

**BRIANBOATRIGHT**  
ARCHITECT

914 PLAINFIELD AVENUE  
ORANGE PARK, FLORIDA 32073  
904•413•8028 FL: AA26003151

**PROJECT MANUAL  
AND SPECIFICATIONS FOR**

**DISTRICT OFFICE  
RENOVATION/REMODELING:  
OPERATIONS BUILDING 1 WEST END  
RENOVATIONS**

**Clay County School Board  
Project No. C-30-19/20**

**BID SET**



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Clay County School Board

**BRIAN BOATRIGHT ARCHITECT, INC.**  
914 Plainfield Ave  
Orange Park, Florida 32073

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SECTION 00009

**DESCRIPTION OF THE WORK**

**PART 1- GENERAL**

- 1.1 **Scope:** This information is for summary and general information only. The Drawings and Specifications supercede information contained in this section.
- A. **Location:** The project involves the minor remodeling and renovation of finishes and lighting of the existing District Office Operations Building 1 West end.
  - B. **Site work:** No site work for this project.
  - C. **Buildings:**
    - 1. The building is partly single-story and partly two-story.
    - 2. The building has approximately 13,663 square feet in total.
    - 3. The area of work is approximately 2,565 SF.
  - D. **Schedule:** Project to be commenced as soon as the bidding and contract is completed, and substantially complete no later than three (3) months after the Notice to Proceed.

END OF SECTION 00009

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SECTION 00010

**NOTICE TO BIDDERS**

Sealed bids will be received by the Clay County School Board until

**2:00pm on Tuesday, 9 June 2020,**  
in the Purchasing Conference Room,  
800 Center Street, Green Cove Springs, FL 32043

at which time and place all bids received will be publicly opened and read aloud for furnishing all labor and materials for the construction of:

**DISTRICT OPERATIONS OFFICE  
RENOVATION/REMODEL OF BUILDING 1 WEST**

All work shall be done according to the plans and specifications prepared by:

**BRIAN BOATRIGHT ARCHITECT, INC.**  
914 Plainfield Ave, Orange Park, FL 32073  
*email all questions to [brianoatrightaia@gmail.com](mailto:brianoatrightaia@gmail.com)*  
*include project number in subject line*

Plans are on file and open to inspection at the office of the architect and are available for purchase and on file with the following plan room:

**LDI Reprinting Center**  
550 Wells Road, Suite 8, Orange Park, FL 32073  
(904) 579-4027  
[orangepark@ldireprinting.com](mailto:orangepark@ldireprinting.com)

Addenda will be posted with the plan room listed above. Partial sets of drawings and/or specifications are not advised and neither the architect nor owner will be responsible for partial information given to subcontractors by the general contractors. ***Electronic drawings and specifications will not be distributed.***

***There will be Mandatory Pre-bid Meeting at the site on Friday, 29 May 2020, at 2:00pm per Section 00100, Part 9.2. Bidders not attending the pre-bid meeting will not be permitted to submit a bid.***

Only contractors having been pre-qualified by the Clay County School District are eligible to submit bids for this project. **Only pre-qualified Contractors should submit bids** for this project (Florida Statutes).

**DISCRIMINATION:** An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may **not** submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may **not** submit bids on leases of real property to public entity, may **not** award or perform work as a contractor,



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supplier, subcontractor, or consultant under contract with any public entity, and may **not** transact business with any public entity.

The owner reserves the right to waive any irregularities and minor technicalities or to reject any and all bids. Each bidder must deposit, with his bid, a bid bond or cashier's check in the amount of five percent (5%) of the base bid price, payable to the owner.

***The successful bidder will be required to provide a performance, labor and material bond in the amount of 100% of the accepted bid amount.***

No bidder may withdraw his bid within (60) days after the actual date of the opening thereof. Any actual or prospective bidder who disputes the reasonableness or competitiveness of the terms and conditions of the invitation to bid, contract award, or recommendation for contract award, shall file a notice of protest with the superintendent of schools within 72 hours of receipt of the bid solicitation, posting of the bid tabulations, or posting of the bid award and must file a formal written protest within ten (10) days following the filing of the notice to protest. Failure to observe such timelines will constitute a waiver of proceedings and of right to protest as stipulated in Chapter 120 of the Florida Statutes. The school board requires a protestor to post bond in accordance with Florida Statutes, Section 255.0516 F.S.

### **Protest Bond Requirement:**

Should a contractor wish to protest the bid recommendation, the protestor shall be required to post a bond as follows:

- (1) Twenty-five thousand (\$25,000.00), or 2% of the lowest accepted bid, whichever is greater, for projects valued over \$500,000.00; and
- (2) Five percent (5%) of the lowest accepted bid for all projects valued less than \$500,000.00.

Conditioned upon payment of all cost and fees, which may be adjusted against the protestor, in the administrative hearing. If at the hearing, the school board prevails, it may recover all costs and attorney's fees from the protester; if the protestor prevails, the protestor shall recover from the school board, all costs and attorney's fees.

Bid Tabulations shall be posted in the Operations Reception area at 925 Center Street, Green Cove Springs, Florida 32043, after the intended recommendation is announced on or about four (4) days after the bid opening. The Bid Tabulation will remain posted for a minimum period of 96 hours.

David Broskie, Superintendent  
Clay County District Schools

END OF SECTION 00010

SECTION 00100

**INSTRUCTIONS TO BIDDERS**

**PART 1 - SPECIFICATION TERMINOLOGY**

- 1.1 The Bidders are required to obtain a copy of AIA Document A701, 2018 Edition, for their reference.
- 1.2 **Definition of Terms:** Whenever in the Specifications the following terms or pronouns in place of them are used, their intent and meaning shall be interpreted as follows:
  - A. **Owner:** Clay County School Board, Florida.
  - B. **Architect:** Acting directly or through a duly-authorized representative.
  - C. **Inspector:** An authorized representative of the Architect or Owner assigned to inspect any of the materials, workmanship or completed work entering into the work.
  - D. **Bidder:** Any individual, firm, partnership or corporation submitting a proposal for the work contemplated.
  - E. **Surety:** The corporate body which is bound with and for the Contractor, which is primarily liable and which guarantees the faithful performance of the Agreement.
  - F. **Proposals:** The approved forms on which the Bidder will submit his bid for the work contemplated.
  - G. **Drawings:** The authorized plans and other drawings or reproductions thereof pertaining to the work to be done.
  - H. **Project Manual:** The Conditions of the Contract, detailed technical specifications and such other descriptions of the work as are set forth in any of the Contract Documents.
  - I. **Agreement:** "Agreement" shall mean the document entitled "Form of Agreement Between Contractor and Owner for Construction of Buildings", including all Addenda issued prior to execution of Agreement and all modifications issued subsequent thereto.
  - J. **Contract:** "Contract" shall mean the Contract Documents as defined and listed in the Agreement.
  - K. **Pre-Qualified Bidder:** Contractors pre-qualified to submit bids for Clay County School District projects.

**PART 2 - QUALIFICATIONS OF BIDDERS**

- 2.1 The Agreement will only be entered into with responsible contractors having been pre-qualified at the time of bid opening.

**PART 3 - FAMILIARITY WITH LAWS**

- 3.1 The Bidder is required to be familiar with all Federal, State and Local laws, ordinances, rules and regulations that in any manner affect the work. Unfamiliarity or misinterpretation on the part of the Bidder will in no way relieve him from applicable responsibilities.
- 3.2 The Contractor will be provided from the Clay County School District's Project Manager, the appropriate building permit prior to commencement of such work.

**PART 4 - PROGRESS PAYMENTS**

- 4.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments to the Contractor as provided in the Agreement. **No payment will be allowed for any material or equipment stored off the project site.**

## **PART 5 - BIDDING DOCUMENTS**

5.1 All of the descriptions of the work as well as of the instruments of procedure which are contained in and embraced by the Drawings and Specifications and including Addenda not contained therein comprise the Bidding Documents.

## **PART 6 - ALTERNATES**

6.1 Refer to Section 00105, Alternates, for any alternates.

## **PART 7 - ADDENDA**

7.1 In case the Architect finds it expedient to supplement, modify or interpret any portion of the Bidding Documents during the bidding period, such procedure will be accomplished by the issuance of written Addenda to the Bidding Documents which will be delivered or mailed to all prospective Bidders at the respective addresses furnished for such purposes.

## **PART 8 - INTERPRETATION OF BIDDING DOCUMENTS**

- 8.1 No interpretation of the meaning of the Drawings, Specifications, or other Bidding Documents, no correction of any apparent ambiguity, inconsistency or error therein will be made to any Bidder orally. Every request for such interpretation or correction should be in writing, addressed to the Architect. All such interpretation and supplemental instructions will be in the form of written Addenda to the Bidding Documents.
- 8.2 Only the interpretation or correction so given by the Architect, in writing, shall be binding and prospective Bidders are advised that no other source is authorized to give information concerning or to explain or interpret the Bidding Documents.

## **PART 9 - EXAMINATION OF BIDDING DOCUMENTS AND SITE WORK**

9.1 Bidders are required, before submitting their proposals, to visit the site of the proposed work and completely familiarize themselves with the nature and extent of the work and any local conditions that may in any manner affect the work to be performed and the equipment, materials, and labor required. They are also required to examine carefully the Drawings, Specifications and other Bidding Documents to inform themselves thoroughly regarding any and all conditions and requirements that may in any manner affect the work.

## **PART 10 - BID GUARANTEE**

10.1 **Bid Bonds (Guarantee):** Each bid must be accompanied by certified check, cashier's check, or a bid bond attached thereto, duly executed by the bidder as principal, and by a surety company admitted to do business in Florida, as a surety, such bond/check in the amount of five percent (5%) of the Base Bid Price. Certified/cashier's check will be returned by mail to all except the three (3) lowest bidders within five (5) days after opening of the bids, and the remaining checks will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if an award has been made, thirty (30) days after the date of award, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid. If a bid bond is submitted it must be signed by a Florida Licensed resident agent who holds a current power of attorney for the surety company issuing the bond.

## **PART 11 - SURETY COMPANY ACCEPTABILITY**

11.1 To be acceptable to the Owner as Surety for Bid Bonds, Performance Bonds and for Labor and Material Payment Bonds, a Surety Company shall comply with the following:

A. **IF THE BID IS \$500,000 OR LESS THE SURETY COMPANY MUST COMPLY WITH THE FOLLOWING:**

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1. Must have twice the minimum surplus and capital required by the Florida Insurance Code at the time that invitation to bid is issued;
2. Must otherwise be in compliance with the provisions of the Florida Insurance Code; and
3. Must hold a currently valid certificate of authority issued by the United State Department of the Treasury under ss. 31 U.S.C. 9304-9308.

**NOTE: IT MAY BE THE RESPONSIBILITY OF THE SURETY COMPANY OR ITS AGENT TO SUBMIT PROOF OF COMPLIANCE WITH 11.1.A: 1. 2. and 3. ABOVE, AT THE TIME THE SURETY BONDS ARE SUBMITTED TO OWNER FOR APPROVAL.**

**B. IF THE BID IS IN EXCESS OF \$500,000 THE SURETY COMPANY MUST COMPLY WITH THE FOLLOWING:**

1. The Surety Company must be admitted to do business in the State of Florida.
2. The Surety Company must have been in business and have a record of successful continuous operations for at least five years.
3. The Surety Company shall have at least the following minimum ratings according to (Best's Key Rating Guide, latest Edition.)

<u>(1)</u> <u>CONTRACT AMOUNT</u>	<u>POLICY</u> <u>HOLDER'S</u> <u>RATING*</u>	<u>REQUIRED:</u> <u>FINANCIAL</u> <u>RATING*</u>	<u>SURPLUS</u> <u>RATING</u>
\$500,000 to 750,000	A-	CLASS VIII	10-25 MIL
\$750,000 TO 1,500,000	A-	CLASS VIII	25-50 MIL
\$1,500,000 TO 2,500,000	A-	CLASS VIII	50-100 MIL
\$2,500,000 OR MORE	A-	CLASS VIII	100-250 MIL

\* From Best's Key Rating Guide, Current Edition.

- (2) Best's Policy Holder's Rating of "A" (which signifies A= Excellent) based upon good underwriting, economic management, adequate reserves for undisclosed liabilities, net resources for unusual stock and sound investment).

11.2 The Surety Company shall not expose itself to any loss on any one risk in an amount exceeding ten (10) percent of its surplus to policy holders, provided:

- A. Any risk or portion of any risk shall have been reinsured (in which case these minimum requirements contained herein also supply to the reinsuring carrier) in assuming insurer authorized or approved by the Insurance Commissioner to do such business in this State shall be deducted in determining the limitation of risk prescribed in this Section.
- B. In the case of a surety insurance company, there shall be deducted in addition to the deduction for reinsurance, the amount assumed by any co-surety.
- C. The value of any surety deposited, pledged or held subject to the content of the Surety and for the projection of the Surety.

**PART 12 - LISTING AND APPROVAL OF SUBCONTRACTORS**

12.1 In order that the Owner may be assured that only qualified and competent subcontractors will be employed on the project, each Bidder shall submit with his Proposal a list of the subcontractors who will perform the work in these Specifications as indicated by the "List of Subcontractors" form contained in these Specifications in Section 00400. The Bidder shall have determined to his

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own complete satisfaction that a listed subcontractor has been successfully engaged in this particular type of business for a reasonable length of time, has successfully completed installations comparable to that which is required by this Agreement and is qualified by technically and financially to perform that pertinent phase of this work for which he is listed. Each Subcontractor shall be currently certified and licensed to perform that phase of the work for which he is listed. Only one subcontractor shall be listed for each phase of the work. Electrical, HVAC, Plumbing, Roofing and Underground Utility Contractors shall be state-certified and present a copy of license to the Owner within 24 hours of bid opening, if requested.

- 12.2 After public opening and reading of Proposals, the Listing of Subcontractors submitted by the apparent competitive low Bidders will be read publicly. The listings or the next two low bids will be held for 30 days.
- 12.3 No change shall be made in the list of subcontractors before or after the award of a contract, unless agreed to in writing by the Owner.

### **PART 13 - PREPARATION AND SUBMISSION OF BIDS**

- 13.1 Each Bidder shall copy the proposal form on his own letterhead indicating his prices thereon in proper spaces for the entire work and for alternates on which he bids. Any erasure or other correction in the proposal may be explained or noted over the signature of the Bidder. Proposals containing any conditions, omissions, unexplained erasures, alterations, items not called for or irregularities of any kind may be rejected by the Owner.
- 13.2 Each bid must give the full business address of the Bidder and state whether he is an individual, corporation or partnership.
- 13.3 Proposals by a corporation must be signed with the legal name and seal of the corporation followed by the name of the state of its incorporation and the manual signature and designation of an officer, agent or other person authorized to bind the corporation.
- 13.4 Proposals by partnerships shall show the names of the partners and must be signed in the partnership name by one of the partners. The partnership signature shall be followed by the manual signature of the partner signing.
- 13.5 In every case, the name of the person signing and his designation shall be typed or printed below his signature. A person who affixes to his signature the work "President", "Secretary", "Agent" or other designation without disclosing his principal may be held to be individually responsible for such bid. Satisfactory evidence of the authority of an officer, agent, attorney or other person signing for a corporation and agent, attorney or other person signing for a partnership or an individual shall be furnished.
- 13.6 Bidder's proposal with all required documents shall be enclosed in a sealed envelope which shall be marked and addressed as indicated by the advertisement. If mailed the sealed envelope shall be placed within a mailing envelope, sealed, marked and addressed as above and delivered to the proper address.

### **PART 14 - BID MODIFICATION**

- 14.1 Delete any reference to Bid Modifications

### **PART 15 - WITHDRAWAL OF BIDS**

- 15.1 Bids may be withdrawn on written or telegraphic request received from Bidders prior to the time fixed for opening. Negligence on the part of the Bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened and the Bid Guarantee may be forfeited.

### **PART 16 - DISQUALIFICATION OF BIDDERS**

- 16.1 More than one bid from an individual, firm, partnership, corporation or association under the same or different names will not be considered. Reasonable grounds for believing that a Bidder

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is interested in more than one proposal for the same work will cause the rejection of all proposals in which such bidders are believed to be interested.

16.2 Contractors not already qualified by the Clay County School Board may not bid on this project.

### **PART 17 - RECEIPT AND OPENING OF BIDS**

17.1 Bids will be opened publicly at the time and place stated in the Call for Bids. The Officer whose duty it is to open them will decide when the specified time has arrived and no bids received thereafter will be considered. No responsibility will be attached to any officer for the premature opening of a bid not properly addressed and identified. At the time fixed for the opening of bids, their contents will be made public for the Bidders and others interested who may be present.

### **PART 18 - DISQUALIFICATION OF BIDS**

18.1 Any or all proposals will be rejected if there is reason to believe that collusion exists among the Bidders and no participants in such collusion will be considered in future proposals for the same work. Proposals in which the prices obviously are unbalanced may be rejected.

18.2 Contractors not previously approved by the School Board are not eligible to bid this project.

### **PART 19 - REJECTION OF BIDS**

19.1 The Owner reserves the right to reject any one or all bids, or any part of any bid, to waive any informality in any bid, and to award the purchase in the best interest of the Clay County District Schools.

### **PART 20 - AWARD OF CONTRACT**

20.1 The contract will be awarded as soon as possible to the lowest responsible Bidder provided his bid is reasonable and it is in the best interest of the Owner to accept it.

20.2 The Owner reserves the right to waive any informality in bids received when such waiver is in the interest of the Owner.

### **PART 21 - TIME OF COMPLETION AND LIQUIDATED DAMAGES**

21.1 The Work to be performed under this contract shall be commenced after receipt of the Notice to Proceed. The Date of Substantial Completion shall not be later than **90 days after Notice to Proceed**. The Work shall be finally completed within **15 calendar days** after Substantial Completion.

21.2 In as much as failure to complete the project within the time fixed in the Agreement will result in substantial injury to the Owner, and as damages arising from such failure cannot be calculated with any degree of certainty, it is hereby agreed that if the project is not substantially completed, according to the definition of "substantial completion" in Section 00800, Article 8B, of the Specifications, or within such further time, if any, as in accordance with the provisions of the contract documents shall be allowed for substantial completion, the Contractor shall pay to the Owner as liquidated damages for such delay, and not as a penalty, **one thousand dollars (\$ 1,000)** for each and every calendar day elapsing between the date fixed for substantial completion and the date such substantial completion shall have been fully accomplished, and **five hundred dollars (\$ 500)** for each and every calendar day elapsing between date fixed for Final Completion and the date such Final Completion shall have been fully accomplished. Said liquidated damages shall be payable in addition to any excess expenses or costs payable by the Contractor to the Owner under the provisions of the contract documents, except for Contractor's delays.

21.3 This provision for liquidated damages for delay shall in no manner affect the Owner's right to terminate the contract as provided in Article 14 of the General Conditions or elsewhere in the contract documents. The Owner's exercise of the right to terminate shall not release the

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Contractor from his obligation to pay said liquidated damages in the amounts set out in the Agreement.

- 21.4 It is further agreed that the Owner may deduct from the balance retained by the Owner under the provisions of Article 4 of the Agreement as the case may be, or such portion thereof as the said retained balance will cover.

### **PART 22 - BASIS FOR BIDDING, TRADE NAMES, PERFORMANCE SPECIFICATIONS**

- 22.1 For clarity of description and as a standard of comparison, certain equipment, materials, etc., have been specified by trade names or manufacturers to insure a uniform basis for bidding. The Bidder shall base his Proposal on the particular system, equipment or material specified.
- 22.2 The use of a particular trade name or manufacturer is not intended to imply a sole source relationship with that product or manufacturer. Manufacturers are invited to submit their products, in accordance with the requirements of the particular specification section, for consideration as equal to the product specified.
- 22.3 **No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.**
- a. For the purposes of this bid, this date shall be fixed as ten (10) calendar days prior to the initial bid opening date.
  - b. **If the bid date is postponed in an addendum, this date shall NOT be moved, unless this is specifically stated in the addendum postponing the bid opening.**
- 22.4 **Unsolicited and Unapproved Materials and/or Manufacturers:** Submitting prices for unsolicited and/or unapproved products to the Bidders will not be tolerated. Any product or manufacturer that has not been pre-approved in the specification or by addendum will not be approved during construction and will be rejected. The cost to provide the approved product will be solely borne by the Bidder. If there is a question about the approval of a manufacturer or product, call the Architect for verification.

### **PART 23 - FLORIDA PRODUCTS AND LABOR**

- 23.1 The Contractor's attention is called to Section 255.04, Florida Statutes, which require that on public building contracts Florida products and labor shall be used wherever price and quality are equal.

### **PART 24 - TAXES**

- 24.1 Although the Owner is not subject to the Florida Sales and Use Tax, any Contractor who purchases materials which will be used in the construction of state-owned building will not be exempted from the Sales Tax on these materials as evidenced by the following excerpt from the Florida statutes:

*"The State, any county, municipality or political subdivision of this State is exempt from the sales tax, except this exception shall not include sales of tangible personal property made to contractors employed either directly or as agents of any such government of political subdivision thereof when such tangible personal property goes into or becomes a part of public works owned by such government or political subdivision thereof."*

- 24.2 The Owner is **not** subject to:
- A. Federal Excise Taxes on materials or appliances that are incorporated into and become a part of the completed improvement.
  - B. Federal Tax on Transportation of Property.

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- 24.3 In every case of a purchase of materials to be incorporated in the work which are subject to Federal Excise Tax, the Owner will furnish to the Contractor the necessary Federal Excise Tax Exemption Certificate upon receipt of a copy of the supplier's invoice showing the item or items, the net price, and Federal Excise Tax separately.
- 24.4 The Bidder shall take these factors into consideration in preparing his proposal, including therein the cost of the State Sale and Use Tax on materials, but excluding the cost of those taxes not applicable.

### **PART 25 - PERMITS**

- 25.1 The Owner, hence the Contractor, is exempt from all county, municipal, or local building codes, interpretations, building permits and assessments of fees for building permits, and ordinances.
- 25.2 The Contractor, upon award by the School Board, will be provided the Building Permit from the Clay County School District's Project Manager. No work shall commence until the building permit has been received. The building permit shall be posted in the field office or where designated by the building official.

### **PART 26 - GOVERNING CODES FOR SCHOOL FACILITIES**

- 26.1 The Florida Building Code shall govern codes to be followed for this project.
- 26.2 All work contained under this Contract is based on the requirements contained in the following codes:
- A. 2017 Florida Building Code - Building, 6th Edition
  - B. 2017 Florida Building Code - Plumbing, 6th Edition
  - C. 2017 Florida Building Code - Mechanical, 6th Edition
  - D. 2017 Florida Building Code - Fuel Gas, 6th Edition
  - E. 2017 Florida Building Code - Accessibility, 6th Edition
  - F. 2017 Florida Building Code - Energy Conservation, 6th Edition
  - G. 2017 Florida Building Code - Existing Building, 6th Edition
  - H. 2017 Florida Fire Prevention Code (NFPA 70, NFPA 110 and NFPA 111), 6th Edition
  - J. 2014 National Electric Code (NEC)
  - K. Other Standards as referenced in other Sections

### **PART 27 - BID PROTEST**

- 27.1 Any actual or prospective bidder who disputes the reasonableness or competitiveness of terms and conditions of the Invitation to Bid or contract award recommendation shall file a Notice to Protest with Superintendent of Schools within 72 hours of receipt of bid solicitation or posting of the bid tabulation with recommendation and must file a formal written protest **within ten (10) days** following the filing of Notice to Protest. Failure to observe such timelines will constitute a waiver of proceedings and of right to protest - Chapter 120, Florida Statutes. The School Board requires a protestor to post bond in accordance with Florida Statutes, Section 255.0516 F.S.
- 27.2 **Protest Bond Requirement:** The School Board requires a protestor to post bond in accordance with Florida Statutes, Section 255.0516. Should a Bidder wish to protest the bid recommendation, the protestor shall be required to post a bond as follows:
- A. Twenty-five thousand (\$25,000.00), or 2% of the lowest accepted bid, whichever is greater, for projects valued over \$500,000.00; and
  - B. Five percent (5%) of the lowest accepted bid for all projects valued less than \$500,000.00.

Conditioned upon payment of all costs and fees, which may be adjusted against the protestor, in the Administrative Hearing. If, at the Hearing, the School Board prevails, it may recover all costs and attorney's fees from the protestor. If the protestor prevails, the protestor shall recover, from the School Board, all costs and attorney's fees.



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27.3 Bid Tabulations shall be posted outside the Operation's Meeting Room after the intended recommendation is announced, on or about four (4) days of the bid opening and after the Board's decision is made. The Bid Tabulation will remain posted for a minimum period of 96 hours.

### **PART 28 - CHECKLIST FOR BID SUBMITTAL**

28.1 The following items shall be included within the sealed bid envelope:

- A. Bid Proposal on Proposal Form.
- B. Notarized statement on Public Entity Crimes (see Section 00200 for an example, Assurance of Conformance with Public Entity Crime Law, section 287.133(2)(a), F.S.).
- C. Bid Security.
- D. List of Subcontractors

28.2 Within 24 hours, copies of subcontractor's licenses shall be submitted by the apparent low bidder to the Owner, if requested.

### **PART 29 - EXECUTION OF AGREEMENT AND BOND**

29.1 **Agreement Between Owner and Contractor:** If the Contractor is to be an individual, the Agreement shall be signed with his manual signature.

29.2 If the Contractor is a firm or company owned by an individual, the Agreement shall be executed in the name of the firm or company by the manual signature of the Owner.

29.3 If the Contractor is a Partnership, the Agreement shall be executed in the name of the partnership by the manual signature of a partner or partners.

29.4 If the Contractor is a Corporation, the Agreement shall be executed in the name of the Corporation and shall bear the corporate seal. It may be signed for the Corporation by any other officer than the President, the signature of such officer signing shall be attested by the Secretary, the executed contract shall be accompanied by a duly authenticated document, bearing the seal of the Corporation, quoting the section of the by-laws of the Corporation authorizing the Board of Directors to designate such Officer a copy of the resolution designating and authorizing him to execute on behalf of the Corporation. That document must contain a statement that the authority is in effect on the date of the execution of the contract and may not be dated earlier than the date of the execution of the Agreement. The same officer may not execute the Agreement and authenticate the document of authority.

29.5 **Performance and Payment Bond:** This bond shall be executed on behalf of the Contractor in the same manner and by the same person who executed the contract.

END OF SECTION 00100

SECTION 00200

**PUBLIC ENTITY CRIMES**

**SWORN STATEMENT UNDER SECTION 287.133(3)(a),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Bid, Proposal or Contract No. \_\_\_\_\_ for \_\_\_\_\_.

2. This sworn statement is submitted by \_\_\_\_\_  
(Name of entity submitting sworn statement)  
whose business address is \_\_\_\_\_  
\_\_\_\_\_ and  
(if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_.

(If the entity has not FEIN, include Social Security Number of the individual signing this sworn statement: \_\_\_\_\_.)

3. My name is \_\_\_\_\_ and my relationship  
(please print name of individual signing)  
to the entity named above is \_\_\_\_\_.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:  
a. A predecessor or successor of a person convicted of a public entity crime; or

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b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding thirty-six (36) months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement.  
(Please indicate which statement applies.)

\_\_\_\_\_ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_\_\_ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

\_\_\_\_\_ There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list.  
(Please attach a copy of the final order.)

\_\_\_\_\_ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearing. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

\_\_\_\_\_ The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

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\_\_\_\_\_  
(Signature)

Date: \_\_\_\_\_

STATE OF FLORIDA  
COUNTY OF \_\_\_\_\_

PERSONALLY APPEARED BEFORE ME, the undersigned authority,  
\_\_\_\_\_, who, after being first duly sworn by me,  
affixed his/her signature in the space provided above on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:

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SECTION 00300

**BID PROPOSAL FORM**

*(submit in duplicate on contractor's letterhead)*

TO: **CLAY COUNTY SCHOOL BOARD**  
800 Center Street  
Green Cove Springs, Florida 32043

FOR: **District Office Renovation/Remodeling: Operations Building 1 West End**

The undersigned, hereinafter called "Bidder", having visited the site of the proposed project and familiarized himself with the local conditions, nature and extent of the Work, and having examined carefully the drawings, specifications, the Form of Agreement, and other Contract Documents with the Bond Requirements therein, proposed to furnish all labor, materials, equipment and other items, facilities and services for the proper execution and completion of the referenced construction, in full accordance with the Drawings and Specifications prepared by the firm of Brian Boatright Architect, Inc., in full accordance with the advertisement for bids, Instructions to Bidders, Agreement, and all other documents relating thereto on file in the office of the Architect and if awarded the Contract, to complete the said work ***within the time limits specified*** for the following bid price:

**BASE BID** \_\_\_\_\_ **Dollars**    \$ \_\_\_\_\_

The following unit prices, described in detail in Section 01026, will remain in effect for the duration of the Work, until the Final Acceptance and release of retainage:

**UNIT PRICE No. 1:**    \$ \_\_\_\_\_/EA (Install Empty Duplex Box and Conduit)

**UNIT PRICE No. 2:**    \$ \_\_\_\_\_/EA (Install Empty Quad Box and Conduit)

**UNIT PRICE No. 3:**    \$ \_\_\_\_\_/SF (Plaster Skim-coat on Wall Board)

There is enclosed a certified check, cashier's check, treasurer's check, bank draft or Bid Bond in the total amount of not less than five (5%) percent of the Base Bid payable to the District School Board of Clay County as a guarantee for the purpose set out in your Instructions to Bidders.

The Bidder hereby agrees that;

- A. The base bid proposal and alternates shall remain in full force and effect for a period of sixty (60) calendar days after the time of the opening of this proposal and that the Bidder will not revoke or cancel this proposal or withdraw from the competition within the said sixty (60) calendar days.
- B. In the event the Contract is awarded to this Bidder, he will enter into a formal written Agreement with the Owner in accordance with the accepted bid within ten (10) calendar days after said Contract is submitted to him and will furnish to the Owner a Contract Performance Bond and Labor and Material Bond with good and sufficient sureties, satisfactory to the Owner, in the amount of 100% of the accepted bid, the form and terms of which shall fully comply with Section 255.05, Florida Statutes. The Bidder further agrees that in the event of the Bidder's default or breach of any of the agreements of this proposal, the said bid deposit shall be forfeited as liquidated damages.

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Acknowledgment is hereby made of receipt of the following Addenda issued during the bidding period  
(Expand list to accommodate all addenda as required):

Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

\_\_\_\_\_ A List of Subcontractors (if applicable) is included in the Bid.

In witness thereof, the Bidder has hereunto set his signature and  
affixed his seal this \_\_\_ day of \_\_\_\_\_, A.D. 20\_\_.

By: \_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Signature)

(Seal)

Title: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

Florida Construction Industries Licensing Board of Certification

\_\_\_\_\_  
(Name of Holder)

\_\_\_\_\_  
(Certificate No.)

END OF SECTION 00300

SECTION 00400

**LIST OF SUBCONTRACTORS FORM**

*(To be submitted on the Bidder's letterhead, placed in a sealed envelope and attached to proposal)*

DATE: \_\_\_\_\_

This list is an integral part of the bid submitted by: \_\_\_\_\_  
(Bidder to insert his full name and address)

For the Construction of: **District Office Renovation/Remodeling: Operations Building 1 West  
End**

The undersigned, hereinafter called the "Bidder", lists below the names of the Subcontractors who will perform the phases of the work indicated:

<b>TYPE OF WORK</b>	<b>NAME/ADDRESS OF SUBCONTRACTORS</b>
1. Plumber	_____
2. HVAC	_____
3. Electrician	_____
4. Epoxy Flooring	_____
5. Drywall	_____

END OF SECTION 00400



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SECTION 00500

**AGREEMENT AND COMPLETION FORMS**

The Bidders are required to obtain and familiarize themselves with the following forms:

<b>AIA A101-2017</b>	<b>Standard Form of Agreement Between Owner and Contractor (Stipulated Sum)</b>
<b>AIA G706</b>	<b>Contractor's Affidavit of Payment of Debts And Claims</b>
<b>AIA G706A</b>	<b>Contractor's Affidavit of Release of Liens</b>

Included in this section are the following forms which will be used for the completion of this Project:

**Substantial Completion Inspection Form (for reference)**  
**Certificate of Substantial Completion**

**Final Completion Inspection Form (for reference)**  
**Certificate of Contract Completion**

*The Owner may substitute updated or revised forms in lieu of the listed forms herein.*

# School District of Clay County Substantial Inspection Report

**Project Name:** \_\_\_\_\_  
**SDCC Project Number:** \_\_\_\_\_ **OEF Project Number:** \_\_\_\_\_  
**School/Campus:** \_\_\_\_\_  
**Contractor:** \_\_\_\_\_  
**Architect:** \_\_\_\_\_  
**Inspection Date:** \_\_\_\_\_  
**Inspected By:** \_\_\_\_\_  
**Accompanied by:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- A. Threshold Building included in project?  Yes  No  
 (If yes, has the District received the letter of certification from the Threshold Inspector?)  Yes  No

B. Systems and areas Inspected:

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| _____ Fire Alarm and Detectors      | _____ Fire Hydrant Test            |
| _____ HVAC Shut-down                | _____ Elevator Certification       |
| _____ Inter-Com System              | _____ Well Certification/Test      |
| _____ Signage                       | _____ Water Certification/Test     |
| _____ Emergency Power Shut-down     | _____ Kitchen Hood Certification   |
| _____ Emergency Generator Operation | _____ Fire Sprinkler Certification |
| _____ Emergency Lighting            | _____ Lift Station Test            |
| _____ Exiting & Exit Lights         | _____ HVAC Test & Balance          |
| _____ Glazing                       | _____ Carpet Certification/Test    |
| _____ Fire Extinguishers            | _____ DEP Certification/Clearance  |
| _____ Toilet Facilities             | _____ SJRWMD Inspection/Clearance  |
| _____ Food Preparation              | _____ Safety Conditions Interior   |
| _____ Site Lighting                 | _____ Safety Conditions Exterior   |
| _____ Site Parking                  | _____ Roofing                      |

\*See attached punch list

\_\_\_\_\_  
Project Manager's Signature

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
Architect's Signature

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
Contractor's Representative Signature

\_\_\_\_\_  
(Date)

# School District of Clay County Certificate of Substantial Inspection

Having completed all requirements as outlined within the project specifications and drawings, I certify that the project listed below is substantially completed and has been constructed in accordance with said documents.

**Project Title:** \_\_\_\_\_  
**School:** \_\_\_\_\_  
**SDCC Project Number:** \_\_\_\_\_  
**OEIS Project Number:** \_\_\_\_\_  
**Project Architect:** \_\_\_\_\_  
**Project Contractor:** \_\_\_\_\_  
**Date of Substantial Completion:** \_\_\_\_\_

\_\_\_\_\_  
Signature: Contractor      Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Architect      Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Project Manager      Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Code Enforcement      Date \_\_\_\_\_

# School District of Clay County Final Completion Inspection and Report

Date: \_\_\_\_\_  
SDCC Project Number: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Architect: \_\_\_\_\_  
SDCC Project Manager: \_\_\_\_\_

- A. All deficiencies identified as the final punch list have been identified, and a list is attached?  Yes  No
- B. The following items (as identified within the Project Manual) must be received in accordance with project specifications before a Certificate of Final Completion will be issued:

- \_\_\_\_\_ Application for Payment
- \_\_\_\_\_ Consent of Surety to Final Payment
- \_\_\_\_\_ Extra Materials (when specified)
- \_\_\_\_\_ Warranties and Bonds
- \_\_\_\_\_ Completion of the Architect/Engineer Punch List
- \_\_\_\_\_ Certificate of Contract Completion
- \_\_\_\_\_ Test and Balance Reports (if applicable)
- \_\_\_\_\_ Other Certifications, as required:
  - 1. Asbestos
  - 2. Carpet
  - 3. Lead
  - 4. Bacteriological
  - 5. Clearance letter from Dept. of Environmental Protection (DEP)
  - 6. Storm Water
  - 7. Toxic Substances
- \_\_\_\_\_ As-Built Drawings
- \_\_\_\_\_ Maintenance and Operations Manuals
- \_\_\_\_\_ Keys accepted
- \_\_\_\_\_ Other (Explain)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Contractor

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Architect

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Project Manager

# School District of Clay County Certificate of Final Inspection

Having completed all requirements as outlined within the project specifications and drawings, I certify that the project listed below has reached final completion and has been constructed in accordance with said documents.

**Project Title:**

---

**School:**

---

**SDCC Project Number:**

---

**OEFS Project Number:**

---

**Project Architect:**

---

**Project Contractor:**

---

**Date of Final Completion:**

---

\_\_\_\_\_  
Signature: Contractor

Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Architect

Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Project Manager

Date \_\_\_\_\_

\_\_\_\_\_  
Signature: Code Enforcement

Date \_\_\_\_\_



SECTION 00600

**BONDS AND CERTIFICATES**

1.1 Form for Performance and Payment Bond:

**PERFORMANCE AND PAYMENT BOND**

KNOW ALL MEN, THAT \_\_\_\_\_, hereinafter called the Principal, and \_\_\_\_\_, hereinafter called the Surety of Sureties, are held and firmly bound unto the Owner and their successors, in the sum of \_\_\_\_\_ (\$ \_\_\_\_\_) for the payment whereof the Principal and the Surety of Sureties bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

WHEREAS, The Principal has, by means of a written Agreement, dated \_\_\_\_\_, entered into a Contract with the Owner for \_\_\_\_\_ a copy of which Agreement is by reference made a part hereof.

NOW, THEREFORE, the Condition of this Obligation is such that the Principal:

- 1. Performs the Contract at the times and in the manner prescribed in the Contract, and
- 2. Promptly makes payments to all persons supplying Principal with labor, material and supplies used directly or indirectly by the Principal or subcontractors, in the prosecution of the work provided for in the Contract, as prescribed by Section 255.05, or Section 713.23, Florida Statutes, whichever is applicable to the Contract, and
- C. Pays the Obligee all loss, damages, costs and attorney's fees that the Obligee sustains because of default by the Principal under the Contract, and
- 4. Performs the guarantee of all work and materials furnished or this obligation shall be void; otherwise, it shall remain in under the Contract applicable to the work and materials, then in full force and effect.

The provisions and limitations of Section 255.05 or Section 713.23, Florida Statutes, whichever is applicable to the Contract, are incorporated in this Bond by reference.

Signed and Sealed this \_\_\_ day of \_\_\_\_\_, 20\_\_, In presence of:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

By: \_\_\_\_\_  
 By: \_\_\_\_\_

END OF SECTION 00600





SECTION 00700

**AIA GENERAL CONDITIONS**

The ***General Conditions of the Contract for Construction, AIA Document A201-2017***, issued by the American Institute of Architects, and its Supplements if any, relates directly to the Work of this Project and is hereby made a part of the Contract as though fully contained in these Specifications.

The Contractor is hereby specifically directed, as a condition of the Contract, to obtain the necessary number of copies of AIA Document A201, to acquaint himself with the Articles contained therein and to notify and apprise all Subcontractors, Sub-subcontractors, suppliers and any other parties to the Contract or individuals or agencies engaged on the Work as to its contents.

No contractual adjustments shall be made as a result of failure on the part of the Contractor to fully acquaint himself and all other parties to the Contract with the conditions of AIA Document A201.

END OF SECTION 00700



SECTION 00800

**SUPPLEMENTARY CONDITIONS**

**PART 1 - GENERAL**

- A. These Supplementary Conditions modify, extend and add to provisions of the **General Conditions of the Contract for Construction, AIA Document A201-2017**, for specific project requirements. Modifications specified herein supplement, change, delete from and add to above-referenced AIA Document A201. Where a portion of the General Conditions is modified herein, the unaltered portions of the General Conditions shall remain in effect. Paragraphs not listed herein are not modified. The General Conditions and Supplementary Conditions apply to all Sections in each Division of the Specifications and the Drawings. The Contractor shall be responsible for informing all applicable parties. This becomes especially critical when partial sets of Plans and Specifications are issued to Subcontractors not familiar with these requirements. General Contractors are responsible for verifying Bids prior to submitting the Bid.

**ARTICLE 1 - DEFINITIONS**

**1.2 Execution, Correlation and Intent:**

- A. Paragraph 1.2.3: ADD the following Subparagraphs:
- .1 In the event of conflicts or discrepancies among the Contract Documents, the Architect's interpretations will be based on the following priorities:
    - 1. The Agreement.
    - 2. Addenda, with those of later date having precedence over those of earlier date.
    - 3. The Supplementary Conditions.
    - 4. The General Conditions of the Contract for Construction.
    - 5. Drawings and Specifications.
  - .2 In case of an inconsistency between the Drawings and Specifications or within either Document as to a material, product system, dimension, size, quantity or method, the Contractor shall include in the Contract Sum the cost of providing the more expensive, better quality or greater quantity material, product, system, dimension, size quantity or method. The Architect will interpret the inconsistency and the Contract Sum will be adjusted when the intent of the Contract Documents is interpreted by the Architect and his interpretation is that the intent was to be the less expensive, lesser quality or lesser quantity material, product, system, dimension, size, quantity or method.
- B. Paragraph 1.2: ADD the following Subparagraph:
- 1.2.4 References in these Contract Documents to standards including trade associations, Federal and Military Specifications, technical societies, organizations, and associations, codes and government authorities whether specific or by implication, shall refer to the latest issue or edition in effect 30 days prior to date of receipt of Bids or date of the Agreement, if there were no Bids, unless a date is specified. The provisions of referenced standards shall not change the duties and responsibilities of the Owner, the Contractor, or the Architect, or any of their consultants, agents or employees.
  - 1.2.5 The word "provide" shall mean furnish and install the indicated term, product, material or system unless otherwise indicated.
  - 1.2.6 The terms "as shown" or "as indicated" or phrases of similar import, shall mean as shown or indicated on the Drawings.

### ARTICLE 3 - CONTRACTOR

#### 3.4 Labor and Materials:

A. Add Paragraphs 3.4.4, 3.4.5 and 3.4.6 as follows:

- 3.4.4 The Contractor shall not use or allow to be used and shall not furnish or install any material, product, equipment or tool that contains or uses asbestos or any other toxic material or substance, as determined by the U.S. Environmental Protection Agency, for use in or on the Project, whether temporary or permanent. Should the Contractor determine that a material, product or equipment that is specified or indicated in the Contract Documents contains asbestos or any other toxic material or substance, the Contractor shall not install the material, product or equipment and shall notify the Architect immediately.
- 3.4.5 Substitutions: After the Contract has been executed, the Owner and the Architect will consider a written request for substitution of products in place of those specified only under conditions set forth herein.
- .1 Materials, products, and systems are specified in the Contract Documents by manufacturer, trade name or distributor to establish a standard of the required criteria, including function, performance, dimension, appearance and quality to be met by a proposed substitution. Each application shall include name, Specification Section, Paragraph and manufacturer of the material, product, equipment or system for which it is to be substituted and a complete description of the proposed substitute including Drawings, product data, performance and test data and all other information necessary for an evaluation. A statement setting forth all changes in other materials, equipment or other portions of the Work including changes in Work of other Contracts, that incorporation of the substitute would cause or require, shall be included with the application for a substitution. The application shall include an itemized cost estimate indicating all cost and saving caused by the acceptance of the substitute. The burden of proof of merit of proposed substitute is upon the proposer.
  - .2 Substitutes shall not be incorporated in the Work without prior written approval of the substitute by the Architect.
  - .3 Where material, products, or systems are specified by one or more manufacturers with model number(s) or specific item, identification and "or approved equal" is included, only the item(s) that is specified by manufacturers with model number(s) or specific identification is approved and any other item shall be submitted for approval same as a substitution.
  - .4 Where materials, products, equipment or systems are specified by a referenced standard or performance specification, the item must be submitted for approval same as a substitute.
  - .5 Applications submitted for approval as substitutions shall be by the Contractor and not by Subcontractor or Supplier. Each item submitted for substitution shall be a separate submittal.
  - .6 Whether or not the Architect and Owner accept a proposed substitute, when notified by the Owner, the Contractor shall reimburse the Owner for the Architect's cost for the Architect and the Architect's consultants for evaluating any proposed substitute including changes required in the Contract Documents for the substitute.
  - .7 The Architect's decision of approval or disapproval of a proposed substitution shall be final.
- 3.4.6 By making requests for substitutions based on Subparagraph 3.4.4 above, the Contractor:

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- .1 Represents that the Contractor has personally investigated the proposed substitute item and determined that it is equal or superior in all respects to that specified;
- .2 Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
- .3 Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently becomes apparent; and
- .4 Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

### 3.7 **Permits, Fees, Notices, and Compliance with Laws:**

#### A. Paragraph 3.7.4: Add Subparagraph 3.7.4.1 as follows:

- .1 When data on subsurface investigations including soil borings, ground water table and other data on existing conditions above and below the ground surface is included in the Contract Documents or made available by the Architect, the data is made available for information indicating only the conditions found by said investigations and is limited to the exact locations and dates listed in the data available. The Architect and the Owner shall not be responsible for variations found to exist between data made available and actual field conditions. The Contractor shall make his own investigations of ground water table conditions and other existing conditions and shall not assume that ground water table conditions remain the same after the date and time the available data was made.

### 3.11 **Documents and Samples at the Site:**

#### A. Add Paragraph 3.11.1 as follows:

- 3.11.1 Additional requirements for Record Documents are specified in Division 1 General Requirements.

### 3.12 **Shop Drawings, Product Data and Samples:**

#### A. Add Paragraphs 3.12.11 thru 3.12.17 as follows:

- 3.12.11 Contractor shall stamp each item in each Submittal with his firm approval stamp, date and sign each copy. Contractor shall not reproduce Architect's Drawings for Shop Drawings without written approval of the Architect.
- 3.12.12 Submittal: Submit a minimum of six (6) copies of product data and Shop Drawings to the Architect. The Architect will mark-up his review comments on the copies and return three (3) of the marked-up copies of Drawings and three (3) marked-up copies of product data to the Contractor.
- 3.12.13 Mark-up: Shop Drawings and data will be reviewed by the Architect and marked APPROVED, APPROVED AS NOTED, RETURNED FOR CORRECTIONS, NOT APPROVED or RETURNED WITHOUT ACTION (or words to that effect). Submittal returned APPROVED AS NOTED need not be returned if Architect's comments are acceptable to the Contractor. Submittal returned NOT APPROVED, and RETURNED FOR CORRECTION must be resubmitted. Architect's comments will be marked in red pencil.
- 3.12.14 When submittals are rejected and returned more than two times through no fault of the Architect, then the Contractor shall reimburse the Owner for the Architect's time to review submittals that are resubmitted three or more times. The Architect's cost is defined in Paragraph 4.1.5.
- 3.12.15 Transmittal: Contractor shall use transmittal letter provided by the Architect. Submit separate transmittal letter and one (1) copy for each group of Shop

Drawings common to a portion of the Work and separate transmittal letter and one (1) copy for each Section of the Specifications. Partial Submittal are not acceptable. Each item in the Submittal must be listed in the transmittal letter. The Architect will return transmittal letter to Contractor with each returned Submittal with disposition noted for each item.

- 3.12.16 The Architect shall review the submittals within sufficient time to avoid impacting the Project schedule. The Contractor must transmit submittals in the order of construction, in sufficient quantity and complete as directed in the Specifications.
- 3.12.17 Samples: Submit samples, in the quantity required by the Specifications Section, where it is specified, accompanied by same transmittal letter as used for Drawings and product data.

**3.18 Indemnification:**

A. Add Paragraph 3.18.3 as follows:

- 3.18.3 For ten dollars (\$10.00), acknowledged to be included and paid for by the Owner, in the Contract Sum, and other good and valuable consideration, the Contractor agrees to indemnify and hold harmless the Owner and his agents and employees in accordance with the provisions of this Paragraph 3.18 and of Paragraph 3.17. For ten dollars (\$10.00), and other good and valuable consideration, to be paid to the Contractor by the Architect after execution of the Agreement by the Contractor and the Owner, the Contractor also agrees to indemnify and hold harmless the Architect and his agents, employees and his consultants in accordance with the provisions of this Paragraph 3.18 and of Paragraph 3.17.

