit interfering with construction is included under this Section.

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.

END OF SITE CLEARING

SECTION 02314 - EARTHWORK

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 01270 - "Unit Prices"
.. Section 02230- "Site Clearing"
.. Section 02751 - "Portland Cement Concrete Paving"
.. Division 15 - "Mechanical Work"
.. Division 16 - "Electrical Work"

1.2 SUMMARY:

A. This Section includes the following:

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 requirements of Owner's "Geotechnical Report", this Section 02314, and other Division 2 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. Drainage fill course (porous fill) for support of building slabs is included as part of this work; compacted in place.

3. Excavating and backfilling of trenches within building lines and "controlled areas".

4. Stripping and stockpiling of topsoil (if any) is specified in Section 02230 - "Site Clearing."

5. 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.

B. Excavating and Backfilling for Mechanical and Electrical Work: Refer to Divisions 15 and 16 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 Mechanical and Electrical work shall comply with requirements of this Section 02314, and related Division 2 Sections, when the work and/or materials required are not indicated or only partially indicated in Divisions 15 and 16.

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 or designated undercut elevation, if required, 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, continue excavation until suitable bearing materials are encountered and 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 that is over and above what is accounted for by allowance, 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, drainage fill, 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 18,700 lbf (83 kN); measured according to SAE J-1179.

2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a minimum of 45,000-lbf (200-kN) breakout force; measured according to SAE J-732.

3. Refer to soils report 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 01015 - “Special Conditions”, for additional information and requirements.

1.6 PROJECT CONDITIONS:

A. Site Information: Refer to Section 02230 - “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 indicated 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.

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 indicated 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 with particle size no larger than 3 inches complying with ASTM D2487 soil classification groups and meet the following characteristics:

Soil Type[1]	USCS Classification	Acceptable Locations
Lean Clay	CL (LL <50 and PI <25)	All locations and elevations
Silt	ML (LL>50 or PI>30)	All locations and elevations
Sand	SW, SC, SM, SP	All locations and elevations
On-Site Soils	Varies	The native soils which are free of organics appear suitable for reuse as fill: however, moisture conditioning (wetting or drying) should be anticipated if on-site soils are used as fill.

1. Structural Fill should consist of approved materials free of organic matter and debris. Frozen materials should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on the site.

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 matter.

1. All fill soils must be compatible with existing soils, so they can bond together.

E. Topsoil: Refer to Section 02230- “Site Clearing.”

F. Rock Fill: Refer to Geotechnical Report 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 and again after fill is placed in the building controlled area; cut areas shall be proofrolled after they are brought to subgrade level. Proofrolling shall be performed with a fully loaded tandem axel dumptruck, or similarly weighted construction equipment. The proofroller shall make at least two passes over each section in perpendicular directions over the “controlled areas”. Soft, organic, or excessively wet soils found during the proofrolling operations shall be excavated and replaced with suitable compacted fill. The exposed subgrade must be well drained to prevent the accumulation of water.

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 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. Provide and maintain 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.

3.5 STORAGE OF EXCAVATED MATERIALS:

A. Stockpile excavated materials acceptable for backfill and fill where directed. Place, grade, and shape stockpiles for proper drainage.

1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.

2. Dispose of excess excavated soil material and legally dispose of offsite.

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. Excavation for Footing and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottom 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 for inspection. Do not disturb bottom of excavations, intended for bearing surface.

3. The contractor shall include in the base bid, the cost of the volume of undercut and removal of existing material within the building control area, building areas plus 10 feet, to an average depth of eighteen inches below existing grade for a volume of 600 CY. If any additional undercut is required, the contractor shall be paid by unit price through an allowance according to Section 01020 “Allowances.” The undercut will be replaced with acceptable structural fill and properly compacted. All excess undercut will be disposed of off-site at the contractor’s expense.

4. The contractor shall include in the bid for Add Alternate #1, the cost of the volume of undercut and removal of existing material within the building control area, building areas plus 10 feet, to an average depth of eighteen inches below existing grade for a volume of 330 CY. If any additional undercut is required, the contractor shall be paid by unit price through an allowance according to Section 01020 “Allowances.” The undercut will be replaced with acceptable structural fill and properly compacted. All excess undercut will be disposed of off-site at the contractor’s expense.

3.7 EXCAVATION FOR WALKS AND PAVEMENTS:

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

1. The contractor shall include in the base bid, the cost of the volume of undercut and removal of existing material within the pavement control area, paving areas plus 5 feet, to an average depth of twelve inches below existing grade for a volume of 500 CY. If any additional undercut is required, the contractor shall be paid by unit price through an allowance according to Section 01020 “Allowances.” The undercut will be replaced with acceptable structural fill and properly compacted. All excess undercut will be disposed of off-site at the contractor’s expense.

2. The contractor shall include in the bid for Add Alternate #2, the cost of the volume of undercut and removal of existing material within the pavement control area, paving areas plus 5 feet, to an average depth of twelve inches below existing grade for a volume of 2,850 CY. If any additional undercut is required, the contractor shall be paid by unit price through an allowance according to Section 01020 “Allowances.” The undercut will be replaced with acceptable structural fill and properly compacted. All excess undercut will be disposed of off-site at the contractor’s expense.

3.8 TRENCH EXCAVATION FOR PIPES AND CONDUIT:

A. Excavate trenches to uniform width, sufficiently wide to provide ample working room and a minimum of 6-inches to 9-inches of clearance on both sides of pipe or conduit.

B. Excavate trenches and conduit to depth indicated or required to establish indicated slope and invert elevations and to support bottom of pipe or conduit on minimum of 4-inches of compacted “select fill” bedding. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

C. Except as otherwise indicated, excavate for exterior water-bearing piping (water, steam, condensate, drainage, etc.) so top of piping is not less than 3'-0" below finished grade and/or paving.

D. Where rock or concrete is encountered, carry excavation 6" below required elevation and backfill with a 6" layer of dense graded aggregate, prior to installation of pipe.

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 material. Refer to Owner's "Geotechnical Report," and this Section 02314, for minimum testing requirements.

2. Within parking lot area, place and compact acceptable compacted structural fil as directed by the Owner's Geotechnical Engineer.

3. 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.

4. 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.

   c. Utility trenches shall be backfilled with acceptable borrow or dense graded crushed stone in 6" loose lifts compacted with mechanical piston tampers to the project requirements.

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:

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. Where new fill is placed against sloped surfaces steeper than 1-vertical to 5-horizontal, the existing slope shall be benched. Benching shall commence at the toe of the proposed fill and proceed upwards as fill is placed at a maximum of 4 vertical feet. Benches shall be at least 6 feet wide.

3. 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 and again after fill is placed in the building controlled area; cut areas shall be proofrolled after they are brought to subgrade. Proofrolling shall be performed with a partially loaded truck with a rear single axle weight of 8 to 10 tons, or similarly weighted construction equipment. The proofroller shall make at least two passes over each section in perpendicular directions over the “controlled areas”. Soft, organic, or excessively wet soils found during the proofrolling operations shall be excavated and replaced with suitable compacted fill. The exposed subgrade must be well drained to prevent the accumulation of 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.

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.

E. 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 testing lab'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 the top 12" in cut areas to at least 98% standard proctor maximum dry density.

1) Cut areas shall be proof rolled prior to and during scarification efforts and observed by the independent testing company in order to determine if the 12" re-compacted depth is adequate.

2) Refer to paragraph 1.2 above for areas where additional depth(s) of preparation and compaction of exposed subgrade are or may be required.

b. Under steps, covered areas, sidewalks, mechanical/utility and in all other "controlled areas", compact full depth of fill placement and scarify moisture condition and re-compact the top 12" in cut areas to at least 98 percent standard proctor maximum dry density.

1) Refer to paragraph 1.2 above for areas where additional depth(s) of preparation and compaction of exposed subgrade are or may be required.

c. Under pavements and at least 5-feet beyond (measured from back-of-curb or edge of paving, where occurs), compact full depth of fill placement and scarify moisture condition and re-compact the top 12-inches to at least 98-percent standard proctor maximum density.

d. Under lawn or unpaved areas beyond “controlled areas”, compact each layer of backfill or fill material to at least 98-percent standard proctor maximum dry density.

e. On-site Borrow (where allowed): 98-percent standard proctor maximum dry density.

f. Select and/or Structural Fill: 98-percent standard proctor maximum dry density.

g. Porous Fill (drainage course): 98-percent standard proctor maximum dry density.

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 percentage points to +3 percentage points of the materials ASTM-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 3 percentage points 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 BUILDING SLAB DRAINAGE COURSE:

A. General: Drainage course consists of placement of drainage fill material, in layers of indicated thickness, over subgrade surface to support concrete building slabs, sidewalks, pads, and below canopies and covered porches, and elsewhere as indicated.

1. Minimum Completed Thickness: 4-inches.

B. Placing: Place drainage fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.

1. When a compacted drainage course is indicated to be 6-inches thick or less, place material in a single layer. When indicated to be more than 6-inches thick, place material in equal layers, except no single layer more than 6-inches or less than 3-inches in thickness when compacted.

3.14 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 nuclear testing method, as applicable.

3. New Footing Subgrade: All foundation excavations shall be observed by the geotechnical engineer or his representative to verify required design bearing capacities of the bearing soils.

4. New Paved Areas, New Building Slab and “Building Control Areas” Subgrade: Perform at least 3 field density tests of subgrade for each lift of fill placed in “controlled areas”, or 1 test per 5000 square feet, whichever is more.

5. Foundation Wall Backfill: Perform at least 2-field density tests at locations and elevations as directed.

6. 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.

7. A laboratory soil particle size, Atterberg limit, and Proctor density test shall be performed on each different type of fill soil used in the “controlled areas”.

8. 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.

3.15 EROSION CONTROL:

A. Provide erosion control methods in accordance with the BMP plan and the requirements of authorities having jurisdiction and per drawings.

3.16 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.

3.17 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

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SECTION 02370 – 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 02230 – “Site Clearing”
2. Section 02314 – “Earthwork”
3. The Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, March 2009 edition or most 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. 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.

C. 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 fourteen (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.

D. 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.

E. 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.

F. 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.

G. 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.

H. 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.

I. 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.

J. 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. Transfer the NPDES permit, which was obtained by the previous Contractor, from the previous Contractor's name to the Contractor's name. All fees associated with the transfer, correspondence with ADEM and inspections as part of the maintenance of the permit are the responsibility of the contractor.

PART 2 - PRODUCTS

2.1 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. Any additional material work required beyond the extent of the erosion control plan shall be paid for by the Owner except where such measures are required to correct deficiencies caused by the failure of the Contractor to construct the work in accordance with the erosion and sediment control plan.

H. 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.

I. Remove and properly dispose of accumulated silt and sediment from all erosion control measures on a daily basis off site unless material is reusable.

J. 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.

K. 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.

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

END OF EROSION AND SEDIMENTATION CONTROL

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SECTION 02511 – WATER SERVICE PIPING

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:

1. Section 02314 - “Earthwork”
2. Division 15 - Mechanical

1.2 SUMMARY:

A. This Section includes water service piping system, meters, vaults, valves, and appurtenances from the existing on-site utility source of potable water to a point 5 feet outside the building, and as indicated on the Drawings, and in this Section of the Project Manual.

B. Note that the Contractor shall furnish and install connection, back flow preventer, etc., acceptable to the Alabaster Water Board (AWB) and notify the Alabaster Water Board (AWB) to request an inspection for approval of the equipment and the installation prior to covering if required.

C. All fees and charges for water service, meters, taps, permits, impact fees, etc., shall be paid by the Contractor from their contract amount.

D. The extent of water service piping system, fire hydrants, etc., is indicated on the Drawings, in this Section, other referenced Sections of the Project Manual, and as otherwise required by authorities having jurisdiction.

1.3 SUBMITTALS:

A. General: Submit the following in accordance with conditions of Contract and Division 1 Specification Sections

1. Product data for water service piping and specialties.

2. Shop drawings for vaults, junction boxes, valve boxes, manholes, meters, backflow preventers, and other similar water service equipment.

PART 2 – PRODUCTS

2.1 PIPE AND PIPE FITTINGS - GENERAL:

A. General: Pipe, valves, fittings and installation in R.O.W. and on site shall comply with requirements of this Section, other referenced Sections of the Project Manual, the Drawings, and the Alabaster Water Board (AWB).

1. Pipe, fittings, hydrants and valves shall be as specified herein, subject to acceptance by the Alabaster Water Board (AWB), unless other specific materials acceptable to utility company are indicated on the Drawings.

2. Water piping and fittings smaller than 4” shall be type K copper or SDR-26 PVC Plastic Pipe; and pipe 4” and larger, below paving and fire lines shall be Ductile Iron, of type(s)

acceptable to the Alabaster Water Board (AWB), unless other specific materials acceptable to utility company are indicated on the Drawings.

B. Ductile-Iron, Push-on-Joint Pipe: AWWA C151, with cement-mortar lining and seal coat according to AWWA C104. Include rubber compression gasket according to AWWA C111.

1. Ductile-Iron, Push-on-Joint Fittings: AWWA C110, ductile-iron; or AWWA C153, ductile-iron, compact type. Include cement-mortar lining and seal coat according to AWWA C104 and rubber compression gaskets according to AWWA C111.

2. Joining Materials: AWWA C111 rubber gaskets and lubricant.

C. Ductile-Iron, Mechanical-Joint Pipe: AWWA C151, with cement-mortar lining and seal coat according to AWWA C104. Include gland, rubber gasket, and bolts and nuts according to AWWA C111.

1. Ductile-Iron, Mechanical-Joint Fittings: AWWA C110, ductile-iron; or AWWA C153, ductile-iron, compact type. Include cement-mortar lining and seal coat according to AWWA C104 and glands, rubber gaskets, and bolts and nuts according to AWWA C111.

2. Joining Materials: AWWA C111 ductile-iron or gray-iron glands, high-strength steel bolts and nuts, and rubber gaskets.

D. PVC Plastic, Schedule 40 PVC with pressure-rated fittings: Conform to ASTM D 1785 standard specifications for PVC plastic pipe.

E. PVC Plastic, Water Pipe: AWWA C900, Class 236. Include elastomeric seal according to ASTM F477.

1. Ductile Iron Fittings: AWWA C110, ductile-iron; or AWWA C153, ductile-iron, compact type, and specifically designed for joining PVC pipe; Include elastomeric seals according to ASTM F 477 or as otherwise required for joining plastic pipe specified.

2. Plastic Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended in writing by piping system manufacturer.

F. Where copper pipe is indicated, provide Soft Copper Tube, ASTM B 88, Type K, water tube, annealed temper.

1. Copper, Solder-Joint Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint pressure type. Furnish only wrought-copper fittings if indicated.

G. PVC Plastic, Water Pipe: Pressure Class 200 (minimum) conforming to SDR 21 (minimum wall thickness). Comply with ASTM D1784 for PVC compounds, ASTM D2241 Product Standard 22 for PVC pipe, and ASTM D-3139 and F-477 for gaskets and joints.

H. Pipe Sleeves: Provide pipe sleeves at least one size larger than water service piping required below existing concrete and paving, and as follows.

1. Below Concrete, Entry Pads, and Paving Subject to Only Pedestrian Traffic: Schedule 40 PVC.

2. Below Concrete, Equipment Pads, Dumpster Pads, Valley Gutters, Curbs and Gutters, Paving Subject to Vehicular Traffic, and Where Indicated: Ductile Iron, as specified above herein this Section.

I. Identification for Underground Plastic Pipe:

1. 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.

J. Valves - Provide in accordance with Alabaster Water Board (AWB) specifications.

1. Valve box and cover shall be provided for access.

2. Valve box and cover shall be traffic-bearing in all paved areas.

K. Domestic Water Meter – Provide in accordance with Alabaster Water Board (AWB) specifications.

1. Meter box and cover shall be traffic-bearing in all paved areas.

PART 3 - EXECUTION:

3.1 INSTALLATION:

A. Comply with requirements of Division 15, the International Plumbing Code, Drawings, and requirements of authorities having jurisdiction.

B. Comply with requirements of the State Health Department, the local Health Department, and authorities having jurisdiction.

3.2 DEPTH OF COVER:

A. Provide minimum cover of 36-inches for all water-bearing piping.

3.3 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.

3.4 CLEANING:

A. Clean and disinfect water distribution piping as follows, or as required by utility company, Code, and authorities having jurisdiction:

1. Purge all new water distribution piping systems and parts of existing systems that have been altered, extended, or repaired, prior to use.

2. Use the purging and disinfecting procedure prescribed by the authority having jurisdiction or, in case a method is not prescribed by that authority, use the procedure described in AWWA C651, or as described below:

   a. Fill the system or part thereof with a water/chlorine solution containing at least 50 parts per million of chlorine. Isolate (valve off) the system or part thereof and allow to stand for 24 hours.

   b. Drain the system or part thereof of the previous solution and refill with a water/chlorine solution containing at least 200 parts per million of chlorine and isolate and allow to stand for 3 hours.

   c. Following the allowed standing time, flush the system with clean, potable water until chlorine does not remain in the water coming from the system.

   d. Submit water samples in sterile bottles to the authority having jurisdiction. Repeat the procedure if the biological examination made by the authority shows evidence of contamination.

B. Prepare reports for all purging and disinfecting activities, and submit for review and along with each set of “Record Documents”.

END OF WATER SERVICE PIPING

SECTION 02530 – SANITARY SEWERAGE

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 02314 - “Earthwork”
.. Section 03300 - “Cast-In-Place Concrete”
.. Division 15 - “Plumbing”

1.2 SUMMARY:

A. This Section includes sanitary sewerage system piping and appurtenances from a point 5 feet outside the building to the point of disposal.

B. The extent of sanitary sewerage system is indicated on the Drawings, in this Section 02530, and as otherwise required by authorities having jurisdiction.

C. All fees and charges for sanitary sewerage service, taps, connections, permits, impact fees, etc., shall be paid by the Contractor from his/her contract amount.

1.3 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Product data for sewer piping and specialties.

2. Shop drawings for precast concrete sanitary manholes, including frames and covers.

a. Shop drawings for cast-in-place concrete or field-erected masonry sanitary manholes, if any, including frames and covers.

3. Test Reports.

1.4 QUALITY ASSURANCE:

A. Environmental Compliance: Comply with applicable portions of local environmental agency regulations pertaining to sanitary sewerage systems.

B. Utility Compliance: Comply with Alabaster Environmental Services regulations and standards pertaining to sanitary sewerage systems. Where conflicts or discrepancies occur with the plans or these specifications, the utility specifications shall govern.

C. Comply with requirements of authorities having jurisdiction, when more stringent than specified or otherwise indicated.

D. Health Department Compliance: Comply with the State Department of Health Code or the local Health Department code, regulations and standards, whichever is more stringent.

1.5 PROJECT CONDITIONS:

A. Site Information: Perform site survey, research public utility records consult with Alabaster Environmental Services Department, and verify existing utility locations. Verify that sanitary sewerage system piping may be installed in compliance with original design and referenced standards.

1.6 SEQUENCING AND SCHEDULING:

A. Coordinate connection to public sewer with Alabaster Environmental Services.

B. Coordinate with interior building sanitary drainage piping.

C. Coordinate with other utility work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cleanouts:

   a. Ancon, Inc.
   b. Josam Co.
   c. Smith (Jay R.) Mfg. Co.
   d. Wade Div.; Tyler Pipe.
   e. Zurn Industries, Inc.; Hydromechanics Div.

2. Underground Warning Tapes:

   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.

2.2 PIPE AND FITTINGS:

A. General: Provide pipe and pipe fitting materials compatible with each other. Where more than one type of materials or products is indicated below, refer to drawings for locations of each one, or if not indicated, selection is Installer's option.

B. Pipe larger than 4 inches, unless indicated otherwise:

1. Ductile-Iron, Gravity, Sewer Pipe and Fitting
2. Pipe: ASTM A 746, for push-on joints.
3. Standard Fittings: AWWA C110, ductile or gray iron, for push-on joints.
4. Compact Fittings: AWWA C153, for push-on joints.
5. Gaskets: AWWA C111, rubber

C. PE Encasement for Ductile-Iron Piping: ASTM A 674 or AWWA C105, PE film, 0.008-inch (0.20-mm) minimum thickness, tube or sheet.

D. Couplings: Rubber or elastomeric compression gasket, made to match pipe inside diameter or hub, and adjoining pipe outside diameter.

2.3 MANHOLES (if any):

A. Precast Concrete Manholes: ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints. All manhole covers shall be round.

1. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.

2. Riser Sections: 4-inch minimum thickness; 48-inch diameter, and lengths to provide depth indicated.

3. Top Section: Concentric cone type, unless flat-slab-top type is indicated suitable for mounting cast from manhole frames and covers. Top of cone to match grade rings.

4. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness and match 24-inch diameter frame and cover.

5. Gaskets: ASTM C 443, rubber.

6. Steps: Cast into base, riser, and top sections sidewall at 12-to 16-inch equally spaced intervals.

7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.

8. Channel and Bench: Concrete 8” wide.

B. Cast-in-Place Manholes (if any): Reinforced concrete of dimensions and with appurtenances indicated. All manhole covers shall be round.

1. Bottom, Walls, and Top: Reinforced concrete.
2. Channel and Bench: Concrete.
3. Steps: Cast into sidewall at 12- to 16-inch intervals.

C. Concrete: Portland cement mix, 4000 psi at 28 days

1. Cement: ASTM C 150, Type II with C3A content of 6.5% or less.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.
5. Refer to Section 03310 – “Concrete” for additional information and requirements.

D. Reinforcement: Steel conforming to the following:

1. Fabric: ASTM A 185, welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

3. Refer to Section 03300 – "Concrete-In-Place Concrete" for additional information and requirements.

E. Steps: Same as for precast concrete manholes.

2.4 MANHOLE STEPS:

A. General: Wide enough for a man to place both feet on one step and designed to prevent lateral slippage off the step.

1. Material: Ductile iron or cast aluminum.

2.5 CLEANOUTS:

A. General: Provide Mission adjustable repair coupling (or approved equal) with stainless steel bends and stainless steel shear ring and a Zurn #ZN1400HD-3, Smith 4220 (or approved equal) cover set flush in a minimum 14" square concrete slab.

2.6 IDENTIFICATION:

A. Plastic Underground Warning Tapes: Polyethylene plastic tape with metallic core, 6 inches wide by 4 mils thick, solid green in color with continuously printed caption in black letters "CAUTION - SEWER LINE BURIED BELOW."

PART 3 - EXECUTION

3.1 PREPARATION OF FOUNDATION FOR BURIED SANITARY SEWERAGE SYSTEMS:

A. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation, throughout the length of the pipe.

B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with clean sand or pea gravel to indicated level.

C. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.2 PIPE APPLICATIONS FOR UNDERGROUND SANITARY SEWERS:

A. Refer to Paragraph 2.2 above.

3.3 INSTALLATION, GENERAL:

A. General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of the underground sanitary sewerage system piping. Location and arrangement of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical.

B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

C. Use manholes for changes in direction, except where a fitting is indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.

E. Install piping pitched down in direction of flow, at minimum slope of 2 percent, except where indicated otherwise.

F. Extend sanitary sewerage system piping to connect to building sanitary drains, of sizes and in locations indicated.

G. Tunneling: Install pipe under streets or other obstructions that cannot be disturbed, by tunneling, jacking, or a combination of both.

3.4 PIPE JOINT CONSTRUCTION AND INSTALLATION:

A. Join and install ductile iron pipe per ALDOT Standard Specifications.

3.5 MANHOLES:

A. General: Install manholes complete with accessories as indicated, of if not indicated, in compliance with project requirements and authorities having jurisdiction. Form continuous concrete or split pipe section channels and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finish surface, unless otherwise indicated.

1. Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.

2. Construct brick manholes as indicated.

3. Construct cast-in-place manholes as indicated.

4. Provide rubber joint gasket complying with ASTM C 443 at joints of sections.

5. Install manhole steps as indicated.

3.6 CLEANOUTS:

A. Install cleanouts and extension from sewer pipe to cleanout at grade as indicated. Set cleanout frame and cover in concrete block 14 by 14 by 12 inches deep, except where location is in concrete paving. Set top of cleanout 1 inch above surrounding earth grade or flush with grade when installed in paving.

3.7 TAP CONNECTIONS:

A. Make connections to existing piping and underground structures so that finished work will conform as nearly as practicable to the requirements specified for new work.

B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye fitting plus 6-inch overlap, with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.

C. Make branch connections from side into existing 4- to 21-inch piping by removing section of existing pipe and installing wye fitting, into existing piping. Encase entire wye with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.

1. Provide concrete that will attain minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.

2. Use epoxy bonding compound as interface between new and existing concrete and piping materials.

D. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris, concrete, or other extraneous material that may accumulate.

3.8 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.

3.9 FIELD QUALITY CONTROL:

A. Testing: Perform testing of completed piping in accordance with local authorities having jurisdiction.

B. Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.

2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.

3. Flush piping between manholes, if required by local authority, to remove collected debris.

C. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

1. Make inspections after pipe between manholes and manhole locations has been installed and approximately 2 feet of backfill is in place, and again at completion of project.

2. If inspection indicates poor alignment, debris, displaced pipe, infiltration or other defects correct such defects, and reinspect.

END OF SANITARY SEWERAGE

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SECTION 02634 – 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 02314 - “Earthwork”
.. Section 03300 - “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”, “perforated underdrain”, foundation drain, planting or other areas, 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, 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, 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 detailed in the construction plans 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 02314 - "Earthwork."

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

SECTION 02740 – HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

B. Related work described elsewhere includes:

.. Section 02314 - "Earthwork"
.. Section 02751 - "Portland Cement Concrete Paving"
.. Section 02753 - “Concrete Curbs and Gutters”
.. Section 02580 - "Pavement Marking"

1.2 DESCRIPTION OF WORK:

A. Work described in this section includes new bituminous paving, and a new base, 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 "ALDOT Standard Specifications for Highway Construction", 2014 edition, or latest edition.

C. Testing: All laboratory and field testing required to ensure compliance with these specifications will be performed by an independent testing laboratory.

1.4 JOB CONDITIONS:

A. Any base or sub-base areas damaged by weather or construction operations shall be scarified, remixed and recompacted 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

2.1 MATERIALS:

A. Provide the paving system(s) indicated on the Drawings, installed in accordance with Part 3 of this Section 02740, and referenced standards.

PART 3 - EXECUTION

3.1 PRIME COAT:

A. Application rates and construction requirements shall be as specified in ALDOT Specification 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 Article 405.03 of the ALDOT Specifications.

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

A. Construction details, including finished surface tolerance, density requirements, and maintenance and protection shall be as specified in Articles 410.03 through 410.07, and 429.04, 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 to 98% AASHTO T-180 maximum dry density.

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

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SECTION 02751 – PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplemental Conditions and Division 1 specification sections apply to this Section.

B. Related work specified elsewhere includes:

.. Section 02314 - "Earthwork"
.. Section 03300 - "Cast-In-Place Concrete"
.. Section 07900 - "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," 2014 Edition, or 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.

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. Fiber Reinforcement:

1. ABC polymer Fibril-Pro Micro synthetic Fiber Reinforcement.

2. Add to concrete mix at 1.5 pounds per cubic yard of concrete.

3. Finishing: Broom finish; pull broom in one direction such that fibers lay down.

4. Locations for Use: All concrete sidewalks, paving and handicap ramps.

C. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 40 or 60.

D. Concrete Materials: Comply with requirements of the Section 03300 - "Cast-In-Place Concrete", for concrete materials, admixtures, bonding materials, and other materials as required.

E. Coloring: Ochre coloring added at 25 lbs./ cubic yard.

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 the Section 03310 - "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-plasticiser), air-entraining admixture and water to produce the following properties:

1. Sidewalks, entry pads, and mechanical equipment pads subject only to pedestrian traffic:

   a. Compressive Strength: 3,000 psi, minimum at 28 days.
   b. Maximum Slump: 5”.
   c. Air Content: 4% to 6%.
   d. Thickness: 4", unless greater thickness is indicated on the Drawings.
   e. Compacted Subgrade: 4" porous fill on compacted subgrade (both at 98% S.P.D.).

2. Paving and pads subject to vehicular traffic, valley gutters, curbs and 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, 2014 edition, or most current edition.
   b. Slump: 4” max
   c. Air Content: 4% - 6% entrained air
   d. Thickness: 7”
   e. Base: 4” ALDOT 825 B at 98% Modified Proctor Dry Density
   f. Subgrade: As required by the Geotechnical Report

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 Geotechnical Engineer before paving is begun.

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 03300 - "Cast-In-Place Concrete", unless otherwise indicated.

3.4 CONCRETE PLACEMENT:

A. Comply with the more stringent requirements of ALDOT Section 450(A) and Section 03300 - "Cast-In-Place 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 ½-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, or if not shown, at spacing no greater than twice the thickness in feet. 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 1/8” wide.

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 ½-hour, except where such placements terminate at expansion joints.

D. Expansion (Isolation) 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.

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 in one direction.

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 edged 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 03300 - "Cast-In-Place 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 the 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 resign 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 PORTLAND CEMENT CONCRETE PAVING

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SECTION 02753 – CONCRETE 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 02314 - “Earthwork”
.. Section 02751 - “Portland Cement Concrete Paving”
.. Section 03300 - “Cast-In-Place Concrete”
.. Section 07900 - “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 02314 - “Earthwork” for subgrade requirements below and beyond curbs and gutters.

D. Refer to Section 02751 - “Portland Cement 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, 2014 Edition, or 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.

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, 2014 edition or most current 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 Articles 830.01 and 830.02.

D. Joint filler and sealer for expansion and construction joints shall meet the appropriate requirements of A.H.D. Section 832, and Section 07900 - "Joint Sealers" herein.

E. Asphalt for repairs shall comply with referenced Alabama Highway Department Specifications, and city requirements, and shall match existing pavement at location(s) requiring patching.

F. Coloring: Ochre coloring added at 25 lbs/ cubic yard

PART 3 - EXECUTION

3.1 CURBS AND GUTTERS:

A. Comply with requirements of Section 02520 - "Portland Cement Concrete Paving," Section 03310 - "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 or project engineer.

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. Pull broom in one direction if fiber is used to lay down fibers.

END OF CONCRETE CURBS AND GUTTERS

SECTION 02765 – 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 02740 - “Hot-Mixed Asphalt Paving”
.. Section 02751 - “Portland Cement 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, 2014 Edition or 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 Alabama Department of Transportation (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 5-inches wide, and shall be laid out as indicated on drawings. Construction requirements shall conform to the applicable parts of Article 701.03 of the Alabama Department of Transportation (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 the disabled and handicapped.

2. Use same materials and construction methods for any arrows and symbols indicated on paved areas.

3. Mark paving at each space for the disabled and handicapped (H.C.) 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 02810 - SODDING AND TOPSOIL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sod:

1. Provide strongly rooted **419 Bermuda Sod**
2. Sod shall be not less than 2 years old and free of weeds and undesirable native grasses.
3. Only provide sod capable of growth and development when planted (viable, not dormant).
4. Provide machine cut sod of a uniform minimum soil thickness of 5/8 inch, plus thickness of top growth and thatch. Sod pieces to be consistent in size and shape.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Sodding shall be restricted to those as instructed or recommended by the local Cooperative Extension Agent except when special instructions to the contrary are issued in writing by the Architect.

1. The Contractor shall furnish, in writing to the Architect, those recommendations of the Extension Agent before proceeding with any operations.
2. Grassing also shall comply with State of Alabama Highway Department specifications, latest Edition.
3. Contractor shall water and maintain newly grassed areas until acceptable stand of grass is established and approved by the Architect.

B. Preparation of Subgrade Soil:

1. The subgrade soil in those areas to be sodded whether shown or not shown on the plans shall be loosened to a minimum depth of 3 inches and graded to remove all ridges and depressions so that it will be, after settlement everywhere parallel to and at the proper level to provide finished grades specified.
2. All stones over 1" in dimension, sticks, rubbish and other extraneous matter shall be removed during this operation.

C. Topsoil:

1. Contractor shall furnish and spread layer of topsoil over all areas.

   Topsoil shall be spread in loose layers to provide finished grades specified and shall have an equal depth of not less than 4" over the site after natural settlement and light rolling.

D. All areas shall be carefully graded and raked to accurate specified grades and uniform slopes following topsoil spreading. The surface, when finished and settled shall conform to required grades and shall be free from hollows and other inequalities, from stones over 1" in diameter, sticks and other debris, and shall be satisfactory to the Architect.

E. Initial fertilization of sodded area prior to sodding and following preparation, commercial fertilizer 4-10-10 or 4-12-12 shall be applied on all grass areas at the uniform rate of 20 pounds per 1,000 square feet each.

3.2 SODDING

A. Prepare all areas to receive sod.

B. **The Contractor shall fully sod all graded and disturbed areas, including the Contractors staging area and all areas disturbed by vehicular construction traffic, whether shown on plans or not.**

3.3 TOPSOIL

A. General:

1. Provide topsoil of natural, friable, fertile, fine loamy, soil possessing the characteristics of representative topsoils in the vicinity which produces a heavy growth; free from subsoil, weeds, litter, clods, stiff clay, stones, stumps, roots, trash, toxic substances or any other material which may be harmful to plant growth or hinder planting operations.

2. The topsoil shall not be in muddy or frozen condition. Topsoil shall be that material stripped and stockpiled, or as required to provide 4” of coverage.

3. The topsoil shall have a pH range of 5.9 to 7.0.

4. Limestone or aluminum sulfate (or acceptable substitute) may be used to adjust the pH of the topsoil to an acceptable level.

END OF SECTION

SECTION 02811 - SEEDING AND TOPSOIL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Seed:

1. Seeds shall be **Tifton Bermuda** in accordance with State of Alabama Highway Department Specification Section 652.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Seeding season(s) shall be restricted to those as instructed or recommended by the local Cooperative Extension Agent except when special instructions to the contrary are issued in writing by the Architect.

1. The Contractor shall furnish, in writing to the Architect, those recommendations of the Extension Agent before proceeding with any operations.
2. Seeding also shall comply with State of Alabama Highway Department specifications, latest Edition.
3. Contractor shall water and maintain newly seeded areas until acceptable stand of grass is established and approved by the Architect.

B. Preparation of Subgrade Soil:

1. The subgrade soil in those areas to be seeded whether shown or not shown on the plans shall be loosened to a minimum depth of 3 inches and graded to remove all ridges and depressions so that it will be, after settlement everywhere parallel to and at the proper level to provide finished grades specified.
2. All stones over 1" in dimension, sticks, rubbish and other extraneous matter shall be removed during this operation.

C. Topsoil:

1. Contractor shall furnish and spread layer of topsoil over all areas.
2. Topsoil shall be spread in loose layers to provide finished grades specified and shall have an equal depth of not less than 4" over the site after natural settlement and light rolling.

D. All areas shall be carefully graded and raked to accurate specified grades and uniform slopes following topsoil spreading. The surface, when finished and settled shall conform to required grades and shall be free from hollows and other inequalities, from stones over 1" in diameter, sticks and other debris, and shall be satisfactory to the Architect.

E. Initial fertilization of sodded area prior to sodding and following preparation, commercial fertilizer 4-10-10 or 4-12-12 shall be applied on all grass areas at the uniform rate of 20 pounds per 1,000 square feet each.

3.2 SEEDING

A. Prepare all areas to receive seeding.

B. **The Contractor shall fully seed all areas indicated on the drawings.**

C. **If not indicated, the Contractor shall fully Sod the areas per Section 02810, Sodding and**

Topsoil.

D. Seedbeds shall be firmed by rolling before seedings are made.

E. The seed or seed mixture for lawn areas as recommended shall be sown at the rate of six pounds per one thousand square feet exercising great care that a uniform distribution of seed is obtained.

F. Seeding shall be done on a still day, using a hopper type seeder, one-half of the seed or seed mixture for each area being sown in a direction at right angles to the other half.

G. After seeding, the surface shall be lightly raked, rolled once with a roller weighing not less than one hundred pounds per lineal foot, and thoroughly watered with a fine spray.

3.3 TOPSOIL

A. General:

1. Provide topsoil of natural, friable, fertile, fine loamy, soil possessing the characteristics of representative top soils in the vicinity which produces a heavy growth; free from subsoil, weeds, litter, clods, stiff clay, stones, stumps, roots, trash, toxic substances or any other material which may be harmful to plant growth or hinder planting operations.

2. The topsoil shall not be in a muddy or frozen condition. Topsoil shall be that material stripped and stockpiled, or as required to provide 4” of coverage.

3. The topsoil shall have a pH range of 5.9 to 7.0.

4. Limestone or aluminum sulfate (or acceptable substitute) may be used to adjust the pH of the topsoil to an acceptable level.

3.4 MULCHING

A. Mulching of seeded areas is required and shall consist of hand or machine application of mulch.

B. The mulch shall be loose enough to permit air to circulate but compact enough to reduce erosion.

C. If baled mulch material is used, care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.

D. The rate of application shall be sufficient to provide a layer of mulch ½ inch thick in depth over the entire seeded area.

E. Mulching shall begin immediately following completion of seed sowing operations.

END OF SECTION

SECTION 02830 - TEMPORARY CHAIN LINK FENCING & GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Erection and maintenance of temporary chain link fencing and gates.

B. Refer to Section 01010, contractor to provide temporary fence layout and location of fence and gates.

1.2 RELATED DOCUMENTS

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

1.3 SUBMITTALS

A. Action Submittals:

1. Shop Drawings:

a. Product Data: Include construction details, material descriptions, dimensions of individual components, and finishes for chain link fences and gates.

1) Fence, gate posts, rails, and fittings.

2) Chain link fabric.

3) Gates and hardware.

2. Test Reports: Field test result for compliance of installation of chain link fence and gates.

B. Informational Submittals:

1. Manufacturer’s recommended installation instructions.

2. Evidence of Supplier and installer qualifications.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Site in undamaged condition. Store materials off the ground to provide protection against oxidation caused by ground contact.

1.5 SCHEDULING AND SEQUENCING

A. Install temporary fence and gates prior to beginning demolition work and/or new construction work

B. Complete necessary Site preparation and grading before installing chain link fence and gates.

PART 2 - PRODUCTS

2.1 MANUFACTURER - Galvanized Steel Fencing: The following manufacturers’ products have been used to establish minimum standards for materials, workmanship and function:

A. Master Halco

B. Merchants Metal

C. Stephens Pipe and Steel, LLC.

D. Eagle Fences

E. Equal products of other manufacturers may be used in the work provided, such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 TEMPORARY CHAIN LINK FENCING

A. Unless otherwise indicated, type of temporary chain link fencing shall be as follows:

1. New materials or previously used salvaged chain link fencing in good condition.
2. Height: 8'-0" (minimum) unless otherwise indicated on drawings.
3. Posts: 2" min. galvanized steel pipe of diameter to provide rigidity. Post shall be suitable for setting in concrete footings.
4. Fencing Fabric: 2" diamond woven galvanized steel wire mesh. Provide in continuous lengths to be wire tied to fence posts or prefabricated into modular pipe-framed fence panels.
5. Privacy Fabric: Temporary fencing shall be outfitted with privacy fabric.
    a. Color: Green
    b. Material Requirement: Polyethylene, 4.9 oz/sq. yd., Burst Strength: 210 psi

B. Gates: Provide personnel and vehicle gates of the quantity and size indicated on the Drawings or required for functional access to site.
1. Fabricate of same material as used for fencing.
2. Vehicle gates:
    a. Minimum width: 20 feet to allow access for emergency vehicles.
    b. Capable of manual operation by one person.

PART 3 - EXECUTION

3.1 GENERAL- TEMPORARY CHAIN LINK FENCING

A. Installation of temporary fencing shall not deter or hinder access to existing and new hose connections and fire hydrants.
1. Maintain 3 feet diameter clear space around fire hydrants.
2. Where fire hydrant or hose connection is blocked by fencing, provide access gate.

B. Access: Provide gates for personnel, delivery of materials, and access by emergency vehicles.

C. Field verify gate locations with Architect.

3.2 INSTALLATION - FENCE

A. Chain link posts:
1. Post spacing shall be 12' maximum if using prefabricated panels and 10' maximum if wire tying mesh to posts.
2. End, Corner and Line posts shall be set in concrete **OR** post driven.
3. Gate posts: Use concrete footings and brace to provide rigidity for accommodating size of gate. Gate posts MUST be set in concrete.

B. Fabric: Leave approximately 2" between finish grade and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.

C. Gates: Install with required hardware.

D. Wire Ties: 11 gage galvanized steel.

E. Tension Wire: 7 gage, galvanized coated coil spring wire, metal and finish to match fabric.

F. Concrete: Provide concrete consisting of portland cement, ASTM C 150, aggregates ASTM C 33, and clean water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3,000 psi using at least 4 sacks of cement per cu. yd., 1" maximum size aggregate, maximum 3" slump.

3.3 INSTALLATION - GATES

A. Chain link gates:

1. Fabricate perimeter frames of gates from metal and finish to match fence framework. Assemble gate frames by welding or with special fittings and rivets for rigid connections, providing security against removal or breakage connections. Provide horizontal and vertical members to ensure proper gate operation and attachment of fabric, hardware and accessories. Space frame members maximum of 8’ apart unless otherwise indicated.
2. Provide same fabric as for fence, unless otherwise indicated. Install fabric with stretcher bars at vertical edges and at top and bottom edges. Attach stretcher bars to gate frame at not more than 15” o.c.
3. Install diagonal cross-bracing consisting of 3/8” diameter adjustable length truss rods on gates to ensure frame rigidity without sag or twist.

B. Gate Hardware: Provide hardware and accessories for each gate, galvanized per ASMT A 153, and in accordance with the following.

1. Hinges: Size and material to suit gate size, non-lift off type, offset to permit 180 degree gate opening. Provide 1½ pair hinges for each leaf over 6’ nominal height.
2. Latch: Forked type or plunger-bar type to permit operation from either side of gate, with padlock eye as integral part of latch.
3. Keeper: Provide keeper for vehicle gates, which automatically engages gate leaf and holds it in open position until manually released.
4. Double Gates: Provide gate stops for double gates, consisting of mushroom type flush plate with anchors, set in concrete, and designed to engage center drop rod or plunger bar. Include locking device and padlock eyes as integral part of latch, permitting both gate leaves to be locked with single padlock.

3.4 MAINTENANCE

A. Maintain fencing in good condition. If damaged, Contractor shall immediately repair at no additional cost to owner.

3.5 FIELD QUALITY CONTROL

A. Post and Fabric Testing: Test fabric tension and line post rigidity according to ASTM F1916.

B. Gate Tests:

1. Prior to acceptance of installed gates, demonstrate proper operation of gates under each possible open and close condition specified.
2. Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range.
3. Confirm that latches and locks engage accurately and securely without forcing and binding.

3.6 CLEANUP

A. Remove excess fencing materials, soil, concrete and any other debris from Site which resulted from installation of fences and/or gates.

END OF SECTION

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SECTION 03310 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of concrete work is shown on drawings.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. ACL 301 "Specifications for Structural Concrete for Buildings".
2. ACI 318 "Building Code Requirements for Reinforced Concrete"
3. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".

B. Concrete Testing Service: The **Owner** will engage and pay a testing laboratory to perform material evaluation tests.

C. Materials and installed work may require retesting, as directed by Architect, at any time during progress of work. Provide free access to material stockpiles and facilities. Retesting of rejected materials and installed work, shall be done at Contractor's expense.

1.4 SUBMITTALS

A. Product Data: Submit data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, joints systems, curing compounds, dry-shake finish materials and others as requested by Architect.

B. Shop Drawings Reinforcements: Submit shop drawings for fabrication, bending and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement.

C. Material Certificates: Provide materials certificates in lieu of materials laboratory test reports when permitted by Architect. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

B. Use plywood complying with U. S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.

C. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two (2) edges and one (1) side for tight fit.

D. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

2.2 REINFORCING MATERIALS

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed, unless otherwise noted.

B. Steel Wire: ASTM A 82, plain, cold-drawn, steel.

C. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.

D. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications, unless otherwise acceptable.

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

2. For exposed to view concrete surfaces, where legs of supports are in contact with forms, provide support with legs which are plastic protected (CRSI, Class I) or stainless steel protected (CRSI, Class 3).

2.3 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type 1, unless otherwise acceptable to Architect.

1. Use one brand of cement throughout project, unless otherwise acceptable to Architect.

B. Normal Weight Aggregate: ASTM C 33, and as herein specified. Provide aggregate from a single source for all concrete.

1. Do not use fine or coarse aggregates containing spalling-causing deleterious substances.

C. Water: Drinkable.

D. Air-Entraining Admixture: ASTM C 260.

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Air-Mix, Euclid Chemical Co.

b. Sika-Ai", Sika Corp.

c. Darex AEA, W. R. Grace

d. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

E. Water-Reducing, Non-Chloride Accelerator Admixture: ASTM C 494, Type E, and containing not more than 0.1% chloride ions.

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Accelguard 80; Euclid Chemical Company

b. Pozzolith High Gally; Master Builders

c. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

F. Water-Reducing, Retarding Admixture: ASTM C 494, Type D, and contain not more than 0.1% chloride ions.

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Edoco 20006; Edoco Technical Products

b. Pozzolith 300-R; Master Builders

c. Eucon Retarder 75; Euclid Chemical Company

d. Daratard; W. R. Grace

e. Plastiment; Sika Chemical Company

f. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

G. Certification: Provide admixture manufacturer's written certification that chloride ion content complies with specified requirements.

H. Calcium chloride or admixtures containing more than 0.1% chloride ions are not permitted.

2.4 RELATED MATERIALS

A. Moisture Barrier: Provide moisture barrier cover over prepared base material where indicated. Use only materials which are resistant to decay when tested in accordance with ASTM E 154, as follows:

1. Polyethylene sheet not less than 10 mils thick.

B. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.

C. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.

1. Waterproof paper

2. Polyethylene film.

3. Polyethylene-coated burlap.

D. Liquid Membrane Forming Curing Compound: Liquid type membrane forming curing compound complying with ASTM C 309, Type 1-D, Class A unless other type acceptable to Architect. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal. Equal to "Kure-N-Seal" - 30; Sonneborn-Contech

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Master Builders

b. Euclid Chemical Company

c. A.C. Horn

d. The Burke Company

e. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

E. Bonding Compound: Polyvinyl acetate or acrylic base, re-wettable type.

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Welcrete; Larsen Products

b. EucoWeld; Euclid Chemical Company

c. Hornweld; A. C. Horn

d. Sonocrete; Sonneborn-Contech

e. Acrylic Bondcrete; The Burke Company

f. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

F. Epoxy Adhesive: ASTM C 881, two component material suitable for use on dry or damp surfaces. Provide material "Type", "Grade", and "Class" to suit project requirements.

1. MANUFACTURERS: The following manufacturers' products have been used establish minimum standards for materials, workmanship and function:

a. Epoxtite; A. C. Horn

b. Sikadur Hi-Mod; Sika Chemical Corporation

c. Euco Epoxy 463 or 615; Euclid Chemical Company

d. Patch and Bond Epoxy; The Burke Company

e. Sure-Poxy; Kaufman Products, Inc.

f. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

G. Subfloor Patching and Leveling**:** The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

a. Ardex K-15; Ardex Engineered Cements 400 Ardex Park Drive Aliquippa, PA 15001; (724) 203-5000

b. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

PART 3 - EXECUTION

3.1 PROPORTIONING AND DESIGN OF MIXES

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Architect.

B. Submit written reports to Architect of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Architect.

C. Design mixes to provide normal weight concrete as indicated on drawings and schedules.

D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

E. Admixtures:

1. Use water-reducing admixture in all concrete for ease of placement and workability.

2. Use non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50 degrees F.

3. Use air-entraining admixture in all concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 6% with a tolerance of plus-or-minus 1-1/2%.

F. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

1. Ramps, slabs and sloping surfaces: 3" to 5".

2. Reinforced foundation systems: 2" to 5".

3. Other concrete: 3" to 5".

3.2 CONCRETE MIXES

A. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as herein specified.

1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

2. When air temperature is between 85 degrees F and 90 degrees, reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes.

3.3 FORMS

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

C. Construct forms to sizes, shapes, lines and dimensions shown and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, off-sets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses and the like, to prevent swelling and for easy removal.

E. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set time to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.

F. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

G. Form Ties: Factory-fabricated, adjustable-length, removable, or snap-off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

1. Unless otherwise indicated, provide ties so portion remaining within concrete after removal is 1" inside concrete and will not leave holes larger than 1" diameter in concrete surface.

H. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.

I. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

3.4 PLACING REINFORCEMENT

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for details and methods of reinforcement placement and supports, and as herein specified.

B. Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers as required.

D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.5 JOINTS

A. Construction Joints: Locate and install construction joints as indicated, or if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Architect.

1. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints.

B. Isolation Joints in Slabs-On-Ground: Construct isolation joints in slabs-on-ground at points of contact between slabs on ground and vertical surfaces, such as column pedestals, and elsewhere as indicated.

1. Joint filler and sealant materials are specified in Division-7 sections of these specifications.

C. Construction Joints in Slabs-On-Ground: Construct construction joints in slabs-on-ground to form panels of patterns no larger than 600 square feet and as shown and as detailed. An alternative control joint detail may be inserts 1/8" to 1/4" wide x 1/4 of slab depth.

1. Form contraction joints by inserting premolded plastic, hardboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris, fill groove with joint sealant.

2. Joint sealant material is specified in Division-7 sections of these specifications.

3.6 INSTALLATION OF EMBEDDED ITEMS

A. General: Set and build into work anchorage devices and other embedded items required for

other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto.

B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface.

1. Provide and secure units sufficiently strong to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

3.7 PREPARATION OF FORM SURFACES

A. Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.

B. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

C. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

3.8 CONCRETE PLACEMENT

A. Replacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately

before placing concrete where form coatings are not used.

1. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

B. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete", and as herein specified.

1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams of planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

C. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24"

and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

D. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Bring slab surfaces to correct level with straightedge and strike-off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

3. Maintain reinforcing in proper position during concrete placement operations.

E. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

1. When air temperature has fallen to or is expected to fall below 40 degrees F uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F. and not more than 80 degrees F at point of placement.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not place concrete when air temperature has fallen to or is expected to fall below 35° F. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

F. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACE 305 and as herein specified.

2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

4. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.

5. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.9 FINISH OF FORMED SURFACES

A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.

B. Smooth Form Finish: For formed concrete surfaces or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete such as waterproofing, dampproofing. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

C. Smooth Rubbed Finish: For formed concrete surfaces exposed to view provide smooth rubbed finish, not later than one day after form removal.

1. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES

A. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155/E 1155M for randomly trafficked floor surfaces:

1. Specified overall values of flatness, F(F) 38: and levelness, F(L) 25: with minimum local values of flatness, F(F) 19: levelness, F(L) 13: for slabs on grade.

B. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo and other bonded applied cementious finish flooring material, and as otherwise indicated.

C. Slope surface uniformly to drains where required. After leveling, roughen surfaces before final set, with stiff brushes, brooms or rakes.

D. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other

finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing membrane or elastic roofing, or sand-bend terrazzo, and as otherwise indicated.

1. After screeding consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

E. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint or other thin film finish coating system.

1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance. Grind smooth surface defects which would telegraph through applied floor covering system.

F. Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps and ramps and elsewhere as indicated.

1. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.11 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Keep continuously moist for not less than 7 days.

2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least seven (7) days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.

1. Provide moisture curing by one of the following methods or by a combination of the following methods:

a. Keep concrete surface continuously wet by covering with water.

b. Continuous water-fog spray.

c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.

C. Provide moisture-cover curing as follows:

1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

D. Provide curing and sealing compound to interior slabs with resilient flooring, carpet over cushion, or left exposed; and to exterior slabs, walks, and curbs as follows:

1. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within two hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period.

E. Do not use membrane curing compounds on surface which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, damp-proofing, membrane roofing, flooring (such as ceramic or quarry tile, glue-down carpet), painting and other coatings and finish materials, unless otherwise acceptable to Architect.

F. Curing Formed Surfaces: Cure formed concrete surfaces, by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

G. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.

H. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise directed.

I. Sealer and Dust-proofer: Apply a second coat of specified curing and sealing compound only to surfaces given a first coat.

3.12 REMOVAL OF FORMS

A. Formwork not supporting weight of concrete, such as sides of walls, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for twenty-four (24) hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided cutting and protection operations are maintained.

B. Formwork supporting weight of concrete, may not be removed in less than fourteen (14) days and until concrete has attained design minimum compressive strength of in place concrete by testing field-cured specimens' representative of concrete location in members.

C. Form facing material may be removed four (4) days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.13 RE-USE OF FORMS

A. Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to Architect.

3.14 MISCELLANEOUS CONCRETE ITEMS

A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

D. Reinforced Masonry: Provide concrete grout for reinforced masonry, masonry lintels and bond beams where indicated on drawings and as scheduled. Maintain accurate location of reinforcing steel during concrete placement.

3.15 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms when acceptable to Architect.

1. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

2. For exposed to view surfaces, blend white portland cement and standard portland cement so that when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

B. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

C. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness using a template having required slope.

1. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01" wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets and other objectionable conditions.

2. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.

3. Correct low areas in unformed surfaces during, or immediately after, completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Architect.

4. Repair defective areas, except random cracks and single holes not exceeding 1" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and exposed reinforcing steel with at least 3/4" clearance all around.

5. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

6. Repair isolated random cracks and single holes not over 1" in diameter by dry-pack method. Groove top of cracks and cut-out holes to sound concrete and clean of dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of one-part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than seventy-two (72) hours.

7. Perform structural repairs with prior approval of Architect for method and procedure, using specified epoxy adhesive and mortar.

8. Repair methods not specified above may be used, subject to acceptance of Architect.

3.16 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. The Owner will employ and pay for a testing laboratory to perform tests and to submit test reports. The Contractor shall notify testing agency 24 hours in advance of requirements.

B. Sampling and testing for quality control during placement of concrete may include the following, as directed by Architect.

C. The Owner shall maintain equipment on site to cast cylinders, perform slump and air tests, and field cure specimens. Should the project testing agency be absent from the site, the Contractor will be responsible for performing the field tests below.

D. Sampling Fresh Concrete: ASTM C 172, except as modified for slump to comply with ASTM C 94.

1. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
2. Concrete Temperature: Test hourly when air temperature is 40 degrees F. and below, and when 80 degrees F. and above; and each time a set of compression test specimens made.
3. Compression Test Specimen: ASTM C 31; one set of four (4) standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

E. Compressive Strength Tests: ASTM C 39; one set for each day's pour plus additional sets for each 50 cu. yds. over and above the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at seven (7) days, two specimen tested at twenty-eight (28) days, and one specimen retained in reserve for later testing if required. Minimum compressive strength of concrete shall be 3,000 psi at 28 days unless otherwise indicated.
1. When frequency of testing will provide less than five (5) strength tests for a given class of concrete, conduct testing from at least five (5) randomly selected batches or from each batch if fewer than five (5) are used.
2. When total quantity of a given class of concrete is less than 50 cu. yds., strength test may be waived by Architect if, in his judgment, adequate evidence of satisfactory strength is provided.
3. When strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
4. Test results shall be reported in writing to Architect and Contractor within twenty-four (24) hours that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at twenty-eight (28) days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

F. Nondestructive Testing: Impact hammer, sonoscope, or other non-destructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

G. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.
1. Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.

END OF SECTION

SECTION 03365 - STAINED CONCRETE (STC) FLOOR SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SECTION INCLUDES

A. Polished concrete floor system.

B. Related Sections

1. Section 03300 - Cast-in-Place Concrete.

1.3 DEFINITIONS

A. IPCI – International Polished Concrete Institute is a resource for architects, designers and contractors to learn more about polished concrete. Contractors become certified through educating and testing on various labor driven techniques to perform a proper scope of work. They do not become certified to use certain products.

B. Concrete Polishing – The process of utilizing industrial diamonds to grind and polish a concrete surface with the application of a impregnating hardeners and sealers that will densify, polish and seal the floor.

1. Process may be either a proprietary system from specialty contractor or use of specified products with acceptable grinding methods.
2. Acceptable Grinding Methods: Equipment and techniques that produce documented results of concrete finishes.

1.4 REFERENCES

A. ASTM C 1028 - Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.

B. ASTM D 523 - Standard Test Method for Specular Gloss.

C. ASTM E 1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers.

1.5 SYSTEM DESCRIPTION

A. Installation of polished concrete floor system for new interior concrete floors by dry grinding and polishing with various size grit metal-bonded and resin-bonded diamonds and application of concrete densifier.

B. Performance Requirements: Improve performance of floor by installation of polished concrete floor system as measured by the following criteria:

1. Static Coefficient of Friction, ASTM C 1028:
   a. Dry Surface: Minimum of 0.60 for level surfaces
2. Specular Gloss/Reflectance, ASTM D 523:
3. Floor Surface Profile, ASTM E 1155:

1.6 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.

B. Product Data: Submit installer's product data, including surface preparation and installation instructions.

C. Installer's Certification: Submit IPCI certification of installer and installer's employees.

D. Installer's Project References: Submit installer's list of successfully completed polished concrete floor system projects, including project name and location, name of architect, and type and quantity of polished concrete floor system installed.

E. Maintenance Manual: Submit installer's maintenance manual, including maintenance and cleaning instructions for polished concrete floor system.

1.7 QUALITY ASSURANCE

A. Basis of Design: Perfect Polish, Mechanical Polishing, Ameripolish Dyes.

B. Installer's Qualifications:

1. Certified IPCI installer.
2. Employ IPCI Certified Craftsmen for installation of polished concrete floor system.
3. Employ IPCI installer with 2-4 years of experience when a floor system involves decorative work.

C. Mandatory Preinstallation Conference: Conduct conference at Project site before first concrete pour and start of application of Polished Concrete Floor Finish System. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and Manufacturers representative. Review the following:

1. Environmental requirements
2. Curing methods
3. Surface preparation.
4. Application and decorative saw cuts.
5. Repair.
6. Field quality control.
7. Cleaning.
8. Protection of systems.
9. Coordination with other work.

D. Coordination: Concrete polisher shall coordinate the following:

1. Concrete placement, floating, troweling and curing shall be coordinated with the polisher so surface is acceptable for polishing.
2. Scheduling of joint sealant installation is not detrimental to the polishing process.
3. Cleaning of concrete surface prior to performing polishing.

E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. Provide polished concrete samples: size 4”x4” or larger if specified for each polished concrete finish required.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:

1. Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
2. Keep materials from freezing.

C. Handling: Protect materials during handling and application to prevent contamination or damage.

PART 2 - PRODUCTS

2.1 INSTALLER

A. Must be IPCI certified installer.

2.2 GRINDING AND POLISHING EQUIPMENT

A. Floor Grinder: Polishing shall be a dry diamond method, not wet, utilizing metal bonded diamond/resin bonded diamond multi orbital planetary action opposing rotational diamond headed machine with approximate grinding pressure of 675 pounds or more.

B. Vacuum System: Vacuum system shall be directly connected to floor grinder to reduce amount of dust exposure. HEPA filtration system is required.

2.3 MATERIALS

A. Concrete Densifier: Clear, odorless liquid form of a lithium silicate to permanently seal, densify, dustproof and harden concrete surfaces and provide abrasion resistance by penetrating into concrete pores and chemically reacting. Products must conform and meet minimum performance characteristics as described herein.

B. Concrete Sealer: Clear, highly concentrated, quick drying penetrating water & oil repellent sealer specifically designed to deeply impregnate the surface pores and chemically bond with the concrete floor to increase durability.

C. Penetrating Dye: Ameripolish “Color Perfect” colorants.

1. Type: Solvent based.

D. Manufacturer’s standard options (similar products/ colorants may be substituted. Refer to finish legend, schedule and drawings for floor pattern, location and color selections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine floor to receive polished concrete floor system.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not begin surface preparation or installation until unacceptable conditions are corrected.

D. Verify the Following for New Concrete Floors:

1. Floor Finish:

a. Slabs and flatwork shall be placed and finished monolithically.
b. Strike off to true, plane surfaces at required elevations.
c. Thoroughly compact concrete with vibrators, floats, and tampers to force coarse aggregate below the surface.
d. Laser Screed floor when applicable
e. Low speed power trowel with no hand finishing.
f. Pan float.
g. Steel trowel finish.
h. Surface should not be burned due to excessive troweling.
i. Imprints are not acceptable (i.e. boots, foreign objects dropped into concrete).

2. Floor and Joints:
   a. Free of debris and excessive dirt, dust, clay, and mud.
   b. Dry.
3. Floor Surface Profile:
   a. Floor Flatness Number (FF): 50 (preferred)_45 (minimum).
   b. Floor Levelness Number (FL): 35 (preferred) 30 (minimum).
4. Concrete Compressive Strength: 3,500 psi to 5,000 psi.
5. Lightweight Concrete: Not allowed if aggregate exposure is required.
6. Concrete Curing: Minimum 8 days water cured, or dissipating curing compound applied.
7. Concrete Adjacent to Floor Penetrations: Troweled flat and level with surrounding concrete.
. Concrete Adjacent to Drains, clean-outs, etc.: Finish level to the top of the structure.

3.2 SURFACE PREPARATION

A. Protection: Protect surrounding areas and adjacent surfaces from the following:

1. Minimal accumulation of dust from grinding and polishing.
2. Contact with overspray of concrete densifier.
3. Contact with overspray of concrete sealer.

B. Surface Preparation: Prepare surfaces in accordance with installer's instructions.

C. Clean Surfaces: Remove dirt, dust, debris, oil, grease, curing agents, bond breakers, paint, coatings, and other surface contaminants which could adversely affect installation of polished concrete floor system.

3.3 INSTALLATION

A. Install polished concrete floor system in accordance with installer’s instructions at locations indicated on the Drawings.

B. Aggregate Exposure:

C. Polished Concrete Floor System: IPCI Sheen Level 3 – Median Gloss.

1. Preparation Step:
   a. Remove existing floor coatings by grinding with 16-grit metal-bonded diamonds.
   b. Remove existing floor coatings and level floor by grinding with 40-grit metal-bonded diamonds.
   c. Open-up concrete to accept concrete densifier by grinding with 80-grit metal-bonded diamonds.
2. Apply concrete densifier to deeply saturate floor.
3. Remove residue of concrete densifier dried on floor surface by grinding with 150-grit metal-bonded diamonds.
4. Floor Closure Polishing:
   a. Remove 150-grit metal-bonded diamond scratches by grinding with 100-grit resin-bonded diamonds.

b. Remove 150-grit metal-bonded and 100-grit resin-bonded diamond scratches by grinding with 200-grit resin-bonded diamonds.
c. Prepare floor for polishing by grinding with 400-grit resin-bonded diamonds.
d. Achieve light-reflective finish when viewed from a distance of 30 feet by grinding with 800-grit resin-bonded diamonds.

5. Apply concrete sealer.

D. Penetrating Dye:

1. Mix dye in accordance with installer's instructions.
2. Apply penetrating dye as last step before applying concrete sealer in accordance with installer's instructions.
3. Apply penetrating dye at 400-grit resin-bonded diamond-grinding step in accordance with installer's instructions.
4. Thoroughly wipe surface clean of excess dye residue with acetone in accordance with installer's instructions.
5. Repeat application of penetrating dye if due to porosity of floor or darker color is desired.

E. Hand Tooling: When applicable in project utilize similar grinding and polishing process to blend the edges of all perimeter areas where obstructions ly with a variable speed polisher.

3.4 FIELD QUALITY CONTROL

A. Inspect completed polished concrete floor system with Owner, Contractor, Architect, and Installer.

B. Review procedures with Architect to correct unacceptable areas of completed polished concrete floor system.

C. Testing: Test the following from completed polished concrete floor system:

1. Static Coefficient of Friction, ASTM C 1028:
   a. Dry surface.
   b. Wet surface.
2. Specular Gloss/Reflectance, ASTM D 523:
3. Floor Surface Profiles, ASTM E 1155:
4. Compare test results from tests performed before and after installation of polished concrete floor system.

3.5 PROTECTIONS

A. Protect completed polished concrete floor system from damage until Substantial Completion.

1. All hydraulic powered equipment shall be diapered to avoid staining of concrete.
2. Vehicle parking on polished concrete slab shall be prohibited. If necessary to complete their scope of work, drop clothes shall be placed under vehicles.
3. No pipe cutting machine shall be used on the finished floor slab.
4. Steel shall not be placed on the finish slab to avoid rusting.
5. Acids and acid detergents shall not be used nor come in contact with the slab.
6. All painters to use drop clothes on finished slab. If spilled, paint must be immediately removed.
7. All trades will be informed that the slab must be protected at all times.
8. Repair damaged areas of completed polished concrete floor system to satisfaction of the Architect.

END OF SECTION

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SECTION 03541 - HYDRAULIC CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

1.2 SUMMARY

A. This Section includes a self-leveling underlayment that consists of a blend of Portland cement, approved aggregate, and other hydraulic cements and polymers that is used to level and smooth interior concrete.

1. Basis of Design: ARDEX K 15 Premium Self-Leveling Underlayment.

B. Related Sections include the following:

1. Section 3 - Concrete
2. Division 9 - Finishes

1.3 REFERENCES

A. ASTM C 109M, Compressive Strength Air-Cure Only

B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars

C. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes

D. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets.

B. Qualification Data: For Installer

1.5 QUALITY ASSURANCE

A. Installation of the product must be completed by a factory-trained applicator, using mixing equipment and tools approved by the manufacturer.

B. Product must have a hydraulic cement-based inorganic binder as the primary cement binder to include Portland cement per ASTM C150: Standard Specification for Portland Cement and other specialty hydraulic cements. Gypsum-based products are not acceptable.

C. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation.

D. Mock-Up: Before performing the work in this section, an on-site mock-up representative of specified process, surface, finish, color and joint design/treatments must be installed for review and approval. These mock-ups should be installed using the same Installer personnel who will perform work. Approved mock-ups may become part of completed work, if undisturbed at time of substantial completion.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and 29°C) and protect from direct sunlight.

C. Handle products in accordance with manufacturer's printed recommendations.

1.7 PROJECT CONDITIONS

A. Do not install material below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA, 15001 USA, (724) 203-5000; www.ardexamericas.com (*Basis of Design).*

B. Dayton Superior Corporation; 1125 Byers Road, Miamisburg, Ohio 45342; Tel: (877) 266-7732; www.DaytonSuperior.com.

C. Equal products of other manufacturers may be used in the work, provide such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Concrete Topping - Hydraulic Cement-based Self-Leveling Underlayment.

1. Product: ARDEX K 15 Premium Self-Leveling Underlayment.

1. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F+/-3°F (23° C+/-3°C) and 50% +/-5% relative humidity:

a. Application: Barrel Mix or Pump

b. Flow Time: 10 minutes

c. Walkable: 2 to 3 hours

d. Compressive Strength: 5500 psi at 28 days, ASTM C109M

e. Flexural Strength: 1200 psi at 28 days, ASTM C348

B. Water

1. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

PART 3 - EXECUTION

3.1 PREPARATION

A. Concrete Subfloors: Prepare substrate in accordance with manufacturer’s instructions.

1. Prior to proceeding, refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming.

2. If necessary, mechanically clean the substate down to solid concrete by shot blasting, scarifying or similar method. Acid etching, adhesive removers, and the use of sweeping compounds and solvents are not acceptable.

3. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering.

B. Crack and Joint Preparation:

1. Moving Joints and Moving Cracks: Honor all expansion, isolation joints and moving cracks up through the underlayment. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.

2. Saw Cuts, Dormant Control Joints and Dormant Cracks: Fill all dormant control joints and dormant cracks with ARDEX ARDIFIX Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX FEATHER FINISH Self-Drying, Cement-Based Finish Underlayment as

recommended by the manufacturer.

3.2 APPLICATION

A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

C. Priming: Comply with manufacturer’s printed instructions.

D. Mixing: Comply with manufacturer's printed instructions and the following:

1. For pump installations, ARDEX K 15 shall be mixed using the ARDEX ARDIFLO™ Automatic Mixing Pumps.

E. Application: Comply with manufacturer's printed instructions and the following:

1. Pour or pump the liquid ARDEX K 15 and spread into place with the ARDEX T-4 Spreader. Immediately use the ARDEX T-5 Smoother to smooth the surface. Wear nonmetallic cleats to avoid leaving marks in the liquid ARDEX K 15.

F. Curing

1. ARDEX K 15 can be walked on in 2-3 hours. Moisture-insensitive tiles such as ceramic, quarry and porcelain can be installed after 6 hours. All other finish floor coverings can be installed after 16 hours at 70°F (21°C).

3.3 FIELD QUALITY CONTROL

A. Where specified, field sampling of the Ardex topping is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.4 PROTECTION

A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION

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SECTION 03950 - CONCRETE SEALER

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exposed concrete slabs where concrete sealer is indicated.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: Submit four samples of concrete sealer over concrete, 6 by 6 inches sample.

C. Manufacturer Certificates: Signed by manufacturers certifying that concrete sealer comply with requirements.

D. Qualification Data: For Installer.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for assemblies.

F. Warranty: Special warranty specified in this Section.

G. Maintenance data.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer with minimum five years documented experience.

1.4 PROJECT CONDITIONS

A. Limitations: Proceed with application only when the following existing substrate conditions permit sealer to be applied according to manufacturers' written instructions and warranty requirements:
   1. Ambient temperature is above 40 deg F.
   2. Concrete surfaces and mortar have cured for more than 28 days.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer and Applicator agree to repair or replace materials that fail to maintain water repellency within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCRETE SEALER

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.
   1. Products:
      a. Curecrete Distribution Inc.; Ashford Formula.
      b. Burke by Edoco; Titan Hard.
      c. ChemMasters; Chemisil Plus.
      d. Euclid Chemical Company (The); Euco Diamond Hard.
   2. Flammability: Self-extinguishing.
   3. Finish: Non slip finish. Coefficient of friction: 0.6 wet, 0.8 dry.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrate of substances that might interfere with penetration or performance of concrete sealer.
   1. Concrete: Remove oil, curing compounds, laitance, and other substances that could prevent adhesion or penetration of concrete sealer.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLICATION

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect the substrate before application of concrete sealer and to instruct Applicator on the product and application method to be used.

B. Concrete Sealer: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
   1. Do not apply to concrete that is less than number of days' old recommended by sealer manufacturer in writing.
   2. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

C. Apply on horizontal surfaces of indicated interior exposed concrete slabs not receiving other finishes.

3.3 CLEANING

A. Immediately clean concrete sealer from adjoining surfaces and surfaces soiled or damaged by concrete sealer application as work progresses. Repair damage caused by concrete sealer application. Comply with manufacturer's written cleaning instructions.

END OF SECTION

SECTION 04200 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of each type of masonry work is indicated on drawings and schedule.

B. Types of masonry work required include.

1. Concrete unit masonry.

2. Brick masonry (match existing).

1.3 QUALITY ASSURANCE

A. Fire Performance Characteristics: Where indicated, provide materials and construction which are identical to those of assemblies whose fire endurance has been determined by testing in compliance with ASTM E 119 by a recognized testing and inspecting organization or by another means, as acceptable to authority having jurisdiction.

B. 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.

C. 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.

D. Samples: Submit the following samples:

1. Unit masonry samples for each type of exposed masonry unit required; include in each set the full range of exposed color and texture to be expected in completed work.

2. Include size variation data verifying that actual range of sizes for brick falls within ASTM C652 dimension tolerances for brick where modular dimensioning is indicated. The grade shall be SW and the type HBS.

E. Field Constructed Mock-Up Panel: Prepare mock-up panel for the following types of masonry. Purpose of mock-up is further verification of selections made for color and finish under sample submittals and establishing standard of quality for aesthetic effects expected in completed work. Build mock-up panel to comply with the following requirements:

1. Locate mock-up panel on site where directed by the Architect.

2. Build mock-up panel of typical exterior masonry wall, approximately 4’-0” long by 4’-0” high, showing all typical components, connections, attachments to building structure and methods of installation.

3. Retain mock-up panel during construction as standard for judging completed masonry work. When directed, demolish mock-up panel and remove from site.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes. Store masonry units off the ground.

C. Store cementitious materials off the ground, under cover and in dry location.

D. Store aggregates where grading and other required characteristics can be maintained.

E. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.5 PROJECT CONDITIONS

A. Protection of Work: During erection, cover top of walls with waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.

B. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

C. Do not apply uniform floor or roof loading for at least 24 hours after building masonry walls or columns.

D. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Remove immediately grout or mortar in contact with such masonry.

E. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

F. Protect sills, ledges and projections from droppings of mortar.

G. Environmental Protection:

1. Maintain air temperature and materials to a minimum of 40 degrees F and a maximum of 90 degrees F prior to and during masonry work
2. Do not lay masonry units which are wet or frozen.
3. Remove masonry damaged by freezing conditions.

H. For clay masonry units with initial rates of absorption (suction) which require them to be wetted before laying, comply with the following requirements.

1. For units with surface temperatures above 32°F wet with water heated to above 70°F.
2. For units with surface temperatures below 32°F wet with water heated to above 130°F.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. General: Comply with referenced standards and other requirements indicated below applicable to each form of concrete masonry unit required.

1. Provide special shapes where required for lintels, corners, jambs, sash, control joints, headers, bonding and other special conditions.
2. Provide bullnose units for outside corners, except where indicated as square-edged.

B. Concrete Block: Provide units complying with characteristics indicated below for Grade, Type, face size, exposed face and under each form of block included, for weight classification.

1. Grade N
2. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8” high x thickness indicated.
3. Type I: moisture-controlled units.
4. Exposed Faces: Manufacturer’s standard color and texture, unless otherwise indicated.
5. Hollow Loadbearing Block: ASTM C 90 and as follows:
   a. Weight Classification: Lightweight
6. All CMU sills shall be bullnose concrete block, unless another material is indicated on the drawings. If the sills are indicated to receive another material (ie: Solid Surface fabrication, wood, etc.) placed on top of the CMU sill, the CMU sill shall be straight edged concrete block units.

2.2 BRICK MADE FROM CLAY OR SHALE

A. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. ACME Brick Company, Montgomery, AL
2. Boral Bricks, Phenix City, Al
3. Henry Brick Company, Selma, AL
4. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. General: Comply with referenced standards and other requirements indicated below applicable to each form of brick required.

C. Provide special molded shapes where indicated and for application requiring brick of form, size and finish on exposed surfaces which cannot be produced from standard brick sizes by sawing.

D. For sills, caps and similar applications resulting in exposure of brick surfaces which otherwise would be concealed from view, provide uncored or unfrogged units with all exposed surfaces finished.

E. Facing Brick: Submit samples for approval of equals prior to bids. Eased edge brick shall not be allowed. **Brich shall match existing in color, size and texture.**

2.3 MORTAR AND GROUT MATERIALS

A. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Atlas
2. Citadel
3. Lone Star
4. Magnolia
5. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. Masonry Cement: ASTM C 91.

1. Type S for CMU walls
2. Type N for Exterior Face and Accent brick – color pigment. **Match existing.**

C. Hydrated Lime: ASTM C 207, Type S.

D. Aggregate for Mortar: ASTM C 144, except for joints less than 1/4" use aggregate graded with 100% passing the No. 16 sieve.

E. Water: Clean and potable.

2.4 JOINT REINFORCEMENT, TIES AND ANCHORING DEVICES

A. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Dur-O-Wall, Inc.
2. Heckman Building Products, Inc.
3. Masonry Reinforcing Corp. of America.
4. National Wire Products Corp.
5. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. Materials: Comply with requirements indicated below for basic materials and with requirements indicated under each form of joint reinforcement, tie and anchor for size and other characteristics.

C. Use individual galvanized steel metal ties installed in horizontal joints to bond wythes together

only where wood or metal stud backup occurs. Provide ties as shown, but not less than one metal tie for 4 sq. ft. of wall area spaced not to exceed 24" o.c. horizontally and vertically. Stagger ties in alternate courses. Provide additional ties within 1'-0" of all openings and space not more than 3'-0" apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24" o.c. vertically.

D. Hot-Dip Galvanized Steel Wire: ASTM A 82 for uncoated wire and with ASTM A 123, Class B-2 (1.5 oz. per sq. ft. of wire surface) for zinc coating applied after prefabrication into units.

E. Application: Use where indicated.

F. Joint Reinforcement: Provide truss-type, welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10', with prefabricated corner and tee units, and complying with requirements indicated below:

1. Width: Fabricate joint reinforcement in units with widths of approximately 2" less than nominal width of walls and partitions as required to provide mortar coverage of not less than 5/8" on joint faces exposed to exterior and 1/2" else- where.

2.5 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing, where flashing is exposed or partly exposed and where indicated, complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:

1. Fabricate continuous flashings in sections 96 inches long minimum, but not exceeding 12 feet.
2. Provide splice plates at joints of formed, smooth metal flashing.
3. Fabricate through-wall metal flashing embedded in masonry from, with ribs at 3-inch intervals along length of flashing to provide an integral mortar bond.
4. Fabricate through-wall flashing with snaplock receiver on exterior face where indicated to receive counterflashing.
5. Fabricate through-wall flashing with drip edge where indicated. Fabricate by extending flashing 1/2 inch out from wall, with outer edge bent down 30 degrees.
6. Fabricate through-wall flashing with sealant stop unless otherwise indicated. Fabricate by bending metal back on itself 3/4 inch at exterior face of wall and down into joint 3/8 inch to form a stop for retaining sealant backer rod.
7. Fabricate metal drip edges and sealant stops for ribbed metal flashing from plain metal flashing of same metal as ribbed flashing and extending at least 3 inches into wall with hemmed inner edge to receive ribbed flashing and form a hooked seam. Form hem on upper surface of metal so that completed seam will shed water.
8. Metal Drip Edges: Fabricate from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees.
9. Metal Flashing Terminations: Fabricate from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch and down into joint 3/8 inch to form a stop for retaining sealant backer rod.
10. Metal Expansion-Joint Strips: Fabricate from stainless steel to shapes indicated.

B. Flexible Flashing: For flashing not exposed to the exterior, use one of the following, unless otherwise indicated:

1. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy as follows:
   a. Monolithic Sheet: Elastomeric thermoplastic flashing, 0.040 inch thick.
   b. Self-Adhesive Sheet: Elastomeric thermoplastic flashing, 0.025 inch thick, with a 0.015-inch thick coating of rubberized-asphalt adhesive.
   c. Self-Adhesive Sheet with Drip Edge: Elastomeric thermoplastic flashing, 0.025 inch thick, with a 0.015-inch thick coating of rubberized-asphalt adhesive. Where flashing extends to

face of masonry, rubberized-asphalt coating is held back approximately 1-1/2 inches from edge.

d. Accessories: Provide preformed corners, end dams, other special shapes, and seaming materials produced by flashing manufacturer.

2. EPDM Flashing: Sheet flashing product made from ethylene-propylene-dieneterpolymer, complying with ASTM D 4637, 0.040 inch thick.

C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

D. MANUFACTURERS: The following manufacturers' products have been used to establish minimum standards for materials, workmanship, and function:

1. Vinyl Sheet Flashing: (Thickness: 20 mils)

a. Vi-Seal Plastic Flashing; Afco Products, Inc.

b. BFG Vinyl Water Barrier; B.F. Goodrich Co.

c. Nuflex; Sandell Manufacturing Co., Inc.

d. Wascosea"; York Manufacturing, Inc.

e. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. See drawings for locations of all required control joints.

B. Non-Metallic Expansion Joint Strips: Pre-molded, flexible cellular neoprene rubber filler strips complying with ASTM D 1056, Grade RE41E1, capable of compression up to 35%, of width and thickness indicated.

C. Premolded Control Joint Strips: Material as indicated below designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

1. Polyvinyl chloride complying with ASTM D 2287, General Purpose Grade, Designation PVC-63506.

D. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Mortar Net Solutions; Mortar Net with Insect Barrier or comparable product by one of the following:

a. Advanced Building Products Inc.

b. Heckmann Building Products, Inc.

c. Wire-Bond.

2. Configuration: Provide one of the following:

a. Strips, full depth of cavity and 10 inches (250 mm) high, with dovetail-shaped notches 7 inches (175 mm) deep that prevent clogging with mortar droppings.

2.7 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of trisodium phosphate (1/2 cup dry measure) and laundry detergent (1/2 cup dry measure) dissolved in one gallon of water.

2.8 MORTAR AND GROUT MIXES

A. General: Do not add admixtures including air-entraining agents, accelerators, retarders, water

repellent agents, anti-freeze compounds or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Mixing: Combine and thoroughly mix cementitious, water and aggregates in a mechanical batch mixer; comply with referenced ASTM standards for mixing time and water content.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types of mortar required, unless otherwise indicated.

1. For Exterior Brick, use Type N mortar, equal to Flamingo, Blue Circle or Lehigh.

2. For Other Masonry Units use Type S mortar without coloring pigment.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Wetting Clay Brick: Wet brick made from clay or shale which have ASTM C 67 initial rates of absorption (suction) of more than 30 grams per 30 sq. in. per minute. Use wetting methods which ensure each clay masonry unit being nearly saturated but surface dry when laid.

B. Do not wet concrete masonry units.

C. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.

D. Thickness: Build cavity and composite walls, floors and other masonry construction to the full thickness shown. Build single wythe walls (if any) to the actual thickness of the masonry units, using units of nominal thickness indicated.

E. Build chases and recesses as shown or required for the work of other trades. Provide not less than 8" of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.

F. Leave openings for equipment to be installed before completion of masonry work. After installation of equipment, complete masonry work to match work immediately adjacent to the opening.

G. Cut masonry units using motor-given saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible.

1. Use wet cutting saws to cut concrete masonry units.

3.2 LAYING MASONRY WALLS

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.

B. Coursing and Bonding:

1. **All CMU shall be Running Bond.**

C. Stopping and Resuming Work: Rack back 1/2-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

D. Built-in Work: As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around built-in items.

1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

A. Lay masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.

B. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on footings and in all courses of piers, columns and

pilasters, and where adjacent to cells or cavities to be reinforced or filled with concrete or grout. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

C. Maintain joint width shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8" joints.

D. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials, unless otherwise indicated.

E. Tool all exposed joints, except where otherwise indicated, slightly concave using a jointer larger than joint thickness, unless otherwise indicated.

F. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.

3.4 STRUCTURAL BONDING OF MULTI-WYTHE MASONRY

A. Use continuous horizontal joint reinforcement installed in horizontal mortar joints for bond tie between wythes. Install at not more than 16" o.c. vertically.

B. Corners: Provide interlocking masonry unit bond in each course at corners, unless otherwise shown.

1. For horizontally reinforced masonry, provide continuity at corners with prefabricated "L" units, in addition to masonry bonding.

C. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, provide same type of bonding specified for structural bonding between wythes and space as shown below:

1. At juncture of interior partitions and exterior walls, rake and caulk vertical joint.

2. Provide metal ties as shown below.

3. Provide individual metal ties at not more than 16" o.c. vertically.

4. Provide continuity with horizontal joint reinforcement using prefabricated "T" units.

D. Intersecting Load-bearing Walls: If carried up separately, block or tooth vertical joint with 8" maximum offsets and provide rigid steel anchors spaced not more than 4'-0" o.c. vertically, or omit blocking and provide rigid steel anchors at not more than 2'-0" o.c. vertically. Form anchors of galvanized steel not less than 1-1/2" x 1/4" x 2'-0" long with ends turned up not less than 2" or with cross-pins. If used with hollow masonry units, embed ends in mortar-filled cores.

E. Non-bearing Interior Partitions: Build full height of story to underside of roof structure above, unless otherwise shown.

3.5 CAVITY WALLS

A. Keep cavity clean of mortar droppings and other materials during construction. Strike joints facing cavity flush.

B. Tie exterior wythe to new back-up with continuous horizontal joint reinforcing, installed in mortar joints at not more than 16" o.c. vertically.

C. Provide weep holes (Open Head Joints) in exterior wythe of cavity wall located as directed on the drawings, spaced 32" o.c., unless otherwise indicated.

3.6 CAVITY WALL INSULATION

A. On units of plastic insulation, install small pads of adhesive spaced approximately 1'-0" o.c. both ways on inside face. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.

1. Fill all cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

3.7 HORIZONTAL JOINT REINFORCEMENT

A. General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls, 1/2" elsewhere. Lap reinforcing a minimum of 6".

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Reinforce walls with continuous horizontal joint reinforcing unless specifically noted to be omitted.

D. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcement placed in 2 horizontal joints approximately 8" apart, immediately above the lintel and immediately below the sill. Extend reinforcement a minimum of 2'-0" beyond jambs of the opening except at control joints.

1. In addition to wall reinforcement, provide additional reinforcement at openings as required to comply with the above.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Provide vertical and horizontal expansion, control and isolation joints in masonry where shown. Build-in related items as the masonry work progresses.

3.9 LINTELS

A. Install steel lintels where indicated.

B. Provide masonry lintels where shown and wherever openings of more than 1'-0" for brick size units and 2'-0" for block size units are shown without structural steel or other supporting lintels. Provide formed-in-place masonry lintels. Temporarily support formed-in-place lintels.

C. Provide minimum bearing of 8" at each jamb, unless otherwise indicated.

3.10 FLASHING OF MASONRY WORK

A. General: Provide concealed flashing in masonry work at, or above shelf angles, lintels, ledges and other obstructions to the down- ward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections which could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar. Extend flashings through exterior face of masonry and turn down to form drip.

B. Extend flashing the full length of lintels and shelf angles and minimum of 4" into masonry each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4", and through the inner wythe to within 1/2" of the interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2". At heads and sills turn up ends not less than 2" to form a pan.

C. Interlock end joints of deformed metal flashings by over-lapping deformations not less than 1-1/2" and seal lap with elastic sealant.