**ARTICLE 4 - ARCHITECT**

**4.2 Communications Facilitating Contract Administration:**

A. Add to Paragraph 4.2.12 as follows:

- 4.2.12.1 Should the Contractor fail to request interpretations or questionable items in the Contract Documents, neither the Owner nor the Architect will thereafter entertain an excuse for failure to execute the Work in a satisfactory manner.
- 4.2.12.2 Should conflict occur between the Contract Documents, the Contractor is deemed to have estimated upon the more expensive method of performing the Work unless he has requested and received a written decision from the Architect before submission of his Proposal.

C. To Paragraph 4.2.13, ADD the following to the end of the paragraph:

The term "aesthetic effect" as used herein refers to color, texture, profile and juxtaposition of masses. The Architect shall be the sole interpreter of the design intent with respect to such matters, but the Architect's authority with respect thereto shall not contravene any other rights of either the Owner or the Contractor ascribed to them by other provisions of the Contract.

**4.3 Claims and Disputes:**

A. Paragraph 4.3.6: Add Subparagraph 4.3.6.1 as follows:

- 4.3.6.1 When data on subsurface investigations including soil borings, ground water table and other data on existing conditions above and below the ground surface is included in the Contract Documents or made available by the Architect, the data is made available for information indicating only the conditions found by said investigations and is limited to the exact locations and dates listed in the data available. The Architect and the Owner shall not be responsible for variations found to exist between data made available and actual field

conditions. The Contractor shall make his own investigations of ground water table conditions and other existing conditions and shall not assume that ground water table conditions remain the same after the date and time the available data was made.

## ARTICLE 5 - SUBCONTRACTORS

### 5.2 Award of Subcontracts and Other Contracts for Portions of the Work:

A. Paragraph 5.2.1: Add Subparagraph 5.2.1.1. as follows:

- .1 Not later than thirty (30) days after date of commencement, the Contractor shall furnish in writing to the Owner through the Architect the names of persons or entities proposed as manufacturers for each of the products identified in the General Requirements (Division 1 of the Specifications) and, where applicable, the name of the installing Subcontractor.

## ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### 6.1 Owner's Right to Perform Construction and to Award Separate Contracts:

A. ADD the following Section 6.1.1.1:

The term "Owner's own forces" may include a potential Subcontractor to the Contractor, provided no formal subcontract between the two exists. The Contractor is obligated to execute subcontract agreements per Article 5.1.1.

## ARTICLE 7 - CHANGES IN THE WORK

### 7.3 Construction Change Directives:

A. Paragraph 7.3.4: In the first sentence, DELETE the words ", or if no such amount is set forth in the Agreement, a reasonable amount" and substitute "*an allowance for overhead and profit in accordance with Subparagraphs 7.3.11.1 thru 7.3.11.6 below*".

B. Paragraph 7.3 - add the following Paragraph:

- 7.3.11 In Paragraph 7.3.4, the allowance for the combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:
- .1 For the Contractor, for Work performed by the Contractor's own forces, 10% of the cost.
  - .2 For the Contractor, for Work performed by the Contractor's Subcontractor, 10% of the amount due the Subcontractor.
  - .3 For each Subcontractor, or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, 10% of the cost.
  - .4 For each Subcontractor, for Work performed by that Subcontractor's Sub-subcontractors, 5% of the amount due the Sub-Subcontractor.
  - .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.4.
  - .6 In order to facilitate checking of quotations for extras or credits, all proposals, unless otherwise agreed upon, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Subcontracts shall be itemized also. In no case will a change be approved without such itemization.



## ARTICLE 9 - PAYMENTS AND COMPLETION

### 9.2 **Schedule of Values:**

#### A. Add Paragraph as follows:

- 9.2.1 The Schedule of Values shall be prepared on AIA Documents G702 and G703, Certificate for Payment. Schedule shall be itemized in CSI 16-Division format (Division 0 thru Division 16). Each major item of Work and each subcontracted item within each Division shall be itemized. Contractor's overhead, profit and other cost shall be distributed proportionately in each item. The total of the items shall equal the Contract Sum.

### 9.3 **Application for Payment:**

#### A. ADD as follows:

- 9.3.4 Make Applications for Payment monthly. Use AIA Form G702 and continuation Sheet G703 for all applications. Place sub-total or total at the bottom of each sheet and continuation sheet. Each Application for Payment shall be due on or before the first day of each month and shall be based on 90% of the Contract price of labor and materials suitably stored at the site thereof up to the 25th day of that month, less the aggregates of previous payments. Progress payments shall be made by the Owner on or before the 10th day of the month following Owner's receipt of Architect's Certificate for Payment.

### 9.6 **Progress Payments:**

#### A. ADD as follows:

- 9.6.9 Progress Payments and Final Payment to the Contractor will be made in accordance with Florida Statutes 218, Florida Prompt Payment Act.
- 9.6.10 Applications for Payment shall be accompanied by properly executed partial Releases of Lien by all Subcontractors, Laborers, and Material Suppliers who have served Notice to Owner supporting all payments made up to and including the Contractor's current Application for Payment. All partial Release of Lien for this Project shall be consistent in form and wording and shall be approved by the Owner and Architect.

### 9.11 **Liquidated Damages** (as identified in Section 00100, Part 21):

#### A. ADD as follows:

- 9.11 **Liquidated Damages:** The Owner will suffer financial loss if the Project is not Substantially Complete on the date set forth in the Contract Documents. The Contractor shall be liable for and shall pay to the Owner the sums stipulated in the Contract Documents as fixed, agreed and Liquidated Damages for each calendar date of delay until the Work is Substantially Complete. If Final Completion is not achieved within the time limits stipulated in the Contract Documents, the sums stipulated in the Contract Documents are to be levied as fixed, agreed and Liquidated Damages for each calendar date of delay.

## ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

### 10.2 **Safety of Persons and Property:**

#### A. ADD as follows:

- 10.2.9 Contractor shall provide adequate fire extinguishers on the premises during the course of the construction period of the type and size as recommended by the National Fire Protection Association, to control fires resulting from the particular

Work being performed, and the Contractor shall instruct his employees in their use. All extinguishers shall be placed in the immediate vicinity of the Work being performed ready for instant use. In the use of especially hazardous types of equipment, such as acetylene torches, welding equipment, tar pots, kettles, salamanders, etc., no Work shall be commenced or equipment used unless fire extinguishers of an approved type and capacity are placed in the working area and available for immediate use by the workmen using the above-mentioned equipment.

## ARTICLE 11 - INSURANCE

### 11.1 Contractor's Insurance and Bonds:

#### A. ADD as follows:

11.1.2.1 Contractor shall take out, pay for and maintain at all times during the prosecution of the Work under the Contract, the following forms of insurance by carriers acceptable to and approved by the Owner. The Surety Company shall have at least an A- minimum rating according to (Best's Key Rating Guide, latest Edition).

#### .1 **Statutory Workman's Compensation and Employer's Liability**

**Insurance:** The Contractor shall procure and shall maintain during the life of this Contract, Statutory Workmen's Compensation Insurance and Employer's Liability Insurance with a limit of **One Hundred Thousand Dollars (\$100,000)** for all of his employees to be engaged on the Project under this Contract. In case of any such Work sublet, the Contractor shall similarly require Subcontractors to provide the same insurance for all of the Subcontractor's employed to be engaged in such Work unless such employees are covered by the protection afforded by the Contractor's Workmans Compensation Insurance. In case any class of employees engaged in hazardous work on the Project under this Contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide, and shall cause each Subcontractor to provide, adequate Employer's Liability Insurance for the protection of such of the employees as are not otherwise protected. If exempt from Workers' Compensation Insurance they must sign a CCSB Release and Hold Harmless Form. If they are not exempt they must provide Workers' Compensation Certificate of Insurance.

.2 **General Liability and Property Damage Insurance:** The Contractor shall take out and maintain during the life of this Contract such Public Liability and Property Damage Insurance as shall protect him and any Subcontractor performing the Work covered by this Contract from claims for damages of personal injury, including accidental death, as well as from claims of property damages which may arise from operations under this Contract, including blasting when blasting is done on or in connection with this Work of this Project, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them. **The Policy shall include as insureds the Owner, Architect and Engineers** .The amounts of such insurance shall be as follows:

#### A. Comprehensive General Liability Limits:

##### Bodily Injury (Occurrence Basis)

Per Person	\$ 500,000
Per Occurrence	\$ 1,000,000

- |                 |              |
|-----------------|--------------|
| Aggregate       | \$ 2,000,000 |
| Property Damage |              |
| Per Occurrence  | \$ 500,000   |
- B. Contractual Liability as regards this Contract, as per General Conditions Article 4.18 entitled "Indemnification".
  - C. Protective Liability
    - Contractor (Independent)
    - Owner
  - D. Completed Operations.
  - E. Automobile Comprehensive Liability:
    - Combined Single Limit \$ 1,000,000
    - Charter Buses \$ 5,000,000
- Policy shall include Automobile Bodily Injury Liability Insurance covering all Contractor owned vehicles. The Contractor shall similarly require Subcontractors to provide Automobile Property Damage Liability Insurance. (NOTE: The coverage shall be amended to an "Occurrence Basis".

- .3 **Builder's Risk Insurance:** The Contractor shall effect and maintain during the life of this Project - until the Project is accepted by the Owner - an **ALL RISK** Builder's Risk Insurance Policy to include as insureds the Owner, the Architect and/or Engineer, the General Contractor, the Subcontractors and/or Sub-Subcontractors as their respective interest may appear. This policy shall include but not be limited to the perils of Fire, Lightning, Windstorm, Hurricane, Hail, Explosion, Riot, Civil Commotion, Smoke, Aircraft, Land Vehicles, Vandalism, Malicious Mischief, etc., in an amount equal to 100% of the Contract Sum (but not including excavation, filling, grading, demolition, foundations, paving, side-walks, curbs and gutters, and other similar non-insurable items). In the event it is necessary to operate permanently-installed equipment on other than a testing basis or in the event it is necessary for the Owner to occupy a part of or the entire structure, the Contractor agrees to have the Builder's Risk Insurance Policy endorsed to permit same.
- .4 **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with a satisfactory proof of carriage of the Insurance required. Certificates of Insurance will be required in duplicate for file with the Owner and Architect. Such certificates to provide that the Owner is entitled to the same notice as that given to the purchaser of the insurance in case of cancellation or any major change therein.

11.1.4 **Performance Bond and Payment Bond:** A Performance and Payment Bond is required on all projects over \$200,000 per 255.05, Florida Statutes.

### ARTICLE 13 - MISCELLANEOUS PROVISIONS

A. Add Paragraph 13.6 as follows:

13.6 **Preconstruction Conference:**

- 13.6.1 Before commencing Work, a conference will be held in the Architect's office, or other agreed upon place, for the purpose of verifying general procedures, expediting Shop Drawings and Schedules and to establish a working understanding between the parties. The Contractor, the Contractor's job Superintendent and representatives to the Architect shall attend the conference. The Contractor shall have representatives of Mechanical and Electrical and

other major Subcontractors present. The date and time of the conference shall be agreed upon by the Contractor and Architect.

**ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT**

A. ADD Paragraph 14.4 as follows:

**14.4 Termination by the Owner for Convenience:**

- 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.
- 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:
  - .1 Cease operations as directed by the Owner in the notice;
  - .2 Take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
  - .3 Except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontracts and Purchase Orders and enter into no further Subcontracts and Purchase Orders.
- 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment from the Owner on the same basis provided in Subparagraph 14.1.2.

END OF SECTION 00800



SECTION 00810

**PROGRESS PAYMENTS**

**PART 1 - GENERAL**

- 1.1 The Contractor shall, **within five (5) days from the date of the Notice to Proceed**, submit a Schedule of Values for approval to the Architect. The work shall be subdivided, as a minimum, into line items matching the index in these specifications. Each item shall be further subdivided into Contractor-purchased material costs, Direct-purchased material costs, and Labor costs. All subcontractor bids shall be broken into their component parts to comply with this section – lump sum values will not be accepted. The value of each item shall include a true proportionate amount of the Contract's overhead and profit. The sum of all such scheduled values shall equal the Contract Sum as evidenced by the Agreement. **No payments shall be issued until the Schedule of Values is approved in writing.**
- 1.2 Approved change orders shall be likewise broken down into their constituent parts in subsequent pay requests, matching the subdivision used in the initial approved Schedule of Values, and placed at the end of the Schedule of Values, Revised (updated) contraction schedules shall also accompany each progress payment.
- 1.3 The approved form of the Schedule of Values will accompany and support the Contract's periodic Applications for Payment and shall indicate the value of suitable stored material as well as labor performed and materials incorporated into the work for each subdivision of the schedule during the period for which the requisition is prepared.
- 1.4 The Owner may withhold payment should the Contractor fail to provide the above referenced documents.
- 1.5 Owner will retain **ten percent (10%)** of the amount earned by the Contractor until Final Payment is made. Upon substantial completion of the project, as determined by the Project Manager and Architect, the Owner may reduce retainage as allowed by Florida Statute.
- 1.6 Owner will at intervals, make progress payments to the Contractor as provided in the Agreement. Payment will be as follows:
  - A. Monthly payments for work completed, less 10% retainage.
  - B. Final Payment of balance due, at final completion of the project, subject to other conditions of the project documents.
- 1.7 Job will be considered 100% complete after the final inspection and acceptance by the Architect and District Schools and any other inspection required by the Architect or State Agencies.
- 1.8 The Clay County District Schools will issue payment based on F.S. 218, Timely Payment for Purposes of Construction Services.
- 1.9 The Contractor shall request such compensation except for final payment by submitting:
  - A. A properly completed and notarized Application for Progress Payment using AIA Document G703-1992 or a mutually agreed schedule.
  - B. A schedule of Contract Values using AIA Document G703-1992. A computer generated form may be used provided it contains all the information required by AIA Document G703-1992.
  - C. See Section 01700 Contract Closeout for submittals required for Final Payment.

**PART 2 - EXCLUSION OF OWNER FROM LIABILITY**

- 2.1 Notwithstanding any other provision of the Contract Documents, should the Contractor sustain loss or be damaged by act or omission of a separate Contractor, the Owner shall not be liable for any such loss or damage and the Contractor shall not be entitled to obtain any monetary relief from the Owner to compensate for any such loss or damage, but shall be limited to such recovery as it otherwise available at law from persons and/or entities other than the Owner.

**PART 3 - SUBSTITUTION OF MATERIALS AND EQUIPMENT**

- 3.1 Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. Any substitution shall be clearly identified to the Architect and it shall not be purchased or installed by the Contractor without the Architect's written approval.

**PART 4 - NOTICE TO PROCEED**

- 4.1 The Contractor shall not commence work on the Project until all preconstruction requirements and obligations specified in these Contract Documents are satisfied including the Building Permit and he has received from the Owner bonafide "Notice to Proceed".

END OF SECTION 00810

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SECTION 00860

**PROJECT DOCUMENTS**

The Architect has submitted signed and sealed Plans, Specifications, and Energy Calculations for permitting to the school district as a part of the Phase III (Final Design) submittal. Upon request after bidding and contract award, the Architect can re-send the Contractor electronic (PDF) copies of the Drawings and Specifications for use in construction.

END OF SECTION 00860





SECTION 00900

**SPECIAL CONDITIONS**

**PART 1 - COMMON REFERENCE STANDARDS**

- A. Reference in the Contract Documents to known standards such as codes, standard specifications, etc., promulgated by professional or technical associations, institutes, societies mean the latest edition of each such standard adopted and published as of the date of the Contract for the work of this Project, except where otherwise specifically indicated. The following is a representative list of such standards together with the abbreviation by which each is identified:

AAMA	Architectural Aluminum Manufacturers Association
AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWSC	American Welding Society Code
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard of National Bureau of Standards
FBC	Florida Building Code
FGMA	Flat Glass Marketing Association
NAAMM	National Association of Architectural Metal Manufacturers
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Assoc.
NFPA	National Fire Protection Association
SDI	Steel Deck Institute
SREF	State Requirements for Educational Facilities
SSPC	Steel Structures Painting Council
TCA	Tile Council of America, Inc.
UL	Underwriters' Laboratories, Inc.

**PART 2 - PROJECT MEETING**

- A. To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Architect will conduct project meetings throughout the construction period.
- B. Minutes: The Architect will compile minutes of each project meeting and will furnish three (3) copies to the Contractor and one to the Project Manager. The Contractor may make and distribute such other copies as he wishes.
- C. Except as noted below for Preconstruction meeting, project meetings will be held as necessary, but at least monthly. Coordinate as necessary to establish mutually acceptable schedule for meetings.
- D. To the maximum extent practicable, meetings will be held at the job site.

- E. Preconstruction Meeting will be scheduled after the Owner has received the signed contract from the contractor. Provide attendance by authorized representatives of the Contractor and all subcontractors identified by the Owner.

### **PART 3 - CONSTRUCTION MEETING**

- A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, in analyzing by use of Critical Path Method or PERT, and in preparation and issue of periodic reports as required below.
- B. Within ten (10) days after receipt of Notice to Proceed, submit one (1) reproducible and four (4) prints of construction schedule. Failure to comply may result in withholding progress payments until such time as construction schedule is received.
- C. Submit updated construction schedule (3 sets) along with each monthly progress payment. Failure to provide this schedule may result in payment being withheld or delayed.

### **PART 4 - PRODUCT DATA AT JOB SITE**

- A. Satisfactory evidence as to the kind and quality of all materials and equipment, in the form of shop drawings, manufacturer's literature, samples, or certification shall be readily available at the job site at all times for the Architect's inspection regardless of whether such evidence has been required in the project manual for submittal to the Architect.

### **PART 5 - TESTING LABORATORY**

- A. The Contractor shall obtain testing services to be provided by Independent Testing Laboratories. The Testing Companies will be approved in writing by the Owner.
- B. Select a testing laboratory, qualified in accordance with ASTM E329 "Recommended Practice for Inspection and Testing".
- C. Testing, when required, shall be in accordance with all pertinent codes and regulations and with the specified standards.
- D. Provide all testing laboratory facilities required to satisfactorily perform the testing required under pertinent other Sections of these Specifications and within the increments of time essential to timely completion of the work.

### **PART 6 - TESTS**

- A. The Contractor will schedule the tests giving sufficient time for the execution of the work mutually agreed upon between the Testing Laboratory and the Contractor. The Contractor is responsible for review of each section of the specifications to determine specifics of the testing requirements. ***If a required test is omitted or in conflict with the Technical Specifications, then the most strict requirements will prevail, at the Architect's discretion.***

### **PART 7 - RECORD DRAWINGS (AS-BUILTS)**

- A. In accordance with the requirements of the General Conditions, the Architect will provide the Contractor with a set of reproducible drawings of the original bidding documents, as required and at Contractor's expense as follows:
  - 1. If the Contractor elects to vary from the Contract Documents, and secures prior approval of the Architect, for any phase of the work other than those listed below, he shall record in a neat readable manner all such variances on the reproducible drawings furnished.
  - 2. For plumbing, heating, ventilating and air conditioning, electrical, and fire protection work, record drawings shall be maintained by the Contractor as the work progresses and as follows:

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- a. All deviations from sizes, locations and from all other features of all installations shown in the Contract Documents shall be recorded.
- b. In addition it shall be possible, using these drawings, to correctly and easily locate, identify and establish sizes of all piping, directions and the like, as well as all other features of work which will be concealed underground and/or in the finished building.
  - (1) Locations of underground work shall be established by dimensions to column lines of walls, locating all turns, etc., and by properly referenced centerline or invert elevations and rates of fall.
  - (2) For work concealed in the building, sufficient information shall be given so it can be located with reasonable accuracy and ease. In some cases this may be by dimension. In others it may be sufficient to illustrate the work on the drawings in relation to the spaces in the building near which it was actually installed. Architect's/Engineer's decisions shall be final.
- c. The following requirements apply to all As-Built Drawings:
  - (1) They shall be maintained at the Contractor's expense.
  - (2) All such drawings shall be done carefully and neatly by a competent draftsman and in form approved by the Architect.
  - (3) Additional drawings shall be provided as necessary for clarifications.
  - (4) They shall be kept up-to-date during the entire course of the work and shall be available on request for examination by the Architect and, when necessary, to establish clearances for other parts of the work.
  - (5) The record drawings shall be returned to the Architect on completion of the work and are subject to the approval of the Architect.
  - (6) Provide four sets of black line prints showing the locations of items not installed as shown on the original Contract Documents. These As-Built drawings are required before final acceptance and payment can be made.
  - (7) Provide laminated As-Built drawings pertaining to each system in its associated DDC equipment panel, and a diagram of the panel itself, attached to, or frame mounted on a wall adjacent to the panel. Provide one (1) complete set of laminated As-Built drawings, attached or located as directed by the Owner.
  - (8) Provide a computer disc on AutoCad Light 2000 compatible.

### **PART 8 - OPERATION AND MAINTENANCE MANUALS**

- A. Submit **Four (4)** copies of Operation and Maintenance Manual prior to indoctrination of operation and maintenance personnel. Include at least the following:
  1. Neatly typewritten index near the front of the manual, giving immediate information as to location within the Manual of all emergency data regarding the installation.
  2. Complete instructions regarding operation and maintenance of all equipment involved, including lubrication, disassembly, and reassembly.
  3. Complete nomenclature of all parts of all equipment.
  4. Complete nomenclature and part number of all replaceable parts name and address of nearest vendor, and all other pertinent data regarding procurement procedure.
  5. Electrostatic copy of all guarantees and warranties issued.
  6. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data with which this installation is not concerned.
  7. Such other data as required in pertinent other Sections of these specifications.
  8. MSDS sheet on all material used.

**PART 9 - SIGNS**

- A. No signs will be permitted on this Project except the project sign, identifying captions over offices, certain directional and warning signs required for safety and protection. Contractor shall take all necessary steps to prevent installation of any unauthorized signs and, should any appear, cause them to be removed immediately, and repair and repaint any damage caused thereby without additional cost to the Owner.
- B. Project Sign: The project sign shall consist of a 4'x 8' x 3/4" sheet of pressure treated plywood on a 4'x 4' supporting structure, painted and installed in location designated. Exact design, text and colors shall be provided by Architect, which will include the name of the building and of the Owner, any emblem selected by the Owner, the Architect's name, names of the Architect's principal consultants, the Contractor's name, and the names of the firms executing the principal parts of the Work. The sign shall be placed as directed by the Architect.

**PART 10 - SCAFFOLDS AND RUNWAYS**

- A. Contractor shall furnish, erect and maintain for duration of the Work as required, all scaffolds, runways, guard rails, platforms and similar temporary construction as may be necessary for the performance of the Contract. Such facilities shall be of type and arrangement as required for their specific use; shall be substantially constructed throughout, strongly supported, well secured, and shall comply with all applicable rules and regulations of applicable State and local codes.
- B. The several levels of the structure shall be connected by means of suitable ladders, ramps and temporary stairs; provided, however, that permanent stairways may be used for such purposes if adequately protected against damage. Open well and shafts shall be enclosed as required by OSHA.

**PART 11 - CLEANING UP**

- A. In addition to the provisions of Article 4.15 of the General Conditions, the following shall be required:
  - 1. Besides the "removal of waste materials", the following special cleaning shall be required just prior to acceptance:
    - a. Remove Stains: This work shall be done by person skilled and equipped for such work.
    - b. Remove foreign matter, marks, stains, foreign paint, fingerprints, soil and dirt from new surface
    - c. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Architect.
  - 2. In addition to clean-up provisions of the Specifications, Contractor shall take appropriate steps to prevent airborne dust due to the work of this Contract. Water shall be applied wherever practical to settle and hold dust to a minimum, particularly during excavation and moving of materials.

**PART 12 - EQUAL OPPORTUNITY**

- A. The contractor shall maintain policies of employment as follows:
  - 1. The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor shall take affirmative action to insure that applicant are employed, and the employees are treated during employment, without regard to their race, religion, color, sex, national origin or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of

compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

2. The contractor and all subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin or age.

#### **PART 13 - TOXIC SUBSTANCES**

- A. The State of Florida has prepared a list of toxic substances. The Contractor shall review the list to determine if any materials which he will be installing are listed.
- B. The Contractor will notify the Owner in writing three (3) days prior to use of any toxic substances in the construction of the facility.
- C. The Contractor shall comply with all State, Federal and Local Regulations for the use of any toxic substances.

#### **PART 14 - LEAD**

- A. No lead product shall be used on this project. The use of solder which contains lead or paint which contains lead are not acceptable on this project. Lead boots on roofs are not acceptable on this project.
- B. The Contractor is responsible for notifying all Suppliers that no lead is acceptable on this project.
- C. If by Independent Test Laboratory studies the Owner discovers any lead-containing products have been used on this project, the Contractor will be liable for necessary consulting fees, removal of lead-containing products and installation of new products of similar value.
- D. The Contractor shall provide written certification, prior to substantial completion, that no lead has been used on this project and acknowledging the agreement to replace any lead-containing products, if discovered, at no expense to the School Board. The certification shall be addressed to the Superintendent of the Clay County District Schools.

#### **PART 15 - ASBESTOS**

- A. No asbestos, or products containing asbestos, will be used on this project.
- B. The Contractor shall be responsible for notifying all Suppliers of this requirement.
- C. If by Independent Test Laboratory studies the Owner discovers any asbestos products have been used on this project, the Contractor will be liable for necessary consulting fees, removal of asbestos products and installation of new product of similar value.
- D. The Contractor shall provide written certification, prior to substantial completion, that no asbestos products have been used on this project and acknowledging the agreement to replace any asbestos products, if discovered, at no expense to the School Board. The certification shall be addressed to the Superintendent of the Clay County District Schools.

#### **PART 16 - JESSICA LUNSFORD ACT COMPLIANCE**

- A. For the purposes of this Part, the term "workers" shall include all employees of the general contractors, subcontractors and vendors supplying materials to the project site.
- B. Workers are subject to the Jessica Lunsford Act, Florida Statute (F.S.) 1012.465. This act deals with noninstructional and contractual personnel who are on school district property when students are present, have direct contact with students, or receive school district funds, and requires they pass a Level 2 background screening, as described in F.S. 1012.467.

- C. **Workers who remain at a site where students are not permitted are exempt from the background screening requirements under F.S. 1012.468 if the site is separated from the remainder of the school grounds by a single chain-link fence of 6 feet in height.**
- D. Therefore, all workers are prohibited under this contract from having direct contact with students.
- E. The project construction site must be fully fenced with a minimum 6-foot high chain-link fence and the access from the fenced compound to the remainder of the school grounds must be secured at all times. The fenced compound shall have a direct fenced access to a public road that prohibits students from entry to the access road or construction site. Signage shall be mounted on the fence near access points and on all sides stating that the construction site is off limits to unauthorized persons.
- F. Once the fenced compound has been removed (e.g. at the end of the project at, or after, substantial completion) the requirement for a Level 2 background screening are in effect, as follows:
  - 1. All workers must have passed a Level 2 background screening before being allowed on the job site. The contractor's site supervisor shall provide the School Board with a list of those persons who will be allowed on the job site.
  - 2. This supervisor shall bear the responsibility for ensuring that all persons on the site, other than School Board employees, have passed a Level 2 screening.
    - a. Screening may be obtained from the school district screening location by appointment. Results can take up to five (5) days to be received and processed. **Screening through the Sheriff's office or other locations (other than described in Item 2b below) are NOT acceptable.** Contact the Clay County School District Human Resources Department at (904) 336-6706 to arrange for an appointment.
    - b. Employees who have been screened by another school district in Florida should consult the Clay County School District Human Resources Department to see if that screening is accepted.
    - c. Photo identification with date of birth will be required at each school site for verification.
  - 3. School board employees shall spot check to determine compliance with these requirements.
  - 4. Any violation subjects the employer to a civil fine of up to \$500.00 for each time such an employee goes onto School Board property when students are present.
  - 5. It is the responsibility of each vendor/contractor to keep their list of fingerprinted, screened and cleared employees updated.
  - 6. If an employee terminates or is fired, the contractor is responsible for notifying the School Board by phone as soon as possible and following up with a notification in writing. The written notification may be faxed to the Clay County School District Human Resources Department at (904) 336-6556.
  - 7. **Employees who have not been fingerprinted, screened, and cleared will NOT be granted access to schools when students are present.**
- G. Per F.S. 1012.468 known, registered sexual offenders or predators are **prohibited** from school grounds, including the construction site fenced or not fenced, **at all times**.
- H. At any time, workers area subject to a search of his or her name or other identifying information against the registration information regarding sexual predators and sexual offenders maintained by the Department of Law Enforcement under s. 943.043 and the National Sex Offender Public Registry maintained by the United States Department of Justice. The school district shall conduct the search required under this subsection without charge or fee to the contractor.

END OF SECTION 00900

SECTION 01010

**SUMMARY OF WORK**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Conditions, Supplementary Conditions, and Special Conditions, (if any), together with Specifications Division 1 respective portions of the Drawings, shall be included as part of each Section of each Division of the Specifications.
- 1.2 This Division modifies and/or adds to the requirements of the General Conditions and Supplementary Conditions. Those portions of the General Conditions and Supplementary Conditions not modified shall remain in full force and effect as published and those additional requirements of this Division shall become a part of the "Conditions of the Contract", for this project.
- 1.3 Each and every Contractor, Subcontractor and Sub-Subcontractor and Supplier shall familiarize themselves with this Division and comply with the provisions contained herein.

**PART 2 - CONTRACTOR'S DUTIES**

**2.1 Contractor's Duties:**

- A. Except as specifically noted, provide and pay for the following to include, but not be limited to, purchase or rental:
  1. Labor, materials and equipment.
  2. Tools, construction equipment and machinery.
  3. Temporary utilities required for construction.
  4. Other facilities and services necessary for proper execution and completion of Work.
  5. Provide an on-site full-time employee to supervise, direct, and instruct and be responsible for all construction activities, to include, but not be limited to, construction procedures and sequences, work safety, techniques of construction, conducting tests and all other activities as defined or designated in the Contract Documents.
- B. Pay legally required sales, consumer and use taxes as specifically noted in the Contract Documents.
- C. Secure and pay for, as necessary for proper execution and completion of Work, and as applicable at time of starting Work, to include, but not be limited to:
  1. Permits.
  2. Government Fees.
  3. Licenses.
- D. Give required notices to Owner, Architect and regulatory agencies as required by Law or Contract Documents, to include, but not limited to:
  1. Start of Work.
  2. Disconnection or interruption of utilities.
  3. All Testing required by Contract Documents or as directed by Owner or Architect.
  4. Delivery of materials.
  5. Disruption of Owner's activities.

***Ensure that no construction activities interfere with school functions without prior approval from project manager.***
- E. Comply with all codes, ordinances, rules, regulations, orders and other legal requirements of public authorities.



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- F. Enforce strict discipline and good order among employees. Do not employ to work:
  - 1. Unfit persons, to include, but not be limited to, as follows:
    - a. Under the influences of alcohol or illegal drug substances.
    - b. Disorderly, abusive, rowdy.
    - c. Disruptive to work progress.
    - d. Any behavior deemed by Owner to be unsuitable and offensive.
  - 2. Persons not skilled in assigned tasks, to include, but not be limited to:
    - a. Unskilled.
    - b. Inexperienced.
    - c. Unlicenced.
    - d. Unsupervised.
- G. Prohibit consumption of alcohol, drugs or other substances prohibited by, and in violation of state laws and dismiss any person found to be under the influence or consuming such substances while on site whether during, before or after work hours.

2.2 **Contracts:** Construct Work under a single lump-sum contract.

### 2.3 **Work Sequence:**

- A. As Owner may occupy and use substantially completed buildings and site, coordinate Work so as not to inconvenience or disrupt the Owner's continued occupancy and use.
- B. Do not disconnect or interrupt utilities without prior approval to the Owner and Architect.
- C. Do not encumber school parking areas, access to buildings, walkways and other such school facilities with equipment, materials, trash or vehicles without prior notice to, and consent of, Owner.

### 2.4 **Use of Premises:**

- A. Confine operations at site to areas permitted by:
  - 1. Owner.
  - 2. Law.
  - 3. Ordinances.
  - 4. Permits.
  - 5. Contract Documents.
- B. Do not unreasonably encumber site with materials, equipment or trash.
- C. Assume full responsibility for protection and safekeeping of any equipment at any buildings and grounds open or accessible to workmen, whether employees of the General Contractor, Subcontractors or Sub-Subcontractors, to include, but not be limited to, damaged, abused or marred equipment, buildings, or other such facilities.
- D. Coordinate location of stored products, materials, or equipment with Owner.
- E. Confine use of site to areas as designated by Owner.
- F. Move any stored products, materials, or equipment which may interfere with operations of Owner.
- G. **Use of Site:**
  - 1. Confine use of site to buildings designated under the Contract Documents.
  - 2. Areas designated by Owner for storage.
  - 3. Maintain a clean site at all times.

2.5 **Reference Standards:** Where references or standard specifications, (i.e., Federal Specifications, ASTM, ANSI, ACI, etc.) are made a part of these Specifications, they shall be the Latest Edition or revision effective on date and acceptable to local building authorities.

END OF SECTION 01010

SECTION 01026

**UNIT PRICES**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** It is the intent of this section to provide for unit prices for listed items in quantities shown and for additional quantities that may be required by Owner or Architect/Engineer as being necessary for a complete, secure installation.
- 1.4 **Inclusions:**
  - A. Within each Unit Price, include labor, materials, equipment, mobilization, overhead, profit, and including, but not limited to, handling, storing, protecting, connecting, adjusting, testing, finishing, cleaning, and completing. Demolition, removal and disposal of existing materials for each Unit Price shall be included as part of the Unit Price.
  - B. Execute work covered by a Unit Price in same manner as if included in a stipulated sum.
  - C. Include, as a part of the Base Bid, the sum of each allotted measurements for each Unit Price item.

**PART 2 - PRODUCTS**

- A. The Unit Prices are defined as follows, by number:

**UNIT PRICE No. 1: Cost each to Install Empty Duplex Box and Conduit.** Cost, each, to install empty electrical duplex receptacle box with 1" conduit (in wall) to above the ceiling. Include multi-port data cover as specified on electrical drawings and specifications. Receptacle to be installed at the same elevation and to the same specifications as indicated on the electrical drawings and specifications.

**UNIT PRICE No. 2: Cost each to Install Empty Quad Box and Conduit.** Cost, each, to install empty electrical quad receptacle box with 1" conduit (in wall) to above the ceiling. Include multi-port data cover as specified on electrical drawings and specifications. Receptacle to be installed at the same elevation and to the same specifications as indicated on the electrical drawings and specifications.

**UNIT PRICE No. 3: Plaster Skim-coat on Wall Board.** Cost per square foot to provide plaster skim-coat over installed wall board to a Level 4 finish, suitable for a smooth paint finish, completely hiding all patching or wall unevenness.

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**PART 3 - EXECUTION** Not used.

END OF SECTION 01026

SECTION 01040

**COORDINATION, INSPECTION AND PROTECTION**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions, (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 The Contractor shall compare and coordinated all Drawings and Specifications. When in the opinion of the Contractor, a discrepancy exists, and he shall promptly report it to the Architect for proper adjustment before proceeding with the work.
- 1.3 In the event that certain features of the construction are not fully shown on the Drawings, then their construction shall be of the same character as for similar conditions that are shown or noted.
- 1.4 Prior to commencing any work, the Contractor shall satisfy himself as to the accuracy of all survey data as indicated in these Plans and Specifications and/or as provided by the Owner. Should the Contractor discover any inaccuracies, error or omissions in the data survey, he shall immediately notify the Architect in order that proper adjustments can be anticipated and ordered. Commencement by the Contractor of any work shall be held as an acceptance of the survey data by him after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions or inaccuracies of the said survey data.
- 1.5 **General Coordination:**
  - A. Coordinate the work of all trades so that any related work or items shown or specified elsewhere throughout the documents are included and the work completed as intended.
  - B. Coordinate the work of all trades so that each will have sufficient space and time within which to work properly and efficiently.
  - C. Changes in the intended design of the project as a result of improperly-coordinated construction work will not be allowed. Delays in the work caused by rejections of installed materials due to improper coordination, and as otherwise specified, will not be considered valid justification for extensions of Contract time if such are requested by the Contractor.
- 1.6 **Altering of Structural Members:**
  - A. No structural member shall be omitted, notched, cut blocked out or altered for any reason without express written prior approval by the Architect.
  - B. If any structural member is found to have been altered it shall be corrected as directed by the Architect at no additional cost.
- 1.7 No deviation in the location of plumbing, mechanical, or electrical as shown will be allowed without approval of the Architect.

**PART 2 - PRODUCTS**

- 2.1 Each trade shall review the work required of other trades and be award of what products will be installed adjacent to their work. Complete, approved submittals and show drawings of the other trades shall be available for review at the job site at all times.

**PART 3 - EXECUTION**

- 3.1 All areas, substrates and conditions under which any and/or all materials are to be installed shall be inspected and any conditions detrimental to proper and timely completion of the installation shall be documented to the Architect. Work shall only proceed when such conditions have been properly corrected.
- 3.2 Protection: Coordinate the work of each trade so that upon completion of any installation protective conditions are maintained to ensure the work will be without damage or deterioration at the time of acceptance.

**PART 4 - INSPECTION PROCEDURES**

- 4.1 The Contractor shall request from the Clay County District Schools Code Enforcement Department all inspections identified on the appropriate building permit. This request shall be made a minimum of 24 hours in advance of the desired inspection time. The request shall be made in writing. A copy shall also be sent to the project Architect that he will coordinate the particular engineer to be present as required.
- 4.2 The Building Code inspector will sign off once the inspections have been successfully accomplished.
- 4.3 Should a particular section fail an inspection, the Contractor shall make appropriate correction and re-submit for reinspection. Provide 24 hours notice again.
- 4.4 The Contractor is required by the specifications to perform other test and inspections. The Contractor shall maintain in the field office copies of all test reports for review by the Building Code Inspector.

END OF SECTION 01040

SECTION 01042

**DIRECT PURCHASING**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the Work specified in this Section.
- 1.2 **Description:** The Owner is exempt from sales tax on the purchase of construction materials. The Owner has elected to exercise this right to purchase directly various construction materials, supplies, and equipment that may be a part of this Contract. Such direct purchase shall be without any additional cost to the Owner. The Owner shall, via Purchase Orders (PO), purchase the materials and the Contractor shall assist the Owner in the preparation of the purchase orders. The materials shall be purchased from the Vendors selected by the Contractor for the price originally negotiated by the Contractor.
- 1.3 The Contract Amount shall be reduced by the net, undiscounted amount of the purchase orders plus all sales taxes. This reduction in the Contract Amount will occur through a **Change Order**, which will reference the Purchase Order effecting the change.
- 1.4 Issuance of Purchase Orders by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased. **The Contractor shall remain fully responsible for coordination, correct quantities ordered, submittals, protection, storage, scheduling, shipping, security, expediting, receiving, installation, cleaning and all applicable warranties.** The Contractor must maintain his Builder's Risk policy to include materials stored on-site and materials installed on site.
- 1.5 It is recognized that the Contractor may encounter additional overhead costs in assisting the Owner with this task. The Contractor is charged with including all additional costs as a part of the Base Bid.
- 1.6 No payment will be made for material stored off-site. Payment is contingent on the receipt of properly verified and approved delivery tickets.
- 1.7 All invoices must contain the Purchase Order Number in order to be paid.
- 1.8 **Terms:** For the purpose of this Section the following terms will be defined:
  - A. **Material:** Any material, supply, or item of equipment intended for permanent installation in the Project.
  - B. **Vendor:** A company supplying materials to the Project, whether such provision includes installation or not.
  - C. **Vendor Purchase Order (VPO):** A material list and price quote by a Vendor required for issuance of a Purchase Order by the Owner.
  - D. **Purchase Order (PO):** An authorization issued by the Owner for the supply of stated materials and agreement to pay quoted price for material upon verification of delivery.

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- E. **Delivery Ticket:** A receipt issued by the Vendor on a business -like form indicating the date, quantity, and type of materials delivered to the site and referencing a Vendor's invoice or the Purchase Order.

### **PART 2 - PRODUCTS**

Not applicable.

### **PART 3 - EXECUTION**

- 3.1 Each Subcontractor, or Vendor if no Subcontractor is involved in the installation of the material, shall issue a Vendor's Purchase Order (VPO) addressed to the Owner and submitted to the Contractor for review and approval prior to submission to the Owner's representative. The VPO shall contain the following minimum information:
  - 1. Date of Issuance
  - 2. Project name and location
  - 3. Vendor's full business name
  - 4. Vendor's full business address
  - 5. Vendor's business telephone number and email address
  - 6. Description of materials
  - 7. Quantity of each material
  - 8. Unit cost of each material
  - 9. Extended price of each material (quantity times unit cost)
  - 10. Sale tax on materials
  - 11. No shipping and handling will be paid by the Owner
  - 12. Total price (extended prices plus sales tax)
  - 13. Signature and printed name of the authorizing agent for the Subcontractor or Vendor, including address
  - 14. Signature and printed name of the authorizing agent for the Contractor
- 3.2 The Owner will issue a Purchase Order in the amount of the Vendor's Purchase Order less the sales tax. The Purchase Order will contain the following minimum information
  - 1. Date of issuance.
  - 2. Project name and location.
  - 3. Vendor's full business name.
  - 4. Vendor's full business address.
  - 5. Reiteration of the authorized quantity, material description, unit cost, and extended price for each material.
  - 6. Total price
  - 7. Signature and printed name of approving agent for the Owner.
  - 8. Signature and printed name of authorizing agent for the Owner.

The PO will be emailed directly to the Vendor with a copy retained by the Owner and copies emailed to the Contractor to be submitted/provided to the Subcontractor.

- 3.3 Upon receipt of the PO by the Vendor, the Vendor shall issue an invoice to the Owner for payment on materials. The invoice shall clearly reference the PO number.
- 3.4 All materials are to be received on the site with the Vendor's delivery ticket. Delivery tickets are to be collected, verified as to accuracy, quantity and product, and signed by the Contractor, or the Contractor's on-site representative.

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- 3.5 The Owner will issue payment to the Vendor for the amount of the approved invoice from the Contractor. In order to maintain timely payments, it will be the responsibility of the Subcontractor/Vendor and the Contractor to process invoices in accordance with the payment schedule. Any late fees incurred as a result of the Contractor's failure to process invoices in a timely manner (when an invoice is faxed to the Contractor for approval the Contractor shall respond back to the District within one week [approval or disapproval] will be paid by the Contractor.
- 3.6 The Contractor shall be responsible for maintaining a summary of materials purchased and tax savings for inclusion on the AIA Form G702, Application and Certificate for Payment. The total cost of goods directly purchased by the Owner shall appear on Line 8 and the total sales tax savings of goods directly purchased by the Owner shall appear on Line 9. Both lines will then be deducted from the Contract Amount via Change Order when determining payment due to the Contractor.
- 3.7 Examples of the following forms are included in this section.
  1. Vendor Purchase Order



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**VENDOR PURCHASE ORDER**

**PROJECT:** District Office  
Renovation/Remodeling:  
Operations Building 1 West End

**DATE:** \_\_\_\_\_  
**BID PACKAGE NO.** \_\_\_\_\_  
**DELIVER TO:** \_\_\_\_\_

**ADDRESS:**  
**CITY/ST:**

**DELIVERY DATE:** \_\_\_\_\_

**VENDOR:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Print Vendor's Name, Address, City State, Zip Code.)

**CONTACT PERSON:** \_\_\_\_\_  
**PHONE:** \_\_\_\_\_ **EMAIL:** \_\_\_\_\_

QUANTITY	DESCRIPTION OF MATERIALS	UNIT COST	PRICE
<b>THIS IS TO REQUEST A PURCHASE ORDER ONLY. VENDOR MUST SEND INVOICE AND DELIVER MATERIALS TO SITE TO RECEIVE PAYMENT.</b>		<b>SUBTOTAL</b>	
		<b>SALES TAX</b>	
		<b>TOTAL</b>	

\_\_\_\_\_  
(Signature) Phone Number (Signature) Phone Number

\_\_\_\_\_  
Email Email

\_\_\_\_\_  
(Signature) Phone Number (Signature) Phone Number

\_\_\_\_\_  
Email Authorized Agent for Subcontractor  
Email Authorized Agent for Subcontractor

END OF SECTION 01042

SECTION 01060

**CODES, PERMITS AND FEES**

**PART 1 - GENERAL:**

**1.1 Standards:**

- A. The codes and regulations adopted by the School District and State Authorities govern the construction of this project. The following codes apply specifically to this project and all aspects of construction shall conform to the strictest requirements of these codes:
  - 1. Florida Building Code, 6th Edition (2017).
  - 2. Florida Existing Building Code, 6th Edition (2017).
  - 3. Florida Fire Prevention Code, 6th Edition (2017).

**1.2 Laws, Codes and Ordinances:**

- A. Contractor and all Subcontractors shall comply with all laws, codes, and ordinances applicable to the work. This shall include federal, state, county and/or municipal entities having jurisdiction. If governing laws, codes or ordinances conflict with this specification, then the laws, codes or ordinances shall take precedence, except where these specifications exceed them in quality of materials or labor, then the specifications shall be followed. When a conflict occurs, the Architect shall be notified before proceeding with the work.

**1.3 Workmanship:**

- A. Except as otherwise required by this Section, all products and workmanship shall conform to the best quality and practices recognized by the agencies, associations, councils, etc., as specified in individual Sections.
- B. In the absence of specified standards, the Contractor shall conform to the requirements of the most widely recognized standards for each particular portion of the work.

**1.4 Fees and Permits:**

- A. The Contractor shall obtain and pay for any and all fees, including impact fees or downstream pollution charges, and all permits which may be required in connection with the execution of this Work. He shall pay for other temporary or permanent permits, licenses or highway fees required, including legal notices and legal fees required unless otherwise specified in these Specifications.

**PART 2 - PRODUCTS:** Not Applicable.

**PART 3 - EXECUTION:**

**3.1 Copies:**

- A. Provide the Architect and Owner with copies of all permits as they are issued. Secure approvals and certificates of inspection and occupancy that may be required by authorities having jurisdiction over the work. All permit originals shall be included in the Close-Out Documents submitted at the close of the Project.

END OF SECTION 01060



SECTION 01070

**CUTTING AND PATCHING**

**PART 1 - GENERAL:**

**1.1 Description:**

- A. Execute cutting, fitting or patching of Work required to:
  - 1. Make existing and new work fit properly.
  - 2. Uncover existing work to provide for installation of new work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace Work not conforming to Contract Documents.
  - 5. Install specified work in existing construction.
  - 6. Remove samples of installed Work as specified or designated and directed by Owner and/or Architect for testing.

**1.2 Samples:**

- A. Should conditions of work indicate a need for a change of materials or methods, submit a written recommendation to the Architect, including, but not limited to:
  - 1. Conditions necessitating change.
  - 2. Recommendations for alternative materials and methods.
  - 3. Submittals for substitute materials.
- B. Submit written notice to the Owner and Architect designating what period of time the work will be uncovered to allow for observation.

**1.3 Payment for Costs:**

- A. Costs incurred and caused by ill-timed sequences of installation, defective materials, unacceptable methods of installation or Work not conforming to Contract Documents, including, but not limited to, additional architectural or engineering fees, testing, removal and replacement costs shall be borne by the Contractor.
- B. Costs incurred and caused by Work done through written instructions and directions of the Owner or Architect, other than the removal and replacement of defective or non-conforming work, will be borne by the Owner.

**1.4 Inspection:**

- A. Inspect existing conditions of Work, including elements subject to movement or damage during:
  - 1. Cutting and patching.
  - 2. Demolition.
- B. After uncovering Work, inspect conditions affecting installation of new products.

**1.5 Preparation:**

- A. Prior to cutting:
  - 1. Provide shoring, bracing and support as required to maintain structural integrity of Work.
  - 2. Provide protection for other portions of Project.
  - 3. Provide protection from the elements.

**1.6 Performance:**

- A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances and finishes.

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- B. Execute cutting and demolition by methods which will prevent damage to other Work and or owner's property, and provide proper surfaces to receive installation of repairs and new Work.
- C. Restore Work which has been cut or removed, and install new products to provide completed Work in accord with Contract Documents.
- D. Refinish adjacent or entire surfaces as necessary to provide a uniform finish and appearance.

END OF SECTION 01070

SECTION 01150

**SUBSTITUTION REQUESTS**  
**(only permitted during bidding)**

**PART 1 - GENERAL**

**1.1 Description:**

- A. Substitution requests are **only** accepted during the bidding phase and require the approval of the Architect in writing to be considered acceptable.
- B. **"OR EQUAL":**
  - 1. Where the phrase "or equal", or "or equal as approved by the Architect", occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically approved in writing by the Architect.
  - 2. This bid time substitution request process supercedes any and all "or equal" statements in the specification manual.
  - 3. The decision of the Architect shall be final.
- C. Bidders are responsible for reviewing the entire set of Contract Documents. Neither the Architect, nor the Owner, shall be responsible for errors by Bidders as a result of the receipt of partial information. Note that some products or systems are integrated and substitution requests shall take this into consideration.

**1.2 Submittal of Substitution Requests:**

- A. During bidding, the Architect will consider written requests for substitutions, **received no later than ten (10) days prior to the originally advertised Bid Date**. Requests received after that time will not be considered and will be rejected without review. Note that this means that any request should be made as quickly as possible, in order to allow time for questions from the Architect, and possible follow-up information. If the requested follow-up information is not received at least 13 days prior to the Bid Date, allowing time for review, then the submitted substitution will be rejected.
- B. **Collateral Changes:** In connection with the use of any substitute item approved by the Architect it shall be the Bidder's, and ultimately the awarded Contractor's, responsibility to see that such items meet all space requirements and that any alterations to connecting items necessitated by use of the alternate items are properly made. Starters, connections and other accessories are to be included and their requirements coordinated with other Subcontractors, with no increase in cost to the Owner.
- C. **Basis of Design:** Specific reference in the specifications to any article, device, product, materials, fixture, form or type of construction, etc. by name, make or catalog number, shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. Specific reference in the specifications does not exempt the Bidder or product manufacturer from meeting all of the specific technical requirements of the Specifications. Substitutions for Basis of Design products or systems shall comply with all physical, performance and aesthetic characteristics of the Basis of Design. Compliance only with ASTM or other testing standards does not constitute an acceptable waiver for acceptance.
- D. **Bidder Representation:** In making request for substitutions, or by including an approved substitution product in his bid, the Bidder represents:
  - 1. He has personally investigated the proposed product or method and determined that it is equal or superior in all respects to that specified.
  - 2. He will provide the same guarantee for the substitution as for the product or the method specified.

3. He will coordinate the installation of the accepted substitution into work, making such changes as may be required for work to be complete in all respects.
  4. He waives all claims for additional costs related to the substitution which consequently becomes apparent.
  5. The manufacturer will warrant that his material used for this application is acceptable.
- E. **Request for Prior Approval Format:** In order to allow the fullest competition, consistent with the Owner's interests, the Architect will give consideration, prior to submission of proposals, to requests for approval of products and materials competitive with and similar to those specified by proprietary name. To be considered and in order to facilitate the Architect's review of requests for approval of substitutions for specified products or materials, all such requests shall be made in writing using the "Substitution Request for Prior Approval" form at the end of this section. ***Failure to include this form, or complete in its entirety, with the submittal will result in the submittal being rejected without review.***

### 1.3 Supporting Data:

- A. Include the following minimum data:
1. Manufacturer cut sheet of the specific product proposed. Do **not** include the manufacturer's entire catalog of products.
  2. Performance and test data that indicates the proposed product's performance characteristics. The relevant specification section will indicate the performance requirements that must be met. Ensure that each performance item in the specification section is addressed in the proposed product's data. Clearly identify applicable portions of the data.
  3. Warranty information that confirms that the proposed product meets or exceeds the warranty requirements listed in the relevant specification section.
  4. Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.
  5. Provide any additional information which would aid the Architect in making an informed decision. Include side-by-side product comparisons, technical data, laboratory test results, product drawings, photographs, etc.
- B. Include any form or information specifically requested in the relevant specification section that is required for substitution consideration, such as a list of installer experience.
- C. Ensure that the **specific** system or product is identified. Submittal of a manufacturer's name or entire product line for consideration as "equal" is not acceptable. The burden of proof rests with the party proposing the substitution. ***The Architect will not conduct research into the product line to see which model was intended as the substitution.*** Any such submittal will be rejected without further review.
- D. The Individual or Firm requesting a substitution is equal or superior to the specified product. Failure to provide clear, accurate, and adequate documentation will be grounds for rejection. Any re-submittal will be handled as a new request.

### 1.4 Samples and Mockups:

- A. Certain products will require the inclusion of a sample or mock-up for consideration. For example, brick typically requires a strap sample showing the full range; and casework typically requires submittal of a mock-up that demonstrates that the specific construction requirements can be met.
- B. Refer to the relevant specification section for specific requirements for approval. If unsure, submit the question to the Architect in writing for clarification.
- C. All architectural finishes will require the submittal of samples using the same components and assemblies (such as the same primer and coats of finish paint) that are specified for use in the Project.

1.5 **Notification:**

- A. Products and materials that have been approved by the Architect will be listed in Addenda to the Bidding Documents furnished to all Bidders. **Following the receipt of Bids, no further requests for substitution of products or materials will be considered.**

1.6 **Requests for Substitutions during Construction:**

- A. Substitutions are not permitted during construction. Required submittals, such as shop drawings, shall be for products listed in the specifications as pre-approved, or in an addendum as an approved substitution. In no case shall the Contractor submit a product for review during construction that does not meet the above two requirements. Any such submittal will be returned unreviewed and neither the Owner, nor the Architect, shall be charged with delaying the Project.
- B. In cases of extreme need, such as the sudden discontinuation of a specified product, the Architect will consider Contractor's request for substitution when the following conditions are satisfied. **If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.**
  - 1. Statement why the specified product cannot be provided. If it is no longer available, the Contractor shall document efforts at finding the product through every available means.
  - 2. 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.
  - 3. Requested substitution does not require extensive revisions to the Contract Documents.
  - 4. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 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 subcontractor, and the 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 subcontractors involved.



**SUBSTITUTION REQUEST FOR PRIOR APPROVAL**  
*(to be submitted during bidding)*

Date of Request: \_\_\_\_\_  
 Bid Date: \_\_\_\_\_  
 Project Name: \_\_\_\_\_

Name of Party Making Request: \_\_\_\_\_

Specified Item: \_\_\_\_\_  
 Specification Section and Paragraph: \_\_\_\_\_

Proposed Substitute: *(Model No.)* \_\_\_\_\_  
 Manufacturer: \_\_\_\_\_

*(the following section may be expanded as necessary)*

Deviations from the Specified Item: <i>(List all deviations, no matter how seemingly inconsequential)</i>	
Manufacturer's Recommendations for Use and Installation: <i>(List all recommendations)</i>	
Change in Other Work to Permit Use of Proposed Substitute: <i>(List changes, submit drawings, if required, for clarity)</i>	
Technical Data to Support Request for Approval: <i>(List designations met, submit testing reports, etc.)</i>	
Other Supporting Data: <i>(Submit brochures, samples, Drawings, etc.)</i>	

**Certification:** *(If request is made by Prime Bidder)*

"I have personally examined the Contract Documents and certify that any changes whatsoever to the proposed work required by the use of this substitute product have been identified and will be included in my Base Bid".

Signed: \_\_\_\_\_

**Certification:** *(If request is made by Manufacturer)*

"I have personally examined the Contract Documents and certify that I will attach to and make a part of my pricing to all Bidders the changes to any or all details, space or weight requirements, utility requirements etc., necessary to accommodate the equipment or product for which I request approval".

Signed: \_\_\_\_\_

SECTION 01200

**JOB SITE ADMINISTRATION**

**PART 1 - GENERAL**

**1.1 Supervision:**

- A. The Contractor shall provide a qualified, full-time Superintendent at the project site throughout the construction. The Superintendent shall maintain at the job site a complete and accessible file containing all submittals, shop drawings and samples approved by the Architect as well as supplemental erection or installation instructions for these items.
- B. The Superintendent (project foreman) or his designee will be present on the job site at all times the project site is manned by the Contractor or any Subcontractor. This will ensure the Architect or Owner representative will have access to a representative of the Contractor at all times.
- C. The Superintendent shall henceforth make every effort to expeditiously coordinate all phases of the work, including the required reporting procedures, to obtain the end result within the full purpose and intent of the Drawings and Specifications for the Project.
- D. The Superintendent will ensure that any Owner-supplied equipment or materials left in the construction area shall not become a victim of theft, damage, or destruction.
- E. The Contractor shall not remove the existing Superintendent without first notifying the Architect in writing. And then only after providing the new Superintendent enough time to familiarize himself with the project.

**1.2 Field Office:**

- A. The Contractor at his discretion shall furnish, equip and maintain at the job site a temporary field office for the use of the Superintendent and occasional use by the Architect or his representatives. The office shall be weathertight, with a telephone, and adequate heating, ventilation and cooling. Lighting and furnishings shall be adequate for reading blueprints. These facilities shall be property of the Contractor and shall be removed by him upon completion of the Work. Coordinate location of field office and storage structures with owner.

- 1.3 Access to the Site:** Access to the site and construction operations shall at no time interfere with the normal business operations of neighboring buildings or their parking, nor cause damage to any of the existing buildings, paving, utilities or landscaping. In the event that any should occur, the Contractor shall repair, replace or otherwise correct the damage at his own expense.

- 1.4 Site Maintenance:** The Contractor shall maintain the building and site in a safe manner, free from accumulation of construction debris. Clean and remove debris from the site at least once a week.

- 1.5 Public Access:** Comply with the requirements of the governing authorities concerning the use of the public streets and right-of-ways for deliveries, access and construction. Maintain in good condition and repair or replace pavement, curbs, utilities and other improvements damaged during construction to the satisfaction of the governing authority having jurisdiction.

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1.6 **Pre-construction Conference:**

- A. Before beginning work at the site the Contractor shall attend a pre-construction conference scheduled by the Architect and bring with him the Superintendent employed for this project. At this time all parties concerned will discuss the project under contract and prepare a program of procedure in keeping with requirements of the Drawings and Specifications.
- B. The purpose of this conference will be to discuss and clarify contract administration procedures which will be employed during construction.
- C. The pre-construction meeting shall be held at time and date to be determined by the Architect.
- D. Attendance:
  - 1. Owner
  - 2. Architect
  - 3. Engineers
  - 4. Contractor
  - 5. Superintendent
  - 6. Subcontractors
- E. Agenda
  - 1. Construction schedule.
  - 2. Critical work sequencing.
  - 3. Coordination of Subcontractors.
  - 4. Designation of responsible personnel and duties.
  - 5. Processing of field decisions and Change Orders.
  - 6. Submittals.
  - 7. Use of premises and site.
  - 8. Delivery of materials.
  - 9. Security procedures.
  - 10. Permits and Approvals, including Pay Requests.
  - 11. Other pertinent issues.

END OF SECTION 01200

SECTION 01300

**SUBMITTAL PROCEDURES**

(Digital)

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions, (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Summary:**
- A. Section includes requirements for the administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
  - B. Related Sections, where applicable:
    - 1. Section 00810, Progress Payments, for submitting Applications for Payment and the schedule of values.
    - 2. Section 01320, Progress Reporting, for submitting schedules and reports, including Contractor's construction schedule.
    - 3. Section 01730, Operation & Maintenance Manuals, for submitting operation and maintenance manuals.
    - 4. Section 01721, Project Record Documents, for submitting record Drawings, record Specifications, and record Product Data.
    - 5. Section 01740, Demonstration and Training, for submitting video recordings of demonstration of equipment and training of Owner's personnel.
- 1.3 **Definitions:**
- A. **Action Submittals:** Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.
  - B. **Informational Submittals:** Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.
  - C. **Portable Document Format (PDF):** An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.
- 1.4 **Submittal Administrative Requirements:**
- A. **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. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
    - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

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4. 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.
- B. **Processing Time:** Allow 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 resubmittals.
  1. **Initial Review:** Allow ten (10) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. **Intermediate Review:** If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. **Resubmittal Review:** Allow five (5) days for review of each resubmittal.
  4. **Concurrent Consultant Review:** Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to other parties, allow fifteen (15) days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- C. **Identification and Information:** In addition to transmittal form identification, place a permanent label or title block on each paper copy submittal item 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 .
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Construction Manager.
    - e. Name of Contractor.
    - f. Name of subcontractor.
    - g. Name of supplier.
    - h. Name of manufacturer.
    - i. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use sequential numbering, with G-, M-, or E- prefix to differentiate between various disciplines, General, Mechanical, or Electrical (e.g. G-1, M-1, etc.) Resubmittals shall include an alphabetic suffix (e.g. G-1A).
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification of product, assembly, etc., included in submittal.
- D. **Identification and Information:** Identify and incorporate information in each digital submittal file as follows:
  1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01).

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Resubmittals shall use the next sequential decimal number (e.g., LNHS-061000.02).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Include the following information on an inserted cover sheet:
  - a. Project name.
  - b. Date.
  - c. Name and address of Architect.
  - d. Name of Construction Manager.
  - e. Name of Contractor.
  - f. Name of firm or entity that prepared submittal.
  - g. Name of subcontractor.
  - h. Name of supplier.
  - i. Name of manufacturer.
  - j. Number and title of appropriate Specification Section.
  - k. Drawing number and detail references, as appropriate.
  - l. Location(s) where product is to be installed, as appropriate.
  - m. Related physical samples submitted directly.
  - n. Other necessary identification of product, assembly, etc., included in submittal.
5. Include the following information as keywords in the digital file metadata:
  - a. Project name.
  - b. Number and title of appropriate Specification Section.
  - c. Manufacturer name.
  - d. Product name.
- E. **Options:** Identify options requiring selection by the Architect.
- F. **Deviations:** Identify deviations from the Contract Documents on submittals.
- G. **Additional Paper Copies:** Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
  1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
- H. **Transmittal:** Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using two transmittal forms. Architect will discard submittals received from sources other than Contractor.
  1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect, and/or Construction Manager, on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- I. **Resubmittals:** Make resubmittals 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 with approval notation from Architect's action stamp.
- J. **Distribution:** Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

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- K. **Use for Construction:** Use only final submittals that are marked with approval notation from Architect's action stamp.

### 1.5 Construction Schedule:

- A. The Contractor, within ten (10) days of award of the Contract, shall prepare and submit, with approval of the Architect, a complete graphic construction schedule showing dates upon which each item or Subdivision of the work shall begin and end. Schedule shall also show required delivery dates for material or equipment to be supplied by the Owner.
- B. The graphic schedule shall be divided into at least weekly periods so that at any period the actual state of the work may be clearly determined.
- C. Schedule shall be updated monthly and distributed to appropriate agencies.

- 1.6 **Manufacturer's Specifications:** Where the name of a concern or manufacturer is mentioned on the Drawings or in Specifications in reference to his required service or product, and no qualifications or specification of such is included, then the material gauges, details of manufacturer, finish, etc., shall be in accordance with his standard practice, directions or specifications. The Contractor shall be responsible for any infringement of patents, royalties, or copyrights which may be incurred thereby.

- 1.7 **Substitutions:** All substitutions will be strictly bound by Section 01150, Substitution Requests. **All requests for substitutions shall only be accepted during the bidding period.** After the bid opening, the only products that shall be submitted are those expressly named in specification sections or approved in an addendum. Submittal of non-approved products will result in summary rejection of the submittal.

### 1.8 Warranties and Guarantees:

- A. **Warranties and guarantees shall begin on the official date of substantial completion and shall be in effect for specified duration. Include all specific items covered, company name(s) and addresses and names of person authorized to warrant or guarantee items, if not blanket coverage.**
- B. If, within any guarantee period, repairs or changes are required in connection with the guarantee work which, in the opinion of the Architect or Engineer, is rendered necessary as the result of the use of materials, equipment or workmanship which are defective or inferior or not in accordance with the terms of the Contract, the Contractor shall promptly, upon receipt of notice from the Owner, and without expense to the Owner, proceed to:
  - 1. Place in satisfactory condition in every particular, all of such guaranteed work, correct all defects therein, and;
  - 2. Make good all damages to the structure or site or equipment or contents thereof which, in the opinion of the Architect or Engineer, are the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract; and
  - 3. Make good any work or materials or the equipment and contents of structures or site disturbed in fulfilling any such guarantee.
- C. If the Contractor, after notice, fails to proceed promptly to comply with the terms of guarantee, the Owner may have the defects corrected and the Contractor and his Surety shall be liable for all expenses incurred.

## PART 2 - PRODUCTS

2.1 **Submittal Procedures:**

- A. Shop Drawings and submittals as required by other Sections of these Specifications ***shall be submitted prior to the commencement of work.***
- B. **General Submittal Procedure Requirements:** Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  - 1. Submit digital submittals via email as PDF digital files.
    - a. Architect, through Construction Manager, will return annotated file. Annotate and retain one copy of file as a digital Project record document file.
  - 2. Post digital submittals exceeding emailable size as PDF files directly to the Architect's FTP site specifically established for Project.
    - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project record document file.
  - 3. **Closeout Submittals and Maintenance Material Submittals:** Comply with requirements specified in Sections 01700, Project Close-out, and 01730, Operation & Maintenance Manuals.
  - 4. **Certificates and Certifications Submittals:** Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  - 5. **Test and Inspection Reports Submittals:** Comply with requirements specified in Sections 01400, Quality Requirements, and 01410, Testing Laboratory Services.
- B. **Product Data:** Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard published data are not suitable or available for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Standard color charts.
    - c. Statement of compliance with specified referenced standards.
    - d. Testing by recognized testing agency.
    - e. Application of testing agency labels and seals.
    - f. Notation of coordination requirements.
    - g. Availability and delivery time information.
  - 4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  - 5. Submit Product Data before or concurrent with Samples.
  - 6. Submit Product Data in the following format:
    - a. PDF file.
- C. **Shop Drawings:** Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  - 1. **Preparation:** Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:



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- a. Identification of products.
  - b. Schedules.
  - c. Compliance with specified standards.
  - d. Notation of coordination requirements.
  - e. Notation of dimensions established by field measurement.
  - f. Relationship and attachment to adjoining construction clearly indicated.
  - g. Seal and signature of professional engineer if specified.
2. Submit Shop Drawings in the following format:
    - a. PDF file.
- D. **Samples:** Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  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 of applicable Specification Section and paragraph (e.g. 01300, 2.1.A.1.).
  3. **Disposition:** Maintain sets of approved Samples at Project site, available for quality control comparisons throughout the course of construction activity. Sample sets will be used to determine final acceptance of construction associated with samples.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  4. **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; remainder will be returned.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least two sets of paired units that show approximate limits of variations.
- E. **Subcontract List:** Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.

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1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
  4. Submit subcontract list in the following format:
    - a. PDF file.
- F. **Qualification Data:** Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- G. **Welding Certificates:** Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.
- H. **Installer Certificates:** Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- I. **Manufacturer Certificates:** Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- J. **Product Certificates:** Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- K. **Material Certificates:** Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- L. **Material Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- M. **Product Test Reports:** Submit 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.
- N. **Research Reports:** Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. 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.
- O. **Schedule of Tests and Inspections:** Comply with requirements specified in Sections 01400, Quality Requirements, and 01410, Testing Laboratory Services.
- P. **Preconstruction Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- Q. **Compatibility Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests

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performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

- R. **Field Test Reports:** Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- S. **Maintenance Data:** Comply with requirements specified in Section 01730, Operation & Maintenance Manuals.
- T. **Design Data:** Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

### PART 3 - EXECUTION

#### 3.1 Contractor's Review:

- A. **Action and Informational Submittals:** Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. **Project Closeout and Maintenance/Material Submittals:** Refer to requirements in Section 01700, Project Close-out.
- C. **Approval Stamp:** Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents. Approval stamp actions and statements shall conform with Transmittal Form actions and statements.

#### 3.2 Architect's Action:

- A. **General:** Architect will not review submittals that do not bear Contractor's approval stamp and signature, and will return them without action.
- B. **Action Submittals:** Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will indicate on the accompanying Transmittal Form the appropriate action.
- C. **Informational Submittals:** Architect will review each submittal and will return it to indicate it does or does not comply with requirements. Architect will forward each submittal to Contractor only, to be distributed by Contractor as is appropriate.
- D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01300

SECTION 01320

**PROGRESS REPORTING**

**PART 1 - GENERAL**

- 1.1 **Submission of Construction Schedule:** Within **ten (10)** days after the date of the Owner's issuance of a Notice to Proceed, the Contractor shall prepare and submit to the Architect **four (4)** copies of the proposed Construction Schedule graphically depicting the activities required to complete the project, and showing the sequence in which the Contractor proposes each such activity to occur and the duration (dates of commencement and completion, respectively) of each such activity. The schedule shall, as a minimum, separate the work as outlined in the various specification sections. The Architect shall have the right to request further subdivision of the schedule to clarify the construction sequencing.
- 1.2 **Monthly Review of Schedule:** At least once each month, the Architect shall determine whether the Construction Schedule developed and submitted by the Contractor meets the requirements stated above and whether the progress of the Work complies with the Contractor's schedule. Failure of the Contractor to develop and submit a Construction Schedule as aforesaid shall be sufficient grounds for the Architect to find the Contractor in substantial default and certify to the Owner that sufficient cause exists to terminate the Contract or to withhold any payment.
- 1.3 **Progress Charting:** Following the development and submittal of the Construction Schedule, the Contractor shall, at the end of each calendar month, update and/or revise the Construction Schedule to show the actual progress of the Work performed and the occurrence of all events which have affected or will affect the progress of the work yet to be performed. Each such update and/or revision to the Construction Schedule shall be submitted to the Architect in duplicate. Failure of the Contractor to update, revise and submit the Construction Schedule as aforesaid shall be sufficient grounds for the Architect to find the Contractor in substantial default and certify to the Owner that sufficient cause exists to terminate the Contract or to withhold payment to the Contractor until a schedule or schedule update acceptable to the Architect is submitted.
- 1.4 **Early Substantial Completion:**
  - A. The Contractor shall have the option of scheduling a Substantial Completion earlier than the date established by the Contract Documents for Substantial Completion; provided the earlier Substantial Completion date is acceptable to the Owner. The consideration of an early completion will be entertained only as a matter of convenience to the Contractor and shall not change the date for Substantial Completion established by the Contract Documents or be otherwise binding on the Owner or anyone under the Owner's control. Should events occur during the performance of the Work which would justify the granting of an extension of the Contract Time pursuant to the provision of Article 8 of the General Conditions which form a part of the Contract Documents, the Contractor shall be entitled to receive only such an extension of the Contract Time as is determined by the Architect to be due the Contractor as follows:
    1. In the event the current Contractor's schedule indicates completion **ahead of** the contractually established date for Substantial Completion, the time extension to the Contract shall be determined as the total time directly affecting the critical path of the

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schedule and will be added to the end date of the schedule thereby making a new end date beyond the contractual completion date.

2. In the event the current Contractor's schedule indicates completion **at or after** the contractually established date for Substantial Completion, the time extension shall only be added to the contractually established date for Substantial Completion and shall be determined by the Architect as the portion of delay time directly affecting the critical path of the current approved contract schedule.

### **PART 2 - PRODUCTS**

#### **2.1 Submission:**

- A. As accompaniment to the monthly updated Progress Schedule, the Contractor shall submit a Monthly Progress Report in a concise format approved by the Architect. The Monthly Progress Report shall address separately each of the following topics:
  1. General progress of the work during the preceding month.
  2. Progress outlook for the upcoming month.
  3. Change Orders, including status of any pending changes in the work.
  4. Delays in the work during the preceding month; current or anticipated delays; any decisions required.
  5. Information needed from the Architect or Engineer.
  6. Information needed from the Owner.

END OF SECTION 01320

SECTION 01410

**TESTING LABORATORY SERVICES**

**PART 1 - GENERAL**

**1.1 Description:**

- A. Specific requirements of tests specified in other Specification Sections shall be provided in addition to requirements specified in this Section.
- B. Record reports are specified in Section 01721, Project Record Documents.

**1.2 Cost of Testing:** The Contractor shall employ and pay an independent Testing Laboratory to perform tests and to submit test reports.

**1.3 Test Reports:**

- A. Test reports shall be submitted in accordance with the Construction Schedule, and in no case longer than twenty-four (24) hours after the time the tests are completed.
- B. Identify test reports by project title, Architect's project number, project location, location of test on project, type of test, section where test is specified in Contract Documents, name of the Testing Laboratory, and person(s) conducting test.
- C. Reports Contents: Provide test results and interpretations of results. Describe the conditions at the test site at time of testing. Render professional opinion regarding compliance of work tested with requirements specified and indicated on Drawings. Recommend additional work required by test results.
- D. Provide a minimum of **three (3)** copies of each report to the Architect for distribution to the Owner and Engineers, as necessary.

END OF SECTION 01410

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SECTION 01500

**TEMPORARY FACILITIES**

**PART 1 - GENERAL**

**1.1 Description:**

- A. Work included: Temporary facilities and controls required for this project include, but are not necessarily limited to:
  - 1. Temporary utilities such as water and electricity.
  - 2. Field offices and sheds.
  - 3. Sanitary facilities.
  - 4. Enclosures and coverings such as fencing, tarpaulins, barricades and canopies.
  - 5. Construction site security.
  - 6. Fire protection.
  - 7. Traffic maintenance and control.
- B. Related Work Described Elsewhere:
  - 1. Compliance with safety regulations: Compliance with all requirements of pertinent regulations is described in General Conditions.
  - 2. Subcontractor Equipment: Except for equipment furnished by Subcontractors, all other equipment shall comply with all requirements of pertinent safety regulations. The ladders, hoists, planks and similar items normally furnished by individual trades in execution of their own portions of the work are not part of this Section of these Specifications.
  - 3. Utility Hook-Up: Installation and hook-up of the various utility lines are the responsibility of the contractor.

**1.2 Product Handling:**

- A. Protection: Use all means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of the work.
- B. Replacements: In the event of loss or damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

**PART 2 - PRODUCTS**

**2.1 Utilities:**

- A. Temporary Utilities:
  - 1. General: Provide and pay all costs for all gas, water and electricity required for the performance of the work.
  - 2. Temporary Piping:
    - a. Furnish and install all necessary temporary piping and, upon completion of the work, remove all such temporary piping.
    - b. Where the installation of water meters are required to obtain temporary water, install meters of a size to accommodate requirements of the finished project.
    - c. Where the existing water system at the project site does not have sufficient pressure to provide water at outlets, provide temporary pumps, tanks and compressors as necessary to produce required pressures.
  - 3. Temporary Electricity:



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- a. Furnish and install all necessary temporary wiring and associated equipment.
  - b. Furnish and install area distribution boxes so located that the individual trades may use their own construction-type extension cords to obtain proper power and artificial lighting at all points where required by inspectors and for safety.
  - c. Should a building or portion of the project be occupied by Owner after Substantial Completion but before Final Acceptance, the metered cost of electricity for the occupied portion will be borne by Owner from the time of partial occupancy until Final Completion.
4. Telephone: Mobile phone service is acceptable for this project. Wired phone service can be provided at the discretion of the contractor and bear all costs.

### 2.2 Sanitary Facilities:

- A. Furnish and install all required temporary toilet facilities for use by all personnel. Comply with all minimum requirements of public agencies having jurisdiction. Maintain in a sanitary condition at all times.
- B. Permanent plumbing fixtures within the building shall not be used during construction.

2.3 **Enclosures:** Furnish, install and maintain for the duration of construction all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms and other temporary construction necessary for proper completion of the work in compliance with all required safety and other pertinent regulations.

2.4 **Construction Site Safety:** The Contractor shall take all measures necessary to ensure the security of the construction site.

2.5 **Temporary Fire Protection:** Provide fire protection equipment during the entire construction period as required by the authority having jurisdiction.

2.6 **Traffic Maintenance and Control:** Whenever the Contractor's operations affect public vehicular or pedestrian traffic, the Contractor shall be responsible for the installation and maintenance of any and all traffic control devices as deemed necessary by the authority having jurisdiction.

## PART 3 - EXECUTION

### 3.1 Removal:

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Remove all such temporary facilities and controls as rapidly as progress of the work will permit or as directed by the Architect.
- B. Contractor shall furnish three (3) contact names and phone numbers for emergency calls.

END OF SECTION 01500

SECTION 01530

**PROTECTIVE BARRIERS**

**PART 1 - GENERAL**

- 1.1 **Scope:** It is the intent of this section to provide for the furnishing, and installation of code-conforming protective barriers to prevent harm to workmen, visitors, trees and other protected items by adequately marking and designating work areas that may be cause of such harm and to adequately mark those areas containing stored materials to prevent damage.
- 1.2 **Description:**
- A. Erect barriers around areas of construction to warn all persons of the possible hazards of personal injury when entering such areas.
    - 1. Erect barricades around open holes and work edges or other such items which may, because of location of work areas or type of work, be cause of injury or harm to any person within construction areas.
  - B. Erect barriers around existing planting areas to protect landscaping plants from damage due to construction operations, storage of materials and abuse by workmen.
  - C. The Contractor shall erect barriers or fences to protect materials stored on-site and to prevent children from playing on stored materials and equipment.

**PART 2 - PRODUCTS**

- 2.1 **Barriers:**
- A. Barricade may be portable, prefabricated types or erected and fabricated on-site of wood or rope and chains.
    - 1. Signs: post at not more than 12 feet apart and attached to barricade.
      - a. Attach signs stating "Danger" or "Do Not Enter".
    - 2. Flags: post red colored flags at not more than 6 feet apart.
    - 3. Each barricade type shall meet OSHA standards.
      - a. OSHA standards exceed all other type barricades listed herein.
  - B. **Landscaped Areas:** Erect barriers to prevent workmen from entering or storing materials in planting areas.
  - C. **Existing Trees:**
    - 1. Erect barriers to prevent damage to existing trees and to prevent the compaction of top soil within the tree drip-line.
    - 2. **Barriers shall be placed at the edge of the canopy drip, and in no case less than ten (10) feet from the trunk of any existing tree.**
    - 3. Tree protection barriers are to remain in place until the acceptance of Final Completion.
    - 4. Should barriers be damaged or removed at any time during construction, the Contractor shall re-erect the barrier to maintain a continuous protection of the tree.
    - 5. Should an existing tree be damaged and/or die during the warranty period through the failure of the Contractor to erect and maintain a protective barrier, the Contractor shall replace the inches with new trees of similar type (hardwood or softwood).
    - 6. Should an existing tree die during the warranty period where the Contractor installed and maintained a protective barrier in accordance with these specifications, the

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Contractor shall remove the tree, if so directed by the Owner, and at the Owner's expense.

- D. **Double Barriers:** In accordance with FBC 453.6.1, where heavy machinery is used on an occupied site, the work shall be separated from the occupied areas by secure double barriers 10 feet apart.
- E. **Maintaining Means of Egress:** In accordance with FBC 453.6.1, when a site is occupied by students during construction the placement of barriers shall not reduce the means of egress below the requirements for new construction.

### **PART 3 - EXECUTION**

- 3.1 Barriers shall remain in place during entire construction operations, from demolition until substantial completion.
- 3.2 Barrier locations will be determined on the plan sheet as approved by Architect and will be discussed at the Pre-construction Meeting.
- 3.3 Barriers shall be removed at completion of all construction operations.

END OF SECTION 01530

SECTION 01531

**TEMPORARY FENCING**

**PART 1 - GENERAL**

- 1.1 **Scope:** It is the intent of this Section to provide for the furnishing and installing of code-conforming temporary fencing and all associated work and accessories.
- 1.2 **Description:**
- A. Contractor will bear all fencing expenses.
  - B. Work included is a convenient listing of the significant items described within this Section and shall not be construed as the only work applicable or related to this Section.
  - C. Work includes, but is not limited to:
    - 1. Chain link fabric.
    - 2. Posts.
    - 3. Gates.
    - 4. Accessories.
  - D. **Double Barriers:** In accordance with FBC 453.6.1, where heavy machinery is used on an occupied site, the work shall be separated from the occupied areas by secure double barriers 10 feet apart.
  - E. **Maintaining Means of Egress:** In accordance with FBC 453.6.1, when a site is occupied by students during construction the placement of barriers shall not reduce the means of egress below the requirements for new construction.
- 1.3 **Quality Assurance:**
- A. Erector Qualifications: Minimum three (3) years experience installing similar fencing.
- 1.4 **Submittals:**
- A. Submit manufacturer's products data describing installation methods procedure with standard drawings of fence and gate installation.

**PART 2 - PRODUCTS**

- 2.1 **General:** Fence components shall be galvanically compatible.
- 2.2 **Chain Link Fabric:**
- A. Fed Spec RR-F-00191/1, Type II.
    - 1. Once piece fabric, full height 6 ft.
    - 2. Mesh size 2".
    - 3. Wire diameter finish gauge 11.
    - 4. Knuckle to knuckle
- 2.3 **Gates:**
- A. Fed Spec RR-F-00191/2, Type I, double swing.
    - 1. **Fabric:** Same as fence fabric.
    - 2. **Hinges:** Standard type.
    - 3. **Latches:** Plunger bar type, operable either side of gate with padlock hasp.
- 2.4 **Framework:**

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- A. **Posts:** Fed Spec RR-F-00191/3, Type I, Class 3.

### **PART 3 - EXECUTION**

#### **3.1 Preparation:**

- A. Measure and lay out complete fence line according to the site drawings. Measure parallel to the surface of the ground. Run fence to the existing fence for a temporary tie in.
- B. Locate and mark position of post. Locate line posts at equal distance spacing not exceeding 10' centers. Locate corner posts at positions where fence changes direction more than 10 degrees.

#### **3.2 Installation:**

- A. **Posts:**
  - 1. Maximum of 8' spacing.
  - 2. Minimum of 2' depth.
- B. **Fabric:**
  - 1. Stretch fabric tight between terminal posts. Position bottom of fabric approximately 1" to 2" above ground level at each post.
  - 2. Attach fabric to terminal post using tension bars and tension band.
  - 3. Attach fabric to line posts using wire ties or clips.
- C. **Gates:**
  - 1. Install gates plumb and level 1/4" to 10 ft.
  - 2. Adjust hardware to provide smooth operation.

#### **3.3 Removal:**

- A. Remove fencing at completion of construction. Remove all evidence of fencing. Fill holes and tamp. Remove all cuttings, clippings and concrete.

END OF SECTION 01531

SECTION 01620

**MATERIALS, STORAGE AND PROTECTION**

**PART 1 - GENERAL**

- 1.1 **Delivery:** All materials shall be new and delivered to the site in original manufacturer's or fabricator's bundles, packages, containers, etc. and tagged or otherwise marked or labeled for proper identification.
- 1.2 **Storage:** Store all materials in appropriate manner from elements and weather off ground, under cover or in enclosures as required by manufacturer's recommendations, code or trade association recommendations.
- 1.3 **Ventilation:** Ventilate enclosed or covered areas to prevent moisture damage to materials.
- 1.4 **Contamination:** Do not allow materials to become unusable by contamination from foreign matter, rain, frost, ice, rust, corrosion, etc.
- 1.5 **Singular Source:** Obtain all similar types of materials or products from a single manufacturer, produced by similar or duplicate methods. Do not change sources or brands during the course of the Work unless approved in writing by the Architect.

**PART 2 - PRODUCTS** As required by Specifications.

**PART 3 - EXECUTION**

- 3.1 **Inspection:** Inspect all materials and products prior to installation or incorporation into the work.
- 3.2 **Damaged Materials:** Do not install materials or items which are damaged or otherwise not acceptable. Acceptance of project is contingent upon all items or materials being in proper operating condition and free from defects, blemishes or damage.
- 3.3 **Installation:** Install all items specified or referenced by specification in locations and manner shown or required. Proprietary items shall be installed in manner and under conditions recommended by the manufacturer.

END OF SECTION 01620

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SECTION 01700

**PROJECT CLOSE-OUT**

**PART 1 - GENERAL**

**1.1 Definition:**

- A. Close-out is the series of actions by Contractor near the end of the Contract period, preparatory to termination of the Contract, acceptance by Architect, occupancy by the Owner and similar actions evidencing completion of work and resulting in the Final Payment.
- B. It is the Owner's intent for the General Contractor to "construction clean" the entire facility prior to Substantial Completion and the Architectural Punch List. The Owner will then mobilize the delivery of equipment and furniture. Prior to occupancy, the General Contractor shall clean the entire facility with a "white glove" cleaning of all surfaces.

**1.2 Final Cleaning:**

- A. Upon completion of construction, clean finish surfaces as follows:
  - 1. **Pavements:** Sweep with broom to remove loose rock, dirt and construction debris and wash with water running from a hose to remove cement stain and other discoloration.
  - 2. **Aluminum:** Wash with mild solution of non-alkali soap or detergent and remove smudges, pencil marks, gypsum board compound and other foreign matter, followed by clean water rinse.
  - 3. **Painted Surfaces:** Remove stains and leave clean.
  - 4. **Mechanical Equipment:** Remove all stains from the roofing process.
  - 5. **Roof Surface:** remove all excess materials stains and debris and leave clean.
  - 6. Clean all other surfaces damage by the roofing process and leave as per original state. If surface can not be cleaned contractor shall repair surface to the acceptability of the Owner and Architect and bear all costs.

**1.3 Prerequisites to Substantial Completion:**

- A. **Certificate of Occupancy:** Contractor shall obtain written approval from all permitting agencies for building occupancy. Refer to Section 00500, *Agreement and Completion Forms*.
- B. **Releases of Lien:** Provide partial waivers of lien for all work minus retainer and work indicated on the Architect's Punch List.

**1.4 Final Payment:** Final payment shall be made to the Contractor as provided by the Agreement and upon receipt of the following:

- A. Completion of Architect's and Engineers' Punch Lists.
- B. Record Drawings.
- C. Operation and Maintenance Manuals.
- D. Extra Materials (when specified).
- E. Warranties.
- F. Final Application for Payment.

END OF SECTION 01700



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SECTION 01710

**CLEANING**

**PART 1 - GENERAL**

**1.1 Description:**

- A. **Work Included:** Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this Section.
- B. **Related Work Described Elsewhere:** In addition to standards described in this Section, comply with all requirements for cleaning as described in various other Sections of these Specifications.

- 1.2 **Quality Assurance:** For codes and standards, in addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

**PART 2 - PRODUCTS**

- 2.1 **Compatibility:** Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Architect.

**PART 3 - EXECUTION**

**3.1 Progress Cleaning:**

A. **General:**

- 1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic and providing the required protection of materials.
- 2. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this work.
- 3. At least twice each month, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
- 4. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.

B. **Site:**

- 1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
- 2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site. Re-stack, tidy or otherwise service all arrangements to meet the requirements of Paragraph 3.1.A.1 above.
- 3. Maintain the site in a neat and orderly condition at all times to the approval of the Owner.

C. **Structures:**

- 1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
- 2. Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this Subparagraph, shall be interpreted as meaning free from dust and

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other material capable of being removed by reasonable diligence using a hand-held broom.

3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
4. Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials have been installed. "Clean", for the purpose of this Subparagraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Architect, may be injurious to the finish floor material.

D. **Graffiti:** Promptly remove all evidence of graffiti.

### 3.2 Final Cleaning:

- A. **Definition:** Except as otherwise specifically provided, "clean" (for the purpose of this Paragraph) shall be interpreted as meaning the level of cleanliness generally provided by commercial building maintenance Subcontractors using commercial quality building maintenance equipment and materials.
- B. **General:** Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in Paragraph 3.1 above.
- C. **Site:** Unless otherwise specifically directed by the Architect, hose down all paved areas on the site and all public sidewalks directly adjacent to the site. Completely remove all resultant debris.
- D. **Structures:**
  1. **Exterior:** Visually inspect all exterior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Architect and Owner may require other cleaning at no additional cost to the Owner.
  2. **Interior:** Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains and dirt from finished surfaces. Wash all plumbing and electrical fixtures if necessary. Remove all temporary labels. Use only the specified cleaning materials and equipment.
  3. **Glass:** Clean all glass inside and outside.
  4. **Polished Surfaces:** To all surfaces requiring the routine application of buffed polish, apply the specified polish as recommended by the manufacturer of the material being polished.
- E. **Timing:** Schedule final cleaning as approved by the Owner to accept a completely clean project.

- 3.3 **Cleaning During Owner's Occupancy:** Should the Owner occupy the work or any portion thereof to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Architect in accordance with the General Conditions.

END OF SECTION 01710

SECTION 01721

**PROJECT RECORD DOCUMENTS**

**PART 1 - GENERAL**

**1.1 Description:**

- A. Specific requirements for Record Documents specified in other specification sections are in addition to requirements specified in this Section and shall be included in Record Documents prepared for Owner as specified in this Section.
- B. Refer to Article 1, Paragraph 1.6 of the General Conditions. ***Note that the Drawings, Specifications and other documents, including those in digital form, prepared by the Architect and the Architect's consultants are copyrighted materials and no additional copies are to be retained by the Contractor, Subcontractors, etc. except as required to complete this project. At project completion, all extra copies of the Contract Documents are to be destroyed except for one copy which may be retained by the Contractor for his records.***
- C. The Contractor is charged with the full and complete responsibility for preparing and maintaining Record Documents for the Owner's records. The Record Documents shall include all additional information not indicated by original Contract Documents. Record Documents include Contract Drawings, Shop Drawings, Specifications, Addenda, Architect's Supplemental Instructions, Construction Change Directives and Change Orders, Product Data Submittals, Samples, Field Records for variable and concealed conditions such as excavations and foundations, and miscellaneous Project Record information on work not shown, or shown schematically.

**1.2 Record Drawings:** During the progress of work, maintain one (1) complete set of as-built drawings, marked-up to show work as actually installed. Show all changes and deviations from work as originally shown. Mark whichever drawings that will show more clearly and accurately work as actually installed. Where Shop Drawings are marked-up, provide a cross-reference on Contract Documents and the corresponding location. Note alternate numbers, Change Order numbers and similar identification. Require each person preparing the mark-ups to initial and date the marks and indicate name of firm. Label each sheet "**RECORD DOCUMENTS**" in 1/2" inch high letters.

**1.3 Record Specifications:** During progress of work, maintain and mark-up one (1) copy of Specifications, including Addenda, Change Orders and similar modifications issued in printed form during construction. Mark-up changes and variations in actual work in comparison with text of Specifications and modifications as issued. Identify substitutions, selection of options and information on work that is concealed. Label front cover "**RECORD DOCUMENTS**" in 3/4 inch high letters.

**1.4 Record Product Data:** During progress of work, maintain one (1) copy of each product data submittal, and mark-up all deviations and changes in actual work in comparison with submitted information. Identify concealed products and portions of work that are not visible after work is complete. Label each data submittal "**RECORD DOCUMENT**" in 3/4 inch high letters.

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- 1.5 **Record Samples:** At Substantial Completion, the Architect or Owner will notify Contractor if any of samples submitted during progress of work are to be transmitted to Owner for record purposes. Comply with the Architect's instructions for packaging, identification marking and delivery to Owner's sample storage space. Dispose of samples not transmitted to Owner.
- 1.6 **Miscellaneous Project Records:**
- A. Refer to other Sections of these Specifications for requirements of miscellaneous record-keeping and submittals. Immediately prior to Substantial Completion, complete miscellaneous Project Records and place in good order, properly identified and bound in 3-ring binders. Include the following:
1. Test reports for compliance with Contract Documents.
  2. Certifications received from Contractor for compliance with Contract Documents.
  3. Field testing reports.
  4. Inspections and certifications by governing authorities.
- 1.7 **Submittal:** Submit all Record Documents at one time to Architect for review and transmittal to Owner. Final Payment will be withheld until Record Documents are submitted and accepted by the Owner. Refer to Section 01300, *Submittals*, for detailed information on the preparation of Record Drawings.

END OF SECTION 01721

SECTION 01730

**OPERATION AND MAINTENANCE MANUALS**

**PART 1 - GENERAL**

**1.1 Description:**

- A. Prepare and furnish **two (2)** sets of Operational and Maintenance Manuals for building operating systems, equipment, and for care, preservation and maintenance of products and finishes.
- B. Operational and Maintenance Manuals shall be specially prepared for the Owner and Owner's personnel. The Manuals shall contain information necessary for safe and efficient operation and maintenance of roof membrane.
- C. Operational and Maintenance Manuals shall include the information specified in Specification Sections, and include the following information as applicable:
  - 1. Table of Contents.
  - 2. Copies of applicable Shop Drawings and manufacturer's product data.
  - 3. System equipment identification, including name of manufacturer, model number and serial number of each component.
  - 4. Operating, maintenance and repair instructions.
  - 5. Emergency instructions.
  - 6. Copies of Warranties/Guarantees and Service Contracts.
  - 7. Names and addresses of sources of maintenance parts, materials and service for each item.

**1.2 Quality Assurance:** Preparation shall be by personnel who are thoroughly trained and experienced in the operation and maintenance of system involved.

**1.3 Submittals:** See Section 01300, Submittals.

**1.4 Manuals:**

- A. **Binders:** Commercial quality, three-ring vinyl-covered loose-leaf binders for 8-1/2" by 11" paper, 3" to 4" in thickness as necessary to accommodate contents. Provide clear plastic sleeve on spine, for holding labels. If necessary provide separate binders to accommodate all the information in a convenient size.
- B. Identify each binder on the front and spine with the printed title " ROOF OPERATIONAL AND MAINTENANCE MANUAL", title of project, and subject matter covered in manual. Indicate volume number for multiple volume sets of manuals.
- C. **Dividers:** Heavy paper dividers with celluloid covered labeled tabs for each separate section. Clearly mark each tab to indicate section contents.
- D. **Text Material:** Use either manufacturer's standard printed material, or specially-prepared data, neatly typewritten, on 8-1/2 x 11 inch, 20 pound white bond paper. Ensure that xerox copies are legible and clean, if not order new copies of information from the manufacturer.
- E. **Drawings:** Provide reinforced punched binder tabs on Drawings and bind in with text. Fold oversize Drawings to same size as text pages.

**1.5 Manual Content:**

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- A. Organize contents of each manual into sections for each piece of related equipment. Each manual shall contain a title page, table of contents, copies of product data, supplemented by drawings and written text, as appropriate, and copies of any warranty, guarantee and service contract provided by manufacturer.
- B. **Title Page:** Enclosed in a transparent plastic envelope as first sheet of each manual. Provide following information:
  - 1. Subject matter covered by manual.
  - 2. Name and address of project.
  - 3. Date of Substantial Completion.
  - 4. Name, address and telephone number of Contractor and equipment or product supplier.
  - 5. Cross reference to related system in other Operational and Maintenance Manuals.
- C. **Table of Contents:** Provide one section in manuals for architectural products, including applied materials and finishes, and a second section for products designed for moisture-protection and products exposed to weather.
- D. When manufacturer's standard printed product data is included in manuals, include only those sheets that are pertinent to specific part or product installed. Clearly mark each sheet to identify each part or product included in installation.
- E. When standard printed data is not available from manufacturer for operation and maintenance of equipment or systems, prepare typewritten text, to provide the necessary information.
- F. Prepare drawings when required to supplement manufacturer's printed data to illustrate the relationship of component systems.