D. Install flashing to comply with manufacturer's instructions.

E. Provide weep holes (open head joints) in the head joints of the first course of masonry immediately above concealed flashings. Space weep holes 32" o.c., unless otherwise indicated.

3.11 REPAIR, POINTING AND CLEANING

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

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 work to provide a neat, uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and non-metallic 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 non-masonry 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 clean water.
5. Use bucket and brush hand cleaning method described in BIA "Technical Note No. 10 Revised" to clean brick masonry made from clay or shale, except use masonry cleaner indicated below.
    a. Detergent
6. Clean concrete unit masonry to comply with masonry manufacturer's directions and applicable NCMA "Tek" bulletins.

END OF SECTION

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SECTION 04720 - ARCHITECTURAL CAST STONE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Architectural Cast Stone - window sills.

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

1.2 RELATED SECTIONS

A. Section 04200 - Unit Masonry.

C. Section 07900 - Joint Sealer.

1.3 REFERENCES

A. ASTM A 615/A 615M - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

B. ASTM A767/A767M - Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.

C. ASTM C 33 - Concrete Aggregates.

D. ASTM C 150 - Portland Cement.

E. ASTM C 173 - Air Content of Freshly Mixed Concrete by the Volume Method

F. ASTM C 231 - Air Content of Freshly Mixed Concrete by the Pressure Method

G. ASTM C 260 - Specification for Air Entrained Admixtures for Concrete

H. ASTM C 270 - Mortar for Unit Masonry.

I. ASTM C 426 - Linear Drying Shrinkage of Concrete Masonry Units.

J. ASTM C 494 - Chemical Admixtures for Concrete.

K. ASTM C 618 - Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Concrete

L. ASTM C 666 - Resistance of Concrete to Rapid Freezing and Thawing.

M. ASTM C 979 - Pigments for Integrally Colored Concrete.

N. ASTM C 989 - Ground Granulated Blast- Furnace Slag for use in Concrete

O. ASTM C 1194 - Compressive Strength of Architectural Cast Stone.

P. ASTM C 1195 - Absorption of Architectural Cast Stone.

Q. ASTM C 1364 - Architectural Cast Stone.

R. Cast Stone Institute Technical Manual (Current Edition).

S. ACI 530 “Building Code Requirements for Masonry Structures”

1.4 DEFINITIONS

A. Cast Stone: An architectural stone unit manufactured to copy fine grain texture and color of natural cut stone used in unit masonry applications. Meets ASTM C 1364 requirements.

1. Dry Cast Concrete Products: Manufactured from zero-slump concrete.

   a. Vibrant Dry Hand Tamp Casting Method: Vibratory compaction by hand tamp of earth-moist, zero-slump concrete against rigid mold until it is densely compacted.

2. Wet Cast Concrete Products: Manufactured from measurable slump concrete.

   a. Wet Casting Method: Manufactured from measurable slump concrete and consolidated into a mold.

1.5 SUBMITTALS

A. Comply with Section 01600 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data.

C. Shop Drawings: Submit manufacturer's shop drawings, including profiles, cross sections, modular unit lengths, exposed faces, anchors and anchoring method recommendations (if required), and annotation of cast stone types and location.

D. Samples: Submit pieces of manufacturer's cast stone units that represent general range of texture and color proposed to be furnished for project.

E. Test Results:

1. Submit manufacturer's test results from architectural cast stone units previously made by manufacturer using materials from same sources proposed for use in project.

F. Manufacturer's Project References: Submit list of projects similar in scope, including project name and location, name of architect, and type and quantity of architectural stone veneer units installed.

G. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Sufficient plant facilities to provide quality, shapes, quantities, and sizes of architectural stone veneer units required without delaying progress of the Work.

2. Minimum of 10 years experience in producing masonry units or cast stone.

3. Fabricating plant shall be certified by the Cast Stone Institute, National Precast Concrete Association, or equivalent certification program.

4. Manufacturer shall have an internal Quality Assurance Testing Program with certified laboratory technician(s).

5. Custom Cast Stone Series and Architectural Masonry Veneer Series are to be manufactured from a similar mix design to match color and texture.

B. Mock-Ups: Provide full-size architectural cast stone units for use in construction of mock-ups. Approved mock-ups shall become the standard for appearance and workmanship for project.

1. Mock-ups shall remain as part of the completed Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. Deliver architectural cast stone units secured to shipping pallets and protected from damage and discoloration.

2. Provide itemized shipping list.

B. Storage:

1. Store architectural cast stone units and installation materials in accordance with manufacturer's instructions.

2. Store architectural cast stone units on pallets with non-staining, waterproof covers.

3. Do not double stack pallets.

4. Ventilate units under covers to prevent condensation.

5. Prevent contact with dirt and splashing.

C. Handling:

1. Protect architectural cast stone units, including corners and edges, during storage, handling, and installation to prevent chipping, cracking, staining, or other damage.

2. Handle long units at center and both ends simultaneously to prevent cracking.

3. Do not use pry bars or other equipment in a manner that could damage units.

1.8 SCHEDULING

A. Schedule and coordinate production and delivery of architectural stone veneer units with unit masonry work.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Reading Rock, Inc., 4600 Devitt Drive, Cincinnati, Ohio 45246; Phone: (800) 482-6466 Fax: (513) 874-2361; www.readingrock.com; e-mail: info@readingrock.com

B. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 ARCHITECTURAL CAST STONE

A. Architectural Cast Stone: RockCast's Custom Cast Stone Series.

B. Compliance: ASTM C 1364.

C. Casting Method: Vibrant dry hand tamp or wet cast as specified and/or required.

D. Texture: Smooth or otherwise as indicated on the drawings.

E. Color: To be selected by Architect after bid date.

F. Units: As indicated on the drawings.

G. Profiles: As indicated on the drawings.

H. Test Results:

1. Compressive Strength, ASTM C 1194: Minimum 6,500 psi at 28 days.

2. Absorption, ASTM C 1195: Maximum 6 percent, by the cold water method, at 28 days.

3. Linear Shrinkage, ASTM C 426: Less than .065 percent.

4. Density, ASTM C 140: Greater than 120 pounds per cubic foot.

5. Freeze-Thaw, ASTM C 666: Less than 5 percent cumulative mass loss after 300 cycles.

6. Air Content: ASTM C 173 or C 231 for wet cast product shall be 4-8% for units exposed to freeze-thaw environments; air entrainment is not required for VDT products.

H. Curing: Cure in enclosed chamber at 100 percent relative humidity and minimum 90 degrees F for up to 16 hours and yard cure for a minimum of 3 days.

2.3 ARCHITECTURAL STONE VENEER MATERIALS

A. Portland Cement: ASTM C 150, Type I or III. White and/or gray as required to match specified color.

B. Coarse Aggregates: ASTM C 33, except for gradation. Granite, quartz, or limestone.

C. Fine Aggregates: ASTM C 33, except for gradation. Manufactured or natural sands.

D. Pigments: ASTM C 979, except do not use carbon black pigments. Inorganic iron oxide pigments.

E. Admixtures:

1. Water Reducing, Retarding, and Accelerating Admixtures: ASTM C 494.

2. ASTM C 260 for air-entraining admixtures

3. Other admixtures: Integral water repellents and other chemicals, for which no ASTM Standard exists, shall be previously established as suitable for use in concrete by proven field performance or through laboratory testing.
4. ASTM C 618 for mineral admixtures
5. ASTM C 989 for ground granulated blast-furnace slag

F. Water: Potable.

G. Reinforcing Bars: ASTM A 615, deformed steel bars. Epoxy coated or galvanized when covered with less than 1-1/2 inches of material.
1. Galvanized Coating: ASTM A 767.

2.4 TEXTURE AND COLOR

A. General: Match texture and color of full-size sample on file with Architect.

B. Texture of Surfaces Exposed to View:
1. Fine-grained texture similar to natural stone.
2. Approximately equal to approved sample when viewed in direct daylight at 10 feet.

C. Surface Air Voids:
1. Size: Maximum 1/32 inch.
2. Density: Less than 3 occurrences per any 1 square inch.
3. Viewing Conditions: Not obvious under direct daylight at 10 feet.

D. Finish:
1. Minor chips shall not be obvious under direct daylight at 20 feet, as determined by Architect.

C. Color Variation:
1. Viewing Conditions: Compare in direct daylight at 20 feet, between units of similar age, subjected to similar weathering conditions.
2. Total Color Difference: ASTM C 1364, 6 units
3. Hue Difference: ASTM C 1364, 2 units

2.5 MORTAR

A. Mortar: ASTM C 270, Type N As specified in Section 04200.

B. Mortar Materials: As specified in Section 04200.

2.6 ACCESSORIES

A. Anchors: Non-corrosive type, sized for conditions. Type 304 stainless steel.

B. Sealant: As specified in Section 07900.

C. Cleaner: Prosoco Sure Klean Custom Masonry Cleaner. * Note: Aggressive cleaners may remove too much of the concrete surface paste making some of the color to appear to be “stripped.” Therefore, on darker units a less aggressive cleaner such as Prosoco’s Light Duty Cleaner should be used to maintain color.

2.7 FABRICATION

A. Shapes: As indicated on drawings.
1. Suitable wash on exterior sills, copings, projecting courses, and units with exposed top surfaces.
2. Drips on projecting units, wherever possible.

2.8 TOLERANCES

A. General: Manufacture architectural cast stone units within tolerances in accordance with Cast Stone Institute Technical Manual, unless otherwise specified.

B. Cross Section Dimensions: Do not deviate by more than plus or minus 1/8 inch from approved dimensions.

C. Length of Units: Do not deviate by more than length/360 or plus or minus 1/8 inch, whichever is greater, not to exceed plus or minus 1/4 inch.

D. Warp, Bow, or Twist: Do not exceed length/360 or plus or minus 1/8 inch, whichever is greater.

2.9 PRODUCTION QUALITY CONTROL

A. Mix Designs: Test new and existing mix designs for applicable compressive strength and absorption compliance before manufacturing cast stone units.

B. Plant Production Testing: Test compressive strength and absorption from specimens selected at random from plant production. Tests to be conducted by certified laboratory testing technicians.

1. Custom Cast Stone Units: Test in accordance with ASTM C 1194 and C 1195.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine construction to receive architectural cast stone units. Notify Architect if construction is not acceptable. Do not begin installation until unacceptable conditions have been corrected.

B. Examine architectural cast stone units before installation. Do not install unacceptable units.

1. All RockCast products are shipped on a pallet and have one unfinished side. Textured units are to be set with the texture face forward and smooth units are stacked “face up” on the pallet.

2. RockCast’s Custom Cast Stone Series units do not have returns or finished ends unless otherwise ordered and noted on the shop drawings.

3.2 INSTALLATION

A. Install units in conjunction with masonry, as specified in Section 04200.

B. Pull units from multiple cubes during installation to minimize variation in color and help with natural blending.

C. Cut units using motor-driven masonry saws. Finished ends should be turned to the visible side and the saw cut turned to the inside of the mortar joint to hide exposed aggregates and saw marks.

D. Do not use pry bars or other equipment in a manner that could damage units.

E. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

F. Use Type N mortar (ASTM C 270), unless specified otherwise.

G. Per ACI 530.1, it is not necessary, nor recommended, to wet the units prior to installation.

H. Set units in full bed of mortar, unless otherwise indicated on the drawings. It is not necessary to rake joints for later tuckpointing. Standard full mortar application with tooling is all that is necessary.

I. Fill vertical joints with mortar.

J. Leave head joints in copings and similar components open for sealant.

K. Make joints 3/8 inch, unless otherwise indicated on the drawings.

L. Mortar joints should have a slightly concave profile (unless specified otherwise).

M. Remove excess mortar immediately.

N. Remove mortar fins and smears before tooling joints.

O. Cover wainscot for protection and bond separation with plastic, felt paper or other approved products.

P. Cover freshly installed masonry products as required to assist with the curing process.

Q. Sealant Joints:

1. As specified in Section 07900.
2. Prime ends of units, insert properly sized backing rod, and install sealant.
3. Provide sealant joints at following locations:
    a. Copings and cast stone units with exposed tops.
    b. Joints at relieving angles.
    c. Control and expansion joints.
    d. As indicated on the drawings.

3.3 TOLERANCES

A. Installation Tolerances:

1. Variation from Plumb: Do not exceed 1/8 inch in 5 feet or 1/4 inch in 20 feet or more.
2. Variation from Level: Do not exceed 1/8 inch in 5 feet, 1/4 inch in 20 feet, or 3/8 inch maximum.
3. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch or 1/4 of nominal joint width, whichever is greater.
4. Variation in Plane between Adjacent Surfaces: Do not exceed 1/8-inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

3.4 CLEANING

A. Clean exposed units after mortar is thoroughly set and cured.

B. Perform test of cleaner on small area of 4’ x 4’ on each type and color and receive approval by Architect before full cleaning. Let test area dry 4 to 5 days before inspection. Keep test area for future comparison.

C. Clean units by wetting down the surface first, before using the specified cleaner (as specified in Section 2.7.C). Brush on cleaner, let dwell for 2 to 3 minutes. Reapply cleaner, scrub surface with masonry brush and rinse off thoroughly. Areas with heavy soiling use a wood block or non-metallic scraper.

D. Apply cleaner to units in accordance with cleaner manufacturer's instructions.

E. Do **not** use the following to clean units:

1. Muriatic acid.
2. Power washing.
3. Sandblasting.
4. Harsh cleaning materials or methods that would damage or discolor surfaces.

3.5 REPAIR

A. Repair methods and results to be approved by Architect.

3.6 INSPECTION AND ACCEPTANCE

A. Inspect completed installation in accordance with Cast Stone Institute Technical Manual.

3.7 WATER REPELLANT

A. Sealer: Prosoco Sure Klean Weather Seal Siloxane WB or PD or Hydrozo Enviroseal 7 according to manufacturer’s recommendations. Apply water repellant for weatherproofing in accordance with water repellant manufacturer's instructions.

B. Apply water repellant after installation, cleaning, repair, inspection, and acceptance of units are completed.

3.8 PROTECTION

A. Protect installed units from splashing, stains, mortar, and other damage.

END OF SECTION

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SECTION 05120 - STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections, and type of steel required.

B. Structural steel is that work defined in AISC "Code of Standard Practice" and as otherwise shown on drawings.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of following, except as otherwise indicated.

1. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including "Commentary" and Supplements thereto as issued.
2. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
3. AWS D1.1 "Structural Welding Code".
4. ASTM A 6 "General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use.

B. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

C. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.

1. If re-certification of welders is required, retesting will be Contractor's responsibility.

1.4 SUBMITTALS

A. Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).

1. Structural steel including certified copies of mill reports covering chemical and physical properties.
2. High-strength bolts including nuts and washers.
3. Structural steel primer paint.
4. Shrinkage-resistant grout.

B. Shop Drawings: Submit shop drawings including complete details and schedules for fabrication and assembly of structural steel members procedures and diagrams. All shop and erection drawings shall be prepared under the direct supervision of a registered engineer and shall be sealed by said engineer.

1. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld.
2. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed by others.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site at such intervals to ensure uninterrupted progress of work.

B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not to delay work.

C. Store materials to permit easy access for inspection and identification. Keep steel members off ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

D. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal Surfaces, General: For fabrication of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.

B. Miscellaneous Steel Shapes, Plates, Channels, Bars and other shapes: ASTM A 36.

C. Wide Flange and CWT Shapes: ASTM A992 Grade B, Fy=50 ksi

D. Cold-Formed Steel Tubing: ASTM A 500, Grade B, Fy=46.0 ksi

E. Steel Pipe: ASTM A 53, Type E or S, Grade B.

1. Finish: Black, except where indicated to be galvanized.

F. Anchor Bolts: ASTM A 307, nonheaded type unless otherwise indicated.

1. Provide hexagonal heads and nuts for all connections.

G. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts, and hardened washers, as follows:

1. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A 325.

H. Electrodes for Welding: Comply with AWS Code.

1. For high-strength low-alloy steel, provide electrodes, welding rods and filler metals equal in strength and compatible in appearance with parent metal joined.

I. Structural Steel Primer Paint: Manufacturer’s standard (no lead).

J. Non-metallic Shrinkage-Resistant Grout: Pre-mixed, non-metallic, non-corrosive, non-staining product containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water reducing agents, complying with CRD-C62l.

1. The following manufacturers' products have been used to establish minimum standards for material, workmanship and function:

a. Dayton Superior 1107 Advantage

b. Euco N.S.; Euclid Chemical Co.

c. Crystex; L&M Construction Chemicals

d. Masterflow 7l3; Master Builders

e. Five Star Grout; U.S. Grout Corp.

f. Upcon; Upco Chem. Div., USM Corp.

g. Propak; Protex Industries, Inc.

h. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2. Manufacturer Single Source: Provide cementitious grout products from a single qualified manufacturer.
3. Cementitious Grout: Cementitious grout for high-performance applications.
4. Product shall conform to:
   a. CRD C621, US Army Corps of Engineers Specification for Non-Shrink Grout
   b. ASTM C1107, Standard Specification for Packaged, Dry, Hydraulic-Cement Grout (non-shrink)
5. Basis of Design Product:

   "EUCO TREMIE GROUT" by The Euclid Chemical Company

   a. Compressive Strength, ASTM C109 Modified to ASTM C1107 Section 11.5, 2 in. (5 cm) cubes:
      i. At 72º F (22º C)
         a) 1 day: 3200 psi (22MPa)
         b) 3 days: 4800 psi (33 MPa)
         c) 7 days: 5600 psi (38 MPa)
         d) 28 days: 7200 psi (49 MPa)
      ii. At 50º F (10º C)
         a) 1 day: 1000 psi (7 MPa)
         b) 3 days: 3000 psi (20 MPa)
         c) 7 days: 3700 psi (25 MPa)
         d) 28 days: 4500 psi (31 MPa)
   b. Volume Change, ASTM C1090 and CRD C621:
      i. At 72º F (22º C)
         a) 3 days: 0.04%
         b) 7 days: 0.06%
         c) 14 days: 0.06%
         d) 28 days: 0.08%
   c. Setting time, ASTM C191:
      i. At 72º F (22º C)
         a) Initial set: 5 hours
         b) Final set: 7 hours
      ii. At 50º F (10º C)
         a) Initial set: 12 hours
         b) Final set: 18 hours

2.2 FABRICATION

A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings.

1. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
2. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.

B. Connections: Weld or bolt shop connections, as indicated.

C. Bolt field connections, except where welded connections or other connections are indicated.
1. Provide high-strength threaded fasteners for principal bolted connections, except where unfinished bolts are indicated.

D. High-Strength Bolted Construction: Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A 325.

E. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.

F. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.

G. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.

H. Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.

I. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

2.3 SHOP PAINTING

A. General: Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel which is partially exposed on exposed portions and initial 2" of embedded areas only.

B. Do not paint surfaces which are to be welded.

C. Apply 2 coats of paint to surfaces which are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

D. Surface Preparation: After inspection and before shipping, clean steel work to be painted. Remove loose rust, loose mill scale, and spatter, slag or flux deposits. Clean steel in accordance with Steel Structures painting Council (SSPC) as follows:
1. SP-3 "Power Tool Cleaning".

E. Painting: Immediately after surface preparation, apply structural steel primer paint in accordance with manufacturer's instructions and at a rate to provide dry film thickness of not less than l.5 mils. Use painting methods which result in full coverage of joints, corners, edges and exposed surfaces.

PART 3 - EXECUTION

3.1 ERECTION

A. Surveys:
1. Check elevations of concrete and masonry bearing surfaces, and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect. Do not proceed with erection until corrections have been made, or until compensating adjustments to structural steel work have been agreed upon with Architect.

B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and

connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.

C. Temporary Planking: Provide temporary planking and working platforms as necessary to effectively complete work.

D. Anchor Bolts: Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.

1. Furnish templates and other devices as necessary for presetting bolts and other anchors to accurate locations.

E. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of base and bearing plates.

1. Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.

F. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

G. Pack grout solidly with non-metallic shrinkage resistant grout between bearing surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.

H. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure within specified AISC tolerances.

2. Splice members only where indicated and accepted on shop drawings.

3. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

4. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.

I. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only on secondary members which are not under stress, as acceptable to Architect. Finish gas-cut sections equal to a sheared appearance when permitted.

J. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.

1. Apply by brush or spray to provide minimum dry film thickness of l.5 mils.

3.2 PREPARATION

A. The Contractor shall employ and pay an independent laboratory acceptable to Architect to conduct shop and field inspections and tests.

B. Correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's expense, as may be necessary to reconfirm any non-compliance of original work, and as may be necessary to show compliance of corrected work.

C. Shop Bolted Connections: Inspect in accordance with AISC specifications.

D. Shop Welding: Inspect and test during fabrication of structural steel assemblies, as follows:

1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
2. Perform visual inspection of all welds.
3. Perform Ultrasonic or radiographic test on all groove welds.

E. Field Bolted Connections: Inspect in accordance with AISC specifications.

F. Field Welding: Inspect and test during erection of structural steel as follows:

1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
2. Perform visual inspection of all welds. Perform Ultrasonic or radiographic test on all groove welds.

END OF SECTION

SECTION 05210 - STEEL JOISTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of steel joists is shown on drawings, including basic layout and type of joists required.

1.3 QUALITY ASSURANCE

Provide joists fabricated in compliance with the following, and as herein specified.

A. SJI "Standard Specifications, Load Tables and Weight Tables" for:

1. K - Series Open Web Steel Joists.

B. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with the AWS "Standard Qualification Procedure".

C. Joists welded in place are subject to inspection and testing. Expense of removing and replacing any portion of steel joists for testing purposes will be born by Owner if welds are found to be satisfactory. Remove and replace work found to be defective and provide new acceptable work.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's specifications and installation instructions for each type of joist and accessories. Include manufacturer's certification that joists comply with SJI "Specifications".

B. Shop Drawings: Submit detailed drawings showing layout of joist units, special connections, jointing and accessories. Include mark, number, type, location and spacing of joists and bridging.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle steel joists as recommended in SJI "Specifications". Handle and store joists in a manner to avoid deforming members and to avoid excessive stresses.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel: Comply with SJI "Specifications".

B. High-Strength Threaded Fasteners: ASTM A 325 or A 490 heavy hexagon structural bolts with nuts and hardened washers.

C. Steel Prime Paint: Manufacturer's standard.

2.2 FABRICATION

A. General: Fabricate steel joists in accordance with SJI "Specification".

B. Holes in Chord Members: Provide holes in chord members where shown for securing other work to steel joists; however, deduct area of holes from the area of chord when calculating strength of member.

C. Extended Ends: Provide extended ends on joists where shown, complying with manufacturer's standards and requirements of applicable SJI "Specifications" and load tables.

D. Ceiling Extensions: Provide ceiling extensions in areas having ceilings attached directly to joist bottom chord. Provide either an extended bottom chord element or a separate unit, to suit manufacturer's standards, of sufficient strength to support ceiling construction. Extend ends to within 1/2" of finished wall surface unless otherwise indicated.

E. Bridging: Provide horizontal and cross bridging, complying with SJI "Specifications", and as shown on structural drawings.

1. Provide bridging anchors for ends of bridging lines terminating at walls or beams.

F. End Anchorage: Provide end anchorages to secure joists to adjacent construction, complying with SJI "Specifications", unless otherwise indicated.

G. Shop Painting: Remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories before application of shop paint.

1. Apply one shop coat of primer paint to steel joists and accessories, by spray, dipping, or other method to provide a continuous dry paint film thickness of not less than 0.50 mil.

PART 3 - EXECUTION

3.1 INSPECTION

A. Erector shall examine areas and conditions under which steel joists are to be installed and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Erector.

3.2 ERECTION

A. Place and secure steel joists in accordance with SJI "Specifications", final shop drawings, and as herein specified.

B. Anchors: Furnish weld plates and other devices to be built into concrete and masonry construction.

1. Refer to Division-3 sections for installation of anchors set in concrete.

C. Placing Joists: Do not start placement of steel joists until supporting work is in place and secured. Place joists on supporting work, adjust and align in accurate locations and spacing before permanently fastening.

1. Provide temporary bridging, connections, and anchors to ensure lateral stability during construction.

D. Bridging: Install bridging simultaneously with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords where terminating at walls or beams. Connect cross bridging at intersection of bridging members.

E. Fastening Joists:

1. Field weld joists to supporting steel framework in accordance with SJI "Specifications" for type of joists used. Coordinate welding sequence and procedure with placing of joists.

F. Touch-Up Painting: After joist installation, paint field bolt heads and nuts, and welded areas, abraded or rusty surfaces on joists and steel supporting members. Wire brush surfaces and clean with solvent before painting. Use same type of paint as used for shop painting.

END OF SECTION

SECTION 05310 - STEEL DECKING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Roof deck

B. Composite floor deck

C. Metal form deck.

D. Corro form (Cement Fiber Decking)

E. Bearing plates and angles.

F. Stud shear connectors.

1.2 RELATED REQUIREMENTS

A. Section 05120 - Structural Steel Framing: Support framing for openings larger than 18 inches and shear stud connectors.

B. Section 05210 - Steel Joist Framing: Placement of embedded steel anchors for bearing plates and joist seats in cast-in-place concrete.

1.3 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

B. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished; 2013.

C. ASTM A510/A510M - Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel; 2013.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

E. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2015.

F. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015, with Errata (2016).

G. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2018.

H. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; 2017.

I. ICC-ES AC43 - Acceptance Criteria for Steel Deck Roof and Floor Systems; 2016.

J. ICC-ES AC70 - Acceptance Criteria for Fasteners Power Driven into Concrete, Steel and Masonry Elements; 2016.

K. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks; 2007.

L. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

M. UL (FRD) - Fire Resistance Directory; Current Edition.

1.4 QUALITY ASSURANCE

A. Design deck layout, spans, fastening, and joints under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Field Quality Control:

1. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

2. Field welds will be subject to inspection.

3. Testing agency will report inspection results promptly and in writing to Contractor and Architect.
4. Remove and replace work that does not comply with specified requirements.
5. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Cut plastic wrap to encourage ventilation.

B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Steel Deck:

1. Canam Steel Corporation/United Steel Deck; www.canam-construction.com/en/construction-products/steel-deck/
2. Cordeck, Inc; www.cordeck.com
3. Nucor-Vulcraft Group; www.vulcraft.com/#sle.
4. CSI; www.versa-roof.com
5. Epic Metals Corporation; www.epicmetals.com
6. Substitutions: See Section 01600 - Product Requirements.

2.2 STEEL DECK

A. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.

1. Calculate to structural working stress design and structural properties specified.
2. Maximum Lateral Deflection of Diaphragms: 1/500 of the height of the wall.

B. Acoustical Roof Deck: Non-composite type, steel sheet with plain vertical flute faces perforated with 1/8 inch (3 mm) diameter holes staggered 3/8 inch (10 mm) on center:

1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
2. Primer: Shop coat of manufacturer's standard primer paint over cleaned and phosphatized substrate.
3. Minimum Base Metal Thickness: 22 gage, 0.0299 inch (0.76 mm).
4. Nominal Height: As indicated on drawings. Otherwise, 1-1/2 inch (38 mm).
5. Profile: Fluted; SDI NR.
6. Formed Sheet Width: As indicated on drawings. Otherwise, 24 inch (600 mm).
7. Side Joints: Lapped, welded.
8. End Joints: Lapped, welded.
9. Fire Resistance Classification: Comply with UL (FRD) Assembly Number if fire rated assembly is required.

C. Roof Deck: Non-composite type, fluted steel sheet:

1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
2. Primer: Shop coat of manufacturer’s standard primer paint over cleaned and phosphatized substrate.

3. Minimum Base Metal Thickness: As indicated on drawings. Otherwise, 22 gage, 0.0299 inch (0.76 mm).
4. Nominal Height: As indicated on drawings. Otherwise, 1-1/2 inch. (38 mm).
5. Profile: Fluted; SDI NR.
6. Formed Sheet Width: As Indicated on drawings.
7. Side Joints: Lock seam or Mechanically Fastened.
8. End Joints: Lapped, welded.
9. Fire Resistance Classification: Comply with UL (FRD) Assembly Number if fire rated assembly is required.

D. Composite Floor Deck: Fluted steel sheet embossed to interlock with concrete:
1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
2. Primer: Shop coat of manufacturer's standard primer paint over cleaned and phosphatized substrate.
3. Span Design: Double.
4. Minimum Base Metal Thickness: As indicated on drawings. Otherwise, 22 gage, 0.0299 inch (0.76 mm).
5. Nominal Height: As indicated on drawings. Otherwise, 1-1/2 inches (38 mm).
6. Profile: Fluted; SDI NR.
7. Formed Sheet Width: As indicated on drawings. Otherwise,24 inch (600 mm).
8. Side Joints: Lock seam.
9. End Joints: Lapped, welded.
10. Fire Resistance Classification Comply with UL (FRD) Assembly Number if fire rated assembly is required.

E. Cellular Floor Deck: Composite floor deck equipped with bottom flat sheet.
1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
2. Primer: Shop coat of manufacturer's standard primer paint over cleaned and phosphatized substrate.
3. Span Design: Multiple.
4. Minimum Base Metal Thickness: As indicated on drawings. Otherwise, 22 gage, 0.0299 inch (0.76 mm).
5. Nominal Height: As indicated on drawings. Otherwise, 1-1/2 inches (38 mm).
6. Formed Sheet Width: As indicated on drawings. Otherwise, 24 inch (600 mm).
7. Side Joints: Lapped, welded.
8. End Joints: Lapped, welded.
9. Fire Resistance Classification: Comply with UL (FRD) Assembly Number if fire rated assembly is required.

F. Metal Form Deck: Corrugated Steel Sheet, with provision for ventilation of concrete:
1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
2. Primer: Shop coat of manufacturer’s standard primer paint over cleaned and phosphatized substrate.

3. Minimum Base Metal Thickness: As indicated on drawings. Otherwise, 22 gage, 0.0299 inch (0.76 mm).
4. Nominal Height: As indicated on drawings. Otherwise 1-1/2 inch. (38 mm).
5. Formed Sheet Width: As Indicated on drawings.
6. Side Joints: Lapped, welded.
7. End Joints: Lapped, welded.

2.3 ACCESSORY MATERIALS

A. Bearing Plates and Angles: ASTM A36/A36M steel, galvanized per ASTM A123/A123M.

B. Stud Shear Connectors: Made from ASTM A108 Grade 1015 bars.

C. Welding Materials: AWS D1.1/D1.1M.

D. Fasteners: Galvanized hardened steel, self-tapping.

E. Powder Actuated Mechanical Fasteners: Steel; with knurled shank and forged ballistic point. Comply with applicable requirements of ICC-ES AC70.

1. Design Requirements: Provide number and type of fasteners that comply with the applicable requirements of SDI (DM) design method for roof deck and floor deck applications and ICC-ES AC43.
2. Material: Steel; ASTM A510/A510M, Grade 1077.
    a. Hardness: Rockwell C 54.5, minimum.
    b. Tensile Strength: 285 kips per square inch, minimum.
    c. Shear Strength: 175 kips per square inch, minimum.
    d. Washers:
        i. Steel Bar Joist Framing Applications: 0.472 inch diameter, minimum.
        ii. Exposed Roof Deck Applications: 0.591 inch diameter, minimum.
    e. Corrosion Resistance:
        i. Steel Bar Joist Framing Applications: ASTM B633, SC1, Type III zinc electroplate.

F. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.

1. Design Requirements for Sidelap Connections: Provide number and type of fasteners that comply with the applicable requirements of SDI (DM)SDI design method for roof deck and floor deck applications and ICC-ES AC43.
2. Fasteners for Steel Roof Decks Protected with Waterproofing Membrane: ASTM B633, SC1, Type III zinc electroplate.
3. Fasteners for Exposed Steel Roof Deck Application: Manufacturer's standard stainless steel with bonded neoprene washer.

G. Weld Washers: Mild steel, uncoated, 3/4 inch outside diameter, 1/8 inch thick.

H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, complying with VOC limitations of authorities having jurisdiction.

I. Flute Closures: Closed cell foam rubber, 1 inch thick; profiled to fit tight to the deck.

2.4 FABRICATED DECK ACCESSORIES

A. Sheet Metal Deck Accessories: Metal closure strips, wet concrete stops, and cover plates, 22 gage, 0.0299 inch (0.76 mm) thick sheet steel; of profile and size as indicated; finished same as deck.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify existing conditions prior to beginning work.

3.2 INSTALLATION

A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.

B. On concrete and masonry surfaces provide minimum 4inch (100 mm) bearing.

C. On Steel supports provide minimum 1-1/2 inch (38 mm) bearing.

D. Fasten deck to steel support members at ends and intermediate supports at 12 inches on center maximum, parallel with the deck flute and at each transverse flute using methods specified.

1. Welding: Use fusion welds through weld washers.
2. Place and secure special deep fluted sections for integral concrete bridging.

E. Clinch lock seam side laps.

F. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.

G. Drive mechanical sidelap connectors completely through adjacent lapped sheets; positively engage adjacent sheets with minimum three-thread penetration.

H. At welded male/female side laps weld at 18 inches on center maximum.

I. Weld deck in accordance with AWS D1.3/D1.3M.

J. At deck openings from 6 inches to 18 inches in size, provide 2 by 2 by 1/4 inch steel angle reinforcement. Place angles perpendicular to flutes; extend minimum two flutes beyond each side of opening and fusion weld to deck at each flute.

K. At deck openings greater than 18 inches in size, provide steel angle reinforcement. as specified in Section 05500.

L. Where deck (other than cellular deck electrical raceway) changes direction, install 6 inch minimum wide sheet steel cover plates, of same thickness as deck. Fusion weld 12 inches on center maximum.

M. At floor edges, install concrete stops upturned to top surface of slab, to contain wet concrete. Provide stops of sufficient strength to remain stationary without distortion.

N. At openings between deck and walls, columns, and openings, provide sheet steel closures and angle flashings to close openings.

O. Close openings above walls and partitions perpendicular to deck flutes with single row of foam cell closures.

P. Place metal cant strips in position and fusion weld.

Q. Position roof drain pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

R. Position floor drain pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

S. Weld stud shear connectors through steel deck to structural members below.

T. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up primer.

END OF SECTION

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SECTION 05500 - MISCELLANEOUS STEEL AND METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Definition: Metal fabrications include items made from iron and steel shapes, plates bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.

B. Extent of metal fabrications is indicated on drawings and schedules.

C. Types of work in this section include metal fabrications for:

1. Rough hardware.
2. Nosing.
3. Loose bearing and leveling plates.
4. Loose steel lintels.
5. Miscellaneous framing and supports.
6. Miscellaneous steel trim.
7. Shelf angles.
8. Steel Railings.
9. Pipe Bollards.

1.3 QUALITY ASSURANCE

A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit shop drawings for fabrication and erection of metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

1. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis.

C. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Architect.

PART 2 - PRODUCTS

2.1 MATERIALS

A. FERROUS METALS

1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
2. Steel Structural, Shapes and Bars: ASTM A 36, wide flange, ASTM A572, fyz50ks.

3. Steel Tubing: Hot-rolled, ASTM A 500. FY=46KSI
4. Structural Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled ASTM A 611, Class 1; of grade required for design loading.
5. Galvanized Structural Steel Sheet: ASTM A 446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
6. Steel Pipe: ASTM A 53; Type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (schedule 40), unless otherwise indicated.
7. Gray Iron Castings: ASTM A 48, Class 30.
8. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
9. Brackets, Flanges and Anchors: Cast or formed metal of the same type of material and finish as supported rails, unless otherwise indicated.
10. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A 153.
11. Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, non- staining, non-corrosive, non-gaseous grout complying with CE CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

B. FASTENERS

1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.
3. Lag Bolts: Square head type, FS FF-B-561.
4. Machine Screws: Cadmium plated steel, FS FF-S-92.
5. Wood Screws: Flat head carbon steel, FS FF-S-111.
6. Plain Washers: Round, carbon steel, FS FF-W-92.
7. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.
8. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
9. Lock Washers: Helical spring type carbon steel, FS FF-W-84.

C. PAINT:

1. Shop Primer for Ferrous Metal: Manufacturer's or Fabricator's standard, fast-curing, lead-free, "universal" primer; selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645.
2. Galvanizing Repair Paint: High zinc dust content paint for regalvanizing welds in galvanized steel, complying with the Military Specifications MIL-P-21035 (Ships) or SSPC-Paint-20.

D. CONCRETE FILL:

1. Concrete Materials and Properties: Comply with requirements of Division-3 section "Concrete Work" for normal weight, ready-mix concrete with minimum 28-day compressive strength of 3000 psi, and W/C ratio of 0.58 maximum, unless higher strengths indicated.
2. Non-Slip Aggregate Finish: Factory-graded, packaged material containing fused aluminum oxide grits or crushed emery as abrasive aggregate; rust-proof and non-glazing; unaffected by freezing, moisture or cleaning materials.

2.2 FABRICATION - GENERAL

A. Workmanship: Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

C. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

E. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

F. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

G. Galvanizing: Provide a zinc coating for those items indicated or specified to be galvanized, as follows:

1. ASTM A153 for galvanizing iron and steel hardware.

2. ASTM A 123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.

3. ASTM A386 for galvanizing assembled steel products.

H. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

I. Shop Painting:

1. Apply shop primer to surfaces of metal fabrications except those which are galvanized or as indicated to be embedded in concrete or masonry, unless otherwise indicated, and in compliance with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting.

a. Stripe paint all edges, corners, crevices, bolts, welds and sharp edges.

J. Surface Preparation: Prepare ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Exteriors (SSPC Zone 1B): SSPC-SP6 "Commercial Blast cleaning".

2. Interior (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning".

2.3 ROUGH HARDWARE

A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division-6 sections.

B. Fabricate items to sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.4 LOOSE STEEL LINTELS

A. Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown and scheduled. Weld adjoining members together to form a single unit where indicated.

Provide not less than 8" bearing at each side of openings, unless otherwise indicated. All steel lintels shall be hot-dipped galvanized steel.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

A. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.

B. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise indicated, fabricate from structural steel shapes, plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

C. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

1. Except as otherwise indicated, space anchors 24" o.c. and provide minimum anchor units of 1-1/4" x 1/4" x 8" steel straps.

2.6 FABRICATION - STEEL RAILINGS AND HANDRAILS

A. Structural Performances: Provide assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.

1. Handrails and Toprails: Capable of withstanding the following loads applied as indicated when tested per ASTM E 935.

2. Concentrated Load: 200lb applied at any point and in any direction.

3. Uniform load of 50 lb per linear ft. applied in any direction.

4. Concentrated and uniform loads above need not be assumed to act concurrently.

5. Guards: Intermediate rails, balusters and panel fillers capable of withstanding a uniform load of 25 lb per sq. ft. of gross area of guard, including any open areas, of which they are a part.

B. Fabricate steel railings and handrails to design, dimensions, and details indicated. Provide railings and handrails members formed of steel tubing of shapes, sizes and wall thickness indicated, but not less than that required to support design loading.

C. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.

1. At tee and cross intersections provide coped joints.

2. At bends interconnect tubing by means of prefabricated elbow fittings or flush radius bends, as applicable, or radiuses indicated.

3. At elbow bends provide mitered joints.

4. Form bends by use of prefabricated elbow fittings and radius bends or by bending pipe, at fabricator's option.

D. Form simple and compound curves by bending tubing in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting or otherwise deforming exposed surfaces of pipe.

E. Provide wall returns at ends of wall-mounted handrails, except where otherwise indicated.

F. Close exposed ends of pipe by welding 3/16" thick steel plate in place or by use of prefabricated fittings.

G. Toe Boards: Where indicated, provide toeboards at railings around openings and at the edge of open-sided floors and platforms. Fabricate to dimensions and details indicated, or if not indicated, use a 4" high x 1/8" plate welded to, and centered between, each railing post.

H. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings and anchors for interconnections of pipe and attachment of railings and

handrails to other work. Furnish inserts and other anchorage devices for connecting railings and handrails to concrete or masonry work.

1. For railing posts set in concrete provide sleeves of galvanized steel pipe not less than 6" long and with an inside diameter not less than 1/2" greater than the outside dimensions of tubing. Provide steel plate closure welded to bottom of sleeve and of width and length not less than 1" greater than outside diameter of sleeve.

I. Stair Railings and Handrails: Comply with applicable requirements specified elsewhere in this section for steel railings and handrails, and as follows:

1. Railings may be bent at corners, rail returns and wall returns, instead of using prefabricated fittings.

2. Connect railing posts to stair framing by direct welding, unless otherwise indicated.

2.7 IMPACT BOLLARDS

A. Provide concrete filled steel pipe bollards as indicated on drawings as follows:

1. Unless otherwise indicated, bollards are to be 4” Schedule 40 steel pipe.

2. Locate bollards as indicated on drawings. Install bollards such that they are vertically aligned and plumb, so they do not appear to lean from any direction.

3. Install pipe to depth and height as indicated on drawings.

4. Pipe to be bedded and filled with concrete with hand-formed domed cap, as indicated on drawings.

5. Prime and Paint pipe bollards. Color to be selected by architect.

PART 3 - EXECUTION

3.1 PREPARATION

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.

B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION - GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.

1. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

C. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

D. Setting Loose Plates: Clean concrete and masonry bearing surfaces of any bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

1. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated.

3.3 ADJUST AND CLEAN

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.

B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

C. For galvanized surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 05510 - METAL STAIRS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Section specifies steel stairs with railings.

1. Closed riser stairs with concrete filled treads and platforms.

1.3 RELATED WORK

A. Concrete fill for treads and platforms: Section 03310, Cast In-Place Concrete.

B. Wall handrails and railings for other than steel stairs: Section 05521, Pipe and Tube Railings.

C. Requirements for shop painting: Section 09900, Painting.

1.4 SUBMITTALS

A. Shop Drawings: Show design, fabrication details, installation, connections, material, and size of members.

1.5 APPLICATION PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation.

1. American Society for Testing and Materials (ASTM):
    a. A36/A36M-04, Structural Steel
    b. A47-99 (R2004), Ferritic Malleable Iron Castings
    c. A48-03, Gray Iron Castings
    d. A53-04, Pipe, Steel, Black and Hot-Dipped Zinc-Coated Welded and Seamless
    e. A307-04, Carbon Steel Bolts and Studs, 60000 psi Tensile Strength
    f. A653/653M-04, Steel Sheet, Zinc Coated (Galvanized) or Zinc Alloy Coated (Galvannealed) by the Hot-Dip Process
    g. A563-04, Carbon and Alloy Steel Nuts
    h. A1008-04, Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low-Alloy
    i. A786/A786M-00., Rolled Steel Floor Plates
    j. A1011-04, Steel, Sheet and Strip, Strip, Hot-Rolled Carbon, Structural, High-Strength, Low-Alloy
2. American Welding Society (AWS):
    a. D1.1-00., Structural Welding Code-Steel
    b. D1.3-98, Structural Welding Code-Sheet Steel
3. The National Association of Architectural Metal Manufactures (NAAMM) Manuals:
    a. Metal Bar Gratings (ANSI/NAAMM MBG 531-93)
    b. 2nd Edition-1985, Pipe Railing Manual, Including Round Tube
4. American Iron and Steel Institute (AISI):
    a. Specification for the Design of Cold-Formed Steel Structural Members

PART 2 – PRODUCTS

2.1 DESIGN CRITERIA

A. Design stairs to support a live load of 500 kg/m2 (100 pounds per square foot).

B. Structural design, fabrication and assembly in accordance with requirements of NAAMM Metal Stairs Manual, except as otherwise specified or shown.

C. Design Grating treads in accordance with NAAMM Metal Bar Grating Manual.

D. Design pipe railings in accordance with NAAMM Pipe Railing Manual for 900 N (200 pounds) in any direction at any point.

2.2 MATERIALS

A. Steel Pipe: ASTM A53, Standard Weight, zinc coated.

B. Sheet Steel: ASTM A1008.

C. Structural Steel: ASTM A36.

D. Steel Floor Plate: ASTM 786.

E. Steel Decking: Form from zinc coated steel conforming to ASTM A446, with properties conforming to AISI Specification for the Design of Cold-Formed Steel Structural Members.

F. Steel Plate: ASTM A1011.

G. Iron Castings: ASTM A48, Class 30.

H. Malleable Iron Castings: ASTM A47.

2.3 FABRICATION GENERAL

A. Fasteners:

1. Conceal bolts and screws wherever possible.
2. Use countersunk heads on exposed bolts and screws with ends of bolts and screws dressed flush after nuts are set.

B. Welding:

1. Structural steel, AWS D1.1 and sheet steel, AWS D1.3.
2. Where possible, locate welds on unexposed side.
3. Grind exposed welds smooth and true to contour of welded member.
4. Remove welding splatter.

C. Remove sharp edges and burrs.

D. Fit stringers to head channel and close ends with steel plates welded in place where shown.

E. Fit face stringer to newel post by tenoning into newel post, or by notching and fitting face stringer to side of newel where shown.

F. Shop Prime Painting: Prepare surface and apply primer as specified for ferrous metals in Section 09900, Painting.

G. Provide guard railings not less than 1060 mm (42-inches) high.

2.4 RAILINGS

A. Fabricate railings, including handrails, from steel pipe with flush.

1. Connections may be standard fittings designed for welding or coped or mitered pipe with full welds.
2. Wall handrails are provided under Section 05521, Pipe and Tube Railings.

B. Return ends of handrail to wall and close free end.

C. Provide standard terminal castings where fastened to newel.

D. Space intermediate posts not over six feet on center between end post or newel post.

E. Fabricate handrail brackets from cast malleable iron.

F. Provide standard terminal fittings at ends of post and rails.

2.5 CLOSED RISER STAIRS

A. Provide treads, risers, platforms, railings, stringers, headers and other supporting members.

B. Fabricate pans for treads and platforms, and risers from sheet steel.

C. Form risers with sanitary cove.

D. Fabricate stringers, headers, and other supporting members from structural steel.

E. Construct newel posts of steel tubing having wall thickness not less than 5 mm (3/16-inch), with forged steel caps and drops.

PART 3 - EXECUTION

3.1 STAIR INSTALLATION

A. Provide hangers and struts required to support the loads imposed.

B. Perform job site welding and bolting as specified for shop fabrication.

C. Set stairs and other members in position and secure to structure as shown.

D. Install stairs plumb, level and true to line.

E. Provide steel closure plate to fill any gap between the stringer and surrounding shaft wall.

F. Weld and finish with prime and paint finish of adjoining steel.

3.2 RAILING INSTALLATION

A. Install standard terminal fittings at ends of posts and rails.

B. Secure brackets, posts and rails to steel by welds, and to masonry or concrete with expansion sleeves and bolts, except secure posts at concrete by setting in sleeves filled with commercial non-shrink grout.

C. Set rails horizontal or parallel to rake of stairs to within 3 mm in 3650 mm (1/8-inch in 12 feet).

D. Set posts plumb and aligned to within 3 mm in 3650 mm (1/8-inch in 12 feet).

3.3 FIELD PRIME PAINTING

A. When installation is complete, clean field welds and surrounding areas to bright metal, and coat with same primer paint used for shop priming.

B. Touch-up abraded areas with same primer paint used for shop priming.

C. Touch up abraded galvanized areas with zinc rich paint as specified in Section 09900, Painting.

END OF SECTION

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SECTION 05515 - LADDERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Aluminum Access Ladders.

B. Aluminum Cage Ladders.

1.2 RELATED SECTIONS

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

B. Section 05500 – Metal Fabrications: Fasteners and installation requirements used to attach ladders to structure.

C. Section 14200 – Elevators

D. Section 15050 – Basic Electrical Materials and Methods: For electrical grounding of ladders.

1.3 REFERENCES

A. AA – Aluminum Association.

B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

D. OSHA 1910.27 – Fixed Ladders.

1.4 SUBMITTALS

A. Submit under provisions of Section 01320 or 01330.

B. Product Data: Manufacturer's data sheets on each product.

C. Shop Drawings:

1. Detail fabrication and erection of each ladder indicated. Include plans, elevations, sections, and details of metal fabrications and their connections.

2. Provide templates for anchors and bolts specified for installation under other Sections.

3. Provide reaction loads for each hanger and bracket.

D. Qualification Data:

1. Refer to Quality Assurance provisions for submittal requirements evidencing experience, certifications and resources.

E. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors.

F. Verification Samples: For each finish specified, two samples, minimum size 6 inches (150 mm) square, represent actual product color.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in producing aluminum metal ladders similar to those indicated for this Project.

1. Record of successful in-service performance.

2. Sufficient production capacity to produce required units.

3. Professional engineering competent in design and structural analysis to fabricate ladders in compliance with industry standards and local codes.

B. Installer Qualifications: Competent and experienced firm capable of selecting fasteners and

installing ladders to attain designed operational and structural performance.

C. Product Qualification: Product design shall comply with OSHA 1910.27 minimum standards for ladders.

D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Install ladder in area designated by Architect.
2. Do not proceed with remaining work until workmanship and installation are approved by Architect.
3. Rework mock-up as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions by field measurement before fabrication.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, indicate established dimensions on shop drawing submittal and proceed with fabrication.

1.8 WARRANTY

A. Manufacturer has responsibility for an extended Corrective Period for work of this Section for a period of 5 years commencing on the shipment date of the product against all the conditions indicated below, and when notified in writing from Owner, manufacturer shall promptly and without inconvenience and cost to Owner correct said deficiencies.

1. Defects in materials and workmanship.
2. Deterioration of material and surface performance below minimum OSHA standards as certified by independent third party testing laboratory. Ordinary wear and tear, unusual abuse or neglect excepted.
3. Within the warranty period, the manufacturer shall repair, replace, or refund the purchase price of defective ladder.

1.9 EXTRA MATERIALS

A. Furnish touchup kit for each type and color of paint finish provided.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. O’Keeffe’s, Inc.; 100 N Hill Drive, Suite 12, Brisbane, CA 94005. Toll Free Tel: (888) 653-3333. Tel: (415) 824-4900. Fax: (415) 824-5900. Email: info@okeeffes.com. Web: http://www.okeeffes.com.
2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the architect no later than Ten (10) days prior to bid opening.
3. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 APPLICATIONS/SCOPE

A. Fixed and Cage Ladder Design:

1. Safety cages are required on ladders over 20 feet (6096 mm)
2. Safety cages are required on all ladders in high or hazardous areas.

3. Landing platforms are required at 30 feet (9144 mm) above the bottom of the ladder.

B. Fixed Access Ladder:

1. Standard Duty Channel Rail.
   a. Model 500 as manufactured by O'Keeffe's Inc.
   b. Finish: Paint. Urethane over chemically pretreated substrate.

      Caution Yellow (RAL 1018).

   c. Location: Elevator Pit
2. Tubular Rail Low Parapet Access Ladder with Roofover Rail Extension.
   a. Model 502 as manufactured by O'Keeffe's Inc.
   b. Finish: Mill finish as extruded.
   c. **Location: Roof**
   d. Provide locking security door at bottom of wall mounted roof access ladders. Formed 1/8 inch (3 mm) thick aluminum sheet. Security panels shall extend on both sides, perpendicular to the door face, to within 2 inches (51 mm) of the wall. Security door shall be furnished with continuous aluminum piano hinge and heavy duty forged steel locking hasps

2.3 FINISHES

A. Mill finish. As extruded.

B. Clear Anodic Finish: AA-M10C22A41 Mechanical finish as fabricated. Architectural Class I, clear coating 0.018 mm or thicker.

C. Paint. Urethane over chemically pretreated substrate.

1. Fire Red (RAL 2002).
2. Alert Orange (RAL 2003).
3. Warning Blue (RAL 5005).
4. Caution Yellow (RAL 1018).
5. Safety Green (RAL 6001).
6. As scheduled on drawings.

2.4 MATERIALS

A. Aluminum Sheet: Alloy 5005-H34 to comply with ASTM B209.

B. Aluminum Extrusions: Alloy 6063-T6 to comply with ASTM B221.

2.5 FABRICATION

A. Rungs: Not less than 1-1/4 inches (32 mm) in section and 18–3/8 inches (467mm) long, formed from tubular aluminum extrusions. Squared and deeply serrated on all sides.

1. Rungs shall withstand a 1,500 pound (454 kg) load without deformation or failure.

B. Channel Side Rails: Not less than 1/8 inch (3 mm) wall thickness by 3 inches (76 mm) wide.

C. Heavy Duty Tubular Side Rails: Assembled from two interlocking aluminum extrusions no less than 1/8 inch (3 mm) wall thickness by 3 inches (76 mm) wide. Construction shall be self-locking stainless steel fasteners, full penetration TIG welds and clean, smooth and burr-free surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Coordinate anchorages. Furnish setting drawings, templates, and anchorage structural loads for fastener resistance.

B. Do not begin installation until supporting structure is complete and ladder installation will not interfere with supporting structure work.

C. If supporting structure is the responsibility of another installer, notify Architect of unsatisfactory supporting work before proceeding.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 05540 - METAL STUDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Types of work include:

1. Light-gage metal support system for installation of gypsum and other materials.

1.3 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where gypsum drywall systems with fire- resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.

1. Provide fire-resistance rated assemblies identical to those indicated by reference to GA File No.'s. in GA "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications and installation instructions, including other data as may be required to show compliance with these specifications.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store material inside under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Alabama Metal Industries Corp.
2. Bostick Steel Framing Co.
3. Ceco Corp.
4. Dale Industries, Inc.
5. Marinoware, Inc.

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect not less than Ten (10) days prior to scheduled bid opening.

2.2 METAL FRAMING

A. Fabrication: Fabricate metal framing components of commercial quality steel sheet with a minimum yield paint of 33,000 psi; ASTM A446, A570 or A611.

B. Finish: Provide galvanized finish to metal framing components complying with ASTM A525 for minimum G60 coating.

C. "C"-Shape Studs and Resilient Channels. Provide as follows:

1. Manufacturer's standard 22 gauge at all interior gypsum board locations, size to be as noted on the drawings.

2. Gauge at all exterior locations to be 18 gauge at exterior walls or as noted on the Structural Drawings, size to be as noted on the drawings.

3. Resilient hat channels,18-gauge, size as noted on the drawings.

D. "C"H-Shape Studs: Provide manufacturer's standard 20 gauge unless otherwise noted on the Structural Drawings, size to be as noted on the drawings.

E. Fastenings: Attach components by welding, bolting, or screw fastenings, as standard with manufacturers.

2.3 INSTALLATION

A. Manufacturer's Instructions: Install metal framing systems in accordance with manufacturer's printed or written instructions and recommendations, unless otherwise indicated.

B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer for type of construction involved, except do not exceed 24" o.c. spacing for nail or power-driven fasteners, or 16" o.c. for other types of attachment. Provide fasteners at corners and ends of tracks.

1. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.

2. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.

3. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported.

C. Installation of Wall Stud System: Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.

1. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoes or by welding and space jack studs same as full-height studs of wall. Secure stud system wall opening frame in manner indicated.

2. Frame both sides of expansion and control joints, with separate studs; do not bridge the joint with components of stud system.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Space framing member 24" o.c., unless noted otherwise on the drawings or by UL Classification.

B. Install auxiliary framing at termination of drywall work, and at openings for light fixtures and similar work, as required for support of both the drywall construction and other work indicated for support thereon.

C. Supplementary Supports:

1. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar work to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of

"Gypsum Construction Handbook" published by United States Gypsum Co.

2. Isolate stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading.
3. Extend supplementary supports to the structural support system.
4. Frame openings to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co. Attach vertical studs at jambs directly to frames; install runner track section (for jack studs) at head and secure to jamb studs.
5. Erect thermal insulation vertically. Until gypsum board is installed hold insulation in place with 18-gage tie wire or by an equally acceptable method.

END OF SECTION

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SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SCOPE

A. The work under this section consists of all rough carpentry work.

1.3 GENERAL

A. Rough carpentry shall generally include all rough framing, furring, grounds, bucks, blocking and such other wood work as required.

B. Carpentry shall also include all temporary bracing, shoring and centering as required for the support or protection of the work.

1.4 COOPERATION WITH OTHER TRADES

A. The work under this section includes the necessary cutting and patching required for the proper installation of work of other trades. Work which is to be built in by others shall be accurately positioned and properly built in to secure the work of this section. Temporary centering, bracing and shoring shall be provided as required for the support and protection of masonry work during construction.

1.5 DELIVERY AND STORAGE

A. Lumber and other materials specified herein shall be delivered, handled and stored in order to prevent damage and absorption of excess moisture. Lumber shall be stored in such a manner as to insure proper ventilation and protection from the weather.

PART 2 - PRODUCTS

2.1 LUMBER

A. All dimensional lumber used under this section shall be thoroughly dried No. 2 Southern Yellow Pine or No. 2 Douglas Fir of sizes, shapes and lengths required. Moisture content shall not exceed 19% at time of installation.

B. All wood shall be sound, flat, straight, well-seasoned, thoroughly dry and free from structural defects. Warped or twisted wood shall not be used.

C. Lumber grades shall conform to the grading rules of the manufacturer's association under whose rules the lumber is produced. All lumber shall be grade-marked.

2.2 PLYWOOD

A. Each panel of softwood plywood shall be identified with the DFPA grade trademark of the American Plywood Association and shall meet the requirements of Product Standard PS 1-66 for Softwood Plywood Construction and Industrial. All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.

B. Plywood sheathing and/or decking shall be DFPA Standard with exterior glue, thickness as shown on the drawings or required for the intended use. Square edge or tongue and groove as approved.

D. Plywood for roof decking shall be 3/4" minimum CDX with C grade up. Provide “H” clips at mid-span of edge joints.

E. Gypsum Sheathing:

1. 5/8” exterior grade fiberglass mat-faced gypsum sheathing

a. Georgia Pacific Dens-Glass Fireguard Sheathing: ASTM C1177, Type X.
b. R-Value of 0.67.

2.3 ORIENTED STRAND BOARD (OSB)

A. Shall be used for floor, wall and roof sheathing in light commercial construction applications as indicated. Each panel is third-party certified for quality and is rated for Exposure 1 bond durability for protected applications and limited exposure during normal construction delays. OSB shall be edge coated to limit absorption and pick-up of moisture. OSB shall be equal to Georgia -Pacific Blue-Ribbon OSB.

2.4 WOOD TREATMENT

A. Lumber in contact with concrete or masonry, including roof blocking, cants and nailers and/or as indicated, shall be pressure preservative treated in accordance with American Wood Preservers Institute Standard No. LP-2. Creosote, oil or similar materials which bleed shall not be used.

B. Lumber for blocking and furring, located within interior concealed spaces shall be non-combustible. Treatment shall be equal to "Flame-Proof" by Osmose Wood Preservative; "Non-Con" by Koppers or approved equal. Lumber shall be UL certification marked.

C. Pressure Treated wood associated with roof and roof edge construction which will be in contact with steel or galvanized steel components shall be wrapped or covered with Ice & Water Shield to prevent direct contact between pressure treated wood and steel.

2.5 FASTENING DEVICES

A. Nails, screws, bolts, anchors, washers, clips, shields, power actuated devices and other rough hardware shall be of the sizes and types indicated on the drawings or as required to adequately anchor all members. Anchors for nailing strips and blocking shall have nuts and washers countersunk and bolts cut off flush with the top of the wood nailer. All fasteners in contact with pressured treated wood shall be galvanized.

2.6 TEMPORARY CLOSURES

A. Provide batten doors with locks at all exterior openings. Appropriate protection against weather and life safety shall be maintained throughout the job.

2.7 BLOCKING

A. Provide solid blocking at all grab bars, millwork cabinets and wall mounted units. Coordinate with Installer and/or Manufacturer.

2.8 BUILDING WRAP

A. Provide building wrap over exterior surface of all exterior walls as recommended by manufacturer.

Building Wrap shall be approved equal to Tyvek.

2.9 AIR /MOISTURE BARRIER

A. Provide building wrap over exterior surface of all exterior walls as recommended by manufacturer. Basis of Design: Spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon Dupont Tyvek Commercial Wrap and related assembly components.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All work shall be installed plumb and true, and secured in place with proper fastenings so as to make rigid and firm.

B. The work of this section shall be performed in the best practice relating to the trade so as to carry out the intent of the drawings and to properly accommodate the work of all trades.

C. Cut ends or faces of all treated wood shall be brushed treated with preservative.

D. Wood Studs shall not exceed 16" o.c. Provide stud framing for walls to receive ceramic tile at 12" o.c.

E. Plywood Roof Decking shall be installed with a 1/8" expansion gap between abutting sheets, all sides.

F. All Roof Deck fasteners shall be 100% within roof framing. Nails missing or by-passing structural rafter members shall be subject to correction.

END OF SECTION

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SECTION 06210 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SCOPE

A. The work under this section consists of all finish carpentry, millwork and related items.

B. Millwork shall be defined as follows: "All exterior and interior woodwork exposed to view in the finished building, except lumber yard or specialty items. All exposed wood, plywood, hard plastic and wood doors are included."

C. All millwork shall be produced by the same source of supply to coordinate matching of materials.

1.2 SUBMITTALS

A. Shop drawings shall be furnished on all millwork to the architect for approval prior to fabrication. These drawings to show size, arrangement, type of material, connections and relationship to adjacent work.

B. All shop drawings shall show species of woods and the manufacturer's name for all manufactured items.

C. When required, contractor shall submit a sample unit as requested.

D. Submit samples of decorative laminate colors, patterns, and textures for semi-exposed materials for architect’s selection. Samples of other materials or hardware shall be available if requested.

1.3 APPLICABLE STANDARDS

A. The Quality Standards of the American Woodwork Institute (AWI) shall apply and, by reference, are made a part of this specification.

B. Millwork materials and workmanship not shown, specified, or normally furnished to a higher degree of quality shall conform to custom grade requirements of the AWI Quality Standards.

1.4 DELIVERY AND STORAGE

A. When all millwork items are ready for shipment to the job site, the architect shall be notified through the contractor so that either may inspect the work in the mill prior to shipment.

B. All materials shall be inspected by the contractor's superintendent upon receipt at the job site. No faulty or damaged materials shall be received. It shall be the contractor's responsibility to produce finished items of work in first class condition.

C. No interior millwork shall be delivered until the building has been dried out. Heat shall be required in cold or humid weather.

D. No trim shall be delivered or placed until the areas of the building in which the trim is to be placed are thoroughly dry and ready for the installation. The building shall be enclosed and heated. Allow wood to acclimate for 7-10 days prior to installation.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall be of the best of their respective kinds. All materials used in finished work shall be clear, free from cracks, checks, knots and other imperfections that may interfere with the proper completion of the work and any warped or otherwise imperfect work shall be removed and replaced.

B. All plywood shall have a grade-trademark which shall identify each panel of plywood as to type, grade and conformance to CS45 or CS122 (current issues). If use is exposed to weather or excessive moisture, plywood shall be of the exterior type. Exposed faces and faces to receive plastic laminates shall be "A" grade. Panels used for concealed cabinet parts may be C-D grade. Thickness and application details shall be as shown on drawings or required for the intended use.

2.2 INTERIOR WOODWORK

A. Lumber used for painted interior woodwork, unless otherwise indicated, shall be one of the following:

1. Fir - Coast or Inland Douglas White
2. Pine - Ponderosa, Southern
3. Redwood
4. Cypress
5. Yellow Poplar
6. Grade of lumber used shall be second grade for paint finish, except cypress may be third grade.

B. Hardwood: All references to hardwood shall imply stain grade oak.

C. All interior plywood to be painted shall be Natural Birch.

D. All interior woodwork and plywood to be stained or finished natural shall be Premium Grade Select White Oak or as specified on drawings. Veneer shall be rotary cut or as indicated on drawings or related specification sections. Semi-exposed parts, as defined by AWI, of natural or stained casework shall be Natural Birch.

E. Lumber shall be kiln dried with an average moisture content of 6% to 11%.

F. Particle board shall be U. S. Plywood Corp. "Novoply" Weyerhaeuser Company "Timblend", or approved equal of thickness shown. Factory sanded or sealed or filled, 2 sides.

2.3 PLASTIC LAMINATE

A. Plastic laminate shall be Nevamar, Wilson-Art, Formica, Laminart, Arborite, Pionite, 1/16" thick. See Finish Legend and Schedule for color selections.

B. Backing sheet shall be high pressure laminate, .020" minimum thickness. Plastic laminate to be used on all interior open shelves. Melamine is not acceptable unless it matches the selected plastic laminate.

C. The adhesive shall be that recommended by the manufacturer of the laminated plastic used.

D. Edging Materials:

1. 1mm PVC banding, machine applied; match laminate as scheduled.
2. 3mm PVC banding, machine applied and machine profiled to 1/8 inch radius; match laminate as scheduled

2.4 SOLIDS SURFACE COUNTERTOP

A. Solid surface countertop to be Durasein by BPI, or pre-approved equal. Provide as indicated on drawings.

B. Fabrication - Countertops with sinks to be 19 mm thick; edge detail as indicated on Architectural drawings, complete with holes and cutouts for plumbing and bath accessories as indicated on drawings. Provide counter complete with back and side splashes of size shown on Architectural drawings. Fabrications to be performed by a certified Corian fabricator/installer. Components to be fabricated to greatest extent practical to sizes and shapes indicated. Form joints between components using manufacturer's standard joint adhesive. Joints to be inconspicuous in appearance and without voids. Attach 2" wide reinforcing strip of Corian under each joint. Rout and finish component edges to a smooth, uniform finish. Rout all cutouts and then sand all edges smooth.

C. Installation - Install components plumb and level. Adhere plumbing and bath accessories to countertops using manufacturer's recommended adhesives and color matched silicone sealant. Adhere back and side splashes to countertop using color matched silicone sealant.

2.5 ROUGH HARDWARE

A. All exposed bolts or other anchors shall be chrome-plated brass.

2.6 FINISH HARDWARE

A. Furnish and install all finish hardware for millwork items including, but not necessarily limited to, cabinet door and drawer pulls and latches, adjustable shelf standards and brackets, and hardware for doors less than 1-3/8" thick. Hardware finish shall match room door hardware finish.

2.7 THICKNESS OF MEMBERS

A. All thicknesses shall be in accordance with the maximum possible dressed size from standard lumber. If widths or thicknesses are not available in hardwood, gluing may be used on widths over 5-1/4" or thicknesses over 1-1/6".

2.8 WORKMANSHIP

A. All exposed surfaces and edges shall be finished smooth and be free of saw cuts, marks or defacement. All joints shall be accurately and neatly made and fit.

B. End grain shall be concealed. Exposed edges of plywood shall present a finish the same as the finished sides.

C. Work shall be scribed and fit to other finished surfaces in a careful manner. Should other work be damaged or disturbed, it shall be made good at the expense of this contractor.

D. Work shall be assembled at the mill as is practicable and delivered ready for erection. When necessary to cut and fit on job, the material shall be made up with ample allowance for cutting.

E. This contractor shall verify all measurements at the building and shall examine all adjoining work on which his work is dependent.

F. Millwork shall be executed in accordance with the approved shop drawings, the workmanship shall be of first quality, and the construction of all parts shall be of the best current practice. The work shall be assembled so as to hold together with close joints, fastenings shall be concealed, and all

work shall be properly and firmly backed and blocked as required. Provision shall be made for expansion and shrinkage.

G. Exposed surfaces shall be machine-sanded to an even, smooth surface, nails set, ready for finishing or pre-finishing when noted. All woodwork shall be dry, clean, and smooth before any finishing materials are applied. All nail holes, cuts, cracks and other defects shall be treated so as to be unnoticeable.

H. All wood surfaces to be set against masonry and/or concealed after erection shall be given a heavy coat of sealer. All woodwork to have paint finish shall be primed under the PAINTING SECTION.

I. All transparent finished (i.e., stained) woodwork shall be shop finished by Millwork Contractor.

J. All caulking to match laminate or stain color.

K. All millwork/casework cabinets in contact with finish floor shall receive scheduled base.

2.9 CARPENTRY AND MILLWORK ITEMS

A. The following millwork items are intended to guide such work in this project and do not necessarily limit the scope of this section.

B. Where not otherwise specified, shelving, cabinet work and millwork of all types shall conform with requirements of Premium Grade of "Quality Standards of the Architectural Woodwork Industry" (Architectural Woodwork Institute).

C. Wood Base and Shoe Mould: Shall be as detailed on drawings. Base shoe mould lengths to be maximized wherever possible. Wood scraps and remnants used for base material is NOT acceptable. Minimum 8' lengths.

2.10 MATERIALS AND CONSTRUCTION

A. MDF (Medium Density Fiberboard): Shall be equal to Premier7 MDF, Plus Grade. MDF is to be shop finished by Millwork Contractor with a transparent stain. The actual surface of the MDF is to be visible through the stain color. Stain colors are to match paint selections indicated on drawings. Millwork Contractor to provide stain samples to Architect for approval prior to fabrication.

B. Panels - End panels, shelves, bottoms and partitions of 3/4" Birch plywood, "Good" grade on all surfaces or plastic laminate covered particle board as approved. All other surfaces may be A grade fir plywood. All edges exposed to sight shall be self-edged and sanded smooth and flush.

C. Doors - Construction of 3/4" Birch plywood, "Good" grade or plastic laminate covered particle board as approved. All edges shall be self edge.

D. Drawers - Front identical to doors above. Back minimum of 1/2" A-A Grade fir plywood. Sides of solid hardwood of sound grade. Bottoms of 1/4" plywood or 1/4" brown welded fiber board. Front and back connection shall be rigid type. Bottoms shall be let into front, back and sides approximately 1/4 of an inch. Drawer interiors to be Melamine.

E. Backs - Backs shall be a minimum of 1/4" plywood or 1/4" brown welded fiber board. Open to view 1/4" Birch plywood. All open-to-view backs are to receive plastic laminate.

F. Adjustable Shelves - 3/4" thick for maximum spans of 30". 1-1/8" thick for maximum spans of 42". All open-to-view shelves are to receive plastic laminate.

G. Cabinet Base – Cabinet Base and tall units shall have a site-built toe base constructed of 3/4-inch (minimum) lumber unless otherwise shown on the drawings. Base is 96mm (nominal 4 inch) high unless otherwise indicated on the drawings. Particle board is not acceptable.

H. Finishes – Tops, edges, and backsplashes and any other areas noted shall be plastic laminate covered.

I. Cabinet Hardware - Contractor shall furnish hardware equal to that as manufactured by Stanley, as hereinafter specified. All hardware to be Brushed Chrome, unless indicated otherwise on drawings.

1. Pull Handles - 4" wire pull, brushed chrome finish. Two pulls on drawers over 30" wide.
2. Drawer Guides - Regular, knee space and pencil: 100-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers. Positive stop both directions with self-closing feature. Paper storage, 150-pound load rated epoxy coated steel slides.
3. File: Full extension, 150-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers. Positive stop both directions with self-closing feature.
4. Door Hinges - Five knuckle, epoxy powder coated, institutional grade, 2-3/4 inch overlay type with hospital tip. 0.095 inch thick. ANSI-BHMA standard A156.9, Grade 1. Doors 48 inches and over in height have 3 hinges per door. Magnetic door catch with maximum 5 pound pull provided, attached with screws and slotted for adjustment.
5. Finish to be selected by Architect.

J. Tote Trays:

1. Heavy-duty vacuum-formed polypropylene plastic with full top rim and pull. Trays are ivory color, equipped with label holder.
2. Tote tray/supply cabinets equipped with injection molded polycarbonate continuous side rail support glide. Each side rail support glide is adjustable with integral support pins to interface 32mm pre-drilled holes.

PART 3 - EXECUTION

3.1 SHOP ASSEMBLY

A. When it is possible, all items of millwork which can be carried into the building through doorways or windows shall be shop assembled. When it is impractical to shop assemble the entire item in one piece, it shall be shop assembled in sections and perfectly fitted in place on the job by thoroughly experienced and competent mechanics. Where job joining requires gluing, it shall be done by the same method used in the Shop.

3.2 INSTALLATION

A. All finish carpentry and millwork of every sort shall be put up plumb or level, and straight and true. Trim put up with proper grounds and firmly secured. All work fitted and scribed to other work in a careful manner as not to injure the surface in any way. All nailing shall be blind wherever possible, but where not possible, the nailing driven and set so as to be not visible in the finish.

B. All trim to be free from defects impairing durability or fitness for receiving finish. All trim properly sanded at mill and hand sanded at the job.

C. Finished surfaces of interior millwork, detailed or scheduled to be painted, shall be left ready for treatment by the painter. The jointing and framing of all members of the finished millwork shall be executed in accordance with the best and latest recognized mill practice.

D. This contractor shall cooperate with contractors for other trades with which his work comes in contact.

3.3 FINISH HARDWARE

A. Install items of hardware furnished under FINISH HARDWARE SECTION.

B. Hardware shall be accurately fitted and securely attached, without damage to metal or woodwork, and care shall be taken to not mar or injure any work.

C. Hardware shall be protected as approved or removed for painting.

D. Upon completion of the work, hardware shall be demonstrated to work freely, keys shall be fitted into their respective locks and upon acceptance of the work, all keys shall be tagged and delivered to the Owner.

E. All open -to- view shelves are to receive heavy duty, double cleated adjustable standard hardware.

END OF SECTION

SECTION 06241 - SOLID SURFACING FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Provide solid surfacing fabrications including but not limited to following:

1. Window Sills
2. Trim
3. Base
4. Caps

B. Related Sections: Following description of work is included for reference only and shall not be presumed complete:

1. Finish Carpentry - Section 06100.
2. Joint Sealants - Section 07900.

1.2 REFERENCES

A. Definitions:

1. Solid Surface: Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Arrange preinstallation meeting 1 week prior to commencing work with all parties associated with trade as designated in Contract Documents or as requested by Architect. Presided over by Contractor, include Architect who may attend, Subcontractor performing work of this trade, Owner’s representative, testing company's representative and consultants of applicable discipline. Review Contract Documents for work included under this trade and determine complete understanding of requirements and responsibilities relative to work included, storage and handling of materials, materials to be used, installation of materials, sequence and quality control, Project staffing, restrictions on areas of work and other matters affecting construction, to permit compliance with intent of work of this Section.

1.4 SUBMITTALS

A. Product Data: Indicate Product description including solid surface sheets, sinks, bowls and illustrating full range of standard colors, fabrication information and compliance with specified performance requirements. Submit Product data with resistance to list of chemicals.

B. Shop Drawings: Submit Shop Drawings for work of this Section in accordance

with section 01600. Indicate plans, sections, dimensions, component sizes, edge details, thermosetting requirements, fabrication details, attachment provisions, sizes of furring, blocking, including concealed blocking and coordination requirements with adjacent work. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacles and other items installed in solid surface.

C. Coordination Drawings: Submit coordination drawings indicating plumbing and miscellaneous steel work indicating locations of wall rated or non-rated, blocking requirements, locations and recessed wall items and similar items.

D. Samples: Submit samples in accordance with Section 01 30 00. Submit minimum 6" x 6" samples.

1. Cut sample and seam together for representation of inconspicuous seam. Indicate full range of color and pattern variation. Approved samples will be retained as standards for work.

E. Test and Evaluation Reports: Submit flammability test reports and food preparation zone

certifications/listing confirming compliance with NSF/ANSI 51. Refer to www.nsf.org for the latest compliance to NSF/ANSI 51 for Food Zone — all food types.

1.5 CLOSEOUT SUBMITTALS

A. Operational and Maintenance Data:

1. Submit manufacturer's care and maintenance data, including repair and cleaning instructions. Include in Project closeout documents.

2. Provide a commercial care and maintenance kit and video. Review maintenance procedures and warranty details with Owner upon completion.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Installers: Provide work of this Section executed by competent installers with minimum 5 years of experience in the application of Products, systems and assemblies specified and with approval and training of the Product manufacturers.

B. Mock-Ups:

1. Prior to final approval of Shop Drawings, erect 1 full size mock-up of each component at Project site demonstrating quality of materials and execution for Architect review.

2. Should mock-up not be approved, rework or remake until approval is secured. Remove rejected units from Project site.

3. Approved mock-up will be used as standard for acceptance of subsequent work.

4. Approved mock-ups may remain as part of finished work.

1.7 DELIVERY, STORAGE AND HANDLING

A. Delivery and Acceptance Requirements: Deliver no components to Project site until areas are ready for installation.

B. Storage and Handling Requirements:

1. Store components indoors prior to installation.

2. Handle materials to prevent damage to finished surfaces.

1.8 WARRANTY

A. Manufacturer Warranty: Provide manufacturer’s standard warranty for material only for period of 10 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Architect and at no expense to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer Products of following manufacturers are acceptable subject to Conformance to requirements of Drawings, Schedules and Specifications:

1. Corian® by DuPont; www.corian.com.

2. Wilsonart Contract; www.wilsonartcontract.com.

3. Formica; www.formica.com.

B. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Performance/Design Criteria:

Property		Requirement (min or max)		Test Procedure
1. Solid Surface Based Products:				
a.	Tensile Strength	6000 psi min		ASTM D638
b.	Tensile Modulus	1.5 x 106 psi min		ASTM D638
c.	Tensile Elongation	0.4% min.		ASTM D638
d.	Flexural Strength	10000 psi min		ASTM D790
e.	Flexural Modulus	1.2 x 106 psi min		ASTM D790
f.	Hardness	>85-Rockwell "M" scale min.		ASTM D785
g.	Thermal Expansion	2.2 x 10-5 in./in./°F		ASTM E228
h.	Fungi and Bacteria	Does not support microbial growth		ASTM G21 & G22
i.	Microbial Resistance	Highly resistant to mold growth		UL 2824
j.	Ball Impact	No fracture - 1/2 lb. Ball: 6 mm slab - 36" drop 12 mm slab - 144" drop		NEMA LD 3, Method 3.8
k.	Weatherability	∆E*94<5 in 1,000 hrs		ASTM G155
l.	Flammability			ASTM E84, NFPA 255 & UL 723
	All Colors			
		6 mm	12 mm	
m.	Flame Spread	<25	<25	
n.	Smoke Developed	<25	<25	
o.	Class	A	A	NFPA 101®, Life Safety Code

B. Solid Surface Material: Single Source manufacturer for all solid surfacing fabrications on entire project.

C. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment; not coated, laminated or of composite construction; meeting following criteria:

D. Flammability: Class 1 and A when tested to UL 723.

E. Food Equipment Material Compliance: Food Zone to NSF/ANSI 51.

1. Ensure material has minimum physical and performance properties specified under “Performance/Design Criteria”.

2. Ensure superficial damage to a depth of 0.010" is repairable by sanding and polishing.

F. Adhesive for Bonding to Other Products: One component silicone to ASTM C920.

G. Sealant: A standard mildew-resistant, FDA/UL® [and NSF/ANSI 51 compliant in Food Zone area,] recognized silicone color matched sealant or clear silicone sealants.

H. Sink/Bowl Mounting Hardware: Manufacturer's approved bowl clips, brass inserts and fasteners for attachment of undermount sinks/bowls.

I. Heat Reflecting Tape: Manufacturer’s standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.

J. Insulating Nomex® Fabric: Manufacturer’s standard for use with conductive tape in insulating solid surface material from adjacent heat source.

2.3 COMPONENTS

A. Window Sills, Trims, Base, & Rail Caps: 3/4" thick solid surfacing material, adhesively joined with inconspicuous seams, edge details as indicated on Drawings or from manufacturers standards. Colors to be selected by Architect from manufacturer’s full color range.

B. Fabrication:

1. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved Shop Drawings and solid polymer manufacturer requirements. Form joints between components using manufacturer’s standard joint adhesive without conspicuous joints.
2. Where indicated, thermoform corners and edges or other objects to shapes and sizes indicated on Drawings, prior to seaming and joining. Cut components larger than finished dimensions and sand edges to remove nicks and scratches. Heat entire component uniformly prior to forming.
3. Ensure no blistering, whitening and cracking of components during forming.
4. Fabricate joints between components using manufacturer's standard joint adhesive. Ensure joints are inconspicuous in appearance and without voids. Attach 50 mm (2") wide reinforcing strip of solid polymer material under each joint. Reinforcing strip of solid polymer material is not required when using DuPont™ Joint Adhesive 2.0.
5. Provide holes and cutouts for plumbing and bath accessories as indicated on Drawings.
6. Rout and finish component edges to a smooth, uniform finish. Rout cutouts, then sand edges smooth. Repair or reject defective or inaccurate work.
7. Finish: Ensure surfaces have uniform finish: As selected by Architect.
    a. Matte, with a 60° gloss rating of 5 - 20.
    b. Semi-gloss, with a 60° gloss rating of 25 - 50.
    c. Polished, with a 60° gloss rating of 55 - 80.
8. Fabrication Tolerances:
    a. Variation in Component Size: +/-1/8".
    b. Location of Openings: +/-1/8" from indicated location.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.
2. Verify actual site dimensions and location of adjacent materials prior to commencing work.
3. Examine cabinets upon which counter tops are to be installed. Verify cabinets are level to within 1/8" in 10' - 0".
4. Notify Architect in writing of any conditions which would be detrimental to installation.

B. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

A. Install components plumb, level, rigid, scribed to adjacent finishes in accordance with reviewed Shop Drawings and Product installation details.

B. Fabricate field joints using manufacturer's recommended adhesive, with joints being inconspicuous in finished work. Exposed joints/seams are not permitted. Keep components and hands clean when making joints. Reinforce field joints as specified herein. Cut and finish component edges with clean, sharp returns.

C. Route radii and contours to template. Anchor securely to base component or other supports. Align adjacent components and form seams to comply with manufacturer’s written recommendations using adhesive in color to match work. Carefully dress joints smooth, remove surface scratches and clean entire surface.

D. Seal between wall and components with joint sealant as specified herein and in Section 0790, as applicable.

E. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Ensure components are clean on date of Substantial Completion of the Work.

F. Coordinate connections of plumbing fixtures and make plumbing connections to sinks in accordance with Division 15 Mechanical and with any other division requiring cutouts.

G. Provide holes and cutouts indicated on approved shop drawings. Rout cutouts and complete by sanding all edges smooth.

3.3 REPAIR

A. Repair minor imperfections and cracked seams and replace areas of severely damaged surfaces in accordance with manufacturer’s “Technical Bulletins”.

3.4 SITE QUALITY CONTROL

A. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Architect at no cost to Owner.

3.5 CLEANING

A. Remove excess adhesive and sealant from visible surfaces.

B. Clean surfaces in accordance with manufacturer’s “Care and Maintenance Instructions”.

3.6 PROTECTION

A. Provide protective coverings to prevent physical damage or staining following installation for duration of Project.

B. Protect surfaces from damage until date of Substantial Completion of the Work.

END OF SECTION

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SECTION 06410 - CUSTOM CABINETS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Specially fabricated Laminate Cabinets.

B. Cabinet hardware.

C. Factory finishing.

D. Preparation for installing utilities.

1.2 RELATED REQUIREMENTS

A. Section 06100 - Rough Carpentry: Support framing, grounds, and concealed blocking.

1.3 REFERENCE STANDARDS

A. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use; 2009.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2009.

C. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2005, 8th Ed., Version 2.0.

D. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2010 (ANSI/BHMA A156.9).

E. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 2009 (ANSI/HPVA HP-1).

F. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.

G. NHLA G-101 - Rules for the Measurement & Inspection of Hardwood & Cypress; National Hardwood Lumber Association; 2011.

H. PS 1 - Structural Plywood; 2009.

I. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2010.

J. WI (MAN) - Manual of Millwork; Woodwork Institute; 2003.

1.4 SUBMITTALS

A. See Section 01300 - Submittal Procedures, for submittal requirements.

B. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.

C. Product Data: Provide data for hardware accessories, including cabinet hardware and accessories and finishing materials and processes. For hardboard, medium density fiberboard, particleboard, plywood, high pressure decorative laminate, adhesive for bonding plastic laminate, thermoset decorative overlay, solid surfacing material. cabinet hardware and accessories, and finishing materials and processes.

D. Samples: Submit four actual samples of architectural cabinet construction, minimum 12 inches square, illustrating proposed cabinet, countertop, back and shelf unit substrate and finish.

E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

F. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

G. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.

B. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Premium quality, unless other quality is indicated for specific items.

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience. Member in good standing of the Architectural Woodwork Institute (AWI) and familiar with the AWI/AWMAC QSI.

D. Quality Certification: Provide inspection and quality certification of completed custom cabinets in accordance with AWI/AWMAC Quality Certification Program.

E. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production and installation of interior architectural woodworking including wood doors when veneer matching includes door faces.

1.6 MOCK-UP

A. Provide mock-up of typical base cabinet and wall cabinet, including hardware, finishes, and plumbing accessories.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.7 PRE-INSTALLATION MEETING

A. Convene not less than one week before starting work of this section.

1.8 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.10 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.

1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed and indicate measurements on shop drawings.

2. Established Dimensions: Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating woodwork without field

measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 CABINETS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI Architectural Woodwork Standards for Custom Grade.

B. Plastic Laminate Faced Cabinets: Custom grade.

2.2 LUMBER MATERIALS

A. Softwood Lumber: NIST PS 20; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade II/Custom; average moisture content of 5-10 percent; species as scheduled.

B. Hardwood Lumber: NHLA; Graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Grade II/Custom; average moisture content of 5-10 percent; species as scheduled.

2.3 PANEL MATERIALS

A. Softwood Faced Plywood: DOC PS 1, Medium Density Overlay.

B. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application; sanded faces; thickness as required.

1. Use as backing for plastic laminate unless otherwise indicated.

C. Core Material at Sinks: Marine-grade plywood, medium-density fiberboard made with exterior glue or exterior-grade plywood.

2.4 LAMINATE MATERIALS

A. Manufacturers: Basis of Design as indicated on the Drawings.

1. Substitutions: See Section 01600 - Product Requirements.

B. Product: As indicated on the Drawings.

C. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications and as follows:

1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, through color, colors as scheduled, finish as scheduled.