### 1.6 **Materials and Finishes Maintenance:**

- A. Provide one section in manuals for architectural products, including applied materials and finishes, and a second section for products designed for moisture-protection and products exposed to weather.
- B. Provide complete manufacturer's data and instructions on care and maintenance of products, including applied materials and finishes.
- C. Provide complete manufacturer's data with instructions on the inspection, maintenance and repair of roofing, sealants and other products exposed to weather and for moisture-protection.

### 1.7 **Equipment and Systems Maintenance:** Provide Operational and Maintenance Manuals for each unit of equipment, each operating system, and each electric and digital system, as appropriate. Refer to Specification Section where equipment is specified for additional requirements for providing operation and maintenance data for various equipment and operating systems.

### 1.8 **Instructions to Owner's Personnel:** Prior to final inspection, instruct Owner's designated operating personnel in the operation, adjustment and maintenance of products, equipment and systems. Provide instruction at mutually agreed upon time. Arrange to have the instruction session video recorded and included with the close-out documents.

END OF SECTION 01730

SECTION 02005

**BUILDING & GENERAL DEMOLITION**

**PART 1 - GENERAL**

**1.1 Description of Work:**

- A. The extent of demolition work is shown on the drawings or called for in the specifications. At time of demolition contractor shall before leaving the site, provide temporary covering to maintain the integrity of the building interior from water infiltration.
- B. Demolition includes the complete wrecking/removal and disposal of selected structures and other materials as shown on the drawings and specified.
- C. Demolition includes the removal of all household trash incidental to the site. This material may contain, but not be limited to, food waste, paper, paint cans, used oil, carpet, etc.

**1.2 Submittal of Demolition Schedule:** Submit written schedule of methods and operations of demolition to the Architect for approval prior to the start of work. Include in the schedule the coordination for maintain integrity of roof membrane and water infiltration.

**1.3 Discovery of Hazardous Materials:** Notify the Architect and Owner of any suspected hazardous materials discovered during demolition work.

**1.4 Job Conditions:**

- A. **Occupancy:** Structures and other items to be demolished will be vacated and discontinued in use immediately prior to the start of demolition work.
- B. **Condition of Items to be Demolished:** The Owner assumes no responsibility for the actual condition of items to be demolished. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable. However, variations within the items may occur by Owner's removal and salvage operations prior to the start of the demolition work. Contractor shall verify in writing to the Architect, safe conditions prior to the commencement of demolition work.
- C. **Protections:** Ensure the safe passage of persons around the area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities and persons.
  - 1. If necessary, erect temporary covered passageways to maintain existing fire exits and as otherwise required by authorities having jurisdiction.
  - 2. Provide interior and exterior shoring, bracing, or support to prevent movement or settlement or collapse of structures to be demolished and adjacent facilities to remain.
- D. **Damages:** Promptly repair damages caused to adjacent facilities by demolition operations at no cost to the Owner.
- E. **Utility Services:** Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing



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utilities serving occupied or used facilities, except when authorized in writing by the Owner. Timely notice shall be given to all parties affected by temporary interruptions to existing utilities, as acceptable to the governing authorities.

- F. Provide temporary fencing, barricades or guards to protect trees and other plants, which are to remain, from damage.

### **PART 2 - PRODUCTS** Not Applicable

### **PART 3 - EXECUTION**

#### **3.1 Demolition:**

- A. **Pollution Controls:** Use water sprinkling, temporary enclosures and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. ***Comply with all governing regulations pertaining to environmental protection.***
- B. Clean adjacent structures and improvements of dust, dirt and debris caused by demolition operations to the satisfaction of the Architect or governing authorities. Return adjacent areas to condition existing prior to the start of the work.
- C. **Noise Pollution:** Comply with all applicable sections of Federal, State, local and OSHA Regulations for noise pollution control, suppression and equipment.
- D. **Selective Demolition:** Demolish items completely and remove from the site. Use such methods as required to complete the work within the limitations of governing regulations.
  - 1. ***Use of explosives is NOT ALLOWED.***
  - 2. ***Use of cutting torches and welding equipment is NOT ALLOWED***
- E. **Disposal of Demolished Materials:** Remove from the site debris, rubbish, household waste, excess excavations, displaced trees, trimmings and other materials resulting from demolition operations and clearing and grubbing. ***Burning or disposal of removed materials from demolished structures shall not be permitted on project site.*** Dispose of material in an approved manner meeting local requirements. Contractor shall pay all expenses including landfill fees associated with the disposal of material.

#### **3.2 Protection of Trees and Plants:**

- A. Protect all trees and plants.
- B. **Repair and Replacement of Trees:**
  - 1. Repair trees or plants damaged by construction operations in a manner acceptable to the Architect. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.

END OF SECTION 02005

SECTION 03300

**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Work includes, but is not limited to the following: Structural elements including slabs, tie beams, masonry grout work, sills, foundations, embedded items, sidewalks and supervision of those items placed in or through the concrete by other trades.
- 1.4 **Quality Assurance:**
  - A. **References:**
    1. American Concrete Institute (ACI):
      - a. ACI 211: Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete.
      - b. ACI 214: Recommended Practice for Evaluation of Strength Test Results of Concrete.
      - c. ACI 301: Specifications for Structural Concrete for Buildings.
      - d. ACI 302: Guide for Concrete Floor and Slab Construction.
      - e. ACI 304: Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
      - f. ACI 305: Hot Weather Concreting.
      - g. ACI 306: Cold Weather Concreting.
      - h. ACI 315: Details and Detailing of Concrete Reinforcement.
      - i. ACI 318: Building Code Requirements for Reinforced Concrete.
      - j. ACI 347: Recommended Practice for Concrete Formwork.
    2. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice.
    3. American Society for Testing Materials (ASTM). All ASTM Standards shall apply where appropriate.
    4. American Welding Society (AWS).
      - a. AWS D1.1 - Structural Welding Code.
      - b. AWS D1.4 - Structural Welding Code and Reinforcing Steel.
    5. American Institute of Steel Construction (AISC) Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

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- B. **Workmanship:** The Contractor shall furnish a full-time qualified foreman to oversee and direct the construction of all formwork, reinforcing steel placement, and concrete placement. The Contractor shall be responsible for correction of all work which does not conform to specified requirements, including strength, tolerances and finish. Deficiencies shall be corrected as directed by the Architect and as called for herein, at no cost to the Owner.
- C. **Concrete Testing Service:** The Contractor shall employ a qualified independent Testing Laboratory, approved by the Architect, to perform material evaluation tests, quality control during construction, and to design the concrete mixes, as specified in Section 01410. Materials and installed work may require testing and retesting, as directed by the Architect, at any time during the progress of the work. Allow free access to material stockpiles and facilities at all times. Tests not specifically indicated to be done at Owner's expense, including retesting of rejected materials and installed work, shall be done at the Contractor's expense.
- D. **Tests for Concrete Materials:**
  - 1. Regular Weight Aggregate - ASTM C33.
  - 2. Portland Cement - ASTM C150.
- E. Sources of materials must remain unchanged during the course of the work; any variation in materials will require retesting.
- F. Certificates of material properties and compliance with specified requirements may be submitted in lieu of testing, when acceptable to the Architect, provided the proposed materials have a satisfactory service record and have been tested within the past year and such previous tests have met the specified requirements. Certificates of compliance for each material must be signed by the Contractor and supplier.
- G. **Advance Mix Design:** ASTM C192; each class of concrete required for the job shall be designed by the Testing Laboratory to determine the proper proportions of ingredients to insure concrete of the desired strength, workability and durability. The maximum permissible water/cement ratio, based on a five-inch slump shall be such as to produce a laboratory strength at least 15% greater than the strengths specified. Advance mix designs shall be submitted prior to the placing of any concrete on the job. Regardless of the recommendations of the Testing Laboratory, it shall be the responsibility of the Contractor to furnish the strength and quality of concrete specified. Ultimate strength has been used on this project.
- H. **Quality Control Tests During Construction:** Concrete shall be sampled and tested for adequacy of the design for strength, as a basis for acceptance of the concrete and for shore removal. Test cylinders shall be made, stored and tested by the Contractor's Testing Laboratory. Special provisions shall be furnished to protect the test cylinders while on the job site. Handle and store carefully prior to testing. Concrete shall be sampled and tested as follows:
  - 1. **Acceptance Test Specimen (ASTM C31):** One set of **four (4)** standard test cylinders for each compressive strength test. Mold and store for laboratory cured test specimens.
  - 2. **Field-Stored Test Specimens (ASTM C31):** One set of **four (4)** standard test cylinders of shored concrete stored on job site, until tests are required, as

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nearly as possible under the same conditions as in-place concrete from which cylinders were taken.

3. **Compressive Strength Tests (ASTM C39):** One set for each 30 cubic yards or fraction thereof, for each class of concrete, placed in any one day or for each 2,400 square feet of surface area placed, whichever is less. One set for each 100 lineal feet of footing or one set per truck load. For acceptance tests, break 1 cylinder at 7 days and 2 at 28 days using average strength of the two and with one held in reserve. Field stored cylinders shall be taken in same manner as acceptance cylinders, except they shall be taken only from those portions of the structure which are shored or braced. To check time for removing shores, break one cylinder at a time until required strength is reached. When the strength of field stored cylinders is less than 85% of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing in-place concrete.
  4. **Tests of In-Place Concrete:** The Testing Laboratory shall make additional tests of in-place concrete when results indicate to the Architect that specified concrete strengths or other characteristics have not been met. Tests may consist of cored cylinders complying with ASTM C42, or, if these tests are not conclusive, by load test performed in accordance with Chapter 20 of ACI Standard 318-88. The cost of all such tests shall be at Contractor's expense.
  5. **Reports:** Report all test results to the Owner, Structural Engineer, Contractor and Architect immediately after tests are made. Report tests of materials and advance concrete mix designs before job concrete work is started. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of Contractor, name of supplier, truck number, name of testing service, concrete type and class, location of concrete batch in structure, design compressive strengths at 28 days, compressive breaking strength, type of break for both 7-day and 28-day tests, entrained air content, slump, air temperature, weather, and any water added after leaving the plant.
- 1.5 **Submittals:**
- A. **Manufacturer's Data:** For information only, submit two (2) copies of the manufacturer's data with application and installation instructions for all proprietary materials and items relative to the concrete work.
  - B. **Reinforcing Steel Shop Drawings: *Submit complete Shop Drawings of fabrication and placement of all reinforcing.*** Include bar schedules, stirrup spacing and arrangement and concrete cover. Provide full information for placement without reference to design drawings. Show all walls in elevation at a scale of not less than 1/4" = 1'-0". Show all openings which interrupt reinforcing, including special reinforcing. Coordinate openings with Plumbing, HVAC, and Electrical Contractors. Show all areas fully. Do not use "similar" or "opposite hand" notations. Approval of Shop Drawings does not constitute authorization to vary from Contract Drawings. All placement work must be checked against the Contract Drawings, and details shall be checked by the Contractor and show the Contractor's approval and the initials of the checker before they are submitted to the Architect for approval. If required dimensions or necessary details are not clearly shown on the

Contract Drawings, the Contractor shall circle and question them on the Working Plans. These dimensions and details will be checked or furnished by the Architect.

## **PART 2 - PRODUCTS**

### **2.1 Concrete Materials:**

- A. **Cement:** Portland Cement - ASTM C150, Type I, unless otherwise acceptable to the Architect.
- B. **Coarse Stone Aggregate:** Crushed stone, rock or gravel meeting requirements of ASTM C33 and graded in accordance with Table II as follows:
  - 1. All Concrete - 57.
  - 2. All aggregate for exposed concrete shall be from the same source.
- C. **Fine Aggregate:** Clean, sharp silica or quartz sand meeting all requirements of ASTM C33 and having a fineness modulus between 2.3 and 3.0.
- D. **Water:** Clean, fresh, potable.
- E. **Air-Entraining Admixture:** ASTM C260.
- F. **Water-Reducing Admixture:** ASTM C494, Type A, containing no set-accelerating or set-retarding compounds, chlorides, fluorides or nitrates.
- G. **Set-Control Admixtures:** ASTM C494, Type D. Use retarding admixture in all horizontal pours when air temperature is above 80°F. Use sufficient amount to retard the initial set by not more than one hour.
- H. **Calcium Chloride:** Do *not* use calcium chloride in concrete.
- I. **General Requirements:** When any specified admixture is used in the concrete, the compressive strength, bond strength and flexural strength shall not be less than that of the specified concrete strengths without admixtures. Volume change of concrete shall not be more with admixtures than without admixtures.

### **2.2 Related Materials:**

- A. **Preformed Expansion Joint Fillers:** Closed cell synthetic foam of 4" depth and 1/4" thickness or as shown on the Drawings. "Ceramar" as manufactured by W.R. Meadows, Inc. or an approved equal. Where joints are to be sealed or caulked, hold joint filler down, or score down to proper depths below concrete surface to allow for sealant, (refer to sealant manufacturer's recommendations). Bond one side to existing concrete surface before placing adjacent concrete to prevent floating. If, at the time sealants are to be applied to horizontal joints, the concrete has separated from the joint filler, furnish crack-sealing acrylic or latex caulking, as approved by the sealant supplier, to seal such cracks.
- B. **Joint Sealer:** See Section 07920, Sealants and Caulking, of these Specifications.
- C. **Membrane-Forming Curing Compound:** ASTM C309, Type I. Compound shall contain fugitive dye. Use in strict accordance with manufacturer's printed instructions. Do not use on any areas having materials or finishes bonded to them, unless specifically recommended in writing by the manufacturer. Apply at the rate of one gallon per 200 square feet.

### **2.3 Concrete Inserts:** Concrete inserts shall be Liebig "Safety Bolts" or an approved equal.

- 2.4 **Non-shrink Grout:** Non-shrink, non-staining, non-metallic grout. Masterflow 713 or approved equal.

### **PART 3 - EXECUTION**

#### **3.1 Proportions:**

- A. All concrete shall be accurately proportioned by weight so as to give an ultimate compressive strength at 28 days, or at time of use, as called for on the Structural Drawings.
- B. **Proportions:** The proportions of materials shall be such as to produce concrete that can be readily puddled into the corners and angles of the forms and around the reinforcement without segregation or undue accumulation of water or laitance on the surface. Water/cement ratio shall be held to the minimum consistent with proper placing and finishing. The amount of mixing water used shall take into account the moisture, or lack of the same, in the aggregate and liquid admixtures used. ***In no case shall concrete be placed which has a slump outside the following limits:***
1. Foundations -2" to 4"
  2. Slabs and Beams -2" to 4"
  3. Walls and Columns -3" to 5"
- D. **Admixtures:**
1. Use air-entraining admixture in all concrete, unless specifically shown otherwise. Add air-entraining admixtures at the manufacturer's prescribed rate to result in concrete at the point of placement having an entrained air content within the following limits for regular stone concrete: - 4% to 6%.
  2. Use water-reducing admixtures in strict compliance with the manufacturer's directions to increase cement dispersion and to provide increased workability of low-slump concrete at Contractor's option, subject to Architect's acceptance.
  3. Use retarding admixture only as previously specified.
  4. Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at time of placing. Adjust quantities as required to maintain quality control.

#### **3.2 Concrete Mixing:**

- A. Concrete shall not be placed if it has been in the mixer for more than one hour after addition of the water, nor after concrete has begun to heat-up due to hydration.
- B. Ready-Mix Concrete: Ready-mixed concrete shall be used and shall be mixed and delivered in accordance with requirements set forth in the ***Standard Specification for Ready-Mixed Concrete (ASTM C94)***, and as noted above.

#### **3.3 Concrete Placement:**

- A. Comply with ACI-304, and as herein specified. 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 or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to

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- avoid segregation due to rehandling or flowing. Clean all dowels of hardened concrete before placing new concrete.
- B. **Pre-Placement Inspection:** Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be imbedded or cast-in. Notify other trades to permit the installation of their work; cooperate with other trades in setting such work, as required. Thoroughly wet wood forms immediately before placing concrete, as required and where form coatings are not used. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel. Notify Architect of placing schedule at least **48 hours** in advance.
- 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. Remove temporary spreaders in forms when concrete placing has reached the elevation of such spreaders. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use vibrators designed to operate with vibratory element submerged in concrete, maintaining a speed of not less than 10,000 impulses per minute. Have available for use at least two vibrators, in case of breakdown, for each concrete placing crew. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI-309, to suit the type of concrete and project conditions. Vibration of forms and reinforcing will not be permitted, unless expressly accepted by the Architect. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the placed layer of concrete at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix. Do not place concrete on supporting elements until the concrete previously placed in columns and walls is no longer plastic, at least 2 hours.
- D. **Placing Concrete Slabs:** Deposit and consolidate concrete slabs in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners. Consolidate concrete in slabs by vibrating bridge screeds, roller pipe screeds, or other acceptable methods. Limit the time of vibration consolidation to prevent bringing an excess of fine aggregate to the surface. Bring slab surfaces to the correct level with a straightedge and strikeoff. Use bull floats or darbies to smooth the surface, leaving it free of humps or hollows. Do not sprinkle water or cement on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations. Maintain reinforcing in the proper position during concrete placement operations. If reinforcing position is not maintained by Contractor, approved supports for all reinforcing will be required (including slabs-on-grade).

### 3.4 Bonding:

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- A. Roughen surfaces of set concrete at all joints, except where bonding is obtained, by use of a concrete bonding agent, and clean surfaces of laitance, coating, loose particles and foreign matter. Roughen surfaces in a manner to expose bonded aggregate uniformly and to not leave laitance, loose particles of aggregate, or damaged concrete at the surface.
1. **New to Fresh Concrete:** Dampen, but do not saturate, the roughened and cleaned surface of set concrete, and apply a coat of neat cement grout composed of equal parts of Portland Cement and fine aggregate by weight with not more than 6 gallons of water per sack of cement. Apply with a stiff broom or brush to a minimum thickness of 1/16". Deposit fresh concrete before cement grout has attained its initial set. In lieu of neat cement grout, bonding grout may be an approved commercial bonding agent. Apply to cleaned concrete surface in accordance with manufacturer's printed instructions.
  2. **New to Recently Hardened Concrete:** Bond fresh to fully-cured concrete by using epoxy-resin adhesive binder in compliance with the manufacturer's printed instructions, including safety precautions. Mix the epoxy-resin adhesive binder in the proportions recommended by the manufacturer, carefully following directions for safety of personnel. Before depositing fresh concrete, thoroughly roughen and clean hardened concrete surfaces and coat with epoxy-resin grout not less than 1/16th thick. Place fresh concrete while the epoxy-resin material is still tacky, without removing the in-place grout coat, and as directed by the epoxy-resin manufacturer.
  3. **New to Old or Existing Concrete:** Bond fresh to existing concrete by using epoxy-resin adhesive binder in compliance with the manufacturer's printed instructions, including safety precautions. Mix the epoxy-resin adhesive binder in the proportions recommended by the manufacturer, carefully following directions for safety of personnel. Install 12 inch long #5 rebar dowels at 36" on center into 6" deep drilled holes in the existing concrete. Epoxy the dowels using epoxy equal to Simpson ET. Obtain the Architect's approval of the epoxy prior to use. Before depositing fresh concrete, thoroughly roughen and clean hardened concrete surfaces and coat with epoxy-resin grout not less than 1/16th thick. Place fresh concrete while the epoxy-resin material is still tacky, without removing the in-place grout coat, and as directed by the epoxy-resin manufacturer. Once cured and prior to the installation of any finish flooring, grind the joint to ensure a smooth transition and prevent telegraphing the joint through the flooring.

### 3.5 Embedded Items:

- A. Set and build into the work anchorage devices, steel angles and plates, stair nosings, dovetail anchor slots, reglets, ceiling inserts 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 the supplier of the items attached thereto and to other Sections of Specifications. Protect all embedded items that must be set by others.



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- B. Set all bolts, anchors, grounds and inserts as required. Where structural steel shapes and other members are shown and bolted to the concrete, bolts shall be set in proper position in the forms before the concrete is placed and spaced as indicated on the Drawings. Bolts and nuts exposed to moisture conditions shall be galvanized. Where masonry abuts concrete or where concrete is faced with masonry, furnish and install galvanized, felt-filled dovetail anchor slots. Slots shall be placed as required under the Masonry Section of the Specifications and as called for on the Drawings. Masonry ties are to be furnished and installed under Section 04150, Masonry Accessories.
- C. Conduit may be placed in slabs four-and-a-half (4-1/2) inches or more in thickness, provided conduit or layers of conduit fall completely within the middle third of the slab depth and are spaced not closer than 24" on center. No conduit in slabs shall be more than one inch in diameter. Conduit or piping may extend vertically through the middle third of the width of the beam or horizontally through the middle third of a column when not exceeding 4% of the gross area of the concrete member, unless such conduit or pipe is galvanized iron or steel not thinner than Schedule 40 steel pipe, in which case the maximum size with fittings may be two inches. No more than one pipe may be spaced not less than three diameters apart along the longitudinal direction of the beam. Pipe or conduit over two inches in diameter shall have Schedule 40 galvanized steel sleeves, and when located closer than three feet from face of support, shall have stirrups added as recommended by the Engineer. No pipe or conduit shall interfere with the placing or functioning of the reinforcing, and shall be rigidly held in the specified positions.

### 3.6 Shore and Supports:

- A. Comply with ACI-347 for shoring and reshoring construction, and as herein specified. Provide wedges, jacks or camber strips to facilitate vertical adjustments. Carefully inspect falsework and formwork during and after concrete placement operations to determine abnormal deflection or signs of failure; make necessary adjustments to produce work of required dimensions.
- B. Tolerances: Construct formwork to provide completed concrete surfaces complying with the tolerances specified in ACI-347, Section 2.4, after removal of forms, except that tolerances for exposed concrete and troweled finish floors shall be half of those specified in ACI-347. Where closer tolerances are required for special conditions, such closer tolerances shall govern.

- 3.7 **Removal of Forms and Shores:** A competent foreman shall be in charge of all form or shore removal, and the work shall be done without damaging the concrete. Forms shall not be dropped to the floor below. All forms shall be completely removed and all form ties shall be broken back or pushed out and filled as specified. The Contractor shall be fully responsible for removal of forms, but in no case, shall forms be removed before concrete has hardened or until members have acquired sufficient strength to support their weight and the loads therein. Stripping of beam forms shall not be done in less than seven (7) days or less than two (2) days for columns, beam sides, and building walls. Beam and slab soffits shall not be stripped until job stored test cylinders indicate a compressive strength of at least three-fourths (3/4) the design strength. Stripping time shall be counted

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in calendar days from the time of the last pour. Beams and slabs shall remain shored or reshored until design strength is reached. No superimposed loads will be permitted on slabs or beams during removal of shores and until the reshoring is completed. Additional reshoring shall be provided when, due to job conditions, imposed loads may exceed the design live-loads.

### 3.8 **Construction Joints:**

- A. Except as otherwise shown on the Drawings, the work shall be planned to provide a minimum number of construction joints consistent with good placing practices, and at a maximum distance of 20 feet in either direction. Columns shall be placed continuously to an even level of bottoms of connecting beams. Beams and girders shall be considered a part of the floor system and shall be deposited integrally therewith. Allow two-hours lapse between placing concrete in columns and placing of superimposed concrete. Give particular attention to cleaning of laitance from the top of vertical forms and to cleaning of concrete from projecting reinforcing. Reinforcing shall run continuous through construction joints. Provide one-and-a-half (1-1/2) inch deep keyways between walls and beams and walls and footings.
- B. **Structural Frame:** Joints shall be made by forming wooden mortise and key dams fitted around the reinforcing at such points as to least impair the strength and appearance of the structure. Secure approval of the Structural Engineer for location. Joints shall be made at the center of the span. Where an intersecting member occurs at the center of the span, or where it is otherwise impossible to locate the joint at the center of the span, the Contractor shall obtain instructions from the Structural Engineer for special provisions which will be made for shear.

3.9 **Expansion Joints:** Construct expansion joints where shown on the Drawings. Form joints using a half-inch wide full-depth fiberboard strip.

3.10 **Slab Cold Key Joints:** Construct cold key joints in concrete slabs where shown on the Drawings. Joints are to be a tongue-and-groove shaped, 24 gauge galvanized steel cold joint left permanently in the slab. Joint shall be equal to "Burke-Keyed Kold Joint". Install joint, of appropriate size, in accordance with manufacturer's recommendations.

3.11 **Cold Weather Concreting:** Concrete shall not be placed during periods when the air temperature is at or below 40°F, or whenever it appears to the Architect, from weather reports or otherwise, that air temperature may fall below 40°F within the twenty-four hour period next following the completion of a concrete pour without taking approved precautions. The Contractor shall take approved precautions to maintain the temperature of the concrete at not less than 70°F for three (3) days or 50°F for seven (7) days after placement. For approved procedures, see ***Recommended Practice for Cold Weather Concreting (ACI-306)***.

3.12 **Hot Weather Concreting:** During hot weather, use all available means to keep concrete temperature as low as is practical, but in no case, shall temperature of concrete at time of placement be higher than 90°F. At air temperatures above 80°F, use the above specified

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retarding agent. For approved procedures, see ***Recommended Practices for Hot Weather Concreting (ACI-305)***.

END OF SECTION 03300

SECTION 04100

**MORTAR AND GROUT**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Work Included in this Section:
    - 1. Mortar for concrete unit masonry work.
    - 2. Mortar for brick masonry work.
    - 3. Grout.

**PART 2 - PRODUCTS**

- 2.1 **Materials:**
- A. Cementitious Materials:
    - 1. Masonry Cement shall conform to ASTM C91.
    - 2. Portland Cement: ASTM C150, Type I.
  - B. Hydrated Lime shall conform to ASTM C207.
  - C. Sand shall be clean, **White** Builder's Sand.
  - D. Fine Aggregate: Aggregate for masonry grout shall conform to requirements of ASTM C144.
  - E. Coarse Aggregate: Aggregate for masonry grout shall conform to requirements of ASTM C404.
  - F. Water shall be clean and free from deleterious amounts of alkalies, acids, or organic materials.
  - G. **Color:** Mortar color is to be **standard grey**.
- 2.2 **Mixes:**
- A. Brick veneer mortar shall conform to ASTM C270, Type N.
  - B. Concrete Masonry Unit mortar shall conform to ASTM C270, Type S.
  - C. Grout shall conform to ASTM C476, or 2,500 PSI gravel concrete.
    - 1. Fine grout shall be used in spaces less than two inches (2") in width.
    - 2. Coarse grout shall be used in spaces two to four inches (2"-4") in width.

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3. Concrete shall be used in spaces over four inches (4") in width. Concrete shall be 3,000 PSI concrete in accordance with Section 03300, Cast-in-place Concrete.
- D. Submit mix design per Section 03300, Cast-in-place Concrete.

**PART 3 - EXECUTION**

- 3.1 Apply mortar according to Section 04210, Brick Masonry, and according to manufacturer's suggested procedure.
- 3.2 Water shall be clean, potable water free from debris.
- 3.3 Provide inspection clean-out holes at the bottom of all cells with vertical reinforcement when high-lift grouting (over 5 ft. high) is used.
- 3.4 **Grout Testing:**
  - A. For each type of grout, prepare one set of four prism specimens for each 30 cubic yards or fraction thereof being placed each day.
  - B. Report test results in writing and in form specified under each test method to Architect and Contractor, on same day tests are made.
  - C. Tests shall be performed by an independent testing laboratory under Contractor's responsibility. Cost of those services shall be paid by the Contractor.

END OF SECTION 04100

SECTION 04150

**MASONRY ACCESSORIES**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Work Included this Section:
    - 1. Reinforcing for lintel blocks, bond beams, and other reinforced masonry.
    - 2. Joint Reinforcement.
    - 3. Anchors and Ties.
  - B. Related Work Specified Elsewhere:
    - 1. Cavity Drainage System: Section 04090, Cavity Drainage Mesh.
    - 2. Weeps: Section 04210, Brick Masonry.
    - 3. Galvanized Steel Lintels: Section 05120, Structural Steel.

**PART 2 - PRODUCTS**

- 2.1 **Rods:** Reinforcing steel for lintel blocks, bond beams, and other reinforced masonry work as required, shall conform to ASTM A615-76A, Grade 60, size as indicated or specified.
- 2.2 **Joint Reinforcement:**
- A. Code Approval: Joint reinforcement for masonry walls shall be factory-fabricated units approved by the SBCC, BOCO, or IBCO Code Organizations.
  - B. Single Wythe Reinforcement shall be manufactured by cold-drawn steel wire conforming to ASTM A82-76 Wire-Bond Series 800 or approved equal with prefab corners and tees.
- 2.3 **Acceptable Products:**
- A. **Approved Manufacturers:**
    - 1. Wire-Bond
    - 2. Hohmann & Barnard (Dur-O-Wall)
    - 3. Ty-Wal

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- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

**PART 3 - EXECUTION**

- 3.1 Place masonry reinforcement as indicated on the Drawings and directed by the Architect. Install as per *Portland Cement Association Concrete Masonry Handbook*.

END OF SECTION 04150

SECTION 04220

**STRUCTURAL CONCRETE MASONRY UNITS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Requirements of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Work Included in this Section:
    - 1. Concrete masonry unit walls and partitions.
    - 2. Concrete masonry unit lintels.
  - B. Related Work Specified Elsewhere:
    - 1. Mortar and Grout: Section 04100.
    - 2. Masonry Accessories: Section 04150.
    - 3. Brick Masonry: Section 04210.
    - 4. Concrete Work: Section 03300.
- 1.4 **Submittals:**
- A. Submit manufacturer's product data in compliance with Section 01300, Submittals. It should include nominal dimensions of block, special shapes, and appearance.
  - B. Submit manufacturer's testing data of CMU for material strength. Data should include as a minimum the net and gross area compressive strength for each size and style of block to be used for this project. Testing reports shall not be more than two (2) years old and with block fabricated by the manufacturing plant supplying product to this project. In addition, the manufacturer shall supply a letter of certification stating that the units supplied for this project conform to the required compressive strength. Tests shall conform to ASTM C140.
  - C. All testing shall be at the manufacturer's expense.
- 1.5 **Job Conditions:** Do not lay masonry when the temperature is below 40 degrees F. Keep walls dry by covering at the end of each day or during shut downs. Covering shall overhang at least 2'-0" on each side of the wall and shall be securely anchored.
- 1.6 **Quality Assurance:**



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- A. All work shall conform to the Concrete Masonry Handbook (Latest Edition), ACI 530-92, and ACI 530.1-92, in relation to proper workmanship, layout reinforcement, and bracing of concrete masonry.
- B. Provide 4' x 8' sample wall indicating typical color, mortar joint preparation and workmanship as a quality standard for the project. To be approved by the Architect.

## PART 2 - PRODUCTS

### 2.1 Materials:

- A. Concrete masonry units shall be of modular dimensions and special shapes or sizes as required to complete the work as indicated. Units shall be of the same appearance and shall be cured by the same process, delivered to the project site in an air-dry condition. Units shall be made with light-weight aggregate and meet or exceed the following requirements:
  - 1. Hollow Load-Bearing Concrete Masonry Units: ASTM C90, Grade N-1. Units not to exceed 90 lb./cubic foot.
  - 2. Hollow Non-Load Bearing Concrete Masonry Units: ASTM C129, Grade U-1.
  - 3. Concrete Building Brick: ASTM C55, Grade N-1.
- B. **Masonry Cleaning Agent:** Cleaning agent for exposed concrete masonry units shall be Sure Klean No. 600 detergent cleaning compound as manufactured by the Process Solvent Company, Inc., or approved substitution.

### 2.2 Mixes:

- A. Aggregate: Blending or screening which will impair the insulation value of the unit is prohibited.
- B. Concrete: Concrete for lintel blocks, bond beams, and other reinforced masonry work shall be 3000 PSI concrete as specified in Section 03300, CAST-IN-PLACE, except that pea gravel aggregate shall be used.
- C. Masonry Cleaning Agent: One part agent to six-to-eight parts potable water.

## PART 3 - EXECUTION

- 3.1 **Inspection:** Masonry installer must examine the areas and conditions under which masonry is to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the masonry installer.
- 3.2 **Mortar Mix:** Mix ingredients for a minimum of 5 minutes in a mechanical batch mixer using potable water. Do not use mortar which has begun to set or which is over 2-1/2 hours old. **Do not use calcium chloride or admixtures to lower the freezing point.**
- 3.3 **Layout:** Layout walls in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly 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.

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- 3.4 **Laying Masonry:** Lay-up walls plumb and true with courses level and accurately spaced. Lay dry units with full mortar coverage on horizontal and vertical face shell; also bed webs on starting courses. Remove masonry disturbed after laying; clean and relay in fresh mortar. If work is topped before completion, step down ½ unit in each course. Tothing is not permitted.
- 3.5 **Bond Pattern:** Standard running bond with vertical joint in each course centered on units in courses above and below.
- 3.6 **Joints:**
- A. All joints shall be struck flush, 3/8".
  - B. Rake out joints for application of control joint caulk where indicated on the Drawings.
- 3.7 **Horizontal Joint Reinforcing:** Provide continuous horizontal joint reinforcing as shown or specified. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 3/4" on exterior side of walls and ½" at other locations. Lap reinforcement a minimum of 6" at ends. Do not bridge control and expansion joints with reinforcing except at wall openings. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions. Space continuous horizontal reinforcing at 16" o.c. vertically, and at the first and second course above and below wall opening extending joint reinforcement at least 2' beyond sides of openings.
- 3.8 **Anchoring Masonry Unit:** Anchor masonry to structural members with metal ties embedded in masonry joints and secured to structure. Provide anchors with flexible tie sections. Space anchors not more than 16" o.c. vertically and 24" o.c. horizontally.
- 3.9 **Lintels:** Provide masonry lintels where shown and wherever openings of more than 1'-0" are shown without structural steel or other supporting lintels. Thoroughly cure pre-cast lintels before handling and installation. Temporarily support formed-in place lintels. Provide one #5 reinforcing bar for each 4" of wall thickness. Provide minimum bearing at each jamb, of 6" for openings less than 6'-0" wide, and 8" for wider openings. Fill side cells solid with grout. Coordinate lintels with Structural Drawings. Structural Drawings shall take precedence unless no specific lintel is shown.
- 3.10 **Control and Expansion Joints:** Provide vertical control and isolation joints in masonry where shown. Build-in related masonry accessory items as the masonry work progresses. Rake out mortar in preparation for application of caulking and sealant.
- 3.11 **Repair:** Remove and replace with new units any chipped, broken, stained or damaged units. Install new units in fresh mortar or grout.
- 3.12 **Pointing:** During the tooling of joints, enlarge any voids and completely fill with mortar. Point up all joints at corners, openings, and adjacent work to provide neat, uniform appearance, properly prepared for application of caulking sealant.

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3.13 **Cleaning:** Clean exposed CMU masonry by dry brushing at the end of each days work and after final pointing to remove mortar spots and droppings.

3.14 **Disposal:** Dispose of all debris material in appropriate containers.

END OF SECTION 04220

SECTION 05400

**COLD-FORMED METAL FRAMING**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Provide cold-formed steel framing shown on Drawings and specified.
- 1.4 **Submittals:**
- A. Comply with Sections 01150 and 01300.
  - B. **Product Data:** Manufacturer's product data and installation instructions for each item of cold-formed framing and accessories.
  - C. **Shop Drawings:** Indicate each framing member with size, type and gauge designations, quantity, location and spacing. Indicate and detail type of connections, anchorage to structure, supplemental framing, strapping, bracing, splices, bridging, accessories and other components and details required for proper installation.
- 1.5 **Standards:**
- A. **Component Design:** Structural properties of steel members shall be in accordance with American Iron and Steel Institute (AISI) Specification for Design of Cold-Formed Steel Structural Members.
  - B. **Welding:** Use qualified welders and materials that comply with American Welding Society (AWS) D1.3, Structural Welding Code - Sheet Steel.
- 1.6 **Fire-Rated Assemblies:** Where framing units are components of assemblies indicated for a fire-resistance rating required for compliance with governing regulations, provide units that have been approved by governing authorities that have jurisdiction.

**PART 2 - PRODUCTS**

- 2.1 **Acceptable Manufacturers:**
- A. Subject to compliance with requirements, provide cold-formed metal framing of one of the following:
    - 1. ClarkDietrich Metal Framing
    - 2. SCAFCO Steel Stud Mfg. Co.

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3. Super Stud Building Products, Inc.
  4. Phillips Manufacturing Co.
  5. Southeastern Stud & Components, Inc.
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

2.2 **Metal Framing:**

- A. **System Components:** Provide load-bearing or non load-bearing framing members as required. With each type of metal framing required, provide steel runners (tracks), blocking, lintels, clip angles, shoes, reinforcements, fasteners, anchorages, accessories and other components as recommended by manufacturer and as indicated on the Contract Drawings for applications indicated, as needed to provide a complete metal framing system.
- B. **Materials and Finishes:**
1. For the purposes of this project, the following gauge equivalents are the minimum accepted ("mil" is the uncoated base metal thickness in thousands of an inch):
    - a. 25 gauge: 18 mil
    - b. 22 gauge: 27 mil
    - c. 20 gauge: 30 mil (DW/interior nonload-bearing only)
    - d. 20 gauge: 33 mil
    - e. 18 gauge: 43 mil
    - f. 16 gauge: 54 mil
    - g. 14 gauge: 68 mil
    - h. 12 gauge: 97 mil
    - i. 10 gauge: 118 mil
  2. ***"Equivalent" gauges shall not be used for determining strength of material. Actual base metal thickness of member shall be used in accordance with the above schedule.***
  3. **Recycled Content:** Minimum 58 percent post-consumer recycled content, or minimum 32 percent pre-consumer recycled content at contractor's option.
  4. For 16-gauge and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield of not less than 50,000 psi: ASTM A446, A570, A611, or AG53.
  5. For 18-gauge units, fabricate metal framing components of commercial quality steel sheet with minimum yield point of not less than 33,000 psi; ASTM A446, A570, A611, or AG53.
  6. Provide galvanized finish to all metal framing components and accessories. For sheet metal components comply with ASTM A525 for minimum G60 coating. For structural steel shapes provide galvanized coating complying with ASTM a123. For hardware galvanized coating comply with ASTM A153.
  7. Metal studs shall not be less than 33 mil thickness for cementitious backer boards and 27 mil for gypsum board products.
- C. **C-Shape Studs:** Manufacturer's steel C-shape studs of size indicated and of gauge and structural properties required. Provide flanges of proper bearing area and type

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- for attachment of materials.
- D. **Furring:** Manufacturer's standard hat-shaped or Z-shaped steel furring members of gauge and structural properties required.
  - E. **Joists:** Manufacturer's standard C-shape sections of size, shape and gauge indicated on the Contract Drawings.
  - F. **Bridging and Spacer Bar:**
    - 1. Basis-of Design-Product: ClarkDietrich Building Systems; Spazzer 9200 spacing bar or approved equivalent.
    - 2. Minimum Base-Steel Thickness: 0.0538 inch.
    - 3. Size: 7/8 by 7/8 by 50 inches long, pre-notched at 16 inch centers.
  - F. **Fasteners:** Corrosion-resistant plated steel or stainless steel.

2.3 **Galvanizing Repair Paint:** Galvicon, ZRC or approved equal.

### 2.4 Fabrication:

- A. **Panels:** Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in a manner to prevent damage or distortion.
- B. **Fastenings:** Attach components by welding, bolting or screw fasteners, as standard with manufacturer and as required by design calculations.

## PART 3 - EXECUTION

### 3.1 Tolerances:

- A. **Vertical:** vertical alignment (plumbness) shall be within 1/16" in 10'-0".
- B. **Horizontal:** horizontal alignment (straightness) shall be within 1/16" in 10'-0". Levelness of halfwalls and soffits shall be within 1/16" of level in 10'-0".
- C. **Spacing:** Spacing of studs shall not be more than 1/16"  $\pm$  from the designated spacing, providing that the cumulative error does not exceed the requirements of the finishing materials. Stud and furring spacing shall not exceed 16" o.c.
- D. **Square:** Prefabricated panels shall not be more than 1/16" out of square within the length of the that panel.

### 3.2 Installation:

- A. Install metal framing systems in accordance with approved Shop Drawings and manufacturer's instructions and recommendations.
- B. Temporary bracing of walls and other cold-formed framing shall be provided during erection until such time it is no longer needed.
- C. **Runner Tracks:** Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks per Contract Drawings. Provide fasteners at corners and end of tracks.
- D. Set studs plumb, except as needed for diagonal bracing.
- E. Where stud system abuts structural columns or walls, anchor ends of stiffeners to supporting structure.
- F. Install supplementary framing, blocking, bracing and spacing bars in metal framing

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- 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, considering weight or loading resulting from items supported.
- G. **Stud Wall System:** Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.
  - H. Frame wall opening larger than two (2) feet square with double stud at each jamb of frame where more than two (2) are either shown or indicated in the 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.
  - I. Frame both sides of expansion and control joints, with separate studs; do not bridge the joint with components of stud system.
  - J. **Installation of Joists:** Install level and plumb, complete with bracing and reinforcing. Provide not less than 1-1/2 inch end bearing.
    - 1. Reinforce ends with end clops, steel hangers and steel angle clips, steel stud section, or as otherwise recommended by joist manufacturer or designer.
    - 2. Secure joists to support systems to prevent lateral movement of bottom flange.
- 3.3 **Galvanize Coating Repair:** Touch-up galvanized coatings damaged during handling, welding and installation with galvanizing repair paint.
- 3.4 **Disposal:** Dispose of all debris material in appropriate containers for reclamation.

END OF SECTION 05400

SECTION 06100

**ROUGH CARPENTRY**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** The work specified in this Section includes structural framing, sheathing and miscellaneous ground, blocking and furring, and associated framing hardware.
- 1.4 **Quality Assurance:** Factory mark each piece or each bundle of lumber and plywood with the type, grade, mill and grading agency identification. Materials shall be graded as follows:
  - A. Framing (Dimensional) Lumber: SPIB per ASTM D245.
  - B. Plywood: APA per ASTM D2555-66T.
  - C. Connectors: ASTM D1761.
  - D. Pressure Treated Wood: AWPA P-18.
- 1.5 **Product Handling and Storage:** Keep materials dry during delivery, storage and handling. Store lumber to provide air circulation and protect against direct contact with damp or wet surfaces.
- 1.6 **Coordination:** Coordinate location of furring, nailers, blocking, grounds and similar deadwood with equipment and other trades so that attached work will comply with design requirements.

**PART 2 - PRODUCTS**

- 2.1 **General Framing Lumber:** Framing (dimensional) lumber shall be of standard nominal size and be No.2 Southern Pine or Hem Fir, surfaced dry (19% maximum moisture content) with bending stress ( $F_b$ ) of 1400 PSI minimum.
- 2.2 **Structural Framing Lumber:** For structural framing lumber 6" and wider and from 2" to 4" thick provide No.1 grade (structural joist grade, Southern Pine,  $F_b=1700$  PSI minimum).



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- 2.3 **Treated Lumber:** Use a boron-based preservative conforming to AWPA P18, sodium silicate wood mineralization process, or Ammoniacal Copper Quaternary (ACQ) compound to treat wood. Use boron-based preservatives for above-ground applications only.
- 2.4 **Plywood:** Plywood for roof sheathing and sub-flooring shall be exterior grade (C-D). Fir plywood in thickness shown. Backing panels for electrical or telephone equipment shall be fire-retardant treated plywood, 3/4" thickness, and painted according to the Paint schedule.
- 2.5 **Miscellaneous Lumber:** Provide wood supports and attachments for other work using standard grade light framing size lumber as required, any species.
- 2.6 **Framing Hardware:** Provide proper type, size, material and finish required for each application. Comply with the following:
- A. Nails and Staples: FS-FF-N-105.
  - B. Tacks: FS-FF-N-103.
  - C. Wood Screws: FS-FF-S-111.
  - D. Bolts and Studs: FS-FF-8-575.
  - E. Washers: FS-FF-W-92.
  - F. Lag Screws or Lag Bolts: FS-FF-8-561.
  - G. Masonry Anchoring Devices for Expansion Shields, Nails and Drive Screws: FS-FF-S-325.
  - H. Toggle Bolts: FS-FF-8-588.
  - I. Bar and Strap Anchors: ASTM A575 Carbon Steel Bars.
  - J. Framing hardware shall be mill-galvanized, have Code approval, and conform to ASTM A446-75, Grade A or better.

## PART 3 - EXECUTION

- 3.1 Discard material which is unsound, warped, bowed, twisted, improperly treated or seasoned, or too small to fabricate the work with a minimum of joints. At carpentry, work accurately to required levels and lines with members plumb and true. Shim with suitable materials as required for full bearing on concrete or masonry substrates.
- 3.2 Securely attach carpentry work by anchoring and fastening as shown or required by recognized standards. Provide washers under bolt heads and nuts in contact with wood. Countersink nails on exposed carpentry work and fill voids.
- 3.3 **Fasteners:**
- A. **Nails:** Use galvanized annular ring-shank nails for framing hardware and connectors, hot-dipped galvanized where exposed to exterior, mill-galvanized for other wet locations, and common wire nails elsewhere, unless otherwise noted. Use finish nails for exposed work.

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- B. Select fasteners of size that will not penetrate members where opposite side will be exposed or will receive finish materials.
- C. Make tight connections between members. Install fasteners without splitting of wood - pre-drill as required. Do not drive threaded friction type fasteners, turn into place. Tighten bolts and lag screws at installation and re-tighten as required for good connections prior to closing in or at completion of work.

### 3.4 **Framing:**

- A. Frame members as shown, or if not shown, comply with recommendations of the National Forest Products Association (NFPA) "Manual for House Framing".
- B. All members shall be framed, anchored, tied, and braced so that they develop the necessary strength and rigidity. Provide adequate bracing and bridging to resist wind and other lateral forces.
- C. Provide temporary bracing as required until permanent bracing is installed. Do not overstress members or joints during construction.
- D. Notching of structural members, including beams, joists, girders, load bearing studs and plates is not permitted. Boring, grooving and dapping of structural members shall be restricted to 1/6 of the entering face dimension of the member and not located to the top or bottom third of the member or in the center third of a span.
- E. Framing members shall be anchored and nailed in compliance with the recommendations of NFPA
- F. Where wood sill rests on concrete or masonry, they shall be set in double row bed of continuous sealant.

- 3.5 **Miscellaneous Wood:** Miscellaneous wood framing, blocking, nailers, grounds, sleepers, furring and shims shall be installed where indicated or required.

END OF SECTION 06100

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SECTION 06200

**FINISH CARPENTRY**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Provision and installation of all finish carpentry, wood paneling, wood moldings, installation of finish hardware and wood doors, specified elsewhere. Scope of work as specified and indicated on the plans
- 1.4 **Related Sections:**
  - A. Section 08211 - Wood Doors
  - B. Section 08710 - Finish Hardware
- 1.5 **Coordination:** Time delivery and installation of carpentry work to avoid delaying other trades whose work is dependent on or affected by the carpentry work, and to comply with protection and storage requirements
- 1.6 **Inspection:** Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed, and notify the Contractor in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- 1.7 **Concealed Supports:** Correlate location of furring, nailers, blocking, grounds and similar supports to that attached work will comply with design requirements.
- 1.8 **Extent of Finish Carpentry:** Furnish all items shown on the Drawings and specified herein. Finish carpentry includes all woodwork exposed to view in finished building.
- 1.9 **Quality Control:** The Quality Standards of the Architectural Woodwork Institute (AWI) Custom Grade shall apply, and by reference, are made a part of this Section.

**PART 2 - PRODUCTS**

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- 2.1 **Materials:** Provide materials as indicated on the Drawings. The following items may or may not appear on the Drawings.
- A. **Moisture Content:** Lumber shall be air-dried or kiln-dried. The maximum moisture content of interior finish and millwork and treated or untreated finish lumber, trim and siding shall be 15% at the time of delivery to the job site.
  - B. **Plywood:** Cabinet grade, thickness and veneer species as indicated in the plans.
  - C. **Mouldings:** Clear, Red Oak for Stained locations, White Pine or Poplar for painted applications. Sizes, finish and profiles are indicated in the Plans.
  - D. **Paneling:** Clear, Red Oak size and profiles as indicated in the plans.

### **PART 3 - EXECUTION**

- 3.1 Finished carpentry materials and work shall be carefully protected from damage during transit, storage and after erection until Final Completion and Acceptance of the building.
- 3.2 Fasteners shall be concealed where possible. Where surface fastening is necessary, fastener heads shall be countersunk with holes plugged to match the finished surface. Finishing nails, where required, shall be well set for puttying.
- 3.3 Mitered corners shall have full surface contact throughout its length and flushness tolerance within a maximum of 0.015". Only flush or rounded edge trim shall be sanded at the joints.
- 3.4 Machine doors for hardware as required by the Hardware Schedule.

END OF SECTION 06200

SECTION 06412

**LAMINATE CASEWORK  
(FLUSH INSET)**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Provide all plastic laminate casework and accessory items as specified herein. Refer to plans for specific details and requirements.
- 1.4 **Related Work Specified Elsewhere:**
- A. General millwork and custom cabinetry unless specified herein or so noted on plans and included within this section.
  - B. Rubber, vinyl or other finished toe base (where allowed on the Drawings).
  - C. Locks master-keyed to room doors and other special locks.
  - D. Blocking within walls.
  - E. Sinks, faucets, fittings, traps, stops, tail pieces, vacuum breakers, and other fixtures, electrical and mechanical runs and connections.
  - F. Fixture installation/services connections: Setting and installation of equipment and fixtures, and related utility connections, are provided under the other sections of the Project Specification governing that utility.
- 1.5 **Submittals:**
- A. Submit in accordance with Section 01300, Submittals.
  - B. Submit shop drawings for approval in the number of prints required in Section 01300, Submittals. Show materials, dimensions, cabinet-cut details, and sink locations.
  - C. Samples of colors shall be submitted upon award of contract for selection and coordination with other suppliers. Architect may request and obtain samples and catalog cuts as required for accessory and special items.
- 1.6 **Qualifications:**
- A. Drawings and specifications are based upon casework as manufactured by:

LSI Corporation of America, Inc.

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2100 Xenium Lane  
Minneapolis, Minnesota, 55441

- B. Construction and design shall be equal to **NewCentury™ L55 Series**.
- C. Provided all specifications are adhered to, the following manufacturers are approved:
1. Stevens Cabinets Co., Teutopolis, IL (217-857-6411)
  2. TMI Systems, Dickinson, ND (701-225-6716)
  3. Commercial Casework, Orange Park, FL (904-264-4222)
- D. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.*** Casework of other nationally recognized casework manufacturers may be considered for approval **provided a written statement of specification compliance, with request to bid, is received ten (10) days prior to opening of bids.** Casework must conform to design, quality of materials, design intent, workmanship and exact performance function of casework components and details specified and implied by manufacturer's reference, and as shown on plans regardless of that manufacturer's "product standards".
- E. Manufacturers requesting approval shall submit evidence of at least five (5) years experience and installations for similar type of project. Manufacturers shall also show evidence of financial stability, plant facilities, catalogs, and specifications. Full-sized samples, catalogs, and specifications shall be submitted with written request along with detailed list of compliance and deviations from these documents for approval. Samples may be impounded by Owner and retained until completion of job for verification and compliance of specifications.
- F. In addition to the above requirements, manufacturers requesting approval shall, at the same time, submit certified product test data in accordance with ANSI A161.1-1980, NEMA LD3-1995, and general static load testing performed and certified by an independent testing agency, covering the following areas of product performance, with these minimum results:
1. Base cabinet construction/racking test: 800 lbs. (363 kg).
  2. Cabinet front joint loading test: 425 lbs. (193 kg).
  3. Wall cabinet static load test: 2,000 lbs. (907 kg).
  4. Drawer front joint loading test: 600 lbs. (272 kg).
  5. Drawer construction/static load test: 750 lbs. (340 kg).
  6. Cabinet adjustable shelf support device/static load test: 300 lbs. (136 kg).
  7. Particleboard screw holding power: 330 lbs. (150 kg).
- G. The following performance details are project requirements and must be met by all Bidders, whether named herein, or approved by Addendum, regardless of that manufacturer's "Standards". Deviations will not be allowed.

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1. **Design:** Door/drawer shall set flush between extended cabinet end panels for increased lateral door strength, safety, and security. Door/drawer and all leading cabinet body, shelf and divider edges shall be 3mm PVC as specified herein. Overlay door designs and edgings other than specified are not acceptable.
2. **ADA, Americans with Disabilities Act Requirements:** The special requirements specified herein shall be met, where specifically indicated on architectural plans as "ADA", or by General Note. Shall be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations.
3. **Lamination System:** Doors, finished end panels, and other decorative exterior laminate surfaces shall be laminated exterior with .030 inch (.76mm) high-pressure plastic laminate, and interior with .020 inch (.51mm) high-pressure cabinet-liner. Lamination with hybrid P.V.A. Type III water-resistant adhesives.
4. **Structural Cabinet Body:** Cabinet backs shall be minimum ½ inch (12.7mm) thick, inset from rear of body, and fully bound (dadoed) four sides. Provide ¾ inch (19.1mm) thick stiffeners fastened to back/body as specified herein. Back perimeter shall be toe-nailed with 16 gauge twin-pin coated mechanical fasteners for tight interior fit, and direct connection of back panel to body.
5. **Interior Structure:** All cabinets over 36 inches (914mm) wide shall be furnished with a mechanically fastened, yet removable, vertical divider to reduce horizontal member/shelf deflection. Wall cabinets shall have a clear inside nominal depth of 12 inches (305mm) unless detailed otherwise.
6. **Shelf Loading:** Shelves shall meet the loading/deflection standards of the National Particleboard Association.
7. **Structural Drawer Body:** Drawer body shall be doweled with ½ inch (12.7mm) typical bottom, recessed, fully bound (dadoed) and joint-glued all four sides. Provide under body stiffeners as specified herein.
8. **Drawer Suspension:** Drawer slides shall be self-closing design, epoxy powder-coated, with positive instop, outstop, and out-keeper. Dynamic operational load rating shall be minimum 100 lbs. (45 kg). Minimum 150 lb. (68 kg) static load rating.
9. **Structural Cabinet Support:** Cabinet sub-base shall be of a separate and continuous ladder-type platform design leveled and floor mounted to cabinet body placement (where allowed in the Drawings). Material shall be exterior grade plywood. No cabinet sides-to-floor will be allowed, unless specifically detailed thus in the Drawings.

## PART 2 - PRODUCTS

### 2.1 Materials:

#### A. Laminated Plastics/Finishes:

1. **High-pressure plastic laminate:** 0.030 inch (0.76mm) in thickness, for exterior cabinet surfaces shall meet NEMA LD3-1985 VGS standards including thickness.



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2. **Exterior Color Selection Available:**
    - a. Standard finish vertical surface laminate from casework manufacturer's standard stock colors consisting of wood grain patterns and solid colors. Minimum of 54 selections available.
    - b. **Total of five (5) different color schemes available per project.**
    - c. Direction of wood grain shall be vertical on door, end panels, fascia panels, and exposed backs; horizontal on drawer faces, aprons, and top rails.
  3. **Plastic Laminate Balancing Sheet:** White high-pressure cabinet-liner, 0.020 inch (0.51mm) in thickness shall meet NEMA LD3-1995 CLS standards. Use for balancing exterior surface laminates.
  4. **Countertop High-pressure Plastic Laminate:**
    - a. High-pressure plastic laminate, textured finish, 0.050 inch (1.27mm) thickness or .042 inch (1.07mm) post-forming grade as detailed. Color as selected from manufacturer's stock standard patterns and solid colors.
    - b. Heavy-gauge neutral-colored backing sheet for balanced construction.
  5. **Pressure-Fused Laminate:**
    - a. Melamine resin-impregnated, 90 gram PSF minimum, thermofused to core under pressure.
    - b. Shall meet NEMA LD3.13-1995 VGS standards and NEMA LD3-1005 CLS standards.
    - c. White pressure-fused laminate for cabinet interiors behind door and drawers, interiors of all open cabinets, and underside of wall cabinet.
    - d. Shall be balanced at all concealed surfaces with same thermofused melamine. Unsurfaced coreboard or simple backers not allowed.
- B. **High Performance Particleboard Core:**
1. Particleboard shall be 47 lbs. (21.3 kg) density, of balanced 3-ply construction with moisture content not to exceed 8%. Particleboard shall conform to ANSI A208.1-1993, Type M-3.
  2. Cabinet components shall be of the following minimum finished thicknesses:
    - a. Cabinet backs, drawer body, and drawer bottoms: ½ inch (12.7mm)
    - b. Base, wall, and tall cabinet tops and bottoms, cabinet sides, drawer spreaders, cabinet back, rear hangstrips, structural dividers, exposed cabinet backs, and shelves in cabinets: ¾ inch (19.1mm)
    - c. Door and drawer faces: 13/16 inch (20.6mm)
    - d. Product-specific work surfaces and library stack shelving unless stack fitted with vertical divider: 1 inch (25.4mm)
- C. **Edging Types:** Provide the following in accordance with "Edging Locations":
1. **3mm thick PVC:** Solid, high-impact, purified, color-thru, acid resistant, pre-lamination primed edging, machine-applied with hot melt adhesives, automatically trimmed, inside/outside length-radiused for uniform appearance, buffed and corner-radiused for consistent design.

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2. **Flat Edge PVC:** 0.020 inch (0.51mm). Solid, high-impact, purified, color-thru, acid resistant PVC edging machine-applied with hot melt adhesives, automatically trimmed face, back and corners for uniform appearance.
- D. **Edging Locations:** Provide the above specified edging types at the following locations, of the following colors:
1. **Door/Drawer Front edging:** shall be 3mm PVC selected from at least 27 standard manufacturer colors, color matched to manufacturer standard laminates.
  2. **Cabinet end panel, top, bottom, door/drawer front spacer rail, interior dividers, and shelf:** shall be 3mm PVC selected from at least 27 standard manufacturer colors.
  3. **Top of drawer body:** shall be Flat Edge PVC White.
- E. **Hardware:**
1. **Hinges:**
    - a. Heavy-duty, five-knuckle, 2-3/4 inch (69.9mm), institutional-type hinge shall meet ANSI/BHMA A156.9 Grade 1 requirements. Mill ground, hospital tip, tight pin feature with all edges eased. Hinge shall be full wrap around type of tempered steel .095 inch (2.4mm) thick. Each hinge shall have minimum of 9 screws, #7, 5/8 (15.9mm) FHMS to assure positive door attachment.
    - b. One pair per door to 48 inch (1219mm) height. One and one-half pair over 48 inches (1219mm) in height. Hinge shall accommodate 13/16 inch (20.6mm) thick laminated door and allow 180 degree swing.
    - c. Finish shall be LH-301 ChromeCoat Powder Finish, LH-302 Black, LH-303 White, LH-304 Dove Grey, LH-305 Haze, or LH-306 Light Beige epoxy coated.
  2. **Pulls:**
    - a. Wire design, LH-321 4 inches (101.6mm), in ChromeCoat powder finish.
    - b. Wire design, LH-325 nylon, 4 inches (101.6mm), in White, Dove Grey, or Black.
    - c. LSI Signature Series LH-331 semi-recessed design, 5 1/4 inches x 1 3/4 inches (133mm x 44.5mm), in Dove Grey, Black, White, Haze, and Light Beige. Pull design shall be in compliance with the Americans with Disabilities Act, Federal Register Volume 56, no 144, Rules and Regulations. Similar pulls by Baer Supply #ME 497608 or Haefele #151.35 may be acceptable pending Architectural approval.
  3. **Sliding Door Hardware:**
    - a. **Frameless 1/4 inch (6.4mm) glass sliding doors:** LH0370 double track rolling door assembly.
    - b. **Framed 13/16 inch (20.6mm) thick stile and rail sliding doors:** LH-372 top mounted track with dual roller hangers. Vertical adjustment for accurate alignment.
  4. **Drawer Slides:**
    - a. **Standard Drawers:** LSI Lab Series Slide, LH-375, self-closing design, epoxy powder coated White with positive in-stop, out-stop, and out-keeper to maintain drawer in 80% open position. Captive nylon rollers,

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- front and rear. Minimum 100 lb. (45 kg) dynamic load rating at 50,000 cycles.
- b. **File Drawers:** Full extension, 3-part progressive opening slide, minimum 100 lb. (4 kg), zinc plated or epoxy coated at manufacturer's option.
  - c. Provide body-mounted molded rails for hanging file system for legal or letter size as indicated by manufacturer's model number. Cutting or machining of drawer body/face not allowed.
  - d. **Paper Storage Drawers:** Full extension, 3-part progressive opening slide, minimum 100 lb. (45 kg), zinc plated or epoxy coated at manufacturer's option.
5. **Catches:** Catch shall provide opening resistance in compliance with the Americans with Disabilities Act.
- a. Provide one top-mounted magnetic catch for base and wall cabinet door. Provide two at each tall cabinet door. Catch housing shall be molded in White. LH-340ADA.
  - b. LH-345 Roller catch for mobile cabinets.
6. **Adjustable Shelf Supports:** Shall be LH-354 twin pin design with anti tip-up shelf restraints for both 3/4 inch (19.1mm) and 1 inch (25.4mm) shelves. Design shall include keel to retard shelf slide-off, and slot for ability to mechanically attach shelf to clip. Load rating shall be minimum 300 lbs. (136 kg) each support without failure. Cabinet interior sides shall be flush, without shelf system permanent projection.
7. **Wardrobe Rod:** Shall be 1 1/6 inch (26mm) rod, LH-363, supported by LH-363 flanges.
8. **Coat Hooks:**
- a. Single coat hooks, wall mount - LH-365 Satin Aluminum.
  - b. Double coat hooks, wall mount - LH-366 Satin Aluminum.
9. **Molded Trays:**
- a. High-impact Polyethylene with cardholders. Color, White.
  - b. Sizes: 10 1/2 inches W x 3 1/2 inches H x 19 inches (267mm W x 89mm H x 483mm D).  
14 1/2 inches W x 3 1/2 inches H x 19 inches (368mm W x 89mm H x 483mm D).
  - c. Trays shall glide on molded, twin pin side rails, adjustable 1 1/4 inch (32mm) on center. Color, White.
10. **Molded Personal Pencil Drawer:** High-impact 100 Poly Styrene with in-stop, out-stop, and self-closing features. Provide under top mounted 100 lb. (45 kg) self-closing slides. Twelve compartment drawer body, and slides, Black. Provide where indicated on plans as "molded pencil drawer".
11. **Locks:** Shall be disc tumbler lock keyed alike and master keyed. Dull chrome finish.
- a. Hinged doors and drawers National Lock No. M4-7054.
  - b. Sliding doors, 13/16 inch (20.6mm) thick, national Lock No. M40057.
  - c. 1/4 inch (6.4mm) sliding panel doors, National Lock No. M2-0225.
12. **Wheel Casters:**

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- a. LH-386 swivel casters for standard mobile cabinets shall be plate type caster with ball bearing swivel. Size shall be 5 inches (127mm) for tall mobiles, with 1 1/16 inch (27mm) wide tread for carpet or hard cover floor. Wheel brakes on front two casters. Minimum 300 lb. (136 kg) load rating per caster.
  - b. Casters for low mobiles, book trucks, and low moveable carts shall be LH-390 4 inches x 1 1/16 inch (101.6mm x 27mm). Minimum 275 lb. (124.7 kg) load rating per caster.
13. **Mobile Steel Frame Structure:**
- a. Tall mobile cabinets shall be designed with a minimum 12- gauge (2.78mm) angular and channel steel frame structure. Frame shall be continuous at bottom, top, sides, front, and back. Finish shall be White. Frame system shall be welded and bolted together to insure stability and prevent racking when fully loaded. The manufacturer shall certify, in writing, a 10 year guarantee against racking under normal conditions.
  - b. Low mobile cabinets shall be designed with a structurally layered base to which above specified plate-type casters are bolted.
14. **Keyboard Tray:**
- a. Articulating keyboard trays, quantity and location as shown on architectural drawings, shall be adjustable for height, tilt, and backslope and allow 360 degree arm swivel. Slideout tray shall have low profile design for storage. BIFMA 100# rating. Tray size: 21 inch x 10 ½ inch (229mm x 267mm). Color: Black or Putty.
  - b. Optional sliding mouse tray (where shown) for both right and left-handed use. 9 inch x 8 ½ inch (533mm x 216mm).
- F. **Detailed Requirements for Cabinet Construction:**
1. **Sub-Base:**
    - a. Cabinet sub-base shall be separate and continuous (no cabinet body sides-to-floor) **except where required on the drawings**, water resistant exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type jobsite construction of individual front, back, and intermediates, to form a secure and level platform to which cabinets attach.
    - b. Sub-base at exposed cabinet end panels shall be recessed 1/4 inch (6.4mm) from face of finished end, for flush installation of finished base material by other trades.
  2. **Cabinet Top and Bottom:**
    - a. Solid sub-top shall be furnished for all base and tall cabinets.
    - b. At cabinets over 36 inches (914mm) bottoms and tops shall be mechanically joined by a fixed divider.
    - c. Exterior exposed wall cabinet bottoms shall be Pressure Fused white laminate both sides. Assembly devices shall be concealed on bottom side of wall cabinets.
  3. **Cabinet Ends:**
    - a. Holes drilled for adjustable shelves 1 1/4 inch (32mm) on center.

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- b. Exposed exterior cabinet ends shall be laminated with high-pressure plastic laminate, balanced with high-pressure cabinet-liner interior surface.
- c. Front edge shall be flush with door/drawer face.
- 4. **Fixed and Adjustable Shelves:**
  - a. Thickness shall be 3/4 inch (19.1mm).
- 5. **Cabinet Backs:**
  - a. Cabinet back shall be fully bound (dadoed) into sides, top, and bottom, recessed 7/8 inch (22.2mm) from cabinet rear. Rear, unexposed, side of back shall be toe-nailed to cabinet body with 16 gauge twin-pin coated mechanical fasteners.
  - b. Hang rails shall be located at rear of cabinet back and fastened to cabinet sides. Provide minimum of 2 at base, 2 at wall, and 3 at tall cabinets.
  - c. Exposed exterior backs shall be high-pressure plastic laminate balanced with high-pressure cabinet-liner.
- 6. **Door And Drawer Fronts:**
  - a. Laminated door and drawer fronts shall be 13/16 inch (20.6mm) thick for all hinged and sliding doors. Drawer fronts and hinged doors shall inset between extended cabinet end panels. Maintain a nominal 3/32 inch (2.38mm) reveal between pairs of doors, between door and drawer front, between door and end panel (route for hinge as required), or between multiple drawer fronts within the cabinet.
  - b. Stile and Rail doors shall be 13/16 inch (20.6mm) thick with full 1/4 inch (6.4mm) plate glass. Available hinged or sliding. All exposed lite-opening edges shall be trimmed and glazed with extruded vinyl glazing bead.
  - c. Frameless sliding glass doors shall be 1/4 inch (6.4mm) thick plate glass with ground and polished edges. Fit with anodized aluminum shoes and nylon rollers.
- 7. **Drawers:**
  - a. Drawer fronts shall be applied to separate drawer body component sub-front.
  - b. Drawer sides shall be doweled and glued to receive front and back, machine squared and held under pressure, to set.
  - c. Drawer bottom shall be fully bound (dadoed) into front, sides, and back. Routing, in drawer body for bottom, shall receive continuous glue. Reinforce drawer bottoms with 1/2 inch x 4 inches (12.7mm x 101.6mm) front-to-back intermediate underbody stiffeners, mechanically fastened. One at 24 inches (610mm), 2 at 36 inches (914mm), and over.
  - d. Paper storage drawers shall be fitted with full width hood at back.
- 8. **Vertical and Horizontal Dividers:** One of the following as indicated by cabinet number:
  - a. Natural hardboard 1/4 inch (6.4mm) thick, smooth both faces. Secured in cabinet with molded plastic clips.

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- b. Pressure Fused laminate 3/4 inch (19.1mm) thickness. Sub-dividers secured in cabinet with molded plastic clips or dowels. Structural dividers in cabinets over 36 inches (914mm) wide secured in cabinet with mechanical euro fasteners.
  9. **Door/Drawer Front Rail:** Provide minimum 3/4 inch x 6 inch (19.1mm x 152mm) x full width cabinet body rails immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, close off reveal, and be locator for lock strikes.
  10. **ADA, Americans with Disabilities Act Requirements:** The following special requirements shall be met, where specifically indicated on architectural plans as "ADA" or by General Note. Shall be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations:
    - a. **Countertop height:** With or without cabinet below, not to exceed a height of 34 inches (864 m) A.F.F., (Above Finished Floor), at a surface depth of 24 inches (610mm).
    - b. **Kneespace Clearance:** Shall be minimum 29 inches (737mm) A.F.F. at apron, and 30 inches (762mm) clear span width.
    - c. 12 inch (305mm) deep shelving, adjustable or fixed: Not to exceed a range from 9 inches (229mm) A.F.F. to 54 inches (1372mm) A.F.F.
    - d. **Sink cabinet clearances:** In addition to above, upper kneespace frontal depth shall be no less than 8 inches (203mm), and lower toe frontal depth shall be no less than 11 inches (279mm), at a point 9 inches (229mm) A.F.F., and as further described in Volume 56, Section 4.19.
- G. **Countertops:**
  1. High-pressure plastic laminate bonded to core. Thickness as shown on plans. Underside shall be properly balanced with heavy gauge backing sheet. Furnish countertops with edge treatment and design profile as shown on drawings. Provide tops in as long as practical continuous lengths. Provide field glued splines at joints. No joints closer than 24 inches (60mm) either side of sink cutout.
  2. Mobile cabinet tops shall be high-pressure plastic laminate on exterior and high-pressure cabinet-liner on underside. Edges shall be high-impact 3mm PVC.
- H. **Workmanship:**
  1. All exposed exterior cabinet surfaces shall be 0.030 inch (0.76mm) high-pressure laminate, color as selected from casework manufacturer's standards, minimum 54 colors/wood grains available. Laminate surface liner to core under controlled conditions by approved and regulated laminating methods to assure a premium lamination. Natural-setting hybrid P.V.A. Type III water resistant adhesives that cure through chemical reaction, containing no health or environmentally hazardous ingredients, are required. Methods requiring heat are not allowed; "contact" methods of laminating are not allowed.
  2. Cabinet parts shall be accurately machined and bored for premium grade quality joinery construction utilizing automatic machinery to insure consistent sizing of modular components. End panels shall be doweled to receive bottom and top.

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3. Back panel shall be fully bound (dadoed) into, and recessed 7/8 inch (22.2mm) from the back of cabinet sides, top, and bottom to insure rigidity and a fully closed cabinet. Cabinet back shall be mechanically fastened from rear of body for tight interior fit.
  4. Drawer bottom shall be fully bound (dadoed) and glued into and recessed 1/2 inch (12.7mm) up from the bottom of sides, back, and sub-front. Sides of drawer shall be doweled to receive drawer back and sub-front.
  5. 3/4 inch (19.1mm) thick hang rails shall be mechanically fastened to end panels of all wall, base, and tall cabinets for extra rigidity and to facilitate installation.
  6. All cases shall be square, plumb, and true.
  7. Case body and drawer workmanship and quality of construction shall be further evidenced by Independent Testing Laboratory results.
  8. Provide removable back panels and closure panels for plumbing access at all sink cabinets, and where shown on drawings.
- I. **Mobile Cabinet Design and Construction:**
1. Tall mobiles shall incorporate a continuous steel White frame as the structure to which finished panels/doors are applied. Frame profile dictates doors to overlay body. No conventional particleboard-to-particleboard fastening allowed as structural members. Low mobile cabinets shall be designed with a structurally layered base, to which plate-type casters are bolted.
  2. No exposed fasteners.
  3. Unit top shall be edged with 3mm PVC and overhang case front, back, and sides to function as a bumper system.
- J. **Instrument Storage Cabinets:** Modular components in 21 inch (533mm) or 7 inch (686mm) widths as detailed, inset door design. Compartment size and arrangements as shown on drawings, as manufactured by LSI Corporation of America, Inc. Manufacturers seeking approval must submit sample of instrument storage cabinet showing shelf system and construction details conforming to the requirements of this specification. Samples may be impounded by Owner and retained until completion of project for verification and compliance with specifications.
1. **Cabinet Body:** 3/4 inch (19.1mm) core as specified in Materials. Back panel 1/2 inch (12.7mm), recessed and structurally bound (dadoed) all four sides of cabinet body, secured with toe-nailed mechanical fasteners and 3/4 inch (19.1mm) thick rear stiffeners. Interior body surfacing, whether open or closed door cabinet, including sides, rear, and shelf underbody, shall be pressure fused thermofused melamine laminate, White. Toe base shall be separate and continuous platform of exterior grade plywood of front, back and intermediates for continuous support and moisture resistance.
  2. **Fixed Shelf System:** LSI ProtectorShield™ high-impact, molded system with continuous 1/2 inch wide x 1/4 inch deep (12.7mm x 6.4mm) ventilation grooves, soli core, and integral 1 1/4 inch (32mm) diameter 180 degree full-radiused front nosing. Shelf shall be 1 1/4 inch (32mm) total thickness, fixed to cabinet/divider sides with continuous offset channels to retain and support the

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shelf. Color, White to match other interior components. Vandal-resistant, removable only by authorized personnel.

3. **Relocatable Shelf System:** When so designated by individual product description within the bid documents, or on architectural plans, those cabinets shall be designed with shelves relocatable by facilities personnel. Cabinet bodies shall be factory pre-drilled to accept continuous shelf channel, relocatable to 1 1/4 inch (32mm) increments. Shelf system remains vandal-resistant.
4. **Heavy Weight Shelf Support:** Provide 1 1/4 inch (32mm) by 1 1/4 inch (32mm) 14 gauge steel tubing under all shelves in cabinets 36 inches (914mm) wide and wider, structurally fastened to cabinet end panels, and shelf. Color, White to match other interior components.
5. **Doors:** Refer to drawings for type, swing, and location. All doors shall inset flush between cabinet/compartments end panels.
  - a. **Grille Doors:** 5/16 inch (7.9mm) perimeter/reinforcing, and 3/16 inch (4.8mm) interior vertical wire. Door and welded 0.095 inch (2.4mm) hinges in White powder coat.
  - b. **Solid Laminate Doors:** Balanced construction with 0.030 inch (0.76mm) high-pressure plastic laminate exterior, high-pressure cabinet-liner interior, 13/16 inch (20.6mm) total thickness. Laminate surface/balancing liner to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination. Natural-setting hybrid PVA Type III water resistant adhesives that cure thru chemical reaction, containing no health or environmentally hazardous ingredients, are required.
  - c. **Hinges:** Five knuckle safety tip hinge with 2 3/4 inch (69.9mm) barrel, heavy gauge 0.095 inch (2.4mm) steel with non-loosening specially designed furniture screw attachment. Finished in White epoxy powder coat.
  - d. **Hasp:** Hasp system shall be of one piece construction, no moving parts. Hand grip shall be minimum 6 inch (152.4mm) U-shaped of welded 5/16 inch (7.9mm) rod. Hasp body plate shall contain padlock hole of sufficient size to accommodate all typically available combination/key padlock. Provide integral nylon stop for door-stop. Color, White. Provide pre-numbered, dual sided labels of contrasting color, integral with door, for Owner placement. Provide extra set of blank labels for Owner customization.
6. **Edging:** Cabinet Body Edging shall be high-impact, color-thru 3mm PVC, length beveled both sides. Door Edging shall be high-impact, color-thru 3mm PVC, length beveled and corner radiused inside and outside. Edging must be hot melt applied, trimmed, beveled, radiused and buffed by singular automatic machinery for consistency. No exceptions. Choice of 27 manufacturer's standard colors.
7. **Workmanship:** Premium standards of consistent reveals, bevels, and edge treatments. No exposed mechanical body fasteners. Color choices at laminate door face and exterior exposed cabinet body end panels shall be from



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manufacturer's standard 54 colors. Instrument Storage Cabinets shall be shipped factory pre-assembled, including doors of either right or left mounting.

### K. **High Density Rollout Music Library:**

1. Shall consist of steel framed structure attached to wall at back and one side and to floor, to which open shelving units 36 inches (914mm) wide x 81 inches (2057mm) and 92 inches (2337mm) high containing 6 and 7 shelves roll forward for right or left access according to room layout and height requirements.
2. **Steel Frame:** System of vertical and horizontal stabilizers and guidance system for housing each shelving unit. Integral cushioned in-stop and out-stop system. No floor tracks.
3. Shelving units of either right-side or left-side opening. Six shelves in 81 inch (2057mm) height unit, 7 shelves in 92 inch (2337mm) units. Shelves shall be 3/4 inch (19.1mm) thick and nominal 18 inches (457mm) wide either side of fixed vertical divider. Shelves shall be adjustable every 1 1/4 inch (32mm), with exception of fixed center shelf. Retention hardware shall prevent shelf tip-out or accidental removal. Interior metal angle reinforcements shall be at all four corners and back panel.
4. Each unit shall be fitted with thru-bolted 7 inch (178mm) impact-resistant molded pull, separate identification holder, and 4 heavy-duty 8 inch (203mm) diameter wheels to support unit rollout).
5. **Assembly:** System shall be installed level and true on hard surface finished floor. Floor level not to exceed 1/8 inch (3mm) variance in 48 inch (1219mm) left to right or front to back distance.

## 2.2 **STEEL FABRICATIONS, ASSEMBLIES, AND SUPPORT DEVICES:** Provide, of the size and configuration as detailed, or as indicated by product number. Exposed welds shall be ground smooth.

- A. **Heavyweight Table System:** Shall be constructed of 2 inch x 2 inch (50.8mm x 50.8mm) 12 gauge (2.66mm) steel legs and four-sided under-top surround. End assemblies shall be factory pre-welded, with welded length-connectors for 3/8 inch (9.53mm) diameter double bolted 2 inch x 2 inch (50.8mm x 50.8mm) 12 gauge (2.66mm) horizontal top supports. Provide levelers with non-rusting foot pad of tear drop design, for attaching to floor, as directed by contract documents. Provide leg shoes as indicated by product designation. Work top attachment brackets shall be pre-welded to horizontal and end frame members.
- B. **C-Frame Bench and Table Assemblies:** Shall be constructed of 1 1/2 inch (38.1mm) wide x 2 1/2 inch (63.5mm) deep 12 gauge (2.66mm) steel tube, corner welded, and ground smooth. Provide 3/8 inch (9.5mm) diameter levelers with non-rusting foot pads. Horizontal connectors shall be 1 1/2 inch x 1 1/2 inch (38.1mm x 38.1mm) 12 gauge (2.66mm) bolted to vertical C-frames. Table frames with laminate back panel horizontal connectors shall incorporate 1 inch x 1 inch (25.4mm x 25.4mm) channel, to receive panel.
- C. **Table Frame Cabinet Hanging System:** Provide 12 gauge (2.66mm) rolled-channel horizontal top member and tubular horizontal lower cabinet standoff. Provide, for the

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- attachment and relocation of product designated cabinet types, at assemblies specified or indicated by product designation.
- D. **Steel Support Legs at Cabinet Assemblies:** Shall be 2 inch x 2 inch (50.8mm x 50.8mm) 12 gauge (2.66mm) steel with welded top or side plate according to product design. Provide 3/8 inch (9.5mm) diameter leveler with non-rusting foot pad of tear drop design for floor attachment, and leg shoe according to product design.
  - E. **Cantilevered Work Top Support Bracket:** Shall be of 1 1/2 inch x 1 1/2 inch (38.1mm x 38.1mm) 12 gauge (2.66mm) steel vertical, welded and ground smooth to 1 1/2 inch wide by 2 1/2 inch deep (38.1mm x 63.5mm) 12 gauge (2.66mm) horizontal, of the overall size as indicated on contract documents, or as designated by product number. Provide molded cap inserts at wall and countertop fastener holes.
  - F. **Angular Work Top Support Bracket:** Shall be factory-welded 1 1/2 inch by 14 inch (38.1mm x 355.6mm) flat steel of vertical, horizontal, and angular design according to size indicated on contract documents, or designated by product number.
  - G. **Free Standing Science Island Pedestal Group:** Shall be of angular and channel shapes, minimum 1 1/2 inch x 1 1/2 inch (38.1mm x 38.1mm) x 1/8 inch (3.2mm) coated steel consisting of factory pre-welded four sided pedestal support frame of four vertical, four upper, and four lower members. Provide cabinet hanging rails four sides as indicated by product designation. Upper frame shall be factory welded and bolted rolled channels and brackets to support work top and related perimeter aprons. Overall size and shape as directed by product number.

### PART 3 - EXECUTION

#### 3.1 COORDINATION:

- A. Coordinate work of this Section with related work of other Sections as necessary to obtain proper installation of all items.
- B. Verify site dimensions of cabinet locations in building prior to fabrication.

#### 3.2 INSTALLATION:

- A. **Storage and Protection:** Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not store or install casework in building until concrete, masonry, and drywall/plaster is dry.
- B. **Workmen:** Install casework under the supervision of the manufacturer's representative with factory-trained mechanics certified by manufacturer.
- C. **Workmanship:**
  - 1. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
  - 2. Install all items complete and adjust all moving parts to operate properly.
  - 3. Leave surface clean and free from defects at time of final acceptance.
- D. **Guarantee:** All materials shall be guaranteed for a period of 5 years from manufacturer's defects and workmanship.

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- E. **Clean-Up:** Remove all cartons, debris, sawdust, scraps, etc., and leave spaces clean and all casework ready for Owner's use.

**END OF SECTION 06412**

SECTION 07213

**FIBROUS INSULATION**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall **not** relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** The work included under this Section is building insulation of a fibrous, flexible type. Extent of work on project is limited primarily to sound partitions.

**PART 2 - PRODUCTS**

- 2.1 **Fibrous Insulation:** Insulation shall be unfaced, flame-resistant, Class 'A' rated, with a flame spread of 25 or less, have minimum "R" value of 11, unless indicated otherwise.
- 2.2 **Fasteners:** Foil-backed tape.

**PART 3 - EXECUTION**

- 3.1 **Application of Blanket-Type Insulation:**
  - A. The insulation shall be installed after all electrical wiring, plumbing, and other concealed work is in place; areas around electrical outlets, pipes and all other protruding objects shall be snugly fitted.
  - B. Each space between studs shall be insulated completely with blanket insulation sized to fit the full width of the spaces.
  - C. Blankets or batts shall be butted snugly. Insulation with affixed facing shall be installed with the affixed facing toward the interior (warm in winter) side of construction.
  - D. All joints or breaks in the insulation facing shall be sealed.

END OF SECTION 07213

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SECTION 07261

**SELF-ADHERING AIR AND VAPOR BARRIER**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. This Section specifies a water-resistant self-adhering sheet air and vapor barrier in exterior wall assemblies.
  - B. Related Work in other Sections include the following:
    - 1. Section 01500, Temporary Facilities; requirement to schedule work to prevent sunlight and weather exposure of materials beyond limits established by manufacturer; requirement to protect materials from damage after installation and prior to installation of enclosing work.
    - 2. Section 03300, Cast-In-Place Concrete; requirement that backup concrete be free of fins, protrusions and large holes.
    - 3. Section 04210, Brick Masonry; requirement that backup masonry joints are flush and completely filled with mortar, and that excess mortar on brick ties will be removed; requirement for gap at deflection joints and fillers; coordination with sequencing of through-wall flashing.
    - 4. Section 06461, Gypsum Sheathing; requirement that backup gypsum sheathing has been installed with damaged corners repaired, joints filled and surface flush with compatible material as acceptable to the self-adhering air and vapor barrier manufacturer; requirement for gap at deflection joints and fillers.
    - 5. Section 07535, Modified Bitumen Sheet Roofing; requirement for coordination with sequencing of membrane roofing; requirement to seal roof membrane to wall air and vapor barrier.
- 1.2 **Performance Requirements:**
- A. **Material Performance:** Provide materials which have an air permeance not to exceed 0.004 cubic feet per minute per square foot under a pressure differential of 0.3 in. water (1.57 pounds per square foot) when tested according to ASTM E 2178, and a vapor permeance of 0.1 perms or less when tested according to ASTM E 96.

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- B. **Assembly Performance:** Provide a continuous air and vapor barrier assembly that has an air leakage not to exceed 0.040 cubic feet per square foot per minute under a pressure differential of 0.3 in. water (1.57 pounds per square foot) when tested in accordance with ASTM E 2357. Assembly shall perform as a liquid drainage plane flashed to discharge condensation or water penetration to the exterior. Assembly shall accommodate movements of building materials by providing expansion and control joints as required, with accessory air and vapor seal materials at such locations, changes in substrate and perimeter conditions.
1. Assembly shall be capable of withstanding positive and negative combined design wind, fan and stack pressures on the envelope without damage or displacement, and shall transfer the load to the structure.
  2. Assembly shall not displace adjacent materials under full load.
  3. Assembly shall be joined in an airtight and flexible manner to the air barrier material of adjacent assemblies, allowing for the relative movement of assemblies due to thermal and moisture variations and creep, and anticipated seismic movement.
- C. **Connections to Adjacent Materials:** Provide connections to prevent air leakage and vapor migration at the following locations:
1. Foundation and walls, including penetrations, ties and anchors.
  2. Walls, windows, curtain walls, storefronts, louvers or doors.
  3. Different wall assemblies, and fixed openings within those assemblies.
  4. Wall and roof connections.
  5. Floors over unconditioned space.
  6. Walls, floor and roof across construction, control and expansion joints.
  7. Walls, floors and roof to utility, pipe and duct penetrations.
  8. Seismic and expansion joints.
  9. All other leakage pathways in the building envelope.

### 1.3 Submittals:

- A. Refer to Section 01300, Submittals, and Section 01150, Substitution Requests (during bidding).
- B. **Quality Assurance Program:** Submit evidence of current accreditation and certification under the Air Barrier Association of America's (ABAA) Quality Assurance Program. Submit accreditation number of contractor and certification number of installers.
- C. **Product Data:** Submit manufacturer's product data, manufacturer's printed instructions for evaluating, preparing, and treating substrate, temperature and other limitations of installation conditions, technical data, and tested physical and performance properties.
1. Submit letter from primary materials manufacturer indicating approval of products not manufactured by primary manufacturer.
  2. Include statement that materials are compatible with adjacent materials proposed for use.
  3. Submit reports indicating that field peel-adhesion test on all materials to which sealants are adhered have been performed and the changes made, if required, to other approved materials, in order to achieve successful adhesion.

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- D. **Samples:** Submit clearly labeled samples, 3 by 4 inch (75 mm by 100 mm) minimum size of each material specified.
- E. **Shop Drawings of Mock-Up:** Submit shop drawings of proposed mock-ups showing plans, elevations, large-scale details, and connections to the test apparatus.
- F. **Field Test Results of Mock-Up:** Submit test results of air leakage test and water leakage test of mock-up in accordance with specified standards, including retesting if initial results are not satisfactory.
- G. **Shop Drawings:** Submit shop drawings showing locations and extent of air and vapor barrier assemblies and details of all typical conditions, intersections with other envelope assemblies and materials, membrane counter-flashings, and details showing how gaps in the construction will be bridged, how inside and outside corners are negotiated, how materials that cover the air and vapor barrier are secured with air-tight condition maintained, and how miscellaneous penetrations such as conduits, pipes, electric boxes and similar items are sealed.
  - 1. Include VOC content of each material, and applicable legal limit in the jurisdiction of the project.
  - 2. Include statement that materials are compatible with adjacent materials proposed for use.
  - 3. Include recommended values for field adhesion test on each substrate.
- H. **Compatibility:** Submit letter from manufacturer stating that materials proposed for use are permanently chemically compatible and adhesively compatible with adjacent materials proposed for use. Submit letter from manufacturer stating that cleaning materials used during installation are chemically compatible with adjacent materials proposed for use.

### 1.4 Quality Assurance:

- A. **Air Barrier Contractor Qualifications:** Currently accredited by the Air Barrier Association of America (ABAA) whose applicators are certified in accordance with the ABAA Quality Assurance Program.
- B. **Manufacturer:** Obtain primary materials from a single manufacturer regularly engaged in manufacturing air and vapor barrier membranes. Obtain secondary materials from a source acceptable to the primary materials manufacturer.
- C. **Accredited Laboratory Testing for Materials:** Laboratory accredited by International Accreditation Service Inc. (IAS), American Association for Laboratory Accreditation (A2LA), or the Standards Council of Canada (SCC).
- D. **VOC Regulations:** Provide products which comply with applicable regulations controlling the use of volatile organic compounds.
- E. **Preconstruction Meeting:** Convene a minimum of two weeks prior to commencing Work of this Section. Agenda shall include, at a minimum, construction and testing of mock-up, sequence of construction, coordination with substrate preparation, materials approved for use, compatibility of materials, coordination with installation of adjacent and covering materials, and details of construction. Attendance is required by representatives of related trades including covering materials, substrate materials and adjacent materials.



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- F. **Field Quality Assurance:** Implement the ABAA Quality Assurance Program requirements. Cooperate with ABAA inspectors and independent testing and inspection agencies engaged by the Owner. Do not cover air and vapor barrier membrane until it has been inspected, tested and accepted.
- G. **Mock-Ups:** Build mock-up representative of primary exterior wall assemblies and glazing assemblies including backup wall and typical penetrations as acceptable to the Architect. Mock-up shall be approximately 8 feet long by 8 feet high and include all components in the exterior wall assembly.
- H. **Mock-Up Tests for Air and Water Infiltration:** Test mock-up for air and water infiltration in accordance with ASTM E 1186 (air leakage location), ASTM E 783 (air leakage quantification), and ASTM E 1105 (water penetration). Use smoke tracer to locate sources of air leakage. If deficiencies are found, reconstruct mock-up and retest until satisfactory results are obtained. Deficiencies include air leakage beyond values specified, uncontrolled water leakage, unsatisfactory workmanship.
  - 1. Perform the air leakage tests and water penetration test of mock-up prior to installation of cladding and trim but after installation of all fasteners for cladding and trim and after installation of other penetrating elements.
- I. **Mock-Up Tests for Membrane Adhesion:** Test mock-up of membrane for adhesion in accordance with ASTM D 4541 using a Type 1 pull tester except that the disk used shall be 100mm in diameter and the membrane shall be cut through to separate the material attached to the disk from the surrounding material. Perform test after curing period recommended by the manufacturer. Record mode of failure and area which failed in accordance with ASTM D 4541. When the air barrier material manufacturer has established a minimum adhesion level for the product on the particular substrate, the inspection report shall indicate whether this requirement has been met. Where the manufacturer has not declared a minimum adhesion value for their product/substrate combination, then the inspector shall simply record the value.

### 1.5 **Delivery, Storage, and Handling:**

- A. Deliver materials to Project site in original packages with seals unbroken, labeled with manufacturer's name, product, date of manufacture, and directions for storage.
- B. Store materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air and vapor barrier membrane manufacturer. Protect stored materials from direct sunlight.
- C. Handle materials in accordance with manufacturer's recommendations.

### 1.6 **Project Conditions:**

- A. **Temperature:** Install air and vapor barrier within range of ambient and substrate temperatures recommended by air and vapor barrier manufacturer. Do not apply air and vapor barrier to a damp or wet substrate.
- B. **Field Conditions:** Do not install air and vapor barrier in snow, rain, fog, or mist. Do not install air and vapor barrier when the temperature of substrate surfaces and surrounding air temperatures are below those recommended by the manufacturer.

### 1.7 **Warranty:**

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- A. **Material Warranty:** Provide manufacturer's standard product warranty, for a minimum 3 years from date of Substantial Completion.
- B. **Installation Warranty:** Provide installer's 2 year warranty from date of Substantial Completion, including all components of the air and vapor barrier assembly, against failures including loss of air tight seal, loss of watertight seal, loss of adhesion, loss of cohesion, failure to cure properly.

## PART 2 - PRODUCTS

### 2.1 Materials:

- A. **Sheet Air and Vapor Barrier:** Self-adhering membrane composed of flexible facing material coated completely and uniformly on one side with adhesive material, formed into uniform, flexible sheets, interleaved with disposable release liner that is removed prior to application. Use regular or low-temperature formulation depending on site conditions, within temperature ranges specified by manufacturer. Provide related accessories including primer, seam tape, mastic, fluid and sealant recommended by manufacturer. Subject to compliance with requirements, provide one of the following:
  - 1. Carlisle Coatings and Waterproofing:
    - a. Air and Vapor Barrier Membrane: CCW-705, 40 mils thick.
    - b. Water-Based Primer: CCW-AWP Water-Based Primer.
    - c. Solvent-Based Primer: CCW-702 Solvent-Based Primer.
    - d. Solvent-Based Aerosol Primer: CAV-GRIP.
    - e. Counterflashing for Masonry Through-Wall Flashings: CCW-705 TWF.
    - f. Mastics, Adhesives and Tapes: CCW-704 Solvent-Based Rubberized Asphalt Mastic.
  - 2. Grace Construction Products:
    - a. Air and Vapor Barrier Membrane: Perm-A-Barrier, 40 mils thick.
    - b. Water-Based Primer: Perm-A-Barrier WB Primer.
    - c. Solvent-Based Primer: Bituthene Primer B-2.
    - d. Counterflashing for Masonry Through-Wall Flashings: Perm-A-Barrier Flashing.
    - e. Mastics, Adhesives and Tapes: As recommended by manufacturer.
  - 3. Henry:
    - a. Air and Vapor Barrier Membrane: Blueskin SA, 40 mils thick.
    - b. Water-Based Primer: Aquatac.
    - c. Solvent-Based Primer: Blueskin Primer.
    - d. Counterflashing for Masonry Through-Wall Flashings: Blueskin TWF.
    - e. Mastics, Adhesives and Tapes: Henry 570-05 Polybitume.
  - 4. Protective Coatings Technology, Inc.:
    - a. Air and Vapor Barrier Membrane: Poly-Wall Crack Guard, 25 mils thick.
    - b. Water-Based Primer: As recommended by manufacturer.
    - c. Solvent-Based Primer: Poly-Wall AirLok or AirLok Flex as recommended.
    - d. Counterflashing for Masonry Through-Wall Flashings: Poly-Wall Crack Guard.

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- e. Mastics, Adhesives and Tapes: As recommended by manufacturer.
- 5. Tremco, Inc.
  - a. Air and Vapor Barrier Membrane: ExoAir 110, 40 mils thick.
  - b. Water-Based Primer: ExoAir WB Primer.
  - c. Solvent-Based Primer: ExoAir Primer or GM Primer or ExoAir 10 Primer as recommended.
  - d. Counterflashing for Masonry Through-Wall Flashings: ExoAir TWF.
  - e. Mastics, Adhesives and Tapes: As recommended by manufacturer.
- 6. W. R. Meadows, Inc.:
  - a. Air and Vapor Barrier Membrane: Air-Shield, 40 mils thick.
  - b. Water-Based Primer: Mel-Prime Water Base.
  - c. Solvent-Based Primer: Mel-Prime VOC.
  - d. Counterflashing for Masonry Through-Wall Flashings: Detail Strip.
  - e. Mastics, Adhesives and Tapes: As recommended by manufacturer.

### 2.2 Auxiliary Materials:

- A. **Sealant at Transitions in Substrate and Connections to Adjacent Elements:**  
Low-modulus pre-cured silicone extrusion and sealant for bonding extrusions to substrates; Tremco Silicone Extruded Sheet by Tremco, Spectrem EZ Seal by Tremco, or Bondaflex Silbridge 300 by May National Associates.
- B. **Transition Membrane Between Air and Vapor Barrier Membrane and Roofing and Other Adjacent Materials:** Comply with both air and vapor barrier manufacturer's recommendations and material manufacturer's recommendations.