2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, through color, colors as scheduled, finish as scheduled.

3. Cabinet Liner: CLS, 0.020 inch nominal thickness, through color, colors as scheduled, finish as scheduled.

4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

D. Melamine Laminate tested to meet NEMA Test LD 3.

E. Colors for cabinet surfaces shall be selected from Wilsonart's standard solid and pattern offering. A maximum of one (1) color to be selected per unit face and two (2) colors per project.

F. Melamine colors shall be light beige or dove grey. One color only per project.

G. Colors: All To be selected by architect during submittal phase of project.

2.5 COUNTERTOPS

A. General: Provide materials which have been selected for surface flatness and smoothness. Exposed surfaces which exhibit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptable.

B. Adhesives or fasteners to be provided for securing of tops to cabinet work. Such materials to allow for contraction or expansion of tops where necessary.

C. Tops shall be 1" thick unless otherwise specified and provided with 4" high back splashes with thickness matching countertop thickness where shown and where tops abut walls, columns, case ends, adjacent cabinets, etc.

D. Types:

1. Plastic laminate counter tops shall be surfaced with general purpose horizontal grade laminate. Cores shall be 1 1/8" built up wood front edge; #45 density particleboard.

2. All exposed edges, including back and end splashes, must be covered with the same laminate as top surfaces. When splice joints are required, they shall be joined with dowel pins and tite joint fasteners as needed for a gapless joint.

3. Laminate Color Selection(s): Colors for countertops shall be selected from Wilsonart's standard solid and pattern offering. A maximum of Two (2) colors per project.

E. Plastic Laminate Type: Fire rated type, 0.050” thick; UL tested and labeled ratings of 25 for flame spread, 25 for fuel contributed and l00 for smoke developed when bonded to wood particle board.

F. Preparations for Finishing: Comply with AWI Quality Standards, Section l500, for sanding, filling countersunk fasteners, backpriming and similar preparations for finishing of architectural woodwork, as applicable to each unit of work..

2.6 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Fasteners: Size and type to suit application.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

D. Concealed Joint Fasteners: Threaded steel.

E. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.

2.7 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using shelf brackets and coordinated shelf rests, satin chrome finish, for nominal 1 inch spacing adjustments. Comply with BHMA A156.9, B04102, with shelf brackets B04112.

C. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch spacing adjustments.

D. Drawer and Door Pulls: Aluminum/stainless steel pull, 1'-0" long..

1. Product: Item No. 112.83.006 manufactured by Westin Collection.

E. Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with satin finish. Comply with BMA A156.11, E07121.

F. Drawer locks: Comply with BHMA A156.11, E07041

G. Grommets for Cable Passage through Countertops: Mockett BRV1, Satin Nickel finish.

H. Metal Slot Grommet: Mockett Max2/D-94, Satin aluminum finish.

I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Nickel; match Architect's sample.

J. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

K. Catches: Magnetic.

L. Drawer Slides:

1. Type: Heavy duty full extension.

2. Static Load Capacity: Commercial grade.

3. Mounting: Side mounted.

4. Stops: Integral type.

5. Features: Provide self-closing/stay closed type.

6. Products:

a. Accuride International, Inc: www.accuride.com.

b. Grass America Inc: www.grassusa.com.

c. Knape & Vogt Manufacturing Company: www.knapeandvogt.com.

d. Substitutions: See Section 016000 - Product Requirements.

M. Hinges: European style concealed self-closing type, BHMA No. A156.9, B01602, steel with polished finish.

1. Products:

a. Grass America Inc: www.grassusa.com.

b. Hardware Resources: www.hardwareresources.com.

c. Julius Blum, Inc: www.blum.com.

d. Substitutions: See Section 016000 - Product Requirements.

N. Countertop Supports: Powder coated, formed metal supports. Must provide attachment points between countertop and wall.

2.8 SHOP TREATMENT OF WOOD MATERIALS

A. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.

B. Provide UL approved identification on fire retardant treated material.

C. Deliver fire retardant treated materials cut to required sizes. Minimize field cutting.

2.9 FABRICATION

A. Cabinet Style: Flush overlay.

B. Cabinet Doors and Drawer Fronts: Flush overlay.

C. Drawer Construction Technique: Dovetail joints.

D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

F. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

G. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

2. Cap exposed plastic laminate finish edges with material of same finish and pattern.

H. Mechanically fasten back splash to countertops as recommended by laminate manufacturer at 16 inches on center.

I. Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes, and fixtures and fittings. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

J. Fastening devices and their attachment shall be submitted for approval prior to installation. Drywall screws will not be allowed for the attachment and installation of millwork.

K Continuous or Unit Tops: All cabinets over 42" and up to 72" in height shall be supplied where shown with a finished 1" continuous top laminated with high pressure decorative laminate and balanced with high pressure backer BKL.

L. Bases: Provide and install all base and tall units with finished integral base. Provide ¾" thick marine grade plywood bases. All bases shall have finished facings unless rubber vinyl base covering is being furnished and applied by others.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units and countertops.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages. Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware so center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

1. Install cabinets with no more than 1/8" in 96 inch sag, bow or other variation from a straight line.

2. Maintain veneer sequence matching of cabinets with transparent finish.

3. Fasten wall cabinets through back, bear top and bottom, at ends and not more than 16 inches o.c. with No. 10 wafer head screws sized for 1 inch penetration into wood framing, blocking or hanging strips.

F. Securely anchor countertops by screwing through corner blocks of base cabinets or other supports into underside of countertop.

1. Align adjacent solid surface material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches and clean entire surface.

2. Install countertops with no more than 1/8 inch in 96 inch sag, bow or other variation from a straight line.

3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.

4. Caulk space between backsplash and wall with sealant.

G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.3 ADJUSTING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Adjust installed work.

C. Adjust moving or operating parts to function smoothly and correctly.

D. Clean woodwork on exposed and semi exposed surfaces. Touch up shop applied finishes to restore damaged or soiled areas.

3.4 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

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SECTION 07115 - BITUMINOUS DAMPPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SUMMARY

A. This Section includes cold-applied, emulsified-asphalt dampproofing applied to the following surfaces:

1. Exterior face of inner wythe of exterior masonry cavity walls.
2. Exterior, below-grade surfaces of concrete and masonry foundation walls.
3. Back side of concrete and masonry retaining walls, below grade.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include recommendations for method of application, primer, number of coats, coverage or thickness, and protection course.

B. Material Certificates: For each product, signed by manufacturers.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain primary dampproofing materials and primers through one source from a single manufacturer. Provide secondary materials recommended by manufacturer of primary materials.

1.5 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt dampproofing to be performed according to manufacturers' written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cold-Applied, Emulsified-Asphalt Dampproofing:
2. Euclid Chemical Company (The)
3. Gardner Asphalt Corporation
4. Henry Corporation
5. Koppers Industries, Inc.
6. Malarkey Roofing Company
7. Meadows, W. R., Inc.
8. Sonneborn, Div. Of ChemRex, Inc.
9. Tamms Industries

2.2 BITUMINOUS DAMPPROOFING

A. Fibered Brush and Spray Coats: ASTM D 1227, Type II, Class I.

2.3 MISCELLANEOUS MATERIALS

A. Emulsified-Asphalt Primer: ASTM D 1227, Type III, Class I, except diluted with water as recommended by manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Applicator present, for compliance with requirements for surface smoothness and other conditions affecting performance of work.

1. Begin dampproofing application only after substrate construction and penetrating work have been completed and unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protection of Other Work: Mask or otherwise protect adjoining exposed surfaces from being stained, spotted, or coated with dampproofing. Prevent dampproofing materials from entering and clogging weep holes and drains.

B. Clean substrates of projections and substances detrimental to work; fill voids, seal joints, and apply bond breakers if any, as recommended by prime material manufacturer.

3.3 APPLICATION, GENERAL

A. Comply with manufacturers written recommendations unless more stringent requirements are indicated or required by Project conditions to ensure satisfactory performance of dampproofing.

B. Apply additional coats if recommended by manufacturer or required to achieve coverage's indicated.

C. Allow each coat of dampproofing to cure 24 hours before applying subsequent Coats.

D. Apply dampproofing to footings and foundation walls where opposite side of wall faces building interior whether indicated or not.

1. Apply from finished-grade line to top of footing; extend over top of footing, and down a minimum of 6 inches (150 mm) over outside face of footing.

2. Extend 12 inches (300 mm) onto intersecting walls and footings, but do not extend onto surfaces exposed to view when Project is completed.

3. Install flashings and corner protection stripping at internal and external corners, changes in plan, construction joints, cracks, and where shown as "reinforced," by embedding an 8-inch (200 mm) wide strip of asphalt-coated glass fabric in aheavy coat of dampproofing. Dampproofing coat required for embedding fabricis in addition to other coats required.

E. Apply dampproofing to provide continuous plane of protection on exterior face of inner wythe of exterior masonry cavity walls.

1. Lap dampproofing at least ¼ inch (6 mm) onto flashing, masonry reinforcement, veneer ties, and other items that penetrate inner wythe.

2. Extend dampproofing over outer face of structural members and concrete slabs that interrupt inner wythe, and lap dampproofing at least ¼ inch (6 mm) onto shelf angles supporting veneer.

3.4 COLD-APPLIED, EMULSIFIED-ASPHALT DAMPPROOFING

A. On Exterior Face of Inner Wythe of Cavity Walls: Apply primer and one brush or spray coat at not less than 1 gal./100 sq. ft. (0.4 L/sq.m).

B. On Backs of Concrete Retaining Walls: Apply one brush or spray coat at not less than 1.5 gal. / 100 sq. ft.

3.5 CLEANING

A. Remove dampproofing materials from surfaces not intended to receive dampproofing.

END OF SECTION

SECTION 07120 - WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of each type of waterproofing work is indicated on drawings.

B. Types of waterproofing specified in this section include the following:

1. Collector Pipe.
2. Subsurface Drainage Fabric
3. Bentonite Composite Membrane

1.3 QUALITY ASSURANCE

A. Manufacturer: Obtain primary waterproofing materials of each type required from a single manufacturer to greatest extent possible. Provide secondary materials only as recommended by manufacturer of primary materials.

B. Installer: Firm with not less than 3 years of successful experience in installation of waterproofing similar to requirements for this project and which is acceptable to manufacturer of primary waterproofing materials.

1.4 SUBMITTALS

A. Product Data: Submit product data and general recommendations from waterproofing materials manufacturer, for types of waterproofing required. Include data substantiating that materials comply with requirements.

1.5 JOB CONDITIONS

A. Substrate: Proceed with work after substrate construction openings, and penetrating work have been completed.

B. Weather: Proceed with waterproofing and associated work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturers' recommendations and warranty requirements.

1.6 WARRANTY

A. Provide 10 year written warranty signed by product manufacturer agreeing to repair or replace the system to a waterproof condition at no cost to the Owner. Warranty shall cover all labor and materials for the full period of warranty.

B. In addition to above manufacturers' warranty, General Contractor shall provide a 2 year written warranty, agreeing to the same requirements stated for product manufacturer's warranty.

PART 2 - PRODUCTS

1.1 MANUFACTURERS

A. Manufacturers: The following manufacturer’s products have been used to establish minimum standards for materials, workmanship and function:

1. Collector Pipe: Provide, where indicated:
   a. Standard Schedule 40, perforated, PVC pipe.
2. Drainage Fabric: Provide, where indicated:

a. Layer of subsurface drainage fabric with geotextile filter layer bonded to one side of drainage fabric. Drainage fabric with geotextile filter.

b. Manufacturer: J-Drain 100 by JDR Enterprise, Inc., Alpharetta, Ga. 30201.

3. Waterproofing Membrane: Provide, where indicated:

a. Composite membrane of Bentonite laminated to sheet high density polyethylene (H.D.P.E.). Composite membrane

b. Manufacturer: Paraseal by Paramount Technical Products, Inc., Spearfish, S. D. 57783.

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

1.2 MISCELLANEOUS MATERIALS

A. Adhesives: Provide types of adhesive compound and tapes recommended by waterproofing system manufacturer, for bonding to substrate (if required), for waterproof sealing of seams in membrane, and for sealing of joints between waterproofing and flashings, adjoining surfaces and projections through waterproofing.

B. Fasteners: Provide type of fasteners recommended by waterproofing system manufacturer.

C. Flashing Materials: Except as otherwise indicated, provide types of material for flashing as recommended by waterproofing system manufacturer.

D. Protection Course: Where shown, provide type recommended by waterproofing system manufacturer, unless another type is indicated; include adhesives recommended by manufacturer.

PART 3 - EXECUTION

2.1 PREPARATION

A. Prior to installation of waterproofing and associated work, meet at project site with Installer of each component of associated work, inspection and testing agency representatives (if any), and installers of work requiring coordination with waterproofing work. Review material selections and procedures to be followed in performing work.

2.2 INSTALLATION

A. Comply with manufacturer's instructions for handling and installation of waterproofing materials.

B. Coordinate installation of waterproofing materials and associated work to provide complete system complying with combined recommendations of manufacturers and installers involved in work. Schedule installation to minimize period of exposure of waterproofing materials.

C. Extend waterproofing system and flashings as shown over area indicated to be waterproofed. Seal to projections through waterproofing and seal seams. Fasten to vertical surfaces and also, where shown or recommended by manufacturer to horizontal surfaces.

2.3 PERFORMANCE REQUIREMENTS

A. It is required that waterproof systems are watertight and not deteriorate in excess of limitations published by manufacturer.

2.4 PROTECTION

A. Institute required procedures for protection of completed system during installation of other work and throughout remainder of construction period.

END OF SECTION

SECTION 07141 - INTERIOR MASONRY WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Waterproofing below grade interior surface of concrete, cement, brick, stone or concrete block basements and foundation walls as scheduled.

2. Waterproofing above grade interior surfaces of concrete, cement, brick, stone or concrete block walls, ceilings or floors as scheduled.

A. Related Sections:

1. Section 03300 - Cast-in-Place Concrete.

2. Section 04200 - Unit Masonry.

1.3 REFERENCES

A. ASTM International (ASTM)

1. ASTM D 16 – Standard Terminology for Paint, Related Coatings, Materials and Applications. ASTM D 1653 Method A (Dry Cup) – Standard Test Methods for Water Vapor Transmission of Organic Coating Films.

2. ASTM D 6904 – Standard Practice for Resistance to Wind-Driven Rain for Exterior Coatings Applied to Masonry.

3. ASTM D 7088 – Standard Practice for Resistance to Hydrostatic Pressure for Coatings Used in Below Grade Applications Applied to Masonry.

1.4 ACTION SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: For each type of product.

1. Include construction details, materials descriptions and tested physical properties of water proofing.

2. Include manufacturer’s instructions for evaluating, preparing and treating substrate.

C. Shop Drawings:

3. Show locations and extent of waterproofing.

D. Samples:

4. For each product specified, two samples, minimum 4 inches square, representing actual product color and texture.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products and systems.

2. Applicator Qualifications: Company with minimum of 5 years’ experience in application of waterproofing as specified in this section on projects of similar size and scope and employs installers and supervisors who are trained by and acceptable to product manufacturer.

a. Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

B. Field Mock-up:

1. Install at Project site or pre-selected area of building an area for field mock-up, as directed by Architect.
2. Apply material in strict accordance with manufacturer's written application instructions.
3. Manufacturer's representative or designated representative will review technical aspects; surface preparation, application, and workmanship.
4. Field sample will be standard for judging workmanship on remainder of Project.
5. Maintain field mock-up during construction for workmanship comparison.
6. Do not alter, move, or destroy field mock-up until Work is completed and approved by Architect.
7. Obtain Architect's written approval of field mock-up before start of material application, including approval of aesthetics, color, texture, and appearance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 01 60 00.

B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Transport and store in unopened containers and keep in clean, dry condition protected from rain, dew, and humidity.

E. Do not allow DRYLOK® to freeze.

1.7 PROJECT CONDITIONS

A. Environmental Requirements:

1. Do not apply in rain or when rain is expected within 24 hours. Do not apply above 90 degrees F (32 degrees C) or below 50 degrees F (10 degrees C) or when temperatures are expected to fall below 40 degrees F (4 degrees C) within 24 hours.

1.1 WARRANTY

A. Manufacturer agrees to replace product or refund product purchase price if product fails to provide a waterproof coating.

1. Warranty Period: 15 years from application.
2. Specific Warranty Limitations:
   a. Review manufacturer website: http://www.drylok.com/warranty/ugl-drylok-extreme-masonry-waterproofer-15-year-warranty.pdf for complete warranty details.
3. Warranty Inspection: Manufacturer representative or designated representative.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from the following manufacturer:

1. United Gilsonite Laboratories (UGL), which is located at 1396 Jefferson Avenue, P.O. Box 70 Scranton, PA 18501; Customer Service: 1-800-845-5227 or 1-570-344-1202; Email: ugllabs@ugl.com; Website: www.ugl.com.

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. DRYLOK® EXTREME Latex Base Masonry Waterproofer - Latex based coating for concrete and masonry that resists both positive and negative hydrostatic pressure.

2.3 MIXING

A. Stir thoroughly before and during application. Do not thin.

B. Color:

1. White
2. Custom color. Refer to Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Comply with Section 01700 Execution Requirements.

3.2 SURFACE PREPARATION

A. Ensure that substrates are sound and free of dust, dirt, paints, form oils, wax curing compounds, or other contaminants that could impair bond of the coating. Old paint in poor condition must be removed by wire-brushing, sand blasting or other suitable means.

B. Ensure substrate has properly cured. Concrete should obtain 80 percent of design strength. If efflorescence is present, remove it with DRYLOK® ETCH or muriatic acid before proceeding.

3.3 APPLICATION – GENERAL

A. Stir DRYLOK® EXTREME thoroughly during application.

B. Apply coating directly on to bare masonry with a DRYLOK® Brush, nylon bristle brush or equivalent stiff fiber brush or by textured spray equipment. Spray or back-brush first coat to fill pores of masonry and achieve uniformity.

C. Two coats shall be applied. Allow first coat to cure 3 hours, then apply second coat by brush, spray or roller.

D. Examine finished surface after two coats and inspect for any leaking, open pores or pinholes. If observed, spot-treat rejected areas, repaint entire surface with another coat of DRYLOK® EXTREME and reinspect.

E. Allow coating to cure 7 to 10 days before immersion in water.

3.4 CLEANING

A. Clean waterproofing material from tools and equipment with water. Remove cured materials by washing or scraping.

3.5 PROTECTION

A. Protect work from damage of other trades during construction. Correct deficiencies or damage by cleaning or recoating, as approved by Architect.

END OF SECTION

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SECTION 07200 - INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:

1. Blanket-type at all exterior stud walls.
2. Sound Attenuation at interior stud walls.
3. Sound Attenuation above acoustical ceilings – at partition walls.
4. Cavity Wall Insulation.
5. Foam Insulation at CMU Cells

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications and installation instructions for each type of insulation and vapor barrier material required.

1.4 PRODUCT HANDLING

A. General Protection: Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.1 BATT INSULATION

A. MANUFACTURERS:

1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.
   a. Certain-Teed Products Corp.; Valley Forge, PA
   b. Manville Bldg. Materials Corp.; Denver, CO.
   c. Owens-Corning Fiberglass Corp.; Toledo, OH.
2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS:

1. Mineral/Glass Fiber Blanket/Batt Insulation (M/GFB-Ins): Inorganic (nonasbestos) fibers formed into resilient flexible blankets or semi-rigid batts; FS HH-1-521. Manufacturer's standard lengths and widths as required to coordinate with spaces to be insulated.
3. Exterior Stud Walls (Batts): Provide faced batt insulation at exterior stud walls:
   a. 3-1/2” batts - R13
   b. 6” batts - R-19.
   c. 8” batts - R25.
4. Interior Stud Walls: Provide unfaced Sound Attenuation batts at interior stud partitions.

a. Thickness: 3 ½" (nominal), unfaced batts.

5. Above New Acoustical Ceilings: Provide unfaced Sound Attenuation batts above all interior metal stud partition-divider walls as indicated on drawings.

a. Thickness: 6" (nominal), Unfaced batts laid over acoustical ceiling.

b. Install 4'-0" out from each side of partition/divider wall.

c. Install entire length of partition/divider wall.

2.2 CAVITY WALL INSULATION - POLYISOCYANURATE

A. MANUFACTURERS:

1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.

a. Sika Corporation - Rmax; 13524 Welch Road, Dallas, TX 75244; Ph.: 800.527.0890: www.rmax.com.

b. Carlisle.

c. Johns Manville, Inc.

2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS:

1. Rigid Foam Insulation Board: Aluminum-Faced, Polyisocyanurate-Foam Insulating Sheathing: ASTM C1289, Type I, Class 1 or Class 2, rigid, cellular, polyisocyanurate thermal insulation, bonded to reinforced aluminum facers on both sides.

a. Basis of Design: Thermasheath from Rmax.

b. Flame Spread Index and Smoke Contribution per ASTM E84:

i. Flame: 25 or less at thickness of 1 inch (25 mm) or greater; and 75 or less at thickness of less than 1 inch (25 mm).

ii. Smoke: 450 or less.

c. Water Vapor Permeability per ASTM E96 desiccant method: 0.03 perm or less.

d. Air Permeability per ASTM E2178: 0.004 cfm per sq ft (1.2192 L per min per sq m) or less.

e. Compressive Strength per ASTM D1621:

i. 20 psi (138 kPa).

ii. 25 psi (172 kPa).

f. R-Value per ASTM C518: R-6.0 minimum at thickness of 1 inch (25 mm) and R-13.1 minimum at thickness of 2 inches (51 mm).

g. Required Insulation Thickness and R-value: As indicated on the Drawings.

h. Insulation shall be suitable as continuous exterior wall insulation.

i. Exterior Usage in NFPA 285 Wall Assemblies:

j. Acceptable for inclusion in NFPA 285 exterior wall assemblies that include exterior gypsum sheathing.

2. All Cavity Walls: Provide rigid thermal insulation at the cavity space.

a. Minimum R-value of 5.

b. 1.0" thick, unless otherwise indicated.

3. Adhesive:
    a. Type recommended by insulation board manufacturer for application indicated.

2.3 CMU FILLED CELL WALL INSULATION

A. MANUFACTURERS:
1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.
    a. Core-Fill 500, as manufactured by Tailored Chemical Products, Inc., Hickory, NC. Phone: (800) 627-1687: www.core-fill500.com.
    b. R501, as manufactured by PolyMaster, Inc.", Knoxville, TN. Phone: (800) 580-3626.
    c. Core Foam Masonry Foam Insulation by cfiFOAM, Inc., Knoxville, TN. Phone: (800) 656-3626.
2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS:
1. Insulation: Aminoplast foam for injection application.
    a. Thermal Resistivity: **R/inch equal to R-4.4/inch** @ 75 degrees F mean when tested per either ASTM C-177 or ASTM C518.
    b. Water Vapor Transmission: Average ≤15 perms when tested per ASTM E 96/E96M.
    c. Potential Heat: ≤7700 Btu/lb. when tested per NFPA 259.
    d. Cured Density: ≤1.0 lb/ft3 (dry) when tested per ASTM D 1622.
    e. Surface Burning Characteristics: Class A - Flame Spread ≤25, Smoke Developed ≤450 per ASTM E 84.

C. INSTALLATION:
1. Fill **masonry cells** with foam insulation from exterior face of building.
2. Foam Insulation at exterior concrete block wall **cells**:
    a. Fill **cells** of concrete masonry with amino-plast foam insulation. Holes for filling cells of masonry shall be drilled at horizontal masonry joint on the exterior side of exposed masonry walls and re-grouted.
    b. Installed insulation value: R**-10**.
3. Reference Standards:
    a. ASTM C 177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2004.
    b. ASTM C518 - 01 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2001.
    c. ASTM D 1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics; 2004a.
    d. ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics; 2008.
    e. ASTM D 2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2006.
    f. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008.

g. ASTM E 96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2005.

h. NFPA 259 - Standard Test Method for Potential Heat of Building Materials

4. **NOTE: Both Cavity Wall Insulation and CMU Filled Cell Wall Insulation is required at all exterior CMU walls.**

PART 3 - EXECUTION

3.1 INSPECTION AND PREPARATION

A. Installer must examine substrates and conditions under which insulation work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with insulation work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

B. Clean substrates of substances harmful to insulations or vapor barriers, including removal of projections which might puncture vapor barriers.

C. Close off openings in cavities to receive poured-in-place and insulation, sufficiently to prevent escape of insulation. Provide bronze or stainless-steel screen (inside) where openings must be maintained for drainage or ventilation.

3.2 INSTALLATION

A. General: Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.

B. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.

3.3 CAVITY WALL INSULATION

A. On units of plastic insulation, install small pads of adhesive spaced approximately 1'-0" o.c. both ways on inside face. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.

1. Fill all cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

3.4 PROTECTION

A. General: Protect installed insulation and vapor barriers from harmful weather exposures and from possible physical abuses, where possible by non-delayed installation of concealing work or, where that is not possible, by temporary covering or enclosure. Installer shall advise Contractor of exposure hazards, including possible sources of deterioration and fire hazards.

END OF SECTION

SECTION 07220 - FIRE/SMOKE STOP INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of firestopping work shall be as follows:

1. Through-penetration firestopping in fire rated construction.
2. Construction -gap firestopping occurring within fire rated wall, floor to floor assemblies.
3. Construction-gap firestopping at abutments to existing construction.
4. Construction-gap firestopping occurring at the top of fire rated walls.
5. Through-penetration smoke-stopping in smoke partitions.

1.3 SUBMITTALS

A. Submit product data and manufacturer's certificate that the product meets or exceeds specified requirements.

B. Before commencing work, submit in accordance with local code.

C. Submit independent laboratory test reports, data sheets, physical properties, and samples as required by local code officials.

D. Submit the technical data sheet from the manufacturer showing the test results from the ASTM E84 (Surface Burning Characteristics).

1.4 QUALITY ASSURANNCES

A. Applicator performing work under this section must be trained by the manufacture in the art of applying related material.

1.5 DELIVERY AND STORAGE OF MATERIALS

A. All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.

PART 2 - PRODUCTS

2.1 DESIGN CONDITIONS

A. Thermafiber safing insulation or equal shall be one hour and two hour fire tested under simulated field conditions using ASTM E119 guidelines.

1. ASTME 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
2. International Building Code, 2015 edition.

B. All materials, unless otherwise indicated, shall be supplied by United States Gypsum Company or Tremco Firestopping Systems and shall be installed according to current printed directions.

C. Systems or devices listed in the U.L. Fire Resistance Directory under categories XHCR and XHEZ may be used, providing that it conforms to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos-free.

D. All firestopping products must be from a single manufacturer. All trades shall use products from the same manufacturer.

E. Sealing Compound: Thermafiber Smoke Seal compound or equal, smoke resistant, in 30 oz. cartridges.

PART 3 - EXECUTION

A. Verify openings are ready to receive the work of this section.

B. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.

C. Remove incompatible materials which may affect bond.

D. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

E. Fire Sealant Application: Seal all joints with 3/8" bead of Thermafiber Smoke Seal compound or equal. Top off safing insulation in all poke-through openings with minimum 2" depth of Thermafiber Smoke Seal compound, or equal.

END OF SECTION

SECTION 07240 - EXTERIOR INSULATION AND FINISH SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of each type of exterior insulation and finish system work is indicated on drawings and by provisions of this section. Composite wall cladding of rigid insulation and reinforced finish coating ("Class PB").

B. Types of work specified in this section include the following:

1. Application of insulation to gypsum sheathing substrate.
2. Application of plastic veneer base, reinforced with woven-glass fiber fabric, to insulation board.
3. Drainage and water-resistive barriers behind insulation board.
4. Application of plastic coating finish with integral color and texture.

1.3 REFERENCE STANDARDS

A. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 2011.

B. ASTM C297/C297M - Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions; 2004 (Reapproved 2010).

C. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2012.

D. ASTM C1397 - Standard Practice for Application of Class PB Exterior Insulation and Finish Systems (EIFS) and EIFS with Drainage; 2009.

E. ASTM D968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive; 2005 (Reapproved 2010).

F. ASTM D2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity; 2011.

G. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.

I. ASTM E2273 - Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies; 2003 (Reapproved 2011).

J. ICC-ES AC219 - Acceptance Criteria for Exterior Insulation and Finish Systems; 2009.

K. ICC-ES AC235 - Acceptance Criteria for EIFS Clad Drainage Wall Assemblies; 2004 (Editorially revised 2009).

L. NFPA 268 - Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source; 2012.

1.4 QUALITY ASSURANCE

A. EIFS Manufacturer Qualifications: Provide all EIFS products other than insulation from the same manufacturer with qualifications as follows:

1. Member in good standing of EIMA (EIFS Industry Members Association).
2. Manufacturer of EIFS products for not less than 5 years.
3. Manufacturing facilities ISO 9001 certified.

B. Insulation Manufacturer Qualifications: Approved by manufacturer of EIFS and approved and labeled under third party quality program as required by applicable building code.

C. Applicator:

1. Application of the system shall be by an applicator approved by the manufacturer, with at least five (5) years experience in the installation of this system.

2. Follow manufacturer's latest printed application instructions. Installer is to certify that work is installed in accordance with manufacturer's instruction.

D. Samples:

1. Submit 2'-0" x 4'-0" sample color and texture to be used.

2. Samples to be made by applicator utilizing tools and techniques proposed for installation.

E. Code Approvals:

1. The system shall be approved by the building codes or agencies with jurisdiction on the project.

2. Approval must be based on full scale diversified Fire Testing and its end use configuration by independent agencies whose classifications and requirements have general acceptance as regulatory.

3. System must maintain the current model code approvals of ICBO #2728, BOCA #71-55, SBCC #7218-78.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions and general recommendations for each specified material and product.

1.6 JOB CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

B. Application of this work shall be in ambient temperatures above 40 degree F. and rising, and on unfrozen surfaces. For installation in temperatures less than 40 degree F., supplementary heat shall be provided. A minimum ambient temperature of 40 degree F shall be maintained for at least 24 hours after installation.

C. Protect surrounding areas and surfaces to preclude damage during application of this work. Protect finished work when stopping for the day or when completing an area in order that water will not penetrate behind the system.

D. Coordinate the work of this section closely with other related sections. The cap flashing shall be installed as soon as possible after the installation of this work. All joints to be caulked shall be done immediately after the installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to project site in manufacturer's original, unopened containers with labels intact. Inspect materials and notify manufacturer of any discrepancies.

B. Storage: Store materials as directed by manufacturer's written instructions.

1. Protect adhesives and finish materials from freezing, temperatures below 40 degrees F and temperatures in excess of 90 degrees F.

2. Protect insulation materials from exposure to sunlight.

1.8 SPECIAL PROJECT WARRANTY

A. Provide a Five (5) year warranty against defective materials and workmanship, signed by manufacturer of exterior insulation and finish system and the manufacturer's certified applicator, agreeing to repair or replace defective materials and workmanship at no cost to the Owner.

1.9 MOCK-UP

A. Construct mock-up of typical EIFS application on specified substrate, size as required to include examples of all key conditions, and including flashings, joints, and edge conditions.

B. Locate mock-up at approved location convenient for comparison to finished work.

C. Mock-up may not remain as part of the Work.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Senergy "Senerflex Channeled Adhesive Design" (Basis of Design)
2. Dryvit System, Inc., West Warwick, RI
3. STO Industries, Inc., Rutland, VT
4. Parex, Inc., P.O. Box 189, Redan, GA

B. Equal products of other manufacturers may be used in the work, provided such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid date.

2.2 EXTERIOR INSULATION AND FINISH SYSTEM

A. Exterior Insulation and Finish System: DRAINAGE type; reinforced finish coating on flat-backed insulation board adhesive-applied directly to water-resistive coating using Vertical notched trowel application of adhesive over substrate; provide a complete system that has been tested to show compliance with the following characteristics; include all components of specified system and substrate(s) in tested samples.

B. Substrate shall be 5/8" exterior grade fiberglass faced (treated core) gypsum sheathing, equal to Georgia Pacific Dens-Glass Gold or BPB Glasroc Premium exterior sheathing, complying with ASTM C-79. Substrate shall be installed according to recommendations of substrate material manufacturer for application intended.

C. Allowable Wind Loading: At least 25 psf, positive and negative, determined in accordance with ICC-ES AC 219 or AC 235, using factor of safety of 3.0.

D. Fire Characteristics:

1. Flammability: Pass, when tested in accordance with NFPA 285.
2. Ignitibility: No sustained flaming when tested in accordance with NFPA 268.

E. Adhesion of Water-Resistive Coating to Substrate: For each combination of coating and substrate, minimum flatwise tensile bond strength of 15 psi, when tested in accordance with ASTM C297/C297M.

F. Adhesion to Water-Resistive Coating: For each combination of insulation board and substrate, when tested in accordance with ASTM C297/C297M, maximum adhesive failure of 25 percent unless flatwise tensile bond strength exceeds 15 psi in all samples.

G. Water Penetration Resistance: No water penetration beyond the plane of the base coat/insulation board interface after 15 minutes, when tested in accordance with ASTM E331 at 6.24 psf differential pressure with tracer dye in the water spray; include in tested sample at least two vertical joints and one horizontal joint of same type to be used in construction; disassemble sample if necessary to determine extent of water penetration.

H. Drainage Efficiency: Average minimum efficiency of 90 percent, when tested in accordance with ASTM E2273 for 75 minutes.

I. Salt Spray Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 300 hours exposure in accordance with ASTM B117, using at

least three samples matching intended assembly, at least 4 by 6 inches in size.

J. Freeze-Thaw Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 10 cycles, when tested in accordance with ICC-ES AC 219 or 235.

K. Weathering Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 2000 hours of accelerated weathering conducted in accordance with ASTM G153 Cycle 1 or ASTM G155 Cycle 1, 5, or 9.

L. Water Degradation Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 14 days exposure, when tested in accordance with ASTM D2247.

M. Mildew Resistance: No growth supported on finish coating during 28 day exposure period, when tested in accordance with ASTM D3273.

N. Abrasion Resistance Of Finish: No cracking, checking or loss of film integrity when tested in accordance with ASTM D968 with 500 liters of sand.

2.3 MATERIALS

A. Finish Coating Top Coat: Water-based, air curing, acrylic or polymer-based finish with integral color and texture.

1. Texture: Fine.

2. Colors: As selected by Architect from manufacturer's full range.

B. Base Coat: Fiber-reinforced, acrylic or polymer-based product compatible with insulation board and reinforcing mesh.

C. Reinforcing Mesh: Balanced, open weave glass fiber fabric, treated for compatibility and improved bond with coating, weight, strength, and number of layers as required to meet required system impact rating.

D. Insulation Board: Molded, expanded polystyrene board; ASTM C578, Type I; with the following characteristics:

1. Board Size: 24 by 48 inches.

2. Board Size Tolerance: plus/minus 1/16 inch from square and dimension.

3. Board Thickness: As indicated on drawings, but not less than 1 inch at any location.

4. Thickness Tolerance: plus/minus 1/16 inch maximum.

5. Board Edges: Square.

6. Thermal Resistance: Provide 2” for a total R value of 7.2. (R factor per 1 in (25.4 mm) at 75 degrees F: 3.60).

7. Board Density: 0.9 lb/cu ft.

8. Compressive Resistance: 10 psi.

9. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/450, when tested in accordance with ASTM E84.

E. Water-Resistive Barrier Coating: Fluid-applied air and water barrier membrane; applied to sheathing; furnished or approved by EIFS manufacturer.

F. Fluid-Applied Flashing: Flexible water based polymer material suitable for use with reinforcing mesh and, if used with water-resistive barrier sheet, certified compatible with sheet material.

G. Flashing Tape: Self-adhering rubberized asphalt tape with polyethylene backing or other material and surface conditioner furnished or approved by EIFS manufacturer.

2.4 ACCESSORY MATERIALS

A. Insulation Adhesive: Type required by EIFS manufacturer for project substrate.

B. Trim: EIFS manufacturer's standard PVC, galvanized steel, or clear anodized aluminum trim accessories, as required for a complete project and including starter track and drainage accessories.

C. Sealant: Refer to Division 7 Joint Treatment (Sealants) Section. Installation of EIFS Joint Sealant shall be by EIFS applicator or a separate installer under direct supervision and control of EIFS applicator. Joint Sealant installer shall be experienced and competent in the installation of elastomeric construction sealants.

PART 3 – EXECUTION

3.1 INSTALLATION REQUIREMENTS

A. Install in accordance with EIFS manufacturer's instructions and ASTM C1397.

B. Where different requirements appear in either document, comply with the most stringent.

C. Neither of these documents supercedes the provisions of the Contract Documents that define the contractual relationships between the parties or the scope of work.

3.2 EXAMINATION

A. Verify that substrate is sound and free of oil, dirt, other surface contaminants, efflorescence, loose materials, or protrusions that could interfere with EIFS installation and is of a type and construction that is acceptable to EIFS manufacturer. Do not begin work until substrate and adjacent materials are complete and thoroughly dry.

B. Verify that substrate surface is flat, with no deviation greater than 1/4 in when tested with a 10 ft straightedge.

3.3 INSTALLATION - WATER-RESISTIVE BARRIER

A. Apply barrier coating as recommended by coating manufacturer; prime substrate as required before application.

B. Seal all substrate transitions and intersections with other materials to form continuous water-resistive barrier on exterior of sheathing, using method recommended by manufacturer.

C. At door and window rough openings and other wall penetrations, seal water-resistive barrier and flexible flashings to rough opening before installation of metal flashings, sills, or frames, using method recommended by manufacturer.

D. At moving expansion joints, apply flexible flashing or flashing tape across and recessed into joint with U-loop forming continuous barrier but allowing movement.

E. Lap flexible flashing or flashing tape at least 2 inches on each side of joint or transition.

F. Install drainage layer or spacers after flashing tape has been completed.

3.4 INSTALLATION – INSULATION

A. Install in accordance with manufacturer's instructions.

B . Prior to installation of boards, install starter track and other trim level and plumb and securely fastened.

C. Install only in full lengths, to minimize moisture intrusion; cut horizontal trim tight to vertical trim.

D. Install back wrap reinforcing mesh at all openings and terminations that are not to be protected with trim.

E. On wall surfaces, install boards vertically.

F. Place boards in a method to maximize tight joints. Stagger vertical joints and interlock at corners. Butt edges and ends tight to adjacent board and to protrusions. Achieve a continuous flush insulation surface, with no gaps in excess of 1/16 inch.

G. Fill gaps greater than 1/16 inch with strips or shims cut from the same insulation material.

H. Rasp irregularities off surface of installed insulation board.

I. Adhesive Attachment: Use method required by manufacturer to achieve drainage efficiency specified; do not close up drainage channels when placing insulation board.

3.5 INSTALLATION – FINISH

A. Base Coat: Apply in thickness as necessary to fully embed reinforcing mesh, wrinkle free, including back-wrap at all terminations of the EIFS. Install reinforcing fabric as recommended by EIFS manufacturer.

1. Lap reinforcing mesh edges and ends a minimum of 2-1/2 inches.

2. Allow base coat to dry a minimum of 24 hours before next coating application.

B. Heavy Duty Reinforcing: At locations indicated, install second layer of reinforcing mesh embedded in second coat of base coating, tightly butting ends and edges of mesh.

1. Provide heavy duty reinforcing at all EIFS surfaces less than 48 inches above grade, and elsewhere as indicated.

C. Apply finish coat after base coat has dried not less than 24 hours and finish to a uniform texture and color.

D. Provide V-groove scored control joints at locations indicated on drawings and in accordance with manufacturer's recommendations.

E. Finish Coat Thickness: As recommended by manufacturer.

3.6 INSTALLATION – ACCESSORIES

A. Reveal and Trim Accessories: Install in accordance with manufacturer's recommendations.

3.7 CLEANING

A. Clean EIFS surfaces and work areas of foreign materials resulting from EIFS operations.

3.8 PROTECTION

A. Protect completed work from damage and soiling by subsequent work.

END OF SECTION

SECTION 07500 - MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions prior to the bid that will affect their work.

B. Provide all labor, material, tools, equipment, and supervision necessary to furnish and install a **60** mil **PVC** (polyvinyl chloride) membrane.

C. NOTE: PVC (polyvinyl chloride) membrane is required at all Kitchen Roof areas.

1.3 SUBMITTALS

A. Prior to starting work, the roofing contractor must submit the following:

1. Shop drawings showing layout of insulation, details of construction and identification of materials.
2. Sample of the manufacturer's Membrane System Warranty.
3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system.
4. Certification of the manufacturer's warranty reserve.

B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption. Comply with the manufacturer's written instructions for proper material storage.

1. Store the **PVC** membranes in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. Thermoplastic membrane that has been exposed to the elements for approximately seven (7) days must be prepared with appropriate cleaner prior to hot air welding.
2. Store curable materials (adhesives and sealants) between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
3. Store materials containing solvents in dry, well-ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
4. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.
5. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.5 WORK SEQUENCE

A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.

B. Do not disrupt activities in occupied spaces.

1.6 JOB SITE PROTECTION

A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide all materials as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

B. If during the roofing contractor's performance of the work the building owner continues to occupy the existing building, the contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.

D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.

E. Take precautions to prevent drains from clogging during the roofing application.

F. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

G. Store moisture susceptible materials above ground and protect with waterproof coverings.

H. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

1.7 SAFETY

A. The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state, and federal requirements that are safety related. Safety shall be the responsibility of the roofing contractor. All related personnel shall be instructed daily to be mindful of the full-time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers, and the occurrence of the public on or near the site.

1.8 WORKMANSHIP

A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.

B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.

C. There shall be a supervisor on the job site at all times while work is in progress.

1.9 QUALITY ASSURANCE

A. The Contractor shall engage the services of a Professional Roof Consultant. The Consultant must hold a minimum title of Registered Roof Observer (RRO) through the International Institute of Building Enclosure Consultants (IIBEC) and provide evidence of adequate insurance as required below. The Consultant should perform three (3) inspections during the installation of each new roof system type (1 – Start up inspection; 2 – Interim inspection; 3 – Final inspection). The Consultant must document all site visits with photographs and written reports. All reports shall be forwarded to the Architect with documentation of the roofing progress and any deficiencies noted during the inspections. Upon completion of all punch list items, the Consultant should provide a letter of roof completion advising the new roof systems meet and/or exceed the project requirements. ***(Note: Although the contractor will be paying the roof consultant from their proceeds, the roof consultant will be considered an agent of the owner and architect throughout the project and will perform the required inspections on behalf of the owner and architect. The above specification shall be applied to individual facilities when multiple site locations are included in the project.)***

1. Roof Consultant Insurance Requirements:
    a. Gen. Liability - $1,000,000 each occurrence - $2,000,000 General Aggregate / Auto. Liability - $1,000,000 / Umbrella Liability. - $1,000,000 / Workers Compensation - $1,000,000 per statute / Professional Liability - $1,000,000
2. Approved Roof Consulting Firm:
    a. Roof Asset Management, Inc. | David Lee, RRO, CIT, FAA-107 | 4950 Woodfield Drive, Millbrook, Alabama 36054 | (334) 590-7999.
    b. Professional Roof Observers, LLC.
    1200 Sumac Road
    Pulaski, TN 38478
    Kevin Turner / (931) 703-6018 / kturner@professionalroofobservers.net.
    c. Substitutions: Roof consulting firms must be pre-approved by the Architect. Requests for a substituting firm must be submitted “In writing” 10 (Ten) days prior to the bid opening**.**

C. The Contractor shall provide signed certification from the Roofing Manufacturer that the roof design provided for this project complies with the performance requirements as set forth by applicable applications in IBC Chapter 15, Section 1504.
    1. The certification shall be attached to the Roof Warranty provided at the close out of the project.
    2. Contractor shall submit a copy of his Manufacturer’s Warranty Notification prior to purchase of materials and start of work.

D. Roof system will meet the requirements of all federal, state and local code bodies having jurisdiction.

E. The TPO or PVC membrane roofing system must achieve a UL Class A and the appropriate FM rating.

F. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

G. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the “Resistance to Foot Traffic Test “FM 4470.

H. Drainage:
    1. Provide a roof system with positive drainage where all standing water dissipates within 48 hours after precipitation ends.

I. All roof curbs and penetrations shall have a minimum height of 8” above the completed roof system.

J. Roof curbs shall be installed in accordance with roofing system manufactures instructions.

K. **The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the Architect /owners representative.**

L. Provide adequate number of experienced workers regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.

M. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the Architect. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the Architects consideration.

N. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether corrective work will be required before the warranty will be issued. Notify the Architect and General Contractor seventy-two (72) hours prior to the manufacturer's final inspection.

1.10 JOB CONDITIONS, CAUTIONS, AND WARNINGS

A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage, and application of materials.

B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.

C. When loading materials onto the roof, the Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.

D. Proceed with roofing work only when weather conditions comply with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.

E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.

F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.

G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.

H. New roofing shall be complete and weather tight at the end of the workday.

I. Contaminants such as grease, fats, and oils shall not be allowed to come in direct contact with the roofing membrane.

1.11 WARRANTY

A. Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

B. **Provide manufacturer's 20-year NDL total system warranty covering both labor and material with no dollar limitation and cover all penetrations.**

C. **General Contractor shall provide the General Contractor’s 5-year Roofing Guarantee included in this manual.**

D. Pro-rated system warranties shall not be accepted.

E. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

F. All roof warranties shall be provided to the Owner, by the Contractor at the Final Inspection to obtain the Substantial Completion.

G. The roof insulation shall be covered under the roof warranty as required by the manufacturer.

H. ***Standard manufacturer’s roofing guarantees which contain language regarding the governing of the guarantee by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such guarantees.***

I. The roofing manufacturer shall be required to provide documentation certifying that the roof design provided complies with the performance requirements as set forth in IBC Chapter 15, Section 1504. The documentation shall be attached to the roof warranty at the close out of the

project.

PART 2 - PRODUCTS

2.1 GENERAL

A. All components of the specified roofing system shall be products of the manufacturer of the roofing system or accepted by the manufacturer as compatible. All products (including insulation, fasteners, fastening plates and edgings) must be manufactured and supplied by the roofing system manufacturer and covered by the warranty.

B. MANUFACTURERS

1. PVC 60 Mil Manufactures: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:
    a. GAF Commercial (Basis of Design)
    b. Versico Roofing - VersiFlex Roofing
    c. DuroLast Roofing
    d. Johns Manville, Inc.
    e. Sarnafil Roof Membrane Roofing
    f. Fibertite Roofing
    g. Carlisle Syntec Systems
4. Walkway Pads: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:
    a. Roof Trak III Walkway Pads as manufactured by Durolast.
        i. Non-skid, maintenance free walkway protection pad manufactured from recycled membrane and oriented-strand polyester reinforcement. Factory attached, 4 inch wide white membrane skirts for attachment to the field membrane by heat welding (hot-air).
        ii. Size: 30” x 60”.
        iii. Color: White with Safety Yellow skirts.
        iv. Install per manufacturer’s recommendations.
2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 ADHESIVES AND CLEANERS

A. All products shall be furnished by the roofing manufacturer and specifically formulated for the intended purpose.
    1. Bonding Adhesive: **60** Mil: Manufactures recommended Bonding Adhesive
    2. Edge Sealant: Cut Edge Sealant
    3. Sealer: Water Cut-Off Mastic
    4. Pocket Sealant: Manufacturer’s recommended Molded Pocket Sealant
    5. Cleaner: Manufacturer’s recommended Membrane Cleaner

B. The Contractor shall be responsible for ensuring all existing curbs / flashings shall be raised as necessary to ensure proper flashing heights.

PART 3 - EXECUTION

3.1 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. Required attendees include representatives of the Owner, Division of Construction Management Inspector, General Contractor, Roofing Contractor, Sheet Metal Contractor, Roof Deck Manufacturer (if applicable), Roofing Materials Manufacturer (if warranty is required of this manufacturer) and all installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment. ATTENDANCE OF THE CONTRACTOR'S FOREMAN IS MANDITORY. If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting. Provide at least 72 hours advance notice to participants prior to convening pre-roofing conference.

B. The pre-roofing conference is intended to clarify demolition 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. To review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
2. To establish trade-related job schedules, including the installation of roof mounted mechanical equipment.
3. To 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. To establish those areas on the job site that will be designated as work and storage areas for roofing operations.
6. To establish weather and working temperature conditions to which all parties must agree.
7. To 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.
8. Tour representative areas of roofing substrates (decks); inspect and discuss condition of substrate, penetrations and other preparatory work performed by other trades.
9. Review structural loading limitations of deck and inspect deck for proper installation and fastening as required. Inspect deck for required slope etc.
10. Review roofing system requirements (drawings, specifications and other contract documents). Review required submittals / warranty issues. Verify that the manufacturer's label contains references to specified ASTM standards.
11. Review and finalize construction schedule related to roofing work and verify availability of materials.
12. Review roof application procedures, technique, details and roof specifics. Maintain one copy of manufacturer's application instructions on the project site.
13. Review job specific safety requirements, safety barriers, street blocking, haul routes, building access, site contact, facilities, security, etc.

C. 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 Owner, the Division of Construction Management, and the Division of Construction Management Inspector.

3.1 INSTALLATION - GENERAL

A. Comply with the manufacturer's published instructions for the installation of the membrane roofing

system including proper substrate preparation, jobsite considerations, and weather restrictions.

B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.2 EXECUTION – NEW ROOF SYSTEMS

A. Installation of New Roof System as follows:

1. Roof Insulation
   a. Tapered/non-tapered polyisocyanurate insulation.
      i. Refer to Section 07510, Roof Insulation
   b. Cover board
      i. 1/2”, 100 psi. ISO HD board
         a) Mechanically Attached
   c. Must maintain a minimum total R value of 25 at any area.
2. Membrane
   a. **60** mil white reinforced **PVC** membrane
      i. Adhered in accordance with the manufacturer's most current specifications and details.
   b. **60** mil TPO or PVC membrane flashings and associated metal components as required.
3. Warranties
   a. Provide a **20**-year NDL manufacturer’s warranty
   b. Provide a **5**-year General Contractor’s Roofing Guarantee workmanship warranty found in Contract Forms section of this manual.

3.3 INSULATION PLACEMENT AND ATTACHMENT

A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.

B. Secure insulation to the substrate with the required fasteners and plates in accordance with manufacturers specifications.

3.4 60 Mil PVC MEMBRANE PLACEMENT AND ATTACHMENT

A. Unroll and position membrane without stretching. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.

B. Secure the membrane with the required Fasteners and Plates spaced as required per the manufacturer’s requirements to meet the appropriate up-lift at perimeters, curbs, penetrations, drains, etc. with field of sheets fully adhered in the manufacturer’s recommended adhesive.

C. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.

D. Hot air weld the membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller prior to membrane seam cooling. All splice intersections shall be overlaid with membrane non-reinforced flashing.

E. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).

F. Repair all seam deficiencies the same day they are discovered.

G. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete.

3.5 FLASHING

A. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using PVC reinforced membrane. Non-reinforced membrane can be used for flashing pipe penetrations, Sealant Pockets, scuppers, as well as inside and outside corners when the use of prefabricated accessories is not feasible.

B. PVC Coated Metal Flashings:

1. Install new 24-gauge PVC coated metal flashings at all locations requiring the new PVC membrane to lap/weld over the metal flange. Install PVC metal flashings in lengths no less than 10’-0” unless necessary to fit shorter conditions.

C. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.6 WALKWAYS

A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the drawings.

B. Hot air weld walkway pads to the membrane in accordance with the manufacturer's specifications.

3.7 DAILY SEAL

A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the workday, a daily seal must be performed to close temporarily the membrane to prevent water infiltration.

B. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

3.8 CLEAN UP

A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION

SECTION 07510 - MEMBRANE ROOF INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. This Section applies to insulation products to be used in conjunction with Section 07500.

B. Extent of roof insulation is indicated on drawings.

C. All Roof insulation above decking is specified in this section.

1. Install **tapered and/or non-tapered** polyisocyanurate insulation with new membrane roofing system **as described at each roofing system in Section 07500, Membrane Roofing**.

1.3 QUALITY ASSURANCE

A. Insulation Manufacturer: Obtain primary roof insulation from the roofing membrane manufacturer.

B. Roof System Manufacturer: Shall provide the insulation products which are required to meet its Warranty requirements, as well as Wind Code requirements.

C. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification necessary in connection with fire and extended coverage insurance on roofing and associated work.

D. Thermal Resistivity: Where thermal resistivity properties of insulating materials are designed by r-values, they represent the rate of heat flow through a homogenous material exactly 1" thick, measured by test method included in referenced material standard or otherwise indicated. They are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperature indicated.

E. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction:

1. UL Class A Non-Combustible rated system.

1.4 SUBMITTALS

A. Product Data: Submit specifications, installation instructions and general recommendations from manufacturers of insulation materials, for types of roofing required. Include data substantiating that materials comply with requirements.

B. Tapered Insulation Design Layout: Submit layout to show insulation elevations at ALL peak and valley locations within each roof section, with direction of slopes shown. Any new drains shall be shown on this layout.

1.5 JOB CONDITIONS

A. Weather: Proceed with work when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.

1.6 SPECIAL PROJECT WARRANTY

A. Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

B. Membrane Adhesive: As recommended by insulation manufacturer for particular substrate and project conditions, formulated to withstand min. 60 p.s.f. uplift force.

PART 2 - PRODUCTS

2.1 INSULATING MATERIALS

A. Provide tapered and/or non-tapered insulation as indicated on the drawings meeting the following:

1. Install polyisocyanurate insulation (slope per roof plan) and as describe in Section 07500, Membrane Roofing.

2. Must maintain a **Minimum total R value of 28** at any given roof area.

2.2 MISCELLANEOUS INSULATION MATERIALS

A. Adhesive for Bonding Insulation (if any required): Type recommended by Roof System Manufacturer, Insta-Stik Foam, or equal, and complying with fire resistance requirements.

B. Mastic Sealer: Type recommended by Roof System Manufacturer for bonding edge joints and filling voids.

C. Mechanical Anchors: As recommended by Roof System Manufacturer for deck type and complying with fire and insurance rating requirements.

PART 3 - EXECUTION

3.1 PREPARATION OF SUBSTRATE

A. General: Comply with manufacturer's instructions for preparation of substrate to receive insulation.

1. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16" out of plane.

2. Clean substrate of dust, debris, and other substances detrimental to system work. Remove sharp projections.

3.2 INSTALLATION

A. General: Insulation is required. Extend insulation full thickness in one layer, or in multiple layers over entire surface to be insulated, cutting and fitting tightly around obstructions. Form cant strips, crickets, saddles and tapered areas with additional material as shown and as required for proper drainage of membrane.

1. Stagger all joints in one direction for each course. For multiple layers, stagger joints both directions between courses. Comply with roofing system manufacturer’s recommendations.

B. Do not install more insulation each day than can be covered with membrane before end of day and before start of inclement weather.

C. Set units in adhesive, applied in accordance with requirements of applicable fire and insurance ratings.

D. Secure roof insulation with coated mechanical fasteners as required by Manufacturer.

3.3 INSTALLATION

A. General: Comply with manufacturer's instructions, except where more stringent requirements are indicated.

B. Roof Manufacturer issuing water-tightness Warranty, agrees to warrant insulation attachment and adhesion as part of its Warranty.

END OF SECTION

SECTION 07600 - FLASHING AND SHEET METAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of each type of flashing and sheet metal work is indicated on drawings and by provisions of this section.

B. Types of work specified in this section include the following:

1. Eave Strip/Drip Edge
2. Fascia
3. Soffit
4. Gutters
5. Downspouts
6. Coping

C. Integral masonry flashings are specified as masonry work in sections of Division 4.

1.3 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.

B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

C. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2014.

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

E. ASTM D4479/D4479M - Standard Specification for Asphalt Roof Coatings - Asbestos-Free; 2007, with Editorial Revision (2012).

F. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007, with Editorial Revision (2012).

G. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.4 SUBMITTALS

A. Product Data; Flashing, Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

1.5 JOB CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.

B. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning,

   a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.

2.2 GUTTERS

A. Gutters: Provide flat shapes, no rolled formed stiffeners or ribbed allowed. Form gutters in "continuous" sections not less than 8 feet in length, complete with end pieces, outlet tubes and other special pieces as may be required. Join sections with riveted and soldered or sealed joints. Provide expansion-type slip joint at center of runs.

   1. Furnish gutter supports spaced at 36" on center constructed of same metal as gutters.

B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.

C. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning,

   a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.

2.3 DOWNSPOUTS

A. Downspouts: Form downspouts in sections approximately 10 feet long **(no corrugated sections)**, complete with elbows and offsets. Join sections with not less than 1-1/2" telescoping joints. Provide fasteners, designed to securely hold downspouts not less than 1" away from walls; locate fasteners at top and bottom and equally spaced at approximately 5 feet on center in between.

B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage thick base metal, shop pre-coated with PVDF (Polyvinylidene Fluoride) coating.

C. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss

   finish is required to minimize the appearance of oil canning,

   a. Colors: As selected by Architect after Bid Date, from manufacturer's standard colors including white.

2.4 METAL SOFFIT SYSTEM – STEEL SOFFIT

A. Manufacturer: The following manufacturers' products have been used to establish minimum standard for materials, workmanship and function:

   1. PAC-CLAD (Basis of Design); www.pac-clad.com: 1005 Tonne Road, Elk Grove Village, IL 60007; Ph: 800-PAC-CLAD

   2. MBCI Manufacturing; www.mbci.com; 2280 Monier Avenue, Lithia Springs, Georgia, 30122; Phone: 844.2506 or 770.729.4772.

   3. Morin / A Kingspan Group Company; www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems; 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

C. MATERIALS - FORMED METAL SOFFIT PANELS

1. **PAC-CLAD Flush Profile, Concealed Fastener Metal Soffit Panels**: Structural metal panels consisting of formed metal sheet with vertical panel edges and flat pan, with flush joints between panels, field assembled with nested lapped edges, and attached to supports using concealed fasteners.

   a. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M, structural quality, Grade 50, Coating Class AZ50 (Grade 340, Coating Class AZM150), prepainted by the coil-coating process per ASTM A755/A755M.

      i. Nominal Thickness: 24 gauge (Standard) coated thickness, with smooth surface.

      ii. Panel Width: 12 inches.

      iii. Panel Thickness: 1 inch.

      iv. Flush Narrow (Vented) Panels as indicated on drawings.

      v. Flush Solid (Non-Vented) Panels as indicated on drawings.

2. Finish: The exposed finish on all exposed metals and similar items shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning.

   a. Colors: As selected by Architect after Bid Date, from manufacturer’s standard colors including white.

2.5 SHEET FLASHING

A. Provide EPDM synthetic rubber sheet except where metal is indicated.

B. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Nervastral Seal Pruf HD-20

2. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

C. Materials:

1. Elastic Sheet Flashing/Membrane: Manufacturer’s standard flexible, elastic, black, nonreinforced, flashing sheet of 50 - 65 mils thickness.

2.6 MISCELLANEOUS MATERIALS & ACCESSORIES

A. Solder:

1. For use with steel or copper, provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.

2. For use with stainless steel: Provide 60 - 40 tin/lead solder (ASTM B 32), with acid-chloride type flux, except use rosin flux over tinned surfaces.

B. Fasteners: Same metal as flashing/sheet metal or, other noncorrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

C. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

D. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, non- drying, nonmigrating sealant.

E. Epoxy Seam Sealer: 2-part noncrossive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.

F. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/ weather-resistant seaming and adhesive application of flashing sheet.

G. Paper Slip Sheet: 5-lb. rosin-sized building paper.

H. Polyethylene Underlayment: 6-mil carbonated polyethylene film; FS L-P-512.

I. Reglets: Metal or plastic units of type and profile indicated, compatible with flashing indicated, noncrossive.

J. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed,

noncrossive, size and gage required for performance.

K. Roofing Cement: Must be compatible with materials with which it comes in contact.

L. Provide precast concrete splashblock sloped away from building, approximately 12-inches wide x 24-inches long x 2-inches thick x 3-inches high, with 3-raised edges and one “open” end turned toward building – at locations where downspouts would otherwise drain on grade or paving.

1. Provide 1-preformed metal pan with corrugated bottom and properly hemmed edges (minimum 12” x 24”) at each downspout which drains onto a roof below.

2.9 FABRICATED UNITS

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.

C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be

used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 2" deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

PART 3 - EXECUTION

3.1 INSTALLATION REQUIREMENTS

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual".

1. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be watertight and weatherproof.

B. Underlayment: Where aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.

C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

D. Install reglets to receive counter-flashing in manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division-3 sections.

Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division-4 sections.

1. Install counter-flashing in reglets, either by snap-in seal arrangement, or by wedging in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.

3.2 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION

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SECTION 07840 - FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in, or construction joints between, fire rated wall and floor assemblies.

1.3 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

A. Only tested firestop systems shall be used in specific locations as follows:

1. Gaps between the top of walls and ceilings or roof assemblies.
2. Openings and penetrations in fire-rated partitions or walls containing fire doors.
3. Openings around structural members which penetrate floors or walls.

1.4 RELATED WORK OF OTHER SECTIONS

A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including:

1. Section 03310 - Cast-In-Place Concrete
2. Section 04200 - Unit Masonry
3. Section 07900 - Joint Sealants
4. Section 09250 - Gypsum Board

1.5 REFERENCES

A. Test Requirements: ASTM E 814, "Standard Method of Fire Tests of Through Penetration Fire Stops"

B. Test Requirements: UL 1479, “Fire Tests of Through-Penetration Firestops”

C. Test Requirements: UL 2079, “Tests for Fire Resistance of Building Joint Systems”

D. Underwriters Laboratories (UL) of Northbrook, IL publishes tested systems in their "FIRE RESISTANCE DIRECTORY" that is updated annually.

1. UL Fire Resistance Directory:
   a. Firestop Devices (XHJI)
   b. Fire Resistance Ratings (BXRH)
   c. Through-Penetration Firestop Systems (XHEZ)
   d. Fill, Voids, or Cavity Material (XHHW)
   e. Forming Materials (XHKU)
   f. Joint Systems (XHBN)
   g. Perimeter Fire Containment Systems (XHDG)

2. Alternate Systems: “Omega Point Laboratories Directory” (updated annually).

   a. Test Requirements: ASTM E 1966, “Standard Test Method for Fire Resistive Joint Systems”

b. Test Requirements: ASTM E 2307, “Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate-Scale, Multi-story Test Apparatus”
c. Inspection Requirements: ASTM E 2174, “Standard Practice for On-site Inspection of Installed Fire Stops”
d. ASTM E 84, “Standard Test Method for Surface Burning Characteristics of Building Materials”
e. ASTM D6904, “Standard Practice for Resistance to Wind Driven Rain for Exterior Coatings Applied on Masonry”
f. ASTM C 679, “Standard Test Method for Tack-Free Time of Elastomeric Sealants”
g. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments
h. International Building Code (Most Current Version)
i. NFPA 101 - Life Safety Code
j. NFPA 70 - National Electric Code

1.6 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide through-penetration fire stop systems and fire-resistive joint systems that comply with specified requirements of tested systems.

B. Firestop System installation must meet requirements of ASTM E 814, UL 1479 or UL 2079

tested assemblies that provide a fire rating equal to that of construction being penetrated.

C. Proposed fire stop materials and methods shall conform to applicable governing codes having local jurisdiction.

D. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

E. For those firestop applications that exist for which no qualified tested system is available through a manufacturer, an engineering judgment derived from similar qualified tested system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment documents must follow requirements set forth by the International Firestop Council.

1.7 SUBMITTALS

A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of qualified tested firestop systems to be used and manufacturer's installation instructions to comply with Section 01 30 00.

B. Manufacturer's engineering judgment identification number and document details when no qualified tested system is available for an application. Engineering judgment must include both project name and contractor’s name who will install firestop system as described in document.

1. Submit safety data sheets provided with products delivered to job-site.

1.8 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer’s products per specified requirements. A supplier’s willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

B. Installation Responsibility: assign installation of through-penetration firestop systems and fire-resistive joint systems in Project to a single sole source firestop specialty contractor.

C. The work is to be installed by a contractor with at least one of the following qualifications:

1. FM 4991 Approved Contractor
2. UL Approved Contractor
3. Hilti Accredited Fire Stop Specialty Contractor

D. The installer must have no less than 3 years of experience with fire stop installation.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at jobsite.

C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.

D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

2. Do not use damaged or expired materials.

1.10 PROJECT CONDITIONS

A. Do not use materials that contain flammable solvents.

B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

C. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.

C. Provide a round fire-rated cable management device whenever cables penetrate fire rated walls, where frequent cable changes and additions may occur. The fire-rated cable management device shall consist of a corrugated steel tube with zinc coating, contain and inner plastic housing, intumescent material rings, and inner fabric smoke seal membrane. The length of the sleeve shall

be 12.4 inches. The fire-rated cable management device shall contain integrated intumescent firestop wrap strip materials sufficient to maintain the hourly rating of the barrier being penetrated. The fire-rated cable management device shall contain a smoke seal fabric membrane or intumescent firestop plugs sufficient to achieve the L-Rating requirements of the barrier type. Install device per the manufacturer's published installation instructions.

D. Penetrations in Fire Resistance Rated Walls: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

1. F-Rating: Not less than the fire-resistance rating of the wall construction being penetrated.

E. Penetrations in Horizontal Assemblies: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

1. F-Rating: Minimum of 1-hour rating, but not less than the fire-resistance rating of the floor construction being penetrated.
2. T-Rating: when penetrant is located outside of a wall cavity, minimum of 1-hour rating, but not less than the fire-resistance rating of the floor construction being penetrated.
3. W-Rating: Class 1 rating in accordance with water leakage test per UL 1479.

F. Penetrations in Smoke Barriers: Provide firestopping with ratings determined in accordance with UL 1479 or ASTM E 814.

1. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening at both ambient and elevated temperatures.

G. Mold Resistance: Provide penetration firestopping with mold and mildew resistance rating of one (0) as tested per ASTM G21.

H. Rain and water resistance: provide perimeter joint sealant tested in accordance with ASTM D 6904 with less than 1 hour tack free time as tested in accordance with ASTM C 679.

I. Firestopping Materials are either "cast-in-place" (integral with concrete placement) or "post installed." Provide cast-in-place firestop devices prior to concrete placement.

2.2 MANUFACTURERS

A. Subject to compliance with through penetration firestop systems (XHEZ), joint systems (XHBN), and perimeter firestop systems (XHDG) listed in Volume 2 of the UL Fire Resistance Directory; provide products of the following manufacturers as identified below:

1. Hilti, Inc., (Basis of Designe) | Plano, Texas | Ph: 800-879-8000 | www.us.hilti.com.

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.3 MATERIALS

A. Use only firestop products that have been UL 1479, ASTM E 814 or UL 2079 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Pre-formed firestop devices for use with noncombustible and combustible pipes (closed and open systems), conduit, and/or cable bundles penetrating concrete floors the following products are acceptable:

1. Hilti Cast-In Place Firestop Device (CP 680-P)
   a. Add Aerator Adaptor when used in conjunction with aerator system.

2. Hilti Cast-In Place Firestop Device (CP 680-M) for use with noncombustible penetrants.
3. Hilti Tub Box Kit (CP 681) for use with tub installations.
4. Hilti Firestop Speed Sleeve (CP 653) for use with cable penetrations.
5. Hilti Firestop Drop-In Device (CFS-DID) for use with noncombustible and combustible penetrants.
6. Hilti Firestop Block (CFS-BL)
7. Hilti Closet Stub (CFS-CID CS)

C. Sealants, caulking materials, or foams for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE MAX)
2. Hilti Fire Foam (CP 620)
3. Hilti Flexible Firestop Sealant (CP 606)
4. Hilti Firestop Silicone Sealant Gun Grade (CFS-S SIL GG)
5. Hilti Firestop Silicone Sealant Self Leveling (CFS-S SIL SL)

D. Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:

1. Hilti Silicone Sealant Gun Grade (CFS-S SIL GG)
2. Hilti Firestop Silicone Sealant Self Leveling (CFS-S SIL SL)
3. Hilti Flexible Firestop Sealant (CP 606)
4. Hilti Intumescent Firestop Sealant (FS-ONE MAX)

E. Sealants, sprays, or pre-formed materials for use with fire-rated construction joints and other gaps, the following products are acceptable:

1. Hilti Firestop Top Track Seal (CFS-TTS)
2. Hilti Firestop Joint Spray (CFS-SP WB)
3. Hilti Firestop Silicone Joint Spray (CFS-SP SIL)
4. Hilti Flexible Firestop Sealant (CP 606)
5. Hilti Firestop Silicone Sealant Gun Grade (CFS-S SIL GG)
6. Hilti Firestop Silicone Sealant Self Leveling (CFS-S SIL SL)
7. Hilti Bottom-of-Wall Sealant (CP 605)

F. Pre-formed mineral wool designed to fit flutes of metal profile deck and gap between top of wall and metal profile deck; as a backer for spray material.

1. Hilti Speed Plugs (CP 777)
2. Hilti Speed Strips (CP 767)

G. Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE MAX)

H. Foams, intumescent sealants, or caulking materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti Intumescent Firestop Sealant (FS-ONE MAX)
2. Hilti Fire Foam (CP 620)
3. Hilti Flexible Firestop Sealant (CP 606)
4. Hilti Firestop Silicone Sealant Gun Grade (CFS-S SIL GG)
5. Hilti Firestop Silicone Sealant Self Leveling (CFS-S SIL SL)

I. Non-curing, re-penetrable intumescent putty or foam materials for use with flexible cable or cable bundles, the following products are acceptable:

1. Hilti Firestop Putty Stick (CP 618)
2. Hilti Firestop Plug (CFS-PL)

J. Wall opening protective materials for use with U.L. listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:

1. Hilti Firestop Putty Pad (CFS-P PA)
2. Hilti Firestop Putty Pad (CP 617)
3. Hilti Firestop Box Insert

K. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable:

1. Hilti Firestop Collar (CP 643N)
2. Hilti Firestop Collar (CP 644)
3. Hilti Wrap Strips (CP 648-E/648-S)

L. Materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti Firestop Block (CFS-BL)
2. Hilti Composite Sheet (CFS-COS)
3. Hilti Firestop Mortar (CP 637)
4. Hilti Fire Foam (CP 620)
5. Hilti Firestop Board (CP 675T)

M. Non curing, re-penetrable materials used for large size/complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:

1. Hilti Firestop Block (CFS-BL)
2. Hilti Firestop Board (CP 675T)

N. Re-penetrable, round cable management devices for use with new or existing cable bundles penetrating gypsum or masonry walls, the following products are acceptable:

1. Hilti Firestop Speed Sleeve (CP 653) with integrated smoke seal fabric membrane.
2. Hilti Firestop Cable Collar (CFS-CC)
3. Hilti Firestop Sleeve (CFS-SL SK)
4. Hilti Retrofit Sleeve (CFS-SL RK) for use with existing cable bundles.
5. Hilti Gangplate (CFS-SL GP) for use with multiple cable management devices.
6. Hilti Gangplate Cap (CFS-SL GP CAP) for use at blank openings in gangplate for future penetrations.

O. Sealants or caulking materials used for openings between structurally separate sections of wall and floors, the following products are acceptable:

1. Hilti Firestop Joint Spray (CFS-SP WB)
2. Hilti Flexible Firestop Sealant (CP 606)
3. Hilti Firestop Silicone Sealant Gun Grade (CFS-S SIL GG)
4. Hilti Firestop Silicone Sealant Self Leveling (CFS-S SIL SL)

P. For blank openings made in fire-rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable:

1. Hilti Firestop Block (CFS-BL)
2. Hilti Firestop Plug (CFS-PL)

Q. For single or cable bundles up to one inch diameter penetrating gypsum, masonry, concrete walls or wood floor assemblies the following product is acceptable:

1. Hilti Firestop Cable Disc (CFS-D)

PART 3 - EXECUTION

3.1 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Verify penetrations are properly sized and in suitable condition for application of materials.
2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
5. Do not proceed until unsatisfactory conditions have been corrected.

3.2 COORDINATION

A. Coordinate construction of openings, penetrations and construction joints to ensure that the fire stop systems are installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration fire stop systems. Coordinate construction and sizing of joints to ensure that fire-resistive joint systems are installed according to specified requirements.

C. Coordinate fire stopping with other trades so that obstructions are not placed in the way prior to the installation of the fire stop systems.

D. Do not cover up through-penetration fire stop and joint system installations that will become concealed behind other construction until each installation has been examined by the building inspector.

3.3 INSTALLATION

A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory or Omega Point Laboratories Directory.

B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration and construction joint materials.

1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
3. Protect materials from damage on surfaces subjected to traffic.

3.4 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

B. Keep areas of work accessible until inspection by applicable code authorities.

C. Inspection of through-penetration firestopping shall be performed in accordance with ASTM E 2174, “Standard Practice for On-Site Inspection of Installed Fire Stops” or other recognized standard.

D. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

E. Manufacturer’s Field Services: Contractor to ensure a manufacturer’s direct representative is available for on-site visits during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. Training will be done per manufacturer’s written recommendations published in their literature and drawing details. During installation, contractor shall have manufacturer’s representative provide periodic visual observations and written documentation of the results. Contact Hilti for support at 800.879.8000.

3.5 IDENTIFICATION & DOCUMENTATION

A. The firestop contractor is to supply documentation for each single application addressed. This documentation is to identify each penetration and joint location on the entire project.

B. The Documentation Form for through penetrations is to include:

1. A Sequential Location Number
2. The Project Name
3. Date of Installation
4. Detailed Description of the Penetration’s Location
5. Tested System or Engineered Judgment Number
6. Type of Assembly Penetrated
7. A Detailed Description of the Size and Type of Penetrating Item
8. Size of Opening
9. Number of Sides of Assemblies Addressed
10. Hourly Rating to be Achieved
11. Installer’s Name

C. The Documentation Form for Construction Joints is to include:

1. A Sequential Location Number
2. The Project Name
3. Date of Installation
4. Detailed Description of the Construction Joint’s Location
5. Tested System or Engineered Judgment Number
6. Type of Construction Joint
7. The Width of the Joint
8. The Lineal Footage of the Joint
9. Number of Sides Addressed
10. Hourly Rating to be Achieved
11. Installer’s Name

D. Copies of these documents are to be provided to the general contractor at the completion of the project.

E. Identify through-penetration firestop systems with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:

1. The words: "Warning: Through Penetration Firestop System – Do Not Disturb. Notify Building Management of Any Damage."
2. Contractor's name, address and phone number.
3. Through-penetration firestop system designation of applicable testing and inspecting agency.
4. Date of installation.
5. Through-penetration firestop system manufacturer's name.
6. Installer's name.

F. A firestop documentation manager software shall be used to document, track, and maintain the passive firestop systems throughout the construction and maintenance phase of the facility. The software solution shall be used to track and document every firestop system installed on the project and each subsequent addition, change, or removal of the firestop system. The firestop documentation shall be managed with a cloud-based software which allows the installer to use a standard smartphone or tablet device (either iOS, Android or Windows capable) to capture the relevant information for the installation. The following data shall be tracked for each penetration within the facility: product installed, system installed, date of installation, location of the penetration including a notation on the 2D plan image, F-rating, name of installer, photo (pre-installation and post-installation), and inspection status. The Owner and/ or Construction Manager may designate additional items to be tracked. The firestop documentation manager software must perform the following basic functions:

1. Create multiple projects/ facilities, add/create/ remove users for each project, upload documents including UL systems, 2D floor plans, product data, engineering judgments, etc.
2. Define data to track using pre-defined input fields or creating custom input fields as desired.
3. Capture multiple photos for each penetration, including a pre-installation and post-installation photo.
4. Scan QR Code on Hilti identification label to link the program data to a specific penetration location.
5. Annotate (mark) location of penetration on 2D floor plan.
6. Create reports by filtering data and utilizing report templates.
7. Online/ offline (for use in areas where data service is unavailable) synchronization of data between mobile devices, online applications and cloud-based system.
8. Ability to transfer ownership of projects from one customer to another from construction phase to facility maintenance.

G. Permanently attach Hilti identification labels to surfaces adjacent to and within 6 inches (150 mm) of firestopping edge so labels will be visible to anyone seeking to remove or change penetrating items or firestopping. Labels shall have a unique QR code for each penetration which can be scanned by the firestop documentation software to quickly identify the penetration attributes.

H. Acceptable Software: Hilti CFS-DM, from Hilti Inc., Plano, TX. Tel (800) 879-8000 or Hilti (Canada) Corporation, Mississauga, Ontario (800) 363-4458 website: www.us.hilti.com or www.hilti.ca.com

1. Substitutions: Not permitted.

2. Single Source: Obtain firestop documentation manager software and firestop systems for each type of penetration and construction condition indicated only from a single manufacturer.

3.6 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean conditions.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

3.7 LABOR USE TO INSTALL FIRESTOP SYSTEMS

A. If firestopping is not assigned to a single-source firestop specialty contractor, the installation of each scope of work is to be performed jurisdictionally correct per existing trade agreements.

3.8 SCHEDULE OF COMMON FIRESTOP SYSTEMS

A. Schedule of joint firestop systems. Basis of design: Hilti, Inc.

Joint Type	F-Rating (Hr)	Hilti Basis of Design UL System	
		Joint Width Less than or Equal to 2"	Joint Width Greater than 2" Less than or Equal to 6" [4]
Concrete (**Floor to Floor**)	1	FF-D-1012, FF-D-1013[1]	FF-D-1012, FF-D-1013
	2	FF-D-1012, FF-D-1013[1]	FF-D-1012, FF-D-1013
	3	FF-D-1011, FF-D-1026[1]	FF-D-1011, FF-D-1026
	4	FF-D-1047	FF-D-1125
Concrete (**Edge of Floor Slab to Wall)**	1	FW-D-1011, FW-D-1012, FW-D-1013	FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021
	2	FW-D-1011, FW-D-1012, FW-D-1013	FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021
	3	FW-D-1011	FW-D-1011, FW-D-1021
	4	FW-D-1047	FW-D-1092
Concrete or Block Wall to Flat Concrete Floor (**Top-of-Wall**)	1	N/A**	N/A**
	2	HW-D-0097[1]	HW-D-1009
	3	HW-D-1008[1], HW-D 0268	HW-D-1008
	4	HW-D-1042	HW-D-1103
Concrete or Block Wall to Concrete Over Fluted Metal Deck (**Top-of-Wall)**	1	HW-D-0098	N/A**
	2	HW-D-0080, HW-D-0081, HW-D-0098	HW-D-1037
	3	N/A**	N/A**
	4	HW-D-0294	N/A**
Gypsum Wall to Flat Concrete Floor (**Top-of-Wall)**	1	HW-D-0757, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
	2	HW-D-0757, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
	3	HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
Gypsum Shaft Wall to (**Top-of-Wall)**	2	HW-D-0342 (FLAT CONCRETE) HW-D-0541, HW-D-0542 (CONCRETE OVER METAL DECK)	N/A**
	1	BW-S-0023	N/A**

Gypsum Shaft Wall to Concrete Floor (**Bottom-of-Wall)**	2	BW-S-0023	N/A**
Gypsum Wall to Concrete Floor (**Bottom-of-Wall)**	1	BW-S-0001, BW-S-0002, BW-S-0039	N/A**
	2	BW-S-0001, BW-S-0002, BW-S-0039	N/A**
Gypsum Wall to Concrete Over Fluted Metal Deck (**Top-of-Wall)**	1	HW-D-0042*, HW-D-0049*, HW-D-0087*, HW-D-0089*, HW-D-0045, HW-D-0046*, HW-D-0076*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-0292, HW-D-0295, HW-D-538*	HWD-1011, HWD-1012, HW-1020
	2	HW-D-0042*, HW-D-0049*, HW-D-0087*, HW-D-0089*, HW-D-0045, HW-D-0046*, HW-D-0076*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-292, HW-D-0295, HW-D0538*	HW-D-1011, HW-D-1012, HW-D-1020
	3	HW-D-0292, HW-D-0295	HWD-1011, HWD-1012, HW-1020
	4	HW-D-0292, HW-D-0295	N/A**
Concrete (**Wall to Wall**)	2	WW-D-0017, WW-D-0082	WW-D-1080, WW-D-1084
	3	WW-D-1011[1], WW-D-0032	WW-D-1011
	4	WW-D-1047	WW-D-1128
Gypsum to Concrete (**Wall to Wall)**	1	WW-D-0040	N/A**
	2	WW-D-0040	N/A**

* SEE NOTE 3 ** CONTACT HILTI FOR CURRENT UL-CLASSIFIED SYSTEM OR ENGINEER JUDGMENT DRAWING: 800-879-8000

NOTES:

1. CLASSIFIED SYSTEMS FOR 2" - 6" WIDE JOINTS MAY BE USED FOR JOINTS 2" WIDE AND LESS.
2. CONFIRM THAT MOVEMENT CAPABILITIES OF THE SELECTED UL SYSTEM MEETS OR EXCEEDS THE SPECIFIED MOVEMENT RANGE OF
3. THE PARTICULAR JOINT.
4. SYSTEMS MARKED WITH ASTERIK (*) ARE SUITABLE FOR TOP-OF-WALL JOINTS WHERE THE FLUTED METAL
5. DECK HAS SPRAY-ON MONOKOTE MK-6/HY FIREPROOFING.
6. VERIFY ALLOWABLE JOINT WIDTH ON SPECIFIC UL SYSTEM DRAWING.

B. Schedule of through penetration firestop systems. Basis of design: Hilti, Inc.

CONCRETE FLOORS			CONCRETE OR BLOCK WALLS		
TYPE OF PENETRANT	**F-RATING (HR)**	**BASIS OF DESIGN UL SYSTEM**	**TYPE OF PENETRANT**	**F-RATING (HR)**	**BASIS OF DESIGN UL SYSTEM**

CIRCULAR BLANK OPENINGS	1	F-A-0006, C-AJ-0055, C-AJ-0090	CIRCULAR BLANK OPENINGS	1	C-AJ-0055, C-AJ-0090
	2	F-A-0006, C-AJ-0055, C-AJ-0090		2	C-AJ-0055, C-AJ-0090
	3	F-A-0006, C-AJ-0055, C-AJ-0086,		3	C-AJ-0055, C-AJ-0086
SINGLE METAL PIPES OR CONDUIT	1	C-AJ-1226, F-A-1028, F-A-1017	SINGLE METAL PIPES OR CONDUIT	1	C-AJ-1226, W-J-1067, W-J-1020
	2	C-AJ-1226, F-A-1028, F-A-1017		2	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248
	3	C-AJ-1226, F-A-1017		3	C-AJ-1226, W-J-1041, W-J-1068
	4	C-BJ -1037, C-BJ-1034		4	C-BJ-1034, C-BJ-1037, W-J-1041, W-J-1042, W-J-1068
SINGLE NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167,	SINGLE NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT)	1	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342
	2	C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342		2	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342
	3	F-A-2054, C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342		3	C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342
	4	C-BJ 2016, C-AJ-2017		4	W-J-2057, W-J-2091
SINGLE/CABLE BUNDLES	1	F-A-3007,C-AJ-3095,C-AJ-3180, C-AJ-3283	SINGLE/CABLE BUNDLES	1	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167
	2	F-A-3007,C-AJ-3095,C-AJ-3334, F-A-3060		2	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189
	3	F-A-3007, C-AJ 3095, C-AJ-3285		3	C-AJ-3095, C-AJ-3180, W-J-3167
				4	W-J-3050
CABLE TRAY	1	C-AJ-4034, C-AJ-4035	CABLE TRAY	1	W-J-4027, C-AJ-4034, C-AJ-4035
	2	C-AJ-4034, C-AJ-4035		2	W-J-4027, C-AJ-4034, C-AJ-4035
	3	C-AJ-4034, C-AJ-4035		3	C-AJ-4034, C-AJ-4035
				4	W-J-8007
SINGLE INSULATED PIPES	1	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090, C-AJ-5048	SINGLE INSULATED PIPES	1	C-AJ-5090, C-AJ-5091, C-AJ 5061, W-J-5042
	2	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090		2	C-AJ-5090, C-AJ-5091, C-AJ-5061, W-J-5042
	3	F-A 5016, C-AJ-5090, F-A-5018		3	C-AJ-5090, C-AJ-5061
	4	C-BJ-5006		4	C-BJ-5006, W-J-5028
ELECTRICAL BUSWAY	1	C-AJ-6006, C-AJ-6017, F-A-6002, C-AJ-6036	ELECTRICAL BUSWAY	1	C-AJ-6006, C-AJ-6017, C-AJ-6036

	2	C-AJ-6006, C-AJ-6017, F-A 6042, C-AJ-6036		2	C-AJ-6006, C-AJ-6017, C-AJ-6036
	3	C-AJ-6006, C-AJ-6017		3	C-AJ-6006, C-AJ-6017
MECHANICAL DUCTWORK WITHOUT DAMPERS NON-INSULATED	1	C-AJ-7046, C-AJ-7051, C-AJ-7084	MECHANICAL DUCTWORK WITHOUT DAMPERS NON-INSULATED	1	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022
	2	C-AJ-7046, C-AJ-7051, C-AJ-7085		2	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022
	3	C-AJ-7046, C-AJ-7051		3	C-AJ-7046, C-AJ-7051
MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	N/A**	N/A**	MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	1	W-J-7029, W-J-7124
				2	W-J-7091, W-J-7112, W-J-7124
MIXED PENETRANTS	1	C-AJ 8099, C-AJ-8056, C-AJ-8143	MIXED PENETRANTS	1	C-AJ 8099, C-AJ 8056, W-J 8007, C-AJ 8143
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143		2	C-AJ 8099, C-AJ 8056, W-J 8007, C-AJ 8143
	3	C-AJ-8099, C-AJ-8056		3	C-AJ 8041, C-AJ 8056, W-J 8007, C-AJ 8099
	4	C-AJ-8095		4	C-AJ 8095, W-J 8007
WOOD FLOORS			**GYPSUM WALLS**		
TYPE OF PENETRANT	**F-RATING (HR)**	**BASIS OF DESIGN UL SYSTEM**	**TYPE OF PENETRANT**	**F-RATING (HR)**	**BASIS OF DESIGN UL SYSTEM**
METAL PIPES OR CONDUIT	1	F-C-1009, F-C-1059, F-C-1168	METAL PIPES OR CONDUIT	1	W-L-1054, W-L-1058, W-L-1164, W-L-1506
	2	F-C-1009, F-C-1059, F-C-1168		2	W-L-1054, W-L-1058, W-L-1164, W-L-1506
				4	W-L-1110, W-L-1111, W-L-1165
NON-METALLIC PIPE OR CONDUIT	1	F-C-2232, F-C-2030, F-C-2160, F-C-2389	NON-METALLIC PIPE OR CONDUIT	1	W-L-2078, W-L-2075, W-L-2128
	2	F-C-2029, F-C-2030, F-C-2128, F-C-2160		2	W-L-2078, W-L-2075, W-L-2128
				4	W-L-2184, W-L-2245
SINGLE OR BUNDLED CABLES	1	F-C-3012, F-C-3110, F-C-3044	SINGLE OR BUNDLED CABLES	1	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396
	2	F-C-3012, F-C-3110		2	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396
				3	W-L-3385, W-L-3277
				4	W-L-3139, W-L-3334
INSULATED PIPES	1	F-C-5004, F-C-5037, F-C-5036	CABLE TRAY	1	W-L-4011, W-L-4019, W-L-4081
				2	W-L-4011, W-L-4019, W-L-4081
				4	W-L 8014

	2	F-C-5004, F-C-5037	INSULATED PIPES	1	W-L-5028, W-L-5029, W-L-5047
				2	W-L-5028, W-L-5029, W-L-5047
				4	W-L-5073
NON-INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	F-C-7013	NON-INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	W-L 7017, W-L-7040, W-L-7042, W-L-7155
				2	W-L-7040, W-L-7042, W-L-7155
INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	N/A**	INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	W-L-7059, W-L-7153, W-L-7156, W-L-7151
	2	N/A**		2	W-L-7059, W-L-7153, W-L-7156, W-L-7151
MIXED PENETRANTS	1	F-C-8009, F-C-8014, F-C-826	MIXED PENETRANTS	1	W-L-1095, W-L-8013
				2	W-L-1095, W-L-8013
				4	W-L-8014

END OF SECTION

SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. The extent of each form and type of joint sealer is indicated on drawings and by provisions of this section.