## PART 3 - EXECUTION

### 3.1 Examination:

- A. Examine substrates, areas, and conditions under which air and vapor barrier assemblies will be applied, with Installer present, for compliance with requirements.
  - 1. Verify that surfaces and conditions are suitable prior to commencing work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
  - 2. Do not proceed with installation until after minimum concrete curing period recommended by air and vapor barrier manufacturer.
  - 3. Ensure that the following conditions are met:
    - a. Surfaces are sound, dry, even, and free of oil, grease, dirt, excess mortar or other contaminants
    - b. Concrete surfaces are cured and dry, smooth without large voids, spalled areas or sharp protrusions.
    - c. Masonry joints are flush and completely filled with mortar, and all excess mortar sitting on masonry ties has been removed.
  - 4. Verify substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 and take suitable measures until substrate passes moisture test.

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5. Verify sealants used in sheathing are compatible with membrane proposed for use. Perform field peel-adhesion test on materials to which sealants are adhered.
6. Notify Architect in writing of anticipated problems using air and vapor barrier over substrate prior to proceeding.

### 3.2 Surface Preparation:

- A. Clean, prepare, and treat substrate according to manufacturer's written instructions. Ensure clean, dust-free, and dry substrate for air and vapor barrier application.
  1. Prime masonry, concrete substrates with conditioning primer.
  2. Prime glass-fiber surfaced gypsum sheathing an adequate number of coats to achieve required bond, with adequate drying time between coats.
  3. Prime wood, metal, and painted substrates with primer.
  4. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through air and vapor barrier and at protrusions.

### 3.3 Installation:

- A. **Self-Adhering Sheet Air and Vapor Barrier:** Install membrane to provide continuity throughout the building envelope. Install materials in accordance with manufacturer's recommendations and the following:
  1. Apply primer at rate recommended by manufacturer prior to membrane installation. Allow primer to dry completely before membrane application. Apply as many coats as necessary for proper adhesion.
  2. When membrane is properly positioned, press into place and roll membrane with roller immediately after placement.
  3. Apply membrane sheets to shed water naturally without interception by a sheet edge, unless that edge is sealed with permanently flexible termination mastic.
  4. Position subsequent sheets of membrane applied above so that membrane overlaps the membrane sheet below by a minimum of 2 inches (50 mm), unless greater overlap is recommended by manufacturer. Roll into place with roller.
  5. Overlap horizontally adjacent pieces a minimum of 2 inches (50 mm), unless greater overlap is recommended by manufacturer. Roll seams with roller.
  6. Seal around all penetrations with termination mastic, extruded silicone sealant, membrane counterflashing or other procedure in accordance with manufacturer's recommendations.
  7. Connect air and vapor barrier in exterior wall assembly continuously to the air barrier of the roof, to concrete below-grade structures, to windows, curtain wall, storefront, louvers, exterior doors and other intersection conditions and perform sealing of penetrations, using accessory materials and in accordance with the manufacturer's recommendations.
  8. At changes in substrate plane, provide transition material (bead of sealant, mastic, extruded silicone sealant, membrane counterflashing or other material recommended by manufacturer) under membrane to eliminate all sharp 90 degree inside corners and to make a smooth transition from one plane to another.

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9. Provide mechanically fastened non-corrosive metal sheet to span gaps in substrate plane and to make a smooth transition from one plane to the other. Membrane shall be continuously supported by substrate.
10. At through-wall flashings, provide an additional 6 inch wide strip of manufacturer's recommended membrane counterflashing to seal top of through-wall flashing to membrane. Seal exposed top edge of strip with bead of mastic as recommended by manufacturer.
11. At deflection and control joints, provide backup for the membrane to accommodate anticipated movement.
12. At expansion and seismic joints provide transition to the joint assemblies.
13. Apply a bead or trowel coat of mastic along membrane seams at reverse lapped seams, rough cuts, and as recommended by the manufacturer.
14. At end of each working day, seal top edge of membrane to substrate with termination mastic.
15. Do not allow materials to come in contact with chemically incompatible materials.
16. Do not expose membrane to sunlight longer than as recommended by the manufacturer.
17. Inspect installation prior to enclosing assembly and repair punctures, damaged areas and inadequately lapped seams with a patch of membrane lapped as recommended by manufacturer.

### 3.4 **Protecting and Cleaning:**

- A. Protect air and vapor barrier assemblies from damage during application and remainder of construction period, according to manufacturer's written instructions.
  1. Coordinate with installation of materials which cover air and vapor membrane, to ensure exposure period does not exceed that recommended by the air and vapor barrier manufacturer.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction and acceptable to the primary material manufacturer.

END OF SECTION 07262

SECTION 07262

**VAPOR BARRIER**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Products supplied under this section:
    - 1. Vapor barrier, seam tape, and mastic for installation under concrete slabs.
- 1.4 **References:**
- A. American Society for Testing and Materials (ASTM):
    - 1. ASTM E1745-09 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
    - 2. ASTM E154-99 (2005) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
    - 3. ASTM E96-05 Standard Test Methods for Water Vapor Transmission of Materials.
    - 4. ASTM F1249-06 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.
    - 5. ASTM E1643-09 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
  - B. American Concrete Institute (ACI):
    - 1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
- 1.5 **Submittals:**
- A. Submit in accordance with Section 01300, Submittals, and Section 01150.
  - B. Submit the following information:
    - 1. Summary of test results as per paragraph 8.3 of ASTM E1745.
    - 2. Manufacturer's samples, literature.
    - 3. Manufacturer's installation instructions for placement, seaming and penetration repair instructions.

## **PART 2 - PRODUCTS**

### **2.1 Materials:**

- A. Vapor barrier must have all of the following qualities:
  - 1. Permeance of less than 0.01 Perms as tested in accordance with ASTM E1745 Section 7.
  - 2. **Other performance criteria:**
    - a. Strength: ASTM E1745 Class A.
    - b. Thickness: 15 mils minimum
- B. **Vapor barrier products:**
  - 1. **Basis of Design:**
    - Stego Wrap Vapor Barrier (15-mil)
    - Stego Industries LLC
    - (877) 464-7834
    - www.stegoindustries.com.
- C. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### **2.2 Accessories:**

- A. **Seam tape:** Stego Tape by Stego Industries LLC.
- B. **Vapor-proofing mastic:** Stego Mastic by Stego Industries LLC.

## **PART 3 - EXECUTION**

### **3.1 Preparation:**

- A. Ensure that the base material is approved by Architect.
- B. Level and compact base material.

### **3.2 Installation:**

- A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.
  - 1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement.
  - 2. Lap vapor barrier over footings and/or seal to foundation walls.
  - 3. Overlap joints 6 inches and seal with manufacturer's tape.
  - 4. Seal all penetrations (including pipes) per manufacturer's instructions.
  - 5. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
  - 6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all sides with tape.

END OF SECTION 07262

SECTION 07921

**SEALANTS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Application of sealants at control and expansion joints on exterior vertical and horizontal intersections to provide a water and air tight barrier, as stated below and as noted on drawings.
  - B. Associated materials and preparatory work to insure a successful sealant application.
- 1.4 **References:**
- A. ASTM C 920 - Specification for Elastomeric Joint Sealants.
  - B. ASTM D 2240 - Test Method for Rubber Property-Durometer Hardness.
  - C. ASTM C 1248 and C 510 - Staining.
- 1.5 **Submittals:**
- A. **Product Literature:** Refer to Section 01300, Submittals. Submit product data sheets and manufacturer's installation instructions. Note specifically which (if any) sealants are to be in physical contact (such as parapet and reglet intersections), confirming compatibility of submitted products.
  - B. **Samples:** A 2" cured sample of each chosen color and type of sealant.
- 1.6 **Quality Assurance:**
- A. **Compatibility with Substrate and Coatings:** Applicator shall be responsible for verifying with sealant manufacturer that sealants used are compatible with joint substrates and coatings to which sealants will come in contact.
  - B. **Joint Design Criteria:** Applicator shall be responsible for verifying with sealant manufacturer that installed joint dimensions are adequate for movement capabilities for extreme and significant moving joint sealants.
  - C. Applicator shall be responsible for providing a completely sealed building and ensure that all exterior joints between surfaces are properly sealed even if not detailed in Contract Documents.



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### 1.7 Qualifications:

- A. **Manufacturer:** Company specializing in manufacturing Products specified in this section with minimum ten (10) years experience.
- B. Applicator and job foreman shall have minimum five (5) years experience on equivalent projects.
- C. Use personnel specifically trained in proper application procedures who are thoroughly familiar with joint details shown on drawings and installation requirements as specified in this section.

### 1.8 Delivery, Storage and Handling:

- A. Deliver in manufacturer's original, unopened containers identifying each product specified, relating to product literature submitted.
- B. Store in accordance with manufacturer's recommendation; take precautions to ensure material fitness when installed for design performance.

### 1.9 Warranty:

- A. Warrant sealed joints against adhesive or cohesive failure of sealant and watertightness of sealed joint for a period of five (5) years for labor and material.
- B. Provide material warranty of five (5) years for polyurethanes and twenty (20) years for silicones.

## PART 2 - PRODUCTS

### 2.1 Sealants (See schedule for use of each sealant type)

- A. **Type 1:** ASTM C 920; low modulus, one component, nonsag, neutral cure silicone.
  - 1. **Elongation Capability:** +100% to -50%; total elongation, 1600%.
  - 2. **Service Temperature Range:** -20 to 160° F.
  - 3. **Shore A Hardness Range:** 15-20; ASTM D 2240.
  - 4. **Staining:** None; ASTM C 1248.
  - 5. **Manufacturers:** Dow Corning Corp. 790.
- B. **Type 2:** ASTM C 920; intermediate modulus, one component, nonsag, neutral cure silicone.
  - 1. **Elongation Capability:** +/-50%.
  - 2. **Service Temperature Range:** -40 to 300° F.
  - 3. **Shore A Hardness Range:** 30; ASTM D 2240.
  - 4. **Staining:** None, ASTM C 510.
  - 5. **Manufacturers:** Dow Corning Corp. 795; 995.
- C. **Type 3:** ASTM C 920; high modulus, one component, nonsag, acetoxycure silicone.
  - 1. **Elongation Capability:** +/-25%.
  - 2. **Service Temperature Range:** -35 to 140° F.
  - 3. **Shore A Hardness Range:** 23; ASTM D 2240.
  - 4. **Manufacturers:** Dow Corning Corp. 999A; Pecora 863; GE 1200.
- D. **Type 4:** ASTM C 920; medium modulus, one component, nonsag, neutral cure silicone.
  - 1. **Elongation Capability:** +/-50%.

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2. **Service Temperature Range:** -20 to 120° F.
3. **Shore A Hardness Range:** 25-30; ASTM D 2240.
4. **Staining:** None; ASTM 510.
5. **Manufacturers:** Dow Corning Corp. 791; GE Silpruf.
- E. **Type 5:** ASTM C 920, low modulus, two component, nonsag, polyurethane.
  1. **Elongation Capability:** +/-25%.
  2. **Service Temperature Range:** -20 to 120° F.
  3. **Shore A Hardness Range:** 20-25; ASTM D 2240.
  4. **Manufacturers:**
    - a. Mameco International, Vulkem 922
    - b. Mameco International, Vulkem 45 (self leveling)
    - c. Sika Corporation, Sikaflex 2C/SL
    - d. Tremco, Dymeric 511
    - e. Pecora, Dynatrol II
- F. **Type 6:** ASTM 920; medium modulus, one component, nonsag, polyurethane.
  1. **Elongation Capability:** +/-25%.
  2. **Service Temperature Range:** -20 to 120° F.
  3. **Shore A Hardness Range:** 25-40; ASTM D 2240.
  4. **Manufacturers:**
    - a. Mameco International, Vulkem 116
    - b. Sika Corporation, Sikaflex 1a
- G. **Type 7:** ASTM C 920; one component, self-leveling, fuel resistant, low modulus silicone sealant.
  1. **Elongation Capability:** +100% to -50%.
  2. **Service Temperature Range:** -20 to 160° F.
  3. **Shore A Hardness Range:** 15-20; ASTM D 2240.
  4. **Manufacturers:** Dow Corning 890 SL, 888.
- H. **Type 8:** ASTM 834; single component, modified acrylic latex sealant, interior sealant.
  1. **Elongation Capability:** +/-7.5%.
  2. **Service Temperature Range:** 32 to 95° F.
  3. **Manufacturers:**
    - a. Pecora AC 20
    - b. Tremco 834.

### 2.2 Primers:

- A. Comply with manufacturer's instructions. Manufacturer shall be consulted for all surfaces not specifically covered in submitted application instructions.

### 2.3 Backer Rod - Tape:

- A. Closed-cell polyethylene, open-cell polyurethane, or open-cell polyethylene soft-type baker rod as recommended by sealant manufacturer. Bond breaker tape shall be used to prevent three-sided adhesion in location where backer rod cannot be used.
- B. **Acceptable Manufacturers:**
  1. **Closed-Cell:**
    - a. ITP, Standard Baker Rod

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- b. Nomaco Standard Backer Rod
- 2. **Open-Cell:**
  - a. Denver Foam
  - b. ITP Tundra Foam
  - c. Nomaco.
- 3. **Soft-Type:**
  - a. ITP Soft-type
  - b. Nomaco Sof-rod
- 4. **Bond Breaker Tape:** Pecora Corp.

### PART 3 - EXECUTION

#### 3.1 Examination:

- A. Protect adjacent exposed surfaces.
- B. Prepare joints in accordance with manufacturer's recommended instructions for maximum adhesion; prime as required by manufacturer.
- C. Consult manufacturer for surfaces not specifically covered in application instructions.
- D. Installation of sealant shall be evidence of acceptance of substrate.

#### 3.3 Installation:

- A. Sealant shall be mixed (if multi-component) and installed in accordance with manufacturer's recommendations and instructions to ensure complete mixing and an installed proper width/depth ratio with maximum adhesion contact. Three sided adhesion must be prevented.
- B. Backer rod shall be installed using only blunt or rounded tools which will ensure a uniform(+ or -1/8") depth without puncturing the material. Backer rod shall be a minimum of 33% oversized for closed cell and a minimum of 50% oversized for open cell backer rod, unless otherwise required by the manufacturer.
- C. Surrounding surfaces shall be protected as required to ensure no sealant contaminates these surfaces.
- D. Both temperature and dampness conditions may restrict application of these sealants. Comply with manufacturer's instructions.
- E. Force sealant into joint to ensure conformance with manufacturer's recommended width/depth ratios. Tool to ensure full contact with sidewalls and backing. Tooling pressure shall cause a wetting for maximizing sealant adhesive contact to substrate.
- F. Unless otherwise indicated, finish horizontal joints flush, vertical joints distinctly concave in shape.
- G. Finished bead shall be smooth, free from wrinkles, air pockets, and foreign matter.

#### 3.4 Cleaning:

- A. Remove excess material adjacent to joint.
- B. Remove unused materials for jobsite.

#### 3.5 Schedule:

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**Joint Type:**

1. Structural Glazing. . . . . Type 2
2. Glass to Glass (Nonstructural).. . . . Type 3
3. Perimeter Window Sealant. . . . . Type 2 and Type 4
4. Aluminum to Brick. . . . . Type 4
5. Brick to Brick. . . . . Type 5
6. Wood to Wood and Wood to Vinyl.. . . . Type 6
7. Metal to Metal. . . . . Type 2 and Type 4
8. Metal to Stucco. . . . . Type 4
9. Aluminum to Concrete.. . . . Type 4
10. Concrete to Concrete.. . . . Type 1
11. Stone to Stone.. . . . Type 1
12. Paving on Grade (Concrete to Concrete).. . . . Type 7
13. Exterior Finish System (EIFS to EIFS).. . . . Type 1
14. EIFS to Masonry. . . . . Type 1 and Type 2
15. EIFS to Metal.. . . . Type 2 and Type 4
16. Wood Trim to Wood. . . . . Type 8
17. Wood Trim to Gypsum.. . . . Type 8

END OF SECTION 07921

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SECTION 08110

**STEEL DOORS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **References:**
- A. **ASTM - American Society for Testing and Materials:**
    - 1. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
    - 2. ASTM A 924 - Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.
  - B. **ANSI - American National Standards Institute:**
    - 1. ANSI/DHI A115 - Specifications for Hardware Preparations in Standard Steel Doors and Frames.
    - 2. ANSI/DHI A115.IG - Installation Guide for Doors and Hardware.
    - 3. ANSI A156.7 - Hinge Template Dimensions.
    - 4. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.
    - 5. ANSI A 250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
    - 6. ANSI/SDI 250.11 - Recommended Erection Instructions for Steel Frames
  - C. **SDI - Steel Door Institute:**
    - 1. SDI 105 - Recommended Erection Instructions for Steel frames.
    - 2. SDI 111 - Recommended Details and Guidelines for Standard Steel Doors and Frames and Accessories.
    - 3. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.
    - 4. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
    - 5. SDI 124 - Maintenance of Standard Steel Doors and Frames.
  - D. **NAAMM/HMMA - Hollow Metal Manufacturers Association:**
    - 1. HMMA 840 - Guide Specification for Installation and Storage of Hollow Metal Doors and Frames
    - 2. HMMA 820 TN01- Grouting Hollow Metal Frames

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3. HMMA 820 TN03 - Guidelines for Glazing of Hollow Metal Transom, Sidelight and Windows

### E. **Building Code references:**

1. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
2. NFPA 105 - Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives
3. NFPA 252 - Standard Method of Fire Tests of Door Assemblies
4. ANSI/UL 10C - Standard for Safety for Positive Pressure Fire Tests of Door Assemblies
5. Miami-Dade County test protocols PA 201, PA 202 and PA 203.
6. Florida Building Code test protocols TAS 201, TAS 202 and TAS 203

- 1.4 **Requirements of Regulatory Agencies:** Conform to applicable codes for fire ratings. It is the intent of this specification that door hardware and its application comply or exceed the standards for labeled openings. In case of conflicts in required fire protection ratings, provide fire ratings as required by NFPA and UL. Fire door assemblies in exit enclosures and exit passageways: maximum transmitted temperature end point of not more than 450°F (121°C) above ambient at the end of 30 minutes of the standard fire test exposure.

### 1.5 **Submittals:**

- A. Submit in accordance with Section 01300, Submittals. Include required number of complete copies of the hollow metal shop drawings covering complete identification of items required for the project. Include manufacturer's names and identification of product. Include complete copies of catalog cuts and/or technical data sheets and other pertinent data as required to indicate compliance with these specifications.
  1. **Shop Drawings:** submit complete and detailed with respect to quantities, dimensions, specified performance, and design criteria, materials and similar data to enable the Architect to review the information as required.
  2. ***Include NOA or FBC numbers validating compliance with Miami-Dade County Product Control Approval System of the Florida Building Code Approval System.***
- B. Indicate frames configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive hardware.
- C. Indicate door elevations, internal reinforcement, closure method, and cutouts for glass lights and louvers.
- D. Submit manufacturer's installation instructions, including a current copy of ANSI A250.11 as part of the shop drawing submittal.
- E. **Shop drawings, product data, and samples:** stamp with Contractor's stamp verifying they have been coordinated and reviewed for completeness and compliance with the contract documents.
- F. Shop drawings submitted without the above requirements will be considered incomplete, will NOT be reviewed, and will be returned directly to the Contractor.
- G. Follow the same procedures for re-submittal as the initial submittal with the appropriate dates revised.
- H. Provide evidence of manufacturer's membership in the Steel Door Institute.

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### 1.6 **Quality Assurance:**

- A. Select a qualified hollow metal distributor who is a direct account of the manufacturer of the products furnished. In addition, that distributor must have in their regular employment an Architectural Hardware Consultant (AHC), a Certified Door Consultant (CDC) or an Architectural Openings Consultant (AOC), who will be available to consult with the Architect and Contractor regarding matters affecting the door and frame opening.
- B. Conform to requirements of the above reference standards. Submit test reports upon request by the Owner or Architect.
- C. Underwriters' Laboratories and Intertek Testing Services / Warnock Hersey, labeled fire doors and frames:
  - 1. Label fire doors and frames listed in accordance with Underwriters Laboratories standard UL10C, and Positive Pressure Fire Tests of Door Assemblies.
  - 2. Construct and install doors and frames to comply with applicable issue of ANSI/NFPA 80.
  - 3. Manufacture Underwriters' Laboratories labeled doors and frames under the UL factory inspection program and in strict compliance to UL procedures, and provide the degree of fire protection, heat transmission and panic loading capability indicated by the opening class.
  - 4. Manufacture Intertek Testing Services / Warnock Hersey labeled doors and frames under the ITS/WH factory inspection program and in strict compliance to ITS/WH procedures, and provide the degree of fire protection capability indicated by the opening class.
  - 5. Affixed physical label or approved marking to fire doors and/or fire door frames, at an authorized facility as evidence of compliance with procedures of the labeling agency. Labels to be metal, paper or plastic. Stamped or die cast labels are not permitted. Labels are not to be removed, defaced or made illegible while the door is in service as covered in NFPA 80.
  - 6. Conform to applicable codes for fire ratings. It is the intent of this specification that hardware and its application comply or exceed the standards for labeled openings. In case of conflict between types required for fire protection, furnish type required by NFPA and UL.
- D. **Manufacturer Qualifications:** Member of the Steel Door Institute.
- E. **Installer:** Minimum five (5) years documented experience installing products specified in this Section.

### 1.7 **Delivery, Storage, and Handling:**

- A. **Storage of Doors:**
  - 1. Store doors vertically in a dry area, under proper cover. Place the units on at least 4" high wood sills on floors in a manner that will prevent rust and damage. Avoid storage in non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. If the door becomes wet, or moisture appears, remove protective wrapping immediately. Provide a 4" space between the doors to permit air circulation. Proper storage is required to meet the requirements of ANSI/SDI A250.10 and HMMA 840.



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### B. **Storage of Frames:**

1. Store frames in an upright position with heads uppermost under cover on 4" wood sills on floors in a manner that will prevent rust and damage. Do not use non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. Store assembled frames in a vertical position, five units maximum in a stack. Provide a 2" space between frames to permit air circulation.
2. Provide proper storage for doors and frames, to maintain the quality and integrity of the factory applied paint, and maintain the requirements of ANSI/SDI A250.10 and HMMA 840.
3. Sand, touch up and clean prime painted surfaces prior to finish painting in accordance with the manufacturer's instructions.

### 1.8 **Coordination:**

- A. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.
- B. Coordinate work with frame opening construction, door and hardware installation.
- C. Sequence installation to accommodate required door hardware.
- D. Verify field dimensions for factory assembled frames prior to fabrication.

## **PART 2 - PRODUCTS**

### 2.1 **Manufacturers:**

- A. Acceptable manufacturers for doors and frames specified are listed below. Only the products of the listed manufacturers will be accepted. No alternates will be accepted.
  1. Steelcraft, Cincinnati, Ohio
- B. Provide steel doors and frames from a single manufacturer.

### 2.2 **Doors:**

- A. Provide doors designed to resist the cyclic pressures and static pressures as detailed in the Miami-Dade County Product Control Approval System of the Florida Building Code Approval System and meets the requirements of Miami-Dade County test protocols PA 201, PA 202, PA 203 and Florida Building Code test protocols TAS 201, TAS 202 and TAS 203. Provide mylar Florida Building Code and Miami-Dade labels on all exterior doors.
- B. **Construct Exterior/interior Doors to These Designs and Gages:**
  1. **Exterior Doors:** zinc-iron alloy-coated galvanized steel, ASTM A 653, Class A60, 16 gage or 14 gage zinc-iron alloy-coated galvanized steel, with closed tops.
    - a. Include galvanized components and internal reinforcements with galvanized doors.
    - b. Close tops of exterior swing-out doors to eliminate moisture penetration. Galvanized steel top caps are permitted.
  2. Factory prime painted doors indicated on door schedule as HM.
  3. **Hardware Reinforcements:**

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- a. **Hinge reinforcements for full mortise hinges:** minimum 7 gage.
  - b. **Lock reinforcements:** minimum 16 gage.
  - c. **Closer reinforcements:** minimum 14 gage, 20" long.
  - d. **Galvannealed doors:** include galvannealed hardware reinforcements.
  - e. Projection welded hinge and lock reinforcements to the edge of the door.
  - f. Provided adequate reinforcements for other hardware as required.
4. **Glass moldings and stops (both labeled and non-labeled doors):**
- a. Fabricate glass trim from 24 gage [.6mm] steel conforming to:
    1. Interior openings: ASTM designation A 366 cold rolled steel
    2. Exterior openings: ASTM designation A 924 Zinc-Iron Alloy-Coated galvannealed steel with a zinc coating of 0.06 ounces per square foot (A60) for exterior openings.
  - b. Install trim into the door as a four sided welded assembly with mitered, reinforced and welded corners.
  - c. **Trim:** identical on both sides of the door.
  - d. Exposed fasteners are not permitted. Labeled and non-labeled doors: use the same trim.
  - e. Acceptable mounting methods:
    1. Fit into a formed area of the door face, not extending beyond the door face, and interlocking into the recessed area
    2. Cap the cutout not extend more than 1/16" from the door face.
- C. **Full Flush Type Doors Construction:**
1. ANSI-A250.4 criteria and tested to 5,000,000 operating cycles.
  2. **Approved door core constructions:** Reinforced, stiffened, sound deadened and insulated with a rigid polystyrene core bonded to the inside faces of both panels with contact adhesive. Fill voids around the perimeter of the door with honeycomb.
  3. **Welded Vertical Edges (W):** Continuous vertical mechanical interlocking joint; edge seams welded, epoxy filled, and ground smooth.
  4. Bevel hinge and lock door edges 1/8 inch in 2 inches. Square edges on hinge and/or lock stiles are not acceptable.
  5. Reinforce top and bottom of doors with galvannealed 14 gage, welded to both panels.
- D. **Schedule:**
1. **Exterior Classroom Doors & Other Flush Doors:** Provide HE16 Series Embossed Panel Door, with Miami-Dade NOA 07-0829.04 (Florida Approval FL12400).
  2. **Exterior Double Entry Doors:** Provide HE16 Series Embossed Panel Doors with half-lite (E2G configuration), with Miami-Dade NOA 07-0829.05 (Florida Approval FL12400).
- 2.3 **Fabrication:**
- A. **Face Welded Frames:**
1. Continuous face weld the joint between the head and jamb faces along their length either internally or externally. Grind, prime paint, and finish smooth face joints with no visible face seams.

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2. Externally weld, grind, prime paint, and finish smooth face joints at meeting mullions or between mullions and other frame members per a current copy of ANSI/SDI A250.8.
  3. Provide two temporary steel spreaders (welded to the jambs at each rabbet of door openings) on welded frames during shipment. Remove temporary steel spreaders prior to installation of the frame.
- 2.4 **Finish:** Doors, frames and frame components are required to be cleaned, phosphatized, and finished with one coat of baked-on rust inhibiting prime paint in accordance with the ANSI/SDI A250.10 "Test Procedures and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."

### PART 3 - EXECUTION

#### 3.1 Installation:

- A. Install doors and frames in accordance with Steel Door Institute's recommended erection instructions for steel frames ANSI A250.11.
- B. Install label doors and frames in accordance with NFPA-80.
- C. Remove temporary steel spreaders prior to installation of frames.
- D. Set frames accurately in position; plumb, align and brace until permanent anchors are set. After wall construction is complete, remove temporary wood spreaders.
- E. Provide full height 3/8" to 1-1/2" thick strip of polystyrene foam blocking at frames requiring grouting where continuous hinges are specified. Apply the strip to the back of the frame, where the hinge is to be installed, to facilitate field drilling or tapping.
- F. Where grouting is required in masonry, provide and install temporary bottom and intermediate wood spreaders to maintain proper width and avoid bowing or deforming of frame members. Refer to ANSI A250.11-2001, Standard.
  1. Hollow Metal Frames to receive grouting: comply with a current copy of ANSI/SDI Standard A250.8, paragraph 4.2.2, whereby grout will be mixed to provide a 4" maximum slump consistency and hand troweled into place. Do not use grout mixed to a thinner, pumpable consistency; this practice is not recommended and not permissible. Refer to HMMA 820 TN01 Grouting Hollow Metal Frames.
- G. Provide a vertical wood brace during grouting of frame at openings over 4'0" wide, to prevent sagging of frame header.
- H. Glaze and seal exterior transom, sidelight and window frames in accordance with HMMA-820 TN03.
- I. Apply hardware in accordance with hardware manufacturers' instructions and Section 08710, Finish Hardware, of these Specifications. Install hardware with only factory-provided fasteners. Adjust door installation to provide uniform clearance at head and jambs, to achieve maximum operational effectiveness and appearance.

#### 3.2 Adjusting:

- A. **Final Adjustments:** Adjust operating doors and hardware items just prior to final inspection and acceptance by the Owner and Architect. Leave work in complete and

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proper operating condition. Remove and replace defective work, including doors or frames that are damaged, bowed or otherwise unacceptable.

B. **Prime Coat Touch-Up:** Immediately after erection, sand smooth rusted or damaged areas of prime coat, and apply touch-up of compatible air-drying primer.

3.3 **Protection:** Provide protective measures required throughout the construction period to ensure that door and frame units will be without damage or deterioration, other than normal weathering, at time of acceptance.

END OF SECTION 08110

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SECTION 08111

**STEEL FRAMES**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** This Section includes hollow metal frames for doors, transoms and windows, and all related items necessary for the work indicated and specified.
- 1.4 **Related Work Specified Elsewhere:**
- A. Finish Hardware, Section 08710, Finish Hardware.
  - B. Glass and Glazing, Section 08800, Glass and Glazing.
- 1.5 **Submittals:**
- A. Comply with Section 01300, Submittals.
  - B. Before fabricating any item, submit properly identified manufacturer's catalogs and literature on proposed items, and Shop Drawing layouts, complete enough in detail for review.
  - C. Shop Drawings shall indicate elevations of each frame type, location in the building for each item, conditions at openings with various wall thickness and materials, typical and special details of construction, methods of assembling sections, location and installation requirements for hardware, size, shape and thickness of materials, joints and connections, method of frame anchorage, and material finishes.
  - D. Where fire labels are indicated, doors and frames shall conform to all applicable requirements and shall bear F.M. or UL fire labels. Place fire labels in jamb between top and middle hinges.
- 1.6 **Product Handling:** Store frames on end, with spacers between doors for ventilation, and in protected area.

**PART 2 - PRODUCTS**

- 2.1 **Manufacturers:**
- A. Approved Manufacturers:

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1. Steelcraft

B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### 2.2 Door and Transom Frames:

A. **Material:**

1. Electro-zinc coated bonderized sheet steel.
2. Sheet steel shall conform to requirements of ASTM A366.
3. Electro-zinc coating shall conform to requirements of ASTM A591 or ASTM B-633-78.
4. Frames shall be 16 gauge steel minimum thickness.

B. **Workmanship:**

1. Weld units to sizes and shapes detailed in the Drawings.
2. Exposed welds shall be ground smooth and filled so that welds are invisible.

C. **Heads:** Door and transom frame heads shall have a minimum 12 gauge reinforcement for closers, holders, and similar items, as required.

D. **Hardware Reinforcement:**

1. Reinforce door frames as necessary for installation of hardware, in accordance with ANSI A-115 and A-156.7 with minimum hinge reinforcement of 7 gauge.
2. Punch door stops to receive rubber silencers as required.
3. Provide for three silencers on lock side of single door frame and two (2) silencers at head of double door frames.

E. **Frames Set in Masonry or Concrete:**

1. Provide ten (10) inch long adjustable 16 gauge "T" shaped anchors spaced not over 24" o.c., 3 each side, equally spaced, extending from each side of jamb.
2. Provide 16 gauge floor clips welded to each jamb, punches for anchoring to floor. Where indicated on Drawings, provide adjustable floor clips.

F. **Spreaders:** Provide temporary steel spreaders fastened across bottom of door frames. Leave spreaders in place after installation.

G. **Provide for Frame Connections:** Where hollow metal window frames are indicated abutting door frames, and where connection of dissimilar frames is required, make provisions in frames for welding, or to receive connector splines or connector plates.

### 2.3 Fixed Interior Window Frames:

A. **Window Frames:**

1. Standard sizes and shapes as indicated on the Drawings.
2. Prepared for fixed sash glazing with removable steel glazing beads.
3. Verify glass thickness with details and schedules.

B. **Workmanship:** Continuously weld frame corners and grind off exposed welds smooth and flush, and filled so that welds are invisible.

C. **Glazing Beads:** Provide 18 gauge electro-zinc coated steel removable channel type glazing beads punched and countersunk for fasteners. Provide cadmium or zinc plated oval head screws at maximum three (3) inches from each end and approximately 12 inches o.c. between, tapped into frames.

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- 2.4 **Finishing:** All manufacturing defects shall be filled with a two-part epoxy type filler and sanded to result in a smooth surface after priming. Clean all zinc-coated and bonderized surfaces to assure maximum paint adherence. Provide all frames with a full immersion dip coat of rust-inhibitive metal primer to reach all accessible and hidden surfaces. Provide all door and transom panels with a full cover spray coat of rust-inhibitive metal primer. Frames, doors and panels shall be dried by passing through a baking oven process.

### **PART 3 - EXECUTION**

#### **3.1 Installation:**

- A. Erect door, transom and window frames plumb, level, parallel to walls, and at height and locations indicated.
- B. Secure each jamb floor clip to concrete floors with two 1/4-inch diameter galvanized bolts set in drilled in tamp-ins. Power nailing to floor may be used where practical.
- C. Brace frames in masonry adequately so that walls and partitions may be erected against same. Brace frame jambs and heads receiving poured concrete adequately to resist concrete pressure.
- D. Secure door frames set against previously placed masonry or concrete by 3/8-inch diameter galvanized countersunk flat head screws in suitable shields or toggles as required.
- E. Erect fixed window frames at height and locations indicated, plumb and level, by means of the adjustable clips or suitable supports. Anchor frames to structure as indicated.

#### **3.2 Protection:**

- A. Frames shall be protected from damage by other trades until final acceptance of the project.
- B. Frames which have been damaged shall be repaired as follows:
  - 1. Minor dents shall be filled with a two-part epoxy type filler and sanded to result in a smooth surface after priming.
  - 2. Clean all zinc-coated and bonderized surfaces to assure maximum paint adherence.
  - 3. Repair shall be inspected by the Architect prior to painting. If the repair is not satisfactory, the door shall be replaced at the Contractor's expense.

**END OF SECTION 08111**



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SECTION 08211

**WOOD DOORS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Work includes, but is not limited to, furnishing flush wood doors, installation of flush wood doors, and accessories.
- 1.4 **Quality Assurance:**
  - A. Allowable tolerances for fabrication of doors:
    1. **Size:**
      - a. Plus or minus 1/16" overall dimensions scheduled in the Drawings.
      - b. Maximum Warp: 1/8".
      - c. Squareness: Length of diagonal measured on the face of the door from upper right hand corner to lower left hand corner between the length of the diagonal measured on upper left corner to lower right corner. Maximum difference of 1/4".
      - d. Prefitting and pre-machining for hardware: AWI standard procedures and recommendations.
- 1.5 **Submittals:**
  - A. Comply with Sections 01150 and 01300.
  - B. **Samples:** Submit two (2) samples showing face veneers and finish of doors.
  - C. **Shop Drawings:**
    1. Show details of Door Construction:
      - a. Full size molding section detail for glass light installation.
      - b. Glazing material.
      - c. Face Veneer Species.
    2. **Prefitting and Pre-Machining Doors:** Prepare in accordance with Hollow Metal Frame Shop Drawings and Schedule, Hardware Schedule and templates, furnished before doors are fabricated. Refer to Drawings for special mounting heights for door latches and vision panels as required for Educational Facilities for handicapped children.

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3. **Door Schedule:** Indicate opening, identifying symbol, sizes, door type and grade, and show swing and like cut-out sizes and location and undercuts.
- D. Furnish certificates of compliance for fabrication and test requirements signed by authorized representative of door manufacturing company.

### 1.6 Product Handling:

- A. **Delivery:**
  1. Deliver door to site after all masonry has dried and the building has reached average prevailing relative humidity of locality.
  2. Deliver pre-finished doors in manufacturer's original unopened protective material or container, clearly marked with manufacturer's name, brand name, size, thickness and identifying symbol and covering.
  3. Seal all four edges of doors when delivered to project site.
- B. **Storage:**
  1. Store flat on 2" x 4" lumber laid 12" from ends and across center.
  2. Under door bottom and over top of stack, provide plywood or corrugated cardboard to protect door surface.
  3. Store doors in area where there will be no great variations in heat, dryness, and humidity.
- C. **Handling:** Do not drag doors across one another.
- D. **Damaged Doors:** Reject all doors that are damaged, abused, scratched, or otherwise marred. Final decision on damaged doors rests with the Architect.

### 1.7 Guarantee:

- A. Manufacturer's written life-time warranty for material and workmanship.

## PART 2 - PRODUCTS

### 2.1 Approved Manufacturers:

- A. The following manufacturers are approved:
  1. Algoma Hardwoods
  2. Mohawk Doors
  2. Eggers Industries
  3. Graham Wood Doors
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### 2.2 Materials:

- A. **Door Standards:** AWI flush door standards.
- B. **Wood Veneer:**
  1. **Quality Grade:** AWI premium for smooth-cut veneer joints.
  2. **Species: *Plain Sliced Select Clear White Birch.***
    - a. Balanced book match face veneers.
    - b. Match range as closely as possible to all doors to minimize variations.
  3. **Core: *Staved Lumber Core Door.*** AWI Spec. Sec. 1300 and 1500.

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- a. **5-ply pre-manufactured hardwood skins**, glued block core, styles and rails bonded to cores.

2.3 **Fabrication:**

- A. **Moisture Content:** 12% maximum at time of fabrication for all wood material.
- B. **Solid Core:**
  1. Glued block core, blocks 2-1/2" maximum width, bonded together, end joints staggered in adjacent rows.
    - a. Bond face panels to core.
    - b. Style and rail edge bands 5/8" minimum width bonded to core.
- C. **Light Openings:**
  1. Wood vision panel frames with space bar for 1/4" tempered glass lite. Frame is to be finished to match the door face.
- D. **Factory Preparations:**
  1. **Prefitting:**
    - a. **Swinging Doors:** Standard clearance allowances of 1/8" at each side and 1/2" from bottom to decorative floor covering,.
    - b. Bottom of clearance allowance of doors with threshold, 1/4" from bottom of door to top of threshold.
  2. **Pre-Machining:**
    - a. Bevel on Vertical Edges of Single Door: 1/8" in 2".
    - b. Locate hinge moors from top of doors to top of hinge, 1/32" clearance in height and width with depth sufficient to provide a flush surface when installed.
    - c. **Mortise for Face Plates:** 1/64" larger in width and height, depth to provide a flush surface when installed.
    - d. Lock clearances as recommended by finish hardware manufacturer.
- E. **Pre-Finishing:**
  1. Factory-finish door faces, moldings, lights and side edges with manufacturer's standard finishing system.
  2. Seal top and bottom edges.
  3. Color as selected by Architect from standard range.

**PART 3 - EXECUTION**

3.1 **Inspection:**

- A. Verify that door frames are of type required for door and are installed as required for proper installation of doors.
- B. Do not install doors in frames which would hinder the operation of the doors.

3.2 **Installation:**

- A. **Fitting and Machining:**
  1. Provide template from Hardware Supplier for butt placement.
    - (a) Cut light openings in doors, not exceeding maximum sizes as specified in the Drawings and as permitted by door manufacturer.
- B. **Installation of Doors:**

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1. Follow door manufacturer's written instructions for all installation work.
  2. **Clearances:**
    - a. Allow maximum 1/8" of jam and head job fit doors.
    - b. Allow maximum of 3/16" at jamb and head for pre-fit doors.
    - c. Allow maximum of 3/16" over thresholds or saddles.
    - d. Allow maximum of 1/2" over decorative floor coverings.
- 3.3 **Adjust and Clean:**
- A. Replace or rehang doors which are hinge-bound, or do not swing or operate freely in the opinion of the Owner or Architect.
  - B. Replace prefinished doors damaged during installation to include, but not be limited to, scratches, damaged, or marred surfaces. The Architect shall be the final judge on the extent of damage and the need to replace the door.
  - C. Refinish or replace jo- finished doors damaged during installation. If the refinished door does not meet the satisfaction of the Architect, it shall be replaced at the Contractor's expense.

END OF SECTION 08211

SECTION 08306

**ACCESS DOORS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Provide access doors, also referred to as access panels, hatches, or scuttles, that are indicated and required in walls, partitions, and ceilings, to provide access for adjustment and maintenance of valves, equipment, controls, and other devices.
  - B. All access doors for the project shall conform to requirements of this Section and shall be by same manufacturer to assure uniformity.
  - C. Contractor shall coordinate access doors for all work on the project.
  - D. Access doors required for mechanical, plumbing and electrical work are specified in Division 15 and 16 to be provided in accordance with this Section. Finish is to be as specified in this Section.
- 1.4 **Location, Size And Quantity:**
- A. Provide access doors in locations and sizes shown on the Drawings. Provide swings as shown on Drawings, where indicated.
  - B. Provide access doors not shown but required to provide access for the adjustment and maintenance of valves, equipment, controls and other devices.
  - C. Determine exact sizes, quantities, and locations of access doors by the functions and positions of the valves, controls, equipment and other devices requiring access.
  - D. When normal maintenance requires removal of an item for which an access door is provided, access door shall be sized for removal of the item.
  - E. Where access doors occur in modular construction, size doors in the same module, unless otherwise shown.
  - F. Location of each access door shall be determined by the Architect after the item is in place.
  - G. Where access doors are located in a floor situation, provide access door capable of supporting the live load weight of a person on the door.
- 1.5 **Fire-rated Access Doors:** Where access doors are indicated or required in fire-rated construction, provide flush panel access door assembly that has been tested, approved

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and listed in Underwriter's Laboratories, Inc., Classified Building Materials Index, or other testing laboratory acceptable to the authority having jurisdiction.

- A. **Rating:** 1-1/2 hour rated, B-Label (Temp. Rise - 30 min. - 250 degrees F., max.).
- B. **Label:** Provide UL label or other acceptable laboratory's label on each fire-rated access door.

### 1.6 Submittals:

- A. Comply with Section 01300, Submittals.
- B. **Data:** Submit manufacturer's product data and installation instructions for each type of access door.
- C. **Shop Drawings:** Submit for installation details not shown in manufacturer's product data.

## PART 2 - PRODUCTS

### 2.1 Approved Manufacturers:

- A. Milcor Incorporated products are specified to establish design, quality and type required.
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### 2.2 Materials And Fabrication:

- A. Furnish access door assemblies manufactured as an integral unit, complete with attachment devices and anchors, ready for installation.
- B. Fabricate units of continuous welded steel construction. Grind welds smooth and flush with adjacent surfaces.
- C. **Finish:** Steel chemically bonded with a prime coat of baked-on electrostatic powder.
- D. **Locking Devices for Non-Fire Rated Doors:** Furnish flush screwdriver operated cam locks of the number required by door size to hold door flush with frame.
- E. **Key Locks:** Provide cylinder lock, with two keys, on all exterior access panels.

2.3 **Flush Panel Access Doors, Concealed Flange Frame:** For gypsum drywall surfaces provide Milcor Style DW; 16 gauge frame; 14 gauge flush panel, galvanized drywall bead attached to frame; concealed spring hinges, open 175 degrees, removable pin. Unit designed for field applied drywall casing and drywall compound finish at perimeter of frame.

2.4 **Flush Panel Access Doors, Exposed Flange Frame:** For masonry, drywall, tile and concrete surfaces provide Milcor Style M; 14 gauge frame and door panel, concealed spring hinges, open 165 degrees removable pin. Provide masonry anchors for doors in unit masonry work.

2.5 **Recess Panel And Access Doors, Without Flange Frame:**

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- A. **Plaster, EIFS and Stucco Surfaces:** Milcor Style K; 16 gauge frame, 14 gauge door panel and 22 gauge galvanized casing bead. Concealed spring hinges with removable pin, 175 degrees open.
- B. **Acoustical Tile Ceiling:** Milcor Style AT; 16 gauge frame, 18 gauge recessed door panel, continuous hinge with stainless steel pin. Provide plastic grommet for lock access.
- C. **Suspended Acoustical and Drywall Ceilings, Fire-Rated:** Milcor Style ATR; 16 gauge frame, 18 gauge recessed door panel, continuous hinge with stainless steel pin. Provide plastic grommet for lock access. Unit designed for adhesive applied drywall or acoustical tile. In drywall, designed for field-applied drywall casing bead and drywall compound, finish at perimeter of door and frame.

### 2.6 Fire-rated Wall Access Doors:

- A. **Provide Milcor Fire-Rated Access Door Frame:** 16 gauge, 20 gauge sandwich type insulated panel with automatic closing mechanism; continuous hinge with stainless steel pin.
- B. Provide anchors and accessories required for installation in each type construction; conform to UL rating.
- C. In masonry construction, provide factory attached masonry anchors, in the quantity desired by UL rating and manufacturer's standards.
- D. **Locking Device:** Self-latching lock; one for each door size up to 36 x 36 inches and two for each door larger. Provide interior latch release. Provide locks with direct action knurled knob.

### 2.7 Fire-rated Ceiling Door:

Milcor Fire-Rated Ceiling Door is designed to be flush when installed in 5/8 inch suspended drywall ceiling. 18 gauge steel door panel, 20 gauge steel sides, 26 gauge hat channel. Doors shall have self-closing mechanism and one hour label.

## PART 3 - EXECUTION

### 3.1 Installation:

- A. Comply with manufacturer's product data and installation instructions.
- B. Coordinate installation with work of other trades.
- C. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.
- D. Adjust hardware and panels after installation for proper operation.
- E. Remove and replace panels or frames which are warped, bowed or otherwise damaged.

END OF SECTION 08306



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SECTION 08710

**FINISH HARDWARE**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Work under this section consist of furnishing and installing items known commercially as builders hardware as specified in this section and noted on the drawings for a complete and operational system, which may include electrified hardware, controls, finish hardware for aluminum entrance doors and door operators.
  - B. Items include but are not limited to the following:
    - 1. Hinges
    - 2. Mullions
    - 3. Flush Bolts
    - 4. Coordinators
    - 5. Locks
    - 6. Exit Devices
    - 7. Door Closers
    - 8. Push Plates
    - 9. Door Pulls
    - 10. Protective Plates
    - 11. Door Stops and Holders
    - 12. Thresholds and Weather-stripping
    - 13. Silencers
- 1.4 **Related Work:**
- A. Refer to the following sections for these products:
    - 1. Section 08110: Standard Steel Doors
    - 2. Section 08111: Standard Steel Frames
    - 3. Section 08210: Wood Doors
- 1.5 **Quality Assurance:**
- A. **Standard of Quality:** Manufacturers and model numbers listed in Part 2 of this section have been set to establish a standard of quality, design and function. Only those manufacturers and model numbers listed herein as approved and meet the

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requirements are to be furnished on this project. Obtain each type of hardware (hinges, locks, exit devices, closers, etc.) from a single manufacturer, although several may be listed as acceptable.

### B. **Substitutions:**

1. Only those products specifically listed in Part 2 of this section as approved or equal by manufacturer name and product number are acceptable.
2. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### C. **Supplier:** The Hardware supplier is to be a qualified direct distributor of the products to be furnished, and is to regularly engage in furnishing products on projects of similar size and requirements. In addition, the supplier is to have in their regular employment a Certified Architectural Hardware Consultant who will be made available at reasonable times to consult with the Architect, General Contractor and/or the owners representative regarding any matters that affect the project, inspect and direct detailing, applying, and adjusting of all hardware.