B. The applications for joint sealers as work of this section include the following:

1. Joints (Interior).
2. Joints (Exterior).
3. Flashing Joints.
4. Interior wall/ceiling joints.

C. General Performance: Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicted for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

1.4 JOB CONDITIONS

A. Weather Conditions: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature by manufacturer for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. General: Manufacturers listed in this article include those known to produce the indicated category of prime joint sealant material, either as a nominally pure generic product or as an equivalent-performance modification thereof or proprietary product.

B. Manufacturers: The following manufacturer's products have been used to establish minimum standards for materials, workmanship and function:

1. Acrylic Emulsion Latex Sealants:
    a. Bostik.
    b. Pecora Corp.
    c. Sonneborn Building Products.
    d. Tremco, Inc.
2. Polyurethane Sealants:
    a. Bostik.
    b. Master Builders.
    c. Pecora Corp.
    d. Sonneborn Building Products.
    e. Tremco, Inc.

3. Butyl Sealants:
    a. Bostik.
    b. TEC Incorporated.
    c. Tremco, Inc.
4. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. NOTE: The use of silicone sealants shall not be used at any exterior conditions.

B. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component. (Silicone sealant shall not be used at exterior conditions).
    1. Color: Standard colors matching finished surfaces.
    2. Applications: Use for:
        a. Control, expansion, and soft joints in masonry, stone or concrete.
        b. Joints between concrete and other materials.
        c. Joints between metal frames and other materials.
        d. Other exterior joints for which no other sealant is indicated.

C. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
    1. Applications: Use for:
        a. Concealed sealant bead in sheet metal work.

D. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, single component, paintable.
    1. Color: Standard colors matching finished surfaces.
    2. Applications: Use for:
        a. Interior wall and ceiling control joints.
        b. Joints between door and window frames and wall surfaces.
        c. Other interior joints for which no other type of sealant is indicated.

E. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, nonskinning.
    1. Applications: Use for concealed locations only:
        a. Sealant bead between top stud runner and structure and between bottom stud track and floor or wall.

F. Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 25, Uses T, M and

    A; single component.
    1. Color: Standard color matching finished surfaces.
    2. Applications: Use for:
        a. Joints in sidewalks and paving, either vehicular or pedestrian.
        b. Isolation joints and control joints in slabs on grade.

G. Bituminous and Fiber Joint Filler (BtmF-JF) provide resilient and non-extruding type premolded bituminous-impregnated fiberboard units complying with ASTM D 1751; FS HH-F-341, Type I; or AASHTO M213.

H. Miscellaneous Materials:

1. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.

2. Bond Breaker Tape (BB-Tp): Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape where applicable.

3. Sealant Backer Rod (S-BR): Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other recommended by sealant manufacturer for back-up of and compatibility with sealant. Where used with hot-applied sealant, provide heat-resistant type which will not be deteriorated by sealant application temperature as indicated.

   a. Rod Size to Joint Width: Size of all backer rod width shall be 2 times the width of joint/gap to be sealed.

PART 3 - EXECUTION

3.1 INSPECTION

A. Installer must examine substrates (joint surfaces) and conditions under which joint sealer work is to be performed and must notify Prime Contractor of unsatisfactory conditions.

3.2 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of gaskets, sealants or caulking compounds. Remove dirt, insecure coatings, moisture and other substrates which could interfere with seal of gasket or bond of sealant of caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.

B. Prime or seal joint surfaces where indicated and where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION

A. Comply with manufacturer's printed instructions except where more stringent requirements are shown on specified, and except where manufacturer's technical representative directs otherwise.

B. Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealant. Do not leave voids or gaps between ends of joint filler units.

C. Install sealant backer rod for liquid-applied sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated.

D. Install bond breaker tape where indicated and where required by manufacturer's recommendations to ensure that liquid-applied sealants will perform as intended.

E. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

F. Install sealant to depths as shown or, if not shown, as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads;

G. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.

H. Spillage: Do not allow sealants or compounds to overflow from confines of joints, or to spill onto

adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

I. Recess exposed edges of gaskets and exposed joint fillers slightly behind adjoining surfaces, unless otherwise shown, so that compressed units will not protrude from joints.

J. Bond ends of gaskets together with adhesive of “weld” by other means as recommended by manufacturer to ensure continuous watertight and airtight performance. Miter-cut and bond ends at corners unless molded corner units are provided.

3.4 CURE AND PROTECTION

A. Cure sealants and caulking compounds in compliance with manufacturer’s instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability. Advise Prime Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion. Cure and protect sealants in manner which will minimize increases in modulus of elasticity and other accelerated aging effects. Replace or restore sealants which are damaged or deteriorated during construction period.

END OF SECTION

SECTION 08100 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes:

1. Steel Doors
2. Steel Frames.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 4 Section "Unit Masonry" for building anchors into and grouting frames in masonry construction.
2. Division 8 Section "Wood Doors" for solid-core wood doors installed in steel frames.
3. Division 8 Section "Finish Hardware" for door hardware and weatherstripping.
4. Division 8 Section "Glazing" for glass in steel doors and sidelights.
5. Division 9 Section "Gypsum Board Assemblies".
6. Division 9 Section "Painting".

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.

C. Shop Drawings showing fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

D. Door Schedule: Submit schedule of doors and frames using same reference numbers for details and openings as those on Contract Drawings.

1. Indicate coordination of glazing frames and stops with glass and glazing requirements.

E. Samples for initial selection in the form of manufacturer's color charts showing the full range of colors available for factory-finished doors and frames.

F. Samples for verification of each type of exposed finish required, prepared on Samples not less than 3 by 5 inches (75 by 125 mm) and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

G. Oversize Construction Certification: For door assemblies required to be fire rated and exceeding limitations of labeled assemblies, submit certification of a testing agency acceptable to authorities having jurisdiction that each door and frame assembly has been constructed to conform to design, materials, and construction equivalent to requirements for labeled construction.

1.4 QUALITY ASSURANCE

A. Provide doors and frames complying with ANSI/SDI 100 "Recommended Specifications for Standard Steel Doors and Frames" and as specified.

B. Fire-Rated Door Assemblies: Units that comply with NFPA 80, are identical to door and frame assemblies tested for fire-test-response characteristics per ASTM E 152, and are labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a testing agency acceptable to authorities having jurisdiction that doors conform to all standard construction requirements of tested and labeled fire-rated door assemblies except for size.

2. Temperature-Rise Rating: Where indicated, provide doors that have a temperature-rise rating of 450 deg F (250 deg C) maximum in 30 minutes of fire exposure.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.

B. Inspect doors and frames on delivery for damage. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4-inch- (100-mm-) high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If cardboard wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch (6-mm) spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Pioneer Industries

2. Rocky Mountain Metals, Inc.

3. Republic Doors & Frames/Allegion

4. Steelcraft - Allegion

2.2 MATERIALS

A. Hot-Rolled Steel Sheets and Strip: Commercial-quality carbon steel, pickled and oiled, complying with ASTM A 569 (ASTM A 569M).

B. Cold-Rolled Steel Sheets: Carbon steel complying with ASTM A 366 (ASTM A 366M), commercial quality, or ASTM A 620 (ASTM A 620M)

C. Galvannealed Steel Sheets: Galvannealed Steel Sheet: ASTM A 653/ A 653M, commercial quality, hot dipped. Coating Thickness: A60 coating.

D. Supports and Anchors: Fabricated from not less than 0.0478-inch- (1.2-mm-) thick steel sheet; 0.0516-inch- (1.3-mm-) thick galvanized steel where used with galvanized steel frames.

E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize complying with ASTM A 153, Class C or D as applicable.

2.3 DOORS

A. Steel Doors: Provide 1-3/4-inch- (44-mm-) thick doors of materials and ANSI/SDI 100 grades and models specified below, or as indicated on Drawings or schedules:

1. Interior Doors: Grade 2, heavy-duty, Model 1, visible edge seam design, 18 gauge / minimum 0.0478-inch thick cold-rolled steel sheet faces.

2. Exterior Doors: Grade 3, heavy-duty, Model 1, visible edge seam design, 16 gauge / minimum 0.0635-inch thick A60 galvannealed steel sheet faces.

B. Door Louvers: Provide louvers according to SDI 111C for interior doors where indicated, with blades or baffles formed of 0.0239-inch- (0.6-mm-) thick cold-rolled steel sheet set into minimum 0.0359-inch- (0.9-mm-) thick steel frame.

1. Sight-Proof Louvers: Stationary louvers constructed with inverted V- shaped or Y-shaped blades.

C. Low Profile Lite Kits: All lite kits must be minimum 18 ga. cold rolled steel, mitered and welded corners, welded reinforcing clips at corners, counter-sunk mounting screw- holes.

2.4 FRAMES

A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, according to ANSI/SDI 100, and of types and styles as shown on Drawings and schedules.

B. Conceal fastenings, unless otherwise indicated. Fabricate frames as follows:

1. Fabricate frames with mitered or coped and face welded corners.

2. Interior Frames: 16 gage cold rolled steel

3. Exterior Frames: 14 gage A60 galvannealed steel.

C. Door Silencers: Except on weather stripped frames, drill stops to receive 3 silencers on strike jambs of single-door frames and 2 silencers on heads of double-door frames.

D. Plaster Guards: Provide minimum 0.0179-inch- (0.45-mm-) thick steel plaster guards or mortar boxes at back of hardware cutouts where mortar or other materials might obstruct hardware operation and to close off interior of openings.

E. Grout: When required in masonry construction, as specified in Division 4 Section "Unit Masonry."

2.5 FABRICATION

A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.

1. Internal Construction: One of the following manufacturer's standard core materials according to SDI standards:

a. Interior Doors: 3/4" Cell Honeycomb

b. Exterior Doors: Insulated Polystyrene

2. Clearances:

a. Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between non-fire-rated pairs of doors.

b. Not more than 3/4 inch (19 mm) at bottom.

c. Fire Doors: Provide clearances according to NFPA 80.

3. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

B. Galvannealed Steel Doors, Panels, and Frames: For the following locations, fabricate doors, panels, and frames from galvannealed steel sheet according to SDI 112.

1. At exterior locations.

2. Where indicated.

C. Close top and bottom edges of doors flush as an integral part of door construction or by addition

of minimum 0.0635-inch- (1.6-mm-) thick galvanized steel channels, with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.

D. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

E. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal-insulating door and frame assemblies and tested according to ASTM C 236 or ASTM C 976 on fully operable door assemblies.

1. Unless otherwise indicated, provide thermal-rated assemblies with U- value rating of 0.41 Btu/sq. ft. x h x deg F (2.33 W/sq. m x K) or better

F. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier.

G. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.

1. For concealed overhead door closers, provide space, cutouts, reinforcing, and provisions for fastening in top rail of doors or head of frames, as applicable.

H. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

I. Locate hardware as indicated on Shop Drawings or, if not indicated, according to the Door and Hardware Institute's (DHI) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

J. Glazing Stops: Minimum 0.0359-inch- (0.9-mm-) thick steel or 0.040-inch- (1-mm-) thick aluminum.

1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.

2. Provide screw-applied, removable, glazing beads on inside of glass, louvers, and other panels in doors.

2.6 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for steel sheet finishes. Apply primers and organic finishes to doors and frames after fabrication.

2.7 GALVANIZED STEEL SHEET FINISHES

A. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight and complying with DOD-P-21035 or SSPC- Paint 20.

B. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply air-dried primer specified below immediately after cleaning and pretreatment.

1. Shop Primer: Zinc-dust, zinc-oxide primer paint complying with performance requirements of FS TT-P-641, Type II.

2.8 STEEL SHEET FINISHES

A. Surface Preparation: Solvent-clean surfaces to comply with SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel to comply with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling).

B. Pretreatment: Immediately after surface preparation, apply a conversion coating of type suited to organic coating applied over it.

C. Factory Priming for Field-Painted Finish: Apply shop primer that complies with ANSI A224.1

acceptance criteria, is compatible with finish paint systems indicated, and has capability to provide a sound foundation for field-applied topcoats. Apply primer immediately after surface preparation and pretreatment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions of SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Except for frames located in existing concrete, masonry, or gypsum board assembly construction, place frames before constructing enclosing walls and ceilings.

2. In masonry construction, install at least 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.

3. At existing concrete or masonry construction, install at least 3 completed opening anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with bolts and masonry anchorage devices.

4. Install fire-rated frames according to NFPA 80.

A. Door Installation: Fit hollow-metal doors accurately in frames, within clearances specified in ANSI/SDI 100.

1. Fire-Rated Doors: Install with clearances specified in NFPA 80.

2. Smoke-Control Doors: Comply with NFPA 105.

3.2 ADJUSTING AND CLEANING

A. Prime Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

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SECTION 08214 - HIGH-PRESSURE LAMINATE FACED DOORS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Interior High-Pressure Decorative Laminate Faced Doors:

1. Flush solid-core high-pressure decorative laminate doors.
2. Flush fire-rated high-pressure decorative laminate doors.
3. Sound-retardant doors.

1.2 RELATED SECTIONS

A. Section 08100 – Metal Frames.

B. Section 08700 – Door Hardware.

C. Section 08800 – Glazing.

1.3 REFERENCES

A. ANSI A208.1 – Particleboard.

B. ASTM E 90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

C. ASTM E 413 – Classification for Rating Sound Insulation.

D. AWI/AWMAC/WI Architectural Woodwork Standards, Edition 1, Section 9 – Doors.

E. NFPA 80 – Standard for Fire Doors and Other Opening Protectives.

F. UL 10C – Positive Pressure Fire Tests of Door Assemblies.

G. WDMA Finish System TR-6, Catalyzed Polyurethane.

H. WDMA I.S. 1A-11 – Architectural Wood Flush Doors.

1.4 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data: Product data for each type of door, including details of core and edge construction, trim for openings and louvers, and factory-finishing laminate specifications. Submit manufacturer's product data, including door construction description and WDMA I.S.1-A and AWS classifications.

C. Comply with Section 01330 – Submittal Procedures.

D. Comply with Section 01600 – Product Requirements.

E. Shop Drawings: Shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for veneer matching and factory finishing and other pertinent data.

1. For factory-machined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.

F. Schedules: Submit manufacturer's schedules, including door dimensions, cutouts, species, finish, and hardware. Reference individual door numbers as indicated on the Drawings.

G. Samples for initial selection in the form of color charts consisting of actual materials in small sections for the following:

1. Submit manufacturer's door finish samples, showing range of color variation.

H. Samples for verification in the form and size indicated below:

1. Corner sections of doors approximately 12 inches (300 mm) square with door faces and edgings representing the typical range of color and grain for each species of veneer and solid lumber required. Finish sample with same materials proposed for factory laminate finished doors.

I. Test Reports: Submit manufacturer's test results of STC ratings from testing performed by independent testing agency for sound-retardant doors.

J. Manufacturer's Certification: Submit manufacturer's certification that doors comply with specified requirements and are suitable for intended application.

K. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.

L. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Tolerances for Warp, Telegraphing, Squareness, and Prefitting Dimensions: WDMA I.S.1-A.

B. Identifying Label: Each door shall bear identifying label indicating:

1. Door manufacturer.
2. Order number.
3. Door number.
4. Fire rating, if applicable.

C. Fire-Rated Doors: Labeled by Intertek/Warnock Hersey.

1. Construction Details and Hardware Application: Approved by labeling agency.
2. Fire-Rated Wood Doors: Provide wood doors that comply with NFPA 80; are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152; and are labeled and listed by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.
    a. Oversized Fire-Rated Wood Doors: For door assemblies exceeding sizes of tested assemblies, provide manufacturer's certificate stating that doors conform to all standard construction requirements of tested and labeled fire-door assemblies except for size.
    b. Temperature Rise Rating: At stairwell enclosures, provide doors that have a temperature rise rating of 450 deg F (250 deg C) maximum in 30 minutes of fire exposure.
    c. Temperature Rise Rating: At stairwell enclosures, provide doors that have a temperature rise rating of 250 deg F (139 deg C) maximum in 30 minutes of fire exposure.

D. Single-Source Responsibility: Obtain all doors from one source and by a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. Deliver doors to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
2. Package doors individually in polybags.

B. Storage:

1. Store doors in accordance with manufacturer's instructions.
2. Store doors in clean, dry area indoors, protected from damage and direct sunlight.
3. Store doors flat on level surface.
4. Do not store doors directly on concrete.
5. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.

6. Store doors between 50 and 90 degrees F (10 and 32 degrees C) and 30 to 50 percent relative humidity.

C. Handling:

1. Handle doors in accordance with manufacturer's instructions.
2. Protect doors and finish during handling and installation to prevent damage.
3. Handle doors with clean hands or clean gloves.
4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.7 PROJECT CONDITIONS

A. Conditioning: Do not deliver or install doors until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not subject doors to extreme conditions or changes in temperature or relative humidity in accordance with WDMA I.S.1-A.

1.9 WARRANTY

A. General Warranty: Door manufacturer's 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. Warrant solid core, interior doors for life of installation against warpage, delamination, and defects in materials and workmanship.

C. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form signed by manufacturer, Installer, and Contractor, agreeing to replace any door exhibiting the following:

1. Delamination
2. Warp or Twist of ¼ inch or more in any 3-'6" x 7'-0" section of door.
3. Telegraphing of any part of core assembly through face to cause surface variation of 1/100 inch or more in a 3 inch span.
4. Defects which may impair or affect performance of door for its intended purpose.

D. All replacement cost shall be at no cost to Owner. Corrective work shall include labor and material for replacement, rehanging/installation of door and all door hardware as required.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Oshkosh Door Company; 2501 Universal Street, P.O. Box 2468, Oshkosh, WI 54904; Toll Free (800) 827-1615; Phone (712) 368-4381 or 920.233.6161; www.oshkoshdoor.com.

B. VT Industries; 1000 Industrial Park, P.O. Box 490, Holstein, IA 51025; Ph.: 712.368.4381; www.vtindustries.com.

C. Masonite Architectural; 1401 E 4th St, Marshfield, WI 54449; Phone: (715) 486-2200; www.architectural.masonite.com.

2.2 FLUSH SOLID-CORE HIGH-PRESSURE DECORATIVE LAMINATE DOORS

A. Flush Solid-Core High-Pressure Decorative Laminate Doors:

1. Core: Solid, non-fire rated, Particleboard Core, ANSI A208.1, Grade LD-2 or better.

a. Composite Crossband:

i. Apply to core in hot press using Type I, exterior, water-resistant adhesive before application of hardwood edges.

ii. Exposed Crossbanding: Not allowed along stile edges.

2. Construction: 5 ply; Stiles and rails are bonded to core, and entire unit is then abrasive planed before veneering.
3. Industry Performance Standards: WDMA I.S.1-A.
   a. Aesthetic Grade: Premium.
4. Door Thickness: 1-3/4 inches.
5. STC Rating: (If Applicable)
   a. STC 31 when installed with appropriate gasketing on 1 ¾" doors only.
6. Stiles:
   a. Structural composite lumber (SCL).
   b. Edged with high-pressure decorative laminate. Matching laminate edges applied after face.
7. Rails:
   a. Structural composite lumber (SCL).
   b. Top and Bottom rails Factory sealed.
   c. Top rail blocking for all door closure types is required.
8. Door Assembly:
   a. Stiles and rails bonded to core.
   b. Monolithically sand core assembly to ensure minimum telegraphing of core components.
9. Faces:
   a. Face laminate doors with High-Pressure Decorative Laminates complying with NEMA LD3, Grade HGS.
      i. Grade: General purpose, horizontal grade.
      ii. Apply to core in hot press using Type I, exterior, water-resistant adhesive.
   b. Nominal Minimum Thickness for Faces and Vertical Edges: 0.048 inch.
   c. Laminate Selection: Standard products of Formica, Nevamar, Pionite, Wilsonart, or pre-approved equal.
      i. Finish: Architect to Select color from Manufacturer's standards after Bid Date.
10. Accessories:
    a. Vision Panels: Manufacturers standard wood lipped vision frame as indicated on drawings provided and factory installed by door manufacturer. Wood frames to be painted or stained as selected by Architect after Bid Date.
    b. Glazing: As specified in Section 08800, Glazing.
    c. Louvers: Manufacturers standard wood louvers as indicated on drawings provided and factory installed by door manufacturer. Provide with powder coated finish.

2.3 FLUSH FIRE-RATED HIGH-PRESSURE DECORATIVE LAMINATE DOORS

A. Flush Fire-Rated High-Pressure Decorative Laminate Doors:

1. Match appearance grade and applicable construction and performance requirements of other Flush Solid Core High Pressure Decorative Laminate Doors.

2. Provide units with applicable fire ratings as indicated on drawings.
3. Provide units tested in door and frame assemblies per ASTM E 152; and are labeled and listed by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.

2.4 FABRICATION

A. Fabricate High-Pressure Decorative Laminate Doors to comply with following requirements:

1. Stiles and rails bonded to core and abrasive planed for uniform thickness prior to application of faces.
2. In sizes indicated.
3. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels:
    a. Comply with clearance requirements of referenced quality standard for fitting per WDMA I.S. 1A.
    b. Comply with requirements of NFPA 80 for fire-resistance-rated doors.
4. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame shop drawings, DHI A115-W series standards, and hardware templates.
    a. Factory-machine doors for mortised hardware, including pilot holes for hinge screws and lock fronts required.
    b. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory machining.
    c. Metal Astragals: Pre-machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
5. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.
    a. Light Openings: Trim openings with moldings of material and profile indicated.
    b. Louvers: Factory install louvers in prepared openings.
6. Top and Bottom Rails: Factory sealed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine installed door frames prior to hanging door:

1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
2. Reject doors with defects.

B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

A. Hardware: For installation see Division 8 Section "Door Hardware."

B. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and referenced quality standard and as indicated.

1. Install fire-rated doors in corresponding fire-rated frames according to requirements of NFPA 80.

C. Install doors at locations indicated on the Drawings.

D. Install door hardware as specified in Section 08700.

3.4 ADJUSTING

A. Adjust doors to swing freely, without binding in frame.

B. Adjust hardware to operate properly.

D. Remove and replace damaged doors that cannot be successfully repaired, as determined by Architect.

3.5 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage finish.

3.6 PROTECTION

A. Protect installed doors from damage during construction.

END OF SECTION

SECTION 08330 - COILING DOORS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Insulated Coiling Overhead Doors, electrically operated and manually operated.

1.2 RELATED SECTIONS

A. Section 05500 - Metal Fabrications: Support framing and framed opening.

B. Section 08700 - Door Hardware: Product Requirements for cylinder core and keys.

1.3 REFERENCES

A. ANSI/DASMA 108 - American National Standards Institute Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference.

B. NFRC 102 - Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.

C. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Element.

D. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

E. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

F. ASTM A 666 - Standard Specification for Austenitic Stainless-Steel Sheet, Strip, Plate, and Flat Bar.

G. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

H. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Overhead coiling service doors:

1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components in conformance with ASTM E 330.

2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.

B. Overhead coiling insulated doors:

1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components in conformance with ASTM E 330.

2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.

C. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.5 SUBMITTALS

A. Submit under provisions of Section 01600.

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. Details of construction and fabrication.
4. Installation instructions.

C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, electrical motors and accessories. Include relationship with adjacent construction.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

A. Furnish each coiling door as a complete unit produced by one manufacturer, including hardware, accessories, mounting and installation components.

B. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.

C. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.
4. Anchorages: Furnish all anchoring devices and provide setting drawings, templates, instructions and directions for installation of anchoring devices. Coordinate delivery with other work to avoid delays.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.

C. Store materials in a dry, warm, ventilated, weathertight location.

1.8 PROJECT 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.

1.9 COORDINATION

A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 20,000 cycles, whichever occurs first.

B. Warranty: Manufacturer's limited door system warranty for 2 years for all parts and components.

C. PowderGuard Finish

1. PowderGuard Max: Applied to curtain, guides, bottom bar, headplates: Manufacturer's limited Max Finish warranty for 5 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: info@overheaddoor.com.

B. Raynor; 1101 East River Road, Dixon, IL 61021-0448; www.raynor.com; PH: 815.285.7144.

C. Cookson; 1901 South Litchfield Road, Goodyear, AZ 85338; www.cooksondoor.com; PH: 800.294.4358

D. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 ELECTRIC INSULATED COILING OVERHEAD DOORS

A. Overhead Coiling Stormtite Insulated Service Doors: Overhead Door Corporation Model 625.

1. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.

a. Flat profile type F-265i for doors up to 40 feet (12.19 m) wide.

b. Front slat fabricated of:

1) 24-gauge galvanized steel.

c. Back slat fabricated of:

1) 24-gauge galvanized steel.

d. Slat cavity filled with CFC-free foamed-in-place, polyurethane insulation.

1) R-Value: 7.7, U-Value: 0.13.

2) Sound Rating: STC-21.

2. Performance:

a. Through Curtain Sound Rating: Sound Rating: STC-28 (STC-30+ with HZ noise generator) as per ASTM E 90.

b. Installed System Sound Rating: STC-21 as per ASTM E 90.

c. U-factor: 0.91 NFRC test report, maximum U-factor of no higher than 1.00.

d. Air Infiltration: Meets ASHRAE 90.1 & IECC 2012/2015 C402.4.3 Air leakage <1.00 cfm/ft2.

3. Slats and Hood Finish:

a. Galvanized Steel: Slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on polyester top coat.

1) Powder Coat: PowderGuard Max powder coat, color as selected by Architect.

2) Non-galvanized exposed ferrous surfaces shall receive one coat of rust-inhibitive primer.

4. Weatherseals:
    a. Vinyl bottom seal, exterior guide and internal hood seals.
    b. Interior guide weatherseal.
    c. Lintel weatherseal.
    d. Air Infiltration Package, IECC 2012/2015 listed; product to meet C402.4.3 2012 Air leakage <1.00 cfm/ft2.
        1) Air infiltration perimeter seal package includes: guide cover, guide cap, dual brush exterior guide seal, 4-inch finned lintel brush seal and vinyl bottom seal.
5. Bottom Bar:
    a. Two galvanized steel angles minimum thickness 1/8 inch (3 mm) bolted back-to-back to reinforce curtain in the guides.
6. Guides: Three structural steel angles.
7. Brackets:
    a. Galvanized steel to support counterbalance, curtain and hood.
8. Finish; Bottom Bar, Guides, Headplate and Brackets:
    a. Finish: PowderGuard Max powder color as selected by the Architect.
9. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
10. Hood: Provide with internal hood baffle weatherseal.
    a. 24-gauge galvanized steel with intermediate supports as required.
11. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
    a. Sensing Edge Protection:
        1) Electric sensing edge.
    b. Operator Controls:
        1) Push-button operated control stations with open, close, and stop buttons.
        2) Controls for both interior and exterior location.
        3) Controls surface mounted.
    c. Motor Voltage: 115/230 single phase, 60 Hz.
12. Windload Design:
    a. Standard windload shall be 20 PSF.
13. Locking:
    a. Interior slide bolt lock for electric operation with interlock switch.
    b. Cylinder lock for electric operation with interlock switch.
14. Wall Mounting Condition:
    a. As indicated on drawings.
15. Size:
    b. 12’-0” high x 10’-0” wide, unless indicated otherwise on drawings.

2.3 MANUAL OVERHEAD COILING SERVICE DOORS

B. Industrial Doors: Overhead Door Corporation, **Model 610 Service Doors**.

1. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.
    a. Flat profile type F-265 for doors up to 18 feet 4 inches (5.59 m) wide, fabricated of:
        i. 22 gauge galvanized steel.
    b. Flat profile type F-265 for doors between 18 feet 4 inches (5.59 m) and 25 feet 4 inches (7.72 m) wide, fabricated of:
        i. 20 gauge galvanized steel.
    c. Flat profile type F-265 for doors between 25 feet 4 inches (7.72 m) and 40 feet (12.19 m) wide, fabricated of:
        i. 18 gauge galvanized steel.
2. Slats and Hood Finish:
    a. Galvanized Steel: Slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on polyester top coat.
        i. Powder Coat:
            1) PowderGuard Max powder coat, color as selected by Architect.
        ii. Non-galvanized exposed ferrous surfaces shall receive one coat of rust-inhibitive primer.
3. Weatherseals:
    a. Vinyl bottom seal.
    b. Guide weatherseal.
4. Bottom Bar:
    a. Two galvanized steel angles.
5. Guides: Three structural steel angles.
6. Brackets:
    a. Galvanized steel to support counterbalance, curtain and hood.
7. Finish; Bottom Bar, Guides, Headplate and Brackets:
    a. Finish: PowderGuard Max powder color as selected by the Architect.
8. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
9. Hood:
    a. 24 gauge galvanized steel with intermediate supports as required.
10. Manual Operation:
    a. Manual push up for doors up to 96 SF.
11. Windload Design:
    a. Standard windload shall be 20 PSF.
12. Locking:
    a. Chain keeper locks for chain hoist operation.
    b. Cylinder lock.

13. Wall Mounting Condition: As Indicated on drawings.

14. Size: 8’-0” x 8’-0” unless indicated otherwise on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.

B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

E. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.

F. Install perimeter trim and closures.

G. Instruct Owner’s personnel in proper operating procedures and maintenance schedule.

3.4 ADJUSTING

A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 CLEANING

A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.

B. Remove labels and visible markings.

C. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of aluminum entrances and storefronts is indicated on drawings and schedules.

B. Types of aluminum entrances required include the following:

1. Frames for Exterior Glazed Windows.
2. Storefront type framing system for exterior and interior applications.
3. Storefront entrances for exterior and interior applications.

C. Glazing: Refer to “Glass and Glazing” section of Division 8 for glazing requirements for aluminum entrances and storefronts specified herein to be factory pre-glazed.

1.3 SYSTEM PERFORMANCES

A. General: Provide exterior entrance and storefront assemblies that have been designed and fabricated to comply with requirements for system performance characteristics listed below as demonstrated by testing manufacturer’s corresponding stock systems according to test methods designated. System shall be of design styles indicated. System components and accessories shall be from the same manufacturer, to the maximum extent possible.

B. Thermal Movement: Allow for expansion and contraction resulting from ambient temperature range of 120-degree F.

C. Wind Loading: Provide capacity to withstand loading indicated below, tested per ASTM E 330.

1. Uniform pressure of 20 psf inward and 20 psf outward.

D. Transmission Characteristics of Fixed Framing: Comply with requirements indicated below for transmission characteristics and test methods.

1. Air and Water Leakages: Air infiltration of not more than 0.06 CFM per sq. ft. of fixed area per ASTM E 283 and no uncontrolled water penetration per ASTM E 331 at pressure differential of 6.24 psf (excluding operable door edges).
2. Condensation Resistance: Not less than 51 CRF per AAMA 1502.7.
3. Thermal Transmittance: U-value of not more than 0.65 Btu/hr x sf x degree F) per AAMA 1503.1.

E. Transmission Characteristics of Entrances: Provide entrance doors with jamb and head frames which comply with requirements indicated below for transmission characteristics and test methods.

1. Air Leakage: Air infiltration per linear foot of perimeter crack of not more than 0.50 CFM for single doors and 1.0 CFM for pairs of doors per ASTM E 283 at pressure differential of 1.567 psf.
2. Condensation Resistance: Not less than 48 CRF per AAMA 1502.7.
3. Thermal Transmittance: U-value of not more than 0.93 Btu/(hr x sf x degree F) per AAMA 1503.1.

1.4 QUALITY ASSURANCE

A. Drawings: Plans, elevations and details show spacings of members as well as profile and similar dimensional requirements of aluminum entrances and storefront work. Minor deviations will be

accepted in order to utilize manufacturer's standard products when, in Architect's sole judgment, such deviations do not materially detract from design concept or intended performances.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, standard details, and installation recommendations for components of aluminum entrances and storefronts required for project, including test reports certifying that products have been tested and comply with performance requirements.

B. Samples: Submit samples of each type and color of aluminum finish on 12" long sections of extrusions or formed shapes and on 6" square sheets. Where normal color and texture variations are to be expected, include 2 or more units in each set of samples showing limits of such variations.

PART 2 - PRODUCTS

2.1 ALUMINUM DOORS, FRAMES & STOREFRONTS

A. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Kawneer North America
2. Tubelite, Inc.
3. Coral Industries, Inc./Coral Architectural Products
4. YKK AP America, Inc.
5. Oldcastle
6. Record

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS AND ACCESSORIES

A. Aluminum Members: Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish; ASTM B 221 for extrusion, ASTM B 209 for sheet/plate.

B. Fasteners: Aluminum, non-magnetic stainless steel, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum components.

1. Do not use exposed fasteners except where unavoidable for application of hardware. Match finish of adjoining metal.
2. Provide Phillips flat-head machine screws for exposed fasteners.

C. Concealed Flashing: Dead-soft stainless steel, 26 gauge minimum, or extruded aluminum, 0.062" minimum, of an alloy and type selected by manufacturer for compatibility with other components.

D. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible; otherwise, non-magnetic stainless steel or hot-dip galvanized steel complying with ASTM A 386.

E. Concrete/Masonry Inserts: Cast-iron, malleable iron, or hot-dip galvanized steel complying with ASTM A 386.

F. Bituminous Coatings: Cold-applied asphalt mastic complying with SSPC-PS 12, compounded for 30-mil thickness per coat.

G. Compression Weatherstripping: Manufacturer's standard replaceable stripping of either molded neoprene gaskets complying with ASTM D 2000 or molded PVC gaskets complying with ASTM D 2287.

H. Sliding Weatherstripping: Manufacturer's standard replaceable stripping of wool, polypropylene, or nylon woven pile, with nylon fabric or aluminum strip backing, complying with AAMA 701.2.

I. Glass and Glazing Materials: Provide glass and glazing materials which comply with requirements of "Glass and Glazing" section of these specifications.

2.3 HARDWARE

A. General: Hardware shall comply with requirements of the "Americans with Disabilities Act". Refer to door hardware section of Division 8 for requirements for panic device hardware items. All other door hardware to be provided by manufacturer of aluminum entrances.

2.4 FRAMING

A. Types:

1. Storefront type framing system for insulated exterior applications:

   a. Framing system shall be equal to TriFab Versaglaze 451, by Kawneer.

2. Storefront type framing system for non-insulated interior applications:

   b. Framing system shall be equal to TriFab Versaglaze 451, by Kawneer.

B. General:

1. Support Members: Extruded aluminum alloy 6063-T6 or 6061-T6 complying with ASTM B-221.

2. Flashing/Closures: Formed aluminum 5005-H34 alloy, min. thickness .040", complying with ASTM B-209.

3. Cap System: Manufacturer's standard cap glazing system consisting of rectangular (rafter) and beveled (horizontal) glazing gaps which will secure all sides of each light of glass against negative and positive loads.

4. Fasteners: A300 stainless steel.

5. Sealant: Silicone (FS TT-S-0015 43A and TT-S-0023 o.c.)

2.5 FABRICATION

A. Sizes and Profiles: Required sizes for door and frame units, including profile requirements, are indicated on drawings. Any variable dimensions are indicated, together with maximum and minimum dimensions required to achieve design requirements and coordination with other work.

B. Prefabrication: To greatest extent possible, complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site. Disassemble components only as necessary for shipment and installation.

1. Preglaze door and frame units to greatest extent possible, in coordination with installation and hardware requirements.

2. Do not drill and tap for surface-mounted hardware items until time of installation at project site.

3. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work in manner which prevents damage to exposed finish surfaces. For hardware, perform these operations prior to application of finishes.

C. Welding: Comply with AWS recommendations to avoid discoloration; grind exposed welds smooth and restore mechanical finish.

D. Reinforcing: Install reinforcing as necessary for performance requirements; separate dissimilar metals with bituminous paint or other separator which will prevent corrosion.

E. Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members.

F. Fasteners: Conceal fasteners wherever possible.

G. Weatherstripping: For exterior doors, provide compression weatherstripping against fixed stops; at other edges, provide sliding weatherstripping retained in adjustable strip mortised into door edge.

1. Provide EPDM/vinyl blade gasket weatherstripping in bottom door rail, adjustable for contact with threshold.

2.6 STOREFRONT FRAMING SYSTEM

A. General: Provide inside-outside matched center glazed system with provisions for glass replacement. Shop-fabricate and preassemble frame components where possible.

2.7 FINISHES

A. Baked Enamel Finish: Premium color selection equal to Kawneer #22 Stock Permafluor Architectural Coating (Hylar 5000 or Kynar 500), factory applied and oven baked for a topcoat thickness of 1.0 - 1.3 mils.

1. Color to be selected by Architect after bid date from manufacturer standards
2. Color selections MUST include “White”.

PART 3 - EXECUTION

3.1 PREPARATION

A. Field Measurement: Wherever possible, take field measurements prior to preparation of shop drawings and fabrication, to ensure proper fitting of work.

3.2 INSTALLATION

A. Comply with manufacturer’s instructions and recommendations for installation of aluminum entrances.

B. Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Anchor securely in place, separating aluminum and other corrodible metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials.

C. Drill and tap frames and apply surface-mounted hardware items, complying with hardware manufacturer’s instructions and template requirements. Use concealed fasteners wherever possible.

D. Set sill members and other members in bed of sealant as indicated, or with joint fillers or gaskets as indicated to provide weathertight construction. Comply with requirements of Division 7 for sealants, fillers, and gaskets.

E. Refer to “Glass and Glazing” section of Division 8 for installation of glass and spandrel panels indicated to be glazed into framing, and not preglazed by manufacturer.

3.3 ADJUST AND CLEAN:

A. Adjust operating hardware to function properly, without binding, and to prevent tight fit at contact points and weatherstripping.

B. Clean completed systems, inside and out, promptly after erection and installation of glass and sealants. Remove excess glazing and joint sealants, dirt, and other substances from aluminum surfaces.

C. Institute protective measures and other precautions required to assure that aluminum entrances and storefronts will be without damage or deterioration, other than normal weathering, at time of acceptance.

END OF SECTION

SECTION 08422 - SLIDING AUTOMATIC ENTRANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following types of automatic entrances:

1. Interior, single slide and bi-parting, sliding automatic entrances.
2. Sliding and fixed panels shall be all glass with top and bottom rail.

B. Related Sections:

1. Division 7 Sections for caulking to the extent not specified in this section.
2. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrances furnished and installed separately in Division 8 Section.
3. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
4. Division 8 Section Glazing for materials and installation requirements of glazing for automatic entrances.
5. Division 16 Sections for electrical connections provided separately, including conduit and wiring, for power to sliding automatic entrances.

1.3 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. Underwriters Laboratories (UL):

1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

C. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):

1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
2. ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products
3. ANSI Z97.1: Standard for Safety Glazing Materials Used In Buildings - Safety Performance Specifications and Methods Of Test.

D. American Society for Testing and Materials (ASTM):

1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

E. American Association of Automatic Door Manufacturers (AAADM):

F. National Fire Protection Association (NFPA):

1. NFPA 101 – Life Safety Code.

2. NFPA 70 – National Electric Code.

G. International Code Council (ICC):

1. IBC: International Building Code

H. Building Officials and Code Administrators International (BOCA), 1999:

I. International Organization for Standardization (ISO):

1. ISO 9001 - Quality Management Systems

J. National Association of Architectural Metal Manufacturers (NAAMM):

1. Metal Finishes Manual for Architectural and Metal Products.

K. American Architectural Manufacturers Association (AAMA):

1. AAMA 606.1 – Integral Color Anodic Finishes for Architectural Aluminum.
2. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
3. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
4. AAMA 701 Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals.

1.4 DEFINITIONS

A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.

B. Safety Device: Device that prevents a door from opening or closing, as appropriate.

1.5 PERFORMANCE REQUIREMENTS

A. General: Provide automatic entrance door assemblies capable of withstanding loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).

C. Opening-Force Requirements for Egress Doors: Force shall be adjustable; but, not more than 50 lbf (222 N) required to manually set swinging egress door panel(s) in motion.

D. Closing-Force Requirements: Not more than 30 lbf (133 N) required to prevent door from closing.

1.6 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work.

C. Color Samples for selection of factory-applied color finishes.

D. Closeout Submittals:

1. Owner’s Manual.
2. Warranties.

E. Reports: Based on evaluation performed by a qualified agency, for automatic entrance door assemblies.

1. Environmental Product Declaration.
2. Evaluation Report for compliance with IBC.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative, with certificate issued by AAADM, who is trained for installation and maintenance of units required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility certified under ISO 9001.

C. Manufacturer shall have in place a national service dispatch center providing 24 hours a day, 7 days a week, emergency call back service.

D. Certifications: Automatic sliding door systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:

1. ANSI/BHMA A156.10.
2. NFPA 101.
3. UL 325 listed.
4. IBC 2009 and 2012.
5. BOCA.

E. Environmental Product Declaration (EPD): EPD for automatic sliding entrances shall be certified by the manufacturer to comply with the following:

1. Prepared under Product Category Rule (PCR) UNCPC 4212.
2. Conform to ISO standards 14025, 14040, 14044, 21930
3. Life Cycle Assessment Basis: Cradle to Gate, minimum.

F. Source Limitations: Obtain automatic entrance door assemblies through one source from a single manufacturer.

G. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

H. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

I. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress.

1.8 PROJECT CONDITIONS

A. Field Measurements: General Contractor shall verify openings to receive automatic entrance door assemblies by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.

C. Other trades: General Contractor shall advise of any inadequate conditions or equipment.

1.9 COORDINATION

A. Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing automatic entrances to comply with indicated requirements.

B. Electrical System Roughing-in: Coordinate layout and installation of automatic entrance door assemblies with connections to power supplies.

1.10 WARRANTY

A. Automatic Entrances shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.

B. During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.

C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 AUTOMATIC ENTRANCES

A. Manufacturer: Stanley Access Technologies; Dura-Glide™ 3000 Series sliding automatic entrances including Transom.

B. Record USA; 4324 Phil Hargett Ct., Monroe, NC 28110; www.recorddoors.com; Phone: 704.289.9212.

C. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Headers, stiles, rails, and frames: 6063-T6.
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
3. Sheet and Plate: ASTM B 209.

B. Sealants and Joint Fillers: Performed under Division 7 Section "Joint Sealants".

2.3 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

A. General: Provide manufacturer's standard automatic entrance door assemblies including doors, sidelights, framing, headers, carrier assemblies, roller tracks, door operators, activation and safety devices, and accessories required for a complete installation.

B. Sliding Automatic Entrances:

1. Single Slide Entrances: (**Door #ASF5**)
   a. Configuration: One sliding leaf and one fixed sidelight.
   b. Traffic Pattern: Two-way.
   c. Emergency Breakaway Capability: Sliding leaf and sidelight.
   d. Mounting: Between jambs.
2. Bi-Parting Entrances: (**Door #ASF4**)

a. Configuration: Two sliding leaves and two fixed sidelights.
b. Traffic Pattern: Two-way.
c. Emergency Breakaway Capability: Sliding leaves and fixed sidelights.
d. Mounting: As Indicated on drawings.

2.4 COMPONENTS

A. Framing Members: Manufacturer's standard extruded aluminum reinforced as required to support imposed loads.

1. Nominal Size: As indicated on drawings.
2. Concealed Fastening: Framing shall incorporate a concealed fastening pocket, and continuous flush insert cover, extending full length of each framing member.

B. Glass Panels and Rails: Manufacturer's standard 1 ¾ inch (45 mm) thick extruded-aluminum tubular rail members. Rail members to be specifically designed by automatic entrance manufacturer for use with glass panel automatic entrance systems. Fasten rails to glass panels by mechanical clamp; adhesive systems not acceptable.

1. Top Rail: 6 1/8 inch (156 mm) nominal height.
2. Bottom Rail: 6 1/8 inch (156 mm) nominal height.
3. Glazing: Provide glazing for sliding automatic entrances as follows:
   a. Provide safety glass complying with ANSI Z97.1 and CPSC 16 CFR 1201 for Category II materials.
   b. Safety Glass: 1/2 inch (12 mm) clear, fully tempered, with polished edges, in all panels.

C. Headers: Fabricated from extruded aluminum and extending full width of automatic entrance door units to conceal door operators, carrier assemblies, and roller tracks. Provide hinged or removable access panels for service and adjustment of door operators and controls. Secure panels to prevent unauthorized access.

1. Mounting: Concealed, with one side of header flush with framing.
2. Capacity: Capable of supporting up to 220 lb (100 kg) per panel, up to four panels, over spans up to 14 feet (4.3 m) without intermediate supports.

D. Carrier Assemblies and Overhead Roller Tracks: Manufacturer's standard carrier assembly that allows vertical adjustment of at least 1/8 inch (3 mm); consisting of urethane with precision steel lubricated ball-bearing wheels, operating on a continuous roller track. Support panels from carrier assembly by load wheels and anti-riser wheels with factory adjusted cantilever and pivot assembly. Minimum two ball-bearing load wheels and two anti-rise rollers for each active leaf. Minimum load wheel diameter shall be 2 1/2 inch (64 mm); minimum anti-rise roller diameter shall be 2 inch (51 mm).

E. Thresholds: Manufacturer's standard thresholds as indicated below:

1. Continuous standard tapered extrusion double bevel. Refer to details on Drawings.
2. All thresholds to conform to details and requirements for code compliance.

F. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.

G. Signage: Provide signage in accordance with ANSI/BHMA A156.10.

2.5 DOOR OPERATORS

A. General: Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, operation under normal traffic load for type of occupancy indicated.

B. Electromechanical Operators: Self-contained overhead unit powered by a minimum of 1/4 horsepower, permanent-magnet DC motor with gear reduction drive, microprocessor controller; and encoder.

1. Operation: Power opening and power closing.
2. Features:
   a. Adjustable opening and closing speeds.
   b. Adjustable back-check and latching.
   c. Adjustable braking.
   d. Adjustable hold-open time between 0 and 30 seconds.
   e. Obstruction recycle.
   f. On/Off switch to control electric power to operator.
   g. Energy conservation switch that reduces door-opening width.
   h. Closed loop speed control with active braking and acceleration.
   i. Adjustable obstruction recycle time delay.
   j. Self adjusting stop position.
   k. Self adjusting closing compression force.
   l. Onboard sensor power supply.
   m. Onboard sensor monitoring.
   n. Optional Switch to open/Switch to close operation.
3. Mounting: Concealed.
4. Drive System: Synchronous belt type.

C. Electrical service to door operators shall be provided under Division 26 Electrical. Minimum service to be 120 VAC, 5 amps.

2.6 ELECTRICAL CONTROLS

A. Electrical Control System: Electrical control system shall include a microprocessor controller and position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed. Systems utilizing external magnets and magnetic switches are not acceptable.

B. Performance Data: The microprocessor shall collect and store performance data as follows:

1. Counter: A non-resettable counter to track operating cycles.
2. Event Reporting: Unit shall include event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors.
3. LED Display: Display presenting the current operating state of the controller.

C. Controller Protection: The microprocessor controller shall incorporate the following features to ensure trouble free operation:

1. Automatic Reset Upon Power Up.
2. Main Fuse Protection.
3. Electronic Surge Protection.
4. Internal Power Supply Protection.
5. Resetable sensor supply fuse protection.
6. Motor Protection, over-current protection.

D. Soft Start/Stop: A “soft-start” “soft-stop” motor driving circuit shall be provided for smooth normal opening and recycling.

E. Obstruction Recycle: Provide system to recycle the sliding panels when an obstruction is encountered during the closing cycle. If an obstruction is detected, the system shall search for that object on the next closing cycle by reducing door closing speed prior to the previously encountered obstruction location, and will continue to close in check speed until doors are fully closed, at which time the doors will reset to normal speed. If obstruction is encountered again,

the door will come to a full stop. The doors shall remain stopped until obstruction is removed and operate signal is given, resetting the door to normal operation.

F. Programmable Controller: Microprocessor controller shall be programmable and shall be designed for connection to a local configuration tool. Local configuration tool shall be a software driven handheld interface. The following parameters may be adjusted via the configuration tool.

1. Operating speeds and forces as required to meet ANSI/BHMA A156.10.
2. Adjustable and variable features as specified in 2.5, B., 2.
3. Reduced opening position.
4. Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons..

2.7 ACTIVATION AND SAFETY DEVICES

A. Combined Activation and Safety Sensors: Combined activation and safety sensors shall, in a single housing, detect motion and presence in accordance with ANSI/BHMA A156.10. Motion shall be detected using K-band microwave technology, presence by active infrared reflection technology.

1. Mounting Height: Up to 11.5 feet (3.5 m) above finish floor
2. Temperature Range: Between -31°F and 131°F (-35°C to 55°C) in all environmental conditions
3. Relays: Form C, 50V at 0.3A for both activation and safety. Hold time of less than 0.5 seconds.
4. Detection Pattern: When detection is made in the activation zone, and the entrance opens, the safety zone shall extend through the threshold on each side; creating an X-pattern. When activation and safety zones are cleared and the entrance closes the sensor will ignore the X-pattern safety zones.
5. Combined motion and presence sensors shall be equal to or better than X-Zone Sensor by Optex.

B. Photoelectric Beams: In addition to the threshold sensor include a minimum of two (2) doorway holding beams. Photoelectric beams shall be pulsed infrared type, including sender receiver assemblies for recessed mounting.

C. Presence Sensor Monitoring: Sliding automatic entrances control system shall include a means to verify the functionality of all active presence sensors in accordance with ANSI/BHMA A156.10. A detected fault shall cause automatic operation to cease until the fault is corrected.

2.8 HARDWARE

A. General: Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrances and uses indicated.

B. Emergency Breakaway Feature: Provide release hardware that allows panel(s) to swing out in direction of egress to full 90 degrees from any position in sliding mode. Maximum force to open panel shall be 50 lbf (222 N) according to ANSI/BHMA A156.10. Interrupt powered operation of panel operator while in breakaway mode.

1. Emergency breakaway feature shall include at least one adjustable detent device mounted in the top of each breakaway panel to control panel breakaway force.
2. Limit Arms: Limit arms shall be provided to control swing of sliding or non-sliding panels on break-out; swing shall not exceed 90 degrees. Limit arms shall be spring loaded to prevent shock and include adjustable friction damping.

C. Deadlocks: Manufacturer’s standard deadbolt operated by exterior cylinder and interior thumb turn; with minimum 3/4 inch (19 mm) long throw bolt.

1. Cylinders: Provide standard 1 1/8 inch (29 mm) mortised cylinders with core.

2. Locking: Provide independent locks incorporated into the bottom rails of the sliding panel that, when engaged, automatically extend flush bolts into the threshold.
3. Provide two locks for bi-parting entrances.

D. Control Switch: Provide manufacturer's standard header mounted rocker switches and door position switch to allow for full control of the automatic entrance door. Controls to include, but are not limited to:

1. One-way traffic
2. Reduced Opening
3. Open/Closed/Automatic

E. Power Switch: Sliding automatic entrances shall be equipped with a two position On/Off rocker switch to control power to the door.

2.9 FABRICATION

A. General: Factory fabricates automatic entrance door assembly components to designs, sizes, and thickness indicated and to comply with indicated standards.

1. Form aluminum shapes before finishing.
2. Use concealed fasteners to greatest extent possible.
   a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
   b. Reinforce members as required to receive fastener threads.

B. Framing: Provide automatic entrances as prefabricated assemblies.

1. Fabricate tubular and channel frame assemblies with manufacturer's standard mechanical or welded joints. Provide sub-frames and reinforcement as required for a complete system to support required loads.
2. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
3. Form profiles that are sharp, straight, and free of defects or deformations.
4. Prepare components to receive concealed fasteners and anchor and connection devices.
5. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.

C. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.

D. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.

E. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated.

F. Hardware: Factory install hardware to the greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site.

2.10 ALUMINUM FINISHES

A. General: Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.

B. Baked Enamel Finish: Premium color selection equal to Kawneer #22 Stock Permafluor Architectural Coating (Hylar 5000 or Kynar 500), factory applied and oven baked for a topcoat thickness of 1.0 - 1.3 mils. Color to be selected by Architect after Bid Date, from manufacturer's standard colors. Color selections MUST include "White"

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of automatic entrances. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Do not install damaged components. Fit frame joints to produce joints free of burrs and distortion. Rigidly secure non-movement joints.

B. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.

1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.

C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.

D. Glazing: Glaze sliding automatic entrance door panels in accordance with, the Glass Association of North America (GANA) Glazing Manual, published recommendations of glass product manufacturer, and sliding automatic entrance manufacturer’s instructions.

E. Sealants: Comply with requirements specified in Division7 Section "Joint Sealants".

3.3 FIELD QUALITY CONTROL

A. Testing Services: Factory Trained Installer shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.4 ADJUSTING

A. Adjust door operators, controls, and hardware for smooth and safe operation, for tight closure, and complying with requirements in ANSI/BHMA A156.10.

3.5 CLEANING AND PROTECTION

A. Clean glass and aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish. Comply with requirements in Division 8 Section “Glazing”, for cleaning and maintaining glass.

END OF SECTION

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SECTION 08520 - ALUMINUM IMPACT WINDOWS - FIXED

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of each type of aluminum window units including window column covers, panning trim, as shown on drawings.

1.3 QUALITY ASSURANCE

A. Standards: Except as otherwise indicated requirements for aluminum windows, terminology and standards of performance, and fabrication workmanship are those specified and recommended in ANSI/AAMA 506 and applicable general recommendations published by AAMA and AA. Where more stringent requirements are shown, manufacturer shall provide proof of compliance as required by the architect.

B. Performance and Testing:

C. General: Except as otherwise indicated, comply with air infiltration tests, water resistance tests, and applicable load tests specified in ANSI/AAMA 506 for type and classification of window units required in each case.

D. Prior Approval: Window manufacturers other than those specified requesting approval shall submit samples and test data ten days prior to bid opening for approval. Architect will list those approved manufacturers by addendum. No verbal approvals will be issued.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer’s specifications, recommendations, and standard details for aluminum window units, including certified test laboratory reports as necessary to show compliance with requirements.

B. Shop Drawings: Submit shop drawings, including wall elevations at ¼” scale, typical unit elevations at ¾” scale and full size detail sections of every typical composite member. Show anchors, hardware, operators and other components not included in manufacturer’s standard data. Include glazing details.

1. **Engineered Stamped Calculations are required by an engineer with a State of Alabama Stamp.**

2. Architect reserves right to require additional samples which will show fabrication techniques, workmanship of component parts, and design of hardware and other exposed auxiliary items.

1.5 SPECIAL PROJECT WARRANTY

A. Submit written warranty signed by manufacturer, installer and contractor, agreeing to replace

aluminum window units which fail in materials or workmanship within 3 years of date of acceptance. Failure of materials or workmanship shall include (but not be limited to) excessive leakage or air infiltration, excessive deflections, faulty operation of sash, deterioration of finish or metal in excess of normal weathering, and defects in hardware, weather-stripping and other components of work.

PART 2 - PRODUCTS

2.1 MANUFACTURES

A. The following manufacturers’ products have been used to establish minimum standards for materials, workmanship and function:

1. Peerless Series G241 Impact Windows – Large Missile Impact Fixed
2. Traco Series TR-3800I Impact Windows - Large Missile Impact Fixed
3. WINCO 1150 Impact Windows – Large Missile Impact Fixed

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS - GENERAL

A. GENERAL: All aluminum prime windows shall be single hung type and shall conform to the Architectural Aluminum Manufacturer's Association specification requirements for AW-40.

B. All windows shall be of the type and size shown on the drawings.

C. Aluminum Extrusions: Alloy and temper recommended by window manufacturer for strength,

corrosion resistance, and application of required finish, but not less than 22,000 psi ultimate tensile strength and not less than 0.062" thickness at any location for main frame and sash members. Comply with ASTM B 221.

D. Fasteners: Aluminum, non-magnetic stainless steel, or other materials warranted by manufacturer to be noncorrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.

1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125" thick, reinforce interior with aluminum or non-magnetic stainless steel to receive screw threads, or provide standard non-corrosive pressed in splined grommet nuts.
2. Do not use exposed fasteners except where unavoidable for application of hardware. Match finish of adjoining metal.
3. Provide Phillips flat-head machine screws for exposed fasteners.

E. Anchors, Clips and Window Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate units of aluminum, non-magnetic stainless steel, or hot-dip zinc coated steel or iron complying with ASTM A 386.

F. Sealant: Unless otherwise indicated for sealants required within fabricated window units, provide type recommended by window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Comply with Division 7 sections for installation of sealants.

2.3 MATERIALS

A. All sections of frame and sash members shall be of commercial quality extruded 6063-T5 aluminum alloy. Frame shall have a minimum depth of 3-1/4" with a minimum wall thickness of not less than .062". Sill members and panning trim minimum thickness shall not be less than .078". All horizontal ventilator rails shall be of tubular construction and shall have a minimum glazing depth of 7/8". Panning trim, where required, shall be of extruded aluminum of not less than .078" thick. Window to have individual mulls exposed at exterior.

B. CONSTRUCTION: Frame and sash member joints shall be neatly and securely fastened by means of 2 screws per corner which fasten into screw bosses extruded integrally in the section. Frame corners shall be sealed with an approved sealant in order to provide a permanently leakproof joint. Sash shall have nylon guides to prevent metal to metal contact between sash and frame members.

C. HARDWARE: Each window shall have a set of heavy duty emergency sill latches. Bottom sash shall have a pair of ½" heavy duty block & tackle balances, easily replaceable and adjustable.

D. WEATHERSTRIPPING: The sash shall have integral grooves containing a silicone treated wool pile with fin seal vinyl barrier. Each sash shall be weather-stripped around the perimeter and double weather-stripped at the jambs.

E. GLASS AND GLAZING: Windows shall be factory glazed with 1” thick insulating glass with exterior pane to be 1/4” Gray Cardinal 366 Lo-E tempered, ½” airspace, and interior pane to be 1/4” clear laminated with .090 inner layer “Impact Resistance Glass for Large Missiles”, as per ASTM E 2190-02 as pass/fail.

F. MUNTINS: If detailed on the window schedule and building elevations shall be between the glass. Finish on muntins shall match window finish.

G. FINISH: Windows shall receive a 2605 Kynar Paint Finish.

1. Color to be selected from manufactures standard colors AFTER BID DATE.

H. BREAK METAL SILL FLASHING: If detailed at the window sills shall have end dams and be provided by the window manufacturer. Finish to match windows.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer’s specifications and recommendations for installation of window units, hardware, operators, and other components of work.

B. Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action.

C. Set sill members and other members in bed of compound as shown, or with joint fillers or gaskets as shown, to provide weathertight construction. Refer to Division 7 sealant sections for compounds, fillers and gaskets to be installed with window units. Coordinate installation with wall flashings and other components of work.

3.2 ADJUST AND CLEAN

A. Adjust operating sash and hardware to provide tight fit at contact points and at weather-stripping, for smooth operation and weathertight closure.

B. Clean aluminum surfaces promptly after installation of windows, exercising are to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt and other substances. Lubricate hardware and moving parts.

C. Initiate and maintain all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.

END OF SECTION

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SECTION 08665 - ALUMINUM INTERIOR SLIDING SERVICE WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Section 08800, Glazing.

C. Section 07600, Joint Sealers.

1.2 DESCRIPTION OF WORK

A. Aluminum, Pre-Glazed, medium-duty, Interior Sliding Service Window.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, recommendations, and standard details for aluminum window units, including certified test laboratory reports as necessary to show compliance with requirements.

B. Shop Drawings: Submit shop drawings, including wall elevations at ¼" scale, typical unit elevations at ¾" scale, and full size detail sections of every typical composite member. Show anchors, hardware, operators, and other components not included in manufacturer's standard data. Include glazing details.

C. Architect reserves right to require additional samples which will show fabrication techniques, workmanship of component parts, and design of hardware and other exposed auxiliary items.

1.4 DELIVERY, STORAGE & HANDLING

A. Deliver windows crated to provide protection during transit and job storage.

B. Inspect windows upon delivery for damage. Damaged parts should be removed and replaced to meet the Architect's specifications and satisfaction.

C. Store windows at building site under cover in dry location.

1.5 PROJECT CONDITIONS

A. Field measurements: Check opening by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1.6 WARRANTY

A. All material and workmanship shall be warranted against defects for a period of one (1) year from the original date of purchase

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. C.R. Laurence Co., Inc.- Basis of Design: Phone 800.421.6144; website www.crlaurence.com

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Aluminum Interior Sliding Service Windows: **Model No. D1041DU;** "Daisy" (XX) with X = sliding panel, O = fixed panel, as viewed from clerk's side.

1. Size: As indicated on drawings.

2. Frames: Aluminum frame modules shall be constructed of 6063-T5 extruded aluminum. Window rolls on top-hung ball bearing rollers. Catch locks to be included with all interior

windows.

3. Track/Jambs: D6 overhead track with jambs.
4. Finish: All aluminum to be duranodic bronze.
5. Glazing: ¼" (6mm Glass) clear tempered glass, pre-glazed.
6. Options: Include Keyed lock for each sliding window section.

PART 3 - EXECUTION

3.1 EXECUTION

A. Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, and other components of work.

B. Set units plumb, level and true line, without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action.

C. Set sill members and other members in bed of compound as shown, or with joint fillers or gaskets as shown, to provide weather-tight construction. Refer to Division 7 sealant sections for compounds, fillers and gaskets to be installed with window units. Coordinate installation with wall flashings and other components of work.

3.2 ADJUST AND CLEAN

A. Adjust operating sash and hardware to provide tight fit at contact points and at weatherstripping, for smooth operation and weathertight closure.

B. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt and other substances. Lubricate hardware and moving parts.

C. Initiate and maintain all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.

END OF SECTION

SECTION 08700 - FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.

B. This Section includes the following:

1. Hinges.
2. Key control system.
3. Lock cylinders and keys.
4. Lock and latch sets.
5. Bolts.
6. Exit devices.
7. Push/pull units.
8. Closers.
9. Overhead holders.
10. Miscellaneous door control devices.
11. Door trim units.
12. Protection plates.
13. Weather-stripping for exterior doors.
14. Sound stripping for interior doors.
15. Astragals or meeting seals on pairs of doors.
16. Thresholds.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 8 Section "Standard Steel Doors and Frames" for silencers integral with hollow metal frames.
2. Division 8 Section "Flush Wood Doors" for factory pre-fitting and factory pre-machining of doors for door hardware.
3. Division 8 Section "Aluminum Entrances and Storefronts" for aluminum entrance door hardware, except cylinders.

1.3 HARDWARE ALLOWANCE

A. Allowance of $1,750.00 for Certified AHC (Architectural Hardware Consultant) – (document of certification from DHI must be provided) to visit job site upon substantial completion as directed by Architect. A written report will be required for the Owner, Architect, and Contractor

1.4 QUALITY ASSURANCE

A. Door hardware supplier's responsibilities shall be as follows:

1. Submittals: Submit through Contractor required product data, final hardware schedule;

separate keying schedule, and samples as specified in this Section, unless otherwise indicated.

2. **Hardware Review Meeting**: Hardware Supplier shall attend a scheduled “Hardware Review Meeting” with the Contractor, Owner and Architect representative. All Hardware products, hardware installation locations, finishes, color selections, ratings and keying is to be reviewed and discussed. The Hardware Supplier understands the Hardware Submittal is not deemed “Fully Approved” until the Owner has completed their review and given “Approval”.
3. Construction Schedule: Inform Contractor promptly of estimated times and dates that will be required to process submittals, to furnish templates, to deliver hardware, and to perform other work associated with furnishing door hardware for purposes of including this data in construction schedule. Comply with this schedule.
4. Coordination and Templates: Assist Contractor as required to coordinate hardware with other work in respect to both fabrication and installation. Furnish Contractor with templates and deliver hardware to proper locations.
5. Product Handling: Package, identify, deliver, and inventory door hardware specified in this Section.
6. Discrepancies: Based on requirements indicated in Contract Documents in effect at time of door hardware selection, furnish types, finishes, and quantities of door hardware, including fasteners, and Owner's maintenance tools required to comply with specified requirements and as needed to install and maintain hardware. Furnish or replace any items of door hardware resulting from shortages and incorrect items at no cost to the Owner or Contractor. Obtain signed receipts from Contractor for all delivered materials.

B. Contractor's responsibilities shall be as follows:

1. Submittals: Coordinate and process submittals for door hardware in same manner as submittals for other work.
2. **Hardware Review Meeting**: Contractor is to schedule and attend a “Hardware Review Meeting” with the Owner, Hardware Supplier and Architect Representative. All Hardware products, hardware installation locations, finishes, color selections, ratings and keying is to be reviewed and discussed. The Contractor understands the Hardware Submittal is not deemed “Fully Approved” until the Owner has completed their review and given “Approval”.
3. Construction Schedule: Cooperate with door hardware supplier in establishing scheduled dates for submittals and delivery of templates and door hardware. Incorporate in construction schedule the times and dates related to furnishing hardware by door hardware supplier.
4. Coordination: Coordinate door hardware with other Work. Furnish hardware supplier or manufacturer with shop drawings of other work where required or requested. Verify completeness and suitability of hardware with supplier. Coordinate all wiring, raceways, accesses and final connections to all electronic devices and components per manufacturer requirements for a fully functioning system.
5. Product Handling: Provide secure lock-up for hardware delivered to the site. Inventory hardware jointly with representative of hardware supplier and issue signed receipts for all delivered materials.
6. Installation Information: The general types and approximate quantities of hardware required for this Project are indicated at the end of this Section in order to establish Contractor's costs for installation and other work not included in allowance.
7. No adjustments in Contract sum will be made for costs other than those covered by the allowances for subsequent increases or decreases in quantity of one or more hardware types that do not exceed 5 percent.

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification sections.

B. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Upon return of the reviewed finish hardware schedule, arrange for a meeting with the Owner and representatives of Architect. A keying schedule will be established and submitted to the Architect and Owner. After review, the keying schedule will be returned to representatives of Finish Hardware Supplier so that permanent cylinders and keys can be prepared on a timely basis.

1.6 QUALITY ASSURANCE

A. Substitutions: All substitution requests must be submitted before bidding and within the procedures and time frame as outlined in Division 1, General Requirements. Approval of products is at the discretion of the architect and his hardware consultant.

B. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer.

C. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for a minimum of 10 years, for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced “certified” architectural hardware consultant (AHC)“ as recognized by the Door and hardware Institute (DHI). All submittals shall be signed by an AHC who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

D. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by UL, Warnock Hersey, FM, or other testing and inspecting organization acceptable to authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.

1.7 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule and include basic installation instructions with each item or package.

B. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.8 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 HINGES

A. MANUFACTURERS

1. Ives
2. McKinney
3. Bommer

B. MATERIAL:

1. Provide only template produced units
2. Provide Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head wood screws for installation of units in to wood. Finish screw heads to match surface of hinges or pivots.
3. Hinge pins, except as noted, are to be provided as follows:
   a. Steel Hinges: Steel pins
   b. Non-ferrous Hinges: Stainless steel pins
   c. Exterior Doors: Use Non-Removable Pins
   d. Interior Doors: Non-rising pins
   e. Electric Hinges: Non-removable pins
4. Tips shall be flat button and matching plug, finished to match leaves.
5. Provide number of hinges indicated but not less than three (3) hinges for door leaf of 90” or less in height and one additional hinge for each 30” of additional height.
6. Provide ball bearing hinges of the type and weight suggested by the hinge manufacturer for each type of door application.

2.2 LOCK CYLINERS AND KEYING:

A. Manufacturers:
1. Falcon to match existing

B. Material:

1. Existing System: Grandmaster key the locks to the Owner’s existing Falcon master key system. All lock cylinders shall be standard 6-pin Falcon. Match existing Falcon keyway. New key bittings created shall be an extension of existing Falcon factory key records. All lock cylinders shall be factory keyed by Falcon. All keys shall be factory cut by Falcon.
2. All lock cylinders shall be construction master keyed using drop ball method. Provide 10 construction master keys. General contractor shall void the construction key system at the completion of the project.
3. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster), integrated into Owner’s existing Falcon key system.
4. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.
5. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock that is not designated to be keyed alike with a group of related locks.
6. Permanently inscribe each key with number of lock that identifies cylinder manufacturer's key symbol.
7. Key Material: Provide keys of nickel silver only.
8. Key Quantity: Furnish (4) change keys for each lock, (5) master keys for each master system, (5) grandmaster keys for each grandmaster system.
   a. Deliver permanent keys to Owner via certified method, return receipt requested.

2.3 ACCESSORIES:

Key Cabinet: Provide one surface wall mount key cabinet, Lund Deluxe 1200 series, two tag key system. Capacity shall be 150% of number keys required for the project. General contractor shall install key cabinet in location to be determined by the architect.

2.4 LOCKSETS AND LATCHSETS

A. MANUFACTURERES

1. Falcon MA Series, QG Design
2. Schlage L9000 Series, 17N Design

B. MATERIAL

1. Locksets and latch-sets of all manufacturers must conform to the requirements of Sub paragraphs 2 and be approved by the Architect.
2. Mortise Lock Type
   a. Locksets and latch sets must conform to ANSI A156.2 Series 1000, Operational Grade 1, and be UL Listed.

2.5 EXIT DEVICES

A. MANUFACTURERES

1. Von Duprin 35A/98 Series
2. Sargent 19-43-GL-8000 Series
3. Detex 10 Series

B. MATERIAL

1. All exit devices to be of one manufacturer and provided in same finish design as locksets.
2. Provide sex nuts and bolts for attachment of surface applied items to doors.
3. Devices shall be UL listed. Devices for fire rated openings shall bear factory installed UL markings that indicate approval for fire rated openings.
4. All exit devices shall be touch-bar type design.
5. All exit devices shall comply with ANSI A156.3, Grade 1.
6. Exit device lever trim shall be equal to Von Duprin break away vandal resistant #996L.
7. All exit devices shall be equipped with flush end caps.
8. All exit devices shall be equipped with guarded (deadlocking) latch bolts.
9. Security Indicators for “Keyed Cylinder Dogging” - Provide Von Duprin “CDSI”, dogging indicator provides an at-a-glance verification of the status of the door from inside of the room. Visible “LOCKED” and “UNLOCKED” indicators show whether the device is undogged or dogged.
10. Security Indicators for “-2SI-Classroom Exit Device Locking Lever Trim”. The “-2SI” Security Indicator provides an at-a-glance verification of the LOCKED/UNLOCKED status of the door from inside of the room. Facility staff to be able to lock/unlock outside exit device lever trim from classroom side of door, avoiding corridor exposure.
11. All exit devices shall be provided with anti-microbial coated stainless steel touch bars. Plastic touch pads or plastic covered touch pads will not be accepted.
12. All exit devices are to be installed using through-bolts. All exit devices and exit device strikes shall be installed using manufacturer’s supplied fasteners. Substitution of manufacturer’s fasteners will not be allowed.

2.6 CLOSERS

A. MANUFACTURERES

1. LCN 4000 series
2. Corbin DC8000 Series
3. Norton 9500

B. MATERIAL

1. Size of units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.
    a. Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.
    b. Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units, ANSI opening force and delayed action closing.
2. Closers are to be fully hydraulic, rack and pinion action with high strength cast iron cylinders and one piece forged steel pistons. Closer Piston diameter for all closers shall be minimum 1½". Hydraulic regulation to be controlled by tamper-proof, non-critical screw values, adjustable with a hex by tamper-proof, non-critical screw valves, adjustable with a hex wrench. Separate adjustments for back check, general speed, and latch speed. Where detailed in the door hardware sets, provide delayed action feature to delay closing up to one minute for maximum opening to approximately 75. Back check shall be properly located for protection of the door, frame and applied hardware.
3. All door closers shall comply with ANSI A156.4 Grade 1 and meet the standards of ANSI A117.1 for barrier-free accessibility.
4. Provide closers with full metal covers.
5. All closers are to be through-bolt mounted. All door closers are to be installed using manufacturer supplied fasteners. Substitution of manufacturers supplied fasteners is not permitted.
6. All surface door closers are to be provided with required mounting brackets, mounting plates, drop plates, shims, spacers, arms, special templating, etc. as required for the specified closer and arm function, whether specified in the door hardware sets or not.

2.7 OVERHEAD STOPS AND HOLDERS

A. MANUFACTURERES

1. Glynn Johnson
2. Sargent
3. Rixson

B. MATERIAL

1. Conform to ANSI A156.8 Grade 1.

2.8 PUSH/PULLS & PROTECTION PLATES

A. MANUFACTURERES

1. Ives
2. Trimco
3. Burns

B. MATERIAL

1. Provide manufacturer's standard exposed fasteners for installation, through bolted for matched pairs, but not of single units.
2. Provide 16 gauge minimum thickness for plates.
3. Where specified in the schedule, push/pulls shall have an antimicrobial coating.

2.9 THRESHOLDS, WEATHERSTRIPPING & GASKETING

A. MANUFACTURERES

1. Zero
2. National Guard
3. Pemko

B. MATERIAL

1. Provide continuous weather-stripping at each edge of every exterior door leaf, except as otherwise indicated.
2. Provide type, size and profile shown as scheduled.
3. Provide non-corrosive fasteners as recommended by manufacturer for application indicated. Do not specify adhesive backed weather-strip or gasket material.
4. Where replaceable seal strips are scheduled, provide only those units where resilient or flexible seal strip is easily replaceable from stocks maintained by manufacturer.
5. Proved standard metal threshold unit of type, size and profile shown as scheduled.

2.10 FINISHES

A. Hardware finishes shall conform to ANSI and shall be as listed below for aluminum, FRP, hollow metal and wood doors:

B. Finishes Table:

Butt Hinges	Exterior Door and Doors in Culinary Lab 630, Satin Stainless Steel. Interior doors: 652, Satin chrome on plain steel base metal.
Continuous Geared Aluminum Hinges	Wood and Hollow Metal Doors: 628 Clear Anodized Aluminum. Aluminum Doors: See hardware sets for special finish requirements.
Flush Bolts	626 Satin Chrome Plated
Locksets	626 Satin Chrome Plated
Exit Devices	626 Satin Chrome Plated with 630 Satin Stainless Steel touch bars
Door Closers	689 Powder Coat Aluminum
Push Plates	630 Satin Stainless Steel
Anti-Vandal Pulls	630 Satin Stainless Steel
Pull Plates	630 Satin Stainless Steel
Offset Pulls	629-316 Polished Stainless Steel
Protective Plates	630 Satin Stainless Steel
Door Stops	626 Satin Chrome Plated
Overhead Holders	630 Satin Stainless Steel

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install each hardware item in compliance with manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted of finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, reinstall each item.

1. Do not install surface mounted items until finishes have been completed on the substrate.

B. Conform to ANSI A117.1 for positioning requirements for the handicapped.

3.2 PROTECTION AND CLEANING

A. After installation, clean metal surfaces on both interior and exterior of all mortar, paint and other contaminants. After cleaning, protect work against damage.

3.3 FINAL ADJUSTMENT

A. Whenever hardware is installed more than one month prior to occupancy or acceptance, return during the week prior to acceptance or occupancy and make a final inspection and adjustment of all hardware items in such space or area.

3.4 SCHEDULE

160355 OPT0510690 Version 1

Legend:
Link to catalog cut sheet
Electrified Opening

Hardware Group No. 01

For use on Door #(s):
A034

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	224XY		628	IVE
1	EA	PANIC HARDWARE	98-NL-990NL-299-SNB		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	RAIN DRIP	142AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	8144S-BK-PSA (SIZE AS REQ'D)		AA	ZER
1	EA	DOOR SWEEP	8197AA (SIZE AS REQ'D)		AA	ZER
1	EA	THRESHOLD	65A (SIZE AS REQ'D)		A	ZER

Hardware Group No. 02

For use on Door #(s):
A043B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	224XY		628	IVE
1	EA	PANIC HARDWARE	98-EO-4'-299-SNB		626	VON
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	RAIN DRIP	142AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	8144S-BK-PSA (SIZE AS REQ'D)		AA	ZER
1	EA	DOOR SWEEP	8197AA (SIZE AS REQ'D)		AA	ZER
1	EA	THRESHOLD	65A (SIZE AS REQ'D)		A	ZER

Hardware Group No. 03

For use on Door #(s):
014A 126B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	224XY EPT NOTCH		628	IVE
1	EA	ELECTRIC LATCH RETRACTION PANIC HARDWARE W/MONITOR SWITCH	RX-LC-QEL-98-NL-OP-990NL-299-SNB-CON		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	RAIN DRIP	142AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	8144S-BK-PSA (SIZE AS REQ'D)		AA	ZER
1	EA	DOOR SWEEP	8197AA (SIZE AS REQ'D)		AA	ZER
1	EA	THRESHOLD	65A (SIZE AS REQ'D)		A	ZER
1	EA	POWER TRANSFER HINGE	EPT-10-CON		628	VON
1	EA	WIRE HARNESS SET	CON-__P (LOCKING DEVICE TO ABOVE CEILING			VON
1	EA	POWER SUPPLY	PS902-2RS			VON
1	EA	DOOR POSITION SWITCH	679-05HM			SCE
1	EA	CARD READER	PROVIDED BY ACCESS CONTROL INTEGRATOR			

OPERATION: CARD REAER UNLOCKS DOOR FOR AN ADJUSTABLE TIME PERIOD CONTROLED BY ACCESS CONTROL SOFTWARE. REQUEST TO EXIT SWITCH (RX-LC) SIGNALS AUTHORIZED EGRESS. DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

Hardware Group No. 04

For use on Door #(s):
020B 126C

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	224XY EPT NOTCH		628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE W/MONITOR SWITCH	RX-LC-LD-98-EO-990EO-299-SNB-CON		626	VON
1	EA	ELECTRIC LATCH RETRACTION PANIC HARDWARE W/MONITOR SWITCH	RX-LC-QEL-98-NL-OP-990NL-299-SNB-CON		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	EA	MULLION SEAL	139N PSA			ZER
2	EA	GASKETING	8144S-BK-PSA (SIZE AS REQ'D)		AA	ZER
2	EA	DOOR SWEEP	8197AA (SIZE AS REQ'D)		AA	ZER
1	EA	THRESHOLD	65A (SIZE AS REQ'D)		A	ZER
2	EA	POWER TRANSFER HINGES	EPT-10-CON		628	VON
2	EA	WIRE HARNESS SETS	CON-__P (LOCKING DEVICE TO ABOVE CEILING			VON
1	EA	POWER SUPPLY	PS902-2RS			VON
2	EA	DOOR POSITION SWITCHES	679-05HM			SCE
1	EA	CARD READER	PROVIDED BY ACCESS CONTROL INTEGRATOR			

OPERATION: CARD REAER UNLOCKS ACTIVE LEAF OF DOOR FOR AN ADJUSTABLE TIME PERIOD CONTROLED BY ACCESS CONTROL SOFTWARE. REQUEST TO EXIT SWITCH (RX-LC) SIGNALS AUTHORIZED EGRESS. DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

Hardware Group No. 05

For use on Door #(s):

002	003	004	029	112	113
114	205	206	207		

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	PUSH PLATE	8200 8" X 16"		630	IVE
1	EA	PULL PLATE	8303 8" 4" X 16"		630	IVE
1	EA	SURFACE CLOSER	4011 REG TBSRT		689	LCN
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 06

For use on Door #(s):

104A	115	127A	201	202	208
A031A	A130	A134			

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	FIRE EXIT HARDWARE	98-L-BE-F-06-SNB		626	VON
1	EA	SURFACE CLOSER	4011 REG TBSRT		689	LCN
1	EA	WALL/FLOOR STOP AS NEEDED	WS401/FS439		630	IVE
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 07 – NOT USED

Hardware Group No. 08

For use on Door #(s):

A045

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	FIRE EXIT HARDWARE	98-L-BE-F-06-SNB		626	VON
1	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
1	EA	WALL STOP	WS401/402CCV		626	IVE
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

TEMPLATE CLOSER FOR 180/MAX DEGREE SWING AS WALL CONDITION ALLOWS.

Hardware Group No. 09

For use on Door #(s):

028 A035

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK	MA301 OCCUPIED/VACANT QGM		626	FAL
1	EA	SURFACE CLOSER	4011 REG TBSRT		689	LCN
1	EA	WALL/FLOOR STOP AS NEEDED	WS401/FS439		630	IVE
3	EA	SILENCERS	SR64		GRY	IVE
1	EA	GASKETING	9188BK (DOOR A038 ONLY)		BK	ZER

Hardware Group No. 10

For use on Door #(s):
A036 A037 A038

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK	MA301 OCCUPIED/VACANT QGM		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 11

For use on Door #(s):
008 016 109 110 A040

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	ENTRY / OFFICE LOCK	MA541P6 QG		626	FAL
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 12

For use on Door #(s):
010A 117A 123 124A 126A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE	LD-98-EO-990EO-299-SNB		626	VON
1	EA	PANIC HARDWARE W/CLASSROOM SECURITY LEVER TRIM	LD-98-L-2SI-996L-06-299-SNB		626	VON
2	EA	RIM CYLINDER	951		626	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	SURFACE CLOSER	4111 SHCUSH EDA TBSRT		689	LCN
2	EA	WALL STOP	WS401/402CCV		626	IVE
2	EA	SILENCER	SR64		GRY	IVE

OUTSIDE CYLINDER ONLY RETRACTS LATCHBOLT FOR ENTRY. INSIDE CYLINDER LOCKS AND UNLOCKS EXIT DEVICE LVER TRIM. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

Hardware Group No. 13 – NOT USED

Hardware Group No. 14

For use on Door #(s):
021 023 025 209 211

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSRM SEC LOCK W/INSIDE LOCKED/UNLOCKED SECURITY INDICATOR	MA441P6 QGSI		626	FAL
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

LATCH BOLT OPERATED BY KNOB/LEVER FROM EITHER SIDE EXCEPT WHEN OUTSIDE KNOB/LEVER IS LOCKED FROM INSIDE OR OUTSIDE BY KEY. WHEN OUTSIDE KNOB/ LEVER IS LOCKED, LATCH BOLT IS RETRACTED BY KEY FROM INSIDE OR OUTSIDE OR BY OPERATING INSIDE KNOB/LEVER. AUXILIARY DEAD LATCH. INSIDE KNOB/LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS. AVAILABLE WITH MESSAGING INDICATOR

Hardware Group No. 15

For use on Door #(s):
A033

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	MA561P6 QG		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 16

For use on Door #(s):
A043A A044

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP		652	IVE
1	EA	FIRE EXIT HARDWARE W/CLASSROOM SECURITY LEVER TRIM	98-L-F-2SI-966L-06-SNB		626	VON
2	EA	RIM CYLINDER	951		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 17

For use on Door #(s):
007

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	CLASSRM SEC LOCK W/INSIDE LOCKED/UNLOCKED SECURITY INDICATOR	MA441P6 QGSI		626	FAL
1	EA	SURFACE CLOSER	4011 REG TBSRT		689	LCN
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

LATCH BOLT OPERATED BY KNOB/LEVER FROM EITHER SIDE EXCEPT WHEN OUTSIDE KNOB/LEVER IS LOCKED FROM INSIDE OR OUTSIDE BY KEY. WHEN OUTSIDE KNOB/ LEVER IS LOCKED, LATCH BOLT IS RETRACTED BY KEY FROM INSIDE OR OUTSIDE OR BY OPERATING INSIDE KNOB/LEVER. AUXILIARY DEAD LATCH. INSIDE KNOB/LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS. AVAILABLE WITH MESSAGING INDICATOR

Hardware Group No. 18

For use on Door #(s):
020A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
2	EA	PANIC HARDWARE	LD-98-EO-996EO-299-SNB		630	VON
2	EA	PANIC HARDWARE W/CLASSROOM SECURITY LEVER TRIM	LD-98-L-2SI-996L-06-299-SNB		630	VON
2	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT (LHR LEAF)		689	LCN
1	EA	SURFACE CLOSER	4111 TBSRT (RHR LEAF)		689	LCN
1	EA	MULLION SEAL	139N PSA		GRY	ZER
1	EA	WALL STOP	WS401/402CCV (RHR LEAF)		626	IVE
2	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 19

For use on Door #(s):
119 120 121

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	MA561P6 QG		626	FAL
1	EA	OH HOLDER/STOP	90H		689	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 20

For use on Door #(s):
102B

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	FIRE RATED REMOVABLE MULLION	KR9954 STAB		689	VON
1	EA	FIRE EXIT HARDWARE	98-EO-F-996EO-SNB		630	VON
1	EA	FIRE EXIT HARDWARE W/CLASSROOM SECURITY LEVER TRIM	98-L-F-2SI-996L-06-SNB		630	VON
2	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	SURFACE CLOSERS	4111 SCUSH TBSRT		689	LCN
1	EA	MULION SEAL	139N PSA		GREY	ZER
2	EA	ASTRAGAL	8193AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 21

For use on Door #(s):
A133

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	MA561P6 QG		626	FAL
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 22

For use on Door #(s):
A135A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	FIRE RATED REMOVABLE MULLION	KR9954 STAB		689	VON
1	EA	FIRE EXIT HARDWARE	98-EO-F-996EO-SNB		630	VON
1	EA	FIRE EXIT HARDWARE W/CLASSROOM SECURITY LEVER TRIM	98-L-F-2SI-996L-06-SNB		630	VON
2	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
2	EA	WALL STOP	WS401/402CCV		626	IVE
2	EA	ASTRAGAL	8193AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 23

For use on Door #(s):
A128

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5		652	IVE
1	EA	FIRE EXIT HARDWARE W/CLASSROOM SECURITY LEVER TRIM	98-L-F-4'-2SI-996L-06-SNB		630	VON
2	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 24

For use on Door #(s):
015

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	PANIC HARDWARE W/CLASSROOM SECURITY LEVER TRIM	LD-98-L-2SI-996L-06-SNB		630	VON
2	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 25

For use on Door #(s):
213

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSRM SEC LOCK W/INSIDE LOCKED/UNLOCKED SECURITY INDICATOR	MA441P6 QGSI		626	FAL
1	EA	CONCEALED OH STOP	100S		689	GLY
3	EA	SILENCER	SR64		GRY	IVE

LATCH BOLT OPERATED BY KNOB/LEVER FROM EITHER SIDE EXCEPT WHEN OUTSIDE KNOB/LEVER IS LOCKED FROM INSIDE OR OUTSIDE BY KEY. WHEN OUTSIDE KNOB/ LEVER IS LOCKED, LATCH BOLT IS RETRACTED BY KEY FROM INSIDE OR OUTSIDE OR BY OPERATING INSIDE KNOB/LEVER. AUXILIARY DEAD LATCH. INSIDE KNOB/LEVER IS ALWAYS FREE FOR IMMEDIATE EGRESS. AVAILABLE WITH MESSAGING INDICATOR

Hardware Group No. 26

For use on Door #(s):
A135B A135C

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	MA561P6 QG		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 27

For use on Door #(s):

006	009A	009B	017A	017B	022
026	027	118	122	125	210
212	214	A041			

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	MA581P6 QG		626	FAL
1	EA	WALL STOP	WS401/402CCV		626	IVE
1	EA	OVERHEAD STOP	90S SNB		630	GLY
3	EA	SILENCER	SR64 (DOOR 214 ONLY)		GRY	IVE

Hardware Group No. 28

For use on Door #(s):

019	024	A039	A132

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	MA581P6 QG		626	FAL
1	EA	OH STOP	90S		689	GLY
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 29

For use on Door #(s):
011 A042

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
2	EA	MANUAL FLUSH BOLT	FB358		626	IVE
1	EA	DUST PROOF STRIKE	DP1/DP2 AS REQ'D		626	IVE
1	EA	STOREROOM LOCK	MA581P6 QG		626	FAL
2	EA	OH STOP	90S		689	GLY
2	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 30

For use on Door #(s):
A049

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	MA581P6 QG		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 31

For use on Door #(s):
012 013

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	PANIC HARDWARE	98-L-NL-F-06-SNB		630	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 32

For use on Door #(s):
A048

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	AUTO FLUSH BOLT SET	FB41P		630	IVE
1	EA	DUST PROOF STRIKE	DP1/DP2 AS REQ'D		626	IVE
1	EA	STOREROOM LOCK	MA581P6 QG		626	FAL
1	EA	COORDINATOR	COR X FL		628	IVE
2	EA	SURFACE CLOSER	4011 REG TBSRT		689	LCN
2	EA	WALL STOP	WS401/402CCV		626	IVE
1	EA	GASKETING	9188BK (SIZE AS REQ'D)		BK	ZER

Hardware Group No. 33

For use on Door #(s):
215

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	PANIC HARDWARE	98-L-NL-06-SNB		630	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
1	EA	WALL STOP	WS401/402CCV		626	IVE
3	EA	SILENCERS	SR64		GREY	ZER

Hardware Group No. 34

For use on Door #(s):
117B 124B

Provide each SL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL HARDWARE PROVIDED BY SLIDING DOOR MFG

Hardware Group No. 35

For use on Door #(s):
014B 107B A135D

Provide each RU door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR

ALL HARDWARE PROVIDED BY DOO MFG

Hardware Group No. 36 (MONITOR ONLY)

For use on Door #(s):
000 005 104B A031B

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		630	IVE
1	EA	PANIC HARDWARE W/VISIBLE AT DISTANCE LOCKED/UNLOCKED SECURITY INDICATORS	CDSI-98-NL-990NL-299-SNB		630	VON
1	EA	RIM CYLINDER	951		626	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	RAIN DRIP	142AA (SIZE AS REQ'D)		AA	ZER
1	EA	GASKETING	8144S-BK-PSA (SIZE AS REQ'D)		AA	ZER
1	EA	DOOR SWEEP	8197AA (SIZE AS REQ'D)		AA	ZER
1	EA	THRESHOLD	65A (SIZE AS REQ'D)		A	ZER
1	EA	DOOR POSITION SWITCH	679-05HM		BLK	SCE

OPERATION: DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

Hardware Group No. AL-01

For use on Door #(s):

001 101 107A A030A A030B

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT NOTCH		**	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE W/MONITOR SWITCH	RX-LC-LD-35A-EO-299-CON		626	VON
1	EA	ELECTRIC LATCH RETRACTION PANIC HARDWARE W/MONITOR SWITCH	RX-LC-QEL-35A-NL-OP-388-299-CON		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	90 DEG OFFSET PULL	8190EZHD 12" STD		630-316	IVE
2	EA	CONCEALED OH STOP	100S		689	GLY
2	EA	SURFACE CLOSER	4021 TBSRT TOP JAMB MOUNT		689	LCN
2	EA	MOUNTING PLATES	4020-18G SRT		689	LCN
1	EA	MULLION SEAL	139N PSA			ZER
1	EA	WEATHER SEALS	PROVIDED BY FRAME/DOOR SUPPLIER			B/O
1	EA	THRESHOLD	65A			ZER
2	EA	POWER TRANSFER HINGES	EPT-10-CON		628	VON
2	EA	WIRE HARNESS SETS	CON-__P (LOCKING DEVICE TO ABOVE CEILING			VON
1	EA	POWER SUPPLY	PS902-2RS			VON
2	EA	DOOR POSITION SWITCHES	679-05HM			SCE
1	EA	CARD READER	PROVIDED BY ACCESS CONTROL INTEGRATOR			

COORDINATE HARDWARE WITH ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.
BALANCE OF HARDWARE BY ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.

OPERATION: CARD REAER UNLOCKS ACTIVE LEAF OF DOOR FOR AN ADJUSTABLE TIME PERIOD CONTROLED BY ACCESS CONTROL SOFTWARE. REQUEST TO EXIT SWITCH (RX-LC) SIGNALS AUTHORIZED EGRESS. DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

** CONTINUOUSE HINGE FINISH SHALL BE SAME AS THAT SPECIFIED FOR FRAME AND DOOR. WHERE REQUIRED PROVIDE CUSTOM ANODIZED OR CUSTOM KYNAR PAINT FINISH.

Hardware Group No. AL-02

For use on Door #(s):
010B 010C

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY		**	IVE
2	EA	MANUAL FLUSH BOLT	FB458		626	IVE
1	EA	DUST PROOF STRIKE	DP1/DP2 AS REQ'D		626	IVE
1	EA	THUMBTURN	4066		335	ADA
1	EA	DEADLOCK	MS1850			ADA
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	PUSH/PULL BAR	9190EZHD-12"-NS		630-316	IVE
2	EA	CONCEALED OH STOP	100H		689	GLY
2	EA	SURFACE CLOSER	4111 REG TBSRT		689	LCN
2	EA	MOUNTING PLATE	4110-18 SRT		689	LCN
1	EA	GASKETING	PROVIDED BY DOOR SUPPLIER			B/O

COORDINATE HARDWARE WITH ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.
BALANCE OF HARDWARE BY ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.

** CONTINUOUSE HINGE FINISH SHALL BE SAME AS THAT SPECIFIED FOR FRAME AND DOOR. WHERE REQUIRED PROVIDE CUSTOM ANODIZED OR CUSTOM KYNAR PAINT FINISH.

Hardware Group No. AL-03

For use on Door #(s):
102A

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112XY EPT NOTCH		**	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE W/MONITOR SWITCH	RX-LC-LD-35A-EO-299		626	VON
1	EA	ELECTRIC LATCH RETRACTION PANIC HARDWARE W/MONITOR SWITCH	RX-LC-QEL-35A-NL-OP-388-299		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	MORTISE CYLINDER	985		626	FAL
2	EA	90 DEG OFFSET PULL	8190EZHD 12" STD		630-316	IVE
2	EA	CONCEALED OH STOP	100S		689	GLY
2	EA	SURFACE CLOSER	4021 TBSRT TOP JAMB MOUNT		689	LCN
2	EA	MOUNTING PLATES	4020-18G SRT		689	LCN
1	EA	MULLION SEAL	139N PSA			ZER
1	EA	WEATHER SEALS	PROVIDED BY DOOR SUPPLIER			B/O
2	EA	POWER TRANSFER HINGES	EPT-10-CON		628	VON
2	EA	WIRE HARNESS SETS	CON-__P (LOCKING DEVICE TO ABOVE CEILING			VON
1	EA	POWER SUPPLY	PS902-2RS			VON
2	EA	DOOR POSITION SWITCHES	679-05HM			SCE
1	EA	REMOTE CONTROLS AT RECEPTION 102	PROVIDED BY ACCESS CONTROL INTEGRATOR			
1	EA	CARD READER	PROVIDED BY ACCESS CONTROL INTEGRATOR			

COORDINATE HARDWARE WITH ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.
BALANCE OF HARDWARE BY ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.

OPERATION: CARD REAER UNLOCKS ACTIVE LEAF OF DOOR FOR AN ADJUSTABLE TIME PERIOD CONTROLED BY ACCESS CONTROL SOFTWARE. REQUEST TO EXIT SWITCH (RX-LC) SIGNALS AUTHORIZED EGRESS. DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

** CONTINUOUSE HINGE FINISH SHALL BE SAME AS THAT SPECIFIED FOR FRAME AND DOOR. WHERE REQUIRED PROVIDE CUSTOM ANODIZED OR CUSTOM KYNAR PAINT FINISH.

Hardware Group No. AL-04

For use on Door #(s):
106

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112XY EPT NOTCH		**	IVE
1	EA	ELECTRIC LATCH RETRACTION PANIC HARDWARE W/MONITOR SWITCH	RX-LC-QEL-35A-NL-OP-388		626	VON
1	EA	RIM CYLINDER	951		630	FAL
1	EA	90 DEG OFFSET PULL	8190EZHD 12" STD		630-316	IVE
1	EA	CONCEALED OH STOP	100S		689	GLY
2	EA	SURFACE CLOSER	4021 TBSRT TOP JAMB MOUNT		689	LCN
2	EA	MOUNTING PLATES	4020-18G SRT		689	LCN
1	EA	GASKETING	PROVIDED BY DOOR SUPPLIER			B/O
1	EA	DOOR SWEEP	PROVIDED BY DOOR SUPPLIER			B/O
1	EA	THRESHOLD	PROVIDED BY DOOR SUPPLIER			B/O
1	EA	POWER TRANSFER HINGES	EPT-10-CON		628	VON
1	EA	WIRE HARNESS SET	CON-__P (LOCKING DEVICE TO ABOVE CEILING			VON
1	EA	POWER SUPPLY	PS902-2RS			VON
1	EA	DOOR POSITION SWITCHES	679-05HM			SCE
1	EA	CARD READER	PROVIDED BY ACCESS CONTROL INTEGRATOR			

COORDINATE HARDWARE WITH ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.
BALANCE OF HARDWARE BY ALUMINUM DOOR/FRAME MANUFACTURER/SUPPLIER.

OPERATION: CARD REAER UNLOCKS DOOR FOR AN ADJUSTABLE TIME PERIOD CONTROLED BY ACCESS CONTROL SOFTWARE. REQUEST TO EXIT SWITCH (RX-LC) SIGNALS AUTHORIZED EGRESS. DOOR POSITION SWITH REPORTS DOOR OPEN OR CLOSED. EXIT DEVICE PROVIDES FREE EGRESS AT ALL TIMES.

** CONTINUOUSE HINGE FINISH SHALL BE SAME AS THAT SPECIFIED FOR FRAME AND DOOR. WHERE REQUIRED PROVIDE CUSTOM ANODIZED OR CUSTOM KYNAR PAINT FINISH.

END OF SECTION

SECTION 08800 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Glass for windows
2. Glass for doors
3. Glass for interior borrowed lites
4. Glass for storefront framing.
5. Glazing sealants and accessories.

1.2 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass as defined in referenced glazing publications.

B. Glass Fabricators: Firms that produce the fabricated glass products. Fabrication processes include cutting, heat processing, insulating, spandrel, laminating and other as fabrication activities defined in referenced glazing publications.

1.3 REFERANCE STANDARDS

A. American Society of Test and Material (ASTM)

1. ASTM C1036: Standard Specification for Flat Glass
2. ASTM C1048: Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass
3. ASTM C1172: Standard Specification for Laminated Architectural Flat Glass
4. ASTM C1376: Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Glass.
5. ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials
6. ASTM E1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
7. ASTM E1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
8. ASTM E 2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation

B. American National Standards Institute (ANSI)

1. ANSI z97.1: For Safety Glazing Materials Used In Buildings - Safety Performance Specifications and Methods of Test

C. Consumer Products Safety Commission

1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials

D. International Code Council

1. ICC 500: ICC/NSSA Standard for the Design and Construction of Storm Shelters

E. Underwriters Laboratory (UL)

1. UL 263: Standard for Fire Tests of Building Construction and Material
2. UL 9: Standard for Fire test of Window Assemblies
3. UL 10B: Standard for Fire Tests of Door Assemblies

4. UL 10C: Standard for Positive Pressure Fire Tests of Door Assemblies

F. National Fire Protection Association (NFPA)

1. NFPA 80: Standard for Fire Doors and Other Opening Protectives
2. NFPA 257: Standard on Fire Test for Window and Glass Block Assemblies
3. NFPA 252: Standard Methods of Fire Test of Door Assemblies

1.4 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product, provide performance characteristics, certificates of compliance, installation instructions, and cleaning and maintenance instructions.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12” x 12” inches (300 mm) square. For each type of sealant/gasket exposed to view; 12” length sample. Install sealant/gasket sample between two strips of materials representative of adjoining framing system in color.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

D. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Preconstruction adhesion and compatibility test report.

1.7 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

B. Single Source Responsibility: Provide materials obtained from one source for each type of glass and glazing product indicated

1.8 PRECONSTRUCTION TESTING

Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect glass and glazing materials during delivery, storage and handling to comply with manufacturer's directions and as required to prevent edge damage to glass, and damage to glass and glazing materials form effects of moisture including condensation, of temperature changes, of direct exposure to sun, and from other causes.

1.10 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing material manufacturer or when joint substrates are wet due to rain, frost, condensation or other causes. Install glazing sealants only when temperatures are in middle third of manufacturer's recommended installation temperature range.

1.11 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: Ten (10) years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: Five (5) years from date of Substantial Completion.

C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: Ten (10) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved Manufacturers: Subject to compliance with requirements, provide AGC Glass North America, Inc or approved equal product by one of the following:

1. Vitro Architectural Glass (Basis of Design)
2. Guardian Glass.

B. Approved Fabricators: Subject to compliance with requirements

1. American Insulated Glass
2. OldCastle Building Envelope
3. Trulite Glass and Aluminum Solutions
4. Tristar Glass

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer to design glazing. A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the 2021 International Building Code and ASTM E 1300.

1. Design Wind Pressures: As indicated on Drawings.
2. Design Snow Loads: As indicated on Drawings.

C. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

D. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

E. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 7.3 computer program, expressed as Btu/sq. ft. x h x deg F.

2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBNL's WINDOW 7.3 computer program.

3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: “Laminated Glazing Reference Manual", "Glazing Manual", and “Sealant Manual”.

2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."

3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."

4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than the thickness indicated.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

F. Heat-Treated Float Glass: Where heat treated float glass is required or indicated provide glass in accordance with ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

2. For uncoated glass, comply with requirements for Condition A.

3. For coated vision glass, comply with requirements for Condition C (other coated glass).

2.4 GLASS PRODUCTS

A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.

B. Tinted Annealed Float Glass: ASTM C 1036, Type I, Class 2 (tinted), Quality-Q3.

Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

C. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.

D. Sputtered Coated Low-Emissivity Clear Vision Glass, ASTM C 1376, Kind CV (coated vision glass), coated by sputtered process, ASTM C 1036, Type I, Class I (clear) or Class 2 (tinted) as indicated, Quality-Q3.

E. Pyrolytic Coated Low-Emissivity Clear Vision Glass, ASTM C 1376, Kind CO (coated overhead glass), coated by pyrolytic process, ASTM C 1036, Type I, Class I (clear) or Class 2 as indicated, Quality-Q3.

F. Ceramic-Coated Vision Glass: ASTM C 1048, Condition C, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3; and complying with Specification No. 95-1-31 in GANA's "Engineering Standards Manual."

G. Reflective-Coated Vision Glass: ASTM C 1376.

2.5 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

1. Sealing System: Dual seals.

a. Primary Seal: Polyisobutylene

b. Secondary Seal: Two-part Silicone

2. Spacer: Manufacturer's standard spacer material and construction

a. Color: As select by architect from fabricators full range of colors

2.6 FIRE PROTECTIVE-RATED GLASS

A. Fire -Protective -Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire -protection ratings indicated, based on positive -pressure testing according to NFPA 257 or UL 9, including the hose -stream test, and shall comply with NFPA 80.

1. Fire -protection -rated glazing required to have a fire -protection rating of 20 minutes shall be exempt from the hose -stream test.

B. Fire -Protective -Rated Glazing Labeling: Permanently mark fire -protection -rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name; test standard; whether glazing is permitted to be used in doors or openings; if permitted in openings, whether or not glazing has passed the hose -stream test; whether or not glazing meets 450 deg F (250 deg C) temperature -rise limitation; and the fire -resistance rating in minutes.

C. Fire -Protective -Rated Tempered Glass: 6 -mm thickness, fire -protection -rated tempered glass; and complying with 16 CFR 1201, Category II.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Safti First; SuperLite I

b. Technical Glass Products; Fireglass20

c. Vetrotech Saint-Gobain; SSG Pyroswiss US

D. Fire-Protective Rated Ceramic: 5mm thickness, fire protective rated ceramic, non-safety rated

1. Products: Subject to compliance with requirements, provide one of the following:

a. Schott Pyran Platinum

b. Technical Glass Products Firelite

E. Fire-Protective Rated Ceramic-Filmed: 5mm thickness, fire protective rated ceramic, safety rated, complying with 16 CFR 1201, Category II

1. Products: Subject to compliance with requirements, provide one of the following:
    a. Schott Pyran Platinum-F
    b. Technical Glass Products Firelite-NT

F. Fire-Protective Rated Ceramic-Laminated: 9mm thickness, fire protective rated ceramic, safety rated, complying with 16 CFR 1201, Category II
    1. Products: Subject to compliance with requirements, provide one of the following:
        a. Schott Pyran Platinum-L
        b. Technical Glass Products Firelite-Plus

2.7 FIRE -RESISTANCE -RATED GLAZING

A. Fire -Resistance -Rated Glazing: Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire -resistance ratings indicated, based on testing according to ASTM E 119 or UL 263.

B. Fire -Resistance -Rated Glazing Labeling: Permanently mark fire -resistance -rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, that the glazing is approved for use in walls, and the fire -resistance rating in minutes.

C. Fire-Resistance Rated Intumescent Glazing: 16mm-52mm thickness, multiply constructed laminated with fire resistive intumescent interlayers, and complying with 16 CRF 1201, Category II.
    1. Products: Subject to compliance with requirements, provide one of the following:
        a. GC Glass - Pyrobel
        b. Pilkington - Pyrostop

2.8 GLAZING SEALANTS

A. General:
    1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
    2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
    3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Dow Corning Corporation.
        b. GE Construction Sealants; Momentive Performance Materials Inc.
        c. May National Associates, Inc.; a subsidiary of Sika Corporation.
        d. Pecora Corporation.
        e. Sika Corporation.
        f. Tremco Incorporated.

C. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. BASF Corporation-Construction Systems.
    b. Dow Corning Corporation.
    c. GE Construction Sealants; Momentive Performance Materials Inc.
    d. May National Associates, Inc.; a subsidiary of Sika Corporation.
    e. Pecora Corporation.
    f. Polymeric Systems, Inc.
    g. Sika Corporation.
    h. Tremco Incorporated.

D. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. Bostik, Inc.
        b. Dow Corning Corporation.
        c. GE Construction Sealants; Momentive Performance Materials Inc.
        d. May National Associates, Inc.; a subsidiary of Sika Corporation.
        e. Polymeric Systems, Inc.
        f. Schnee-Morehead, Inc., an ITW company.
        g. Sika Corporation.
        h. Tremco Incorporated.

E. Glazing Sealant: Acid-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.
    1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
        a. BASF Corporation-Construction Systems.
        b. Bostik, Inc.
        c. Dow Corning Corporation.
        d. GE Construction Sealants; Momentive Performance Materials Inc.
        e. May National Associates, Inc.; a subsidiary of Sika Corporation.
        f. Pecora Corporation.
        g. Polymeric Systems, Inc.
        h. Schnee-Morehead, Inc., an ITW company.
        i. Sika Corporation.
        j. Tremco Incorporated.

F. Glazing Compounds for Fire-rated Glazing Materials
    1. Glazing Compound: DAP 33 putty
    2. Silicone Sealant: One-part neutral curing silicone, medium modulus sealant, Type S;
    3. Grade NS; Class 25 with additional movement capability of 50 percent in both extension

and compression (total 100 percent); Use (Exposure) NT; Uses (Substrates) G, A, and O as applicable. Available Products:

a. Dow Corning 795 - Dow Corning Corp.

b. Silglaze-II 2800 - General Electric Co.

c. Spectrem 2 - Tremco Inc

2.9 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

C. Fire-rated Glazing Tape: Closed cell polyvinyl chloride (PVC) foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent. Glass panels that exceed 1,393 sq. inches for 90-minute ratings must be glazed with fire-rated glazing tape supplied by manufacturer.

2.10 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Non-Fire Rated Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

C. Fire-rated Setting Blocks: Neoprene, EPDM, or silicone; tested for compatibility with glazing compound; of 70 to 90 Shore A hardness.

D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).

G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant where indicated.

F. Center glass lites in openings on setting block and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape where indicated.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Immediately after installation remove nonpermanent labels and clean surfaces.

Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.

1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

B. Remove and replace glass that is damaged during construction period.

C. Wash glass on both faces not more than 4 days prior to date scheduled for inspection intended to establish date of substantial completion in each area of the project. Wash glass with methods as recommended by glass manufacturer.

3.6 MONOLITHIC GLASS SCHEDULE

A. Glass Type [**GL-1**]: **Solarban 70** Clear fully tempered float glass.

1. Minimum Thickness: 6 mm.
2. Visible Light Transmittance: 88 percent minimum.
3. Solar Heat Gain Coefficient: **.84** maximum.
4. Safety glazing required.

B. Glass Type [**GL-2**]: Tinted fully tempered float glass.

1. Basis-of-Design Product: Vitro Architectural Glass.
2. Tint Color: Pure Grey, Bronze or Forest Green.
   a. Color to be selected by Architect after Bid Date.
3. Minimum Thickness: 6 mm.
4. Visible Light Transmittance: 45 percent minimum.
5. Solar Heat Gain Coefficient: .60 maximum.
6. Safety glazing required.

3.7 INSULATING GLASS SCHEDULE

A. Glass Type [**IG-3**]: **Solarban 70** Tinted Low-E insulating glass.

1. Basis-of-Design Product: Vitro Architectural Glass.
2. Overall Unit Thickness: 1 inch (25 mm).
3. Minimum Thickness of Each Glass Lite: 6 mm.
4. Outdoor Lite: Tinted fully tempered float glass.
5. Tint Color: Pure Grey, Bronze or Forest Green.
   a. Color to be selected by Architect after Bid Date.
6. Interspace Content: Air.
7. Indoor Lite: Clear fully tempered float glass.
8. Low-E Coating: Sputtered on second surface

9. Winter Nighttime U-Factor: .29 maximum.
10. Summer Daytime U-Factor: .27 maximum.
11. Visible Light Transmittance:
    a. Pure Grey -36 percent minimum.
    b. Bronze -39 percent minimum.
    c. Forest Green -48 percent minimum.
12. Solar Heat Gain Coefficient:
    a. Pure Grey -.25 maximum.
    b. Bronze -.25 maximum.
    c. Forest Green -.25 maximum.
13. Safety glazing required.

END OF SECTION

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SECTION 09250 - GYPSUM DRYWALL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Types of work include:

1. Gypsum drywall at walls and ceilings.

2. Drywall finishing (joint tape-and-compound treatment).

1.3 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where gypsum drywall systems with fire- resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.

1. Provide fire-resistance rated assemblies identical to those indicated by reference to GA File No.'s. in GA "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

B. Gypsum Board Terminology Standard: GA-505 by Gypsum Association.

C. Single-Source Responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these specifications.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store material inside under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

1.6 PROJECT CONDITIONS

A. Environmental Requirements, General: Comply with requirements of referenced gypsum board application standards and recommendations of gypsum board manufacturer, for environmental conditions before, during and after application of gypsum board.

B. Cold Weather Protection: When ambient outdoor temperatures are below 55 degrees F maintain continuous, uniform, comfortable building working temperatures of not less than 55 degrees F for a minimum period of 48 hours prior to, during and following application of gypsum board and joint treatment materials or bonding of adhesives.

C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Gypsum Board and Related Products:

a. Georgia-Pacific Corp.

b. Gold Bond Building Products Div., National Gypsum Co.

c. United States Gypsum Co.

d. CertainTeed Corporation

e. Lafarge North America

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Gypsum Wallboard: ASTM C 36, of types, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.

1. Provide Type “X” fire-resistant at all locations unless otherwise where identified by a UL Listing or Classification or as denoted on the drawings.

2. Provide Type “C”, fire-resistant where identified by a UL Listing or Classification where denoted on the drawings.

3. Impact/Penetration Resistant Type “X” fire-resistant at locations as identified on the drawings. Equal to Hi-Impact Brand 2000 Fire Shield by National Gypsum. Tested in accordance with ASTM C36/C 1396 Type X, ASTM E 695, ASTM D 1037, ASTM D4977 and ASTM D 4060.

4. Provide Type “MR” moisture resistant, where gypsum board is shown at all wet areas (Restrooms, etc.) install 5/8” moisture resistant gypsum board at all wet walls where plumbing fixtures are shown.

5. Thickness: 5/8" unless otherwise indicated.

6. Edges: Manufacturer's standard.

2.3 TRIM ACCESSORIES

A. General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.

B. Non-Beaded Trim: Non-beaded trim shall not be used, except with specific approval by the Architect.

2.4 JOINT TREATMENT MATERIALS

A. General: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.

B. Joint Tape: Paper reinforcing tape.

C. Joint Compound: Ready-mixed vinyl-type for interior use.

1. Grade: A single multi-purpose grade, for entire application.

2.5 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board.

B. Gypsum Board Screws: Comply with ASTM C 646.

C. Gypsum Board Nails: Comply with ASTM C 514.

D. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant for concealed applications per ASTM C 919.

E. Exposed Acoustical Sealant: Nonoxidizing, skinnable, paintable, gunnable sealant for exposed applications per ASTM C 919.

F. Water-Resistant Adhesive: Type I organic adhesive for ceramic tile complying with ANSI A136.1.

PART 3 - EXECUTION

3.1 GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS

A. Gypsum Board Application and Finishing Standards: ASTM C 840 and GA 216.

B. Locate exposed end-butt joints as far from center of walls possible, and stagger not less than 1'-0" in alternate courses of board.

C. Install wall/partition boards vertically to avoid end-butt joints wherever possible.

D. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.

E. Locate all edge and end joints over supports. Stagger vertical joints over different studs on opposite sides of partitions.

F. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

G. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories.

H. Cover both faces of stud framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are braced internally.

1. Except where concealed application is required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area and may be limited to not less than 75% of full coverage.

I. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4" to 1/2" space and trim edge with J-type semi-finishing edge trim. Seal joints with acoustical sealant.

J. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

3.2 METHODS OF GYPSUM DRYWALL APPLICATION

A. Single-Layer Application: Install gypsum wallboard.

B. On partitions/walls apply gypsum board vertically unless otherwise indicated and provide sheet lengths which will minimize end joints.

3.3 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.

B. Install metal corner beads at external corners of drywall work.

C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

D. Install semi-finishing trim where indicated, and where exterior gypsum board edges are not covered by applied moldings or indicated to receive trim with face flanges covered with joint compound.

E. Provide control joints horizontally and/or vertically at no less than 24'-0" o.c. max. Refer to plans for specific location or installed as directed by Architect.

F. Install H-molding in exterior gypsum drywall work where control joints are indicated.

3.4 FINISHING OF DRYWALL

A. General: Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepare work for decoration. Prefill open joints and rounded or beveled edges, if any, using type of compound recommended by manufacturer.

1. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
2. Apply joint compound in 3 coats (not including prefill of openings in base), and sand between last 2 coats and after last coat.
3. Tape and finish gypsum board in accordance with ASTM C 840, GA 214 and GA 216.
4. Provide joint, fastener depression, and corner treatment. Do not use fiber glass mesh tape with conventional drying type joint compounds; use setting or hardening type compounds only. Provide treatment for water-resistant gypsum board as recommended by the gypsum board manufacturer.
5. Where gypsum surfaces are to be finished to Level 5 in accordance with GA 214, apply a thin skim coat of joint compound to the entire gypsum board surface, after the two-coat joint and fastener treatment is complete and dry.
6. **All Exposed gypsum board surfaces** shall be finished to a minimum **Level 4** in accordance with GA 214.
7. Where gypsum board is to receive eggshell, semi-gloss or gloss paint finish, or where severe, up or down lighting conditions occur, shall be finished to **Level 5** in accordance to GA 214 Level 5, unless indicated otherwise.
8. All gypsum board surfaces at **all Corridors** shall be finished to **Level 5** in accordance to GA 214 Level 5.
9. All gypsum board surfaces at **all Classrooms** shall be finished to **Level 4** in accordance to GA 214.
10. Plenum areas above ceilings shall be finished to **Level 1** in accordance with GA 214.
11. Water resistant gypsum backing board, ASTM C 630/C 630M, to receive ceramic tile shall be finished to **Level 2** in accordance with GA 214.
12. Walls and ceilings to receive a heavy-grade wall covering or heave textured finish before painting shall be finished to **Level 3** in accordance with GA 214.

B. Partial Finishing: Omit third coat and sanding on concealed drywall work which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

C. Refer to section on painting in Division 9 for decorative finishes to be applied to drywall work.

3.5 PROTECTION OF WORK

A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall work being without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 09300 - TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.1 SUMMARY

A. Section Includes:

1. Porcelain Tile
2. Ceramic Tile
3. Quarry Tile
4. Glass Tile
5. Specialty Tile
6. Installation Products; adhesives, mortars, grouts and sealants
7. Waterproof Membranes
8. Crack Isolation Membranes
9. Thresholds, trim, cementitious backer units and other accessories specified herein.
10. Tile and grout care and maintenance recommendations.

1.2 REFERENCES

A. American National Standards Institute (ANSI):

1. A108.1 - Installation of Ceramic Tile in a Mortar Bed
2. A108.5 - Installation of Ceramic tile with Dry-Set Portland Cement or Latex-Portland Cement
3. A108.10 - Installation of Grout in Tile work
4. A108.13 - Installation of Membranes for Thin-Set Ceramic Tile
5. A118.3 - Chemical Resistant, Water-Cleanable, Tile-Setting and-Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive
6. A118.4 - Latex-Portland Cement Mortar
7. A 118.5 - Chemical-Resistant Furan Mortar and Grout.
8. A118.6 - Ceramic Tile Grouts
9. A118.7 - Polymer Mortified Cement Grouts
10. A118.10 – Load-Bearing, Bonded Waterproofing Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations
11. A136.1 - Organic Adhesives for Installation of Ceramic Tile
12. A137.1 - Ceramic Tile

B. American Society for Testing and Materials (ASTM):

1. C 136 - Sieve Analysis of Fine and Coarse Aggregates
2. C 144 - Aggregate for Masonry Mortar
3. C 150 - Portland Cement
4. C 207 - Hydrated Lime for Masonry Purposes
5. C 373 - Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products
6. C 503 - Marble Dimensional Stone (Exterior)
7. C 623 - Young’s Modulus, Shear Modulus, and Poisson’s Ratio for Glass and Glass-Ceramics by Resonance
8. C 627 – Robinson Floor Test for Tile Service Level
9. C 847-95 Metal Lath
10. C 933-96a Welded Wire Lath
11. C 1028 - Static Coefficient of Friction of Ceramic Tile and Other like Surfaces by the Horizontal Dynamometer Pull-Meter Method

12. D 87 - Melting Point of Petroleum Wax (Cooling Curve)
13. D 226 - Asphalt Saturated Organic Felt Used in Roofing and Waterproofing
14. D 4397 - Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
15. E-90 and E-413 for STC (Sound Transmission Class), E-492 and E-989 for IIC (Impact Insulation Class) – Sound Deadening Underlayments

C. TCA Handbook for Ceramic Tile Installation by Tile Council of America, latest edition

1.3 SUBMITTALS

A. Submit shop drawings, product data, and samples under provisions of Section 01350.

B. Shop Drawings:

1. Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, thresholds, and setting details.
2. Locate and detail expansion and control joints.

C. Submit product data, specifications, and instructions for using mortars, adhesives and grouts.

D. Samples:

1. Submit color samples illustrating full color range of each type tile.
2. Grout: Submit manufacturer's full range of standard and designated color samples for each type for Architect's selection.

E. Submit following Informational Submittals:

1. Certifications specified in Quality Assurance article.
2. Qualification Data: Manufacturer's and installer's qualification data.
3. Manufacturer's instructions.

F. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.4 QUALITY ASSURANCE

A. Single Source Responsibility:

1. Obtain each type and color tile material required from single source.
2. Obtain setting and grouting materials from one manufacturer to ensure compatibility.
3. Furnish a 10 year guarantee from installation material manufacturer. The guarantee is inclusive of installation materials, finish product, and labor.
4. Obtain prefabricated edge protection and transition and movement profiles from one manufacturer to ensure compatibility.
5. Obtain membrane from same manufacturer as setting material or from manufacturer approved by setting material manufacturer to ensure compatibility.

B. Manufacturer Qualifications:

1. Tile: Minimum 5 years experience in manufacture of tile products.
2. Setting Materials: Minimum 10 years experience in manufacture of setting and grout materials specified.

C. Installer Qualifications: Specializing in tile work, having minimum of 5 years successful documented experience with work comparable to that required for this Project.

D. Certifications:

1. Maintain one copy each of all Referenced standards and specifications on site. Include the TCA Handbook, ANSI A108 Series, ANSI A118 Series ANCI A136.1 and ANSI A137.1 and others as specified under paragraph References.
2. Submit manufacturer's certifications that mortars, adhesives, and grouts are suitable for intended use.

E. Conform to ANSI- Recommended Standard Specifications for Ceramic Tile - A137.1.

F. Conform to TCA Ceramic Tile: The Installation Handbook.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's unopened containers, fully identified with name, brand, type, and grade.

B. Protect materials from contamination, dampness, freezing, or overheating in accordance with manufacturer's instructions.

C. Broken, cracked, chipped, stained, or damaged tile will be rejected, whether built-in or not.

D. Protect mortar and grout materials against moisture, soiling, or staining.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.

B. Do not begin installation until building is completely enclosed and HVAC system is operating and maintaining temperature and humidity conditions consistent with "after occupancy" conditions for a minimum of 2 weeks.

C. Maintain continuous and uniform building temperatures of not less than 50 degrees F during installation nor more than 100 degrees F.

D. Ventilate spaces receiving tile in accordance with material manufacturers' instructions.

1.7 WARRANTY

A. Special Project Warranty: Submit a written warranty, executed by the Contractor, Installer, and Manufacturer, agreeing to repair or replace tile that fails in materials or workmanship within the specified warranty period.

1. Warranty Period: 1 year after date of Substantial Completion.

1.8 EXTRA MATERIALS

A. At completion of project, deliver to Owner extra stock of materials used on project as follows:

1. Provide 10% of each size, color, and surface finish of tile.
2. Six lineal feet of each color and type of base.

B. Store in location as directed by Owner.

C. Ensure materials are boxed and identified by manufacturer, type, and color.

1.9 MAINTENANCE DATA

A. Submit maintenance data under provisions of Section 01910.

B. Include cleaning methods, cleaning solutions recommended, stain removal methods, and polishes and waxes recommended.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Daltile Corporation or pre-approved equal.

B. Requests for substitutions will be considered in accordance with provisions of Section 01360 received 10 days prior to bid.

2.2 PRODUCTS

A. Ceramic Wall Tile

1. Manufacturer: DALTILE
2. Product: SEE FINISH SCHEDULE
3. Color: SEE FINISH SCHEDULE
4. Size: SEE FINISH SCHEDULE
5. Finish: SEE FINISH SCHEDULE
6. Pattern: As indicated on drawings.
7. Trim Units: Matching bead, bullnose, cove and base shapes in sizes coordinated with field tile.

B. Porcelain Wall Tile

1. Manufacturer: SEE FINISH SCHEDULE
2. Product: SEE FINISH SCHEDULE
3. Color: SEE FINISH SCHEDULE
4. Pattern: As indicated on drawings.
5. Trim Units: Matching bead, bullnose, cove and base shapes in sized coordinated with field tile.

C. Porcelain Floor Tile

1. Manufacturer: DALTILE
2. Product: SEE FINISH SCHEDULE
3. Color: SEE FINISH SCHEDULE
4. Size: SEE FINISH SCHEDULE
5. Edge:
6. Finish: SEE FINISH SCHEDULE
7. Pattern: As indicated on drawings.
8. Trim Units: Matching bead, bullnose, cove and base shapes in sized coordinated with field tile.

D. Quarry Tile

1. Manufacturer: DALTILE
2. Product: SEE FINISH SCHEDULE
3. Color: SEE FINISH SCHEDULE
4. Pattern: As indicated on drawings.
5. Trim Units: Matching bead, bullnose, cove and base shapes in sized coordinated with field tile.

2.3 SETTING MATERIALS

A. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.

B. Epoxy Adhesive: ANSI A118.3, thinset bond type.

C. Mortar Bed Materials:

1. Portland cement: ASTM C150, type 1, gray or white.
2. Hydrated Lime: ASTM C207, Type S.
3. Sand: ASTM C144, fine.
4. Latex additive: As approved.
5. Water: Clean and potable.

D. Mortar Bond Coat Materials:

1. Dry-Set Portland Cement type: ANSI A118.1.
2. Latex-Portland Cement type: ANSI A118.4.
3. Epoxy: ANSI A118.3, 100 percent solids.

E. Epoxy Grout: ANSI A118.8, 100 percent solids epoxy grout; color to be selected.

F. Waterproofing Membrane at Floors: Membrane in accordance with ANSI A118.10.

G. Membrane at Walls: No. 15 (6.9 kg) asphalt saturated felt, ASTM D226, Type

H. Membrane at Walls: 4 mil (0.1 mm) thick polyethylene film, ASTM D4397.

I. Membrane at Walls: Reinforced asphalt paper.

J. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced with 2 inch (50 mm) wide coated glass fiber tape for joints and corners:

1. Thickness: 1/2 inch (13 mm).

2.4 MISCELLANEOUS MATERIALS

A. Temporary Protective Coating: Provide product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout, is compatible with tile and mortar/grout products, and is easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined, tasteless, odorless, containing at least 0.5 percent oil with a melting point of 120-degree F to 140-degree F per ASTM D 87.
2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as a temporary protective coating for tile.

2.6 MIXING MORTAR AND GROUT

A. Mix mortars and grouts in accordance with manufacturer’s instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that all wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified in ANSI A137.1, and are ready to receive.

B. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and float within tolerances specified in ANSI A137.1.

C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

A. Clean substrates.

B. Wet down or wash dry, dusty surfaces and remove excess water immediately prior to application of tiles.

C. Prepare surfaces in strict accordance with instructions of manufacturer whose setting materials or additives are being used.

D. Acid Based Cleaners: Use not permitted.

E. Scarify concrete substrates with blast track equipment if necessary to completely remove curing compounds or other substances that would interfere with proper bond of setting materials. Clean and maintain substrate in condition required by setting material manufacturer.

F. Do not seal substrate unless required by manufacturer.

G. Prime substrate when required by manufacturer.

H. Membrane

1. Flash membrane up adjacent walls and restraining surfaces.
2. Use preformed cove, corners, and expansion joint flashing.
3. Allow membrane to cure as prior to setting tile.
4. Do not allow construction traffic on membrane.

I. Apply primer-sealer to wood and plywood subfloors when recommended by setting materials manufacturer.

J. Blending: For tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

K. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent adhesion or staining of exposed tile surfaces by grout, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of temporary protective coating indicated below, taking care not to coat unexposed tile surfaces:

1. Petroleum paraffin wax or grout release.

3.3 INSTALLATION

A. Cement Board Substrate

1. Place rough side out and fasten with galvanized or resin coated gypsum board screws at 8 inches on center in field of panel and at 6 inches on center at edges.
2. Provide 1/4 inch gap above floor or fixture lip for flexible calking.
3. Maintain manufacturer's required space between board edges.
4. Fill joints by applying tile setting material and joint reinforcement.

B. Vapor Retarder:

1. Extend vapor retarder to extremities of areas indicated to be protected from vapor transmission.
2. Secure in place with mechanical fasteners or adhesives.
3. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose mineral-fiber insulation.
4. Seal vertical joints in vapor retarders over framing by lapping not less than two wall studs.
5. Fasten vapor retarders to framing at top, end, and bottom edges, at perimeter of wall openings, and at lap joints; space fasteners no greater than 16 inches apart.
6. Seal joints in vapor retarders caused by pipes, conduits, electrical boxes and similar items penetrating vapor retarders with vapor retarder tape.
7. Repair tears and punctures in vapor retarder immediately before concealing it with the installation of cementitious backer units.

C. Membrane:

1. Install membrane with products or methods approved in writing by membrane manufacturer when joining, sealing, fastening, or adhering sheet membranes.
2. Flash membrane to cure prior to setting tile.
3. Do not allow construction traffic on membrane.

D. Crack Isolation Membrane

1. Install crack isolation membrane over cracks of up to 1/8 inch or greater in substrates. Apply a 12 inch wide strip centered on crack. Install in accordance with manufacturer's recommendations.
2. Install membrane with products or methods approved in writing by membrane manufacturer when joining, sealing, fastening, or adhering sheet membranes.

E. Waterproofing

1. Install waterproofing in strict compliance with manufacturer's instructions.
2. Flash waterproofing up adjacent walls in accordance to manufacturer's details, to a height of 4 inches.
3. Flood test waterproof membranes after fully cured.
4. Field Quality Control water test when required.

F. Tile Installation, General

1. Install tile materials in accordance with ANSI A137.1, other referenced ANSI and TCA specifications, and TCA "Handbook for Ceramic Tile Installation", except for more stringent requirements of manufacturer or these Specifications.
2. Cut and fit tile tight to protrusions and vertical interruptions and treat with a compatible sealant as specified in Section 07900
3. Form corners and bases neatly.
4. Work tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joint watertight, without voids, cracks, excess mortar, or grout.
5. Prepare surface, fit, set, bond, grout and clean in accordance with applicable requirements of ANSI standards and Tile Council of America.

G. Layout

1. Lay out work to indicated pattern so that full tile or joint is centered on each wall and no tile of less than half width need be used. Do not interrupt pattern through openings. Lay out tile to minimize cutting and to avoid tile less than half size.
2. For heights stated in feet and inches, use courses of full tile to produce nearest attainable heights without cutting tile.
3. No staggered joints will be permitted.
4. Align joints in tile in both directions.
5. Align joints between floor and base tile.
6. Make joints between sheets of tile exactly same width as joints within sheet.
7. File edges of cut tile smooth and even.
8. Cut and fit tile at penetrations through tile. Do not damage visible surfaces. Carefully grind edges of tile abutting built-in items. Fit tile at outlets, piping and other penetrations so that plates, collars, or covers overlap tile.
9. Extend tile work into recesses and under or behind equipment and fixtures, to form complete covering without interruptions, except as otherwise indicated. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.
10. Accurately form intersections and returns.
11. Form internal angles coved and external angles bullnosed.

H. Thin Set Method, Floors and Walls

1. Apply mortar or adhesive with notched trowel using scraping motion to work material into good contact with surface to be covered. Maintain 90 percent coverage on back of tile and fully bed all corners.
2. Apply only as much mortar or adhesive as can be covered within allowable windows as recommended by mortar or adhesive manufacturer or while surface is still tacky.
3. When installing large tiles, ceramics or mosaics, trowel small quantity of mortar or adhesive onto back of each tile or sheet of tiles.
4. Set tiles in place and rub or beat with small beating block.
5. Beat or rap tile to ensure proper bond and also to level surface of tile.
6. Align tile to show uniform joints and allow to set until firm.
7. Clean excess mortar or adhesive from surface of tile with wet cheese cloth (not a sponge) while mortar is fresh.
8. Allow face mounted tile to set until firm before removing paper and before grouting.
9. Sound tile after setting. Replace hollow sounding tiles.

I. Thick Bed Method, Horizontal Surfaces

1. Apply slurry bond coat approximately 1/16 inch thick to substrate surface using flat trowel.
2. Place thick bed mortar, 1-1/4 inch thick nominally onto slurry bond coat while coat is still wet and tacky.
3. Spread prepared mortar approximately one-half desired bed thickness and then lay reinforcing mesh.
4. Lap wire 3 inches and place additional mortar on top of wire to bring bed to required thickness.
5. Rod and compact mortar with steel trowel.
6. Before placing tiles on green or wet screed bed, apply slurry bond coat approximately 1/16 inch thick to mortar using flat trowel.
7. Apply mortar skim coat to back of each tile or sheet of tile immediately prior to placing on bed.
8. Place tiles in wet slurry coat before surface dries maintaining uniform joints.
9. After each tile or sheet of tiles is laid, beat tile with wooden block or rubber mallet to level surface and embed tiles.
10. Perform beating before mortar takes initial set.
11. Pitch surface to drain where required.
12. On hardened screed or mortar bed, install tiles by thin bed method.
13. Sound tiles after setting. Replace hollow sounding tiles.

14. Clean excess mortar or adhesive from surface of tile with wet cheese cloth (not a sponge) while mortar is fresh.

J. Grouting

1. Allow tiles to set a minimum of 48 hours before grouting.
2. If bonding materials are rapid setting, follow manufacturer's recommendations.
3. Install in accordance with grout manufacturer's recommendations and ANSI A108.10.
4. Pack joints full and free before mortar takes initial set.
5. Clean excess grout from surface with wet cheesecloth as work progresses. Do not use hydrosponges.
6. Cure after grouting by covering with Kraft or construction paper for 72 hours. Install sealant in vertical wall joints at interior corners.

K. Marble Threshold

1. Provide thresholds at wall or framed openings to other building areas not receiving tile.
2. Set one piece threshold in adhesive without voids, full width of door opening.
3. Point threshold base flush with adjoining tile floors.
4. Cope ends to fit door frame profile.

L. Control Joints and Other Sealant Usage

1. Install control joints where tile abuts retaining surfaces such as perimeter walls, curbs, columns, wall corners and directly over cold joints and control joints in structural surfaces conforming to architectural details.
2. Install control joint in floors at spacings as indicated in TCA Installation Handbook, unless noted otherwise.
3. Rake or cut control joints through setting bed to supporting slab or structure. Keep joints free of mortar.
4. Install in accordance with TCA Installation Handbook.
5. Fill joints with self-leveling polyurethane sealant and backing material specified in Section 07910.
6. Fill joints around toilet fixtures with white silicone sanitary sealant. Refer to Section 07910.

M. Expansion Joints:

1. Keep expansion joints free of mortar and grout.
2. Use manufacturer's expansion joint flashing when covering expansion joints with waterproof or crack isolation membranes.
3. Provide expansion joints directly over changes in material, over control and expansion joints in substrate, at juncture of floors and walls, at other restraining surfaces such as curbs, columns, bases, and wall corners, and where recommended by TCA EJ171 Expansion Joint requirements.
4. Install sealant in expansion joints.
5. Provide sealant material at items penetrating tile work, unless otherwise indicated.
6. Provide sealants and related materials in accordance with cited ANSI and TCA requirements.

3.4 Adjusting

Sound tile after setting. Replace hollow sounding units.

3.5 CLEANING

A. Clean excess mortar from surface with water as work progresses. Perform cleaning while mortar is fresh and before it hardens on surfaces.

B. Sponge and wash tile diagonally across joints. Polish with clean dry cloth.

C. Remove grout haze following recommendation of mortar additive manufacturer. Do not use acids for cleaning.

D. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

3.6 PROTECTION

A. Prohibit traffic from floor finish for 72 hours after installation.

B. Where temporary use of new floors is unavoidable, supply large flat boards or plywood panels for walkways over Kraft paper.

C. Protect work so that it will be without any evidence of damage or use at time of acceptance.

END OF SECTION

SECTION 09510 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Extent of acoustical ceilings specified in this section include the following:

1. Acoustical lay-in panel ceilings in an exposed suspended metal grid system.

SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

1. Full size sample of each acoustical panel type, pattern and color.
2. Set of 12" long samples of exposed runners and moldings for each color and system type required.

B. Certificates: Submit certificates from manufacturers of acoustical ceiling units and suspension systems attesting that their products comply with specification requirements.

1.3 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated by UL or other testing and inspecting agency accept- able to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

1. Surface Burning Characteristics: As follows, tested per ASTM E 84.
2. Flame Spread: 25 or less.
3. Smoke Developed: 50 or less.

B. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for floor, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E 119. Provide protection materials for lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

C. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).

D. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.5 PROJECT CONDITIONS

A. Space Enclosures: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete

and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. USG Interiors, LLC. (Basis of Design) | www.usg.com | Ph: 1.800.950.3839
2. Certainteed Corporation | www.certainteed.com | Ph: 1.800.233.8990
3. Armstrong World Industries Inc. | www.armstrongceilings.com | Ph: 877.276.7876

B. Equal products of other manufacturers may be used in the work provided such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 GENERAL ACOUSTICAL CEILING TILE UNITS

A. Standard for Acoustical Ceiling Tile Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with FS SS-S-118 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC' as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any).

1. Mounting Method for Measuring NRC: No. 7 (mechanically mounted on special metal support), FS SS-S-118; or Type E-400 mounting as per ASTM E 795.

B. Sound Attenuation Performance: Provide acoustical ceiling units with ratings for ceiling sound transmission class (STC) of range indicated as determined according to AMA 1-II "Ceiling Sound Transmission Test by Two-Room Method" with ceilings continuous at partitions and supported by a metal suspension system of type appropriate for ceiling unit of configuration indicated (concealed for tile, exposed for panels).

C. Colors, Textures and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

2.3 ACOUSTICAL TILES

A. **Acoustical Panel Type: Vinyl Covered Ceiling Panels**

1. USG “Sheetrock Brand Clean Room Lay-In Gypsum Panels”.
2. Classification: Provide ceiling panels complying with ASTM E 1264 for type, form and pattern as follows:
    a. Type XX, mineral based with membrane faced overlay. Vinyl face, back and sides covered gypsum ceiling panels.
    b. Form: Not Applicable
    c. Pattern: Smooth
3. Color: Flat White 050.
4. LR: Not less than 0.77
5. NRC: Not less than: N/A
6. CAC: Not less than 35
7. Edge / Joint Detail:
    a. Square (Typical if not indicated on drawings).
    b. SLT Beveled Reveal (Only if indicated on drawings).

8. Panel Thickness: 1/2 inch (12.7 mm).
9. Modular Size: 24 by 24 inches (610 by 610 mm).
10. Recycled Content: 80%.
11. Panel Features: Washable, scrubbable, soil and impact resistant finish. Meets USDA/FSIS guidelines for use in food processing areas.
12. Clean room performance: Acceptable in applications up to Class 100 Clean rooms.
13. ClimaPlus™ 30-year limited system warranty. Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag resistance performance.
14. Suspension Grid/Width: USG Donn ZXLA; 15/16".

B. **Acoustical Panel Type: Lay-In Acoustical Ceiling Panels**

1. USG "Radar" Acoustical Panels
2. Classification: Provide ceiling panels complying with ASTM E 1264 for type, form and pattern as follows:
    a. Type III, mineral base with painted finish
    b. Form: 2, water felted.
    c. Pattern: Perforated, small holes and light texture.
3. Color: Flat White 050.
4. LR: Not less than 0.84
5. NRC: Not less than 0.45
6. CAC: Not less than 33
7. Edge / Joint Detail:
    a. SQ Square (Typical if not indicated on drawings).
    b. SLT Beveled Reveal (Only if indicated on drawings).
8. Panel Thickness: 5/8 inch (15.8mm).
9. Modular Size: 24 by 24 inches (600 by 600 mm).
10. Recycled Content: Up to 59%.
11. Panel Features:
    a. Biobased product that is USDA certified.
    b. Abuse Resistant, high durability and can be cleaned easily with a soft brush & vacuumed.
12. ClimaPlus™ 30-year limited system warranty. Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag resistance performance.
13. Suspension Grid/Width: USG Donn DX; 15/16" (24mm).

C. **Acoustical Panel Type: Noise Reduction Lay-In Acoustical**

1. Location: Refer to Drawings.
2. USG "Radar" "High-NRC/High-CAC" Acoustical Panels
3. Classification: Provide ceiling panels complying with ASTM E 1264 for type, form and pattern as follows:
    a. Type III, mineral based, Form 2, water felted.
4. Pattern: To be selected by architect during submittal stage of project.

5. LR:
    a. Not less than 0.84.
6. NRC:
    a. Not less than **0.70**.
7. CAC:
    a. Not less than 40.
8. Size:
    a. 24" x 24" x 3/4” (unless otherwise indicated on drawings)
9. Edge Profile(s):
    a. Square #22521 (Typical if not indicated on drawings).
    b. SLT Beveled Reveal #22523 (Tegular) (Only if indicated on drawings)
10. Color:
    a. White
11. ClimaPlus™ 30-year limited system warranty. Contains a broad-spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag resistance performance.
12. Suspension Grid/Width: USG Donn DX; 15/16”.

2.4 GENERAL METAL SUSPENSION SYSTEMS

A. Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable STM C 635 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.
    1. White.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

D. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1 coating, sized so that stress at 3- times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12 gage.

E. Edge Moldings and Trim: Formed steel section; exposed surfaces prefinished to match suspension system components.
    1. Provide shadow molding for edges equal to MS174; 9/16” thick exposed flange; 3/8” x 3/8” reveal; 7/8” vertical flange.
    2. At penetrations of ceiling install manufacturer's standard molding which fits with type of edge detail and suspension system indicated.
    3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

F. Hold-Down/Impact Clips: Where indicated provide manufacturer's standard impact clip system design to absorb impact forces against lay-in panels. Install hold down clips at all ceiling panels within 10’-0” of and exterior door.

2.5 METAL SUSPENSION SYSTEMS

A. **USG Donn Brand ZXLA 15/16” Acoustical Suspension System**

1. Double-web design; Intermediate Duty as defined by ASTM C635. Bottom face with 15/16” (24mm) exposed flange with pre-painted aluminum cap; cross tee holes and hanger wire holes at 6 in oc; integral reversible splices, commercial quality pretreated and painted, exposed surfaces prefinished in manufacturer's enhanced corrosion resistant polyester paint finish. Cross tees; roll-formed into double-web design with rectangular bulb; 15/16 (24mm) in exposed flange with pre-painted aluminum cap; Stainless Steel clips clenched to the web Main tees and cross tees shall be positively locked yet shall be removable without the use of tools.
2. Structural Classification: Intermediate Duty.
3. Tee Profile: 15/16” (24mm) wide.
4. Color: White

2.6 SEALANT

A. Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of concealed construction joints.

B. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. BA-98; Pecora Corp.
2. Tremco Acoustical Sealant; Tremco
3. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to schedule bid opening.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Coordinate ceiling layout with lighting layout. Avoid use of less-than-half width units at borders and comply with reflected ceiling plans.

3.2 INSTALLATION

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements as indicated, and CISCA standards applicable to work.

B. Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members.

1. Locate hangers within 6" inches from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" n 12'-0".
2. Locate hangers on all 4 corners of the ceiling grid where a projector is installed

D. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperature.

E. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only

where required to miss obstructions and offset resulting horizontal force by bracing, counter-splaying or other equally effective means.

F. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

G. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.

H. Screw-attached moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

I. Install acoustical panels in coordination with suspension system with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

J. Install hold-down clips on panels, within 10’-0"' of exterior door openings, where panels are other than horizontal, and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

3.3 EXTRA STOCK

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

1. Ceiling Tile: Furnish not less than one box for each type, color, pattern and size installed.

END OF SECTION

SECTION 09651 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SUMMARY

A. Section Includes:

1. Resilient Luxury Vinyl Tile Flooring

1.3 Submittals

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.

D. Product Schedule: For resilient products. Use same designations indicated on Drawings**.**

1.4 QUALITY ASSURANCE

A. Installation Qualification: Contractors for floor covering installation should be experienced in managing commercial flooring projects and provide professional installers, qualified to install the various flooring materials specified. An installer is “qualified” if trained by Tarkett or a certified INSTALL (International Standards & Training Alliance) resilient floor covering installer.

B. Mockups: Provide resilient products with mockups as required by Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Tarkett, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.6 PROJECT CONDITIONS

A. Install resilient products after other finishing operations, including painting, have been completed.

B. Maintain ambient temperatures within range recommended by Tarkett, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

C. Maintain the ambient relative humidity between 40% and 60% during installation.

D. Until Substantial Completion, maintain ambient temperatures within range recommended by Tarkett, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

B. Flooring products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 LUXURY VINYL TILE

A. Basis-of-Design Product: Subject to compliance with requirements, provide Tarkett LVT Event Series See Finish Schedule

1. Tile Standard: ASTM F 1700, Class III, Type B, embossed surface.
2. Wearing Surface: Embossed.
3. Edge Treatment: Square
4. Thickness/Wearlayer: 0.120 inch (3.0 mm).
5. Sizes:
a. See Finish Schedule
6. Colors and Patterns: As selected by Architect from full range of industry colors
7. Test data:
    a. Wear Layer: 0.030 inch (0.76 mm)
    b. Size, Squareness, ASTM F 2055: Conforms
    c. Flexibilty, ASTM F137: Conforms
    d. Chemical Resistance, ASTM E925: Conforms
    e. Static Load Limit, ASTM F 970: Conforms at 250 psi load
    f. Resistance to Heat, ASTM F 1514: $\Delta E \leq 8$
    g. Resistance to Light, ASTM F1515: $\Delta E \leq 8$
    h. Residual Indentation, ASTM F1914: Conforms
    i. Static Coefficient of Friction, ASTM D 2047: Minimum 0.5 SCOF
    j. Dimensional Stability, ASTM F2199: Conforms
    k. Flamability, ASTM E648 Critical Radiant Flux: Class 1 (≥0.45 W/cm2)
    l. Smoke Density, ASTM E662: ≤ 450
    m. Limited Commercial Warranty: 20 years

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation.

B. Adhesives: As recommended by Tarkett to meet site conditions

1. Resilient Vinyl Floor Tile
    a. Tarkett RollSmart™
    b. CENTI 2001 Wet Set Adhesive
    c. CENTI 6000 SP Wet Set
    d. CENTI 2000 EP Two-Part Epoxy Adhesive

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to Tarkett written instructions to ensure proper adhesion of Resilient Flooring.

1. Prepare concrete substrates in accordance with ASTM F 710.
    a. Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.
    b. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.
    c. Perform moisture testing as recommended by manufacturer. Proceed with installation only after substrates have been tested and meet the minimum requirements from the manufacturer in accordance with ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
    d. A pH test for alkalinity must be conducted on the concrete floor prior to installation with results conforming to manufacturer requirements. If the test results are not within the acceptable range, then installation must not proceed until the problem has been corrected.
2. Wood subfloors must have a minimum 18" (45.7 cm) of cross-ventilated space beneath the bottom of the joist.
    a. The floor must be rigid, free of movement.
    b. Single wood and tongue and groove subfloors should be covered with ¼" (6.4 mm) or ½" (12.7 mm) APA approved underlayment plywood.
    c. Use ¼" (6.4 mm) thick underlayment panels for boards with a face width of 3" (76 mm) or less.
    d. Use ½" (12.7 mm) thick underlayment panels for boards with a face width wider than 3" (76 mm).
    e. Do not install over OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.

B. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Floor covering shall not be installed over expansion joints

D. Do not install resilient products until they are same temperature as the space where they are to be installed.

E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT TILE FLOORING INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient tile flooring.

B. Luxury Vinyl Tile Flooring:
   1. Install with Tarkett adhesive specified for the site conditions and follow adhesive label for proper use.
   2. Follow Tarkett’s recommendation for tile orientation.
   3. Open enough cartons of floor tiles to cover each area, and mix tile to ensure shade variations do not occur within any one area.
   4. Roll the flooring in both directions using a 100 pound three-section roller.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

B. Perform the following operations immediately after completing resilient product installation:

   1. Remove adhesive and other blemishes from exposed surfaces.
   2. Sweep and vacuum surfaces thoroughly.
   3. Damp-mop surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

   1. No traffic for 24 hours after installation.
   2. No heavy traffic, rolling loads, or furniture placement for 48 hours after installation.

D. Wait 48 hours after installation before performing initial cleaning.

E. A regular maintenance program must be started after the initial cleaning.

END OF SECTION

SECTION 09660 - RUBBER BASE, STAIR TREAD, RISER AND STRINGER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Resilient Rubber Base
2. Resilient Rubber Stair Tread with Riser.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.

D. Product Schedule: For resilient products. Use same designations indicated on Drawings**.**

1.4 QUALITY ASSURANCE

A. Mockups: Provide resilient products with mockups specified in other Sections.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Johnsonite, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.6 PROJECT CONDITIONS

A. Install resilient products after other finishing operations, including painting, have been completed.

B. Maintain ambient temperatures within range recommended by Johnsonite, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

C. Maintain the ambient relative humidity between 40% and 60% during installation.

D. Until Substantial Completion, maintain ambient temperatures within range recommended by Johnsonite, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

PART 2 - PRODUCTS

2.1 MANUFACTURERES

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

1. Tarkett USA Inc. (Basis of Design; 30000 Aurora Road, Solon, OH 44139: 800.899.8916; www.tarkettna.com.
2. Mannington Commercial, 1844 U.S. Highway 41 S.E. Calhoun, GA 30701; PH: 800.241.2262; www.manningtoncommercial.com.

3. Roppe Corporation, U.S.A.; 1602 North Union Street, Fostoria, Ohio 44830-1158; Ph: 1.800.537.9527 or 419.435.8546; www.roppe.com.
4. Flexco Corporation; 1401 East 6th Street, Tuscumbia, AL 35674; PH: 800.633.315; www.flexcofloors.com.
5. Armstrong Flooring Commercial; 2500 Columbia Avenue, Lancaster, PA 17604; Ph:1.888.276.7876; www.armstrongflooring.com/commercial.

2.2 MATERIALS - RUBBER BASE

A. Material Physical Characteristics: Provide rubber base complying with FS SS-W-40, Type II, with matching end stops and pre-formed or molded corner units and as follows:
   1. Manufactured from a proprietary thermoplastic rubber formulation.
   2. Meets performance requirements for ASTM F 1861 Standard Specification for Resilient Wall Base, Type TP, Group 1.
   3. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm2 or greater, Class I.
   4. ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class A, Smoke <450.
   5. Flexibility: Does not crack, break, or show any signs of fatigue when bent around a 1 1/4" diameter cylinder when tested according to ASTM F 137 Standard Test Method for Flexibility of Resilient Flooring Materials protocols.
   6. Color Stability: Meets or exceeds ASTM F 1861 requirements for color stability when tested to ASTM F 1515 Standard Test Method for Measuring Light Stability of Resilient Flooring protocols.

B. Rubber Wall Base (RB):
   1. Wall Base and Accessories: Provide products below or equivalent by approved manufacturer:
      a. RB-1: Johnsonite (Tarkett), Baseworks TS Rubber Base with Toe, 4” x 120”
      b. RB-2: Johnsonite (Tarkett), Millwork TP Rubber/Reveal, MW-XX-F6, ¼” thick, 6” high
      c. RB-3: Johnsonite (Tarkett), Millwork TP Rubber/Monument, MW-XX-S4, ¼” thick, 4” high
      d. TRS-1: Johnsonite (Tarkett), Edge Guard, Install at Area Rugs
   2. Colors and Patterns: As selected by Architect from manufacturer’s standards after Bid.

2.3 MATERIALS - RUBBER INTEGRATED STAIR TREAD WITH RISER:

A. Material Physical Characteristics:
   1. Manufactured from a homogeneous composition of 100% synthetic rubber.
   2. Complies with requirements for ASTM F 2169 Standard Specification for Resilient Stair Treads, Type TS, Class 1 and 2, Group 1 and 2.
   3. Hardness: ASTM D 2240 – Not less than 85 Shore A.
   4. Abrasion Resistance: ASTM D 3389 – less than 1 gram weight loss.
   5. ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish- Coated Flooring of 0.6 or greater.
   6. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm^2 or greater, Class I.
   7. Integrated tread and riser.
   8. Visually Impaired treads meet ADA and are California Title 24 Accessibility requirements.
   9. Visually Impaired treads will have 2" wide co-extruded contrasting color insert or 2" wide

contrasting color grit tape insert.

B. Rubber Integrated Stair Tread with Riser:

1. Visually Impaired Solid Color Rubber Integrated Stair Tread and Riser with Contrasting Color Insert

a. For Raised Round surface, solid color integrated stair tread and riser, 2" height hinged Square Nose, tapering .210" to .113", with 2" contrasting color grit tape insert.

b. Color to be selected by Architect after the bid date.

c. Round Pattern

2. Visually Impaired Solid Color Rubber Integrated Stair Tread and Riser with Contrasting Color Insert

a. Fast Lane surface, solid color integrated stair tread and riser, 2" height hinged Square Nose, tapering .210" to .113", with 2" contrasting color grit tape insert.

b. Color to be selected by Architect after the bid date.

c. Fast Lane Pattern.

2.4 MATERIALS - RESILIENT RUBBER STAIR STRINGER

A. Material Physical Characteristics:

1. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm^2 or greater, Class I.

2. Meets or exceeds the performance requirements for resistance to heat/light aging, chemicals, and dimensional stability when tested to the methods, as described, in ASTM F-1861.

3. Flexibility: Will not crack, break, or show any signs of fatigue when bent around a 1/4" (6.35 mm) diameter cylinder.

B. Rubber Stair Stringer:

1. Rubber Stringers are manufactured from a proprietary thermoplastic rubber formulation designed specifically to meet the performance and dimensional requirements of ASTM F-1861, Type TP, Group 1 (solid) Standard Specification for Resilient Wall Base.

a. Thickness of 0.080” (2mm)

b. 10” (25.4 cm) height x 6 ft. (1.83 cm) long.

c. Color to be selected by Architect after the bid date.

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement-based formulation manufactured and warranted by a reputable manufacturer.

1. Flooring and Tread Adhesives: Premium, Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.

B. Stair Tread and Nose Filler: Two-Part Epoxy Caulking Compound to fill nosing substrates that do not conform to tread contours.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other

Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

3. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.

4. Prepare Substrates according to ASTM F 710 including the following:

a. Moisture Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

1) Perform anhydrous calcium chloride test, ASTM F 1869. Results must not exceed 5 lbs. Moisture Vapor Emission Rate per 1,000 sq. ft. in 24 hours.

– or –

2) Perform relative humidity test using in situ probes, ASTM F 2170. Must not exceed 80%.

b. A pH test for alkalinity must be conducted. Results should range between 7 and 9. If the test results are not within the acceptable range of 7 to 9, the installation must not proceed until the problem has been corrected.

c. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.

5. Wood steps/substrates:

a. The substrate must be rigid, free of movement.

b. Single wood and tongue and groove substrate should be covered with 1/4" (6.4 mm) or 1/2" (12.7 mm) APA approved underlayment plywood.

1) Use 1/4" (6.4 mm) thick underlayment panels for boards with a face width of 3" (76 mm) or less.

2) Use 1/2" (12.7 mm) thick underlayment panels for boards with a face width wider than 3" (76 mm).

c. Do not install over OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.

B. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement-based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Floor covering shall not be installed over expansion joints.

D. Do not install resilient products until they are same temperature as the space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

3.3 Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.4 INSTALLATION - RUBBER BASE

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required.

B. Install base in lengths as long as practicable without stretching base.

C. Install base at outside corners using preformed corner units. If preformed unit is not available, then fabricate outside corners from base material utilizing a “V” shape top-set or pull-type gouge tool to make a shallow V-shape notch on back-side of wall base. Field-fabricated outside corners must have a minimum return length around each corner of 3 feet. Adhere to corner of walls so that no “whitening” (discoloration of base material) occurs at the bends.

D. Install base at inside corners using preformed corner units or fabricated from base materials with mitered or coped inside corners.

E. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

1. On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

F. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

3.5 INSTALLATION - RESILIENT STAIR TREAD AND RISER

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Stair Tread and Nosing:

1. Use manufacturer Epoxy Caulking Compound to strengthen nosing and fill irregularities in substrates to conform to tread nosing.

2. Tightly adhere to substrates throughout length of each piece.

3. For treads installed as separate, equal-length units, install to produce a flush joint between units.

3.4 INSTALLATION - RESILIENT RUBBER STAIR STRINGER

A. Comply with manufacturer's written instructions for installing resilient accessories.

3.6 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

B. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.

2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

END OF SECTION

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SECTION 09680 - CARPET

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SCOPE

A. The work under this Section consists of all carpet, labor, metal strip, and all accessories required to properly install carpet in quality, workmanlike manner.

1.3 SUBMITTALS

A. The carpet contractor shall submit to the Architect samples of all materials with complete color specifications specified herein.

B. Carpet subcontractor shall submit to Architect a seam layout for approval before being approved as a subcontractor.

1.4 QUALITY ASSURANCE

A. Carpet manufacturer shall have been manufacturer of this type of carpet continuously for period of five (5) years.

1.5 TEST REQUIREMENTS

A. Meets FHA requirements as prescribed in "Use of Materials Bulletin" No. 44b, dated April 23, 1969, for HEAVY TRAFFIC.

B. Certified to pass Flame Spread Rating in accordance with provisions of State Fire Marshall's regulations.

1.6 GUARANTEES AND WARRANTIES

A. Carpet manufacturer and installer must submit certification guaranteeing carpet and installation against defects for a period of two (2) years from date of final acceptance of the Contract, or from occupancy of the building, whichever is earlier.

B. Carpet manufacturer shall guarantee carpet against wear for a period of Fifteen (15) Years minimum from date of final acceptance of the Contract, or from occupancy of the building, whichever is earlier.

C. Carpet manufacturer shall guarantee static generation of no more than 3.5 KV as tested under AATCC-134.

D. Manufacturer must submit certification guaranteeing carpet against edge ravel for a period of Fifteen (15) Years from date of final acceptance of the Contract, or from occupancy of the building, whichever is earlier.

1.7 MAINTENANCE INSTRUCTION

A. The carpet manufacturer shall furnish three (3) copies of a complete Maintenance Manual for Owner's use.

1.8 MANUFACTURER

A. Basis of Design: CPT - 1 Tarkett, Assertive Stria 04839, Color: See Finish Legend

PART 2 - PRODUCTS

2.1 MATERIALS

A. All carpet shall be first quality of American manufacture, and all yarn shall be of Domestic origin.

1. Assertive Stria 04839 (CPT - 1):

Style Name: Soft Glow Colorline
Style Number: 131130AK00
Product Type: 25cm X 1m Modular Tile
Construction: Tufted Textured Loop
Fiber Type: 100% Recycled Content Nylon
Dye Method: 100% Solution Dyed
Gauge: 1/12 (47.24 per 10cm)
Stitches Per Inch: 8.5 /in
Tufted Pile Height: 0.14 in
Tufted Yarn Weight: 19 oz/sq.yd
Finished Pile Thickness: 0.093 in
Density: 7,355
Weight Density
Protective Treatments: Protekt
Primary Backing: GlasBac
Secondary Backing
Width
Pattern Repeat: None
Recommended Installation: As indicated on drawings.
Post-Consumer Recycled Content: 9.99%
Post Industrial Recycled Content

2. Performance Specifications:

Methenamine Pill Test (DOC FF-1-70)	Pass
Flooring Radiant Panel (ASTM E-648)	Class I
Smoke Density (ASTM E-662)	Less than 450
Static Control (AATCC-134)	Less than 3.5 kV
CRI Green Label Plus	GLP 9968

3. Warranty Information:

Wearability Lifetime Commercial Limited

B. Provide white metal aluminum wrap around edge strip at termination edge of carpet where transitioning to other floor finish.

C. Interior finish materials shall comply with critical radiant flux, flame spread limitations and smoke production limitations as follows. If a separate underlayment is used with any floor finish materials, the underlayment and the finish material shall be tested as a unit or equivalent

provisions taken as to the effect of the underlayment on the flammability characteristics of the floor finish material. Tests shall be performed by an independent testing laboratory.

1. Carpet on floors in Group I Occupancies shall satisfactorily withstand a minimum critical radiant flux of 0.45 watts/sq cm when tested in accordance with NFPA 253.

2. Carpet on floors in other than Group I Occupancies shall satisfactorily withstand a minimum critical radiant flux of 0.22 watts/sq. cm when tested in accordance with NFPA 253.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

B. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

C. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

D. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.2 PREPARATION

A. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects as recommended by the flooring manufacturer.

B. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.

C. Perform subfloor moisture testing in accordance with ASTM F 2170, “Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Relative humidity shall not exceed 80%.][MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.

D. Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.

E. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.3 INSTALLATION

A. All materials to be installed by craftsmen with at least 5 years commercial experience and must show evidence of having satisfactorily installed jobs of this size. Installer must be a CFI (Certified Floorcovering Installer) or FCIB (Floor Covering Installation Board) Certified Installer.

B. Direct Glue-Down Method - Direct lamination to the sub-floor with NO PAD. Use primer and cement as recommended by carpet manufacturer.

C. All seams shall receive a coating of latex edge sealer as approved by the manufacturer. All seams must be kept to a minimum and shall be invisible.

D. After installation clean up all dirt, scraps, debris and vacuum. Remove any spots.

E. Installation of carpet shall be delayed until final stages of project construction to insure that goods are not soiled and stained during project completion. Rooms shall be locked immediately after installation of carpet and traffic is not to be allowed in these areas.

F. Installation of all carpet tile is to be as noted on Finish Legend.

G. Carpet Tile Glue Down Method – shall be done as a “Continuous Spread” method. **“Grid-Set” method is <u>unacceptable</u>**.

H. Dye lots – If more than one dye lot is used, verify customer satisfaction with all lots prior to installing carpet. Make sure to inspect all carpet prior to installation. Carpet from a single dye lot is preferred.

3.4 DAMAGES

A. Carpet contractor shall be responsible for any damages to structure thru fault of installers.

3.5 SURPLUS MATERIALS

A. Carpet remnants shall be packaged and delivered to the Owner.

3.6 ATTIC STOCK

A. Provide 5% of each style and color of specified products. Store at location as determined by Owner.

END OF SECTION

SECTION 09726 - TACKABLE WALLCOVERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SUMMARY

A. Section Includes:

1. Resilient cork/linoleum tackable wallcovering.
2. Accessories.

B. Related Sections/Items:

1. Primer/sealer application on gypsum board substrate, refer to Section 09910.

1.3 SUBMITTALS

A. Comply with Section 01350.

B. Product data indicating compliance with specified requirements.

C. Installation Instructions.

D. Samples: 6 X 9 inch (150 x 225 mm) samples of each type of tackable wallcovering material required.

1.4 QUALITY ASSURANCE

A. Fire Performance Characteristics: Comply with fire performance characteristics indicated below. Identify components with markings from testing and inspection organization.
1. ASTM E 84 (Fuel contribution) - Class B
2. NFPA253 (Critical Radiant Flux) - Class II

B. Single Source Responsibility: Obtain tackable wallcovering system components from a single source.

C. Deliver materials in original factory wrappings and containers, clearly labeled with manufacturer, brand name, and fire hazard classification.

D. Store materials in original, undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, and extreme temperatures. Maintain room temperature within the storage area at not less than 68º F (20º C) during the period materials are stored.

E. Mock-ups: Prepare mock-ups for Architect’s review and to establish requirements for seaming and finish trim.
1. Correct areas, modify method of application/installation, or adjust finish texture as directed by Architect to comply with specified requirements.
2. Maintain mock-ups accessible to serve as a standard of quality for this Section.
3. Install sample panel of each type of wallcovering specified.
4. Install panels in areas designated by Architect.

1.5 PROJECT CONDITIONS

A. Maintain ambient temperature within the building at not less than 68º F (20º C) for a minimum of 72 hours prior to beginning of installation.

B. Do not install tackable wallcovering until the space is enclosed and weatherproof.

C. Do not install tackable wallcovering until temperature is stabilized and permanent lighting is in place.

1.6 MAINTENANCE

A. Maintenance Instructions: Include precautions against cleaning materials and methods that may be detrimental to finishes and performance.

B. Extra Materials: Deliver to Owner extra materials from same production run as installed products. Package with protective materials.

1.7 Warranty

A. Submit manufacturer's five-year written warranty against manufacturing defects.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Walltalkers® tac•wall as a basis of design: Uni-color, resilient, homogeneous, tackable linoleum surface consisting of linseed oil, granulated cork, rosin binders, and dry pigments calendared onto natural burlap backing. Color shall extend through thickness of material. Color to be selected by Architect from Manufacturer's full range of colors.

B. Other products will be considered for pre-approval if they meet or exceed the specifications provided herein. Submit at least 10 days prior to bid and comply with Section 01330.

2.2 ACCESSORIES

A. Adhesive: Solvent-free, SBR type linoleum adhesive (L-910) or polyvinyl acetate dispersion type (contact adhesive) when used in press.

B. Color matched caulk:

1. Acrylic Caulk - color to be selected by Architect from Manufacturer's full range of colors.

C. J-Trim for tac•wall:

1. JTRM-00: Clear satin, anodized aluminum, 1/4 inch profile trim

D. H-Trim for Tac-Wall:

1. H212: Clear satin, anodized aluminum 1/2".

E. WTQP-01:

1. 24 push pins; translucent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions in which tackable wallcoverings will be installed.

1. Complete finishing operations, including painting, before beginning installation of tackable wallcovering materials.
2. Wall surfaces to receive wallcovering materials shall be dry and free from dirt, grease, loose paint, and scale.
3. Do not proceed with installations until satisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Preparation: Remove hardware, accessories, plates, and similar items to allow tackable wallcovering to be installed.

1. Plaster surface: Remove surface chalk. In new work, use moisture meter to determine moisture content. Do not begin installation when moisture content is greater than five percent.
2. Gypsum board surface: Recess nails and screws. Repair irregular tape joints, sand and remove dust.
3. Painted surface: Remove loose paint or scale. Sand surface of enamel or gloss paint and wipe clean with damp cloth.
4. Ensure gypsum wallboard surfaces scheduled to receive wallcovering are properly primed with a quality acrylic wallcovering primer under Section 09910.

B. Prime substrate as recommended by manufacturer.

3.3 APPLICATION

A. Comply with manufacturer's printed installation instructions.

B. Cut sheets to size including 2 to 3 inches of overage. Allow sheets to lay flat for at least 24 hours prior to the application. Mark roll directly on the backside of each sheet. Hang sheets in sequence as cut from the roll, do not reverse every other sheet.

C. Permanent HVAC system should be set to 68º F (20º C) for at least 72 hours prior to, during, and after the installation.

D. Back roll each sheet prior to the installation to release curl memory.

E. For seamed applications, using a seam and strip cutter remove the factory edge of one sheet. Using the same tool, overlap and trace cut the mating edge of the second sheet. Repeat this step for as many sheets as required for the job.

F. Scribe, cut, and fit material to butt tightly to adjacent surfaces, built-in casework, and permanent fixtures and pipes.

G. Apply adhesive (only enough to hang one sheet at a time) with a 1/16 inch trowel to the area to receiving the sheet.

H. Work from top to bottom then side to side. Roll sheet firmly into adhesive for positive contact and to remove air bubbles.

I. Remove adhesive residue immediately.

3.4 CLEANING

A. Clean wallcovering using a sponge with a neutral pH cleaning solution. Do not use abrasive cleaners. Rinse thoroughly with water and let dry before using.

B. Remove excess adhesive using methods and materials recommended by manufacturer.

3.5 PROTECTION

A. Protect installed product and finish surfaces from damage during construction.

END OF SECTION

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of painting work is indicated on drawings and schedules, and as herein specified including accent painting.

B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatments specified under other sections of work.

C. Work includes field painting of exposed bare and covered pipes, conduits and ducts (including color coding), and of hangers, exposed steel and iron work, and conduits and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.

D. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

E. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

F. Following categories of work are not included as part of field-applied finish work.

1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, acoustic materials, elevator entrance doors and frames, elevator equipment, and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.

2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

3. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.

4. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

G. Following categories of work are included under other sections of these specifications.

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

2. Unless otherwise specified, shop priming of fabricated components such as shop-fabricated or factory-built mechanical and electrical equipment or accessories is included under other sections of these specifications.

H. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer and use only within recommended limits.

B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Prior to beginning work, Architect will furnish color chips for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect's review of color and texture only.

C. Provide a listing of material and application for each coat of each finish sample. Provide a 4' x 4' sample application of each color paint for Architect's approval prior to final ordering of product. Sample application shall be applied in an inconspicuous place, satisfactory to the Architect.

1.5 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

1. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.6 JOB CONDITIONS

A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50-degree F and 90-degree F, unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45-degree F and 95-degree F, unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85% or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

1. Painting may continue during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers are listed as acceptable substitutions to the establish minimum standards. Sherwin Williams Products are listed as the standard of product performance and quality.

1. Sherwin Williams Paint Company (SW)
2. Benjamin Moore and Co. (Moore).
3. Pittsburgh Paints (PPG).

B. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Material Quality: Provide the best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

1. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.
2. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.
3. Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Architect. Furnish material data and manufacturer's certificate of performance to Architect for any proposed substitutions.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

PART 3 – EXECUTION

3.1 INSPECTION

A. **Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator. If work begins before satisfactory conditions are met, then it shall be the Applicators' responsibility for the finish surfaces conditions.**

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

1. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.
2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting

of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

3. Contractor MUST remove ALL foreign matter/material not pertinent to new paint from all surfaces before application of any new paint. Foreign matter/material includes, but is not limited to, flaking paint, tape, tacks, nails, poster gum, adhesives of any kind etc.

4. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

B. Cementitious Materials: Prepare cementitious surfaces of concrete, concrete block, cement plaster and cement-asbestos board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

1. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

2. Clean concrete floor surfaces schedules to be painted with a commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid and allow to dry before painting.

C. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

1. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.

2. When transparent finish is required, use spar varnish for backpriming.

3. Backprime all exposed exterior wood. Backprime paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside.

4. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

D. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

1. Touch-up shop-applied prime coats wherever damaged or bare. Clean and touch-up with same type shop primer.

E. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density and stir as required during application. Do not stir surface film into material. If film exists, remove film and strain paint material.

3.4 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Paint colors, surface treatments, and finishes, are indicated in "schedules" of the contract documents.

1. Provide finish coats which are compatible with prime paints used.
2. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness not less than specified thickness.
3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
4. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
5. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
6. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
7. Sand lightly between each succeeding enamel or varnish coat.
8. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss adhesion of the undercoat.