### D. **Fire-rated Hardware:** Furnish hardware for fire-rated openings that meet NFPA 80 and the local building codes. Furnish only hardware that has been tested and listed by UL or FM for fire-rated openings. All labeled doors to have ball-bearing steel hinges, a door closer and a lockset to meet the requirements of NFPA 80. Where exit devices are specified or required on Fire Rated Doors furnish only those devices that have been tested and listed "FIRE EXIT HARDWARE."

## 1.7 **References:**

- ### A. The following codes are referenced for this work:
1. NFPA 80 Fire Doors and Windows 1995 Edition
  2. NFPA 101 Life Safety Code 1994 Edition
  3. NFPA 105 Installation of Smoke-Control Door Assemblies 1989 Edition
  4. ADA The Americans with Disabilities Act: Title III Public Accommodations
  5. ANSI A117.1: American National Standards Institute: Accessible and Usable Buildings and Facilities.
  6. UL: Underwriter's Laboratories
  7. WHI: Warnock Hersey International
  8. DHI: Door and Hardware Institute
  9. FBC: Florida Building Code

## 1.8 **Submittals:**

- ### A. Submit schedules in accordance with Section 01300, Submittals.
- ### B. **Schedules:** Provide Finish Hardware Schedules detailing each opening individually within two weeks after receipt of purchase order. Use the Vertical format scheduling method as outlined in the DHI brochure "*Sequence and Format for the Hardware Schedule*". The horizontal format will not be allowed. Schedule each floor and each building separately. Separate fire rated doors and non-rated doors using different headings. Separate doors of different sizes in headings that have all doors of the same size and like hardware. Provide six (6) copies.

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- C. **Samples:** Provide samples of the products listed in the Schedule as required by the Architect. Furnish one (1) item that is representative of the manufacturer series that is being supplied.
- D. **Templates:** Within one (1) week after receipt of an approved Hardware Schedule provide template information to related door and frame suppliers to prepare for the installation of mortise hardware and reinforcement of surface-mounted hardware. Provide three (3) copies for distribution.
- E. **Product Data:** Together with the Finish Hardware Schedule provide catalog cuts highlighting each item that is being proposed, including appropriate ANSI/BHMA criteria and special mounting instructions. Provide six (6) copies.
- F. **Keying Schedule:** Keying will be provided by the Owner during construction.
- G. **Cycle Testing:** Submit independent lab test verifying the minimum cycle test requirements listed with this specification for locksets, door closers and exit devices. Provide six (6) copies.

1.9 **Delivery, Storage and Handling**

- A. **Delivery:** Deliver hardware to the job site in the manufacturer's original packages. Tag and mark each item of package to correspond with the door and heading number on the finish hardware schedule. Include installation instructions and custom wiring diagrams for electrified hardware. Inventory hardware jointly with a representative of the General Contractor and the Hardware Supplier until both are satisfied with the count.
- B. **Storage:** Store material in a dry, secured area, within the building, free from dust and dirt within a controlled environment.
- C. **Handling:** Provide strict control over access to the storage area so that completion of the work will not be delayed due to hardware losses.

1.10 **Warranty:** Submit warranties in accordance with Division 1, General Requirements and Contract Documents. This requirement does not take the place of Division 1 requirements but is in addition to the Warranties and Bonds section. This warranty shall cover against defects in materials and workmanship, commencing with Substantial Completion of the project.

1.	All Finish Hardware	1 Year
2.	Locks	5 Years
3.	Exit Devices	3 Years
4.	Door Closers	10 Years

**PART 2 - PRODUCTS**

2.1 **Materials:**

- A. **Screws and Fasteners:** Provide all necessary screws, bolts and fasteners of suitable size and type to anchor the hardware properly. Fasteners are to match the finish and the base metal of the applied item. Provide the manufactures standard and recommended fasteners to template. Furnish fasteners where required with expansion shields, toggle bolts, and other anchors designated by the Architect according to the hardware requirements. All door closers and exit devices applied to labeled wood doors shall be thru-bolted. Thresholds are to be secured with machine

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screws and set with an adjustable sill anchor. All hardware applied to exterior doors shall be of non-ferrous material matching the finish of the hardware specified for interior openings or as specified in 3.6 of this section.

- B. **Hinges:** Provide hinges as specified in 3.6 of this section. Furnish five-knuckle, heavy duty, button tip, full mortise template type hinges with non-rising loose pins at exterior doors, interior openings with exit devices and high frequency openings. Provide five-knuckle, standard duty, button tip, full mortise template hinges with non-rising loose pins at all other interior openings. At exterior locations and reverse bevel openings provide with non-removable pins. Furnish one (1) hinge for every 30 inches in door height or fraction thereof with a minimum of two (2) hinges per leaf. For doors up to 36 inches in width provide hinges 4.5 inches in height; for doors over 36 inches and up to 48 inches in width provide hinges 5.0 inches in height. The width of the hinges are to be sufficient to clear all trim and allow the door to swing 180 degrees. Exterior doors and secured reverse bevel doors are to be furnished with non-removable pins or security stud. Use ball bearing steel hinges on labeled door openings and non-ferrous hinges on exterior doors or doors located in high humidity areas.
1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Hager
    - b. Stanley
    - c. McKinney
- C. **Mullions:** Provide keyed removable mullion. Removable mullions are to be hardware type with cylinder latch for mullion removal. Latch cylinder shall be a keyed removable core cylinder. All mullions are to be steel (aluminum is not allowed).
1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Von Duprin
- D. **Flush Bolts:** Provide flush bolts of the type listed in 3.6 of this section. Manual flush bolts are to have a length that will position the lever at no more than 6 feet above the finished floor. Automatic flush bolts are to be applied at labeled pairs of doors. Furnish a dust-proof strike at each set of flush bolts specified.
1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Ives
    - b. Rockwood
- E. **Coordinators:** Provide a coordinator wherever the specified hardware requires that one door close before the other or when an overlapping astragal is used. Coordinator is to be of the type that mounts flat to the stop and extends through the

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full width of the frame with the use of a filler bar. A coordinator that mounts on the face of the frame is not acceptable.

1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Ives
    - b. Rockwood
- F. **Locks:** Provide locks of the type and function listed in 3.6 of this section.
1. Provide heavy-duty commercial cylindrical locks that exceed ANSI/BHMA A156.13, Series 4000, Grade 1 for strength, security and durability in the categories below:
    - a. **Abusive locked lever torque:** minimum 3,100 inch-pounds without gaining access
    - b. **Offset lever pull:** minimum 1,600 foot pounds without gaining access
    - c. **Vertical lever impact:** minimum 100 impacts without gaining access
    - d. **Cycle life:** minimum 16 million cycles
      - 1) With no visible lever sag
      - 2) Without the use of performance aids (i.e. – set screws, spacers, etc.)
    - e. Provide certification of cycle testing by independent lab testing organization with complete documentation and must be submitted to the Clay County School Board to show compliance with this specification.
  2. Provide lock body that can be re-handed on site without disassembling the lock case.
  3. Provide locksets with solid steel anti-rotation through bolts and posts to control excessive lever rotation. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
  4. All lever trim shall be of the solid cast type, no hollow levers will be accepted.
    - a. Provide **Rhodes** lever design.
  5. Trim is to be wrought roses on both sides.
  6. Provide locks with standard latches featuring a 2-3/4" (70 mm) backset and a 1.2" latch throw capable of UL listing of 3 hours on a 4.0 x 10.0 opening. Provide proper latch throw for UL listing at pairs.
  7. Provide standard ASA strikes unless extended lip strikes are required to protect trim.
  8. Deadbolts are to have a 1-inch throw.
  9. Provide manufacturer's standard wrought box strike for each latch set, with curved lip extended to protect the frame.
  10. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Schlage ND
    - b. Best 9K
    - c. Sargent 11 Line

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- G. **Exit Devices:** Furnish exit devices of the type and function listed in 3.6 of this section. Provide devices that are UL Listed for Accident Hazard, or when applied to fire rated doors, UL Listed "Fire Exit Hardware" and meets or exceeds ANSI A156.3 Grade 1 and have been cycle tested to 1,000,000 cycles. Provide certification of cycle testing by independent lab testing organization with complete documentation and must be submitted to the Clay County School Board to show compliance with this specification. All devices are to have dead latch feature. Supply a dampener as standard that will decelerate the push pad to reduce the noise of operation. Provide break away lever trim at locations exposed to abuse or vandalism free wheeling levers are not acceptable. Provide all accessories necessary for a complete and proper installation. Where molding from lite kits may interfere with the exit device provide glass bead kits to secure the device to the door.
1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Von Duprin 99 Series
    - b. Equals as approved by the Architect and the Clay County School Board.
- H. **Door Closers:** Furnish door closers of the type listed in 3.6 of this section. Closers are to exceed ANSI A156.4 Grade 1 and have been cycle tested to 10,000,000 cycles. Provide certification of cycle testing by independent lab testing organization with complete documentation and must be submitted to the Clay County School Board to show compliance with this specification. Provide fully hydraulic, rack and pinion action with high strength cast iron cylinders and one piece forged steel pistons, aluminum closers are not acceptable. The pinion shaft to have a minimum diameter of 11/16". Hydraulic regulation controlled by tamper proof non-critical valves with separate adjustments for backcheck, latch and closing speed. Door closers shall not have pressure relief valves (PRV's), these valves are not acceptable. Arms are to be constructed of forged steel stamped steel not acceptable. Door closers shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees Fahrenheit to -30 degrees Fahrenheit, without requiring seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with the standards UBC 7-2 (1997) and UL 10C. Provide closers with regular arm, parallel arm or top jamb mount as required to keep corridors clear and for proper installation. Provide all brackets, arms and plates as necessary for complete installation. Size closers according to the manufacturer's recommendations for the size and location of the door. Where multi-sized closers are required size closers to the proper setting at the factory. Provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.
1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. LCN 4010/4110
    - b. Rixson PRM2020
    - c. Sargent 250
  2. **S.R.I.** = Special Rust Inhibiting process

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- I. **Protective Plates:** Furnish armor plates, kick plates and mop plates as specified in 3.6 of this section. Provide armor plates, kick plates and mop plates 32 inches, 8 inches and 4 inches in height respectively. For the width of the plates furnish 2 inches less the door width on the push side of the door for single doors and 1 inch less the door width on the pull side and on the push side of pairs of doors. Bevel three edges and provide in 0.05 in thickness.
  - 1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Ives
    - b. Rockwood
  - 2. **L.D.W.** = Less Door Width
  
- J. **Door Trim:** Furnish push plates, door pulls, wall stops and floor stops as specified in 3.6 of this section. Provide with fasteners as required for proper installation.
  - 1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Ives
    - b. Rockwood
  
- K. **Overhead Holders:** Furnish overhead holders of the type listed in 3.6 of this section. Holders and Stops to meet or exceed ANSI A 156.8 Grade 1 requirements. They shall be non-handed and field reversible and have adjustable holding force. Provide all brackets necessary for proper installation. Provide overhead stops wherever wall stops will not stop the door.
  - 1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Glynn-Johnson
    - b. Rixson
  
- L. **Thresholds and Weatherstripping:** Furnish in the type listed in 3.6 of this section. Use vinyl or silicone inserts in face of stop at exterior doors. Verify threshold requirements with drawings and sill conditions for proper application. For exterior doors provide a threshold anchor channel assembly that sets firmly into the concrete and secures the threshold. Provide an abrasive, skid and corrosion resistant threshold at all exterior locations. For weatherstrip provide at the jambs and head of the frame. On pairs of doors provide an overlapping astragal with a seal running the full height of the door or two split astragals at the meeting stile to seal doors that require independent operation.
  - 1. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
    - a. Hager
    - b. NGP



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- c. Pemko
- 2. **L.A.R.** - Length as Required.

2.2 **Finishes:** Unless noted otherwise, the following finishes shall be used:

A.	Hinges, Exterior	630
B.	Hinges, Interior	652
C.	Pivots, Exterior	626
D.	Locksets	626
E.	Exit Devices	626
F.	Closers	689
G.	Door Trim	630
H.	Protection Plates	630
I.	Thresholds	AL

2.3 **Keying:**

- A. Provide a construction master key system tied into the existing small format interchangeable core (SFIC) Everest system as directed by the Owner’s Representative. All locks are to be factory-keyed.
- B. Furnish keys in the following quantities;
  - 2 ea Change Keys per lock
  - 6 ea Master Keys for each system used
  - 6 ea Grand Master Keys
  - 12 ea Construction Keys
  - 100 ea Key blanks
  - 10 ea Additional Permanent Cores
- C. Send all permanent keys directly from the manufacturer to the owner by registered mail.
- D. Furnish one SITEMASTER 200 key control system complete with indexed door numbers, key codes, bittings, room numbers, lock function, design and finish.

**PART 3 - EXECUTION**

3.1 **Inspection:** After installation has been completed a representative of the hardware supplier is to inspect the installation of the finish hardware to ensure that each item of hardware is operating properly and installed according to the approved hardware schedule.

3.2 **Installation:**

- A. Mount hardware units at heights indicated in “*Recommended Locations for Builders Hardware for Standard Steel Doors and Frames*” by the Door and Hardware Institute except as specifically indicated or required to comply with governing regulations, and as may be indicated otherwise by the Architect.
- B. Install each hardware item in compliance with the manufacturer’s instructions and recommendations (failure to install hardware correctly and to make proper adjustments will result in monetary penalties applied to the installation team to correct improper installation). Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished, coordinate

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removal, storage and reinstallation of items. Do not install surface mounted hardware until finishes have been applied.

- C. Set units level, plumb and true. Adjust and reinforce the surface material as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchors and fasteners.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant to completely fill voids and exclude moisture. Remove excess sealant.
- F. Before installation and after approved hardware submittals the manufacturer's representative is to provide pre installation training of hardware to the sub contractor and or installation team.

### 3.3 **Adjusting and Cleaning:**

- A. Adjust and check each operating item of hardware at each door to ensure proper operation and function. Replace units that cannot be adjusted to operate freely as intended. Make final adjustments to door closers and floor closers to ensure that all valves are set properly for proper functioning of the door.
- B. After installation and before turning the building over all hardware shall be left clean and free from dirt, dust or disfigurement.
- C. Instruct the owners personnel in the proper adjustment and maintenance of hardware and electrical security systems. Turn over installation instructions, final approved finish hardware schedules, custom wiring diagrams and any special tools that were required for installation.

3.4 **Protection:** The General contractor shall be responsible for protecting all hardware and finishes of each item of hardware until the owner accepts the project as complete.

3.5 **Extra Stock:** At the completion of the project, supply to the Owner the following items:

- A. Complete bitting list of keys cut
- B. One (1) set of instruction sheet for each item furnished
- C. One (1) each of any nonstandard tool for installation of items furnished

3.6 Provide finish hardware as specified in the previous articles in sets according to the following Schedule:

## HARDWARE SCHEDULE

### HARDWARE SET No. 1

Office, Single, HM, Interior

Door Numbers: 105A, 112, 113

Each to Have:

3	EA	HINGE	1279	4-1/2" X 4-1/2"	626	HAG
1	EA	OFFICE LOCK	ND50PD	RHO	626	SCH
1	EA	DOME STOP	FS438		626	IVE
3	EA	SILENCER	SR64		GRY	IVE

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**HARDWARE SET No. 2**

Restroom, Single, HM, Interior

Door Numbers: 114, 121

Each to Have:

3	EA	HINGE	1279 4-1/2 X 4-1/2	626	HAG
1	EA	PRIVACY LOCK	ND44S RHO	626	SCH
1	EA	WALL BUMPER	WS406CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

**HARDWARE SET No. 3**

Double, HM, Exterior

Door Numbers: 152

Each to Have:

6	EA	HINGE	BB1191 4-1/2 X 4-1/2	630	HAG
1	EA	SURFACE BOLT	SB360-12-B	602	IVE
1	EA	SURFACE BOLT	SB360-12-T	602	IVE
1	EA	STOREROOM LOCK	ND66PD	626	SCH
1	EA	LOCK GUARD	LG1	630	IVE
1	EA	OVERHEAD STOP	450S	630	GLY
1	EA	DRIP GUARD	810S LAR	AL	HAG
1	SET	GASKET	891S head and jambs	AL	HAG
1	EA	THRESHOLD	950A LAR	AL	NGP

**HARDWARE SET No. 4**

Office, Single, HM, Interior

Door Numbers: 101, 103,104,105B, 105C, 106A, 110G, 111, 123, 124, 125, 126A, 127C

Each to Have:

3	EA	HINGE	1279 4-1/2" X 4-1/2"	626	HAG
1	EA	OFFICE LOCK	ND50PD RHO	626	SCH
1	EA	DOME STOP	FS438	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

**HARDWARE SET No. 5**

Storage/Mechanical, Single, HM, Interior

Door Numbers: 102, 107A, 115, 127A, 127B

Each to Have:

3	EA	HINGE	1279 4-1/2" X 4-1/2"	626	HAG
1	EA	STORAGE LOCK	ND66PD RHO	626	SCH
1	EA	DOME STOP	FS438	626	IVE
3	EA	SILENCER	SR64	GRY	IVE



SECTION 09120

**CEILING SUSPENSION SYSTEM**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** Work includes suspension system, acoustical materials, and, where applicable, integrated lighting, heating and ventilating service components. Work done by others includes heating and cooling plants, duct work, piping, electrical, and telephone services.
- 1.4 **Qualifications:**
  - A. Manufacturing of materials shall conform to ASTM C635. Construction conditions and installation shall comply with ASTM C636. Acoustical material and suspension systems, including all necessary hangers, grillage, splines and supporting hardware, shall be supplied.
  - B. Manufacturer must certify that the metal suspension system is UL classified to be load compliant per ASTM C635. For load compliance, each carton of main tees must carry the Underwriters' Laboratory certification for the required load.
  - C. **Subcontractor Qualifications:** Installer shall have not less than three years of successful experience in installation of ceiling suspension systems on projects with requirements similar to requirements specified.
  - D. **Regulator Agencies:** Codes and regulations of authorities having jurisdiction shall apply.
  - E. **Source Quality Control:** Manufacturer will provide test certification for suspension for system as required to meet performance standards specified by various agencies.
- 1.5 **Delivery, Storage and Handling:** All materials shall be delivered and stored in original unopened packages. Storage shall be in a dry, enclosed shelter on site, protected from construction activity. Stack and handle to insure against racking, distortion, or physical damage.
- 1.6 **Project Conditions:**
  - A. **Environmental Requirements:** Building shall be enclosed with all windows and exterior doors in place and glazed, and roof watertight before installation of

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suspension system. Wetwork in place, completed and nominally dry. Climate conditions range of 60 degrees F. (15.56 degrees C.) to 85 degrees F. (29.44 degrees C.) and relative humidity of not more than 70 percent (70%) should be maintained before installation of suspension system.

### B. **Coordination with other work:**

1. **General:** Coordinate with other work supported by or penetrating through ceiling, including electrical and mechanical work and partition system.
2. **Mechanical Work:** Ductwork above suspension system shall be complete and permanent heating and cooling system operating.
3. **Electrical Work:** Installation of conduit above suspension system shall be complete before installation of suspension system.
4. Painting shall be completed prior to installation of suspension system or safeguarded.

### 1.7 **Submittals:**

- A. Comply with Section 01300, Submittals.
- B. **Samples:** Submit samples of suspension system main and cross tees for acceptance.
- C. **Manufacturer's Data:** Submit manufacturer's catalog cuts or standard drawings showing details of system with recommended installation instructions.
- D. **Maintenance Materials:** Submit (1%) one percent of amount of main tees and amount of cross tees.

## PART 2 - PRODUCTS

### 2.1 **Manufacturers:**

- A. **Acoustical Ceiling Grid:**
  1. USG Interiors, Donn XLA, intermediate duty, hot-dipped, galvanized steel, 15/16" wide, aluminum-capped, with baked polyester paint finish, white.
- B. **Furring Systems:**
  1. **Gypsum Board Ceilings:** USG Drywall Suspension System, intermediate duty, hanger spacing of 4'-0" o.c., 1-1/2" web height, 48" cross ties at 24" o.c., for a maximum ceiling load of 12 PSF .
- C. **Approved Manufacturer:** US Gypsum (USG)

### 2.2 **Materials:**

- A. Provide all necessary wall angle and hardware as required for complete installation.
- B. **General:** ASTM C635 intermediate medium duty classification commercial quality, cold-rolled steel, exposed surfaces prefinished.
- C. **Dimensions:** System to consist of main tees and cross tees, built to snap together to form modules of 24 inch x 24 inch as shown on the drawings, for installation of lay-in acoustical panels, light fixtures, and air diffusers.

### 2.3 **Fabrication:**

- A. Suspension system components shall be designed to support the ceiling assembly indicated on Project Drawings, with maximum deflection of 1/360 of the span,

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including appropriate load-carrying capacity for acoustical panels, light fixtures, and HVAC elements. Minimum of 12 PSF.

- B. **Exposed Tee System:** 1-1/2-inch high main tees combined with 1-1/2-inch high cross tees; components concealed with plug-in positive lock insertion. Pull-out tension valves in excess of 300 lbs.

### PART 3 - EXECUTION

- 3.1 **Inspection:** Examine materials and the areas to receive materials for conditions which will adversely affect installation. Do not start work until unsatisfactory conditions are corrected.
- 3.2 **Installation:**
  - A. Acoustical material and suspension system shall be installed square, level, and true, in accordance with ASTM C636, CIASCA Standards, and the job's Contract Documents.
  - B. Installer shall verify actual field dimension prior to installation, and provide all materials and labor necessary to insure proper installation.
  - C. **Hanger Wire:** Pre-stretched non-corrosive 12-gauge hanger wire with a yield strength of 394 lbs. **Hanger wires shall be installed at each corner of each light fixture and air boot. Hangers shall be attached to structural members capable of, and designed for, supporting the weight.**
  - D. Mechanical fasteners and hold-down clips shall be provided in compliance with building codes and sound construction practice.
- 3.3 **Cleaning:** Perform general cleaning maintenance with non-solvent based commercial cleaner.

END OF SECTION 09120

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SECTION 09150

**ACOUSTICAL CEILINGS**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** The extent of each type of acoustical ceiling is shown on the Drawings and in Schedules.
- 1.4 **Quality Assurance:**
  - A. Standards for Terminology and Performance: Applicable publications by the Acoustical and Insulating Materials Associations (IAMA), including "Performance Data, Architectural Acoustical Materials".
  - B. **Flame Spread Classification:** Tested, listed and labeled as 25 or under UL or 0-25 ASTM E-84.
- 1.5 **Submittals:**
  - A. Comply with Section 01300, Submittals.
  - B. **Manufacturer's Data:**
    1. Submit five (5) copies of manufacturer's product Specifications and installation instructions for each acoustical ceiling material required, and for each suspension system, including certified laboratory test reports and other data, as required to show compliance with these Specifications.
    2. Include manufacturer's recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods which may be detrimental to finishes and acoustical performances.
  - C. Submit Shop Drawings to describe any portions of the systems not fully shown on Data Sheets.
  - D. Submit two (2) 12" square samples for each acoustical unit required. Architect's review will be for color and texture only. Compliance with technical requirements is the exclusive responsibility of the Contractor.
  - E. **Maintenance Stock:** At the time of completing the installation, deliver stock of maintenance material to the Owner. Furnish full-size units matching the units installed, packaged with protective covering for storage, and identified with

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appropriate labels. Furnish an amount equal to 2% of the amount installed of each type.

- 1.6 **Job Conditions:** Do not install interior acoustical panels until the space has been enclosed and is weather-tight, and until the space is nominally dry, and until work above ceilings has been completed and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

## PART 2 - PRODUCTS

### 2.1 Ceiling Units:

- A. **Approved Products:** Except as otherwise indicated, provide lay-in panels of the types specified. Provide sizes shown on Reflected Ceiling Plan.
- Type 1: **Standard Acoustical Panels:**
- a. **Series:** USG Interiors, Radar ClimaPlus (2210)
  - b. **Size:** 24" x 24" x 5/8"
  - c. **Finish:** White
- Type 2: **Kitchen Areas:**
- a. **Series:** USG Interiors, Clean Room ClimaPlus Class 100, nonperforated (56099)
  - b. **Size:** 24" x 24" x 5/8"
  - c. **Finish:** White
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

- 2.2 **Ceiling Suspension Materials:** Refer to Section 09120.

## PART 3 - EXECUTION

### 3.1 Inspection and Preparation Work:

- A. Install acoustical panels in coordination with recessed suspension system. Install hold-down clips for each panel where shown or required for fire-resistance ratings. Scribe, cut and route panels to fit accurately at walls and penetrations and provide moldings or trim as indicated.
- B. If a condition exists where panels of less than 6 inches would be installed at edge conditions, cut ceiling panels from 2 x 4 panels to match field of ceiling and extend to partition on edge condition. Do not install panels of less than 6" width unless acceptable to the Architect.

### 3.2 Cleaning and Protection:

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage.
- B. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

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- C. Verify required protection for the acoustical ceilings, including temperature and humidity limitations and dust control, so that the work will be without damage and deterioration at the time of acceptance.

END OF SECTION 09150

SECTION 09250

**GYPSUM WALL BOARD**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. The extent of the gypsum wall board work is shown on the Drawings and in Schedules.
  - B. The types of work required includes the following:
    - 1. Gypsum wall board partitions and ceilings.
    - 2. Thermal Sound and Fire Control above CMU walls.
    - 3. Wall board finishing (joint tape-and-compound treatment).
    - 4. Skim-coating.
    - 5. Knockdown Ceiling Texture.
- 1.4 **Quality Assurance:**
- A. **Fire-Resistance Rating:** Where work is indicated for fire-resistance ratings, including those required to comply with governing regulations, provide materials and installations identical with applicable assemblies which have been tested and listed by recognized authorities, including FM, UL, NFPA, and ASTM.
  - B. **Industry Standard:** Comply with applicable requirements of ASTM C476 and "Application and Finishing of Gypsum Board" by the Gypsum Association except where more detailed or more stringent requirements are indicated, including the recommendations of the manufacturer.
  - C. **Allowable Tolerances:** 1/16" offsets between planes of board faces, and 1/8" in 8'-0" for plumb, level, warp and bow. Where substrates have been installed by other trades, tolerances may vary to those specified for that trade.
  - D. **Manufacturer:** Obtain gypsum boards, trim accessories, adhesives and joint treatment products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum board.
- 1.5 **Submittals:**
- A. Comply with Section 01300, Submittals.

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- B. Submit manufacturer's product Specifications and installation instructions for each gypsum wall board component, including other data as may be required to show compliance with these Specifications.

### 1.6 **Product Handling:**

- A. Deliver gypsum wall board materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type and grade; store in a dry well-ventilated space, protected from the weather, under cover and off the ground.

### 1.7 **Job Conditions:**

- A. Maintain ambient temperatures at not less than 55 degrees F. for the period of 24 hours before wall board finishing, during installation, and until compounds are dry.

## **PART 2 - PRODUCTS**

### 2.1 **Gypsum Board Products:**

- A. Gypsum boards with tapered edges, 4' wide x maximum length available (8' minimum).
- B. Provide the following types:
  1. 5/8" standard type: all ceilings where exposed for finish.
  2. 5/8" Type-X at fire walls and ceilings.
  3. 5/8" standard type: where indicated by wall types.

### 2.2 **Joint Treatment Materials:**

- A. **General:** ASTM C475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.
- B. **Joint Tape:** Perforated type.
- C. **Joint Compound:** Ready-mixed vinyl-type for interior use. Commercial quality general purpose grade specifically formulated for bedding tapes, filling depression, and topping and sanding. Comply with ASTM C475.

### 2.4 **Miscellaneous Materials:**

- A. **General:** Provide auxiliary materials for gypsum wall board work of the type and grade recommended by the manufacturer of the gypsum board.
- B. **Laminating Adhesive:** ASTM C893.
- C. **Gypsum Board Fasteners:** ASTM C646, Type S Bugle head screws for steel and ASTM C894, Type W Bugle head, and ASTM C514 nails for wood.

## **PART 3 - EXECUTION**

### 3.1 **Installation of Gypsum Wall Boards:**

- A. **General Standards:** In addition to compliance with GA-216, *Application and Finishing of Gypsum Board*, comply with manufacturer's instructions and requirements and these Specifications. Where a conflict exists assume the more stringent requirement and submit a request for interpretation from the Architect.

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- B. **Ceilings:** Install ceiling boards by screws (prior to adjacent wall boards) in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints in ceilings at least 1'-0". All joints shall have solid backing.
- C. **Walls:** Install wall boards with screws and glue at all supports. Install boards horizontally with end joints staggered over studs. Cut boards as required around joists, beams, decking, etc., as required to provide the least practical voids.
- D. **Double-layer Walls and Partitions (if any):** Install base layer of gypsum backing board and face layer of exposed gypsum board, both vertically and with all joints offset at least 10". Use fire-resistant gypsum boards for fire-rated construction.
  - 1. Fasten base layer with screws.
  - 2. Laminate face layer to base layer with laminating adhesive, and supplement with either temporary or permanent screws, or nails where permitted, through base layer and into support.
  - 3. Stagger joints as required by Code.

### 3.2 Installation of Wall Board Trim Accessories:

- A. **General:** Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. ***Do not fasten trim by crimping.***
- B. **Exposed Work:**
  - 1. ***Install paper-covered metal bull-nose corner beads at all external corners of vertical wall board work.***
  - 2. Install metal edge trim or wall board moldings whenever edges of gypsum board would otherwise be exposed or semi-exposed. Provide type with face flange to receive joint compound except where semi-flashing 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 J-Type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints). Install W-Type moldings where masonry abuts wall board work.
  - 3. Install metal control joint (beaded-type) where indicated or required for crack control.

### 3.3 Control Joints:

- A. Control joints in gypsum board systems shall be installed where indicated on the plans or specifications. Gypsum Association recommended specifications GA-234 and manufacturer's recommendations specify minimum requirements for the installation of control joints. Control joints in the gypsum board shall be installed where any of the conditions listed below exist:
  - 1. A partition, wall, or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.
  - 2. Where a wall or partition runs in an uninterrupted straight plane exceeding 30 lineal feet. Full height door frames may be considered a control joint.
  - 3. **Interior Ceilings With Perimeter Relief:** Control joints shall be installed so that linear dimensions between control joints shall not exceed 50 ft and total area between control joints shall not exceed 2500 square feet.

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4. **Interior Ceilings Without Perimeter Relief:** Control joints shall be installed so that linear dimensions between control joints shall not exceed 30 ft and total area between control joints shall not exceed 900 square feet.
5. **Exterior Ceilings and Soffits:** Control joints shall be installed so that linear dimensions between control joints shall not exceed 30 ft and total area between control joints shall not exceed 900 square feet.
6. A control joint or intermediate blocking shall be installed where ceiling framing members change direction.
7. A control joint is desired or incorporated as a design accent or architectural feature.

### 3.4 Wall Board Finishing:

- 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 paint--referred to as **Level 4** in GA-214, *Recommended Levels of Gypsum Board Finish*, from the Gypsum Association. Pre-fill deep joints and rounded or beveled edges, using type to compound specified.
  1. Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.
  2. Apply joint compound in three (3) coats (not including pre-fill) and sand between last two (2) coats and **after** last coat.
- B. **Skim-Coating:** Referred to as **Level 5** in GA-214, *Recommended Levels of Gypsum Board Finish*, from the Gypsum Association. Pre-fill deep joints and rounded or beveled edges, using type to compound specified.
  1. Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.
  2. Apply joint compound in three (3) coats (not including pre-fill) and sand between last two (2) coats and **after** last coat.
  3. A thin skim coat of joint compound, or a material manufactured especially for this purpose, shall be trowel-applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
  4. Apply a drywall primer before paint is commenced.
- C. **Partial Finishing:** Omit third coat and sanding on concealed wall board work (Level 2 per GA-214). ***In no case will work that is simply taped and bedded be accepted.***
- D. Ceilings to receive texture shall be sprayed and knocked-down trowel finished.
- E. Ceilings shall be skim-coated where indicated to receive smooth finish. The levelness and smoothness of the finish shall be inspected by the Architect and if not acceptable, it shall be re-skimmed until acceptable.

- 3.5 **Protection of Work:** Protect gypsum wall board and maintain conditions necessary to ensure the work will be without damage or deterioration at the time of acceptance.

END OF SECTION 09250



SECTION 09380

**WALL BASE**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** It is the intent of this Section to provide for the furnishing, installing and warranting of the rubber composition base and all associated work and accessories described herein.
- 1.4 **Work Included:**
- A. Work included is a convenient listing of significant items described within this Section and shall not be construed as the only work applicable or related to this Section.
  - B. Work includes, but is not limited to:
    - 1. Rubber Base.
    - 2. Adhesive.
    - 3. Transition Mouldings, as needed.
- 1.5 **Quality Assurance:**
- A. **Product:** Burke Uni-color
  - B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***
  - C. **Installer Qualifications:** Minimum three (3) years experience and demonstrated quality of workmanship.
- 1.6 **Submittals:**
- A. Comply with Section 01300, Submittals.
  - B. **Samples:** Submit for color and pattern selection by Owner.
  - C. **Maintenance Data and Instructions:** Comply with Section 01300, Submittals.
  - D. **Replacement:** Furnish minimum of two (2) cartons per color and pattern for replacement and maintenance. This stock is not to be used for replacement or maintenance by the Contractor during the course of the project prior to Final Acceptance.

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- 1.7 **Product Handling:** Deliver material in unbroken, unopened manufacturer's containers with labels indicating colors and patterns. Store in dry area and protect from wetting and damage. Reject damaged materials.
- 1.8 **Environmental Requirements:** Maintain temperature in space to receive tile between 70° F. and 90° F. for minimum twenty-four (24) hours before and forty-eight (48) hours after installation.

### PART 2 - PRODUCTS

#### 2.1 Materials:

- A. **Rubber Cove Base:**
1. **Thickness:** 0.125"
  2. **Coil:** 4" high, continuous roll.
  3. **Color:** #875 Navy (Night Blue)
- B. **Adhesive:** Per Manufacturer's recommendations.
- C. **Crack Filler:** Per Manufacturer's recommendations.

### PART 3 - EXECUTION

- 3.1 **Inspection of Surfaces:** Examine floor surface to receive base for excessive moisture content or unevenness which would prevent suitable and acceptable results. Report defects before beginning work so repairs can be made. ***Starting of work constitutes acceptance of subsurface and installer shall be held responsible for good results, to include, but not limited to, smooth planes and surfaces without ridges or buckles. Replace unsuitable work, at no extra cost to the Owner.***
- 3.2 **Preparation:** Remove dirt, oil, grease, or other foreign matter from subsurface to receive base. Fill cracks less than 1/16" wide and depressions less than 1/8" deep with crack filler.
- 3.3 **Adhesive Application:** Mix and apply adhesive in accordance with manufacturer's instructions. Trowel on evenly and thinly to cover only that amount of area which can be covered by base within the recommended adhesive working time.
- 3.4 **Installation:**
- A. **General:** Install base around perimeter of room or space. Unroll base material and cut in lengths as desired or as required for minimum number of joints. Match edges at all seams or double-cut adjoining lengths. Install with tight butt joints.
  - B. Apply adhesive and firmly adhere to wall surfaces. Press down so that bottom cove edge follows floor profile. Top of base should follow a straight line, allowing the cove to accommodate variations in the floor. Base should not be indented under the bottom edge of the wall board, but should follow the line of the wall without buckling.
  - C. Form internal corners by shaving the back of the strip to form a clean crease.

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- D. Form external corners by using a minimum of 24" base on each side of corner, bending base tight around corner without buckling. Do not notch toe to ease stress at bend.
- E. Scribe base accurately to abutting materials.

3.5 **Finishing and Cleaning:** After installation completion and materials have set, clean surfaces with neutral cleaner recommended by manufacturer.

3.6 **Adjust and Clean:** Replace broken, chipped marred or otherwise damaged base. Remove all base cuttings, material and debris from site.

3.7 **Protection:** Protect base after finishing and cleaning.

END OF SECTION 09380

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SECTION 09672

**QUARTZ ACRYLIC FLOORING**

**PART 1 – GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall **not** relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Summary**
- A. This section includes seamless acrylic, methyl methacrylate (MMA) flooring system as shown on the drawings and in schedules.
- 1.4 **System Description**
- A. The work shall consist of preparation of the substrate, the furnishing and application of a methyl methacrylate (MMA) based multi-roller-applied flooring system with Q11 colored quartz aggregate and topcoats. The system shall have the color and texture as specified by the Owner with a nominal thickness of 3/16 inch. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.
- 1.5 **Submittals**
- A. Comply with Section 01300, Submittals.
  - B. Submit the following:
    - 1. **Product Data:** Latest edition of Manufacturer's literature including performance data and installation procedures.
    - 2. Manufacturer's Material Safety Data Sheet (MSDS) for each product being used.
    - 3. **Samples:** A 6 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system.
- 1.6 **Quality Assurance**
- A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of methyl methacrylate (MMA) industrial flooring and related materials.
  - B. The Applicator shall have been approved by the flooring system manufacturer in all phases of surface preparation and application of the product specified.
  - C. No requests for substitutions shall be considered that would change the generic type

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- D. of the specified system (100 % reactive, Methyl Methacrylate based acrylic resin). System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), local Health Department, Canadian Food Inspection Agency (CFIA) and certified by National Sanitation Foundation (NSF)
- E. A pre-installation conference shall be held between Applicator, General Contractor and the Owner to review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

### 1.7 Product Delivery, Storage, and Handling

- A. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.
- B. **Storage and Protection:**
  - 1. The Applicator shall be provided with a storage area for all components. The area shall be between 35 F and 85 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
  - 2. Copies of Material Safety Data Sheets (MSDS) for all components shall be kept on site for review by the Engineer or other personnel.
- C. **Waste Disposal:**
  - 1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

### 1.8 Project Conditions

- A. Site Requirements
  - 1. Application may proceed while air, material and substrate temperatures are between 35°F and 90°F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
  - 2. The relative humidity in the specific location of the application shall be less than 85% and the surface temperature shall be at least 5 F above the dew point.
  - 3. The Applicator shall ensure that adequate ventilation is available for the work area. This shall include the use of manufacturer's approved fans, smooth bore tubing and closure of the work area.
- B. Conditions of concrete to be coated with MMA material.
  - 1. New Concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of twenty eight days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
  - 2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary or desirable).
  - 3. Sealers and curing agents should not to be used.
  - 4. New Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.
  - 5. Existing concrete shall be shot blasted to desired surface texture.
  - 6. Slab on grade shall be tested for moisture content and the appropriate primer

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shall be used derived from test results.

- C. Safety Requirements
  - 1. All open flames and spark-producing equipment shall be removed from the work area prior to commencement of application.

### 1.9 Warranty

- A. Manufacturer warrants that material shipped to buyers at the time of shipment substantially free from material defects and will perform substantially to Dur-A-Flex, Inc. published literature if used in accordance with the latest prescribed procedures and prior to the expiration date.
- B. manufacturer's liability with respect to this warranty is strictly limited to the value of the material purchase.

## PART 2 – PRODUCTS

### 2.1 Flooring

- A. **Basis of Design:** Dur-A-Flex, Inc, Cryl-A-Quartz, MMA-Based seamless acrylic flooring system.
  - 1. System Materials:
    - a. Primer Coat: Dur-A-Flex, Inc. Cryl-A-Prime P-101 MMA-based, two-component primer.
    - b. Bond Coat: Dur-A-Flex, Inc. Cryl-A-Glaze G-201, MMA-based two-component resin.
    - c. The aggregate shall be Dur-A-Flex, Inc., Q 11 colored quartz.
    - d. Topcoats: Dur-A-Flex, Inc. Cryl-A-Top T-301, MMA-based, two-component resin
  - 2. Patch Materials
    - a. Shallow Filler/Patch Material: Use Dur-A-Flex, Cryl-A-Glaze G-201 with MMA SL Filler Blend in ¼ inch maximum lifts.
    - b. Deep Fill and Sloping Material (over ¼ inch): Use Cryl-A-Tex Polymer Concrete as manufactured by Dur-A-Flex. As required, extend with approved aggregate per manufacturers recommendations.

### 2.2 Manufacturer

- A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### 2.3 Product Requirements

- A. **Primer:** Cryl-A-Prime P-101
  - 1. Percent reactive resin 100 %
  - 2. VOC <100 g/L
  - 3. Water absorption ASTM D 570 0.04 %

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4.	Tensile strength, ASTM D 638	3,550 psi
5.	Tensile modulus ASTM D 638	400,000 psi
6.	Coefficient of thermal expansion ASTM D 696	0.000035 in/in/F
7.	Electrical resistivity ASTM D 257	
	Volume resistance	10 <sup>15</sup> ohm-cm
	Surface resistance	10 <sup>12</sup> ohm
8.	Pot life @ 68 F	10-20 minutes
9.	Cure time @ 68 F	30-45 minutes
10.	Recoat time @ 68 F	45-60 minutes
11.	Multi-coat application, solution weld	yes
B.	<b>Bond Coat:</b> Cryl-A-Glaze G-201	
1.	Percent Reactive	100 %
2.	VOC	<100 g/L
3.	Water Absorption, ASTM D 570	0.04 %
4.	Tensile Strength, ASTM D 638	2,175 psi
5.	Coefficient of thermal expansion ASTM D 696	0.000035 in/in/F
6.	Electrical Resistivity, ASTM D 257	
	Volume resistance	10 <sup>15</sup> ohm-cm
	Surface resistance	10 <sup>12</sup> ohm
7.	Pot Life @ 68 F	10-20 minutes
8.	Cure Time @ 68 F	40-60 minutes
9.	Recoat Time @ 68 F	60 minutes
10.	Multi-coat Application, solution weld	yes
C.	<b>Topcoat:</b> Cryl-A-Top T-301	
1.	Percent reactive resin	100 %
2.	VOC	<100 g/L
3.	Water absorption ASTM D 570	0.4 %
4.	Tensile strength, ASTM D 638	3,550 psi
5.	Tensile modulus, ASTM D 638	300,000 psi
6.	Coefficient of thermal expansion ASTM D 638	0.000035 in/in/F
7.	Electrical resistance ASTM D 257	
	Volume resistance	10 <sup>15</sup> ohm-cm
	Surface resistance	10 <sup>12</sup> ohm
8.	Water vapor transmission DIN 53122	0.9 g/cm-hr-mm HG x 10 <sup>-9</sup>
9.	Potlife @ 68 F	10-15 minutes
10.	Cure time @ 68 F	30-45 minutes
11.	Recoat time @ 68 F	30-45 minutes
12.	Multi-coat application, solution weld	yes

## PART 3 – EXECUTION

### 3.1 Examination

- A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, bond test, installation tolerances and other conditions affecting flooring performance.



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1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

### 3.2 Preparation

#### A. General:

1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products.
2. **Bond Test:** Random tests for adequate bond strength shall be conducted on the substrate while the surface preparation is ongoing and prior to application of the primer, in accordance with the Manufacturer's recommendations.
  - a. A minimum frequency of three tests per 5000 sf. Smaller areas shall receive a minimum of three tests.
  - b. Based on the test results, additional substrate preparation may be required before proceeding with the installation of the system.
3. **Moisture Testing:** Perform anhydrous calcium chloride test ASTM F 1869-98.
  - a. Perform three tests for the first 1,000 sf and then one test per 1,000 sf after that.
  - b. Application will proceed only when the vapor/moisture emission rates from the slab is less than and not higher than 5 lbs/1,000 sf/24 hrs.
  - c. If the vapor drive exceeds 5 lbs/1,000 sf/24 hrs then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
4. There shall be no visible moisture present on the surface at the time of application of the system. Compressed oil-free air and/or a light passing of a propane torch may be used to dry the substrate.
5. **Mechanical surface preparation:**
  - a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 5 as described by the International Concrete Repair Institute.
  - b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
  - c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 1/4 inch key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
  - d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired.
6. At spalled or worn areas, mechanically remove loose or delaminated concrete

to a sound concrete and patch per manufactures recommendations.

### 3.3 Application

#### A. General:

1. The system shall be applied in six distinct steps as listed below:
  - a. Substrate preparation, Bond Tests
  - b. Priming
  - c. First bond coat application with first aggregate broadcast
  - d. Second bond coat with second aggregate broadcast
  - e. Topcoat application, sand floor (if required)
  - f. Second topcoat application
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

#### B. Primer:

1. The Cryl-A-Prime P-101 shall consist of one roller applied coat with a coverage rate of 90-110 sf/gal.
2. All components shall be measured and mixed in accordance with the Manufacturer's recommendations.
3. The primer shall cure tack-free before application of the floor topping.
4. Porous concrete may require a second coat of primer should the first coat be absorbed.

#### C. Bond Coat:

1. The first Bond Coat of Cryl-A-Glaze G-201 shall be applied with a roller at a rate of 100-110 sf/gal and broadcast to excess, 0.3-0.5 lbs/sf with the quartz aggregate.
2. The second Bond coat of Cryl-A-Glaze G-201 shall be applied at 50-70 sf/gal and broadcast to excess, 0.3-0.5 lbs/sf with the quartz aggregate.
3. Allow material to fully cure. Vacuum, sweep, and/or blow to remove all loose aggregate.

#### D. Topcoat:

1. The first roller applicator topcoat of Cryl-A-Top T-301 shall have a coverage rate of 50-70 sf/gal.
2. The first topcoat coat will be allowed to cure then can be sanded or scraped to give desired finish texture.
3. The second topcoat is applied at a coverage rate of 90-110 sf/gal.
4. The finish floor will have a nominal thickness of 3/16 inch.

### 3.4 Field Quality Control

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### A. **Tests, Inspection**

1. The following tests shall be conducted by the Applicator:
  - a. Temperature
    1. Air, substrate temperatures and, if applicable, dew point.
  - b. Bond Test of the primer to the substrate shall be checked as per Clause 3.2, A, 2
  - c. Coverage Rates
    1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

### 3.5 **Cleaning and Protection**

- A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
- B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION 09672

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SECTION 09681

**CARPET TILE**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Requirements, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** It is the intent on this Section to provide for the furnishing, installing and warranting of the carpet and all associated work and accessories.
- 1.4 **Specification No. MC-1A.1:** This Specification is based on the Florida School Plant Management Association (FSPMA) Specification No. MC-1A.3. The carpet shall be on the latest list of certified products complying with this specification from FSPMA.
- 1.5 **References:**
  - A. AATCC - The American Association of Textile Chemists and Colorists
  - B. CRI - Carpet and Rug Institute
- 1.6 **Quality Assurance:**
  - A. **Acceptable Manufacturers:** Minimum three (3) years experience in carpet manufacturing.
  - B. **Installer Qualifications:** Minimum five (5) years experience and approved by carpet manufacturer.
- 1.7 **Submittals:**
  - A. Comply with Section 01300, Submittals, and Section 01150.
  - B. **Manufacturer's Literature:** Maintenance and cleaning instructions.
  - C. **Test Reports: To be provided by and paid for by the Carpet Subcontractor.**
    1. Flammability Tests: ASTM E648.
    2. Smoke Test: As determined by NFPA258, Smoke Generation of Solid Materials.
    3. Static Control.
    4. All tests listed in Table I of this Section.
- 1.8 **Guarantee:**

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- A. **Adjustment:** During guarantee period and within 15 days written notice, restretch carpet, repair seams and edges, remove glue, and remove air pockets or bubbles in reglue.
- B. **Static Electricity:** Manufacturer's 5-year guarantee that carpet will maintain specified levels of static control.