C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

D. Prime Coats: Apply prime coat where required to be painted or finished, and which has not been primed coated by others.

1. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

E. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

F. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats, unless otherwise indicated.

G. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.5 FIELD QUALITY CONTROL

A. The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:

1. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.
2. Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.

B. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

3.6 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each day.

B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

1. Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

D. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.7 EXTRA STOCK

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

1. Paint: Furnish not less than one gallon for each type and color, applied.

3.8 EXTERIOR PAINT SCHEDULE

A. GENERAL

1. Paint all new roof penetrations at roof areas, including roof attic ventilators and exhaust fan housings.
2. General: Provide the following paint systems for the various substrates, as indicated.

B. EXTERIOR METALS

1. Zinc-Coated Metal.
   a. Alkyd Gloss Enamel Finish.
      i. 2 Coats over primer, with total dry film thickness not less than 2.5 mils.
      ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).
      iii. 2nd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series.
      iv. 3rd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series, (2-4 mils dry per coat).
   b. *(Contractor Option)* Waterbased Alkyd Gloss Enamel Finish.
      i. 2 Coats over primer, with total dry film thickness not less than 2.5 mils.

ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).

iii. 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series.

iv. 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series, (1.4 – 1.7 mils dry per coat).

2. Ferrous Metal.

a. Alkyd Gloss Enamel Finish.

i. 2 Finish Coats over primer, with total dry film thickness not less than 6.0 mils.

ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).

iii. 2nd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series.

iv. 3rd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series, (2-4 mils dry per coat).

b. *(Contractor Option)* Waterbased Alkyd Gloss Enamel Finish.

i. 2 Finish Coats over primer, with total dry film thickness not less than 6.0 mils.

ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).

iii. 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series.

iv. 3rd Coat: S-W Pro Industrial Water-based Alkyd Urethane Enamel, Gloss Finish, B53 Series, (1.4 – 1.7 mils dry per coat).

C. EXTERIOR CMU

1. Masonry Materials

a. Elastomeric Paint Finish.

i. Prepare surface

ii. Apply masonry bonding and primer.

iii. Complete and apply painting coat

a. 2 Finish Coats over primer, with total dry film thickness not less than 6.0 mils

i. 1st Coat: Exterior Elastomeric Masonry & Brick SikaWall-4090 Acrylic

(9.0-9.5 mils wet, 16 mils dry per coat).

ii. 2nd Coat: Exterior Elastomeric Masonry & Brick SikaWall-4090 Acrylic

iii. 3rd Coat: Exterior Elastomeric Masonry & Brick SikaWall-4090 Acrylic

3.9 INTERIOR PAINT SCHEDULE

A. **GENERAL**

1. Provide the following paint systems for the various substrates, as indicated on drawings, schedules and specifications.

2. Paint all exposed metals (steel framing, mechanical ducts, conduit, etc.) unless otherwise indicated on drawings.

3. Painter shall identify all fire and smoke partitions above lay in ceilings as follows: Wording shall be “FIRE AND SMOKE BARRIERS - PROTECT ALL OPENINGS” (4” high), to be applied every 8’- 0” on center.

B. **INTERIOR METALS**

1. Structural Steel / Metal Building Components.
    a. Epoxy Egshel Finish.
        i. 2 coats over primer with total dry film thickness not less than 6.0 mils.
        ii. 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66W01310 (5 – 10 mils wet, 1.9 – 3.8 mils dry per coat).
        iii. 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy EgShel Finish, B73-360 Series (5.0 – 12.0 mils wet, 2.0 – 5.0 mils dry per coat).
        iv. 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy EgShel Finish, B73-360 Series (5.0 – 12.0 mils wet, 2.0 – 5.0 mils dry per coat).
2. Zinc-Coated Metal
    a. Alkyd Gloss Enamel Finish.
        i. 2 Coats over primer, with total dry film thickness not less than 6.0 mils.
        ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat) .
        iii. 2nd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series.
        iv. 3rd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series, (2-4 mils dry per coat).
    b. *(Contractor Option)* Waterbased Alkyd Gloss Enamel Finish.
        i. 2 Coats over primer, with total dry film thickness not less than 6.0 mils.
        ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).
        iii. 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series.
        iv. 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series, (1.4 – 1.7 mils dry per coat).
3. Ferrous Metal
    a. Alkyd Gloss Enamel Finish.
        i. 2 Finish Coats over primer, with total dry film thickness not less than 6.0 mils.
        ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).
        iii. 2nd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series.
        iv. 3rd Coat: S-W Industrial Enamel, Gloss Finish, B54 Series, (2-4 mils dry per coat).
    b. *(Contractor Option)* Waterbased Alkyd Gloss Enamel Finish..
        i. 2 Finish Coats over primer, with total dry film thickness not less than 6.0 mils.
        ii. 1st Coat: S-W Pro Industrial Pro-Cryl® Universal Acrylic Primer, B66-01310 Series (5.0-10.0 mils wet, 1.9-3.8 mils dry per coat).
        iii. 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel, Gloss Finish, B53 Series.
        iv. 3rd Coat: S-W Pro Industrial Water-based Alkyd Urethane Enamel, Gloss Finish, B53 Series, (1.4 – 1.7 mils dry per coat).

C. **INTERIOR MASONRY UNITS**

1. Concrete Masonry Units (CMU).
    a. Latex Semi-Gloss Enamel Finish

i. 2 Finish coats over filled surface with total dry film thickness of not less than 11.4 mils.

ii. 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W00150 (16.0 – 21.0 mils wet, 8.0 - 10.5 mils dry per coat).

iii. 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series.

iv. 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series (4 mils wet, 1.5 mils dry per coat).

v. Locations: Typical at all CMU unless otherwise indicated in the schedule.

b. Epoxy - Pre-Catalyzed Waterbased Semi-Gloss Finish.

i. 2 Finish coats over filled surface with total dry film thickness of not less than 11.4 mils.

ii. 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W00150 (16.0 – 21.0 mils wet, 8.0 - 10.5 mils dry per coat).

iii. 2nd Coat: S-W Pro Industrial® Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46-01151 Series (4 mils wet, 1.4 mils dry per coat).

iv. 3rd Coat: S-W Pro Industrial® Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46-01151 Series (4 mils wet, 1.4 mils dry per coat).

v. Locations: All Wet Areas in Athletic Facilities.

c. Epoxy – Catalyzed Waterbased EgShel Finish.

i. 2 Finish coats over filled surface with total dry film thickness not less than 14.0 mils.

ii. 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W00150 (16.0 – 21.0 mils wet, 8.0 - 10.5 mils dry per coat).

iii. 2nd Coat: S-W Pro Industrial Catalyzed Waterbased Epoxy EgShel Finish, B73-360 Series.

iv. 3rd Coat: S-W Pro Industrial Catalyzed Waterbased Epoxy EgShel Finish, B73-360 Series (5.0 – 12.0 mils wet, 2.0 – 5.0 mils dry per coat).

v. Locations:

1. All Showers Areas.

2. Kitchens / Cafeterias / Servicing / Dining / Kitchen Storage / Dishwashing / Freezer-Coolers.

3. FACS.

2. Existing Concrete Masonry Units (CMU).

a. If existing concrete block walls are covered with an enamel paint finish, the following shall be used:

i. 1st Coat: S-W Extreme Bond Primer, B51W00150 (3.1 mils wet, .9 mils dry).

ii. 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series.

iii. 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series (4 mils wet, 1.5 mils dry per coat) .

b. If the existing concrete block walls are covered with a latex paint finish, the following shall be used:

i. 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).

ii. 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series.

iii. 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31W12651 Series (4 mils wet, 1.5 mils dry per coat.

D. **GYPSUM DRYALL**

1. Walls and Ceilings

a. Interior Acrylic Latex Semi-Gloss Finish.

i. 3 Coat system with dry film thickness not less than 3.8 mils.

ii. 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).

iii. 2nd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss Finish, B31W02651 Series.

iv. 3rd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss Finish, B31W02651 Series (4 mils wet, 1.5 mils dry per coat).

v. Locations: Typical at all Gypsum Drywall Walls and Ceilings unless otherwise indicated in the schedule.

b. Epoxy - Pre-Catalyzed Waterbased EgShel Finish.

i. 2 Finish coats over Primer with total dry film thickness not less than 14.0 mils.

ii. 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).

iii. 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy EgShel Finish, K45-01151.

iv. 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy EgShel Finish, K45-01151 (2-4 mils dry per coat).

v. Locations: Walls and Ceilings at Showers Areas. *NOT in Shower Stalls*.

c. *(Contractor Option)* Epoxy - Catalyzed Waterbased EgShel Finish.

i. 2 Finish coats over Primer with total dry film thickness not less than 14.0 mils.

ii. 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).

iii. 2nd Coat: S-W Pro Industrial Catalyzed Waterbased Epoxy EgShel Finish, B73-360 Series.

iv. 3rd Coat: S-W Pro Industrial Catalyzed Waterbased Epoxy EgShel Finish, B73-360 Series (5.0 – 12.0 mils wet, 2.0 – 5.0 mils dry per coat).

v. Locations: Walls and Ceilings at Showers Areas. *NOT in Shower Stalls*.

E. **INTERIOR WOODWORK**

1. Painted Woodwork.

a. Interior Semi-Gloss Acrylic Latex with dry film thickness not less than 3.8 mils.

i. 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W02600 (4 mils wet, 1.0 mils dry).

ii. 2nd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss Finish, B31W02651 Series.

iii. 3rd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss Finish, B31W02651 Series (4 mils wet, 1.5 mils dry per coat).

2. Stained Woodwork

a. Stained Varnish Rubbed Finish: 3 Finish Coats over stain plus filler on open grain wood.

i. 1st Coat: S-W MinWax Performance Series Tintable Interior Stain 550 VOC, (450-550 sq ft/gal) Available in 250 VOC Version.

ii. 2nd Coat: S-W MinWax Performance Series Fast-Dry Varnish.

iii. 3rd Coat: S-W MinWax Performance Series Fast-Dry Varnish (600-700 sq ft/gal) (available in Gloss, Semi-Gloss, Satin)

3. Wall Panels (Wood and Acoustical).

a. Interior Semi-Gloss Finish Acrylic Latex with dry film thickness not less than 3.8 mils.

i. 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W02600(4 mils wet, 1.0 mils dry)

ii. 2nd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31W02651 Series

iii. 3rd Coat: S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31W02651 Series (4 mils wet, 1.5 mils dry per coat)

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SECTION 10100 - MARKABLE BOARDS AND TACKBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of markable boards (M.B.) and tackboards (T.B.) is shown on drawings.

B. Types of markable boards and tackboards specified in this section include the following:

1. Markable Boards
2. Vinyl Fabric-Faced Cork Tackboards

1.3 QUALITY ASSURANCE

A. Manufacturer: Unless otherwise acceptable to Architect, furnish all markable boards and tackboards by one manufacturer for entire project.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each material and component part, including data substantiating that materials comply with requirements.

B. Samples: Submit full range of color samples for each type of markable board, tackboard, trim and accessories required. Provide 12" square samples of sheet materials and 12" lengths of trim members for color verification after selections have been made.

C. Shop Drawings: Submit for each type of markable board and tackboard. Include sections of typical trim members and dimensioned elevations. Show anchors, grounds, reinforcement, accessories, and installation details.

1.5 SPECIAL PROJECT WARRANTY

A. Warranty on Porcelain Enamel Markable Boards: Provide written warranty, signed by manufacturer, agreeing to replace, within warranty period, porcelain enamel remarkable boards which do not retain original writing and erasing qualities, defined to include surfaces which become slick and shiny, or exhibit crazing, cracking or flaking; provided manufacturer's instructions for handling, installing, protecting and maintaining markable boards have been adhered to during the warranty period. Replacement is limited to material replacement only and does not include labor for removal and reinstallation.

1. Warranty Period: 50 years from date of substantial completion or lifetime of the building.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

B. Manufacturers of Markable Boards and Tackboards:

1. Claridge Products and Equipment, Inc.; www.claridgeproducts.com; 601 Highway 62-65 South, P.O. Box 910, Harrison, AR. 72602-0910; Phone: 800.434.4610 or 870.743.2200.
2. Corona Group, Inc.; www.coronagroupinc.com; 3650 Messer Airport Hwy, Birmingham, AL 35222; Ph.: 205.941.1942.
3. ASI Visual Display Products; www.asi-visualdisplayproducts.com; 2210 Dunwin Drive, Mississauga, ON L5L 1C7, Canada; Ph.: 833.632.0878.
4. PolyVision, Inc.; www.polyvision.com; 10700 Abbotts Bridge Road, Suite 100, Johns Creek, GA. 30097; Phone: 888.325.6351 or 678.542.3100.

5. Marsh Industries, Inc.; www.marsh-ind.com; 2301 East High Avenue, New Philadelphia, OH, 44663; Phone: 800.426.4244.

C. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS

A. Markable Boards (M.B.) - Markable boards shall be porcelain enamel writing surface as manufactured by PolyVision, Inc. Writing surface shall have magnetic properties and perform as follows:

1. As a Writing Surface: The writing surface shall accept various writing medium including but not limited to chalk, pencil, water base marker, ball point pen, and fiber tip pen. All markings shall be clearly visible and easily cleaned.

2. As a Projection Surface: Projected images shall be clearly visible from any angle.

3. Board Construction shall include the following:

a. Facing sheet shall be porcelain enamel (P3 ceramic steel) fused to 28-gauge steel face at approximately 1500 degrees F. Core shall be 1/2:" particleboard with 0.005" aluminum backing sheet.

b. Provide single piece units up to 4' x 16'. Where overall sizes exceed manufacturer's maximum size, provide two or more panels of equal size as acceptable to the Architect.

B. Tackboards (T.B.): "Fabricork" Vinyl faced fabric (Koroseal) complying with FS CCC-W-408, Type II, mildew resistant, laminated to 1/4" thick cork backing sheet. Furnish materials as required for tack strips.

1. Unless otherwise indicated, make up rigid panels by factory-laminating under pressure to 1/4" thick exterior type plywood or hardboard backing.

2. Color: Color and Pattern to be selected from manufactures standards.

C. Colors and Textures: Color to be selected from manufactures standards.

D. Trim and Accessories:

1. General: Fabricate frames and trim of not less than 0.062" thick aluminum alloy, size and shape as indicated, to suit type of installation. Provide straight, single-length units wherever possible and keep joints to minimum. Miter corners to neat, hairline closure.

2. Aluminum Finish: Furnish exposed aluminum trim, accessories and fasteners with the following finish:

a. Finish: Manufacturer's standard satin aluminum finish.

3. Chalk-trough: Furnish continuous aluminum chalk-troughs for each markable board, unless otherwise indicated, as follows:

a. Solid extrusion, manufacturer's standard ribbed section, enclosed chalk tray with solid end caps, smoothly curved with concealed mounting.

4. Map-rails and Map hooks: Furnish continuous aluminum maprails with cork tackstrip inserts for each markable board. Provide one pair of paper holders and one pair of maphooks for each 4 foot of remarkable board length. Provide flag holder and 1 pair of roller brackets.

2.3 FABRICATION

A. Assembly: Provide factory-assembled markable board and tackboard units unless field-assembled units indicated.

B. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board, as acceptable to Architect.

C. Provide manufacturer's standard vertical joint system between abutting sections of markable board.

1. Provide mullion trim at joints between markable board and tackboard.

PART 3 – EXECUTION

3.1 INSTALLATION:

A. **Verify mounting heights with Owner prior to installation.**

B. Deliver factory-built markable board and tackboard units completely assembled in one piece without joints, whenever possible. Where dimensions exceed panel size, provide 2 or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefit at factory, disassembled for delivery, and make final joints at site. Use splines at joints to maintain surface alignment.

C. Install units in locations as shown on drawings and mounted at heights as directed by the Owner, keeping perimeter lines straight, plumb, and level. Provide all grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories for complete installation.

3.2 ADJUST AND CLEAN:

A. Verify accessories required for each unit properly installed and operating units properly functioning.

B. Clean units in accordance with manufacturer's instructions, breaking in only as recommended.

END OF SECTION

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SECTION 10155 - TOILET COMPARTMENTS (Solid Phenolic)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract including General and Supplementary Conditions and Division 1 Specification Sections apply to work of this section.

1.2 SCOPE

A. Requirements of the General Conditions and Special Conditions apply to the work in this section.

B. Provide all labor, materials, etc., necessary for the completion of the work of this section as specified or shown on the drawings.

C. Work of this section consists of, but is not limited to the following:

1. Toilet stalls, stall doors, screens and entry partitions.
2. Hardware, etc. for stalls.
3. Shop drawings.

D. Work not included in this section: Toilet room accessories - SECTION 10800.

1.3 SUBMITTALS

A. Submit five (5) sets of shop drawings, including details and a sample of each item of hardware for architect's approval.

B. Provide drawings showing locations for adequate steel reinforcements or wood blocking in walls to be provided by others for proper securement of the finished work.

C. Furnish actual color sample for Architect approval.

D. Provide partitions and screens which are the products of one manufacturer.

1.4 GUARANTEE

A. The Toilet Compartments contractor shall guarantee all materials and workmanship covered by this section for a period of one (1) year from the date of final acceptance of the Contract, or from occupancy of the building, whichever is earlier.

1.5 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings. Advise manufacturer of any changes.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Toilet partitions shall be floor mounted, overhead braced, with non-corrosive panels, doors and pilaster equal to Santana Products, Inc., Knickerbocker Partitions Co., Sanymetal, General Partitions Mfg. Corp.

B. Panels, doors and pilasters shall be fabricated from polymer resins under high pressure forming a single component section which is waterproof, non-absorbent and has a self-lubricating surface

that resists marking with pens, pencils or other writing utensils. All panels, doors and pilasters to arrive at job site with special protective plastic covering.

2.2 CONSTRUCTION

A. Single component solid construction in colors that extend from the surface throughout the entire thickness of the panels, doors and pilasters.

B. Doors, panels and pilasters shall be 1" thick and all edges machined to a radius of .250" and all exposed edges to be free of saw marks.

C. Dividing panels shall be 55" high and mounted at 14" above finished floor. Aluminum edging strips shall be fastened to the bottom edge of all panels full length.

D. Doors shall be 55" high and mounted at 14" above finished floor. Aluminum edging strips shall be fastened to the bottom edge of all doors full width.

E. Pilasters shall be 82" high and fastened to 3" high 20-gauge stainless steel shoes with theft proof sex bolts.

F. Finish of doors, panels and pilasters shall be satin glaze. Colors to be selected from manufacturer's standard colors.

G. Urinal screens shall be provided with overhead braced pilasters and 55" high dividing panels mounted 14" above finish floor.

2.3 HARDWARE

A. Door hardware shall be as follows:

1. Hinges shall be fabricated from heavy aluminum extrusion (6463-T5 Alloy) with clear anodized finish with wrap around flanges, surface mounted and thru-bolted to doors and pilasters with one-way sex bolts. Hinges will be factory set to a full close position unless otherwise noted.
2. Each door shall be furnished with one (1) coat hook/bumper of heavy chrome plated Zamac with rubber bumper. (Handicapped doors to also include: one (1) door pull and one (1) wall stop).
3. Door strike and keeper shall be fabricated from heavy aluminum extrusion (6463-T5 Alloy) with clear anodized finish with wrap around flange surface, mounted and thru-bolted to pilaster with one-way sex bolts.
4. Door latch housing shall be fabricated from heavy aluminum extrusion (6463-T5 Alloy) with clear anodized finish, surface mounted and thru-bolted to door with one-way sex bolts. Slide bolt and button shall be heavy aluminum.

B. Pilaster shoes shall be anchored to finish floor with No. 5 plastic anchors and No. 14 stainless steel Philips head screws.

C. Full length continuous wall brackets (6463-T5 Alloy) with mill finish weighing not less than 1.685 lbs. per linear foot shall be used for all panels to pilaster, pilaster to wall and panel to wall connections. Wall brackets shall be pre-drilled by manufacturer with holes spaced every 6" along full length of brackets. Wall brackets shall be thru-bolted to panels and pilasters with one-way sex bolts. Attachment of brackets to adjacent wall construction shall be accomplished by (1) theftproof Zamac mushroom nail in head anchor directly behind the vertical edge of panels and pilasters at every 12" along the full length of bracket and (2) No. 5 plastic anchors and No. 14 x 1-1/4" stainless steel Philips head screws at each 12" interval alternately spaced between anchor connections.

D. Headrail shall be heavy aluminum extrusion (6463-T5 Alloy) with mill finish in anti-grip configuration

weighing not less than 1.188 lbs. per linear foot. Headrail shall be fastened to tops of pilasters and headrail brackets by thru-bolting with one-way sex bolts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Erection of partitions, etc. shall be in accordance with the manufacturer's standard recommendations and the following:

B. All parts shall be erected in a substantial manner, straight, level and plumb.

C. No evidence of drilling, cutting or patching shall be visible in the finished work.

D. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/16".

E. Finished surfaces shall be cleaned after installation and left free of imperfections.

END OF SECTION

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SECTION 10200 - LOUVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 DESCRIPTION OF WORK:

A. Extent of louvers and vents is indicated on drawings, including indications of sizes and locations.

1. Fixed Wall Louvers.
2. Closed Dryer Hanger Fixed

1.3 DEFINITIONS:

A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.

B. Horizontal Louver: Louver with horizontal blades; i.e., the axes of the blades are horizontal.

C. Vertical Louver: Louver with vertical blades; i.e., the axes of the blades are vertical.

D. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.

E. Rain-Resistant Louver: Louver provides specified wind-driven rain performance, as determined by testing according to AMCA 500-L.

1.4 SUBMITTALS:

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets for each product and assembly specified.
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Cleaning methods.

C. Shop Drawings: For units and accessories. Include plans; elevations; sections; and details showing profiles, angles, and spacing of elements. Show unit dimensions related to wall openings and adjacent construction; free area for each size indicated for louvers; profiles of frames at jambs, heads, and sills; and anchorage details and locations.
1. Verify openings by field measurements before fabrication and indicate measurements on Shop Drawings.
2. For installed products indicated to comply with design loadings, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Product Certificates:
1. Air Performance: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are tested in accordance with AMCA Standard 500 and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.
2. Water Penetration: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are tested in accordance with AMCA Standard 500 and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.
3. Weather Louver Effectiveness: Certificates signed by Air Movement and Control Association International Inc (AMCA) certifying that the manufacturer's stock units are tested in

accordance with AMCA Standard 500-L99, Section 8.3.2 - Wind Driven Rainwater Penetration Test, and are licensed to bear the AMCA Certified Ratings Seal in accordance with AMCA Standard 511.
4. Provide AMCA Certification - Water, Air for louvers as scheduled.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other specified information.

F. Selection Samples: Two complete color charts showing the full range of colors available for units with factory-applied color finishes.

G. Samples for Verification: For each finish specified, two samples representing actual finishes specified; prepared on Samples of same thickness and material indicated for final Work. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

1.5 QUALITY ASSURANCE:

A. Manufacturer Qualifications: Minimum 5 years manufacturing similar products. The manufacturer shall have implemented a program for the management of quality objectives, continual improvement, and monitoring of customer satisfaction to assure that customer needs and expectations are met.

B. Installer Qualifications: Minimum 2 years experience installing similar louvers.

C. Professional Engineer Qualifications: A professional engineer legally qualified to practice in jurisdiction where Project is located and experienced in providing engineering services of kind indicated. Engineering services are defined as those performed for installations of products that are similar to those indicated for this Project in material, design, and extent.

D. Source Limitations: Obtain products through one source from a single manufacturer where alike in one or more respects regarding type, design, or factory-applied color finish.

E. Welding Standards: As follows:
1. Comply with AWS D1.2, "Structural Welding Code - Aluminum."
2. Comply with AWS D1.3, "Structural Welding Code - Sheet Steel."

F. AMCA Standard 500-L: Air performance, water penetration and air leakage ratings shall be determined in accordance with Air Movement and Control Association International Inc (AMCA) Standard 500, "Laboratory Methods of Testing Louvers for Rating."

G. SMACNA Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" recommendations for fabrication, construction details, and installation procedures.

1.6 SEQUENCING AND SCHEDULING

A. Field Measurements: Verify openings and adjacent construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to established dimensions.
2. Coordinate Setting Drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

1.7 PROJECT 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 recommended limits.

1.8 WARRANTY

A. Manufacturer shall provide standard limited warranty for louver systems for a period of five years (60 months) from date of installation, no more than 60 months after shipment from manufacturing plant. When notified in writing from the Owner of a manufacturing defect, manufacturer shall promptly correct deficiencies without direct financial cost to the Owner.

B. Manufacturer shall provide 20-year limited warranty for fluoropolymer-based finish on extruded aluminum substrates.
Finish coating shall not peel, blister, chip, crack or check.
Chalking, fading or erosion of finish when measured by the following tests:
1. Finish coating shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D4214.
2. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244 and ASTM D822.
3. Finish coating shall not erode at a rate in excess of 10%/ 5 year as determined by Florida test sample.

C. Manufacturer shall provide a 5-year limited warranty for Class I and a 3-year limited warranty for Class II anodized finish on extruded aluminum substrates.
Seller warrants the Finish under normal atmospheric conditions.
1. Will not crack, craze, flake or blister
2. Will not change or fade more than (5) Delta-E Hunter units as determined by ASTM method D-2244
3. Will not chalk in excess of ASTM D-4214-07 number (8) rating, determined by the procedure outlined in ASTMD-4214-07 specification test.
4. Any forming or welding must be done prior to finishing. Post forming or welding will void the warranty.
5. This Warranty applies only if the anodized aluminum product is installed in strict accordance with Seller’s recommended practices and maintained in accordance with AAMA (American Architectural Manufacturers Association) publication number 609 and 610-09 (“Cleaning and Maintenance Guide for Architecturally Finished Aluminum”).

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. The following manufacturers' products have been used to established minimum standards for materials, workmanship and functions:

1. Reliable Architectural Products (Basis of Design) |1300 Enterprise Road, Geneva, Alabama 36340 | PH: 334.684.3621 or 800.624.3914 | www.reliablelouvers.com,
2. Ruskin Company | 3900 Dr. Greaves Rd. Grandview, MO 64030 | PH: 816.761.7476 | www.ruskin.com.
3. The Airolite Company, LLC. | Ph:715.841.8757 | www.airolite.com.
4. Air Performance Louvers LLC. | 159 Genco Drive, Hartford, AL 36344 | Ph: 334.588.0191 or 588.0070 | www.airperformancellc.com.
5. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect not less than Ten (10) days prior to scheduled bid opening.

2.2 STATIONARY BLADE LOUVER

A. Model 4375Z125 as manufactured by Reliable Louver Company

B. Fabrication:

1. Design: Stationary non- drainable louver with drain gutters in head frame with downspouts in the jambs and mullions with all welded construction. Hidden vertical supports to allow unlimited continuous line appearance. Steeply angled integral sill.
2. Frame:
   a. Frame Depth: 4 inches (102 mm).
   b. Wall Thickness: .081 inch (2.1 mm) nominal.
   c. Material: Extruded aluminum, Alloy 6063-T6.
3. Blades:
   Style: Non- Drainable: 37.5 degrees at 5-3/32 inches (129 mm)
   a. Wall Thickness: 0.081 inch (2.1 mm), nominal.
   b. Material: Extruded aluminum, Alloy 6063 T6.
4. Minimum Assembly Size: 12 inches wide by 12 inches high (305 mm x 305 mm).
5. Maximum Factory Assembly Size: Single sections shall not exceed 120 inches wide by 90 inches high (3048 mm x 2286 mm) or 90 inches wide by 120 inches high (2286 mm x 3048). Louvers larger than the maximum single size shall be require field assembly of smaller sections.
6. Recycled Content: 18% post-consumer. 55% pre-consumer, post-industrial, total 73% by weight.

C. Performance Data:
1. Based on testing 48-inch x 48-inch (1,219 mm x 1,219 mm) size unit in accordance with AMCA 500.
2. Free Area: 54 percent, nominal.
3. Free Area Size: 8.58 square feet (0.79 m2).
4. Maximum Recommended Air Flow through Free Area: 803 feet per minute (4.08 m/s).
5. Air Flow: 6890 cubic feet per minute (3.25 m^3/s).
6. Maximum Pressure Drop (Intake): 0.15 inches w.g. (0.035 kPa).
7. Water Penetration: Maximum of 0.01 ounces per square foot (3.1 g/m2) of free area at an air flow of 803 feet per minute (4.08 m/s) free area velocity when tested for 15 minutes.

D. Design Windload: Per Code.

E. Louvers shall be factory engineered to withstand the specified seismic loads.
1. Minimum design loads shall be calculated to comply with ASCE – 7, or local requirements of Authority Having Jurisdiction (AHJ).

2.4 ACCESSORIES

A. Bird Screen: Install insect screens on intake louvers and bird screens on exhaust louvers. Do not install insect screens on HVAC intake louvers.
1. Aluminum: Aluminum, 5/8 inches by 0.040 inch (16 mm by 1 mm), expanded and flattened.
2. Frame: Removable. Re-wireable.

B. Insect Screens: Install insect screens on intake louvers and bird screens on exhaust louvers. Do not install insect screens on HVAC intake louvers.
1. Aluminum: 18-16 mesh, mill finish, .011 inch (0.3 mm) wire.
2. Frame: Aluminum.

C. Extended Sills:
1. Extruded aluminum, Alloy 6063-T6. Minimum nominal thickness 0.060 inch (1.5 mm).
2. Formed aluminum, Alloy 3003. Minimum nominal thickness 0.081 inch (2.1 mm).

D. Visible Mullions: Manufacturer’s standard horizontal or vertical visible mullions for architectural accent as indicated on drawings.

2.5 FINISHES

A. Finish: 70 percent PVDF: Finish shall be applied at 1.2 mil total dry film thickness.
1. Coating shall conform to AAMA 2605. Apply coating following cleaning and pretreatment. Cleaning: AA-C12C42R1X.
   a. Standard 2-coat.

2. 20-year finish warranty.

B. Color: Color to be selected by Architect.

2.6 MATERIALS, GENERAL:

A. Fastenings: Use same material as items fastened, unless otherwise indicated. Fasteners for exterior applications may be hot-dip galvanized, stainless steel or aluminum. Provide types, gages and lengths to suit unit installation conditions. Use Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.

B. Anchors and Inserts: Use metal anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required.

C. Bituminous Paint: SSPC-Paint 12 (cold-applied asphalt mastic).

2.7 FABRICATION, GENERAL:

A. Provide louvers and accessories of design, materials, sizes, depth, arrangement, and metal thicknesses indicated, or if not indicated, as required for optimum performance with respect to airflow; water penetration; air leakage where applicable (for adjustable units, if any); strength; durability; and uniform appearance.

B. Fabricate frames including integral sills to suit adjacent construction with tolerances for installation, including application of sealants in joints between louvers and adjoining work.

C. Include supports, anchorages, and accessories required for complete assembly.

D. Provide sill extensions and loose sills made of same material as louvers, where indicated, or required for drainage to exterior and to prevent water penetrating to interior.

E. Maintain equal blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Prepare substrates and openings using methods recommended by manufacturer for achieving best result for substrates under project conditions.

B. Do not proceed with installation until substrates and nailers have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.
   1. Locate and place units level, plumb, and at indicated alignment with adjacent work.
   2. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
   3. Form closely fitted joints with exposed connections accurately located and secured.
   4. Provide perimeter reveals and openings of uniform width for sealants and joint fillers as indicated on Drawings.
   5. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no

evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

6. Protect galvanized and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

B. Install concealed gaskets, flashings, joint fillers, and insulation, as installation progresses, where weathertight joints are required. Comply with Division 7 Section "Joint Sealants" for sealants applied during installation.

3.3 ADJUSTING, CLEANING AND PROTECTION

A. Test operation of adjustable louvers and adjust as needed to produce fully functioning units that comply with requirements.

B. Protect products from damage until completion of project. Use temporary protective coverings where needed and approved by manufacturer. Remove protective covering at the time of Substantial Completion.

C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 10212 - CUBICLE TRACKS AND CURTAINS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Ceiling mounted curtain track
2. Track accessories and attachments
3. Cubicle curtains

1.2 SUBMITTALS

A. Product Data: Manufacturer's product data sheets for all specified curtain track and curtains.

B. Detail Drawings: Mounting details with the appropriate fasteners for specified project substrates.

C. Sample for Verification: Provide samples of the following:

1. Samples of cubicle track, 4" (102mm) in length. Complete with (1) carrier as specified and stop.
2. Curtain Fabric: 12-inch square swatch or larger sample as required to show complete pattern repeat, from dye lot used for the work, with specified treatments applied.
3. Mesh Top: Not less than 4 inches square, demonstrating manufacture's standard hemming around mesh perimeter with matching fabric

D. Submit manufacturer's standard color swatches consisting of actual product pieces, showing full range of colors and textures available.

E. Manufacturer's standard installation instructions

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in unopened factory packaging.
Inspect material on delivery to verify products are as specified.

1.4 WARRANTY

A. Manufacturer's standard warranty against manufacturer defects.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Obtain required products from a single manufacturer for entire project, to ensure continuity of color, design, and overall product consistency.

B. Accessories: Provide accessory items only as produced or recommended by manufacturer of primary products.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the requirements listed, provide cubicle track and carriers from the following manufacturer:

1. Construction Specialties - Cubicle Curtains | 3 Werner Way, Lebanon, NJ 08833 | PH: (800) 416-1102 | CCInfo@c-sgroup.com | www.c-sgroup.com.

B. Equal products of other manufacturers may be used in the work, provided such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 CUBICLE TRACK SYSTEM

A. Cubicle Tracks: CS Cubicle Curtains #6062 surface-mounted tracks of heavy extruded aluminum alloy 6063-T4, 1 3/8" x 3/4", slotted to receive roller carriers, complete with accessories and components required for complete and secure installations including splices, end caps and corner bends.

B. Corner Bends: Corner bends up to 36” radius are to be fabricated in one continuous “L” shape. Radiuses above 36” to be continuous or spliced based on room condition.

1. Finish:

a. Clear anodized aluminum

C. Carriers:

1. CS Cubicle Curtains 1062N, virgin nylon axle with nylon wheels complete with nickel-plated brass bead-chain and hook assembly.

a. Provide one carrier for each 6" of cubicle curtain width.

2.3 CUBICLE CURTAIN FABRIC

A. Cubicle Curtain Fabric: Provide 100% polyester curtains. Fabric is to be opaque, washable, flame retardant and closely woven.

B. Pattern & Color:

1. Cubicle Curtain Fabric: Architect to select solid or patterned fabric from manufacturer’s standard selections.

C. Antimicrobial Treatment:

1. Standard antimicrobial treatment applied to the selected cubicle curtain fabric.

2.4 CUBICLE CURTAINS

A. Cubicle Curtain

a. Type of CS Curtain:
CS Traditional Curtains

1. Width: Equal to track length from which curtain is hung plus 10 percent, but not less than 12" (300 mm).
2. Length: Equal to floor-to-ceiling height minus 2" from finished ceiling at top and 12” above finished floor.
3. Mesh Top: Manufacturer’s standard ½” holed mesh top, framed around perimeter with matching fabric as specified. Mesh height to be 12”.
4. Top Hem: Not less than 1" (26 mm) and not more than 1 ½" (40 mm) wide, triple thickness, reinforced with integral web and double stitched.
   a. Grommets: 2 piece, rolled-edge, rustproof, nickel-plated brass and spaced not more than 6" (150 mm) o.c.
5. Bottom and Side Hems: Not less than 1" (25 mm) wide, reinforced, triple thickness and single stitched.
6. Seams: Not less than ½" (13 mm) wide, double turned and double stitched.
7. Curtain Tieback: At each termination.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions in which the cubicle track system will be installed.

1. Complete all finishing operations, including painting, before beginning installation of cubicle tracking system materials.

2. Verify that surfaces and above ceiling supports are ready to receive work.

3.2 INSTALLATION

A. General: Locate the cubicle track as indicated on the approved detail drawing for the appropriate substrate.

B. Installation of Cubicle Track System:

1. Install cubicle track, secure, rigid, and true to ceiling line.

2. Slide carriers onto the track.
3. Install end cap or stop device.
4. Secure or suspend track to ceiling system. Install with mechanical fasteners or T-Grid clips
5. Install curtains on carriers ensuring smooth operation.

3.3 CLEANING

A. At completion of the installation, remove any debris and clean surfaces in accordance with CS cleaning and maintenance instructions.

END OF SECTION

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SECTION 10410 - IDENTIFYING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Types of identifying devices specified in this section include the following:

1. Room Signs (See Door Schedule)
2. Metal Letters
3. Plaque
4. Project Sign

B. Note to the Contractor: If the Contract Sum (as awarded) is $100,000.00 or more, the Contractor shall furnish and erect a project sign and interior plaques as shown in “Detail of Project Sign” (DCM Form C-15) and “Plaque Detail” bound in the Project Manual at the end of “General Conditions”. The project sign shall be erected in a prominent location selected by the Architect and Owner and shall be maintained in good condition until completion of Work.

C. Extent of signs and plaque is indicated on the drawings.

1.3 QUALITY ASSURANCE

A. Drawings and Specifications are based on one manufacturer's standard products. Another standard system of a similar and equivalent nature may be acceptable when the differences do not materially detract from the design concept or intended performance as judged solely by the Architect.

B. General Contractor is responsible for verifying signage requirements and correct wording, names etc. with Owner and Architect before ordering.

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings for each type of device. Include large scale sections of typical members and other components. Provide dimensioned elevations. Show anchorages, grounds and reinforcement and indicate finishes.

PART 2 - PRODUCTS

2.1 ROOM SIGNS

A. MANUFACTURER:

1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.
    a. ASI Sign Systems, Inc., 8181 Jetstar Drive, Suite 100, Irving, TX 75063; www.asisignage.com; 1-800-274-7732
    b. Best Sign Systems, www.bestsigns.com; 1202 N. Park Avenue, Montrose, CO 81401-3171, Phone (970) 249-2378 or 1-800-235-2378; Fax (970) 249-0223
    c. Leeds Architectural Letters of Alabama Inc, www.leedsletters.com; P.O. Box 40, Leeds, AL 35094; Phone (205) 699-5271; Fax (205) 699-3342
    d. Bayuk Graphic Systems, Inc., www.bayukgraphics.com; 5005 Old Lincoln Highway Parkesburg, PA 19365; Phone: (717)-442-0274; Fax: (717)-442-1289
    e. Mohawk Sign Systems; www.mohawksign.com; 5 Dandreano Dr, Amsterdam, NY 12010; Ph. 518.842.5303.

2. Substitutions: Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS:

1. Provide 6" x 8" high laminated plastic with raised lettering complying with the Americans with Disabilities Act (ADA).
2. All Signs MUST include 1” Slide In Window Slot.
3. Color to be selected by the Architect after bid date from manufacturer standards.
4. Use International Symbols of accessibility for identifying facilities as accessible.
5. Letters and numerals shall be raised 1/32 in (0.8 mm) minimum, upper case, sans serif or simple serif type and shall be accompanied with Grade 2 Braille.
6. Raised characters shall be at least 5/8 in (16 mm) high, but no higher than 2 in (50 mm).
7. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram shall be 6 in (152 mm) minimum in height.
8. **See Door Schedule. If not shown provide 20 letter characters per room sign.**
9. **The Supplier will be required to meet with the Owner for exact wording for all room signs before preparation of the shop drawing submittal to the Architect for approval.)**
10. Tactile characters on signs shall be located 48 inches (1220 mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the finish floor or ground surface, measured from the baseline of the highest tactile character.
    a. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side.
    b. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf.
    c. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door.
    d. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall.
    e. Signs containing tactile characters shall be located so that a clear floor space of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position. Mounting devices shall be concealed.

2.2 METAL LETTERS

A. MANUFACTURER:

1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.
    a. Impact Architectural Signs, www.impactsigns.com; 26 E. Burlington Avenue, LaGrange, IL 60525: (708) 469-7178; impact@impactsigns.com
    b. Leeds Architectural Letters of Alabama Inc, www.leedsletters.com; P.O. Box 40, Leeds, AL 35094; Phone (205) 699-5271; Fax (205) 699-3342
    c. Matthews Architectural Products, www.matthewsid.com; 2 North Shore Pittsburgh, PA 15212; (412) 571-5500; (800) 950-1317
    d. A.R.K. Ramos Architectural Signage, www.arkramos.com; 1321 S. Walker Ave., Oklahoma City, OK; Ph. 800.725.7266

2. Substitutions: Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS

1. Provide standard cast aluminum letters for exterior architectural signage shown on drawings and as follows:
2. Building Signage: Provide full size sample prior to manufacture of all letters.
   a. Mounting shall be projected mount without collars set in adhesive.
   b. Color shall be anodized aluminum.
   c. Style of letter shall be as follows:
      I. Height: 15” High - Upper Case.
      II. Depth: 1 ¼” Deep – Upper Case.
      III. Font: Arial Bold
      IV. Letters to read as indicated on drawings.

2.3 PLAQUE

A. MANUFACTURER:

1. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function.
   a. Impact Architectural Signs, www.impactsigns.com; 26 E. Burlington Avenue, LaGrange, IL 60525: (708) 469-7178; impact@impactsigns.com
   b. Leeds Architectural Letters of Alabama Inc, www.leedsletters.com; P.O. Box 40, Leeds, AL 35094; Phone (205) 699-5271; Fax (205) 699- 3342
   c. Matthews Architectural Products, www.matthewsid.com; 2 North Shore Pittsburgh, PA 15212; (412) 571-5500; (800) 950-1317
   d. A.R.K. Ramos Architectural Signage, www.arkramos.com; 1321 S. Walker Ave., Oklahoma City, OK; Ph. 800.725.7266
2. Substitutions: Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

B. MATERIALS

1. Refer to *Detail Of Plaque (ABC Form C-16, August 2001)* at the front end of the project manual.
2. Size: 24" high x 30" wide.
3. Cast aluminum with bronze finish of standard alloy, hand tooled and chased.
4. Raised letters and border.
5. Satin finish.
6. Background pebbled finish and oxidized to a darker finish.
7. Casting to be free of pits and holes, square and true with no warping.
8. Border style to be single line.
9. Letters to be flat face classic design.
10. Furnish Rubbing to Architect for approval.

C. Wording on the plaque shall read as follows.

(NAME OF PROJECT)
(CITY NAME), ALABAMA

ERECTED (Year)

STATE OF ALABAMA

TROY CITY SCHOOLS
PIKE COUNTY SCHOOLS
DALE COUNTY
CITY OF TROY

MR. (NAME), PRESIDENT
MRS. (NAME), VICE PRESIDENT
MR. (NAME), BOARD MEMBER
MR. (NAME), BOARD MEMBER
MR. (NAME), BOARD MEMBER
MRS. (NAME), BOARD MEMBER
MRS. (NAME), BOARD MEMBER
DR. (NAME), SUPERINTENDENT

SUPERVISED BY

Alabama Real Property Management, Division of Construction Management

LATRHAN McKEE AND ASSOCIATES ARCHITECTS, INC

(COMPANY NAME), CONTRACTOR

Owner will provide names to be included on plaque.

2.4 PROJECT SIGN

A. MATERIALS

1. Refer to *Detail of Project Sign (DCM Form C-15, August 2021)* at the front end of the project manual.

B. Wording on the project sign shall read as follow.

STATE OF ALABAMA

THE (NAME) COUNTY BOARD OF EDUCATION
MR. (NAME), PRESIDENT
MRS. (NAME), VICE PRESIDENT
MR. (NAME), BOARD MEMBER
MR. (NAME), BOARD MEMBER
MR. (NAME), BOARD MEMBER
MRS. (NAME), BOARD MEMBER
MRS. (NAME), BOARD MEMBER
DR. (NAME), SUPERINTENDENT

KAY IVEY, GOVENOR

"Investing in Alabama's Future"

(NAME OF PROJECT)
(CITY NAME), ALABAMA

Alabama Real Property Management, Division of Construction Management

LATHAN McKEE AND ASSOCIATES ARCHITECTS, INC

(COMPANY NAME), CONTRACTOR

2.5 FABRICATION

A. General: Fabricate signs to comply with requirements indicated including, dimensions, design details, quality, thickness and finish of materials. Use materials and shapes of sufficient thickness, with reinforcing, if needed, to produce sufficient flatness, free of "oil canning", and to impart sufficient strength for size, design and application indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units plumb and level, in locations and with mounting shown. Securely attach to the supporting structure with concealed fasteners, in accordance with the manufacturer's installation instructions.

3.2 CLEANING AND PROTECTION

A. At completion of the installation, clean surfaces in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

END OF SECTION

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SECTION 10440 - FIRE EXTINGUISHERS AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fire Extinguishers.
2. Extinguisher cabinets.
3. Accessories.

B. Related Requirements:

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

1.2 REFERENCES

A. Reference Standards:

1. ASTM International (ASTM):
   a. ASTM E814-11a, Standard Test Method for Fire Tests of Penetration Firestop Systems.
2. International Code Council (ICC):
   a. International Building Code (IBC) - Current Edition.
3. Intertek Testing Services/Warnock-Hersey International (ITS/WHI)
4. National Fire Protection Association (NFPA):
   a. NFPA 10-2010, Standard for Portable Fire Extinguishers: For criteria covering installations for Class A, B, C, D, and K hazards as well as the selection, inspection, maintenance, recharging, and testing of portable fire extinguishing equipment.
   b. NFPA 70-2011, National Electrical Code.
5. Underwriters Laboratories, Inc. (UL)
6. United States Code (USC):
   a. Americans with Disabilities Act of 1990, as amended by the ADA Amendments Act of 2008: For restrictions relating to cabinet projections in corridors.

1.3 ACTION SUBMITTALS

A. Submit in accordance with Section 01600:

1. Product Data:
   a. Cabinets: Materials description for fire extinguisher cabinets include roughing-in dimensions, details showing mounting methods, relationships to surrounding construction, door hardware, cabinet type and materials, trim style and door construction, door style and materials.
   b. Extinguishers: Materials description for fire extinguishers; include ratings and classifications.
   c. Installation instructions for each product specified.
2. Shop Drawings:
   a. Small-scale plans showing locations of fire extinguisher cabinets and individual fire extinguishers.
   b. Schedules showing each type of cabinet and extinguisher to ensure proper fit and function.

c. Indicate installation procedures and accessories required for a complete installation.

3. Samples:

a. Extinguisher Cabinet Door and Trim Finishes: For each type of exposed finish required, prepared on samples of size indicated below:

i. Size: 6 inches (150 mm) square.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

A. Comply with standards referenced in Article 1.02 - REFERENCES.

B. Provide fire extinguishers, cabinets and accessories produced by a single manufacturer.

C. Provide fire extinguishers of type approved by UL, State Fire Marshal's Office, and local regulatory agencies, if any.

D. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E814 for fire-resistance rating of walls where they are installed.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle fire protection specialties and related materials using means and methods that will prevent damage, deterioration, or loss.

1. Deliver components in manufacturer's original packaging, properly labeled for identification.

1.7 WARRANTY

A. All Fire Protection Products (except fire extinguishers) carry a one-year warranty after date of shipment against defects in materials or workmanship. Fire extinguishers carry a longer warranty. We will replace or repair any product found defective within this period. No other warranty expressed or implied is valid. Manufacturer’s warranty, terms and conditions apply in all cases. Please see complete warranty on our website for more details.

PART 2 - PRODUCTS

2.1 FIRE PROTECTION SPECIALTIES MANUFACTURERS

A. Acceptable Manufacturers:

1. J. L. Industries, Inc., a division of Activar Construction Products Group; 9702 Newton Av S Bloomington, MN 55431; (800) 554-6077, (952) 835-6850, (952) 835-2218 (FAX); SALES@ACTIVARCPG.COM; www.activarcpg.com

2. Larsen’s Manufacturing Company

3. Modern Metal Products

B. Substitutions: Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 FIRE EXTINGUISHERS

A. Multi-Purpose Chemical Type: Extinguisher unit containing a fluidized and siliconized mono ammonium phosphate powder; nonconductive and nontoxic.

1. Construction: Heavy duty steel cylinder with metal valve and siphon tube, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin and upright squeeze grip.

2. Finish: Factory powder-coated; Red.

3. Effectiveness (Rating): Class A, B, and C fires.

4. Model Identification and UL Rating: Cosmic **10E; 4A-80BC**.

5. “Start Up Tags” for each fire extinguisher must be provided and approved by Local Fire Department before Final Inspection.

B. Class K Wet Chemical Type: Extinguisher unit containing a low "pH" potassium acetate solution.

1. Construction: Stainless steel cylinder with protective nozzle tip orifice seal and nonmetallic nozzle tip finger guard, O-ring seal, replaceable valve stem seal, visual pressure gage, pull pin, and upright squeeze grip.

2. Effectiveness (Rating): Class K fires.

3. Model Identification and UL Rating: **25; Class K**. Capacity: 2.5 gal.

2.3 EXTINGUISHER CABINETS

A. Cabinet with Steel Trim and Door:

1. **Ambassador Series, Model 1017F10** at Non-Fire Rated Walls.

2. **Ambassador Series, Model 1017F10FX2** at Fire Rated Walls.

B. Cabinet Style: **Semi-recessed**.

1. Tub: Cold-rolled steel.
   a. Finish: Factory-applied powder coat paint finish.
      i. To be selected by Architect after bid date from manufacturer Standard Colors.
2. Door and Trim Construction: Cold-rolled steel; flush doors with 5/8-inch (15.88 mm) doorstop attached by continuous hinge and equipped with zinc-plated handle with roller catch.
   a. Finish: Factory-applied powder coat paint finish.
      i. To be selected by Architect after bid date from manufacturer Standard Colors.
3. Trim Style and Depth: Cabinets located in corridors shall not protrude into the hallway more than 2 1/2".
   a. Semi-Recessed Cabinet:
      i. Rolled Edge**:** 2-1/2 inch (63.50 mm).
   b. Trim Dimensions: 1-3/4 inch (44.45 mm) face trim on frame and 1-1/4 inch (31.75 mm) face trim on door.

C. Fire-Rating: Provide Fire-Rated cabinets for 1-hour and 2-hour combustible and noncombustible wall systems as required.

2.4 CABINET DOOR STYLES, GLAZING TYPES, AND ADDITIONAL OPTIONS

A. Door Style:

1. Style F: Full glazing; with pull handle.

B. Door Glazing:

1. Type 10: Clear acrylic.

C. Additional Options:

1. Cabinet Lettering:

   a. Text: FIRE EXTINGUISHER.
   b. Color(s): To be selected by Architect after bid date.

2.5 SOURCE QUALITY CONTROL

A. Ship extinguishers to the Project site fully charged, EXCEPT those which contain water as an extinguishing agent, if any.

B. Obtain Fire Extinguishers and Fire Extinguisher Brackets from same manufacturer to ensure compatibility.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for suitable framing depth and blocking where recessed and semi-

recessed cabinets will be installed and blocking where surface mounted cabinets will be installed.

1. Notify the Contractor in writing of conditions detrimental to proper and timely completion of the installation.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install cabinets in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.

1. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.
2. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer=s instructions.
3. Maintain fire ratings where cabinets are recessed into fire-rated wall systems.

B. Cabinet Lettering:

1. Identify fire extinguisher in cabinet with lettering spelling "FIRE EXTINGUISHER" painted on door by silk screen process. Provide lettering on door as indicated, or if not indicated, as selected by Architect from manufacturer's standard letter sizes, styles, colors and layouts.

3.3 FIELD QUALITY CONTROL

A. Ensure that each extinguisher is fully charged, and that inspection of each extinguisher has been performed, as evidenced by the National Association of Fire Equipment Distributors certification tag, just prior to turnover.

3.4 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.

E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 10800 - TOILET ACCESSORIES

PART 1 - GENERAL

1.1 GENERAL

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

1.2 RELATED DOCUMENTS

A. Section 06100, Rough Framing for Blocking

1.3 DESCRIPTION OF WORK

B. Extent of each type of toilet accessory is indicated on drawings and schedules.

C. NOTE: <u>Prior to placing any orders for items within this section</u>, the General Contractor is responsible for verifying all toilet accessories with the Owner. Should the owner choose to provide/supply any of these toilet accessories, the General Contractor shall issue a deductive Change Order for material only. The General Contractor will maintain responsibility for installation.

D. Toilet Accessories **<u>Furnished and Installed by the Contractor</u>** as follows:

1. Soap Dispensers
2. Toilet Tissue Dispensers
3. Grab Bars
4. Mirror Units
5. Electric Hand Dryer

1.4 QUALITY ASSURANCE

A. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry; coordinate delivery with other work to avoid delay.

B. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and servicing of accessory units.

C. Products: Provide products of same manufacturer for each type of accessory unit and for units exposed in same areas, unless other- wise acceptable to Architect.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each toilet accessory.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturer's products have been used to establish minimum standards for materials, workmanship and function.

1. Soap Dispensers: Wall Mounted over each sink
    a. Approved Products:
        i. Bobrick #B-2112
        ii. ASI #0345
        iii. Bradley #6562
2. Toilet Tissue Dispensers:
    a. Roll Type: (One each water closet)

b. Approved Products:

i. Bradley #5425

ii. ASI #0040

3. Grab Bars:

a. Where shown on Plans with Safety-Grip Finish.

b. Approved Products:

i. Bradley Corporation #8122

ii. Series ASI #3800P

iii. Bobrick #B6806.99

4. Mirror Units:

a. 18” x 36” One over each lavatory

b. 24” x 48” One at each Gang Toilet (if applicable)

c. Approved Products:

i. Bradley #780

ii. Bobrick #B290

iii. ASI #0600

5. Electrical Hand Dryers:

a. As shown on Plans at Gang Toilets

b. Approved Products:

i. Excel – XL-BW

ii. World Dryer Corporation - SLIMdri

B. Equal products of other manufacturers may be used in the work provided such products have been approved by the Architect not less than Ten (10) days prior to scheduled bid opening.

2.2 MATERIALS, GENERAL

A. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 22 gage minimum, unless otherwise indicated.

B. Mirror Units: Mirror glass shall be FS DD-G-451, Type I, Class I, Quality q2, 1/4" thick, with silver coating, copper protective coating, and non-metallic paint coating complying with FS DD-M-411. Mirror shall be provided in stainless steel frames.

C. Fasteners: Screws, bolts, and other devices of same material as accessory unit or of galvanized steel where concealed.

2.3 FABRICATION

A. General: Stamped names or labels on exposed faces of toilet accessory units are not permitted, except where otherwise indicated; in obtrusive labels on surfaces not exposed to view are acceptable. Where locks are required for a particular type of toilet accessory, provide same keying throughout project.

B. Furnish two keys for each lock.

C. Surface Mounted Toilet Accessories General: Except where other- wise indicated, fabricate units with tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

D. Recessed Toilet Accessories, General: Except where otherwise indicated, fabricate units of all welded construction, without mitered corners. Hang doors or access panels with full-length stainless steel piano hinge. Provide anchorage which is fully concealed when unit is closed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install toilet accessory units in accordance with manufacturer's instructions, using fasteners which are appropriate to substrate and recommended by manufacturer of unit. Install units plumb and level, firmly anchored in locations and at heights indicated.

3.2 ADJUSTING AND CLEANING

A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

B. Clean and polish all exposed surfaces after removing labels and protective coatings.

END OF SECTION

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SECTION 11400 - FOOD SERVICE EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION

A. All General Provisions and Sections of the Project Manual, including the AIA General Conditions and Supplementary Conditions & General Requirements; all bidding documents including the Architectural Specifications, Itemized Specifications, Bidding Requirements, Conditions of the Contract, the Contract Documents, all drawings, all Addenda issued and all applicable Divisions of the Architect's Project Manual apply to all the work specified under this Section. Bidder shall examine all other sections and all other drawings including mechanical and electrical drawings for discrepancies and/or conflicts. It is the responsibility of Food Service Equipment Bidder to obtain access to these Project Manuals and drawings.

B. Each Bidder shall examine the bidding documents carefully and, not later than five (5) days prior to the date for receipt of bids, shall make written request to the Architect for the intent or true meaning of any part of the Contract Documents, or for interpretation or correction of any ambiguity, inconsistency, conflict, discrepancy, omission and/or error that he may discover. Any interpretation, clarification, information, amendment and/or correction is issued as a written Addendum by the Architect. Only a written interpretation or correction by Addendum is binding. No bidder shall rely upon any interpretation or correction given by any other method. Architect will not be responsible for oral interpretations or instructions. Addenda are incorporated, by reference, into the contract. Failure by any bidder to receive any addendum shall not relieve the bidder of any obligation and it is the sole responsibility of each bidder to insure that he has received all addenda. Bidder shall familiarize himself with the site, a complete set of Drawings and Specifications and planned conditions and service connections; his failure to do so shall in no way relieve him of responsibility and no claims for extras shall be allowed in his behalf for failure to do so. Each bidder by submitting his Proposal represents that he has read and understands all the provisions of the Project Manual. Should discrepancies and/or conflicts be discovered after the work has started, the Contractor shall report them to the Architect immediately, and no work connected with the discrepancies and/or conflicts shall be undertaken; or if underway, such work shall be stopped immediately until the Contractor and the Architect agree on the clarification thereof.

C. If there is any conflict within or between any of the Bidding Documents involving the quality or quantity of work required, it is the intention of the Contract that the work of highest quality, greatest quantity, and greatest expense shown or specified shall be furnished. Whether or not the word "all" is used in the specification, coverage is intended to be complete, except where partial coverage is specifically and expressly noted. In all cases where an item is referred to in the singular number, it is intended that the reference shall apply to as many such items as are required to complete the work.

D. Each bidder shall visit the site of the Work and/or review all applicable project drawings. Each bidder shall fully inform himself prior to bidding of the conditions and limitations under which the Work is to be performed. He shall include in his bid a sum to cover all costs in order to perform the Work as related to the conditions and limitations. No allowance will be made to any bidder because of lack of such examining knowledge. The submission of a bid will be construed as conclusive evidence that the bidder has made such examination.

1.3 PROJECT FORMS

A. Forms used on this Project (not inclusive) are AIA documents outlined in the Architectural specifications.

B. Within forty-eight (48) hours after written or verbal notification from the Architect or his authorized representative has been received by the General Contractor/Food Service Equipment Contractor, an itemized cost for the food service equipment shall be submitted to the Architect and his Food Service Consultant. With the itemized cost, the Food Service Equipment Contractor is required to identify each items manufacturer and model number as based on the itemized equipment specifications and all addenda. Any applicable bond amounts are entered separately.

1.4 BIDDER RESPONSIBILITY

A. Bidders shall carefully examine the contract and conditions therein affecting work and procedure prior to submitting bids for which contract will be binding.

B. Bonding and Insurance requirements are given in another section of the Project Manual.

C. Instructions for completion of Schedule of Value, Payment Request, etc., are found in a preceding section and are the standard AIA procedure as modified by the Architect.

D. In addition to the progress schedule required by the AIA General Conditions, the Food Service Equipment Contractor also submits his proposed scheme of work for approval, describing proposed sequences of work from beginning to completion of the Work and their correlation with the Owner's specific requirements. Equipment is not delivered, removed from the crates, set-in-place until as a minimum all painting has been completed; ceilings, hood and ventilation duct work are in place; floor is acid cleaned (IF APPROPRIATE); all rough-in connections are in place. Site must be ready for final connections.

1.5 SCOPE OF WORK

A. The work covered by this Section includes the following:

1. Furnishes all food service equipment shown, including all labor, materials, tools and equipment necessary for the complete installation of kitchen equipment and refrigeration in a first-class manner, including all work incidental thereto in accordance with the drawings and these specifications.
2. Provide superintendent who, shall be devoted full time to this project during installation, shall be available to the other trades for verification of connection location, "etc." as needed, and shall direct, coordinate and supervise all work associated with this Section and inspects all equipment provided under this Section.
3. Provide equipment with threaded outlets for type of connections as standardized by Food Service Equipment Manufacturers for other contractors to make final steam, plumbing, electric and ventilating connections.
4. Provide all labor and material necessary to adequately insulate and seal any and all penetrations in Food Service Equipment. All penetrations are to be insulated and sealed properly to prevent condensation on inside of boxes.
5. Erect the equipment at the site in full compliance with all current local, state and Federal rules, regulations and codes.
6. Attend construction meetings and any other scheduled meetings as necessary to maintain coordination related to this Section.
7. Provide coordination of Food Service Equipment shop drawings, submittal data and installation activities, as required and identified in Division 1 Section ”Project Management and Coordination”
8. All labor is to be performed in the best and most workmanlike manner. The standards of the work required are of such grade as will bring first class results. Materials and/or workmanship not in compliance with the drawings and specifications or are improperly installed shall be removed and replaced with no change in contract price or other cost to the Owner.

9. Cleans up all debris resulting from the work of this Section immediately upon completion of installation and removes same from premises.
10. Field verify all measurements on-site (including shelving); verify the placement of pipes, sleeves, hood, pant-leg duct, drains, power, and walk-in wood breaker strip locations prior to the pouring of the floor slab or, if in an existing facility, prior to the installation of such services. Any modification necessary to the equipment because of the location of service connections must be brought to the attention of the Architect immediately for approval if the modifications require design changes. Measurements shown on drawings are approximate and are for estimating purposes only. Verify all electrical and mechanical requirements for all new, existing and future equipment with all appropriate trades, consultants, and engineers. Supplier of Food Service Equipment must examine roughed-in mechanical and electrical services. Notify the General Contractor in writing of unsatisfactory locations and dimensions of other work, and of unsatisfactory conditions for proper installation of Food Service Equipment. Do not proceed with fabrication or installation until unsatisfactory dimensions and conditions have been corrected. Any costs related to the failure of performing this function will not be borne by the Owner.
11. Verify all plug types and lengths of all cord and plug sets on equipment for which it is supplied. All cord sets are to contain an equipment grounding conductor and be furnished with caps or plugs listed or recognized by Underwriter's Laboratories.
12. Confer with the General Contractor on all measurements, location and measurement of recesses and openings, verification of all connection requirements, etc.; coordinate with the General Contractor the scheduling and transfer of all pertinent information (measurements, drawings, connection data, etc.,) to other trades who will be involved in the work associated with this Section.

B. Related Sections include the following:

1. Division 1 Section “Submittal Procedures” for submittal preparation and coordination.
2. Division 1 Section “Project Management and Coordination”.
3. Division 22 for Plumbing/Piping Work
4. Division 23 for Ventilation Work requirements.
5. Division 26 for Electrical requirements

1.6 DEFINITIONS

A. The term "Complete Installation" means the delivery of all kitchen equipment and refrigeration, with transportation and trucking charged prepaid to the building site, removal from crates, assembled, set in place, leveled, ready for final connection, re-leveled, calibrated, started-up and adjusted, cleaned, demonstrated, with Owner Training complete. All equipment to be cleaned using cleaners approved by and as recommended by the manufacturers to a condition of sanitation ready and acceptable for intended food service use. Equipment is cleaned just prior to Owner's acceptance.

B. Work denoted as "Furnished By Others” (F.B.O.) or "By Other Trades" in Part 3, Equipment Schedule, in this Section will be furnished and installed under other Sections.

C. Any reference to “standard” in Part 3, Equipment Schedule, in this Section is to be supplied whether or not it is identified as standard by the manufacturer.

D. GENERAL COORDINATION NOTE:

Utility sizes, connections and locations are based on the Food Service Drawings and Specified Equipment in Section 11 40 00. Alternates are listed BUT it is the responsibility of the Food Service Contractor to compare utilities between manufacturer specified, prime specification, and alternates listed. If alternate equipment is submitted for approval to the Architect by the awarded bidder and is different than prime specifications and has different utilities; it is the General Contractor and Food Service Contractor responsibility for these changes and/or costs. There will not be ANY change

orders approved after the bid for substitutions and/or cost associated with substitutions. This is a non-negotiable statement.

1.7 PERMITS AND LICENSES

A. Pay all costs for permits, licenses, and fees, which are required for the work associated with this Section, and which may arise incidental to fulfilling of these specifications.

1.8 QUALITY ASSURANCE

A. Qualifications:

1. Upon demand, provide evidence satisfactory to the Architect and Owner of having successfully completed Food Service Equipment projects of a size comparable to this one, and having sufficient experience in the work called for to assure completion of this project in a satisfactory manner. If requested, submit as a minimum the following information to the Architect within five days of receipt of request: Number of years in Food Service Equipment Industry; Key organizational personnel; Credit rating for this contract; Total amount of work under other contracts this date; Certificate of Licensing from State Licensing Board of General Contractors; past experience in the work called for to assure completion of the work in a satisfactory manner including names of projects, project contract amounts, scope of projects, names, addresses and telephone numbers of references of projects. If requested, submit evidence of sufficient financial resources for completion of this project.

2. The following Food Service Contractors are pre-approved for this project.
   a. Mobile Fixture 251-342-0455/ Josh Sessions cell 251-422-7863 Joss.sessions@mobilefixture.com
   b. Singer/H & R Division Office: 228-865-9095 Cortney Bates Cell: 601-502-4108 cbates@singerequipment.com
   c. Dykes Restaurant 256-799-7029 / Billy Lynch cell 256-658-9609 blynch@dykesfoodservice.com

B. Custom Equipment Fabricators:

1. It is required that all fabricated equipment such as food serving units, tables, sinks, counter tops, etc., described in the following specifications, other than by name and catalog numbers, be manufactured by an equipment fabricator who has the plant, personnel, and engineering facilities to properly design, detail and manufacture high quality food service equipment. All work in the above category shall be completed by one manufacturer with standard unit assembly and uniform design and finish.

1.9 SUBMITTALS

A. Submittal booklets, electronic, shall contain the following information:

1. Within 30 days after notice to proceed, and prior to equipment purchase, submit one (1) bound set and PDF copies on THUMB DRIVE of manufacturer's specification and data sheets, describing articles and equipment, as specified, for approval. Illustrations need not be manufacturer's original literature sheets. Each submittal must include manufacturer's literature for each item and a type written specification sheet showing item number, quality to be furnished, manufacturer's name, model number and list optional finishes and accessories to be supplied. In addition, show plumbing and electrical characteristics and/or BTU rating and indicate if electrical cord and plug will be furnished. Material shall be assembled in order by item number as specified herein and brochure shall be complete and include all items. After

approval, FSEC to provide six (6) bound sets to General Contractor for distribution to Owner, Architect and Engineers.

B. Shop Drawings, electronic, are required for the following:

1. All custom fabricated equipment including walk-in cooler/freezer, stainless steel fabrication and serving line units, dimensioned and drawn at a minimum scale of 3/4" to the foot, with necessary cross sections at a minimum scale of 1½" to the foot, showing complete detail for each item of specially fabricated equipment. Indicate name of manufacturer.
2. Separate mechanical and electrical rough-in drawings with dimensions showing rough-in locations and final connections for each piece of equipment with each connection shown giving size, height and an explanation with each connection cross-referenced to the specification sheets or shop drawings. Rough-in shall be drawn at a minimum scale of ¼" to the foot. Above finished floor dimensions are required. All electrical connections are to be water tight or located at a height to prevent water from entering. Coordinate height of rough-ins so as not to interfere with the sealing of tables, over shelves and sinks to the walls, etc., as well as at heights for the convenience of the operator. Verify heights required and coordinate with the other trades as required.
3. Service connections located under the exhaust hood must be located to provide the capture space as shown on the enlarged kitchen plan. Space between the backs of the equipment or between the backs of the equipment and wall must be maintained as shown when locating the service connection under the hood. For serving line units, location of floor drains and electrical outlets must be coordinated with the location of drains and cord and plugs on the units.
4. All convenience outlets and convenience drains are to be included on the electrical and mechanical rough-in dimensioned drawings.
5. Dedicated electrical service for computer is required in the manager's office. See electrical, mechanical and plumbing drawings for numbers and locations.
6. Exposed conduit, surface mounted disconnects, surface mounted panel boxes and surface mounted equipment control panels are not permitted unless indicated otherwise or with the permission of the Architect.
7. Provide dimensioned details, sections or elevations for all wall openings for equipment such as pass-thrus, dish machine, chutes, etc.; for all wall or floor recesses for equipment such as walk-in cooler/freezer, floor troughs, wash down system junction boxes and remote stations, waste system control panels, etc. All cross sections, elevations and details are to be drawn at a minimum scale of 1½" to the foot.
8. Provide a dimensioned food service equipment layout separate from the dimensioned electrical and mechanical rough-in drawings showing the placement of all equipment, including the ventilation hood. An itemized equipment schedule is to be included.
9. Provide an electrical and mechanical schedule identified by Item number and description showing the exact electrical and mechanical characteristics required for each item, including comments concerning final connections and interconnections. Power/fuel requirements, water/drainage requirements and similar information are to be included.
10. All drawings are to be based upon the food service equipment layout and itemized specifications. Drawings will include accurately dimensioned layouts and locations for all masonry bases, if required or called for, and will include accurately dimensioned details and locations of any special wall openings that are required for equipment extending through walls.
11. All rough-in connections located in walls are to be dimensioned to avoid any cove tile, stainless steel bases, shelves, table, counter tops, and backsplashes.

C. Submittal requirements are as specified in Division 1 Section “Submittal Procedures”

1.10 MATERIAL AND WORKMANSHIP

A. Unless otherwise specified or shown on drawings, all material is to be new, of best quality, perfect and without flaws, and delivered upon completion in an undamaged condition.

B. All workmanship is required to be the best of its respective kind. All labor to be performed in a thorough workmanlike manner by qualified, efficient and skilled mechanics.

C. Equipment will be inspected after delivery and any equipment found not to be in accordance with specifications, drawings and/or approved shop drawings will be rejected and shall be replaced with the approved equipment ,with associated cost borne by the Contractor. Any defects found during inspection must be remedied to the satisfaction of the Owner and Architect.

1.11 STANDARDS

A. All equipment shall be constructed in strict compliance with the standards of the National Sanitation Foundation (NSF) and in full compliance with the Public Health Regulations of the State in which installation is made. Each piece of equipment must bear "Seal of Approval" label of the National Sanitation Foundation, if applicable.

B. Dish machines must conform to the latest adopted standards, and electrical and gas cooking and warming equipment must conform to the latest adopted standards, as established by the National Sanitation Foundation, Ann Arbor, Michigan.

C. ANSI Standards: Comply with applicable ANSI standards for electric powered and gas burning appliances, for piping to compressed gas cylinders, and for plumbing fittings including vacuum breakers and air gaps to prevent back siphonage in water piping.

D. NFPA Codes: Comply with the latest adopted NFPA Codes, "National Electrical Code", "Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment'", and "National Fuel Gas Code".

E. ASME Boiler Code: Construct steam generating and closed steam heated equipment to comply with the latest adopted ASME Boiler and Pressure Vessel Codes.

F. All electrical equipment is U.L. Approved and Listed.

G. All gas equipment is AGA Approved and Listed.

1.12 COMPLIANCE WITH LAWS AND CODE REGULATIONS

A. Nothing in the Contract Documents shall be construed to conflict with any local, state or federal laws or regulations governing the installation or any part of the work to be performed under this Contract, and all requirements shall be in accordance therewith, without any additional cost to the Owner.

1.13 INSPECTION OF WORK

A. The Owner, Architect, or their duly authorized representative shall have free access to the work covered by these specifications for the purpose of observation, in the shop, in storage and at the job site, of the work for conformance with the Contract Documents. Nonconforming work and/or equipment shall be corrected when

1.14 WAREHOUSING

A. Because of the possibility of damage to the kitchen equipment, it is not shipped directly to the job site. It is shipped to the Food Service Equipment Contractor's warehouse and delivered and removed from crates by him. The one exception to this is the fabricated equipment which may be shipped at a time when the building is ready to receive it and which may be delivered direct to the

job site. The delivery time is coordinated with the General Contractor to arrive at a time when it will not interfere with the operation of other contractors, but in time for the various tradesmen to make their final connections.

B. Stored materials must be stored in an insured warehouse by the Food Service Equipment Contractor. The Food Service Equipment Contractor is totally responsible for stored equipment.

C. Receipt, unloading, removal from crates, etc., is the sole responsibility of the Food Service Equipment Contractor.

1.11 ROYALTIES AND PATENTS

A. Food Service Equipment Contractor pays all fees and royalties for patented articles used under this specification.

1.12 WORK BY OTHER TRADES

A. The work to be provided under other Sections includes roughing-in to points indicated on the mechanical, plumbing and electrical plans, final connections from rough-in point to various pieces of Food Service Equipment requiring such connections, final connection between various pieces of equipment or within pieces of equipment as required, and the supplying of all necessary materials, tools and labor for this work.

B. Electrical Work performed under Division 26 includes the following:

1. Interior wiring and/or control wiring in walk-in cooling equipment, wiring for lights in walk-in cooler/freezer units, sink heaters and ice cream makers.
2. Electrical connections to compressors, blower coils, controls, lights, etc.
3. Install all conduit and wiring for rough-in, final and inter-connections and makes all final connections within, between, and to Food Service Equipment.
4. Wiring for lights in walk-in refrigeration equipment shall be run through conduit installed on the ceiling inside the boxes and not on the top of the boxes. See Installation Instructions, this Section for description of fasteners and use of mastic.
5. Provide any sleeves required for power, controls or alarms.
6. Furnish and install all disconnect switches, safety cut-outs, control panels, fuse boxes, or other electrical controls, fittings, and connections.
7. Install motor starters and switches, which are furnished with Food Service Equipment.
8. Install all cord and plugs, which are furnished loose with Food Service Equipment.
9. Coordinate the installation of electrical components for Food Service Equipment so as to be in compliance with related local codes and regulations.
10. Note that all electrical work related to this Section shall be in compliance with the requirements for WET LOCATION unless otherwise noted.

C. Plumbing/Piping Work performed under Division 22 includes the following:

1. Provide rough-in and make all final connections including all materials and labor for gas, water and waste within, between and to the Food Service Equipment.
2. Install all faucets, lever waste drains, hose reels with mixing valves and gas pressure regulators, which are furnished with Food Service Equipment.
3. Plumbing connections to compressors, blower coils.
4. Provide any sleeves required for installation of refrigeration tubing or other piping.
5. Piping extensions from fixtures to floor drains and floor sinks for walk-in refrigeration.
6. Flush all lines free of foreign matter before connecting fixtures.
7. Provides water supply piping, traps, check valves, water pressure reducing valves, vacuum breakers, tail pieces and fittings, waste piping, floor drains, gas pressure regulators, shut-off valves, and all other necessary fittings.

8. Provide back flow prevention devices required by regulatory codes and/or the Public Health Department, and install any back flow prevention devices supplied by the Food Service Equipment
9. Provide half drain covers on floor drains or floor sinks for free flowing drain connections where required to prevent water from splashing on surrounding floor and/or equipment.

D. Ventilation Work performed under Division 23 includes the following:

1. Furnishes and installs necessary ventilation facilities of sufficient capacity to operate the equipment.
2. Furnishes and installs required vent ducts and transitions, and exhaust hood fans, and connects to equipment.
3. Note the ventilator shown in drawings is approximated size of ventilator capture area only.

E. General Work performed under Divisions 3 through 9

1. Provide a finished floor that is level unless noted otherwise in the Itemized Specifications or on the enlarged Food Service Equipment drawing. Floors are not pitched to drains because of the extensive use of mobile equipment. Leveling of the floor surface in the serving area, under Pass-Thru Refrigerated and Heated Cabinets, under the hood and in the walk-in Cooler/Freezer recess is critical. Equipment in the serving area are equipped with casters and cannot be leveled except by the floor and will not lock together if the floor is not level.
2. Provides all openings and penetrations in walls, ceilings, roofs, etc., for the food service equipment as required and finishes such openings as specified on the Construction Documents

1.13 ENVIROMENTAL PROTECTION

A. It is the intent of these specifications to exclude all substances which are potentially hazardous.

B. The Food Service Contractor is to be aware of this intent and verify though his suppliers and manufacturers that all materials and products provided for this facility are free of known environmental hazardous substances including formaldehyde and asbestos related materials. No such materials shall be installed, even on a temporary basis, in any location of the project.

PART 2 - PRODUCTS

2.1 EQUIPMENT MANUFACTURERS

A. Manufacturers: The equipment specified in Part 3, Equipment Schedule, shall be construed as a **basis-of-design** product and as such sets forth not only quality, standard/optional features but also equipment connection requirements. Acceptable equipment manufacturers shall be listed on a per equipment item basis. Due to the variations of equipment connection requirements from manufacturer to manufacturer the Food Service Equipment Contractor shall be responsible for the following when providing a listed acceptable equipment manufacturer other than the basis-of-design product.

1. Food Service Contractor shall make the General Contractor aware of any differences in connection requirements, including but not limited to the following:
   a. Electrical amperage.
   b. Waste connections and volume.
   c. Water (hot and cold) connections and volume.
   d. Exhaust connections and volume.
2. The Food Service Contractor shall provide, at no additional cost to the Owner, any equipment characteristic considered as a standard on the basis-of-design product but considered as an optional characteristic on the listed acceptable equipment manufacturer.

2.2 FABRICATED EQUIPMENT

A. The material used in manufacturing equipment shall be as hereafter specified. Material that is not definitely specified shall be of the best quality used for its specified or intended purposes. All materials shall be new and free from all defects and imperfections. All fabricated equipment in this specification shall be custom built by a fabricator who has a complete factory with suitable equipment, personnel, and engineering facilities to properly design, detail, and manufacture the highest quality of food service equipment. All fabricated equipment shall conform to the current standards of the National Sanitation Foundation (NSF), Ann Arbor, Michigan. All fabricated equipment shall bear the NSF seal applied before delivery to the job site.

B. Where not defined in Itemized Specifications all General Specifications and Sections take precedent.

C. Deviations or changes from the General Specifications for Fabricated Equipment are found in Itemized Specifications.

D. Where units cannot be fully shop fabricated; fabrication shop shall complete fabrication work at project site.

E. Food Service Equipment Contractor is required to make all field measurements and dimensions and deliver and install all fabricated equipment. Measurements are made wall to wall. Fabricator to allow ¼" for fit.

F. Electrical Specifications

1. Motors up to and including ½ H.P. are wired to 110, 115, or 120 volts, single phase. Motors over ½ H.P. are wired for 208 or 220 volts, three phase, unless otherwise noted on Architect's plans or in the Itemized Specifications.
2. Heating Elements having a connected load up to and including 1,000 watts are wired for 110 or 220 volts, single phase. Any heating element over 1,000 watts or any combination of heating elements within one fixture totaling more than 1,000 watts is wired for 208 or 220 volts, single phase, unless otherwise noted on Architect's plans or in the Itemized Specifications. All units are wired to a single master switch.
3. Provide 480 volt, three phase power where called for in the Itemized Specifications or as noted on Electrical drawings.

G. Switches and Controls

1. The Food Service Equipment Contractor supplies for each motor driven appliance or electrically heated unit, a suitable control switch or starter of proper type in accordance with Underwriter's Code. Controls that are mounted on vertical surfaces of fabricated fixtures are set into recessed die stamped stainless steel cups or otherwise indented to prevent damage.
2. All internal wiring for fabricated equipment items, including all electrical devices, wiring controls, switches, etc., built into or forming an integral part of these items are furnished and installed by Food Service Equipment Fabricator in his factory with all items wired completely to a junction box within the fixture ready for final connection to building lines. All receptacles are grounding type listed by Underwriters Laboratories and approved by National Electrical Code. A standard three-prong plug to fit "U" slot grounding type receptacles is provided for all equipment operating off a 110 or 120 volt single phase A.C. electrical outlet. A three-wire cord of suitable length is provided for this equipment as well. All cord sets are to contain an equipment grounding conductor and be furnished with caps or plugs listed by Underwriter's Laboratories.

H. Faucets, Valves, and Fittings

1. Food Service Equipment Contractor furnishes all faucets and lever waste drains. Sinks are fitted with faucets as called for under each item or as separate item listed as faucets. All special faucets for kettles, pre-wash, etc., are listed under Itemized Specifications.

2. Faucets are properly tagged with item numbers and delivered to Plumbing Contractor on job for installation. Mounting of faucets to fixtures is responsibility of Plumbing Contractor. Lever waste drains are installed into bottom of sinks by Food Service Equipment Contractor.
3. Faucets and hose and spray units with a mixing valve shall be provided with internal spring checks to prevent cross flow of water. If mixing faucet is attached to hose and spray unit with back flow prevention device, the faucet may have to be modified with a spring check spindle and/or check valves provided to prevent cross flow of water. Back flow prevention devices must be compatible with base unit and meet Public Health Code. It is the responsibility of the Food Service Equipment Contractor to verify the Public Health requirements and supply back flow prevention devices accordingly.
4. All other fittings, such as stops, shut-offs, trap valves, etc., furnished and installed by Plumbing Contractor.
5. Openings for faucets and spray units are located by the Fabricator to prevent handles from hitting splash when in the fully open position.

I. Non-Corrodible Alloy

1. Non-Corrodible alloy, or stainless steel, specified hereafter are Type 304 stainless steel, having a standard analysis of 18% chrome and 8% nickel and .08% carbon steel.
2. All gauges, where specified, are United States Standard gauges. All exposed surfaces are given a #4 finish 180 grit. Where manufacturing process and welding disturb the original finish, it is carefully reground, polished and restored to match balance of surface. All gauges, not specified, are United States Type 304, 18-8, 14 gauge stainless steel.

J. Galvanized

1. Where galvanized iron is specified, tight coat galvanized Copper Bearing is furnished in largest possible sheets with as few joints as necessary. The sheets are of an approved grade, re-rolled for smoothness.
2. Paint with hammertone grey enamel which meets U.S.D.A. criteria unless specified otherwise. Underbracing is not painted with hammertone grey enamel.

K. Welding

1. All welding of stainless steel, whether specified or implied, is accomplished by the heli-arc method using stainless steel rod of the same composition as the parts welded. Welds are ground smooth and polished to the original finish of the metal, with the grain uniform to the grain of the original sheet. The stainless steel welds are free of pits, flaws, discolorations, and peened to remove flux and impurities. Where the grinding and polishing have destroyed the grain, restore and blend to obliterate all traces of welding. Welds are ground back to the surface of the original metal and sealed. Acetylene welding will not be accepted. Solder will not be accepted. Shop seams and corners in stainless steel tops shall be welded, ground smooth and polished.
2. All welds of galvanized metal on dish tables and sinks shall be ground smooth and sandblasted and sprayed with molten zinc at 1200 Fahrenheit to a .004 thickness. Tinning of welds is not acceptable.

L. Pipe Stands and Frames

1. All pipe stands for work tables, open base tables, dish tables, sinks and drainboards are constructed of 1-5/8" O.D. stainless steel tubing (16 gauge, type 304) or as indicated in the Itemized Specifications. All stringers and cross bracing are of same material as legs. All joints between legs and cross braces are notched, welded and ground smoothly. Legs fitted at top with fully enclosed stainless steel gussets welded to angle underbracing and stud bolted to top. Legs are attached without the use of bolts and are spaced on maximum of 4' to 5' centers.
2. Crossrails are supplied between each leg. Legs anchored to closed gussets at top only and without crossrails are not acceptable. Constructed of 1-5/8" O.D. stainless steel tubing (16 gauge, type 304).

3. All crossrails are 12" O. A. above floor, or as called for by local health authorities. Verify that height of crossrails does not interfere with service connections.

M. Bracing

1. Bracing is 12 gauge 1" X 4" X 1" galvanized iron channels and 12 gauge 1½" X 1½" X 1/8" galvanized iron angles. See Table Top section for attachment. Amount of bracing provided is as required to reinforce to prevent noticeable deflection. Tops of work tables, dish tables, enclosed base tables, serving counters and drainboards are braced. Clear silicon caulking manufactured to with stand 400° F. temperature water is applied at seam between bracing and tops.
2. Exposed underbracing is 14 gauge, type 304 stainless steel.

N. Sound Deadening

1. Furnish sound deadening pads to break metal to metal contact between bracing and tops on all work tables, dish tables, sinks, drainboards, enclosed base tables and serving counters except where noted otherwise.
2. Furnish sound deadening pads on underside of all sinks including pre-wash and disposal sinks, dish tables, drainboards, and underside of all tables between bracing.
3. Double walled sliding and swing doors are fitted with sound deadening insulation between the walls.

O. Feet

1. All pipe legs are fitted with sanitary die stamped stainless steel bullet shaped feet, fully enclosed with a slightly rounded bottom to protect the floor. Top of these feet are fitted with a male threaded stem to fit into the end of pipe legs hereinabove specified and provide a total adjustment of 1". Stem is extra long so threads are not exposed. Bottom of pipe leg is finished off smoothly and overlap stem to provide sanitary fitting and prevent accumulation of grease or other debris at this joint.
2. Cabinet type fixtures are mounted on 6" high die stamped sanitary one piece stainless steel legs and adjustable feet not less than 3" in diameter at top. Bottom adjusting member to telescope up into inside of upper member and match adjuster on open base units. Legs are fitted with a male threaded stem and have an adjustment of 1" on the 6" high legs. The upper part is stamped in a neat design with flared inverted shoulder, welded to stainless steel base plate designed for anchoring to channel braces below cabinet type fixtures.

P. Table Tops (Metal)

1. Metal table tops are made of 14 gauge stainless steel. See Itemized Specifications for description of edge. Shop seams and corners are welded, ground smooth and polished. Working tops are reinforced on the underside with a framework of 12 gauge 1" x 4" x 1" galvanized iron channel and 1½" x 1½" x 1/8" galvanized iron angles as required. All horizontal and vertical cove corners on a ¼" or larger radius. Height of table top is 34".
2. Tops are reinforced so there will be no noticeable deflections, with reinforcements stud welded to underside of top. Rivets or bolts used through the top are not accepted. Reinforced with 12 gauge 1" x 4" x 1" galvanized iron channel and 1½ " x 1½" x 1/8" galvanized iron angles. Bracing is stud bolted to underside of top with cadmium plated lock nuts. Sound deadening pads are applied to break metal to metal contact between all bracing and underside of top.
3. Field joints are provided in tops where necessary, located for practical construction and consistent with sizes convenient for shipping and accessibility into buildings. See section entitled "Field Joints" for description of these joints.
4. See Itemized Specifications for description of edge.

Q. Dish Table Tops

1. Tops of dish tables are constructed of 14 gauge stainless steel with all free edges turned up 3" and finished with 1½" diameter sanitary rolled rim. Sides and back adjacent to walls or higher

fixtures are coved up 8", returned 2½" on a 45° angle, turned straight back 3/4" and straight down ½" along wall edges to an overall height of 10". Table is attached to wall with 12" stainless steel strips (Z clips). All interior horizontal and vertical corners are coved on a ¼" or larger radius. Outside radius of rolled rim corners is concentric with inside cove. Top is reinforced, braced and sound deadened the same as Table Top.

2. Dish Table Tops are mounted on tubular stainless steel legs and adjustable feet with connecting rails the same as specified for pipe stands and frames.
3. Ends of splash are closed. Free corners of tops are spherical.
4. Legs are fitted with adjustable stainless steel bullet feet as described under feet.
5. Field joints are provided in tops where necessary, located for practical construction and consistent with sizes convenient for shipping and accessibility into buildings. See section entitled "Field Joints" for description.

R. Drawers

1. Drawer housing is fully enclosed and is made entirely from 18 gauge 304 stainless steel including any reinforcements, 24" X 24" X 8", or as called for in Itemized Specifications.
2. Internal drawer slide assembly is removable. Drawer slide assembly is stainless steel full extension drawer slides with stainless steel bearing wheels and screws: Standard-Keil 1452 series or Component Hardware Group Inc. S52 series.
3. Drawer face is of 14 gauge stainless steel. Face equipped with an integral handle across the entire top of the drawer.
4. Drawer pan is die drawn with fully coved corners from one piece of 18 gauge 304 stainless steel, 20" X 20" X 5" deep or as called for in the Itemized Specifications. Top edges to flange out 1½". Interior horizontal corners of the pan are rounded on a 1" radius and interior vertical corners of the pan on a 2" radius. The use of solder or other material to fill in these corners is not acceptable.
5. Apply 1/8" mastic sealant between drawer flange and work surface.
6. Tier of drawers is constructed in same manner as single drawer.
7. Drawers over 5" deep provided with drain hole and cap in front.
8. Each drawer mounted on a mobile unit contains (2) concealed magnetic latches with a minimum release tension of twenty pounds located at rear of drawer.
9. Single drawer and top drawer in tier of drawers are fabricated with a trough protector (gutter) to prevent entry of moisture.

S. Undershelves

1. The undershelves on open base tables are solid removable type of 16 gauge stainless steel.
2. Shelf is made in removable sections with rolled down edges on sides which overlap pipe crossrails where they abut same.
3. Abutting sections of shelves are turned down 1" straight.
4. Shelves are notched to legs of table.
5. Size of shelf is fabricated in sections for easy handling and for sending through dish machine.

T. Elevated Shelves

1. Elevated shelves constructed of 14 gauge stainless steel.
2. Shelf is mounted on 16 gauge 1-5/8" O.D. stainless steel tubular supports. Shelf is 12" wide unless stated otherwise; height is 18" and shelf is supported by cantilever supports mounted through the splash and into gusset welded to table bracing. Gusset fitted with set screw.
3. Three supports are required for shelves four to eight feet in length. One additional support is required for each additional three feet over eight feet in length as a minimum.
4. Front and sides have a marine edge. Back side is turned up 90° 2", returned ½" on a 45° angle, turned straight back 5/8", straight down 5/8" and hemmed. Shelf backsplash is capped at both ends. When elevated shelf is attached to a wall, 12" stainless steel "Z" clips and clear silicon caulking that will withstand 190° F. temperature water are used in order for shelf to be attached to wall. Elevated shelf on mobile units is never attached to wall regardless of location.
5. A minimum of ½" of insulation is required to separate heat lamps and shelf when lamp is installed underneath shelf.

U. Sinks

1. Sinks are of the size called for, constructed of 14 gauge stainless steel, type 304 (18-8), #4 finish. Backs, bottoms and fronts shall be formed of one continuous sheet with ends welded in place. Compartment sinks have double wall partitions of same material as sink.
2. Vertical and horizontal corners, including partition, are coved ½" or larger radius, electrically welded, ground smooth and polished.
3. Top edges of sinks at front and ends, except where fitted with integral type drainboards, are furnished with a 1½" die formed integral sanitary roll rim.
4. Across back of sinks, unless otherwise specified, there will be a 10" high backsplash at walls. When sink adjoins side walls, unless otherwise specified, there will be a 10" high sidesplash. Back and sides, where applicable, are coved up 8", returned 2½" on a 45° angle, turned straight back 3/4" and straight down ½" along wall edges to an overall height of 10". Sink attached to wall with 12" stainless steel strip (Z clips). Faucet holes are provided in backsplash 4" down from top. Faucet holes are centered over single compartment sinks and centered over partitions on multi-compartment sinks. Where roll terminates into backsplash the roll is fully welded and polished thereto. Ends of splash are fully enclosed, integrally welded, finished and polished and fully sealed by welding to meet NSF requirements unless specified otherwise. Sinks not adjacent to wall are equipped with backsplash that is fully enclosed, integrally welded, finished and polished and fully sealed by welding. Access openings are provided by the fabricator in the top and bottom of the enclosed backsplash for piping for faucets and vacuum breakers. Rubber grommets are supplied to seal between the piping and the edge of the openings to prevent corrosion between dissimilar metals.
5. Sinks are 37" high to top of roll, 34" AFF to deck and 14" deep from top of roll to bottom of compartment unless specified otherwise.
6. Bottom of each compartment is die-stamped with tapered grooves at least ¼" deep at drain depression. Each compartment is provided with 2" lever type drain. Drain is fitted with rod lever for opening and closing drain. Each rod handle is suitably braced to bottom of sink with 16 gauge stainless steel bracket. All other components are nickel plated to match stainless steel. Drain is equipped with solid stainless steel handle assembly. Strainers are flat type made of stainless steel and snap-in. Drains have positive sealing action with heavy wall cast bronze body and self-centering face flanges.
7. Bodies are mounted on 1-5/8" O.D. tubing legs of 16 gauge stainlesssteel and fitted with stainless steel bullet type adjustable feet. Legs are mounted with 16 gauge stainless steel fully enclosed gussets fully welded to the sink bottom. See Pipe Stands and Frames and Feet sections.
8. Crossrails are 1-5/8" O.D. stainless steel tubing located 12" from floor; running front to back on legs forming a "H" frame unless specified otherwise. See Pipe Stands and Frames section. Locate crossrails to the front of the sink compartments. Coordinate height of crossrails and location of legs to avoid interference with sink heater controls.
9. All three-compartment sinks with drainboards longer than 27" to have six (6) legs unless specified otherwise. All three-compartment sinks with drainboards 27" or shorter to have four (4) legs mounted underneath sink body at corners. All drainboards longer than 27" require legs. If sink heater is specified for three-compartment sink with drainboards longer than 27", crossrail is located in front of drainboard adjacent to sink heater and rear of drainboard opposite of sink heater. If sink heater is not specified for three-compartment sink with drainboards longer than 27", crossrails are located at rear of drainboards.
10. In compartment with a sink heater, move the sink drain toward the side opposite the heater.
11. All three compartment sinks have 24" X 27" compartments with an overall width of 31¼" unless specified otherwise. Compartment size must accommodate 18" X 26" sheet pans for total immersion.
12. Overall length and width is noted in the Itemized Specifications.
13. Bracing and sound deadening are the same as for table top.
14. Sound deadening pads are furnished on underside of sink compartments and drainboards.
15. Coordinate with Plumbing Contractor for location of faucet and vacuum breaker and provide knock-outs for same.
16. Provide rubber grommets for openings through which plumbing lines are routed to prevent dissimilar metal from touching. Label and deliver to Plumbing Contractor for installation.

V. Sink Inserts

1. Sink inserts are fabricated with no visible seams, size as called for, and constructed of 14 gauge stainless steel.
2. Sinks are welded integral with counter tops with no lap between.
3. Corners, partitions, bottoms and drains, sound deadening, etc., as specified under section entitled "Sinks".

W. Sink Drainboards

1. Drainboards are constructed of same material as sinks and welded integral to same. Drainboards to have 1½" high rims with die formed integral rolled edges to match sink edges. Horizontal and vertical corners are coved on a ¼" or larger radius, electrically welded, ground and polished to a #4 finish. Solder filling of these corners is not acceptable. Drainboards are pitched to properly drain into sink. (Minimum pitch in top of drainboards is 1/8" per foot from end of drainboard to sink compartments).
2. Across backs and ends against walls or high fixtures, drainboards have a 10" high backsplash and sidesplash, when applicable, to match splash of sink compartment. Backsplash and sidesplash, when applicable, are welded integral with splash of sink compartment with ends fully enclosed, integrally welded, finished and polished and fully sealed by welding. Attached to wall with 12" stainless steel "Z" clips. See description for exposed backsplashes and sidesplashes this Section for specifications for drainboards not attached to wall.
3. Sink and drainboards are constructed so that the rolled rims on drainboards are continuous and at the same height of 34". Where drainboards are longer than 27" in length, they are supported on pipe legs of same material as used for sink legs and cross braced above the floor with pipe rail. See Pipe Stands and Frames section.
4. Drainboard underbracing is 1½" x 1½" x 1/8" 14 gauge, type 304 stainless steel stud bolted to top. Sound deadening pads applied between angles and top and on underside between angles.

X. Edges

1. Marine edge.
2. Bull nose marine edge.
3. Bull nose edge.
4. Inverted rolled rim.
5. Standard table edge.
6. Flat turndown edge.
7. Standard roll rim edge.
8. Rolled table edge.

Y. Back, Sidesplashes

1. Back and sidesplashes cove up per drawings and specifications, return 2½" on a 45° angle, turn straight back 3/4" and turn straight down ½". If adjacent to wall and non-mobile, attach to wall with 12" stainless steel strip (Z clips).
2. Sides of sidesplashes and ends of sidesplashes are fully enclosed, integrally welded, finished and polished and fully sealed by welding to the top to meet NSF requirements unless specified otherwise. Use of silicon cannot be used to seal sidesplash on the outside but is one continuous piece. Sidesplash adjacent to wall is coved up 8", returned 2½" on a 45° angle, turned straight back 3/4" and turned straight down ½" to an overall height of 10" and attached to wall with 12" stainless steel strip (Z clips). End is fully enclosed, integrally welded, finished and polished and fully sealed by welding to the top.
3. Ends of backsplash are fully enclosed, integrally welded, finished and polished and fully sealed by welding to the top to meet NSF requirements unless specified otherwise.
4. Backsplash and sidesplashes for mobile equipment or equipment not adjacent to wall are fully enclosed, integrally welded, finished and polished and fully sealed by welding to the top and sides to meet NSF requirements unless specified otherwise. Use of silicon cannot be used to seal splashes on the outside but is one continuous piece. Access openings are required in

fully enclosed backsplash by the fabricator through the top and bottom of the backsplash for equipment requiring piping for faucet and vacuum breaker. When applicable, removable 16 gauge, Type 304, 18-8 stainless steel enclosure panel (skirt) is supplied and installed at back of equipment below backsplash to cover exposed electrical and plumbing connections. Equipment attached to wall with "Z" clips does not have an enclosed backsplash but backsplash is turned down next to wall ½". End is fully enclosed, integrally welded, finished and polished and fully sealed by welding to the top.

5. All fully enclosed backsplashes and sidesplashes extend down to counter or table top or below in order to cover all underbracing.
6. In instances where backsplashes and sidesplashes are attached to the walls and are not fully enclosed, exposed underbracing is 14 gauge, type 304 stainless steel.

Z. Casters

1. All casters are 5” with brake unless specified otherwise.

AA. Field Joints

1. Field joints are located for practical construction, consistent with sizes convenient for shipping and accessibility into building.
2. Field joints in tops are carefully sheared so they can be tightly butted and joined together to form an integral unit to match balance of equipment.
3. Field joints and butte joints are heli-arc welded, ground and polished smoothly. These joints are made by the approved fabricator.

BB. Refrigeration Service

1. Refrigeration service includes start-up and all parts; service, parts, mileage, transportation and labor warranty for one year from the date of final acceptance by the Owner and a five year non-prorated compressor replacement warranty from the date of final acceptance by the Owner.

CC. Painting

1. All fixtures, unless made of stainless steel, are finished with hammertone grey paint of the highest quality, air-dried and applied in accordance with the manufacturer's direction.

DD. Joints, Finishes and Trim Strips

1. All equipment is formed of one piece of material wherever possible, with due regard to shipping and erection.
2. All joints, where necessary, are homogeneously welded by electric fusion metal arc, using welding rod of same composition as material being welded, ground smooth and polished to an invisible joint to match adjoining surfaces.

EE. Definition

1. "Fully" is defined as continuously. Stainless steel gussets are fully (continuously) welded.

FF. Sealing

1. Any gaps or crevices such as the seam between under bracing and top are fully (continuously) sealed with sealant as described in this Section.
2. Supply and install rubber grommets for all openings through which dissimilar metals pass such as piping for disposal vacuum breaker in soiled dish table.

GG. Coordination

1. Provide copy of specification sheet or shop drawing for integral equipment such as dish machine, waste system, disposal, booster heater, etc. to fabricator for use in preparing submittal drawings.

HH. Approved Fabricators

1. Fabricators which are pre-approved for construction of stainless steel custom fabrication (serving line equipment excluded) are:
   Atlanta Custom Fabricators
   Low Temp Industries
   Advance Tabco

2.3 GENERAL MANUFACTURING NOTES FOR ALL EQUIPMENT

A. Water inlets are located above positive water level to prevent syphoning of liquids into the water system. Wherever conditions require a water inlet placed below the water level, Food Service Equipment Contractor supplies suitable type of vacuum breaker or back flow prevention device for the fixture to form part of same to prevent siphoning; labels and delivers to Plumbing Contractor for installation. Food Service Equipment supplier is required to furnish back flow prevention device as required by the Public Health Department for any piece of equipment supplied. It is noted that Public Health Departments usually require back flow prevention device on water inlet for Convection Combo type units. All back flow prevention devices must be acceptable to the Public Health Department.

B. Food Service Equipment Contractor supplies all faucets, spray and hose units with mixing valves and cross flow prevention devices if supply through unit is hot and cold water and all hose and spray units with back flow prevention devices. Face for all spray units is stainless steel. See description of Faucets, Valves and Fittings this section. Parts are labeled and delivered to Plumbing Contractor for installation.

C. Suitable pipe slots are provided through all undershelves to accommodate necessary service lines. These slots are proper size and are neatly made with turned up edges on all four sides to eliminate cutting or defacing of equipment on job. Cabinet bases are provided with an inner panel duct at ends or rear of cabinet to allow enclosed vertical and horizontal pipe space to conceal the vertical and horizontal piping.

D. All hardware, including that used for refrigerators, is heavy-duty cast type and arranged for locking device. Mounting screws are stainless steel or non-corrosive. Hardware is specifically selected for the particular use to which each piece is intended. Mastic required between non-similar metals to prevent rusting.

PART 3 - EXECUTION

3.1 EQUIPMENT DELIVERY

A. Equipment is not to be delivered, removed from crates, set-in-place for final connections until as a minimum all painting has been completed; ceilings, hood and ventilation duct work are in place; floor is cleaned; and all rough-in connections are in place. Site must be ready for final connections

3.2 INSTALLATION

A. Where there are gaps or spaces over 1/8" between walls and equipment, at tops of backsplashes, between adjoining pieces of equipment, etc., necessary trim strips are furnished for the proper finishing in installation. Necessary measurements for trim strips are taken during the time of installation in order to afford proper fit. Wall trim is made generally from 22 gauge Type 304, 18-8 stainless steel, broke to provide a tight fit. Trim is attached to backsplash (metal) with adhesive. Exposed fasteners may not be used to attach trim to metal backsplashes. In all other instances

stainless steel fasteners may be used to attach trim to walls and equipment if equipment finish is stainless steel. Non-corrosive fasteners are required if equipment finish is not stainless steel. Fasteners supplied and installed by other contractors to attach conduit and other materials to the Food Service Equipment must meet the preceding specifications. Trim is sealed to wall and equipment with clear silicon caulking; see installation requirements this Section.

B. Install closure plates and strips where required, of same material as equipment with joints coordinated with units of equipment. Joints are sealed with clear silicon caulking; see description of caulking types, this Section.

C. Install insulation where indicated by industry standards and sealants and gaskets all around each unit and penetration or as required to make joints air-tight, waterproof, vermin-proof and sanitary for cleaning purposes. In general, clear silicon caulking is the sealant. In general, make sealed joints not less than 1/8" wide and stuff with backer rod to shape sealant bead properly, at ¼" depth. Shape exposed surfaces of sealant slightly concave, with edges flush with faces of material at joint. Anchor gaskets mechanically or with adhesives to prevent displacement.

D. Conduit seal-offs required for penetrations into walk-in cooler/freezer.

E. Mastic is required between fasteners and equipment or trim and equipment when non-similar metals are used to prevent rusting through electrolysis. Rubber grommets are required where plumbing lines and connections penetrate splashes to prevent corrosion. Food Service Equipment Contractor supplies, labels and delivers rubber grommets to Plumbing Contractor for installation.

F. All single or multiple compartment sinks and tables with single or multiple compartment sinks are attached to the wall with 12" stainless steel strips (Z clips) and sealed with clear silicon caulking if located adjacent to wall.

G. Top shelf on all shelving and shelving/platform units unless noted otherwise is installed even with the top of the posts.

H. Air curtain devices shall be adjusted to regulate the velocity and volume of air at the air outlet for the purpose intended.

I. One hundred percent clear silicon caulking approved for use with food and rated to withstand temperatures up to 400° F. is used when caulking comes in contact with 190° F. water. General Electric sealant SCS 1000 and SCS 1200 and Component Hardware Silicone Sealer are the standards.

J. Caulking required with glass, copper, mill finish aluminum, galvanized steel, many plastics, stone, concrete and masonry finishes and rated to withstand temperatures up to 400° F. is General Electric sealants, Silglaze N or Gesil N depending upon the cure time required and the color specified. These sealants are only used with non-food contact surfaces. Examples: Floor level, trim at dish room openings and pass-thru openings.

K. Light fixtures over the door frames of walk-in refrigeration boxes are installed at a height sufficient to accommodate installation of strip curtains, if specified.

L. All thermometers, timers, thermostats for all equipment is tested and calibrated to proper operating conditions.

M. The equipment under the hood is positioned to allow for proper capture. Refer to drawings. Food Service Equipment Contractor is responsible for coordinating with all other contractors the proper locations of service connections under the hood to maintain floor space for equipment and the space in front of and behind or between the equipment under the hood as shown on the Food Service Equipment (Kitchen) Plan.

N. Food Service Equipment Contractor is responsible for coordinating the placement of the hood to maintain working aisle spaces.

O. If sprinkler heads are installed inside walk-in cooler/freezer box, Food Service Equipment Contractor is responsible for insulating and sealing penetrations properly to prevent condensation and ice formation.

3.3 QUALITY AND GUARANTEE

A. All equipment is guaranteed by the Food Service Equipment Contractor to be free from defects in workmanship and/or material for a period of one (1) year from the date of substantial completion of same by the Architect and Owner. This guarantee covers replacement of defective material at Food Service Equipment Contractor's expense, including parts, mileage, service, transportation and labor, but it does not cover any cost whatsoever for replacement of parts or work made necessary by carelessness or misuse of equipment. All Refrigeration units have a five (5) year non-prorated replacement warranty on the compressor from the date of substantial completion of same by the Architect and Owner. Extended warranties are specified in the Itemized Equipment Specifications, this Section.

3.4 TESTING AND START-UP INSTRUCTIONS

A. After all utility connections to equipment have been made by other contractors, Food Service Equipment Contractor starts-up, adjusts, levels and calibrates all equipment. Calibrate all thermometers, timers, and thermostats. After start-up and adjustment Food Service Equipment Contractor conducts final test of equipment before requesting first inspection by Architect and his Food Service Equipment Consultant.

B. Delay start-ups of food service equipment until service lines have been tested, balanced, and adjusted for pressure, voltage and similar considerations, and until water and steam lines have been cleaned and treated for sanitation by other Contractors.

C. Test each item of operational equipment to demonstrate that it is operating properly, and that controls and safety devices are functioning. Repair or replace equipment which is found defective in its operation, including units which are below capacity or operating with excessive noise or vibration.

D. Walk-in Cooler/Freezer refrigeration systems to be run ***five consecutive*** days prior to equipment demonstrations.

E. Provide a training program by a Serve Safe certified culinary chef and/or factory representative to consist of one (1) 6 hour day at startup showing all equipment and how it works with demonstrations. Provide training as follow up in another one (1) 4 hour day program within 45 days of start of school. Trainer shall monitor employees and demonstrate how to properly use equipment with live cooking. Service provided shall include abbreviated classes in Serve Safe and HACCP, and the proper method for receiving and storing product. Training to consist of a total of eight (8) hours. Notify GC and Architect of scheduled dates, time and name of Chef with contact info.

F. Contractor shall issue a letter, signed by all sub-contractors involved and co-signed by Owner's representative stating that CNP staff have been satisfactorily instructed in the use of the equipment.

3.5 MANUALS FOR OWNER-UPDATE 10.30.2024

A. Food Service Equipment Contractor, upon completion of work, to deliver to the Architect’s Food Service Consultant for review three (3) thumb drives with all operation manuals in alphabetical

order for all mechanically operated equipment i.e. cooking equipment, serving line operations and dishwashers. (hard copies of these manuals is no longer required).

B. Food Service Equipment Contractor, upon completion of work, to deliver to the Architect's Food Service Consultant for review three (3) sets of the following:

1. Warranty statement indicating date of start-up for equipment. Note if equipment has more than the standard one (1) year warranty and if so what is the warranty period.
2. Names and addresses of manufacturers supplying the equipment.
3. List of authorized service agencies including name, address and telephone number.
4. Service information organized in a chart format, alphabetically by manufacturer, item description, manufacturer, model, electrical and mechanical characteristics, and serial number.
5. As built shop drawings for all custom equipment.
6. Floor plan, plumbing and electrical rough-in drawings and equipment schedule marked as built. Show any variations from the original drawings.

C. Organize and assemble all information into three individual hardback vinyl loose-leaf binders. Binder to include two pocket folders for folded sheet information. Mark the appropriate identification on both the front and spine of each binder. Binder for site has identification as such on the front and spine.

D. Organize drawing sheets into manageable sets, bind with durable paper cover sheets and print suitable titles, dates and other identification on cover of each set.

E. Manuals are assembled and ready to use during demonstration and training.

F. After review and approval of manuals by the Architect, manuals are transferred to Owner or Owner's representative.

3.6 GENERAL OPERATING AND MAINTENANCE INSTRUCTIONS

A. Food Service Equipment Contractor shall furnish qualified representatives to instruct and demonstrate to the Owner's Personnel, at project site, the proper operation, care and maintenance of all equipment involved including the care of finished surfaces. The dates and times of the demonstration shall be coordinated with the Owner's Personnel. Food items supplied by the Owner are prepared during training by the food service employees utilizing the equipment. Food Service Equipment Contractor identifies to the Owner the food items and supplies required for training at least one week before the scheduled training date. All equipment to be demonstrated must be fully operable before training; all final connections must be made and start-up and adjustment completed.

B. It is noted that for the purposes of scheduling that all contractors must be completed with their work with-in the kitchen and or serving area prior to equipment demonstration and training.

C. As part of this instruction, provide a review of the information assembled in the Operation and Maintenance Manuals and the following items which are not inclusive:
1. Maintenance Manuals
2. Operation Manuals
3. Tools
4. Spare parts and materials
5. Lubricants
6. Fuels
7. Identification system
8. Control sequences
9. Hazards

10. Cleaning

D. For operational equipment also demonstrate:

1. Start-up
2. Shut-down
3. Emergency operations
4. Safety
5. Effective energy utilization

E. Review maintenance and operations in relation with applicable warranties.

F. The Food Service Equipment Contractor shall provide a qualified representative to be on site during demonstration and training of all equipment.

G. Provide one copy of an operation and maintenance video for each piece of equipment, if available. Videos become the property of the Owner.

H. Submit written documentation, signed by the personnel receiving instruction, that training was received with the date it was given. Submit written documentation that keys were transmitted to Owner.

3.7 FINAL CLEANING

A. General: Provide final cleaning of all equipment both inside and outside. Comply with manufacturers' instructions for cleaning operations. Final cleaning of the food service equipment by the Food Service Equipment Contractor is not scheduled until all contractors other than Food Service Equipment Contractor have completed their work. Food Service Equipment Contractor and General Contractor shall coordinate timing of the final cleaning to allow sufficient time for the Food Service Equipment Contractor to complete his final adjustments; to schedule inspection by the Architect and his Food Service Consultant; and to schedule training of the Food Service employees. The preceding must occur before training is scheduled and Owner occupies the kitchen.

B. Remove protective coverings and labels which are not required as permanent labels.

C. Clean glazed materials, including glass shelves and sneeze guards, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace any broken glass.

E. Clean exposed exterior and interior hard-surfaced finishes, including metals, painted surfaces, plastics, special coatings, and similar surfaces, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Restore reflective surfaces to their original reflective condition.

F. Replace work which cannot be successfully restored.

G. Polish exposed metal surfaces and touch-up painted surfaces.

H. Boil out fryers.

I. Clean the interior and exterior of all the food service equipment to a condition of sanitation ready and acceptable for intended food service use.

J. It is the sole responsibility of Food Service Equipment Contractor to protect all food service equipment with coverings, to maintain clean status of equipment between cleaning and occupancy. Protective coverings are removed immediately before Owner occupies the area.

K. Cleaning is completed by General and Food Service Equipment Contractors before requesting first inspection by Architect and his Food Service Equipment Consultant.

3.8 PREREQUISITES TO SUBSTANTIAL COMPLETION

A. Complete the requirements included in this Section.

B. Submit Operation and Maintenance Manuals to Architect for review.

C. Submit Record Document for Architect/General Contractor.

D. Deliver physical items such as unattached accessories to Owner.

E. Transmit keys to Owner. Each key is labeled by description and Item Number.

F. Complete start-up, adjustment, leveling and calibration of all equipment.

G. Conduct final test of equipment.

H. Complete final cleaning requirements.

I. Complete operating and training requirements.

J. Request first inspection by Architect.

K. From receipt of written first inspection report prepared by Architect, Food Service Equipment Contractor has ninety days to complete corrections. Notification of receipt is made to Architect by Food Service Equipment Contractor. At the end of the ninety day period, if final inspection by Architect has not been scheduled by the Food Service Equipment Contractor, AIA procedures for correction of the deficiencies by others at the expense of the Food Service Equipment Contractor may be initiated.

3.9 PREREQUISITES TO FINAL ACCEPTANCE

A. Submit to Architect copy of Architect's first and/or prior inspection report of itemized work to be completed or corrected, stating that each item has been corrected or otherwise resolved for acceptance. At same time, request a final inspection by Architect.

3.10 RECORD DOCUMENT SUBMITTAL

A. Record documents shall include the following:

1. Provide one (1) set of as-built shop drawings including floor plan, dimensioned electrical and mechanical rough-in drawings and equipment schedule; as-built shop drawings showing elevations, cross-sections, and details of all custom equipment as provided with the submittals. Give particular attention to concealed work which would be difficult to measure and record at a later date. Note any deviations from the original drawings and specifications. Note related change order numbers where applicable.

B. Submit directly to Architect and/or General Contractor as required.

3.11 EQUIPMENT SCHEDULE

A. Substitutions by any bidder wishing to supply alternate equipment other than that specified shall follow the requirements listed in the Invitation to Bid.

B. Bidders recommending such substitutions are cautioned to examine mechanical and electrical plans and conditions of building to determine if such substitutions will require changes in mechanical or electrical connections which have already been planned. If proposed substitutions require such changes, bidder shall be responsible for any cost involved.

C. Any bidder wishing to supply alternate equipment other than that specified must submit a written request for substitution to the OWNER ten (10) days prior to the Bid Date for approval or disapproval. The request must be accompanied by the name of the manufacturer and model, a complete description of the proposed substitution, drawings, catalog cuts, specifications, performance and test data, samples, of applicable, and all information necessary for an evaluation. A statement describing any changes in materials, equipment, or work that incorporation of the substitute would require must be included. A detailed description of the manner in which the proposed substitution conforms and/or varies from the item specified must also be provided. If approved an addendum will be issued.

ITEM 1 AIR CURTAIN QTY: 2/ALTERNATE BID
MANUFACTURER: BERNER
MODEL: SLC07-1048A
ELECTRICAL: REFERENCE PROJECT DRAWINGS FOR ELECTRICAL REQUIRMENTS.
Description:

General Contractor to provide knock-out in door frame for wiring to micro switch in order for control wiring to be run in conduit concealed in wall above door. Food Service Contactor to coordinate with door supplier. See detail

Accessories:

1. Air curtain to be ordered with 505CRD163SJT-03B 3’ Cord and plug factory mounted.
2. Automatic door switch, plunger type for automatic on/off control model 9503SD020-P.
3. Supply 66ZPR000DMB-AZ-007-WP Z wall bracket, adjustable depth, white powder coated finish.
4. Supply 66ADS000DMB mounting bracket for plunger switch used with manual swing doors.

APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: MARS

ITEM 2 DRY STORAGE ROOM SHELVING BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:
Four tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 21"D, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF
Model 74PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 74-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

ITEM 3: LINEN TRUCK BY OWNER
MANUFACTURER: METRO
MODEL: TX48A-CLTSG
Description:

Body: Rotational molded polymer construction includes routing slip clip, and molded in handle.
Color: Medium Gray
Handle: Integrated into cart, full height, with
the following features:

— Keeps user's hands on the exterior of cart, preventing contact with soiled/clean contents
— Inset to keep user hands inboard to prevent incidental contact with surroundings
— Arched to position user to see around truck while pushing
— Curved outward to provide user more leg clearance while pushing
Gate and Lid: (option for bulk truck) Molded polymer construction with stainless steel hinges, latch and hardware. Color: Medium Gray
Shelves: (for convertible truck) Stainless steel wire, convertible, bolted to cart body, sloped to rear of convertible truck to help contain stored items
Dolly: Molded advanced polymer construction. Color: Charcoal Gray
Casters: Thermoplastic rubber (TPR) wheel with rounded tread design provides a softer, quieter ride than traditional flat faced wheels. The non-marking material also resists flat spotting and repels floor debris
— 6"D (150mm) wheel, with 2"W (50mm) rounded face
— TPR wheels and zinc plated horn; 4 swivel or 2 swivel, 2 rigid
— Double seal precision axle bearing, Double ball bearing swivel raceway with grease seal and zerk fitting
Weight Capacity:
— Shelf: 200 lbs. (91kg)
— Truck: 600 lbs. (274kg)
Accessories:
1 EACH TRUX, CART COVER, UNCOATED VELCRO CLOSE, NAVY BLUE

ITEM 4: HEAVY DUTY TWO TIER SHELVING BY OWNER
HEAVY DUTY
MANUFACTURER: NEW AGE
MODEL: SEE BELOW
Description:
TWO tier shelving units with bottom shelf 8" above finished floor and shelving spaced evenly with top shelf even with top of posts.
2 EACH PER UNIT 24XXTB Dimensions: XX(w) x 24(d)
"Adjust-A-Shelf" T-Bar Series Shelf, XX"W x 24"D, all welded aluminum construction, 1500 lbs. capacity, NSF, Made in USA, (standard factory lead time)
4 EACH PER UNIT Model 48P Post, 48"H, marked in 2" increments, aluminum finish, NSF, Made in USA, (standard factory lead time)
4 EACH PER UNIT Model 0116 Adjustable Foot, 1-5/16" dia., upright, (standard factory lead time)
Lifetime guarantee against rust & corrosion. Lifetime guarantee against worksmanship and material defects.
APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: WINHOLT AND CHOICE

ITEM 5: LINEN CART BY OWNER
MANUFACTURER: ULINE
MODEL: H-3840
Description:
Heavy Duty Poly Box Truck, 18.5 bushel. High-density polyethylene. 5" polyurethane casters, 2 swivel and 2 rigid. 48" x 32" 38". 1200 lb capacity. Weight 72 lbs.

ITEM 6 CHEMICAL STORAGE ROOM SHELVING BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:
Four tier shelving units with bottom shelf 8" above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 18"D, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF
Model 74PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 74-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection
APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

ITEM 7 WASHER QTY: 1 /ALTERNATE BID
MANUFACTURER: WASCOMAT
MODEL: WHLFP817OLP
ELECTRICAL: REFERENCE PROJECT DRAWINGS FOR ELECTRICAL REQUIRMENTS.
Description:

- Extra large load drum — 22+ pound capacity
- 15,000+ cycle machine life design (tested at full load)
- Real-time clock for happy hour, promotional pricing
- Superb cleanability with 4 field adjustable wash programs
- Top quality SKF bearings in a heavy duty cast iron housing
- 3 seals with 5 lips protect bearings
- Pump drain standard
- ADA compliant
- 300 G-force for greatest spin moisture reduction and faster dry time
- Superior over-suds and unbalance tolerance
- AC motor (no brushes)
- Front access for easy serviceability
- Professional 8-point suspension
- Solid steel counterweights — no concrete
- Quiet operation
- Saves up to 60% on water vs. top load washers
- 2 cycle upgrade buttons enhance revenue
- Soft mount design for easy installation
- Energy Star® Certified

ITEM 7.1 DRYER QTY: 1 /ALTERNATE BID
MANUFACTURER: WASCOMAT
MODEL: DLHF0817E OLP (NO COIN OR CARD REQUIRED)
ELECTRICAL: REFERENCE PROJECT DRAWINGS FOR ELECTRICAL REQUIRMENTS.
Description:
Commercial grade construction
Extra large load drum — 22+ pound capacity

- 7.0 cu. ft. drum
- Drum supported by five roller bearings for long life
- Fast drying
- Axial airflow ensures the shortest drying time

Easy to clean, heavy duty lint screen Extra large door opening for easy loading and unloading
Large capacity can handle oversized loads with ease Coin and card payment compatibility
Space-saving design Easy to install Stacking kit available

ITEM 8 LAUNDRY TABLE BY OWNER
MANUFACTURER: Advance Tabco/CUSTOM FABRICATORS
MODEL: Model SS-240

Dimensions: 35.5(h) x 30(w) x 24(d)
Description:
Work Table, 30"W x 24"D, 14 gauge 304 stainless steel top, 18 gauge adjustable stainless steel undershelf, stainless steel legs & adjustable bullet feet, NSF
Accessories
1 st Model TA-255 Casters, expanding adapter, for 1-5/8" dia. O.D. tube/table legs, 400 lb capacity per caster, blue polyurethane, non-marking, roller bearing wheel, set of (4) (2 with brakes)
1 ea Model SS-2020 Deluxe drawer assembly
Fabricators which are pre-approved for construction of stainless steel custom fabrication (serving line equipment excluded) are: Atlanta Custom Fabricators, Commercial Stainless Fabricators, Marietta, GA. Low Temp Manufacturing, Jonesboro, GA.; Titan Stainless, Pageland, SC and Advance Tabco.

ITEM 9 MOP SINK QTY: 1 NIC (NOT IN CONTRACT)
BY OTHER TRADES

ITEM 9.1: SERVICE FAUCET QTY: 1 NIC
BY OTHER TRADES

ITEM 10: MOP AND BROOM HANGER BY OWNER
MANUFACTURER: ADVANCE TABCO
MODEL: K242
Description:
Holds three mops/brooms
Fabricators which are pre-approved for construction of stainless steel custom fabrication (serving line equipment excluded) are: Low Temp Manufacturing, Jonesboro, GA.; Titan Stainless, Pageland, SC and Advance Tabco.

ITEM 11 CARTS BY OWNER
MANUFACTURER: RUMBERMAID
2 EACH: MODEL: FG452500BLA
Description:
Flat Shelf Utility Cart, 43-7/8"L x 25-5/8"W x 33-5/16"H, 500 lb. capacity per shelf, (2) shelves, open base, polyethylene exterior, (4) 5" thermoplastic rubber (TPR) casters, assembly required, black, Made in USA
APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: CARLISLE and CAMBRO

ITEM 12 QTY: 1-LOT

MANUFACTURER: THERMOKOOL
MODEL: CUSTOM
ELECTRICAL: REFERENCE PROJECT DRAWINGS FOR ELECTRICAL REQUIRMENTS.
Description and Accessories:
Refrigerant:
Cooler: Meet CFC reduction regulations
Freezer: Meet CFC reduction regulations
Size: Nominal 7’-6” high
Verify overall box dimensions with drawings, reference Architectural drawings for wall dimensions.
Door swings and positions must be as shown on the drawing.
All specifications apply to cooler and freezer unless indicated otherwise.

The THERMO-KOOL prefabricated modular construction. It shall be designed and constructed to allow fast and easy field assembly, disassembly, relocation and enlargement by the addition of like modular panels. Walk-in shall be designed and constructed as shown on plan. Overall size of walk-in shall be CUSTOM to fit exact job site requirements. 8’-6” height outside dimensions for walk in is standard unless otherwise noted in the detailed specification per school. See all drawings for special instructions.

PANEL CONSTRUCTION:

Wall and ceiling panel widths shall be within 1" increments up to 46" wide. Corner panels shall be 90 degree angle, 12" x 12". All panels shall be interchangeable with like panels for fast and easy assembly. Partition panel placement shall be within 1" increments to meet shelving space requirements.

All panels shall consist of metal pans formed to precise dimensions. Metal finish to be as specified. Insulation shall be "foamed-in-place" urethane to bond permanently to complete inner surfaces of both interior and exterior metal pans to form strong rigid unit. Panels shall not have internal wood or metal support, framing, straps, or other non-insulating members. Each panel shall be 100% urethane foam insulation exclusive of metal pans. Perimeter structure shall be formed of DURATHANE, high density urethane insulation forming tongues and grooves to assure vapor and airtight joints and to prevent pre-installation damage and deterioration of exposed urethane surfaces.

Construction shall be as approved by the National Sanitation Foundation. Unit shall bear the NSF® Seal of Approval affixed to the interior of a door panel.
Floor is recessed. Coordinate recess depth so that the walk-in box flooring is no more than a ¼" above finished floor of the kitchen. Floor of walk-in cooler/freezer is not covered with kitchen finish floor system.
Common Wall Partition:
When specified or shown on drawing, walk-in shall be divided into compartments by use of insulated panels. Panels shall be constructed in accordance with specifications for all panels. Partitions in standard locations shall be foam tongue and groove construction secured in place by com-lock fasteners. All partition panels shall have foamed-in-place thermal breakers to prevent condensation and heat transfer between compartments of different temperatures.

WARRANTY:
MANUFACTURER MUST PROVIDE ONE YEAR PARTS AND LABOR FOR ALL COMPONENTS OF WALK IN COOLER AND FREEZER.
Panels shall be covered by a Ten-Year Factory Warranty.
Compressor shall have a one year parts and labor warranty with an additional four years for parts for compressor.

INSULATION:

Insulation shall be 4" or 5" thick rigid, zero ozone depleting HFC 134a blown Class I urethane foam classified according to UL 723 (ASTM-E-84) as tested by Underwriters Laboratories, Inc. The core material has a flame spread of 25 or less and a smoke density of 250.

The urethane foam is foamed-in-place to bond to inner surfaces of metal pans having an average thermal conductivity (K factor) of 0.13 BTU/hr./sq. ft. per degrees /Fahrenheit/inch. As tested in accordance with ASTM C 518-2004, the R factor for coolers at temperatures of 55 F˚ is greater than 29.0 for 4" thick and greater than 36.0 for 5" thick panels; for freezers at temperatures of 20 F˚ the R factor is greater than 32.0 for 4" thick and greater than 40.0 for 5" thick panels.
(R-value of R-25 for Coolers and R-32 for Freezers required to meet 2009 Energy Code)

The prefabricated urethane foamed panels shall be supplied with a Class I fire hazard classification according to UL 723 (ASTM-E-84) as tested by Underwriters Laboratories, Inc. Panels shall have a flame spread rating of 25 or less and bear a certifying Underwriters Laboratories, Inc. label.

This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions

METAL FINISHES:

INTERIOR WALLS are .040 stucco Aluminum.
INTERIOR CEILING is .040 stucco Aluminum with white baked-on enamel finish.

INTERIOR FLOOR is 1/8" Aluminum Diamond Tread Plate.
EXPOSED EXTERIOR WALLS including door section .040 stucco Aluminum.

PANEL LOCKING ASSEMBLIES:

Assembly of walk-in shall be accomplished by "Insta-Loks" consisting of cam-action hook arm assembly set in one panel and a self-aligning, self-centering, pin assembly set in the matching panel. All vertical joints must have a minimum of three Insta-loks. Rotation of the cam-action hook arm shall pull and lock panels together to form airtight, vapor proof joints. No metal straps or connecting rods shall be used inside the panels. Rotation of the cam-locks shall be operated from inside the walk-in through access ports that are sealed with vinyl snap-in closures.

PANEL GASKETS:

NSF listed double-bead vinyl gasket shall be applied to the tongue side of all panels, on both interior and exterior. Gaskets shall be impervious to stains, grease, oils, mildew, sunlight, etc.

ENTRANCE DOOR AND FRAME:

Walk-in compartment shall be equipped with total of TWO (2) each 34" x 76" hinged-type, flush-mounted entrance door mounted in a nominal 4', 5' or 6' frame and located in exact location as shown on drawing. Door placement shall be within 1" increments to meet shelving space and job site requirements. Door shall be manufactured to accommodate floor construction. Door and frame shall be listed by Underwriters Laboratories and bear the UL Seal of Approval and be equipped with the following:

Door shall be equipped with a one-piece perimeter PVC accordion type removable gasket with magnetic core at the top and along the side perimeter of the door. An adjustable wiper gasket shall be mounted along the bottom edge of the door.

Latch shall be break-a-way type with cylinder lock and inside safety release handle so the door can be opened from the inside even if locked. A positive action hydraulic door closer (required to meet 2009 Energy Code) shall be included to ensure gentle closing action of door to opening and to ensure positive closing of door. The latch shall be of high pressure zinc die cast with highly polished chrome finish.

TWO hinges shall be nine inch modified strap, cam-lift, self-closing design with door lift off capability of high-pressure zinc die cast with highly polished chrome finish. (a spring loaded hinge required to meet 2009 Energy Code) KASON model 1346 adjustable hinges are required.

Door frame shall consist of heavy reinforced steel "U" channel frame to encompass entire perimeter of opening, foamed-in-place to give extra support and rigidity to frame and to prevent racking, distortion, warping and twisting. A backup must be welded for added strength.

An armored anti-sweat heater cable shall be run in a breaker strip located behind a removable heavy gauge stainless steel trim for easy access to heater cable. Heater cable shall be run under threshold consisting of heavy reinforcement "U" channel breaker strip and heavy gauge stainless steel threshold. (A second back up heater cable is to be installed).
The warmer cables shall provide sufficient heat to prevent condensate or frost formation. Door heater has a thermostat that cuts off when it reaches a temperature of 50°F.

Door shall be equipped with contemporary design, heavy-duty, pull handle. Pull handle shall have a cylinder lock built into the handle. Latch shall be provided with inside safety release to prevent accidental or malicious entrapment in walk-in. Latch has brushed satin chrome finish. Two (2) keys are provided for lock

Door section shall be provided with an operating toggle switch and pilot light mounted on the exterior side of the door frame. (Weathertight switches also available for outdoor walk-in applications.) An

incandescent vapor proof light and face mounted inlet box shall be mounted on the interior side of the door frame for 115 volt, 60 cycle, 1 phase A.C. service (Energy Efficient and Motion Sensor Lighting available for Energy Savings). All wiring shall be in concealed rigid conduit. A 2-1/2” diameter chrome face, flush mount, dual reading, adjustable dial thermometer shall be provided on exterior of door section to provide temperature reading of -40 degrees C to +150 degrees C.

INTERIOR RAMPS ARE REQUIRED

SUPPLY STRIP CURTAINS FOR BOTH DOORS

POWER BOX SUPPLY

Power supply box for all lights, heated vent, air curtain electrical receptacle, air curtain micro-switch, heated window (frame and glass), door heater and sill heater is pre-wired and mounted on top near door section by manufacturer. Electrical Contractor supplies and installs power wiring to power supply box. Wiring for lights; door and sill heaters; heated viewport; heated vent (freezer); air curtain receptacle; and air curtain micro-switch must be identified. Design power supply box such that power can be terminated for service while allowing other accessories to continue to function. Each of the electrical components (heated view port, heated vent, door and sill heaters, lights, air curtain receptacle, air curtain micro-switch) is wired to a 4" x 4" junction box which is foamed in place in the center of the jamb. A short piece of PVC electrical conduit is installed out of the junction box to the top of the foam rail of the jamb for the walk-in. The conduit shall have a coupling on it in order to be mated up with the conduit coming through the ceiling panel out of the wiring box located on the top of the ceiling. After the walk-in is set-up, the wires are fed from the junction box through the conduit into the power supply box for final termination per the wiring schedule. Walk-in manufacturer pre-wires for incoming power source for air curtain inside front panel with recessed receptacle (115/60/1) foamed in place and located on front of box near top of air curtain. Incoming power connection for air curtain to be located in power supply box on top of each compartment.

TREADBRITE KICKPLATES:

Door shall have aluminum diamond treadbrite kickplates 48” high on the interior and exterior. Diamond tread kickplates shall be mounted with adhesive and sealed with silicone. No external fasteners such as screws or pop rivets shall be applied as fastening for the diamond tread kickplates.

LED LIGHT FIXTURES:

LED light fixtures shall be provided in quantity as required. (Energy efficient lighting required to meet 2009 Energy Code.) Must have switch with pilot light.
Contractor must furnish CORRECT LED BULBS as required Freezer.
Food Service Equipment Contractor shall install fixtures for Electrical Contractor to wire to junction box provided by manufacturer. LED light fixtures are mounted to ceiling panels where shown on the drawings and are connected to a three-way light switch with dual pilot light. Pilot light glows continuously inside and is on outside of box only when lights are on. Light switch is mounted on exterior and interior door section. Electrical service required is 120 volt, 60 cycle, 1-phase. Electrical Contractor provides and installs conduit and wiring on inside ceiling of boxes. See Installation Instructions this section for additional requirements.

HEATED PRESSURE RELIEF VENT:
Walk Ins shall be equipped with a two-way heated pressure relief vent to equalize pressure between the interior and exterior caused by defrost cycles and opening of door. Electrical service to be 115v/60/1 phase.

FLOOR CONSTRUCTION:

Aluminum Treadplate with high density urethane support structures foamed-in place on interior of floor panel

TRIM AND ENCLOSURES:

Supply 1/8" treadplate wainscot on all exposed exteriors to match doors.
Cove base is required around all exposed sides.
Supply minimum of five (5)" high cove base on exposed walls of same material walk in exterior panels are made. Cove base shall be mounted with adhesive and sealed with BUTYL RUBBER SEALANT, 368, on top and bottom to control moisture from seeping under the walk ins. No external fasteners such as screws or pop rivets shall be applied as fastening for the cove base.
NOTE: Mount cove base then wainscot over the base so that it is the same height at the treadplate on doors.
Supply and install trim made from material with same finish as exposed exterior where walk-in cooler/freezer is adjacent to walls; seal to walls and boxes for rodent, dirt and moisture protection. Attach trim to box and wall with non-corrosive fasteners and seal to wall and box with clear silicon caulking. Extend trim to height of dropped ceiling, or enclosure panel.
Enclosure Panel:
Supply and install enclosure (made from material with same finish as exposed exterior) panel or ceiling trim if height of box is lower than height of dropped ceiling. Enclosure panel to extend below seam between ceiling and wall panels of the walk-in. Attach panel to box with non-corrosive fasteners and seal to ceiling and box with clear silicon caulking. See Part 3, Installation Instructions, for type of clear silicon caulking to use.
Supply stainless steel hat channels to cover exposed control and refrigeration lines along building.

THRESHOLD:

A heavy gauge stainless steel threshold plate shall be provided with each door section.
THRESHOLD TO NOT EXCEED 15% ANGLE ON INTERIOR OR EXTERIOR

ALARM:

Walk-in shall be equipped with audio-visual alarm(s) that activate when temperature rises above desired setting. Alarm sensor is to be located in the return air stream of evaporator coil. Control panel shall be located at front of walk-in or at other pre-specified location. When temperature rises above predetermined setting a red light and buzzer activates.(Model (1) Thermo-Kool TK4700 walk-in monitor system with TK4 panic switch, motion detector,
battery backups, dry contacts and thermostatically controlled heater wires).

REFRIGERATION:

Condensing units shall be factory assembled and UL approved. The condenser shall be air-cooled. Refrigerant for medium and low temperature systems shall be R448A OR AS CODE REQUIRES

3/4 HP, Remote Pre Assembled Refrig. System Model RFON080M4AEANT 208-230/60/3 Medium Temperature, base, weather hood, winter controls, Scroll, Air-cooled, R454A (4.7 Compressor RLA) w/ leak detection with RAL6A081ADARSF 115/60/1 coil (0.8 amps) with Dual Speed EC motor and EcoNet 2.0 with Sporlan SER.
Accessories: 1 ea A2L SSOV and CSOV Mitigation Valves (Shipped Loose For Field Install).

3 HP, Remote Pre Assembled Refrig. System Model RFON300L4AEANT 208-230/60/3 Low Temperature, base, weather hood, winter controls, Scroll, Air-cooled, R454A, No Defrost Provisions (8.7 Compressor RLA) w/ leak detection with RAL6E092DDARSF 208-230/60/1 coil (1 fan amps, 9.8 heater amps) with Dual Speed EC motor and EcoNet 2.0 with Sporlan SER.
Accessories: 1 ea A2L SSOV and CSOV Mitigation Valves (Shipped Loose For Field Install).

Evaporators shall be forced air type with air flow parallel to the walk-in ceiling. Evaporators shall be a standard low profile series. (Electronically Comutated Motors required to meet 2009 Energy Code). All evaporator coil components shall be housed in heavy gauge aluminum housing. Units shall have drain pan with drain pipe connection.

Condensing unit voltage to be as specified by job site requirements.

Units shall have drain pan with drain pipe connection. Evaporators shall be equipped with an automatic electric defrost system including coil heaters, time clock, fan delay control, drain line heaters and liquid line solenoid.

The basic components shall be supplied for Remote Preassembled and shall include condensing unit, evaporator coil, control kit (pressure control, thermostat, liquid line drier, sight glass, suction line vibration eliminator, expansion valve and evaporator coil mounting kit), defrost timer, fan delay control and liquid line solenoid suction accumulator, and quick response controller (QRC). All parts shall be factory mounted.
Provide factory mounted suction accumulators-field installed will not be accepted.

Remote Preassembled the system requires tubing, electrical hook-up, drain line and refrigerant charge supplied by qualified refrigeration, electrical and plumbing contractors.

A low ambient kit and weatherproof housing shall be supplied with condensing units. The low ambient kit shall consist of a crankcase heater and headmaster valve.

NOTE: Supply single point electrical connection for all accessories with labeled wiring through door panels to top of wall in, in foamed in place conduit.

Copeland compressor/condensing units and Bohn or Russell evaporator coils are required.
All work and materials are in full accordance with Local and/or State ordinances.

INSTALLATION INSTRUCTIONS:

Electrical Contractor will supply and run conduit and power wiring to cooler condensing unit and conduit and power wiring to freezer evaporator coil.
Electrical Contractor will supply and run conduit and control wiring from all coils to refrigeration control system. .
Electrical Contractor to supply conduit and wiring and make connections to and supply boxes provided and installed by the manufacturer for all lights, heated windows, door and sill heaters. Lights are not mounted by the factory. Food Service Equipment Contractor or approved installer to mount additional lights located on ceiling after walk-in box has been erected. Conduit and wiring for lights are supplied and installed by Electrical Contractor on the inside ceiling of the box. Electrical Contractor to provide conduit suitable for moist conditions. Conduit seal-offs are required for all electrical connections. All fasteners, etc., must be non-corrosive and mastic provided between dissimilar metals to prevent rusting.

Food Service Equipment Contractor to supply and install refrigeration lines. Food Service Equipment Contractor is responsible for determining length of lines needed.
Condensation drain lines are supplied and installed by Food Service Equipment Contractor or approved installer.
Condensate heat tape shall be 208/1 and supplied by Food Service Equipment Contractor and wired into freezer evaporator by Electrical Contractor.

Installation will be performed by the Food Service Equipment Contractor or an approved professional refrigeration company with experience in the installation of walk-in Cooler/Freezer refrigeration systems.

The installation includes, but is not limited to the following:

Building the box.
Setting the compressor/condensing unit assemblies.
Hanging the evaporator coils - verify locations.
Installation of all accessories unless indicated otherwise.
Installation of all refrigeration lines which includes supplying, running and connecting.
Installation of the drain lines - Verify locations; supply and install tubing.
Food Service Equipment Contractor seals and insulates all penetrations in the walk-in, regardless of who makes the penetration. Conduit seal-offs are required for all electrical connections and are supplied by the Electrical Contractor. Insulation and sealing is required between conduit and wiring and inside conduit where any type of connection or penetration is made. Food Service Equipment Contractor is responsible for informing and coordinating the use of conduit seal-offs by other contractors and for providing proper insulation and sealing for all other penetrations when conduit seal-offs cannot be used.
Perform start-up, test, check, and adjust all components and accessories and pull to proper operating temperatures. Walk-in Cooler/Freezer refrigeration systems to run for five consecutive days prior to equipment demonstrations.
Calibrate thermometers, etc.
Box is to be cleaned before refrigeration is started up. Cleaning includes all inside and outside surfaces.
Hard copper is required for entire job. All refrigerant piping is ACR copper tubing, hard drawn. Wrought copper sweat fittings are used on the hard-drawn tubing. Slope suction line down in direction of flow 1/8" per foot. Where vertical risers of more than 5 feet occur in a suction line, the riser is trapped at the bottom.
Refrigeration system is set for four defrost cycles as a minimum (two defrost cycles for cooler) with each cycle in defrost 30 minutes as a minimum. Defrost times are set at times other than the initial arrival of the employees or periods of heavy usage during the morning and are identified in the Operation and Maintenance Manuals. Training on re-setting defrost times is provided to Owner during training.
System is ready for use when the Owner is prepared to occupy the operation.

General Contractor Information:

Steel reinforced concrete pad for walk-in box is prepared and supplied by General Contractor. See Food Service Equipment Contractor’s supplied drawings and shop drawings for dimensions. Pad area must be transit level and trowel smooth and capable of sustaining weight of box and contents.
RECESSED TO BE DETERMINED BY TILE AND GROUT THICKNESS IN KITCHEN PLEASE CONFIRM WITH GENERAL CONTRACTOR.
Roof curbs (if required) are to be Food Service Equipment Contractor provided and install by the General Contractor.
All penetrations, including but not limited to, roof, wall and floor are provided by the General Contractor. Verification by the General Contractor with the Food Service Equipment Contractor as to location and size is required.
Sprinkler heads inside or over units must be loaded with a dry fire suppression substance.
Plumbing lines (supply, waste, drain, roof drain, sewer, condensation, slurry, etc.) cannot be routed over walk-in boxes.

WARRANTIES:
One-year parts, service, labor, mileage, time and transportation warranty on all parts supplied and all work performed.
Five-year non-prorated replacement warranty for the compressor/ condensing unit assemblies.
Five-year service and parts warranty.
APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: ARTIC AIR, BALLY AND KOLPAK

ITEM 13 SPARE NUMBER

ITEM 14 COOLER SHELVING STATIONARY BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:

Four tier shelving bottom shelf is 8” AFF and other three shelves are evenly spaced. See drawing for sizes and location of shelving. “S” hooks are approved where shown on drawing.

Four tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 21"D AND 18”D-SEE DRAWINGS, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF

Model 74PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 74-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

ITEM 15: COOLER SHELVING MOBILE BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:

THREE tier shelving bottom shelf is 8” AFF and other three shelves are evenly spaced. See drawing for sizes

THREE tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 21"D AND 18”D-SEE DRAWINGS, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF

Model 54PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 54-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection

PROVIDE CASTERS FOR WALK IN CONDITIONS WITH BRAKES ON ALL NOTED MOBILE SHELVING-SEE DRAWINGS

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

****SPECIAL NOTE: LOCATION OF MOBILE SHELVING IS TO ALLOW SERVICE TO THE COILS-IF COIL LOCATION ON SITE IS DIFFERENT THAN WHAT IS SHOWN ON FS DRAWINGS PLEASE REVISE LAYOUT TO ACCOMADATE THESE CHANGES IN THE FIELD****

ITEM 16 FREEZER SHELVING STATIONARY BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:

Four tier shelving bottom shelf is 8” AFF and other three shelves are evenly spaced. See drawing for sizes and location of shelving. “S” hooks are approved where shown on drawing.

Four tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 21"D AND 18”D-SEE DRAWINGS, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF

Model 74PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 74-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

ITEM 17: FREEZER SHELVING MOBILE BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:

THREE tier shelving bottom shelf is 8” AFF and other three shelves are evenly spaced. See drawing for sizes and location of shelving. “S” hooks are approved where shown on drawing.

THREE tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.

Shelf, wire, XX"W x 21"D AND 18”D-SEE DRAWINGS, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF

Model 54PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 54-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection

PROVIDE CASTERS FOR WALK IN CONDITIONS WITH BRAKES ON ALL NOTED MOBILE SHELVING-SEE DRAWINGS

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE
SPECIAL NOTE: LOCATION OF MOBILE SHELVING IS TO ALLOW SERVICE TO THE COILS-IF COIL LOCATION ON SITE IS DIFFERENT THAN WHAT IS SHOWN ON FS DRAWINGS PLEASE REVISE LAYOUT TO ACCOMADATE THESE CHANGES IN THE FIELD

ITEM 18 36” X 24” WORKTABLE BY OWNER
MANUFACTURER: ADVANCE TABCO
MODEL: KSS-243
Description:

Work Tables, 36"W x 24"D x 41"H, 14/300 stainless steel top, backsplash, legs, undershelf & adjustable bullet feet, NSF

Accessories:

- SS-2015: 1 EA: Drawer, 20"W x 15"D x 5"H, roller bearing slides & stainless steel drop in pan, stainless steel construction, NSF SEE FS100 FOR LOCATIONS & AMOUNT.
- TA-95 304 LEGS
- TA-255Casters, 5"H, (2) with brake (set of 4)
- Dimensions: 20(h) x 36(w) x 12(d)

PT-12S-36/TA-227 OVERSHELF 3’, TA-9 1” TURN UP AT ON ENDS OF SHELF, 3’ TA-99 16 GA IUPGRADE FOR SHELF SEE FS100 FOR LOCATION.

Fabricators which are pre-approved for construction of stainless-steel custom fabrication (serving line equipment excluded) are: Atlanta Custom Fabricators, Commercial Stainless Fabricators, Marietta, GA. Low Temp Manufacturing, Jonesboro, GA.; Titan Stainless, Pageland, SC and Advance Tabco

ITEM 19 EVAPORATOR PAN QTY: 2
MANUFACTURER: GLOBAL INDUSTRIAL/Supco
MODEL: WBB461418/CP804
Description:

4.5 qt capacity 120v 100w commercial condensate evaporator.

ITEM 20-22 SPARE NUMBERS

ITEM 23 BAKERY TABLE WITH SINK QTY 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO/CUSTOM FABRICATORS
MODEL: KTMS-308 CORNER TABLE 96” X 96”, 16’ OF TA-7 10” HIGH SPLASH
Description:
Modification include the following:
“L” shaped table, field weld may be required. TA-57 WELDED FIELD JOINT
10” splashes on each end with enclosed backsplashes on each end.SEE BELOW FOR DETAILS
Table mounted to walls with Z clips TA-93 WALL BRACKETS

Bakery Trough added to front of both tables for extra flour etc. with round hole located so excess materials can be scrapped into trough then into waste, also for ease of wash down. 11’ OF TA-79 FLOUR TROUGH WITH TA-61A DRAIN HOLE
Supply stainless steel guard on left of hand sink front to back of table 6” high. 1

1 EA	Work Table, 108"W x 30"D, 14 gauge 304 stainless steel top with countertop non drip edge, 10" backsplash, adjustable stainless steel undershelf, stainless steel legs & adjustable bullet feet, NSF
	6’ OF KT-103 STAINLESS STEEL UNDERSHELF
2 ea	Model TA-32 Side Splash, 10" high (each)
1 ea	Model TA-34 Top cut-out for drop in equipment (per cut-out)
3 ft	Model TA-92 Apron in front of sink or drop in (per linear foot) (note: use TA-27 if control panel mounting is required)
2 ea	Weld-In sink - single bowl
1 ea	Model TA-11N Sink Welded Into Table Top, 18"W x 18"D x 14" deep bowl, includes faucet, NSF (must specify sink location)
1 ea	Model K-15 Lever Waste Drain, twist handle operated with built in overflow, fits 3-1/2" drain opening, 2" NPT & 1-1/2" IPS outlet connections
1 ea	Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
1 ea	Model K-610NF Perforated bottom strainer plate, stainless steel, removable, sits 1" above bottom of sink, fits Advance Tabco Fabricated 18" x 18" sink bowls only
1 ea	Model K-2JF Sink Cover, Poly-Vance™, for 18" x 18" fabricated bowl (includes support clips that rest on edges of sink bowl such that poly sink cover will be approximately flush with tabletop or drainboard work surface)
1 ea	Model K-ROD Weld support rods for poly sink cover in corners of sink bowl (one each per bowl required), replaces standard support clips that support the poly sink cover (K-2xF models) on the edges of sink bowl, standard depth 3/4” to allow poly board to be approximately flush with top of sink bowl
1 ea	Drop-In hand sinks
1 ea	Model DI-1-5SP Drop-In Sink, 1-compartment, 12"W x 18-1/2"D O.A., 10"W x 14"D front-to-back x 5" deep bowl, 6" backsplash, 6" tapered side splash, includes: gooseneck deck mounted faucet 4" O.C. & 3-1/2" stainless steel drain with basket, 20/304 stainless steel, NSF (mounting brackets & nuts included)
1 ea	Model TA-34 Top cut-out for drop in equipment (per cut-out)
1 ea	Model ADT-3-2020 Drawer Assembly, (3) tier, 20"W x 20"D x 5" deep removable stainless steel drawer inserts, roller bearing drawer slides, self closing drawers with noise control, concealed side panels, 430 stainless steel, all TIG welded & fully assembled, NSF
3 ea	Order (3) TA-14SHD for one lock per drawer
1 ea	12" wide
1 ea	Model PT-12S-72 OVER SHELF

ITEM 23.1 PRE-RINSE FAUCET WITH ADD A FAUCET QTY 1-LOT /ALTERNATE BID
MANUFACTURER: T & S BRASS
MODEL: B-0133-ADF10-B
Description:

Easy Install Pre-Rinse Unit, with wall bracket, wall mount base, 8" centers, 44" flexible hose with overhead spring body & B-0107 spray valve, 18" riser, add-on faucet with 10" swing nozzle, lever handles, 1/2" NPT female inlets, quarter-turn Eterna cartridges, low leaf

Accessories:

1. T&S Brass Model B-0230-K Installation Kit, (2) 1/2" NPT nipples, lock nuts & washers, (2) short "Ell" 1/2" NPT female x male

ITEM 24 SPARE NUMBER

ITEM 25 HAND SINK QTY 1 /ALTERNATE BID
MANUFACTURERE: Advance Tabco
MODEL: 7-PS-59
Dimensions: 17.25(h) x 17.25(w) x 15.25(d)
Description:
Hand Sink, wall mounted, 14" wide x 10" front-to-back x 5" deep bowl, Deep Drawn™ sink bowl, 20 gauge 304 stainless steel, welded 7-3/4"H side splashes, heavy duty splash mounted gooseneck faucet, knee valve, basket drain, keyhole wall mount bracket, NSF, cCSAus
Accessories:
1 ea Model 7-PS-10 P-trap, heavy duty, 1-1/2", 17 gauge

ITEM 26 WASTE CONTAINERS BY OWNER
MANUFACTURER: RUBBERMAID
MODEL: FG354060BLA
Dimensions: 30(h) x 22(w) x 11(d)
Description:
Slim Jim® Container, 23 gallon, 22"W x 11"D x 30"H, with venting channels, molded-in handles, general purpose waste, open type without lid, high-impact plastic construction, black, Made in USA
5 ea Model FG267360BLA Slim Jim® Swing Lid, for Slim Jim® Container, black, Made in USA (contact Rubbermaid for broken case information)
5 ea Model 1980602 Slim-Jim® Trolley, 23.9"L x 14.7"W x 8.4"H, accommodates 3540 & 3541 containers, 120 lb. max capacity, black , Made in USA
APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: CARLISLE AND CAMBRO

ITEM 4: HEAVY DUTY FOUR TIER SOLID SHELVING BY OWNER
HEAVY DUTY
MANUFACTURER: NEW AGE
MODEL: SEE BELOW
Description:
FOUR tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.
4 EACH PER UNIT 24XXSB Dimensions: XX(w) x 24(d)
"Adjust-A-Shelf" T-Bar Series Shelf, XX"W x 24"D, all welded aluminum construction, 1500 lbs. capacity, NSF, Made in USA, (standard factory lead time)
4 EACH PER UNIT Model 72P Post, 72"H, marked in 2" increments, aluminum finish, NSF, Made in USA, (standard factory lead time)
4 EACH PER UNIT Model 0116 Adjustable Foot, 1-5/16" dia., upright, (standard factory lead time)
Lifetime guarantee against rust & corrosion. Lifetime guarantee against worksmanship and material defects.

APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: WINHOLT AND CHOICE

ITEM 28 FILL AND SPRAY FAUCET QTY 1 /ALTERNATE BID
MANUFACTURER: T & S BRASS
MODEL: B-2892-QDSV MODIFIED
Description:
Pot & Kettle Filler Faucet, splash-mounted, 8" adjustable center, 68" stainless steel flexible hose, 1/2" NPT female inlet, spring check cartridges, lever handles with color coded indexes, vacuum breaker with integral check valve, quick-connect socket & squeeze valve, quick-connect spray head & hook nozzle, finger hook, UL
MODIFIED
1. Delete Pot & Kettle Filler Faucet
2. Add B-0200-LN: Pantry Base, double, deck mounted, lever handles, 1-1/8" dia. shank, 1/4" IPS union type tailpieces on 4" centers, quarter-turn Eterna cartridge, low lead, ADA Compliant

MUST HAVE INLINE VACUUM BREAKER
1 ea CUSTOM BOX WALL MOUNTED-SEE FS-501-300 SERIES/16 GA REQUIRED

ITEM 29 HOT WATER DISPENSER QTY 1 /ALTERNATE BID
MANUFACTURER: HATCO
MODEL: AWD-12
ELECTRICAL: Reference Project drawings for electrical requirements.
Description:

Atmospheric Hot Water Dispenser, countertop design, 12-gallon capacity, automatic fill, pushbutton portion control, low water cut-off, electronic temp. control with digital display, red & white granite powder coated body, stainless steel tank, shelf & base

Accessories:

1. Model AWD-PLUMB 3 ft. rubber drain hose with 10 ft. 1/4" inlet tubing
2. Model AWD-FILTER Water filtration system with 10' of 1/4" tubing & fittings

ITEM 30 MIXER QTY 1 /ALTERNATE BID
MANUFACTURER: HOBART
MODEL: HL600-1STD
ELECTRICAL: Reference Project drawings for electrical requirements.
Description:
200-240/50/60/3/1 Mixer; with bowl, beater, “D” whip, & spiral dough arm; US/EXP configuration - Legacy Planetary Mixer, 2.7 HP, 60 quart, (4) fixed speeds, gear-driven transmission, 20-Minute SmartTimer™, #12 attach hub, power bowl lift, stainless steel bowl, stainless steel bowl guard, "B" beater, "D" wire whip, "ED" dough hook

1 ea	Standard warranty: 1-Year parts, labor & travel time during normal working hours within the USA
1 ea	Hobart Care Unlimited: M-F, 8am - 5pm, weekday coverage for all calls, unlimited number of calls, (1) business day response for emergency calls, (3) business day response for non-emergency calls (2nd year extended warranty preference) (NET)
1 ea	Model IWIRE-HL60 60 qt. "I" Heavy Duty Wire Whip
1 ea	Model PPASTRY-HL60 60 qt. "P" Pastry Knife
1 ea	Model SCRAPER-HL60 Bowl Scraper for 60 quart bowl (For Use on HL600’s with serial numbers BEFORE 311681285)
1 ea	Model CHUTE-HL HL600/HL662 Ingredient Chute
1 ea	Model BOWL-HL640 Legacy® Mixer Bowl, 40 quart, stainless steel
1 ea	Model BBEATER-HL640 Legacy® Mixer 40 quart,"B" flat beater, aluminum
1 ea	Model DWHIP-HL640 Legacy® Mixer 40 quart "D" wire whip, stainless steel
1 ea	Model EDDOUGH-HL640 Legacy® Mixer 40 qt. "ED" dough hook
1 ea	Model SCRAPER-HL640 Bowl Scraper for 40 quart bowl (For Use on HL600’s with serial numbers BEFORE 311681285)
1 ea	Model VS9-12 9” Vegetable Slicer for #12 attachment hub; includes back case, hopper front, & adjustable slicer plate, NSF
1 ea	Model VS9PLT-GRATER Grater Plate
1 ea	Model VS9PLT-3/16SH 3/16" Shredder Plate
1 ea	Model VS9PLT-1/2SH 1/2" Shredder Plate
1 ea	Model TRUCK-HL1486 Legacy® Mixer Bowl Truck, aluminum, for use with 60, 80 & 140 quart mixers

ITEM 31 MIXER ACCESSORY RACK BY OWNER
MANUFACTURER: METRO
MODEL SEE BELOW IN DESCRIPTION
Description:

2 ea 2448NS Stainless steel shelves
4 ea 74PK4 Stainless steel posts
2 ea SF55N3S 3-sided frame
2 ea EP575 Enclosure panel-only 18” deep would prefer 24” deep x 70” high if available.
24 ea HK 25C Crome plated hooks-large
See detail on FS-501 for building detail.

ITEM 32-40 SPARE NUMBER

ITEM 41 EXHAUST HOOD QTY: 1-LOT
NOT IN CONTRACT BY OTHER TRADES

ITEM 41.1 UTILITY DISTRIBUTION SYSTEM (UDS) QTY: 1
MANUFACTURER: CAPTIVEAIRE
MODEL: CUSTOM
ELECTRICAL: Reference Project drawings for electrical requirements.
Description:

A Utility Distribution System shall provided be as indicated on drawings. Systems shall have two vertical risers, one on each end, with one dedicated to electrical and the other to plumbing. The horizontal distribution raceway between the risers shall be separated into electrical and plumbing compartments and each shall be completely enclosed and water tight with removable access panels. The risers and raceway shall be constructed of 16 gauge, type 304 stainless steel, #4 finish. A circuit protected dual convenience outlet shall be provided on each riser. Service connections shall be located behind easily removable access panels.

Approvals: Unit(s) shall be ETL Listed to US and Canadian Standards, ETL Sanitation Listed, AGA and MA approved.
General Construction and Features

- Electrical Riser: Main power connection shall be made to the main circuit breaker which has a shunt trip and is mounted in the electrical riser.
- Wireway systems: Electrical power shall be fed through a main circuit breaker to a distribution panel which contains individual branch breakers. Each appliance is fed from the individual breakers which are wired to each receptacle located along the raceway.
- Plumbing Riser: The plumbing riser shall house manual (quarter-turn) shut-off valves for each incoming main supply line located in the UDS. The plumbing manifolds shall be provided with stub-outs along the raceway for the individual plumbing connections. Each stub-out shall be equipped with a manual (quarter-turn) shut-off valve.
- Expandability: All electrical systems are designed for additional capacity for future expansion or upgrade of connected appliances.
- Wireway: Electrical distribution panel located in the riser shall be equipped with branch circuit breakers and sized for expansion.
- Serviceability and Accessibility: Lift out doors shall provide easy access to risers without moving cooking equipment, in most cases. Removable panels provided along the length of the raceway shall allow access to either plumbing or electrical compartments.
- Electric Outlets and Cord Sets: All outlets shall provide moisture resistant covers and have been sized per NEMA standards. Each is supplied with a matching cord and plug set if these are not already supplied by the equipment manufacturer. Twist-lock sets are standard in island applications. All 120V, single phase 15 and 20 amp receptacles are DCO-GFI.
- Main Disconnect: One point disconnect through a main circuit breaker equipped with a 120 VAC rated shunt trip provided in the riser.
- Gas Solenoid Valve: Electrical or Mechanical. Electrical valves shall be provided with a manual reset button and time delay relay to prevent pilot lights from going out in momentary power outages.
- Shunt Trip: Shall be provided with each main breaker.
- Appliance Protection: Each electrical outlet connection shall be protected with an individual circuit breaker.

Electrical

- Wireway Systems: The electrical system shall consist of a main circuit breaker which feeds power to a distribution panel located in the electrical riser containing individual branch breakers. Each appliance is fed from the individual breakers which are wired to each receptacle located along the raceway and shall be completely isolated from the plumbing supply manifolds. The main circuit breaker shall be equipped with a built-in 120 VAC rated shunt trip and shall be located in the

electrical riser requiring a single point incoming connection. Terminal block connections shall be provided for field interconnection between the shunt trip and the fire protection system for power shut-off in the event of a fire. All outlets shall be equipped with grounding type receptacles having specific NEMA polarized configurations and located on the under side (Model UDI) or front side (Model UDW) of the raceway at each equipment location. Outlets are matched to the cord and plug sets supplied with equipment. On the Model UDI, all 120V, single phase 15 and 20 AMP receptacles are DCO-GFI. Twist lock cord and plug sets are provided for equipment supplied without cords. On the Model UDW, straight blade cord and plug sets are provided for equipment supplied without cords.

- Main Circuit Breaker: 120/208/3 200 AMP

Plumbing

- The plumbing compartment shall be completely isolated from the electrical with all piping labeled.
- Hot and cold water and steam supply and return manifolds shall be insulated.
- All incoming service connections shall be provided with 1/4 shut-off valve. Each branch connection shall be provided with 1/4 shut-off valve, with color coded hoses, and located at each equipment location.
- Color coded quick disconnect hoses are provided for connection to equipment.
- Hot and cold water piping, including branch connections, shall be type "L" copper tubing. All fittings will be copper sweat soldered (95-5 type).
- Gas and steam piping, including branch connections, shall be threaded black iron. There shall be a drip tee on the incoming gas end. The gas manifold shall be furnished with either an electrical or mechanical gas valve which shall be field interlocked with the fire protection system to shut off fuel sources in the event of a fire. Electrical gas valves shall be furnished with a manual gas reset button and time delay relay to prevent pilot lights from going out in momentary power outages, located in the UDS riser.
- Gas manifolds are sized for an inlet pressure of 7" WC for natural gas or 11" WC for LP.

Gas Equipment

All gas equipment shall conform to local-Code requirements

- Manifold (looped): 3/4" to 3" IPS
- 1/4 turn manual shut-off valve on manifold
- Quick disconnect hoses: 1/4" to 1-1/4", up to 6' long
- Quick disconnect fittings: 1/4" to 1-1/4" with 1/4 shut-off valves

Hot and Cold Water-

- Manifold: 3/4"
- 1/4 turn manual shut-off valve on manifold
- Quick disconnect hoses: 1/4" to 1", up to 6' long
- Quick disconnect fittings: 1/4" to 1" with 1/4 shut-off valves

Options

- Remote Status Indicator Panel: Lighted panel indicates status of receptacles in wireway system.
- Electric Outlets & Cord Sets: Water tight pin and sleeve outlets and cords.
- Light & Fan Switches located in riser.
- Hood Control Panel built into riser.
- Swivel Connectors for gas equipment.
- Plumbing Fixtures: Pre-plumbed and installed faucets, mixing valves, hose reels, water filtration systems.
- Cable Restraints: Available for mobile equipment.
- Temperature/Pressure Gauges for hot/cold water main.

Factory Tested

Unit(s) shall be operated, tested and set at the factory using job-site conditions for electrical and gas input. All operating and safety controls shall be tested and set at the factory.

Service and Parts

The supplier shall furnish gas piping schematics, as built wiring connection and control-circuit diagrams, dimension sheets and a full description of the unit(s). Service manuals showing service and maintenance requirements, shall be provided with each unit.
SEE FS-601 FOR SHOP DRAWINGS

ITEM 42 24” RANGE WITH 4 OPEN BURNERS QTY 1 /ALTERNATE BID
MANUFACTURER: VULCAN
MODEL: 24S-4B
Dimensions: 58(h) x 24(w) x 34(d)
Description:
Endurance™ Restaurant Range, gas, 24", (4) 30,000 BTU burners, standard oven, stainless steel front, sides, backriser & lift-off high shelf, fully MIG welded frame, 6" adjustable legs, 143,000 BTU, CSA, NSF

1 ea	1 year limited parts & labor warranty, standard
1 ea	Optional extended warranty extends the warranty for a period of 12 months beyond the 12 month Original Equipment Warranty, not to exceed 24 months from date of installation (net)
1 ea	Natural gas (specify elevation if over 2,000 ft.)
1 ea	Model SHIELD-FRYRH Fryer Shield, right
1 ea	Stainless steel backriser & lift-off high shelf, standard
1 ea	Model OVNRACK-XL20 Extra oven rack, 20", guides are included (shipped in separate carton)
1 ea	Model CASTERS-RR4 Casters, 5" (set of 4) (2 with locks)
1 ea	Model 3/4QD HOSE-4 3/4" x 4' long gas flex hose & quick disconnect with restraining device

APPROVED ALTERNATE: GARLAND

ITEM 43 TILTING SKILLET BRAISING PAN, GAS QTY 1 /ALTERNATE BID
MANUFACTURER: VULCAN
MODEL: VG30
Dimensions: 40.5(h) x 36(w) x 35.5(d)
Description:
Braising Pan, Gas, 30-gallon capacity, 36" wide open base, manual tilt, 9" deep stainless steel pan with gallon markings, pouring lip & removable strainer, spring assist cover with drip edge, pan holder, solid state control, includes L faucet bracket, electric ignition, 12" stainless steel legs with adjustable flanged feet, 90,000 BTU, CSA Flame, CSA Star, UL EPH Classified

1 ea	1 year limited parts & labor warranty, standard
1 ea	Natural gas (specify elevation if over 2,000 ft.)
1 ea	120v/60/1-ph, 9.0 amps, cord & plug, standard
1 ea	Model DBFCTTS WSHDWN DOUBLE Pantry Deck Mount Faucet, with backflow preventer, washdown hose, wall hook, NSF & Lead Reduction Compliant
1 ea	Model FCTBRKT BP Enclosed box faucet bracket, add 3"
1 ea	Model STRAINR-BPPOUR Pouring Lip Strainer, for braising pan

APPROVED ALTERNATE CLEVELAND

ITEM 44 GAS FLOOR FRYER QTY 1 /ALTERNATE BID
MANUFACTURER: VULCAN
MODEL: 1VHG50DF
Dimensions: 47.75(h) x 15.63(w) x 32.69(d)
Description:
QuickFry™ Fryer, gas, high efficiency, 15-5/8"W, freestanding, 50 lbs. capacity per vat, digital control with melt cycles, electronic ignition, KleenScreen PLUS filtration system, twin baskets, stainless steel cabinet & fry tank, adjustable casters (2 swivel locking & 2 non-locking), 75,000 BTU, CSA, NSF, ENERGY STAR

1 ea	1 year limited parts & labor warranty, standard
1 ea	10 year limited tank warranty, standard.
1 ea	Natural gas (specify elevation if over 2,000 ft.)
1 ea	120v/50/60/1-ph, NEMA 5-15P, standard
1 ea	Model COVER-TANKVHG50 Tank Cover for 50 lbs. fryers

1 ea Model VSPGUARD-VHG50 Splash Guard, 10”H, for 50 lbs. fryers, stainless steel, removable
1 ea Model VHG50CRUMB-SCREEN Crumb Screen for 50 lbs. fryers
APPROVED ALTERNATE DEAN

ITEM 45 HALF SIZE COMBI OVEN QTY 1 /ALTERNATE BID
MANUFACTURER: RATIONAL
MODEL: ICP 10-HALF NG 120V 1 PH AD-QS
Dimensions: 39.9(h) x 33.5(w) x 30.5(d)
Description:
(CD1GRRA.0016164) iCombi Pro® 10-Half Size Combi Oven, natural gas, (10) 13" x 18" sheet pan or (10) 12" x 20" steam pan or (10) 1/1 GN pan capacity, intelligent cooking system with (4) assistants; iDensityControl, iCookingSuite, iProductionManager, & iCareSystem AutoDose, (6) operating modes, (5) cooking methods, (3) manual operating modes, 85° to 572°F temperature range, quick clean, care control, eco mode, 6-point core temperature probe, retractable hand shower, Ethernet interface, Wi-Fi enabled, 83,500 BTU, 120v/60Hz/1-ph, 6 ft. cord, 0.9 kW, CE, IPX5, cCSAus, NSF, ENERGY STAR-®
1 ea 2 years parts and labor, 5 years steam generator warranty
1 ea Model CAP Chef Assistance Program, a RATIONAL certified Chef conducts 4 hours/location specialized application training with personnel, no charge
1 ea Model 9999.2211 RCI RATIONAL Certified Installation, new certified installation for each individual gas table-top iCombi on a stand or counter, 100 miles (200 round-trip) included. (Do not use for Combi-Duo, See attached installation flyer for details)
1 ea Model 8720.1560US Installation Kit, for gas iCombi/SCC/CMP 101G (120/60Hz/1ph); gas iCombi/SCC/CMP 62G (208-240/60Hz/1ph); gas iCombi/SCC/CMP 61G (120/60Hz/1ph)
1 ea Model 1900.1159US Water Filtration Single Cartridge System, for any single combi model, or XS & half-size Combi-Duos, or iVario includes: (1) single head with pressure gauge, R95-CLX filter & (1) filter installation kit
1 ea Model 9999.2271 RCI RATIONAL Certified Installation, additional installation cost for a RATIONAL Water Filter System is available when purchased with Certified Installation of RATIONAL unit
1 ea Note: The RATIONAL Water Filtration Systems helps provide consistent high-quality water to your RATIONAL cooking systems. The patented carbon block technology reduces the effects of sediment, chloramines, and chlorine while delivering the required flow rates.
1 ea Model 56.01.912 Active Green Cleaner Cartridges, iCombi Pro Table Top units with AutoDose option /6 cartridges per box
1 ea Model 56.01.914 Care Cartridges, iCombi Pro Table Top units with AutoDose option /6 cartridges per box
1 ea Model 60.31.103 Stand II Mobile Oven Stand, 27-1/2"H, (14) supporting rails, side panels and top closed, rear panel open, stainless steel construction, height adjustable casters, for iCombi 6- and 10-half size Classic/Pro
1 ea Model 87.00.732US Safety-Set, Equipment placement system for all casters-mounted equipment, allows precise, consistent equipment placement for drain lines to floor sinks and under the fire suppression in ventilation systems, satisfies NFPA codes 17A (5.6.4) and 96 (12.1.2.3), includes tow (2) pieces and installation pack.
APPROVED ALTERNATE: CONVOTHERM

ITEM 46 ROTATING BAKERY OVEN QTY 1 /ALTERNATE BID
MANUFACTURER: BAXTER
MODEL: OV310E
Dimensions: 47.9(h) x 48(w) x 38.12(d)
Description:
Mini Rotating Rack Oven, electric, programmable digital controls, independent doors with dual pane windows, self-contained steam system, stainless steel construction, 18.0kW, cUL (shipped assembled)
1 ea One year parts and labor warranty, standard. A factory authorized installation technician must approve any installation during start-up. To validate the warranty, the start-up must be performed by an authorized service company.

1 ea Model ELE0CG 208v/60/3-ph, 50 amps, 18.0kW, heating circuit, also requires 120v/60/1-ph control circuit (USA)
1 ea End-Load, (8) pan capacity with 4.0" spacing, standard
1 ea Model MB300 (16) pan, proofing cabinet base, 34"H with 4" casters (2 locking), 120/60/1

ITEM 47 CHARBROILER, GAS, COUNTERTOP QTY: 1 /ALTERNATE BID
MANUFACTURER: VULCAN
MODEL: VACB25
Dimensions: 15.5(h) x 25.13(w) x 31(d)
Description:
Achiever Charbroiler, countertop, 25-1/8", (4) 17,000 BTU cast iron burners, infinite heat control valves, fully welded chassis, (1) drip tray, stainless steel front, sides & top trim, backsplash & grease trough, 4" adjustable legs, 68,000 BTU, CSA, NSF
1 ea 1 year limited parts & labor warranty, standard
1 ea Natural gas (specify elevation if over 2,000 ft.)
1 ea Model CUTBD-ACB25 Cutting Board, 10-5/8"D, stainless steel with Sani-Tuff® cutting board
1 ea Model STAND/C-24 Equipment Stand, universal, 26" W x 24" H, 1/2" marine edge, undershelf, stainless steel, 5" casters
APPROVED ALTERNATE: GARLAND

ITEM 48 FLOOR TROUGH QTY: 1
MANUFACTURER: IMC/TEDD7
MODEL: ASFT-1836-SG
Description:
Dimensions: 12.25(h) x 36(w) x 18(d)
ASFT Anti-Spill Floor Trough, 36"W x 18"D, 6" deep receptacle, (1) 4" OD tailpiece, stainless steel beehive strainer, 14/304 stainless steel, brushed satin finish, (SG) subway grating, NSF, Made in USA
Fabricators which are pre-approved for construction of stainless steel custom fabrication (serving line equipment excluded) are: Low Temp Manufacturing, Jonesboro, GA.; Titan Stainless, Pageland, SC and Advance Tabco.

ITEM 49 INSTRUCTOR'S TABLE QTY 1-LOT /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO/CUSTOM

ITEM 49a - WORK TABLE, CABINET BASE OPEN FRONT QTY: 1 /ALTERNATE BID
Advance Tabco Model EB-SS-369 Dimensions: 35.5(h) x 108(w) x 36(d)
Work Table, 108"W x 36"D, open front cabinet base, 14 gauge 304 stainless steel top, stainless steel legs with adjustable hex feet, NSF
1 ea Model TA-12 Countertop edge, (per table)
1 ea Model TA-62C Electric outlet under top of table or overshelf, GFI, duplex, in single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
1 ea Model TA-62D Electric outlet in doghouse box on top of table or overshelf, GFI, duplex, in 'doghouse-style' single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
1 ea Model TA-36A-HINGED Hinged Door, 30" maximum width (per door), stainless steel
1 ea Model TA-40 Remove undershelf in cabinet base for slide in buyout
2 ea Model TA-42-36 Interior partition, 2-1/2" x 36" (each)
1 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf
1 ea Model TA-57A Prepare for field bolting to adjoining piece (apply one charge for each "joint" required between 2 pieces)
2 ft Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
2 ft Model TA-118 Additional fixed mid-shelf (partial or full length) for enclosed base tables

(sold per linear foot) (factory installation only-not sold separately), add TA-42-xx partition to support shelf if required
1 ea Weld-In sink - single bowl
1 ea Model TA-11N Sink Welded Into Table Top, 18"W x 18"D x 14" deep bowl, includes faucet, NSF (must specify sink location)
1 ea Model K-5 Drain, twist operated, 2" NPT & 1-1/2" IPS outlet connections
1 ea Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
1 ea Model K-610NF Perforated bottom strainer plate, stainless steel, removable, sits 1" above bottom of sink, fits Advance Tabco Fabricated 18" x 18" sink bowls only
12 ft Model TA-54 Removable kick plate, (per linear foot) for the table front and left end.
1 ea Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)

ITEM 49b - WORK TABLE, CABINET BASE OPEN FRONT QTY 1 /ALTERNATE BID
Advance Tabco Model EB-SS-368 Dimensions: 35.5(h) x 96(w) x 36(d)
Work Table, 96"W x 36"D, open front cabinet base, 14 gauge 304 stainless steel top, stainless steel legs with adjustable hex feet, NSF
1 ea Model TA-12 Countertop edge, (per table)
1 ea Model TA-34 Top cut-out for drop in equipment (per cut-out)
1 ea Model TA-62C Electric outlet under top of table or overshelf, GFI, duplex, in single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
1 ea Model TA-62D Electric outlet in doghouse box on top of table or overshelf, GFI, duplex, in 'doghouse-style' single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
2 ea Model TA-108 Punch 2" hole for appliance cord (specify location)
2 ea Model TA-36A-SLIDING Sliding Door, 30" maximum width (per door), stainless steel
1 ea Model TA-40 Remove undershelf in cabinet base for slide in buyout
1 ea Model TA-42-36 Interior partition, 2-1/2" x 36" (each)
2 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf and mid shelf.
4 ft Model TA-118 Additional fixed mid-shelf (partial or full length) for enclosed base tables (sold per linear foot) (factory installation only-not sold separately), add TA-42-xx partition to support shelf if required
4 ft Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
1 ea Drop-In hand sinks
1 ea Model DI-1-5SP Drop-In Sink, 1-compartment, 12"W x 18-1/2"D O.A., 10"W x 14"D front-to-back x 5" deep bowl, 6" backsplash, 6" tapered side splash, includes: gooseneck deck mounted faucet 4" O.C. & 3-1/2" stainless steel drain with basket, 20/304 stainless steel, NSF (mounting brackets & nuts included)
1 ea Model TA-34 Top cut-out for drop in equipment (per cut-out)
11 ft Model TA-54 Removable kick plate, (per linear foot) for the front and right end.
1 ea Model K-76 Paint-on sound deadening under top (each)

ITEM 49c - DEMO MIRROR QTY 2 /ALTERNATE BID
Advance Tabco Model MI-60 Dimensions: 62.5(w) x 25.5(d)
Tilting Demo Mirror, ceiling mounted, glass mirror 62-1/2"W x 25-1/2"H inside of square tubular stainless steel frame, rainbow uprights for added support, stainless steel, NSF (height dimension must be provided)

ITEM 50 UNDERCOUNTER REFRIGERATOR QTY 1 /ALTERNATE BID
MANUFACTURER: BEVERAGE AIR
MODEL: UCR48AHC

Dimensions: 34.63(h) x 48(w) x 32(d)
Description:
Undercounter Refrigerator, two-section, 48"W, 11.82 cu. ft., (2) doors, (4) shelves, stainless steel exterior front, sides, door, top & grille, aluminum interior, rear-mounted self-contained refrigeration, R290 Hydrocarbon refrigerant, 1/6 HP, cULus, UL EPH Classified, UL-Sanitation

1 ea	7 year parts & labor and 7 year compressor warranty (excludes maintenance items)
1 ea	115v/60/1-ph, 2.2 amps, cord with NEMA 5-15P
1 ea	Left door hinged left, right door hinged on right, standard
1 ea	Solid hinged stainless steel doors, standard
1 ea	16 gauge top
2 ea	Model 403-828B Shelf, 16-1/2" x 20-7/8", large, epoxy coated wire (left & right)
1 ea	2-3/4" Casters, low profile, in lieu of standard 6" heavy duty casters, no charge when specified on order

ITEM 51 UNDERCOUNTER FREEZER BY OWNER
MANUFACTURER: BEVERAGE AIR
MODEL: UCF48AHC
Dimensions: 34.63(h) x 48(w) x 32(d)
Description:
Undercounter Freezer, two-section, 48"W, 11.04 cu. ft., (2) doors, (4) shelves, stainless steel top with turned down edges, stainless steel exterior top, front, sides, doors & grille, aluminum interior, rear-mounted self-contained refrigeration, R290 Hydrocarbon refrigerant, 1/2 HP, cULus, UL EPH Classified, UL-Sanitation

1 ea	7 year parts & labor and 7 year compressor warranty (excludes maintenance items)
1 ea	115v/60/1-ph, 7.0 amps, cord with NEMA 5-15P
1 ea	Left door hinged left, right door hinged on right, standard
1 ea	Solid hinged stainless steel doors, standard
1 ea	16 gauge top
2 ea	Model 403-828B Shelf, 16-1/2" x 20-7/8", large, epoxy coated wire (left & right)
1 ea	2-3/4" Casters, low profile, in lieu of standard 6" heavy duty casters, no charge when specified on order

ITEM 52 SPARE NUMBER

ITEM 53 STUDENT MOBILE TABLES BY OWNER
MANUFACTURER: ADVANCE TABCO
Dimensions: 35.5(h) x 60(w) x 24(d)
MODEL: TSS-245
Description:
Work Table, 60"W x 24"D, 14 gauge 304 stainless steel top, stainless steel legs with side & rear crossrails, adjustable stainless steel bullet feet, NSF

8 st	Model TA-25 Casters, 5", swivel, with rubber wheels (set of 4) (2 with brakes)
8 st	Model TA-25B Upgrade standard casters to have brakes on all wheels (upgrade only, must order casters separately)
8ST (3 EA)	Weld hooks for purses and backpacks on interior end, table underside, of each table.

ITEM 54 BAR STOOL, STACKING, INDOOR BY OWNER
MANUFACTURER: Flash Furniture
MODEL: CH-31320-24-BK-GG
Description:

ITEM 55-57 SPARE NUMBERS

ITEM 58 UTILITY CHASE WAY QTY: 7 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: UTILITY CHASE WAY : UCF-1
Dimensions: 36(h) x 6(w) x 6(d)

Description:
FLOOR MOUNTED
Utility Chase, 6"D x 6"W x 36"H, 16- gauge stainless steel, 300 series, includes removable access panels & collar modified for floor mount WITH TWO EMPTY JUNCTION BOXES

ITEM 59 3 - COMPARTMENT SINK MODIFIED SOILED DISHTABLE QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
Advance Tabco Model DTOGA-X Dimensions: 44(h) x 143(w) x 30(d)
Dishtable, clean, straight design, attaches to right of dish machine operator, 10-1/2"H backsplash, 3" rolled front & side rims, stainless steel legs & crossrails, 137"W x 34"D x 34"H, 14/304 stainless steel

1 ea	SPECIFY DISH MACHINE BRAND & MODEL to ensure proper fit, refer to attached document (AQ only) or consult www.advancetabco.com for compatibility listing. Certain dish machines require modifications at additional cost not shown here
3 ea	Model TA-11FAB Sink Welded Into Top, 20"W x 28"D x 14" deep bowl
1 ea	Model K-472 Faucet hole revision (each)
3 ea	Model K-15 Lever Waste Drain, twist handle operated with built in overflow, fits 3-1/2" drain opening, 2" NPT & 1-1/2" IPS outlet connections
3 ea	Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
1 ea	Model K-495 Turn Down Backsplash (includes wall clips)
1 ea	Model K-76 Paint-on sound deadening under top (each)
3 ft	Model K-479 Undershelf, stainless steel, (per linear foot)
1 ea	Model TA-94-3 16 gauge 304 stainless steel undershelf upgrade (3 lin. ft.)
3 ft	Model TA-9 Rear splash, 1-1/2" high, for undershelves, (per linear foot)

ITEM 60 FAUCET QTY: 1 /ALTERNATE BID
MANUFACTURER: FISHER
MODEL: 3253
Faucet, wall mount, 8" adjustable centers, 12" swing spout, lever handles with color coded indexes, 1/2" NPT female inlets, brass, ADA Compliant

ITEM 61 HOSE REEL QTY: 1 /ALTERNATE BID
MANUFACTURER: FISHER
MODEL: 29851
Description:
Hose Reel Assembly, closed reel rinse wall mounted with spray valve, powder coated steel construction, 30 feet of 3/8”ID, 3 ply hose, working pressure of 200 psi, withstands 160° F water temperature, ½” NPT Female garden hose inlet
Accessories:

1 ea	Model 28231 Reel Rinse Installation Kit, wall-mounted

ITEM 62 DISHWASHER, DOOR TYPE, VENTLESS QTY: 1 /ALTERNATE BID
MANUFACTURER: HOBART
MODEL: AM16VLT-ADV-2
Description:
Ventless Dishwashing Machine, tall chamber (27") door type, energy recovery, automatic soil removal (ASR), drain water energy recovery (DWER), high temp sanitizing, 208-240/60/3 (field convertible to single phase), internal condensing system, 38 racks/hour, straight-thru or corner installation, user-friendly smart touchscreen controls, Wi-Fi connectivity with SmartConnect app, Complete Delime™ with Delime Notification, Auto Dispensing, and Booster Guard™, Sense-A-Temp™ booster, electric tank heat, X-shaped wash arms, scrap screen and basket, door actuated start, door lock, stainless steel tank, tank shelf, chamber, trim panels, frame & feet, pumped drain air gap, drain water tempering, cULus, NSF, ENERGY STAR®. Factory Startup - Free for installations within 100 miles (accessible by public roadway) of a Hobart Service Office during normal business hours with appropriate notice; Installation beyond 100

miles or those not accessible by public roadway will be quoted by Service.

1 ea Oversized units with crated shipping dimensions greater or equal to 72" in length and/or 90" in height. If delivery is to a facility without a standard height dock, additional shipping charges will apply depending on the service requested. consult Factory.

1 ea Standard warranty - 1-Year parts, labor & travel time during normal working hours within the USA

1 ea Model WTRHAMARREST-AM16 Water Hammer Arrestor – Assembly includes ¾" brass pressure regulator, pressure gauge, shock arrestor and garden hose adapter

1 ea Model CHEMPUMP-HTS-AM16 Hobart Chemical Pumps Tall– Includes detergent and rinse-aid pumps, tubing, wiring, detergent connection port, pump housing and mounting bracket; with empty chemical notification or lockout

1 ea Model WS40-NOINSTALL Water Softening System, 2,527 grains/lb capacity, 5 gallons regeneration volume, & salt alarm, holds 1 bag of salt, pricing DOES NOT include standard installation. INSTALLATION BY AUTHORIZED HOBART SERVICE OFFICE IS RECOMMENDED (NET)

3 ea Model DISHRAK-PEG20 Peg Rack

2 ea Model DISHRAK-COM20 Combination Rack

2 ea Model RACK-6PAN 6 pan rack to hold sheet pans (Tall only)

ITEM 63 CLEAN DISHTABLE BY OWNER

MANUFACTURER: ADVANCE TABCO

MODEL: DTC-S70-48L

Dimensions: 44(h) x 47(w) x 30(d)

Description:

Dishtable, clean, straight design, attaches to left of dish machine operator, 10-1/2"H backsplash, 3" rolled front & side rims, stainless steel legs, with crossrails, 47"W x 30"D x 34"H, 16/304 stainless steel

Accessories:

1 ea SPECIFY DISH MACHINE BRAND & MODEL to ensure proper fit, refer to attached document (AQ only) or consult www.advancetabco.com for compatibility listing. Certain dish machines require modifications at additional cost not shown here

1 ea Model DT-6R-11 Sorting Shelf, wall mounted, traditional design, 22"W, accommodates (1) full size dish rack, solid end brackets, stainless steel, NSF

1 ea Model DTA-SS-18 Dishtable Undershelf, 18"W x 24"D, adjustable die cast leg clamps, stainless steel, NSF (size undershelf to be at least 6" shorter than dishtable)

1 ea Model TA-94-2 16 gauge 304 stainless steel undershelf upgrade (2 lin. ft.)

1 ft Model TA-9 Rear splash, 1-1/2" high, for undershelves, (per linear foot)

ITEM 65 STAINLESS STEEL WALL PANELS QTY: 2-LOT

MANUFACTURER: APPROVED FABRICATORS

MODEL: CUSTOM

Description:

1. Provide and install Type 304, 18-8, 22 gauge stainless steel panels on walls as shown on drawings.
2. Attach panels to masonry partitions with mastic cement (liquid nail) and stainless steel fasteners appropriate for wall type.
3. Caulk around panel edges and butt joints with clear silicon sealant.
4. Reference drawing FS501.

ITEM 66 SMART WALL SHELVING BY OWNER

MANUFACTURER: METRO

MODEL: SEE BELOW

Description:

Smart Wall G3 MetroSeal™ Gray

Provide the following **8'-0"** Unit on Tall Wall:

1 ea SW40K4 Wall Track

2 ea SW56K4 Wall Track

4 ea SWU45K4 Uprights
4 ea SWS18K4 18” Shelf Supports
4 ea SWS14K4 14” Shelf Supports
2 ea WG1848K4 18” x 48” Grid
2 ea1848NK4 18” x 48” Metroseal Shelves
2 ea 1448NK4 14” x 48” Metroseal Shelves
Accessories:
8) HK26C Double Hooks
18) PGHK6K4 Pronged Hooks
5) H210K4 Wire Basket
6) PBA-GSDK4 Light-Duty Shelf
All Items to be packaged together, separate from any other items and marked with the Item number
Below is a sample layout for the accessories for this set up.



ITEM 67 SMART WALL SHELVING BY OWNER
DOUBLE SET UP OVER PREP AREAS DOUBLE QUANITIES BELOW FOR EACH LOT
1 ea Metro Model WG2436K4 Dimensions: 36(w) x 24(d)
SmartWall Wire Grid, 36" x 24", Metroseal Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, NSF
1 kt Model SWGB2 Quick Ship - SmartWall Grid Mounting Bracket Kit for Direct Wall Mount; type 304 Stainless Steel, kit consists of (6) brackets to connect grid to the wall, (1) required per grid
3 ea Model PGHK6K4 Quick Ship - SmartWall Prong Hook, 6", Metroseal Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection
1 ea Model H209K4 Quick Ship - SmartWall Storage Basket, 13-3/8"W x 5"D x 7"H, Metroseal Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, NSF

1 ea Model IWA-12K4 SmartWall Large Utensil Holder, 10-3/8"W x 10-1/2"D, Metroseal Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protectionepoxy finish
1 ea Model GBHHK4-S Glove Box Holder, horizontal, (1) box capacity, Metroseal 4 Gray
2 ea Model HK25C Quick Ship - SmartWall Snap-On Hook, 3-1/2"H, chrome, style B - large, multi-purpose
All Items to be packaged together, separate from any other items and marked with the Item number

ITEM 68 INGREDIENT BIN BY OWNER
MANUFACTURER: CAMBRO
MODEL: IBS27148
Dimensions: 28(h) x 16.31(w) x 29.63(d)
Description:
Ingredient Bin, mobile, 27 gallon capacity, 1-pc seamless polyethylene bin, 2-pc sliding polycarbonate lid, scoop holder included (scoop sold separately), (4) 3" heavy duty casters (2 front swivel, 2 fixed), white with clear cover, NSF, Made in USA
Accessories:
3 ea Model SCP12CW135 Camwear® Scoop, 12 oz., polycarbonate, clear, NSF, Made in USA
3 ea Model IBSH24148 Ingredient Bin Scoop Holder, 24 oz, white, for models IBS20148, IBS27148 and IBSF27, Made in USA

ITEM 69 TRAY DRYING RACKS QTY: 2 /ALTERNATE BID
MANUFACTURER: METRO
MODEL: MAX4-PR48VX3
Description:
MetroMax® 4 Mobile Drying Rack Unit, 48"W x 24"D x 68"H, 4-tier, for bulk drying & trays/cutting boards/sheet pans, includes: (3) open shelf frames, (1) shelf, (4) 63" mobile posts, (2) drop-ins, (1) cutting board/tray drying rack, (4) polymer swivel casters (2 with brakes), built in Microban® antimicrobial product protection, NSF

ITEM 70 UNIFORM/BACKPACK STORAGE BY OWNER
UNITS ARE MOBILE MADE OF TWO EACH SHELVES, TWO EACH GARMET HANGERS, ONE EACH THREE SIDED FRAMES, TWO CASTERS AND TWO CASTERS WITH BRAKES, 4 POSTS EACH
THE FOLLOWING ARE THE MODEL AND NUMBER OF EACH:
4 ea WIRE SHELVING (4 REQ'D)
Metro Model 2436NC Dimensions: 36(w) x 24(d)
Quick Ship - Super Erecta® Shelf, wire, 36"W x 24"D, chrome plated finish, plastic split sleeves are included in each carton, NSF
8 ea Model 74UP Quick Ship - Super Erecta® Post, 73-7/8"H, for use with stem casters, chrome plated finish
4 ea Model 5MP Quick Ship - Super Erecta® Stem Caster, swivel, 5" dia., 1-1/4" face, 300 lb. capacity, polyurethane flat wheel tread, includes bumper
4 ea Model 5MPB Quick Ship - Super Erecta® Stem Caster, swivel (with foot operated brake), 5" dia., 1-1/4" face, 300 lb. capacity, polyurethane flat wheel tread, includes bumper
2 ea Model SF53N3C Super Erecta® 3-Sided Channel Frame, 36"W x 24"D, double snake frame, chrome plated finish
4 ea Model 2442NC Quick Ship - Super Erecta® Shelf, wire, 42"W x 24"D, chrome plated finish, plastic split sleeves are included in each carton, NSF
8 ea Model 74UP Quick Ship - Super Erecta® Post, 73-7/8"H, for use with stem casters, chrome plated finish
4 ea Model 5MP Quick Ship - Super Erecta® Stem Caster, swivel, 5" dia., 1-1/4" face, 300 lb. capacity, polyurethane flat wheel tread, includes bumper
4 ea Model 5MPB Quick Ship - Super Erecta® Stem Caster, swivel (with foot operated brake), 5" dia., 1-1/4" face, 300 lb. capacity, polyurethane flat wheel tread, includes bumper
2 ea Model SF54N3C Super Erecta® 3-Sided Channel Frame, 42"W x 24"D, double snake frame, chrome plated finish

4 ea Model AT3624NC Super Erecta® Garment Hanger, 36"L, for 24, 30 or 36"D shelves, attaches under Super Erecta® shelves, chrome plated finish (includes mounting brakets)
4 ea Model AT4224NC Super Erecta® Garment Hanger, 42"L, for 24, 30 or 36"D shelves, attaches under Super Erecta® shelves, chrome plated finish (includes mounting brakets)

END OF CLASSROOM SECTION 11400

ITEM D01 SPARE NUMBER

ITEM D02 DRY STORAGE ROOM SHELVING BY OWNER
MANUFACTURER: METRO
MODEL: Super Erecta®
Description:
Four tier shelving units with bottom shelf 8” above finished floor and shelving spaced evenly with top shelf even with top of posts.
Shelf, wire, XX"W x 21"D, Metroseal™ Gray epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection, plastic split sleeves are included in each carton, NSF
Model 74PK4 Quick Ship - Super Erecta® SiteSelect™ Post, 74-1/2"H, adjustable leveling bolt,posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 4 Gray epoxy coated corrosion-resistant finish with Microban® antimicrobial protection
APPROVED ALERNATES IF MATCH THE DETAILED SPECIFICATIONS: AMCO and ULINE

ITEM D03: LINEN CART BY OWNER
MANUFACTURER: ULINE
MODEL: H-3840
Description:
Heavy Duty Poly Box Truck, 18.5 bushel. High-density polyethylene. 5” polyurethane casters, 2 swivel and 2 rigid. 48” x 32” 38”. 1200 lb capacity. Weight 72 lbs.

ITEM D04 ICE MAKER CUBE STYLE QTY: 1 /ALTERNATE BID
MANUFACTURER: HOSHIZAKI
MODEL: KM-830MAK2
Dimensions: 28(h) x 30(w) x 24.63(d)
Description:
Ice Maker, Cube-Style, 30"W, air-cooled, self-contained condenser, production capacity up to 777 lb/24 hours at 70°/50° (665 lb AHRI certified at 90°/70°), stainless steel finish, crescent cube style, Environmentally friendly R290 hydrocarbon refrigerant , 208-230v/60/1-ph, 9.9 amps, NSF, UL
1 ea Warranty: 3-Year parts & labor on entire machine
1 ea Warranty: 5-Year parts & labor on evaporator
1 ea Warranty: 5-Year parts on compressor & air-cooled condenser
Accessories:
1 ea Model B-700SF Ice Bin, 44"W, top-hinged front-opening door, 700-lb ice storage capacity, for top-mounted ice makers, stainless steel exterior, painted legs included, protected with H-GUARD Plus Antimicrobial Agent, ETL, ETL-Sanitation
1 ea Warranty: 3-Year parts & labor for bin
1 kt Model HS-2034 Top Kit, 14", ABS
1 pk Model LP-6 LEG Leg Package, (4) x 6" stainless steel legs
1 ea Model HS-5607 Scoop Holder Kit
1 ea Model H9320-52 Water Filtration System, twin configuration, 19.11" H (manifold & cartridge), NSF
1 ea Warranty: 1-Year on entire water filtration system & replaceable elements, standard
1 pk Model H9655-06 Replacement Water Filter Cartridge (6 pack)

ITEM D07 REACH IN FREEZER BY OWNER
MANUFACTURER: TRAULSEN
MODEL: G22013
Dimensions: 83.44(h) x 52.13(w) x 35(d)
Description:
Spec-Line G Series Freezer, Reach-in, two-section, self-contained refrigeration, microprocessor control with LED display, full-height solid doors (hinged left/left), stainless steel exterior & interior, (3) epoxy coated shelves per section (factory installed), LED interior lights, 6" high casters, eco-friendly R290 Hydrocarbon refrigerant, unit can be programmed to operate at -10°F, 1/2 HP, 115v/60/1, 7.6 amps, NEMA 5-15P, cETLus, ETL-Sanitation
1 ea 6-year parts & labor and 7 year compressor, standard. Visit www.traulsen.com for details
Accessories:
1 ea Model G23ACC-SHLF2 Set of (3) epoxy coated shelves with pilasters - L
1 ea Model G23ACC-SHLF6 Set of (3) epoxy coated shelves with pilasters - R
1 ea Casters, 6"H, locking (set of 4), standard
APPROVED ALTERNATE: VICTORY

ITEM D08 REACH IN REFRIGERATOR BY OWNER
MANUFACTURER: TRAULSEN
MODEL: G20013
Dimensions: 83.44(h) x 52.13(w) x 35(d)
Description:
Spec-Line G Series Refrigerator, Reach-in, two-section, 46.0 cu. ft., self-contained refrigeration, (2) full height doors (hinged left/left), (3) epoxy coated shelves per section (factory installed), microprocessor control with LED display, LED interior lights, stainless steel exterior & interior, 6" high casters, R290 Hydrocarbon refrigerant, 1/4 HP, 115v/60/1, 4.3 amps, NEMA 5-15P, cETLus, ETL-Sanitation, ENERGY STAR®
1 ea 6-year parts & labor and 7 year compressor, standard. Visit www.traulsen.com for details
Accessories:
1 ea Model G23ACC-SHLF2 Set of (3) epoxy coated shelves with pilasters - L
1 ea Model G23ACC-SHLF6 Set of (3) epoxy coated shelves with pilasters - R
1 ea Casters, 6"H, locking (set of 4), standard
APPROVED ALTERNATE: VIVTORY

ITEM D09 MOP SINK NIC (NOT IN CONTRACT)
BY OTHER TRADES

ITEM D09.1 SERVICE FAUCET NIC (NOT IN CONTRACT)
BY OTHER TRADES

ITEM D10 MOP HOLDER BY OWNER
MANUFACTURER: ADVANCE TABCO
MODEL: K-242
Description:
Mop Hanger, 23", accommodates (3)

ITEM 11 CARTS BY OWNER
MANUFACTURER: RUMBERMAID
6 EACH: MODEL: FG452500BLA
Description:
Flat Shelf Utility Cart, 43-7/8"L x 25-5/8"W x 33-5/16"H, 500 lb. capacity per shelf, (2) shelves, open base, polyethylene exterior, (4) 5" thermoplastic rubber (TPR) casters, assembly required, black, Made in USA
APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: CARLISLE and CAMBRO

ITEM D12 WASTE CONTAINERS BY OWNER
MANUFACTURER: RUBBERMAID
MODEL: FG354060BLA
Dimensions: 30(h) x 22(w) x 11(d)
Description:
Slim Jim® Container, 23 gallon, 22"W x 11"D x 30"H, with venting channels, molded-in handles, general purpose waste, open type without lid, high-impact plastic construction, black, Made in USA
Accessories:

7 ea	Model FG267360BLA Slim Jim® Swing Lid, for Slim Jim® Container, black, Made in USA (contact Rubbermaid for broken case information)
7 ea	Model 1980602 Slim-Jim® Trolley, 23.9"L x 14.7"W x 8.4"H, accommodates 3540 & 3541 containers, 120 lb. max capacity, black , Made in USA

APPROVED ALTERNATES IF MATCH DETAILED SPECIFICATIONS: CARLISLE AND CAMBRO

ITEM D13 WORK TABLE, CABINET BASE OPEN FRONT QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: EK-SS-307 (MOD 6'-10")
Dimensions: 40.5(h) x 82(w) x 30(d)
Description:
Work Table, 82"W x 30"D, open front cabinet base, 14 gauge 304 stainless steel top, 5"H backsplash, stainless steel legs with adjustable hex feet, NSF
Accessories:

1 ea	Model TA-12 Countertop edge, (per table)
1 ea	Model TA-34 Top cut-out for drop in equipment (per cut-out)
2 ea	Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf (one in back panel and one in undershelf)
1 ea	Model TA-56 5" tall NSF partition
1 ea	Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)
1 ea	Model TA-93 Wall Clips, (for 5" & 10" splash only) (per table)
2 ea	Model TA-42-30 Interior partition, 2-1/2" x 30" (each)
1 ea	Model TA-116 Adjustable mid shelf
1 ft	Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
5 ft	Model TA-118 Additional fixed mid-shelf (partial or full length) for enclosed base tables (sold per linear foot) (factory installation only-not sold separately), add TA-42-xx partition to support shelf if required
1 ea	Drop-In hand sinks
1 ea	Model DI-1-10SP Drop-In Sink, 1-compartment, 12"W x 18-1/2"D O.A., 10"W x 14"D front-to-back x 10" deep bowl, 6" backsplash, 6" tapered side splash, includes: gooseneck deck mounted faucet 4" O.C. & 3-1/2" stainless steel drain with basket, 20/304 stainless steel, NSF (mounting brackets & nuts included)
1 ea	Model TA-227 Splash mounting provision
1 ea	Model PT-12S-48 Overshelf, table mounted, single, 48"W x 12"D, stainless steel, uprights of shelf, splash mounted

ITEM D14 REACH IN REFRIGERATOR BY OWNER
MANUFACTURER: TRAULSEN
MODEL: G20013
Dimensions: 83.44(h) x 52.13(w) x 35(d)
Description:
Spec-Line G Series Refrigerator, Reach-in, two-section, 46.0 cu. ft., self-contained refrigeration, (2) full height doors (hinged left/left), (3) epoxy coated shelves per section (factory installed), microprocessor control with LED display, LED interior lights, stainless steel exterior & interior, 6" high casters, R290 Hydrocarbon refrigerant, 1/4 HP, 115v/60/1, 4.3 amps, NEMA 5-15P, cETLus, ETL-Sanitation, ENERGY STAR®

1 ea	6-year parts & labor and 7 year compressor, standard. Visit www.traulsen.com for details

Accessories:
1 ea Model G23ACC-SHLF2 Set of (3) epoxy coated shelves with pilasters - L
1 ea Model G23ACC-SHLF6 Set of (3) epoxy coated shelves with pilasters - R
1 ea Casters, 6"H, locking (set of 4), standard
APPROVED ALTERNATE: VICTORY

ITEM D15 PREP TOP REFRIGERATOR QTY: 1 /ALTERNATE BID
MANUFACTURER: TRAULSEN
MODEL: TS072HT
Dimensions: 48.38(h) x 72(w) x 36(d)
Description:
Spec-Line TS Series Prep Table, two-section, 72"W, 17.9 cu. ft., self-contained refrigeration, holds (10) 1/3 size pans, insulated lids, (2) self-closing hinged doors, (4) wire shelves, microprocessor control with LED display, galvanized steel back & bottom, stainless steel top, front & sides, stainless steel interior, R290 Hydrocarbon refrigerant, 1/2 HP, 8.2 amps, cETLus, ETL-Sanitation
1 ea Oversized units with crated shipping dimensions greater or equal to 72" in length and/or 90" in height. If delivery is to a facility without a standard height dock, additional shipping charges will apply, depending on the service requested (consult factory for details)
1 ea 6-year parts & labor and 7 year compressor, standard. Visit www.traulsen.com for details
1 ea 115v/60/1-ph, cord with NEMA 5-15P, standard
1 ea Solid Door hinged on left, standard
1 ea Solid Door hinged on right, standard
Accessories:
1 ea Full length white plastic cutting board (3) pcs (24"W x 1/2"H x 18"D)
1 ea Additional coated shelf
1 st Set of casters, 6" high, standard
APPROVED ALTERNATE BEVERAGE AIR

ITEM D16 BEVERAGE COUNTER QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: EK-SS0307M (MOD 6'-6")
Dimensions: 46(h) x 84(w) x 30(d)
Description:
Beverage Table, 84" W, 14 gauge 304 stainless steel top with no drip counter top edge, 10" x 2" backsplash, enclosed stainless steel base with bottom & intermediate undershelves, stainless steel legs, NSF
Accessories:
2 ea Model TA-34 Top cut-out for drop in equipment (per cut-out)
2 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf (one in back panel one in undershelf
1 ea Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)
1 ea Model TA-93 Wall Clips, (for 5" & 10" splash only) (per table)
1 ea Model TA-107 Anti-Siphon vacuum breaker holes in splash, (2) holes, backsplash will be made 2" deep to accommodate (TA-11Z modification included)-FOR GLASS FILLER ITEM D19
5 ea Model TA-108 Punch 2" hole for appliance cord (specify location)
1 ea Model TA-366A Reinforced understructure under table top (increases capacity of table top by 30%) (each)
14 ft Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
1 ea Model TA-116 Adjustable mid shelf
1 EA MODEL TA-12 COUNTER TOP EDGE
1 EA MODEL TA-64 URN TROUGH WITH NO SPLASH DRAIN PLATE

ITEM D16 WORKTABLE QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: KMS-304
Dimensions: 40.5(h) x 48(w) x 30(d)
Description:
Work Table, 48"W x 30"D, 16 gauge 304 stainless steel top with 5"H backsplash, 18 gauge stainless steel adjustable undershelf, stainless steel legs & adjustable bullet feet, NSF
Accessories:

4 ft	Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
1 ea	Model TA-95 16 gauge 304 stainless steel leg upgrade (per table)
MIDSHELF	
1 ea	Model US-30-48 Work Table Undershelf, for work tables 48"W x 30"D, 18 gauge stainless steel, NSF (actual shelf is 6" shorter than table width & depth) (suggested maximum load 300 pounds distributed weight)
1 ft	Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
1 EA	SS-2020 DRAWER

ITEM D17 COFFEE BREWER QTY: 1 /ALTERNATE BID
MANUFACTURER: BUNN
MODEL: 51200.0101
Dimensions: 32.9(h) x 22(w) x 23.4(d)
Description:
ICB Twin Soft Heat® Automatic Coffee Brewer, with Infusion series technology: (6) brew buttons & (3) batch sizes (1/2 gal, 1 gal & 1-1/2 gal), black plastic funnel, hot water faucet on side, multidirectional Peak Extraction™ spray head, 3/8" male flare fitting supplied, USB programming capable, blue LED indicator lights, 4" stainless steel legs, black and stainless steel exterior, 120/240v/60/1-ph, 6.0kW, 25.0 amps, UL, NSF
Accessories:

8 ea	Model 27850.0200 27850.0200 Soft Heat® Infusion Series® Thermal Server, 1.5 gallon capacity, NSF
2 ea	Model 27875.0200 27875.0200 Soft Heat® Serving Stand/Docking System, controlled heat, adjustable 4" stainless steel legs, stainless steel construction, accommodates (2) BUNN Soft Heat® servers, 120v/60/1-ph, 216 watts, 1.8 amps, NEMA 5-15P, UL, NSF
2 ea	Model 53452.0000 53452.0000 Drip Tray Kit, Twin, Soft Heat®
1 ea	Model 24500.0670 24500.0670 Zone A - SYSTEMS PRIMARY INSTALL *Zone C Installation (address outside of normal service areas: airports, military installations, locations with increased security, Alaska, Hawaii, etc., are billed time and materials per job. Contact bunnserve.installs@bunn.com for more information regarding installation availability and pricing.

ITEM D18 ICED TEA BREWER QTY: 1 /ALTERNATE BID
MANUFACTURER: BUNN
MODEL: 36700.0009
Dimensions: 34.2(h) x 11.6(w) x 21.7(d)
Description:
TB3 Iced Tea Brewer, 3-gallon capacity single brewer, 16.3 gallon/hour, SplashGard® funnel, adjustable steep time, (dispensers sold separately), 120v/60/1-ph, 1730w, 14.4amps, NEMA 5-15P, cord attached, UL, NSF
Accessories:

6 ea	Model 34100.0002 34100.0002 TDO-4 Iced Tea/Coffee Dispenser, cylinder style, 4 gallon capacity (15.1 litres), sump dispense valve, oval shape brew-through plastic lid, faucet handles are labeled sweetened & unsweetened, side handles, NSF
1 cs	Model 20100.0000 20100.0000 Paper Filters, 12-3/4" x 5-1/4", white (for Coffee & Tea) (500 each per case, price based on 1-229 lbs total weight - call for price on greater quantities)
1 ea	Model 56000.0030 56000.0030 System, WEQ-SFTN3500(1)10 TEA

1 ea Model 56000.0129 56000.0129 Cartridge, WEQ-SFTN3500 (1)10 TEA
1 ea Model 24500.0630 24500.0630 TEA BREWERS PRIMARY INSTALL *Zone C Installation (address outside of normal service areas: airports, military installations, locations with increased security, Alaska, Hawaii, etc., are billed time and materials per job. Contact bunnserve.installs@bunn.com for more information regarding installation availability and pricing.

ITEM D19 GLASS FILLER QTY: 1 /ALTERNATE BID
MANUFACTURER: FISHER
MODEL: 10090
Description:
Glass/Pitcher Filler, 8” pedestal, 6” swing spout, 3/8” male
Accessories:
T & S BRASS VACUUM BREAKER ASSEMBLY: B-0455-04-963VB

ITEM D19 DROP IN ICE BIN QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: D-30-IBL-7
Dimensions: 14(h) x 27(w) x 18(d)
Description:
Ice Bin, drop-in, 62-lb ice capacity, 27”W x 18”D x 14" deep overall (bin size 24"W x 13-1/2"D x 11" deep), built-in 7-circuit cold plate, removable stainless steel sliding cover, insulated, 1/2" diameter drain, NSF (cutout size 15-1/4" x 26-3/8")

ITEM D21 ONE COMPARTMENT SINK QTY: 5 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: 93-21-20
Dimensions: 42(h) x 30.75(w) x 28(d)
Description:
Regaline Sink, 1-compartment, 20" front-to-back x 20" wide sink compartment, 12" deep, with 8" high splash, stainless steel open frame base, side crossrails, 1" adjustable bullet feet, 16 gauge 304 stainless steel, overall 28" F/B x 30-3/4" L/R, NSF
Accessories:
5 ea Model K-5 Drain, twist operated, 2" NPT & 1-1/2" IPS outlet connections
5 ea Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
5 ea Model FC-455E Sink Cover, stainless steel, for 20" x 20" fabricated bowl (rests on edges of sink bowl such that the sink cover will be approximately flush with the tabletop or drainboard work surface)
5 ea Model K-520 Poly Board & Stainless Steel Sink Cover Holder, accommodates (2) boards 5/8" thick, attaches to legs on work table
5 ea Model K-610E Perforated bottom strainer plate, stainless steel, removable, sits 1" above bottom of sink, fits Advance Tabco Deep Drawn™ 20" x 20" sink bowls only
5 ea Model K-495 Turn Down Backsplash (includes wall clips)
5 ea Model K-76 Paint-on sound deadening under top (each)
5 ea Model K-493 300 Series Leg, stainless steel, welded, assembly with metal bullet feet
5 ea Wall mounted

ITEM D21.1 PRE-RINSE W/ ADD ON FAUCET QTY: 6 /ALTERNATE BID
MANUFACTURER: FISHER
MODEL: 34410
Description:
Pre-Rinse Unit, spring style, backsplash mount, 8" centers, 16" riser, 36" hose, 1.15 GPM Ultra-Spray™ PLUS spray valve with built-in spray handle clip & dish guard bumper, lever handles with color coded indexes, add-on faucet with 12" swing spout, includes wall bracket, 1/2" NPT male inlets, brass, ADA Compliant
NOTE - Model quoted replaces 34460

ITEM D22 WORKTOP REFRIGERATOR/FREEZER QTY: 5 /ALTERNATE BID
MANUFACTURER: BEVERAGE AIR
MODEL: WTFR48AHC
Dimensions: 39.63(h) x 48(w) x 32(d)
Description:

Worktop Freezer/Refrigerator, two-section, 48"W, 5.31 cu.ft. capacity (freezer-left), 5.31 cu. ft. capacity (refrigerator-right), (2) solid hinged doors, (4) adjustable wire shelves, 4" removable backsplash, interior thermometer, adaptive defrost, stainless steel front, sides, door & grille, galvanized back & bottom, aluminum interior, (2) rear-mounted self-contained refrigeration systems, R290 Hydrocarbon refrigerant, 1/4 HP freezer, 1/10 HP refrigerator, cULus, UL EPH Classified, UL-Sanitation

5 ea	7 year parts & labor and 7 year compressor warranty (excludes maintenance items)
5 ea	(2) 115v/60/1-ph, 2.0 amps refrigerated section, 2.5 amps freezer section, cords, (2) NEMA 5-15P
5 ea	6" Heavy duty casters, standard

ITEM D23 WORK TABLES QTY: 2 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO
MODEL: KSS-307 (MOD 6'-6")
Dimensions: 40.5(h) x 78(w) x 30(d)
Description:
Work Table, 78"W x 30"D, 14 gauge 304 stainless steel top with 5"H backsplash, 18 gauge stainless steel adjustable undershelf, stainless steel legs with stainless steel bullet feet, NSF

2 ea	Model TA-61 Modification to reduce length and/or width of table, start with next largest size then add "TA-61" to model number TO REDUCE TO 6’-6” IN LENGTH
2 ea	Model TA-34 Top cut-out for drop in equipment (per cut-out)
14 ft	Model TA-9 Rear splash, 1-1/2" high, for undershelves, (per linear foot)
2 ea	Model TA-23 Table legs welded to undershelf or cross rails, shipped set up and crated (per table) Top is not welded to legs (for fully welded table specify TA-23A)
2 ea	Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf
14 ft	Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
2 ea	Drop-In hand sinks
2 ea	Model DI-1-10SP Drop-In Sink, 1-compartment, 12"W x 18-1/2"D O.A., 10"W x 14"D front-to-back x 10" deep bowl, 6" backsplash, 6" tapered side splash, includes: gooseneck deck mounted faucet 4" O.C. & 3-1/2" stainless steel drain with basket, 20/304 stainless steel, NSF (mounting brackets & nuts included)
4 ea	Model SS-2020 Deluxe Drawer, 20"W x 20"D x 5" deep drawer pan insert, stainless steel, with drawer slides
2 ea	SPLASH MOUNT
2 ea	TA-227 SPLASH MOUNT PROVISION
2 ea	Model SWT-84 Pot Rack, table mounted, rear or splash-mounted, semi-circular design, 84" long, stainless steel, includes: (18) plated pot hooks & (1) AUR-84 utensil rack
2 ea	Model TA-60 Modification to reduce length and/or width of shelf, start with next largest size then add "TA-60" to model number FOR THE POT AND UTENSIL RACK

ITEM D24 INSTRUCTOR’S TABLE QTY: 1 /ALTERNATE BID
MANUFACTURER: ADVANCE TABCO/CUSTOM
MODEL: SEE BELOW
Description:

1 ea	Advance Tabco Model CB-SS-306 MODIFIED Dimensions: 35.5(h) x 72(w) x 30(d) Work Table, 108"W x 30"D, cabinet base with sliding doors, 14 gauge 304 stainless steel top, stainless steel legs with adjustable hex feet, NSF
6 ft	Model TA-3 Upgrade table understructure to stainless steel (per linear foot)
1 ea	Model TA-12 Countertop edge, (per table)
1 ea	Model TA-34 Top cut-out for drop in equipment (per cut-out)
1 ea	Model DI-1-10SP Drop-In Sink, 1-compartment, 12"W x 18-1/2"D O.A., 10"W x 14"D

front-to-back x 10" deep bowl, 6" backsplash, 6" tapered side splash, includes: gooseneck deck mounted faucet 4" O.C. & 3-1/2" stainless steel drain with basket, 20/304 stainless steel, NSF (mounting brackets & nuts included)

2 ea Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)

2 ea Model TA-108 Punch 2" hole for appliance cord (specify location)

1 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf (one in back panel one in undershelf (SIDE PANEL TOWARD PARTICIAL WALL

1 ea Model MI-60 Tilting Demo Mirror, ceiling mounted, glass mirror 62-1/2"W x 25-1/2"H inside of square tubular stainless steel frame, rainbow uprights for added support, stainless steel, NSF (height dimension must be provided

9FT STAINLESS STEEL KICKPLATES

SUPPLY REMOVABLE KICKPLATES ON EITHER END AND FRONT FACING THE STUDENTS.

ITEM D25 INSTRUCTOR'S TABLE QTY: 1-LOT /ALTERNATE
MANUFACTURER: ADVANCE TABCO/CUSTOM
MODEL: SEE BELOW
Description:

ITEM D25a - WORK TABLE, CABINET BASE OPEN FRONT QTY: 1 /ALTERNATE BID
Advance Tabco Model EB-SS-307 Dimensions: 35.5(h) x 84(w) x 30(d)
Work Table, 84"W x 30"D, open front cabinet base, 14 gauge 304 stainless steel top, stainless steel legs with adjustable hex feet, NSF

7 ft Model TA-3 Upgrade table understructure to stainless steel (per linear foot)

1 ea Model TA-12 Countertop edge, (per table)

1 ea Model TA-34 Top cut-out for drop in equipment (per cut-out)

1 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf

1 ea Model TA-62C Electric outlet under top of table or overshelf, GFI, duplex, in single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)

1 ea Model TA-62D Electric outlet in doghouse box on top of table or overshelf, GFI, duplex, in 'doghouse-style' single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)

1 ea Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)

2 ea Model TA-108 Punch 2" hole for appliance cord (specify location)

1 ea Model TA-36A-HINGED Hinged Door, 30" maximum width (per door), stainless steel

1 ea Model TA-42-30 Interior partition, 2-1/2" x 30" (each)

1 ea Model TA-48 12" x 12" cut out for plumbing in back panel or undershelf

10 ft Model TA-54 Removable kick plate, (per linear foot)

1 ea Model TA-57A Prepare for field bolting to adjoining piece (apply one charge for each "joint" required between 2 pieces)

3 ft Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)

1 ea Weld-In sink - single bowl

1 ea Model TA-11N Sink Welded Into Table Top, 18"W x 18"D x 14" deep bowl, includes faucet, NSF (must specify sink location)

1 ea Model K-5 Drain, twist operated, 2" NPT & 1-1/2" IPS outlet connections

1 ea Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain

1 ea Model K-610NF Perforated bottom strainer plate, stainless steel, removable, sits 1" above bottom of sink, fits Advance Tabco Fabricated 18" x 18" sink bowls only

1 ea Model MI-60 Tilting Demo Mirror, ceiling mounted, glass mirror 62-1/2"W x 25-1/2"H inside of square tubular stainless steel frame, rainbow uprights for added support, stainless steel, NSF (height dimension must be provided)

ITEM D25b - WORK TABLE, CABINET BASE OPEN FRONT QTY: 1 /ALTERNATE BID
Advance Tabco Model EB-SS-306 Dimensions: 35.5(h) x 72(w) x 30(d)
Work Table, 72"W x 30"D, open front cabinet base, 14 gauge 304 stainless steel top, stainless steel legs with adjustable hex feet, NSF

6 ft	Model TA-3 Upgrade table understructure to stainless steel (per linear foot)
1 ea	Model TA-12 Countertop edge, (per table)
1 ea	Model TA-62C Electric outlet under top of table or overshelf, GFI, duplex, in single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
1 ea	Model TA-62D Electric outlet in doghouse box on top of table or overshelf, GFI, duplex, in 'doghouse-style' single gang box, NEMA 5-20R receptacles, stainless face plate, maximum 120v 20A service (wiring & utility chases or provisions not included) (optional chases and/or wiring by Advance Tabco is available-call for pricing)
1 ea	Model TA-76 Paint on sound deadening under top (supplements standard sound deadening under support channels) (each)
2 ea	Model TA-108 Punch 2" hole for appliance cord (specify location)
1 ea	Model TA-36A-HINGED Hinged Door, 30" maximum width (per door), stainless steel
1 ea	Model TA-40 Remove undershelf in cabinet base for slide in buyout
1 ea	Model TA-42-30 Interior partition, 2-1/2" x 30" (each)
9 ft	Model TA-54 Removable kick plate, (per linear foot)
1 ea	Model TA-57A Prepare for field bolting to adjoining piece (apply one charge for each "joint" required between 2 pieces)
2 ft	Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)
1 ea	Model MI-60 Tilting Demo Mirror, ceiling mounted, glass mirror 62-1/2"W x 25-1/2"H inside of square tubular stainless steel frame, rainbow uprights for added support, stainless steel, NSF (height dimension must be provided)

ITEM D26 UNDERCOUNTER REFRIGERATOR QTY: 1 /ALTERNATE BID
MANUFACTURER: BEVERAGE AIR
MODEL: UCR48AHC
Dimensions: 34.63(h) x 48(w) x 32(d)
Description:
Undercounter Refrigerator, two-section, 48"W, 11.82 cu. ft., (2) doors, (4) shelves, stainless steel exterior front, sides, door, top & grille, aluminum interior, rear-mounted self-contained refrigeration, R290 Hydrocarbon refrigerant, 1/6 HP, cULus, UL EPH Classified, UL-Sanitation

1 ea	7 year parts & labor and 7 year compressor warranty (excludes maintenance items)
1 ea	115v/60/1-ph, 2.2 amps, cord with NEMA 5-15P
1 ea	Left door hinged left, right door hinged on right, standard
1 ea	Solid hinged stainless steel doors, standard

Accessories:

1 ea	16 gauge top
2 ea	Model 403-828B Shelf, 16-1/2" x 20-7/8", large, epoxy coated wire (left & right)
1 ea	2-3/4" Casters, low profile, in lieu of standard 6" heavy duty casters, no charge when specified on order

ITEM D27 UNDERCOUNTER FREEZER QTY: 1 /ALTERNATE BID
MANUFACTURER: BEVERAGE AIR
MODEL: UCF48AHC
Dimensions: 34.63(h) x 48(w) x 32(d)
Description:
Undercounter Freezer, two-section, 48"W, 11.04 cu. ft., (2) doors, (4) shelves, stainless steel top with turned down edges, stainless steel exterior top, front, sides, doors & grille, aluminum interior, rear-mounted self-contained refrigeration, R290 Hydrocarbon refrigerant, 1/2 HP, cULus, UL EPH Classified,

UL-Sanitation
1 ea 7 year parts & labor and 7 year compressor warranty (excludes maintenance items)
1 ea 115v/60/1-ph, 7.0 amps, cord with NEMA 5-15P
1 ea Left door hinged left, right door hinged on right, standard
1 ea Solid hinged stainless steel doors, standard
Accessories:
1 ea 16 gauge top
2 ea Model 403-828B Shelf, 16-1/2" x 20-7/8", large, epoxy coated wire (left & right)
1 ea 2-3/4" Casters, low profile, in lieu of standard 6" heavy duty casters, no charge when specified on order

ITEM D28 HAND SINK QTY: 3 /ALTERNATE BID
MANUFACTURER: Advance Tabco
MODEL: 7-PS-59
Dimensions: 17.25(h) x 17.25(w) x 15.25(d)
Description:
Hand Sink, wall mounted, 14" wide x 10" front-to-back x 5" deep bowl, Deep Drawn™ sink bowl, 20 gauge 304 stainless steel, welded 7-3/4"H side splashes, heavy duty splash mounted gooseneck faucet, knee valve, basket drain, keyhole wall mount bracket, NSF, cCSAus
Accessories:
1 ea Model 7-PS-10 P-trap, heavy duty, 1-1/2", 17 gauge

ITEM D29 HEATED HOLDING CABINET QTY: 3 /ALTERNATE BID
MANUFACTURERE: F.W.E.
MODEL: MTU-12
Heated Cabinet, mobile, (12) pair universal tray slides, (12) 18" x 26" or (24) 12" x 20" pan capacity 4-1/2" OC, adjustable on 1-1/2" increments, insulated, moisture-temp system, electronic controls, insulated, removable water reservoir, (1) flush mounted door, stainless steel interior & exterior, 5" casters (2) rigid & (2) swivel with brakes, NSF, cULus, IPX4, ENERGY STAR®
3 ea Two year limited parts & one year labor warranty, standard
3 ea For freight & shipping information, please contact factory
Accessories:
3 ea 120v/50/60/1-ph, 13.8 amps, 1650 watts, NEMA 5-15P, standard (US)
3 ea Element Upgrade
3 ea 120v/50/60/1-ph, 18.0 amps, 2150 watts, NEMA 5-20P, standard (US)

ITEM D30 FULL SIZE COMBINATION OVEN QTY: 1 /ALTERNATE BID
MANUFACTURERE: RATIONAL
MODEL: ICP 10-FULL NG 208/240V 1 PH (LM100EG)
Dimensions: 39.9(h) x 42.25(w) x 38.4(d)
Description:
(CE1GRRA.0000240) iCombi Pro® 10-Full Size Combi Oven, natural gas, (10) 18" x 26" sheet pan or (20) 12" x 20" steam pan or (10) 2/1 GN pan capacity, (5) stainless steel grids included, intelligent cooking system with (4) assistants; iDensityControl, iCookingSuite, iProductionManager, & iCareSystem, (6) operating modes, (5) cooking methods, (3) manual operating modes, 85° to 572°F temperature range, quick clean, care control, eco mode, 6-point core temperature probe, retractable hand shower, Ethernet interface, Wi-Fi enabled, 152,000 BTU, 208/240v/60Hz/1-ph, 6 ft. cord, 1.5 kW, CE, IPX5, cCSAus, NSF, ENERGY STAR-®
1 ea NOTE: All discounts subject to approval by manufacturer
1 ea 2 years parts and labor, 5 years steam generator warranty
Accessories:
1 ea Model CAP Chef Assistance Program, a RATIONAL certified Chef conducts 4 hours/location specialized application training with personnel, no charge
1 ea Model 9999.2211 RCI RATIONAL Certified Installation, new certified installation for each individual gas table-top iCombi on a stand or counter, 100 miles (200 round-trip) included.

1 ea Model 8720.1561US Installation Kit, for gas iCombi/SCC/CMP 102G (208-240/60Hz/1ph); gas iCombi/SCC/CMP 201G (120/60Hz/1ph); gas iCombi/SCC/CMP 202G (208-240/60Hz/1ph)
1 ea Model 1900.1158US Water Filtration Double Cartridge System, for full-size Combi-Duos or if used for more than (2) units, includes: (1) double head with pressure gauge, (2) R95-CLX filter & (1) filter installation kit (for each additional unit add (1) additional head & additional cartridge. Maximum (4) cartridges)
1 ea Model 9999.2271 RCI RATIONAL Certified Installation, additional installation cost for a RATIONAL Water Filter System is available when purchased with Certified Installation of RATIONAL unit
1 ea Note: The RATIONAL Water Filtration Systems helps provide consistent high-quality water to your RATIONAL cooking systems. The patented carbon block technology reduces the effects of sediment, chloramines, and chlorine while delivering the required flow rates.
1 ea Model 56.01.535 Active Green Cleaner Tabs, for all iCombi Pro/Classic, 150 pieces/bucket (minimum order quantity- 2 ea, unless ordered with a unit)
1 ea Model 56.00.562 Care Tabs, bucket of 150 packets for all iCombi Pro/Classic models and SelfCooking Center® units from 10/2008, with CareControl - Serial SG, SH or SI series (minimum order quantity: 2pcs, unless ordered with a unit)
1 ea Model 60.31.671 Base with feet, Height adjustable ¾”, for iCombi 6- and 10 full size Classic/Pro
1 ea Model 60.31.090 Stand I Stationary Oven Stand, 27-1/2"H, all sides open, stainless steel construction, for iCombi 6- and 10-full size Classic/Pro
1 ea Model 60.31.087 Stand II Stationary Oven Stand, 26-3/8"H, (14) supporting rails, side panels and top closed, rear panel open, stainless steel construction, for 6- and 10-full size Classic/Pro
1 ea Model 60.76.316 Sous-Vide Core Temperature Probe, USB connection, for 6, 10, and 20 Full and Half size models
1 ea Model 60.76.317 External Core Temperature Probe, USB connection, for 6 and 10 Half and Full size models
1 ea Model 60.75.774 Heat Shield, for right side panel, type 10-full size Pro/Classic, 2"W, stainless steel construction
1 ea Model 42.00.162 RATIONAL USB Data Memory Stick, for transferring of cooking programs and HACCP data between units & computers

ITEM D31 12 QUART KETTLE QTY: 1 /ALTERNATE BID
MANUFACTURERE: CLEVELAND RANGE
MODEL: KET12T
Description:
Tilting Kettle, electric, countertop, 12-gallon (45L) capacity, 2/3 steam jacket design, self-contained, lever style tilting, anti-drip pour spout, IPX6 water protection controls, self-locking marine style safety latch, reinforced rolled rim, support console on right, stainless steel construction with 316 series stainless steel liner, 50 PSI rated, CE
Accessories:
1 ea 1-year parts & labor warranty, standard
1 ea Model PERFORMANCE START-UP Performance start-up included at customer request after equipment is installed (free water quality check included) (mileage capped at 100 miles round trip) (contact Cleveland sales representative for details)
1 ea New construction
1 ea Model 11000115896 Installation of First Unit, 22CET3.1, 22CET6.1,22CGT3.1, 22CGT6.1, 21CET8, 21CET16, 21CGA5, Tilt Skillets SET10, SET15, T/T Kettles, KET3T, KET6T, KET12T, KGT6T, KGT12T (Note: Pricing based on 100 mile round trip, additional charges may apply, see Installation flyer for details) (Note: Customer should indicate your preferred Welbilt Authorized Service Agent for installation on the PO otherwise Welbilt RISE will select an Authorized Service Agent for this install) (Non-discountable NET pricing) (Only applicable for continental US)
1 ea Model 11000116000 Pre-installation site survey (Note: Pricing based on 100 mile round

trip, additional charges may apply, see Installation flyer for details) (Note: One required per location) (Non-discountable NET pricing) (Note: Customer should indicate your preferred Welbilt Authorized Service Agent for installation on the PO otherwise Welbilt RISE will select an Authorized Service Agent for this install) (Only applicable for continental US)

1 ea Standard wattage
1 ea 208v/60/3-ph, 9.8kW, 27.2 amps, 3 wire
1 ea Model CPK35APLG 35A Cord & Plug Kit, 8 AWG x 8' long wire, 15-50P Plug
1 ea Standard Controls, temperature control/main power ON/OFF dial with 1-10 settings, LED indicators for heat-ON, low water, standard
1 ea Model LCHE-12 Kettle Lift-Off Cover Holder, for 12 gallon kettles, per each kettle
1 ea Model CL12 Lift-Off Cover, 12 gallon, per each kettle
1 ea Model BS12 Cooking Basket (12 gallons)
1 ea Model FS12 Food Strainer, 12 gallon, for direct steam & electric series kettles, stainless steel
1 ea Model DHSK Double Faucet, angled 12” swing spray valve & 104” flexible stainless steel hose & hanger
1 ea Model ST55 Equipment Stand, open base with sliding drain drawer & splash screen, for two SET10's or two SET15's, 55" x 20", 18" high, stainless steel top and legs, allows unit to be hard piped to a floor drain
2 ea Model SG28 Retractable splash guard/pan shelves, for drain drawer, for ST55 (requires (2) SG28 drawers)
1 ea Model KAK Kettle Accessory Kit includes: clean-up brush, 36" kettle paddle, stainless steel kettle whip, 36" nylon kettle brush, nylon draw-off brush, & 18" stainless steel 24 oz kettle ladle

ITEM D32 CONVECTION STEAMER QTY: 1 /ALTERNATE BID
MANUFACTURERE: CLEVELAND RANGE
MODEL: 21CGA5
Dimensions: 29(h) x 21(w) x 30(d)
Description:

Steamcraft® Ultra 5 Convection Steamer, Gas, countertop, 1 compartment, (5) 12 x 20 x 2-1/2" pans/compartment capacity, easyTimer 90-minute timer with dial and LED digital readout in minutes and seconds, includes SureCook load compensating thermostat, manual cooking mode and descale indicator, automatic boiler blowdown, left-hand hinged door, controls on right, split water connection, steam shut-off switch, stainless steel construction, 70,000 BTU, 4" adjustable legs

1 ea 1-year parts & labor warranty, standard
1 ea 5 year pro-rated parts warranty on boilers & steam generators
1 ea 3 year Convection Steamer Door Warranty, standard
1 ea Model PERFORMANCE START-UP Performance start-up included at customer request after equipment is installed (free water quality check included) (mileage capped at 100 miles round trip) (contact Cleveland sales representative for details)
1 ea New construction
1 ea Note: When ordering installation, End user contact name and number at the site must be included with the PO to avoid delivery delays. This contact person should have up-to-the-minute status on water, drain, electric/gas availability, as well as confirmation of completion of interior and exterior doorways through which equipment must be transported
1 ea Note: When ordering installation, End user contact name and number at the site must be included with the PO to avoid delivery delays. This contact person should have up-to-the-minute status on water, drain, electric/gas availability, as well as confirmation of completion of interior and exterior doorways through which equipment must be transported
1 ea Model 11000115896 Installation of First Unit, 22CET3.1, 22CET6.1,22CGT3.1, 22CGT6.1, 21CET8, 21CET16, 21CGA5, Tilt Skillets SET10, SET15, T/T Kettles, KET3T, KET6T, KET12T, KGT6T, KGT12T (Note: Pricing based on 100 mile round trip,

additional charges may apply, see Installation flyer for details) (Note: Customer should indicate your preferred Welbilt Authorized Service Agent for installation on the PO otherwise Welbilt RISE will select an Authorized Service Agent for this install) (Non-discountable NET pricing) (Only applicable for continental US)

1 ea Model 11000116000 Pre-installation site survey (Note: Pricing based on 100 mile round trip, additional charges may apply, see Installation flyer for details) (Note: One required per location) (Non-discountable NET pricing) (Note: Customer should indicate your preferred Welbilt Authorized Service Agent for installation on the PO otherwise Welbilt RISE will select an Authorized Service Agent for this install) (Only applicable for continental US)

1 ea New construction

1 ea Note: When ordering installation, End user contact name and number at the site must be included with the PO to avoid delivery delays. This contact person should have up-to-the-minute status on water, drain, electric/gas availability, as well as confirmation of completion of interior and exterior doorways through which equipment must be transported

1 ea Note: When ordering installation, End user contact name and number at the site must be included with the PO to avoid delivery delays. This contact person should have up-to-the-minute status on water, drain, electric/gas availability, as well as confirmation of completion of interior and exterior doorways through which equipment must be transported

1 ea Model FLT0040 Water Treatment System, dual-cartridge, reduces sediments over 0.5 microns, reduces chlorine, includes (1) FLT0014 Activated Carbon Filter & Includes (1) FLT0018 Catalytic Carbon Filter

1 ea Model FLT0014 Water Treatment Cartridge, activated carbon filter, for FLT0040

1 ea Model FLT0018 Water Treatment Cartridge, catalytic carbon filter for chloramines, for FLT0040

1 ea Natural Gas

1 ea (VOS115) 115v/60/1-ph, 4.0 amps, standard

1 ea Right hand door hinging not available

1 cs Model 106174 DISSOLVE® Descaling Solution, (6) one-gallon containers with quart markings, for boiler, generator Cleveland Range steamers

1 ea Model UNISTAND25 (P/N 111717) Equipment Stand, 25" H, stainless steel

1 ea Model URK Pan Rack Kit for Unistands

ITEM D33 36” GAS RANGE QTY: 6 /ALTERNATE BID

MANUFACTURERE: VULCAN

MODEL: 36C-6BN

Dimensions: 58(h) x 36(w) x 34(d)

Description:

Endurance™ Restaurant Range, natural gas, 36", (6) 30,000 BTU burners, lift-off burner heads, convection oven, stainless steel front, sides, backriser & lift-off high shelf, fully MIG welded chassis, 6" adjustable legs, 215,000 BTU, CSA, NSF

6 ea 1 year limited parts & labor warranty, standard

6 ea 115v/60/1-ph, cord & plug, standard

Accessories:

18 ea Manual rotary ignitor with flame safety device, for open top burner, griddle, & oven pilots (one required per 12" section)

6 ea Model 36RB-N Salamander Broiler, natural gas, 36" wide, 50,000 BTU heavy duty burner, dual control, (6) grid positions, removable pan, stainless steel front, top & sides, 3/4" gas connection & pressure regulator

6 ea NOTE: Reinforced shelf required for salamander

6 ea Stainless steel backriser & lift-off high shelf, standard

APPROVED ALTERNATE: GARLAND

ITEM D34 CHARBROILER, GAS, COUNTERTOP QTY: 1 /ALTERNATE BID BY OWNER
MANUFACTURERE: VULCAN
MODEL: VACB25
Dimensions: 15.5(h) x 25.13(w) x 31(d)
Description:
Achiever Charbroiler, countertop, 25-1/8", (4) 17,000 BTU cast iron burners, infinite heat control valves, fully welded chassis, (1) drip tray, stainless steel front, sides & top trim, backsplash & grease trough, 4" adjustable legs, 68,000 BTU, CSA, NSF
6 ea 1 year limited parts & labor warranty, standard
6 ea Natural gas (specify elevation if over 2,000 ft.)
6 ea Model CUTBD-ACB25 Cutting Board, 10-5/8"D, stainless steel with Sani-Tuff® cutting board
APPROVED ALTERNATE: GARLAND

ITEM D35 GRIDDLE, GAS, COUNTERTOP QTY: 1 /ALTERNATE BID BY OWNER
MANUFACTURERE: VULCAN
MODEL: MSA24
Dimensions: 15.25(h) x 24(w) x 31.5(d)
Description:
Heavy Duty Griddle, countertop, gas, 24" W x 24" D cooking surface, 1" thick polished steel griddle plate, embedded mechanical snap action thermostat every 12", millivolt pilot safety, manual ignition, low profile, stainless steel front, sides, front grease trough, 4" back & tapered side splashes, 4" adjustable legs, 54,000 BTU, CSA Star, CSA Flame, NSF
6 ea 1 year limited parts & labor warranty, standard
6 ea Natural gas (specify elevation if over 2,000 ft.)
Accessories:
6 ea Rotary piezoelectric ignition system (no electric needed)
APPROVED ALTERNATE: GARLAND

ITEM D36 GAS FLOOR FRYER QTY: 2 /ALTERNATE BID BY OWNER
MANUFACTURERE: VULCAN
MODEL: 1VHG50DF
Dimensions: 47.75(h) x 15.63(w) x 32.69(d)
Description:
QuickFry™ Fryer, gas, high efficiency, 15-5/8"W, freestanding, 50 lbs. capacity per vat, digital control with melt cycles, electronic ignition, KleenScreen PLUS filtration system, twin baskets, stainless steel cabinet & fry tank, adjustable casters (2 swivel locking & 2 non-locking), 75,000 BTU, CSA, NSF, ENERGY STAR
6 ea 1 year limited parts & labor warranty, standard
6 ea 10 year limited tank warranty, standard.
6 ea Natural gas (specify elevation if over 2,000 ft.)
6 ea 120v/50/60/1-ph, NEMA 5-15P, standard
6 ea Model COVER-TANKVHG50 Tank Cover for 50 lbs. fryers
12 ea Model VSPGUARD-VHG50 Splash Guard, 10”H, for 50 lbs. fryers, stainless steel, removable
6 ea Model VHG50CRUMB-SCREEN Crumb Screen for 50 lbs. fryers
APPROVED ALTERNATE: DEAN

ITEM D37 TILTING SKILLET BRAISING PAN, GAS QTY:1 BY OWNER
MANUFACTURERE: VULCAN
MODEL: VG30
Dimensions: 40.5(h) x 36(w) x 35.5(d)
Description:
Braising Pan, Gas, 30-gallon capacity, 36" wide open base, manual tilt, 9" deep stainless steel pan with gallon markings, pouring lip & removable strainer, spring assist cover with drip edge, pan holder, solid state control, includes L faucet bracket, electric ignition, 12" stainless steel legs with adjustable flanged feet, 90,000 BTU, CSA Flame, CSA Star, UL EPH Classified
1 ea 1 year limited parts & labor warranty, standard

1 ea Natural gas (specify elevation if over 2,000 ft.)
1 ea NOTE: Elevation kits are field installed
1 ea 120v/60/1-ph, 9.0 amps, cord & plug, standard
1 ea Model DBFCTTS WSHDWN DOUBLE Pantry Deck Mount Faucet, with backflow preventer, washdown hose, wall hook, NSF & Lead Reduction Compliant (Note: water connection required)
1 ea Model FCTBRKT BP Enclosed box faucet bracket, add 3"
1 ea Model STRAINR-BPPOUR Pouring Lip Strainer, for braising pan
APPROVED ALTERNATE: CLEVELAND

ITEM D38 CONVECTION OVEN, ELECTRIC QTY: 1 /ALTERNATE BID
MANUFACTURERE: VULCAN
MODEL: VC44ED
Dimensions: 70(h) x 40(w) x 42.25(d)
Description:
Convection Oven, electric, double-deck, standard depth, solid state controls, temperature range 150° to 500°F, 60 minute timer with audible alarm per oven, oven cool switch for rapid cool down, independently operated stainless steel doors with double pane windows, porcelain enamel on steel oven interiors, (5) nickel plated racks per oven, stainless steel front, top, sides & 8"H legs, (2) 1/2 HP two speed oven blower-motors, 12 kW each section, NSF, cUL, UL, ENERGY STAR®
1 ea 1 year limited parts & labor warranty, standard
1 ea (2) 208v/60/3-ph, 70 amps total, standard
Accessories
1 ea Simultaneous doors, top oven
1 ea Simultaneous doors, bottom oven
2 ea Model RACK-1PCNEW Oven rack (1 PC), for VC4, VC5, SG models
2 ea Model DRIPPAN-SSDD Drip Pan (per section), stainless steel
1 ea Model HTSHLD-RH/V Heat shields for oven sides (right)
1 ea SST legs, standard
APPROVED ALTERATE: GARLAND

ITEM D39 FLOOR TROUGH QTY: 1 BY OWNER
MANUFACTURERE: IMC/TEDDY
MODEL: ASFT-1836
Dimensions: 12.25(h) x 36(w) x 18(d)
Description:
ASFT Anti-Spill Floor Trough, 36"W x 18"D, 6" deep receptacle, (1) 4" OD tailpiece, stainless steel beehive strainer, 14/304 stainless steel, brushed satin finish, NSF, Made in USA,

ITEM D40 THREE COMPARTMENT SINK QTY: 1 /ALTERNATE BID
MANUFACTURERE: ADVANCE TABCO
MODEL: 93-83-60-18RL
Dimensions: 42(h) x 101(w) x 36(d)
Description:
Regaline Sink, 3-compartment, with left & right-hand drainboards, 28" front-to-back x 20"W sink compartments, 12" deep, with 8"H backsplash, stainless steel open frame base, side crossrails, 18" drainboards, 1" adjustable bullet feet, 16 gauge 304 stainless steel, overall 36" F/B x 101" L/R, NSF
3 ea Model K-5 Drain, twist operated, 2" NPT & 1-1/2" IPS outlet connections
3 ea Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
3 ft Model K-550 Tubular rack storage, stainless steel, under drainboards (per linear foot)
2 ea Model K-493 300 Series Leg, stainless steel, welded, assembly with metal bullet feet

ITEM D41 PRE-RINSE WITH ADD ON FAUCET QTY: 1 /ALTERNATE BID
MANUFACTURERE: FISHER
MODEL: 34410
Description:
Pre-Rinse Unit, spring style, backsplash mount, 8" centers, 16" riser, 36" hose, 1.15 GPM Ultra-Spray™ PLUS spray valve with built-in spray handle clip & dish guard bumper, lever handles with color coded indexes, add-on faucet with 12" swing spout, includes wall bracket, 1/2" NPT male inlets, brass, ADA Compliant

NOTE - Model quoted replaces 34460

ITEM D42 SPASH MOUNT FAUCET QTY: 1 /ALTERNATE BID
MANUFACTURERE: FISHER
MODEL: 32530
Description:
Faucet, wall mount, 8" adjustable centers, 12" swing spout, lever handles with color coded indexes, 1/2" NPT female inlets, brass, ADA Compliant

1 ea 4 year warranty against defects in materials or workmanship, standard

ITEM D43 CLEAN DISHTABLE QTY: 1 /ALTERNATE BID
MANUFACTURERE: ADVANCE TABCO
MODEL: DTC-S70-60L
Dimensions: 44(h) x 59(w) x 30(d)
Description:
Dishtable, clean, straight design, attaches to left of dish machine operator, 10-1/2"H backsplash, 3" rolled front & side rims, stainless steel legs, with crossrails, 59"W x 30"D x 34"H, 16/304 stainless steel

1 ea SPECIFY DISH MACHINE BRAND & MODEL to ensure proper fit, refer to attached document (AQ only) or consult www.advancetabco.com for compatibility listing. Certain dish machines require modifications at additional cost not shown here
1 ea Model K-454 Side splash, integral (welded), for NSF sinks & dish tables, height matches backsplash height (specify side)
3 ft Model TA-87 Enclose back of splash (per linear foot) FOR END SPLASH OF TABLE
1 ea Model DTA-75 Provision for limit switch (limit switch by others)
1 ea Model K-76 Paint-on sound deadening under top (each)
1 ea Model DTA-SS-42 Dishtable Undershelf, 42"W x 24"D, adjustable die cast leg clamps, stainless steel, NSF (size undershelf to be at least 6" shorter than dishtable)
1 ea Model TA-94-4 16 gauge 304 stainless steel undershelf upgrade (4 lin. ft.)
4 ft Model TA-9 Rear splash, 1-1/2" high, for undershelves, (per linear foot)

ITEM D44 PANT LEG DUCT QTY: 1 /ALTERNATE BID
MANUFACTURERE: CUSTOM FABRICATORS
MODEL: CUSTOM
Description:
Dishwasher Pant Leg Duct with Trim Collar, 16/300 stainless steel construction

ITEM D45 DISHWASHER QTY: 1 /ALTERNATE BID
MANUFACTURERE: HOBART
MODEL: CL44-ADV+BUILDUP
Dimensions: 68.5(h) x 44.75(w) x 31.25(d)
Description:
Conveyor Dishwasher, single tank, Automatic Soil Removal, Drain Water Energy Recovery with factory-installed drain water tempering kit; (202) racks/hour, .45 gallon/rack, Complete Delime with Booster Guard, Touch Screen Controls with diagnostics, troubleshooting, and SmartConnect App, capless wash arms, NSF Pot & Pan mode, pumped rinse, insulated hinged doors, cULus, NSF, ENERGY STAR®, Factory Startup - Free for installations within 100 miles (accessible by public roadway) of a Hobart Service Office during normal business hours with appropriate notice; Installation beyond 100 miles or those not accessible by public roadway will be quoted by Service.

1 ea Standard warranty - 1-Year parts, labor & travel time during normal working hours within

the USA
1 ea Model CL44ADV-HTE15K Electric tank heat 15kW
1 ea Model CL44ADV-ERH18K With 18 kW Booster (default)
1 ea Model CL44ADV-ELE0AX 208v/60/3-ph
Single point connection standard (field convertible to dual point)
1 ea Model CL44ADV-HGTSTD Standard Height 19.5”H x 22”W opening, fits full-sized sheet pan, horizontal
1 ea Model CL44ADV-DIR0LR Left to right operation
1 ea Model CL-BDR0NO Without Blower Dryer
Accessories:
1 ea Model WS40-NOINSTALL Water Softening System, 2,527 grains/lb capacity, 5 gallons regeneration volume, & salt alarm, holds 1 bag of salt, pricing DOES NOT include standard installation. INSTALLATION BY AUTHORIZED HOBART SERVICE OFFICE IS RECOMMENDED (NET)
2 ea Model VNTHD/E-ADJ E-series vent hood domestic (adjustable)
5 ea Model DISHRAK-PEG20 Peg Rack
3 ea Model DISHRAK-COM20 Combination Rack
3 ea Model RACK-HOTEL Hotel Pan Rack, holds (2) 12” x 20” x 4” deep hotel / steam pans; fits standard height openings of CLEN units
3 ea Model BUNPAN-RACK Rack, bun pan
2 ea Model DISHRAK-P1400 Rack, peg type with one side open
2 ea Model SHTPAN-RACK Rack, 6 sheet pan
1 ea Model PRESREG-1/20BR 1/2" brass pressure regulator
1 ea Model 1/2INSHK-ABSRBR Water Shock Absorber Kit (2 required - 1 each incoming hot and cold water lines)
1 ea Model TBLLIM-CL Table limit switch for CL & CLEN series
1 ea Model CURTAIN-KITSTD KIT CURT'N SPLASH Standard E-SERIES
1 ea Model CL44EN-BASFETSTD Standard feet

ITEM D46 HOSE REEL QTY: 1 /ALTERNATE BID
MANUFACTURERE: FISHER
MODEL: 29851
Dimensions: 7(w) x 14.38(d)
Description:
Hose Reel Assembly, closed reel rinse wall mounted with spray valve, powder coated steel construction, 30 feet of 3/8”ID, 3 ply hose, working pressure of 200 psi, withstands 160° F water temperature, ½” NPT Female garden hose inlet
Accessories:
1 ea Model 28231 Reel Rinse Installation Kit, wall-mounted

ITEM D47 SOILED DISHTABLE “L” SHAPED QTY: 1 /ALTERNATE BID
MANUFACTURERE: ADVANCE TABCO
MODEL: DTS-D70-84R
Description:
Dishlanding-Soil Dishtable, L-shaped with landing, attaches to right of dish machine operator, 10-1/2"H backsplash, with pre-rinse sink, stainless steel legs, with crossrails, 83" long, 16/304 stainless steel
1 ea SPECIFY DISH MACHINE BRAND & MODEL to ensure proper fit, refer to attached document (AQ only) or consult www.advancetabco.com for compatibility listing. Certain dish machines require modifications at additional cost not shown here
Accessories:
1 EA K-472 FAUCET HOLE REVISION
1 EA K76 SPECIAL PRE RINSE LOCATION
1 ea Model K-508 Modification to reduce length, start with next largest size then add "K-508" to model number for sinks & dish tables
1 ea Specify length 6’-5” ON THE DISHLANDING SIDE
1 ea Model DTA-81 Leg Assembly, stainless steel with welded cross brace & stainless steel feet, for dishtables

1 ea Model K-5 Drain, twist operated, 2" NPT & 1-1/2" IPS outlet connections
1 ea Model K-4 Support Bracket, for lever waste drain handle, (1) support required for each lever drain
1 ft Model DTA-79S Double Sided Slant Solid Base Rack Sorting Shelf, table mounted (sold per linear foot) (minimum 4 ft), (NOTE: Due to angle of racks, they will NOT fit back to back)
1EA SCARP BLOCK INSTALLATION
2FT DTA-56 ADDITIONAL LENGTH ON DISHMACHINE SIDE OF TABLE

ITEM D48 STAINLESS STEEL WALL PANELS (DISHROOM) QTY: 1-LOT
MANUFACTURER: APPROVED FABRICATORS
MODEL: CUSTOM
Description:

1. Provide and install Type 304, 18-8, 22 gauge stainless steel panels on walls as shown on drawings.
2. Attach panels to masonry partitions with mastic cement (liquid nail) and stainless steel fasteners appropriate for wall type.
3. Caulk around panel edges and butt joints with clear silicon sealant.
4. Reference drawing FS501.

ITEM D49 DRYING RACKS QTY: 3/ALTERNATE BID
MANUFACTURERE: METRO
MODEL: MAX4-PR48VX4
Dimensions: 68(h) x 48(w) x 24(d)
Description:
MetroMax® 4 Mobile Drying Rack Unit, 48"W x 24"D x 68"H, 4-tier, for trays/cutting boards/sheet pans & steam pans, includes: (4) open shelf frames, (4) 63" mobile posts, (2) cutting board/tray drying racks, (2) pan racks, (4) polymer swivel casters (2 with brakes), built in Microban® antimicrobial product protection, NSF

ITEM D50 EXHAUST HOOD NIC BY OTHER TRADES

ITEM D51 UTILITY DISTRIBUTION SYSTEM QTY: 1
MANUFACTURERE: CAPTIVE AIRE
MODEL: CUSTOM
Description:

ITEM D052 EXHAUST HOOD NIC BY OTHER TRADES

ITEM D53 UTILITY DISTRIBUTION SYSTEM QTY: 1
MANUFACTURERE: CAPTIVE AIRE
MODEL: CUSTOM
Description:

ITEM D54 TRAY DRYER QTY: 1 /ALTERNATE BID
MANUFACTURERE: San-Aire Industries
MODEL: PD-100-M
Dimensions: 9.5(h) x 28(w) x 9.5(d)
Description:
PowerDry™ Kitchenware Dryer, Electric, lighted on/off rocker switch, (2) 20" x 6" x 3/8" removable aluminum filter, 826 CFM blower, adjustable air distribution louver, stainless steel housing, UL, CUL, NSF
1 ea 120v/60/1, 4.33amps, 500w, cord with NEMA 5-15P
1 ea Model SMB-PD-100M Standard Wall Mount Bracket
1 st Model FILTERX4 (SAN206) Filter Set, 6" x 20" x 3/8", washable, for PD-100M/100MCORR/100F, set of 4
1 ea Model RD-101 RapiDrain™ Kitchenware Drainer, stainless steel construction, 1" x 3/16"

flat bar with openings for water flow, 3/8" round rod cross bars, 16 ga. formed ends, 1-1/2" 90° lip

1 ea Model RD-101-E RapiDrain™ Kitchenware Drainer Extension, stainless steel construction, 1" x 3/16" flat bar with openings for water flow, 3/8" round rod cross bars, 16 ga. formed ends

ITEM D55 MOBILE WORKTABLE BY OWNER
MANUFACTURERE: ADVANCE TABCO
MODEL: MS-305
Dimensions: 35.5(h) x 60(w) x 30(d)
Description:
Work Table, 60"W x 30"D, 16 gauge 304 stainless steel top, 18 gauge stainless steel adjustable undershelf, stainless steel legs & adjustable bullet feet, NSF

2 ea Model TA-23 Table legs welded to undershelf or cross rails, shipped set up and crated (per table) Top is not welded to legs (for fully welded table specify TA-23A)

2 st Model TA-255 Casters, expanding adapter, for 1-5/8" dia. O.D. tube/table legs, 400 lb capacity per caster, blue polyurethane, non-marking, roller bearing wheel, set of (4) (2 with brakes)

20 ft Model TA-94 16 gauge 304 stainless steel undershelf upgrade (per linear foot)

2 ea Model US-30-60 Work Table Undershelf, for work tables 60"W x 30"D, 18 gauge stainless steel, NSF (actual shelf is 6" shorter than table width & depth) (suggested maximum load 300 pounds distributed weight)

20 ft Model TA-9 Rear splash, 1-1/2" high, for undershelves, (per linear foot)

ITEM D56 & D57 SPARE NUMBERS

ITEM D58 REFRIGERATED EQUIPMENT STAND QTY: 1 /ALTERNATE BID BY OWNER
MANUFACTURERE: TRAULSEN
MODEL: TE060HT
Dimensions: 26.25(h) x 60(w) x 34.13(d)
Description:
Spec-Line TE Series Refrigerated Equipment Stand, 60"W, (6) 12" x 20" x 6"D pan capacity, side by side, (2) drawers, self-contained refrigeration, stainless steel marine top, stainless steel interior & exterior, 4" casters, microprocessor controls, R290 Hydrocarbon refrigerant, 1/4 HP, 4.5 amps, cETLus, ETL-Sanitation

6 ea Oversized units with crated shipping dimensions greater or equal to 72" in length and/or 90" in height. If delivery is to a facility without a standard height dock, additional shipping charges will apply, depending on the service requested (consult factory for details)

6 ea 6-year parts & labor and 7 year compressor, standard. Visit www.traulsen.com for details

6 ea 115v/60/1-ph, cord with NEMA 5-15P, standard

6 ea Compressor located on left side, standard

6 ea 6" Cabinet length extension section (with supports - required)

6 ea Casters, 4"H (set of 6), standard

APPROVED ALTERNATE: BEVERAGE AIR

ITEM D59 STAINLESS STEEL WALL PANELS (DISHROOM) QTY: 1-LOT
MANUFACTURER: APPROVED FABRICATORS
MODEL: CUSTOM
Description:

1. Provide and install Type 304, 18-8, 22 gauge stainless steel panels on walls as shown on drawings.
2. Attach panels to masonry partitions with mastic cement (liquid nail) and stainless steel fasteners appropriate for wall type.
3. Caulk around panel edges and butt joints with clear silicon sealant.
4. Reference drawing FS501.

ITEM D61A WALL GRID SHELVING UNIT BY OWNER

MANUFACTURER: METRO
MODEL: SWK36-1A1-SR
EACH PACKAGE TO CONTAIN THE FOLLOWING
POS Sink Task Station Wall Shelving Kit, includes: (1 each) 40"Wall track, 18" x 36" Metroseal 3™ wire shelf & wire grid, wire basket, lid holder, utensil cylinder & cylinder holder (2 each) uprights, shelf supports & prong hooks (6) standard hooks, 400 lb. capacity per unit

ITEM D61B WALL GRID SHELVING UNIT BY OWNER
MANUFACTURER: METRO
MODEL: SWK36-1A2-SR
EACH PACKAGE TO CONTAIN THE FOLLOWING
POS Food Prep Task Station Wall Shelving Kit, includes: (1 each) 40"Wall track, 18" x 36" Metroseal 3™ wire shelf & wire grid, small shelf, wire basket, bin holder, small bin (2 each) uprights, shelf supports, wire baskets & prong hooks (6) standard hooks, CO5-1080, 400 lb. capacity per unit

ITEM D62 STAINLESS STEEL WALL PANELS QTY: 1-LOT
MANUFACTURER: APPROVED FABRICATORS
MODEL: CUSTOM
Description:

5. Provide and install Type 304, 18-8, 22 gauge stainless steel panels on walls as shown on drawings.
6. Attach panels to masonry partitions with mastic cement (liquid nail) and stainless steel fasteners appropriate for wall type.
7. Caulk around panel edges and butt joints with clear silicon sealant.
8. Reference drawing FS501.

ITEM D62 WATER FILTER FOR BEVERAGES BY OWNER

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