## PART 2 PRODUCTS

### 2.1 Carpeting Manufacturers:

- A. Pentz
  - 1. Revival Series, 7043T-2212 "Awakening"
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids and is deemed "Acceptable" prior to bid date. Product submittal does not constitute acceptance by the Architect or Owner. Contractor shall not use non-approved products for determining bid costs.***

### 2.2 Materials:

- A. **Type A Tile Carpeting:** Tufted, Textured Loop Pile (Random Pattern):
  - 1. **Fiber Type:** Apex SDP Nylon.
  - 2. **Dye Method:** 100% Solution Dyed.
  - 3. **Minimum Face Yarn Weight:** 16 oz/yd<sup>2</sup>
  - 4. **Minimum Gage:** 1/10
  - 5. **Minimum Density:** 6275
  - 6. **Backing System:** Nexus Modular
  - 7. **Size:** 24 x 24 inches
  - 8. **Performance:**
    - a. **Indoor Air Quality:** Green Label Plus Certified GLP2526
    - b. **Radiant Panel:** Class 1 (ASTM E648)
    - c. **Smoke Density:** < 450 (ASTM E662)
    - d. **Lightfastness:** Passes (AATCC 16E)
    - e. **Static:** < 3.5 KV (AATCC 134)
- B. **Resilient Edge Strips:** Not less than one inch wide, tapered bullnose edge, thickness and color as selected.
- C. **Metal Edge Strips:** Extruded aluminum, mill finish; butt type for concealed anchorage; countersunk stainless steel fasteners, with anchors suitable for substrate surface.
- D. **Trowelable Leveling and Patching Compounds:** Latex-modified Portland cement based or blended hydraulic-cement-based formulation provided or approved by tile carpeting manufacturer for application on substrate surface and grade level.
- E. **Adhesives:** Tile carpeting manufacturer's recommended water resistant materials formulated for application on substrate surface and grade level.
- F. **Low VOC Flooring Adhesive and Joint Materials:** Tile carpeting manufacturer's recommended water resistant materials formulated for low VOC (VOC Limit 50g/L less water) and for application on substrate and grade level.

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- G. **Cleaning Solvents:** Low toxicity, and a flash point in excess of 100 degrees F.
- H. **Wood Floor Primer:** Tile carpeting manufacturer's recommended type.
- I. **Liquid Floor Stripper:** Tile carpeting manufacturer's recommended type.

### PART 3 EXECUTION

#### 3.1 Examination:

- A. Examine surfaces scheduled to receive tile carpeting for defects that will adversely affect the proper installation. Do not proceed until unsatisfactory conditions are corrected.

#### 3.2 Preparation:

- A. Clean floors of dust, dirt, solvents, oil, grease, loose paint, and other substances. Allow floors to dry thoroughly.
- B. **Concrete Floors:** Level uneven surfaces and patch cracks and small holes with patching compound.
- C. **Wood Floors:**
  - 1. Renail loose and cracked boards.
  - 2. Patch cracks and depressions with floor filler.
  - 3. Remove wax using liquid stripper or sander.
  - 4. Seal substrate with wood floor primer.
- D. **Resilient Sheet Floors:**
  - 1. Remove existing resilient sheet flooring.
- E. **Resilient Tile Floors:**
  - 1. Remove wax using liquid stripper or sander.
  - 2. Remove loose tiles, if any, and replace or patch as necessary.

#### 3.3 Installation:

- A. Install tile carpeting in accordance with CRI 104, Section 14 and with tile carpeting manufacturer's written installation instructions.
  - 1. Install pattern parallel to walls and borders.
  - 2. Maintain dye lot integrity. Do not mix dye lots in the same area.
- B. Cut and fit tile carpeting neatly around projections through floor and to walls and other vertical surfaces. Bind or seal cut edges as recommended by the tile carpeting manufacturer.
- C. Stagger joints of tile carpeting so tile carpeting grid is offset from access flooring panel grid.
- D. Install edge strips where tile carpeting terminates at other floor coverings or finishes. Use one full length piece where possible. Where splicing cannot be avoided, butt ends tight and flush.

#### 3.4 Cleaning and Protection:

- A. Upon completion of the tile carpeting installation, immediately remove spots and smears of excessive adhesive from tile carpeting with cleaning solvent. Remove loose pieces of face yard with sharp scissors.

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- B. Place usable remnants of tile carpeting in an area designated by the Facilities Project Manager.
- C. Remove waste materials and tools.
- D. Upon completion, thoroughly vacuum clean carpeted areas.
- E. After each area of tile carpeting has been installed, protect from soiling and damage.
- F. Allow glue-down installation a minimum of 48 hours to cure before subjecting it to any traffic, moving of furniture, or other heavy equipment.

3.5 **Disposal:** Dispose of all debris material in appropriate containers.

END OF SECTION 09681



SECTION 09900

**PAINT**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** The work described under this Section consists of all painting and finishing work and related items necessary to complete the work indicated on Drawings, described in the Specifications, and listed in the Paint Schedule included herein. Note that AkzoNobel owns ICI-Dulux, Glidden and Devoe and that paint numbers may be correlated between these products. The present specifications are built around an older county standard and still refers to Glidden and Devoe.
- 1.4 **Definition:** The term "paint" or "painting" as used in this Section in a general sense has a reference to sealers, primers, stains, oil, alkyds, latex, epoxy, and enamel type of paint, and the application of these materials.
- 1.5 **List of items included:** Without restricting the volume or generality of the "Extent", the work performed under this Section shall include, but not be limited to, the following:
  - A. The work, in general, includes all exterior metals, exterior masonry, exterior woodwork, interior metals, interior woodwork, interior wallboard, plaster, concrete, masonry, and other items normally requiring a paint finish, unless otherwise specified.
  - B. Prime coats specified herein will not be required on items delivered with prime coats already applied, except where there is a request for spot priming such as touch-ups. (See other Sections of Specifications for primers specified for shop work).
- 1.6 **Submittals:**
  - A. Comply with Sections 01150 and 01300 for submittals.
  - B. **List of Proposed Materials:** The Contractor shall either verify, in writing, that he intends to apply the materials listed in the Paint Schedule, or submit for approval a list of comparable materials of another listed approved manufacturer. This Submittal shall include full identifying product names and catalog numbers.
  - C. **Samples:**
    1. Provide a complete set of color cards.

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2. Upon receipt of the Architect's color schedule, the Contractor shall then prepare duplicate 8-1/2" by 11" samples of finish on hardboard or other suitable materials to simulate job surfaces.
  2. Final work shall match approved color samples, except if the Architect so directs between coats, the succeeding coat or coats may be slightly lightened or darkened.
- 1.7 **Storage of Materials:** All materials used on the job shall be stored in a single place designated by the Architect. Such storage place shall be kept neat and clean, and all damage thereto or it's surroundings, shall be made good. Any soiled or used rags, waste and trash, must be removed from the building every night, and every precaution taken to avoid the danger of fire.
- 1.8 **Job, Weather and Temperature Controls:**
- A. Maintain temperature in building at constant 65 degrees F., or above, during drying of plaster and masonry, and provide adequate ventilation for the escape of moisture from buildings, in order to prevent mildew, damage to other work, and improper drying of paint.
  - B. Once painting has commenced, provide constant temperatures of 65 degrees F., or above, and prevent such variations in temperature which might result in condensation on freshly painted surfaces.
  - C. Before painting is started in any area, it shall be broom-cleaned, and excessive dust shall be removed from all areas to be painted.
  - D. After painting operations begin in a given area, broom cleaning will not be allowed. Cleaning shall then be done only with commercial vacuum cleaning equipment.
  - E. Adequate illumination shall be provided by the General Contractor in all areas where painting operations are in progress.
  - F. Cover or otherwise protect finished work of other trades and surfaces not being painted concurrently. Remove all hardware, accessories, device plates, lighting fixtures, and similar items, and replace when painting is completed and thoroughly dry.

## PART 2 - PRODUCTS

### 2.1 **Manufacturers:**

- A. **Product:** Sherwin-Williams.
- B. ***No "approved equal" material or equipment will be considered unless written request has been submitted to the Architect for approval at the latest ten (10) days prior to date for receipt of bids.***

### 2.2 **Materials:**

- A. All materials used in the work shall be exactly as specified in the "Painting Schedule" in brand and quality. No claim by the Contractor as to the unsuitability or unavailability of any material specified, or his unwillingness to use same, or his inability to produce first class work with same, will be entertained, unless such claims

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are made in writing and submitted to the Architect with substitute proposal prior to commencing work.

- B. All paints, varnishes, enamels, lacquers, stains, paste fillers and similar materials must be delivered in the original containers, with the seals unbroken and labels intact, and with the manufacturer's instructions printed thereon.
- C. Secondary materials not specified by name and required for the job, such as oils, thinners, shellac, patching compounds and driers, shall be first grade of a reputable manufacturer.
- D. Paint shall be well ground, shall not settle badly, cake, or thicken in the container, shall be readily broken with a paddle to a smooth consistency, and shall have easy brushing properties.
- E. Paint shall arrive on the job ready-mixed, except for tinting of undercoaters and possible thinning.
- F. All thinning and tinting materials shall be as recommended by the manufacturer for the particular material tinted or thinned.
- G. Fungicidal Agent shall be incorporated into the paint by the manufacturer.

2.2 **Application Equipment:** Select, use, and maintain paint application equipment as necessary to provide the execution quality of painting as specified.

2.3 **Accessory Materials:** This work includes all required ladders, scaffolding, drop cloths, maskings, scrappers, tools, sandpaper, dusters, cleaning solvents, and waste, as required to perform the work and achieve the results herein specified.

2.4 **Colors:**

- A. Interior Wall Color: Sherwin-Williams, SW7661 "Reflection"
- B. Interior Door Frame Color: Sherwin-Williams, SW7665 "Wall Street"
- C. CMU Exterior Wall and Exterior Door Color: Match existing.

## PART 3 - EXECUTION

3.1 **Inspection of Surfaces:**

- A. Before starting any work, surfaces to receive paint finishes shall be examined carefully for defects which cannot be corrected by the procedures herein under "Preparation of Surfaces", and which might prevent satisfactory painting results. Work shall not proceed until such damages are corrected.
- B. The commencing of work shall be construed as acceptance of the surfaces, and thereafter, the Contractor shall be fully responsible for satisfactory work as required herein.

3.2 **Cooperation with Other Trades:**

- A. This work shall be scheduled and coordinated with other trades, and shall not proceed until other work and/or job conditions are as required to achieve satisfactory results.
- B. The Contractor shall examine the Specifications of the various other trades and shall thoroughly familiarize himself with all their provisions regarding painting. All

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surfaces that are left unfinished by the requirements of other Sections shall be painted or finished as part of the work covered by this Section.

### 3.3 **Workmanship:**

- A. The workmanship shall be the very best. Only skilled mechanics shall be employed. Application may be by brush, roller or spray, at the Contractors option, except as hereinafter specified otherwise.
- B. All materials shall be mixed, thinned, modified, and applied only as specified by the manufacturer's directions on the container.
- C. The Contractor shall have approval of color samples before applying any paint or finish. All priming coats and undercoaters shall be tinted to the approximate shade of the final coat.
- D. The Contractor not only shall protect his work at all times, but shall also protect all adjacent work and materials by suitable covering or other method during progress of his work. Upon completion of the work, he shall remove all paint and varnish spots from the floors, glass, and other surfaces. He shall remove from the premises all rubbish and accumulated materials of whatever nature not caused by others, and shall leave his part of the work in clean, orderly, and acceptable conditions.
- E. All materials shall be evenly applied, free of runs, sags, holidays, brushmarks, air bubbles, excessive roller stipple, and other defects.
- F. Coverage and hide shall be complete. When color, stain, dirt or undercoaters show through final coat of paint, the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance and coverage, at no additional cost to the Owner.
- G. Each coat shall be thoroughly dry before applying succeeding coat.

### 3.4 **General Preparation:**

- A. Provide all scaffolding and staging required for work in this section. Coordinate locations to eliminate interference with the work of others.
- B. Remove electrical panel box covers and doors before painting wall. Paint separately and reinstall after all paint is dry.
- C. Finish all walls behind wall-mounted equipment, such as chalkboards and tackboards, etc., prior to the mounting of such equipment.
- D. Exterior painting shall not be done when the temperature is below 50 degrees F., while the surface is damp, or during cold, rainy or frosty weather, or when the temperature is likely to drop to freezing within 24 hours. Avoid painting surfaces while they are exposed to the hot sun.
- E. Exterior doors shall have tops, bottoms, and side edges finished the same as the exterior faces of these doors.

### 3.5 **Surface Preparation:**

- A. **Concrete Masonry Units (Unparged):**
  - 1. Remove all burrs, nibs, mortar spatter, and loose masonry.
  - 2. Remove any efflorescence by muriatic acid wash, and rinse with clear water.
  - 3. Fill all large holes, voids and depressions with cement.
  - 4. Scrape all joints to remove mortar.

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5. Brush away all loose dust and residue.
- B. **Concrete Masonry Units (Parged), Precast and Poured Cement:** Grind Carborundum power tool to remove all marks and defects.
- C. **Ferrous Metal:**
  1. Remove rust, mill scale, and defective paint down to bare metal, using scraper, sandpaper, or wire brush as required.
  2. Feather edge of sound paint by grinding, if necessary.
  3. Touch-up all bare metal and damaged shop coat with manufacturer's recommended White Primer as specified.
  4. Touch-up shop coat of all items installed adjacent to concrete masonry prior to caulking.
- D. **Non-Ferrous Metal:**
  1. Prior to painting, pre-treat all metal as directed by the manufacturer of the paint to be used.
- E. **Wood Trim:**
  1. Back-prime painted wood trim before installation with the specified first coat material.
  2. Sand smooth and even surface, then dust off.
  3. Apply pigmented white shellac to all knots, pitch and resinous sapwood before priming coat is applied.
  4. Fill nail holes, cracks, open joints, and other defects with painter's putty after priming coat has dried.
  5. Color putty to match finish color or stain.
  6. Paste wood filler applied on open grain wood, after commencing, to flatten. This shall be wiped across the grain of the wood with a circular motion to secure a smooth, filled, clean surface, with filler remaining in open grain only. After overnight dry, sand surface until smooth before applying the next specified coat.
- F. **Gypsum Wall Board and Plaster:**
  1. Fill narrow, shallow cracks and small holes with manufacturer's recommended vinyl spackling paste.
  2. Rake deep, wide cracks and deep holes. Dampen with clean water and fill with thin layers of drywall joint compound or patching plaster. Allow to dry, sand smooth, and level surface. Exercise care to avoid raising the nap on the drywall.

### 3.6 Application of Paint Materials:

- A. Apply paint materials in accordance with the manufacturer's instructions printed on the container and as specified below. Paint materials shall be evenly spread and smoothly flowed on with the proper type and size of brush, roller cover, bucket grid and spray equipment to avoid runs, sags, holidays, brushmarks, air bubbles, and excessive roller stipple. All coats shall thoroughly dry before applying succeeding coats. Sand and dust between each coat to remove defects visible from a distance of five (5) feet. Coverage and hide shall be complete. **When color, stain, dirt, and/or undercoaters show through final coat of paint, the surface shall be**

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**covered by additional coats until the paint film is of uniform finish, color, appearance, and coverage at no expense to the Owner.**

- B. **Doors:** Top and bottom of wood doors not pre-finished at the factory shall be painted with one coat of primer or sealer within one week after delivery to job site. Shop coat of metal doors and frames shall be touched-up as often as necessary to prevent rust from occurring. After fitting, top, bottom, and side edges of exterior door shall be finished with the same number of coats as the exterior face of the door. Top and bottom edges of exterior doors shall be finished with the minimum of two (2) coats, and side edges shall be finished the same as the faces of the doors. Prime-Coated butts and overhead door closers shall be painted to match the adjoining door frames.

3.7 **Fixed Quality Control:** Unless otherwise directed, each completed coat will be inspected by the Architect prior to application of the succeeding coat. Only inspected coats of paint will be considered in determining the number of coats applied.

3.8 **Cleaning:**

- A. Remove spilled or spattered paint from all surfaces.
- B. Touch-up and restore finish where damaged, and leave work in clean, orderly, and acceptable condition.
- C. Broom cleaning will not be permitted once painting has begun. Subsequent cleaning shall be done only by commercial vacuum cleaning equipment.

END OF SECTION 09900

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SECTION 10800

**TOILET ACCESSORIES**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:** It is the intent of this Section to provide for the furnishing, installing, and warranting of all toilet accessories as described herein.
- 1.4 **Work Included:**
- A. Work included is a convenient listing of the significant items described within this Section and shall not be construed as the only work applicable or related to this Section.
  - B. Work includes, but is not limited to:
    - 1. Toilet Accessories.
    - 2. Fasteners.
- 1.5 **Submittals:**
- A. Comply with Section 01300, Submittals.
  - B. **Product Data:** Submit manufacturer's catalog, cuts, and data sheets, complete parts list and installation requirements for each accessory item specified.
  - C. Submit maintenance data, operating instructions and keys required for each type of equipment and lock.
- 1.6 **Product Handling:**
- A. Deliver items in manufacturer's original unopened protective packaging. Store materials in original protective packaging to prevent soiling, physical damage, wetting or abuse.
  - B. Handle so as to prevent damage to finished surfaces. Maintain protective covers on all units until installation is complete. Remove protective covers at final clean-up of installation.
- 1.7 **Guarantee:** Guarantee all mirrors for ten (10) years against silver spoilage.



## PART 2 - PRODUCTS

### 2.1 Manufacturers:

- A. **Basis of Specification:** Products listed are by Bobrick, unless noted otherwise.
- B. **Acceptable Manufacturers:**
  - 1. Bobrick
  - 2. Bradley Corp.

### 2.2 Products: *(where noted on the plans)*

- A. **Paper Towel Dispensers:**
  - 1. B-262, surface-mounted, C-fold or multi-fold towels.
- B. **Soap Dispensers:**
  - 1. B-2112, surface-mounted.
- C. **Toilet Tissue Dispensers:**
  - 1. **Surface-mounted:** B-2888
  - 2. **Dual Toilet Partition:** B-386
- D. **Paper Waste Receptacles:**
  - 1. B-279, surface-mounted, include vinyl liner.
- E. **Sanitary Napkin Disposal (Feminine Napkin Disposal):**
  - 1. **Surface-mounted:** B-254
  - 2. **Dual Toilet Partition:** B-354
- F. **Grab Bars:**
  - 1. **Type 1:** B-5806.99 x 36", 1-1/4" diameter, peened grip, snap flange.
  - 2. **Type 2:** B-5806.99 x 42", 1-1/4" diameter, peened grip, snap flange.
  - 3. **Type 3:** B-5806.99 x 30", 1-1/4" diameter, peened grip, snap flange.
- G. **Mirrors:**
  - 1. 24" W x 36" H, B-293-2436-8, tilt mirror, tempered.
  - 2. 48" W x 36" H, B-290-4836-8, standard mirror, tempered.

### 2.2 Fabrication:

- A. **Locked Dispensing Units:** Key alike for all accessories.
- B. Weld corners leaving no open miters.

## PART 3 - EXECUTION

### 3.1 Execution:

- A. Check areas to receive surface-mounted units for conditions that would affect quality and execution of work.
- B. Verify plumbing fixtures and toilet partitions that affect installation of accessories.
- C. Do not begin installation of toilet accessories until surfaces are acceptable.

### 3.2 Installation:

- A. Drill holes to correct size for applications that are concealed. Mount surface-mounted accessories to back-up with toggle bolts. Plumb and align.
- B. Lock grab bars to conceal mounting plate installed in wall.
- C. No adhesives shall be used to attach accessories to walls.

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3.3 **Clean-Up:**

- A. Adjust accessories for proper operation.
- B. After completion of installation, clean and polish all exposed surfaces.
- C. Deliver keys and instruction sheets to Owner.

END OF SECTION 10800

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SECTION 15010

**PLUMBING RENOVATION**

**PART 1 - GENERAL**

**1.1 WORK DESCRIPTION**

- A. The work includes providing new and/or modifying existing plumbing systems and related work. The work also includes providing roughing-in and making final plumbing connections to equipment furnished under other sections of these specification. Provide each system complete and ready for operation. Plumbing systems including fixtures, equipment, materials, installation, and workmanship shall be in accordance with the contract documents, all referenced standards, local ordinances and applicable codes.
- B. Plumbing required for this work is indicated on the drawings and includes but is not necessarily limited to:
  - 1. Domestic cold water distribution
  - 2. Domestic water heating and distribution
  - 3. Sanitary waste and vent piping systems
  - 4. Plumbing fixtures and trim
  - 5. Plumbing accessory items

**1.2 RELATED DOCUMENTS**

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.

**1.3 QUALITY ASSURANCE**

- A. General: The work of this section shall comply with all applicable standards, codes and ordinances.
- B. Standards:
  - 1. American Society for Testing and Materials (ASTM):
    - a. D1785 & D1784, Poly Vinyl Chloride (PVC) Pipe, Schedules 40, 80, and 120.
    - b. D2466 & D2467, Poly Vinyl Chloride (PVC) Pipe Fittings, Schedule 40 & 80.
    - c. D2665, Poly Vinyl Chloride (PVC) Drain, waste, and vent pipe and fittings.
    - d. D2564, Solvent Cements for Poly Vinyl Chloride (PVC) Pipe and Fittings.
    - e. D2855, Making Solvent-Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings.
    - f. F402, Safe Handling of Solvent Cements and Primers Used for Joining Thermoplastic Pipe and Fittings.
    - g. B88, Copper Pipe Fittings.
    - h. A74-75, A888, C564, Cast Iron Soil Pipe and Fittings.
    - i. A53, Steel Pipe, Schedule 40, Hot Dip Galvanized.
    - j. D2846, Chlorinated Polyvinyl Chloride (CPVC) Plastic Hot and Cold Water Distribution Systems (Copper tube sizes)
    - k. F441, Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe, Schedules 40 and 80.
    - l. F439, Socket-Type Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe Fittings, Schedule 80.

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- m. F1412, Polypropylene chemical resistant plastic pipe.
- n. F493, Solvent Cements for Chlorinated Poly Vinyl Chloride (CPVC) Pipe and

### Fittings.

- o. ASTM A240, 300 series stainless steel
- 2. Cast Iron Soil Pipe Institute (CISPI): 301-72 Hubless Cast Iron Sanitary System.
- 3. Plumbing and Draining Institute (PDI): WH201, Water Hammer Arrestors.
- C. Requirements of Regulatory Agencies:
  - 1. 2007 Florida Building Code, Mechanical and Plumbing with 2009 Amendments;
  - 2. Code requirements and local ordinances of City and/or County having supervisory jurisdiction.
- D. Permits and Fees:
  - 1. The Contractor shall arrange for all permits, pay all fees, charges and expenses necessary for a complete and operating system.

## 1.4 MANUFACTURERS

- A. Manufacturers' model numbers are listed to establish a standard of quality and level of performance.
- B. Equivalent items of the following manufactures are acceptable:
  - 1. Fixtures:
    - a. American-Standard
    - b. Eljer
    - c. Kohler
    - d. Crane
    - e. Elkay
    - f. Just
    - g. Briggs
  - 2. Fixture Trim:
    - a. American-Standard
    - b. Kohler
    - c. Speakman
    - d. Moen
    - e. Delta
    - f. T&S Brass
    - g. Chicago Faucet
    - h. Symmons
    - i. Briggs
  - 3. Drain and Fixture Specialties:
    - a. J.R. Smith
    - b. Josam
    - c. Zurn
    - d. Wade
    - e. Watts
  - 4. Water Coolers:
    - a. Oasis
    - b. Elkay
    - c. Halsey Taylor
  - 5. Water Heaters:

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- a. Rheem
- b. A.O. Smith
- c. State
- d. Lochinvar
6. Pre-fabricated fiberglass/Acrylic shower:
  - a. Lasco
  - b. Hydro Systems
  - c. Aqualine
  - d. Aquabath
  - e. Kohler

### 1.5 SUBMITTALS

#### A. Material and Equipment Schedule:

1. Submit complete list of materials and equipment to be incorporated in work, partial lists are not acceptable. All deviations and/or substitutions must be submitted in writing 10 days prior to the day bids are due for consideration. Review of this submittal, regardless of action code indicated, shall not relieve the contractor from providing specified items or materials in the event a deviation from the specified items has submitted and inadvertently approved. Deviations must be clearly identified as such on the submittal.
2. Manufacturers' Data:
  - a. Plumbing Fixtures
  - b. Water Heaters
  - c. Cleanouts
  - d. Drains
  - e. Water Hammer Arrestors
  - f. Backflow Preventers
  - g. Piping Materials
  - h. Pipe Insulation
  - i. Valves
3. Certificates of Compliance:
  - a. Water Flushing Volume of Flush Valve and Water Closet Combination.
  - b. Water Flushing Volume of Flush Valve and Urinal Combination
  - c. Backflow Preventers
4. Certified Data:
  - a. Water Heaters
  - b. Pump Test Curves
  - c. Backflow Preventers
5. Operation and Maintenance Manuals
  - a. Water Heaters
  - b. Pumps
6. Posted Operating Instructions:
  - a. Water Heaters
  - b. Pumps

### 1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

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- A. Deliver items in manufacturer's original unopened protective packaging.
- B. Deliver materials with manufacturer's tags and labels intact.
- C. Store materials and equipment in dry, clean location.
- D. Handle and store so as to avoid damage.
- E. Remove items delivered in broken, damaged, rusted or unlabeled conditions from project site immediately.

## PART 2 - PRODUCTS

### 2.1 PIPE

#### A. General:

- 1. Free from defects impairing strength and durability and best commercial quality for purposes specified.
- 2. Structural properties sufficient to safely sustain or withstand strains to which it is normally subjected.

#### B. Pipe Materials:

- 1. **DWV (Drain, Waste, and Vent) Piping:** Fittings shall be long radius fittings, except fittings in vent piping may be short radius fittings. Minimum size piping shall be 2 inches for buried piping and 1-1/4 inches for aboveground piping. Contractor's option:
  - a. Below Grade: Cast iron, ASTM A74, standard, single hub, coated.
  - b. Above Grade: Cast iron, No Hub, CISPI Standard 301/ASTM A888.
  - c. Above and Below Grade: PVC, Schedule 40, meeting ASTM D1785.
- 2. **Domestic Water Piping (Contractor's Option):**
  - a. Copper, meeting ASTM B88.
    - 1. Below Grade: Type K, coated with coal tar shellac.
    - 2. Above Grade: Type L.
  - b. Chlorinated Polyvinyl Chloride (CPVC):
    - 1. Piping up to 1-1/4" shall meet ASTM D2846.
    - 2. Piping 1-1/2" and larger shall be Schedule 80 and meet ASTM F441 and ASTM F439.
    - 3. Exterior Water Piping: PVC, Schedule 40, meeting ASTM D1785.

### 2.2 INSULATION

#### A. Piping to be insulated as follows:

- 1. **Electric Water Cooler Waste:**
  - a. 3/4-lb., 1-1/2 inch blanket.
  - b. FSK jacket.
- 2. **Domestic Cold Mains and Risers;** Hot Water Mains, Risers and Branch lines:
  - a. 1-inch standard fiberglass.
  - b. Factory jacket and fitting covers.
- 3. **Domestic Water Piping Exposed to Exterior:** Nitrile rubber based elastomeric sheet insulation; Armstrong "Armaflex 2". Minimum insulation thickness shall be 3/4-inch.
- 4. **CPVC Water Piping and PVC Waste, Vent and Roof Drain Piping Run in Return Air Plenums:** Wrap with a fire protective jacket with a maximum flame spread rating or 25 and a maximum smoke development rating of 50 in accordance with NFPA-90A,



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paragraphs 4-3.3.1 and 4-3.10.1.

- B. Piping to be uninsulated: Piping run-outs to fixtures (except as noted for handicap-accessible fixtures).

### 2.3 DRAINAGE SPECIALTIES

#### A. Drainage, Waste and Vent System:

##### 1. Cleanouts:

- a. **Unfinished Areas, Exterior:** Josam 58900 or Zurn Z-1440 coated cast iron cleanout ferrule and bronze countersunk plug with access cover.
- b. **Floors, Unfinished Areas:** Josam 58850 or Zurn Z-1400 coated cast iron cleanout ferrule and recessed ABS plug.
- c. **Floors, Finished Areas:** Josam 56000 or Zurn Z-1400 threaded bronze plug, nickel bronze top. Furnish recess top for areas with vinyl or asbestos tile. Furnish carpet marker for carpeted areas.
- d. **Walls:** Josam 58710 or Zurn Z-1441 round cast Nikaloy access frame, anchor lugs, smooth secured cover, coated cast iron cleanout ferrule with bronze plug.
- e. All floor cleanouts installed in floors and waterproof membrane shall be furnished with clamp ring and flange.

##### 2. Floor Drains:

- a. **Toilet Rooms, Finished Areas:** Zurn Z-415 cast iron body with bottom outlet, adjustable collar with "Type B" nickel bronze strainer, 3-inch outlet with 5-inch top, 4-inch outlet with 7-inch top.
- b. **Lab Areas:** Zurn Z-415 cast iron body with acid-resisting enamel interior and "Type B" nickel bronze top.
- c. **Unfinished Areas, Equipment Room:** Zurn Z-415 cast iron body and "Type B" nickel bronze top with sediment bucket
- d. **Showers:** Zurn Z-415 cast iron body with bottom outlet, adjustable collar with "Type BL" nickel bronze strainer

##### 3. Vent Flashing: Provide high boot 4 pound per square foot density lead sheet.

### 2.4 WATER SYSTEM SPECIALTIES

- A. **Water Hammer Arrestors:** All arrestors shall conform to PDI Standard WH201 and ASSE 1010, Acceptable: Zurn Shoktrols Z-1700
- B. **Hose Valves (Bibbs):** See Plumbing schedule
- C. **Backflow Preventers:** Where indicated and/or required by code provide a reduced pressure type backflow preventer meeting the requirements of the local authorities having jurisdiction. Backflow preventers shall be installed at all domestic water/mechanical equipment connections. Minimum size shall be line size.

### 2.5 PLUMBING FIXTURES

- A. As scheduled on the drawings.
- B. Provide control-stop valves in each supply to each fixture.
- C. The finish of fittings, accessories and supplies exposed to view shall be chromium plated.
- D. Provide special roughing-in for wheelchair fixtures.

## PART 3 - EXECUTION

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### 3.1 INSPECTION

- A. Examine areas to receive piping for:
  - 1. Defects that adversely affect execution and quality of work.
  - 2. Deviations beyond allowable tolerances for piping clearances.
- B. Check location of rough-in work to assure match with fixtures.
- C. Verify that electrical facilities are compatible with equipment.
- D. Start work only when conditions are satisfactory and all sections of this specification have been read and understood.

### 3.2 INSTALLATION

- A. **Piping Layout:**
  - 1. Complete installation to present a neat, orderly appearance.
  - 2. Run piping parallel to walls of building unless otherwise indicated.
  - 3. Keep piping free from contact with building structure and all other equipment.
- B. **Pipe Supports and Fasteners:**
  - 1. Hang and support as required with approved structural fasteners.
  - 2. Support metallic pipe with hangers and fasteners of the same material.
  - 3. Maximum spacing of pipe hangers shall be in accordance with Table 308.5 of the 2004 Florida Building Code - Plumbing.
- C. **Piping Within Walls:**
  - 1. Anchor as required to prevent vibration or movement of any kind.
  - 2. Secure piping to flush valves with support system designed specifically for this purpose.
- D. **Penetrations:**
  - 1. Coordinate penetrations for vents and roof drains with roof system.
  - 2. Do not penetrate structural members without written approval from Structural Engineer.
  - 3. Provide chromium plated cast brass adjustable escutcheon plates at exposed pipe penetrations through walls, partitions, ceilings or floor.
- E. **Water Hammer Arrestors (Domestic Water System):**
  - 1. Install where shown or required for elimination of water hammer.
  - 2. Air chambers are not acceptable.
- F. **ProPress Installation:** Copper press fittings shall be made in accordance with the manufacturer's installation instruction. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool approved by the manufacturer.

### 3.3 TESTING AND DISINFECTING

- A. **Testing:**
  - 1. Test prior to covering or concealing piping.
  - 2. Perform all tests in presence of Building Official. Provide 24-hour advance notice.
  - 3. **Soil, Waste, Vent and Roof Drain System:**
    - a. Temporarily plug all outlets.
    - b. Fill lines with water to the roof level.
    - c. Allow to remain full for 24 hours.

4. **Water System:**
    - a. Test at 150 percent of design pressure but not less than 100 psig.
    - b. Allow pressure to remain on line for 24 hours.
  5. Repair all detectible leaks in piping systems.
  6. **Gas System:**
    - a. All testing of gas piping systems shall be done with due regard for the safety of employees and the public during the test. Bulkheads, anchorage and bracing suitably designed to resist test pressures shall be installed if necessary. Prior to testing, the interior of the pipe shall be cleared of all foreign material.
    - b. Test pressure shall be measured with a manometer or with a pressure-measuring device designed and calibrated to read, record, or indicate a pressure loss caused by leakage during the pressure test period. The source of pressure shall be isolated before the pressure tests are made. Mechanical gauges used to measure test pressures shall have a range such that the highest end of the scale is not greater than five times the test pressure.
    - c. The test pressure to be used shall be no less than one and a half times the proposed maximum working pressure, but not less than 3 psig irrespective of design pressure. Where the test pressure exceeds 125 psig, the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.
    - d. Test duration shall be not less than ½ hour for each 500 cubic feet (14 m<sup>3</sup>) of pipe volume or fraction thereof. When testing a system having a volume less than 10 cubic feet or a system in a single-family dwelling, the test duration shall be not less than 10 minutes. The duration of the test shall not be required to exceed 24 hours.
    - e. The test medium shall be air, nitrogen, carbon dioxide or an inert gas. Oxygen shall not be used.
- B. Disinfection of Domestic Water System:**
1. Disinfect domestic water system after approval of test results and piping installation by Building Official.
  2. Prior to substantial completion sterilize piping system in accordance with local plumbing code requirements.
  3. Deliver certification to Building Official.

**END OF SECTION 15010**

SECTION 16010

**ELECTRICAL RENOVATION**

**PART 1 - GENERAL**

- 1.1 **Related Documents:** The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.
- 1.2 **Direct Purchasing:** This Section is subject to the terms described in Section 01042, Direct Purchasing Procedures, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. Issuance of Construction Purchase Orders (CPO) by the Owner shall not relieve the Contractor of any of his responsibilities regarding material purchases or installations, with the exception of the payments for the materials as purchased.
- 1.3 **Scope:**
- A. Necessary labor and materials may include, but shall not be limited to the following:
    - 1. Temporary electric service and distribution for construction purpose.
    - 2. Disconnection, demolition and reconnection of interior panel boards and branch circuits to electrical devices, lighting fixtures, and other electrically operated equipment.
    - 3. Coordination.
- 1.4 **Codes and Standards:**
- A. The Florida Electrical Code (FEC), National Electrical Code (NEC), National Electric Safety Code and OSHA shall establish the minimum requirements for installation, but in addition, all work shall also comply with local, state, county or municipal code requirements.
  - B. Be familiar with local code requirements and local utility company standards for electrical service requirements, and make installation in accordance with such requirements.
- 1.5 **Site Inspection:**
- A. Visit the site and thoroughly inspect conditions affecting the Work before submitting Bid. Assume responsibility for meeting all existing conditions including access and work space limitations.
- 1.6 **Cutting and Patching:**
- A. Place all sleeves, inserts, conduit hangers, etc. as construction progresses to avoid any unnecessary cutting of structural members. Cooperate with other subcontractors in location of electrical outlets that may conflict with location of other equipment.
  - B. Obtain authorization from the Architect for any necessary cutting of building structure to facilitate installation of this work and do not proceed until authorization has been received. Limit necessary cutting and patching to the minimum size required for installation of conduit or apparatus.
- 1.7 **Submittals:**

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- A. Comply with Section 01300, Submittals.
- B. Submit Shop Drawings, catalog sheets, or other descriptive data with sufficient information to establish design, quality and performance. Data shall describe apparatus, equipment, panels, fixtures, and other items requiring descriptive literature.
- C. Submittals shall include the following, where required by the Work:
  - 1. Light fixtures
  - 2. Panels
  - 3. Safety switches
  - 4. Wiring devices

### 1.8 **Maintenance Data:**

- A. Collect and neatly retain maintenance and service data supplied with equipment furnished and installed under this Contract until job completion, at which time deliver to the Contractor for inclusion in the maintenance manual in accordance with 1730, Operation and Maintenance Manuals. All such data must be properly identified as for equipment served.
- B. Keep one set of prints current of any changes or variations by marking prints in a legible manner, and upon completion of project, deliver prints to the Contractor for inclusion with the Record Drawings in accordance with Section 1720, Project Record Documents.

- 1.9 **Temporary Electric Service:** Provide complete temporary system of power and lighting wiring for use during construction and for testing of equipment. Comply with OSHA and FEC including personnel ground-fault protection requirements.

### 1.10 **Coordination - General:**

- A. Review all project Drawings and coordinate all work with Contractor and different trades prior to installing any work so that interferences between electrical work and ducts, piping, equipment, architectural and structural work will be avoided. Do not install conduits, boxes and fittings in spaces required for ductwork or piping.
- B. Furnish all necessary offsets in raceways, fittings, etc., required to properly install work so as to take up minimum space. Install all equipment to provide code required "working space". Furnish and install all materials required to accomplish this without additional cost.
- C. In case interference develops, the Architect will decide which trade work must be relocated regardless of which was installed first. Damage from interference or rework caused by inadequate coordination with other trades shall be rectified without additional cost.
- D. Within 30 days following award of Contract, report to the Architect in writing all real or potential errors, ambiguities and/or conflicts on electrical work or between trades. Those reported after 30 days, except as a result of unforeseen circumstances, shall be resolved at the discretion of the Architect. Report conflicts resulting from progress of work to the Architect immediately.

### 1.11 **Coordination - Electrical/mechanical:**

- A. Unless specifically required otherwise, all motors, integral starters, control and monitoring devices, timers, relays, pilot devices and other required control components will be furnished under Division 15.
- B. Unless specifically required otherwise, furnish and install disconnect switches, fuses and power wiring connections to all equipment as indicated on Drawings or as required.
- C. The Mechanical Contractor will furnish and install all heating, ventilation and air conditioning

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- equipment, including all control devices and control wiring.
- D. Unless specifically required otherwise, make all power wiring connections to all water heaters, pumps, machinery, appliances and other electrically-operated equipment as indicated on the Drawings or as required. Furnish and install disconnect switches and starters as indicated on the Drawings, except for items furnished with integral disconnect switches and/or starters.
  - E. Review approved Shop Drawings and verify final electrical characteristics and wiring before rough-in of power feeds to any equipment. When electrical data on approved Shop Drawings differs from contemplated design, make necessary adjustments to wiring, disconnect, and branch-circuit protection for equipment actually installed.

### 1.12 Working Clearances:

- A. Working clearances around electrical equipment requiring service shall comply with NEC requirements. Coordinate and verify clearances from equipment and work furnished by other trades. Should there be any apparent violations of clearance requirements, notify the Architect before proceeding with connection or placement of equipment. Rework caused by inadequate coordination shall be rectified at no extra cost.

## PART 2 - PRODUCTS

### 2.1 Materials:

- A. All materials used in this project shall be new, unless otherwise noted, and listed by the Underwriters' Laboratories, Inc. as conforming to its standards where such standards have been established. These materials shall bear the UL label.
- B. Where materials, equipment, apparatus or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish standards of desired design or quality and shall be basis of Bid. Alternatives may be submitted to Architect for consideration.

### 2.2 Conduit:

- A. Conduit may be galvanized rigid metal conduit, intermediate metal conduit, rigid aluminum conduit, or electrical metallic tubing (EMT), except as otherwise specified herein.
- B. Rigid or intermediate metal conduit shall be used on building exterior where exposed to weather.
- C. Rigid nonmetallic conduit shall be used underground and in concrete slabs. Floor penetrations shall be rigid galvanized ell's.
- D. Flexible conduit shall be used for final connections to motors, appliances and vibrating equipment.
- E. Electrical nonmetallic tubing (ENMT) may be used where totally concealed and permitted by FEC. The use of ENMT in air plenum ceilings or spaces is not permitted.

### 2.3 Conductors:

- A. All conductors shall be copper and shall not be smaller than 12 AWG except where otherwise noted. Conductors smaller than 6 AWG shall be solid. Conductors 6 AWG and larger shall be stranded.
- B. Conductor insulation shall generally be THWN/THW except where other insulation types shall be used to meet specific Code requirements such as high temperature locations. Conductors subjected to higher ambient temperatures shall be derated in accordance with FEC.

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### 2.4 Outlet Boxes:

- A. All outlet boxes, extensions, and cover frames shall be galvanized sheet steel for concealed locations or cast metal for exposed locations unless otherwise noted. Boxes shall be 1-1/2" deep, minimum, and shall be sized to accommodate the installed conduit, conductors and device. Boxes to which fixtures were installed shall have studs and straps to support fixture weight.
- B. **Types by Location:**
  - 1. **Concrete Masonry Walls:** Boxes shall be gang type, 3-1/2" deep for switch devices and 4" square by 1-1/2" deep, with 1-1/4" single and two gang square corner extension covers for receptacle and junction purposes.
  - 2. **Brick Walls:** Boxes shall be gang type, 3-1/2" deep.
  - 3. **Plastered Walls:** Boxes shall be 4" square by 1-1/2" deep, with 3/4" single and two gang plaster covers.
- C. All boxes shall have internal mounting ears or threaded tappings.

### 2.5 Pull and Junction Boxes:

- A. Pull and junction boxes shall be constructed of code-required gauge galvanized sheet steel and fitted with screw covers held in place with corrosion-resistant machine screws.
- B. Furnish boxes where noted on Drawings or where necessary to facilitate conductor pulling and splicing. Splicing of conductors is to be avoided as much as possible with continuous lengths being preferred. Box sizes shall conform to sizes required by FEC or as indicated on the Drawings.

### 2.6 Wiring Devices:

- A. All devices shall be specification grade and product of one manufacturer throughout the project except as otherwise noted. Device color shall match the existing device colors.
- B. Wall switches shall be 20 amp, 120-277 volt, AC, toggle handle, quiet type, with side or back wiring terminals. Switches shall be single or multi-pole as indicated on the Drawings.
- C. Duplex receptacles shall be straight blade, 15 amp or 20 amp, 125 volt, AC, of grounding type, with side or back wiring terminals. GFI type receptacles with "test" and "reset" buttons shall be provided where indicated.
- D. Device plates shall be stainless steel for all flush installed outlet boxes in finished spaces. Weatherproof devices shall be covered with approved hinged plate and seal. Surface-mounted device outlets shall be fitted with appropriate sheet steel or cast metal cover plates to match device and box.

### 2.7 Lighting Fixtures:

- A. Furnish and install all lighting fixtures as shown on the Drawings. Fixtures of other manufacturers will be acceptable if of similar design and characteristics, subject to approval.
- B. Ballasts for fluorescent fixtures shall be high power factor, ETL certified and CBM approved, Class P, automatic thermal resetting variety. Energy efficient type ballasts shall be specifically approved for operation with the specified lamps.
- C. Ballasts for HID fixtures shall be high power factor type selected for type and wattage of lamp supplied.

### 2.8 Lamps:

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- A. Furnish and install one complete set of lamps for all installed fixtures. All lamps shall be of proper design to fit specific fixture indicated.
- B. Incandescent lamps shall be rated 120 volt with type and wattage as scheduled.
- C. Fluorescent lamps shall be color and size as scheduled, and designed for operation with the fixture ballast. Energy efficient type lamps shall be specifically approved for operation with the specified ballast.

### **PART 3 - INSTALLATION**

#### **3.1 Grounding and Bonding:**

- A. Bond service equipment such as metallic housing and feeder metallic conduits to grounding conductor. Use grounding bushings, on service conduit and at other points where grounding continuity is broken.
- B. Provide a bonding jumper for any equipment, motor, fixture or device to which current carrying conductors are connected that is not bonded directly to the grounded system. Connect bonding jumper to approved lugs and grounding conduit bushings or clamps. Non-metallic conduit shall contain a grounding conductor.
- C. All grounding or bonding conductors shall be sized as required by NEC, or as herein specified, and shall be bare copper or TW insulated, with green coding.

#### **3.2 Raceways:**

- A. Run conduit required to be exposed parallel or perpendicular to the walls, ceilings, or structural members and provide supports as required by FEC. In addition, install supports as required to form a secure and firm installation. Supports shall be galvanized pipe straps, hangers or wall brackets. Firmly support concealed conduit at the structure and install so as to prevent any vibration against structure, pipe or duct work.
- B. Fit conduit installed in concrete or secured to structural members that pass through expansion joints constructed in the building with expansion fittings, complete with copper bonding jumper.
- C. All metallic conduit terminating in outlet, junction or pull boxes and cabinets must terminate with bushing and double locknuts except exposed cast boxes, where they may be omitted. Conduit sizes 1-1/4" and above shall have insulating fiber bushings with double locknuts. Grounding type bushings must be used at points where grounding continuity is broken and at service entrance equipment.
- D. At motor connections, flexible connections, or connections subject to vibration, use flexible galvanized conduit with PVC outer jacket with grounding conductor.
- E. Conduit shall not be smaller than 1/2" trade size and must be sized to accept conductors indicated.

#### **3.2 Wiring:**

- A. No wire is to be installed in raceway systems until the plastering or masonry work is completed and then only with approved lubricant. Install wire before painting begins and protect against being painted.
- B. Branch circuit sizes must be continuous without reduction in size throughout their length except where connecting to fixtures.
- C. Branch circuit wire sizes shall be increased as required where long runs will cause excessive voltage drop per FEC.



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- D. Wire circuits as required to achieve a connected load. Should any change be necessary, it must be brought to the Architect's attention.

### 3.3 **Boxes:**

- A. Outlets are to be centered in blocks, panels, or other modular units. Be familiar with requirements of other trades as well as the building in general to become aware of various materials and finished surfaces in which outlets are to be installed.
- B. Install boxes square and plumb with receptacle and junction boxes in a vertical position. Cover all boxes for future use or junction purposes with blank plates.
- C. Boxes in exterior locations shall be cast metal boxes with threaded conduit hubs. Securely fasten boxes to building surfaces.

### 3.4 **Wiring Devices:**

- A. Where indicated, gang devices together in common boxes with device straps bonded to metallic system or separate grounding conductor.

### 3.5 **Identification Labels:**

- A. Provide identification labels for each motor controller, safety switch, panel board, contactor, timer, control device, and circuit breaker. Labels shall be laminated, phenolic strips 1/16" thick and engraved to show black letters on white background not less than 1/4" high. Emergency equipment and control device labels shall be white letters on red background. Where brackets are not provided, labels shall be mounted with screws, or approved adhesive.
- B. Where control apparatus is installed on or immediately adjacent to equipment, labels are not required.

### 3.6 **Lighting Fixtures:**

- A. Connect single-connected fixtures, surface or stem-hung, with heat-resistant fixture wire. Connect multiple-connected fluorescent fixtures, surface or stem-hung, with type XHHW heat-resistant thermoplastic or type THHN heat-resistant thermoplastic wire of a size indicated for branch circuit. Use the type XHHW or THHN conductor for branch circuit connection of fixtures through fluorescent wireways or channels.
- B. Support fixtures to be recessed in readily removable tile ceilings (lay-in type) from the T-bar tile support and connect to remote mounted 4" square junction boxes with approved six foot long, 3/8" flexible conduit "fixture whip" with grounding conductor bonded between conduit system and fixture.
- C. Upon project completion and just prior to delivering project to the Owner, clean all fixtures and remove all instruction tags.

- 3.7 **Lamps:** Do not install full set of lamps until specific permission of the Architect has been obtained. Temporary lamps may be installed in permanent fixtures for construction purposes, but they must be replaced with new lamps when directed.

### 3.8 **Equipment Connections:**

- A. Make all final power feed connections to starters and/or motorized equipment installed by mechanical and plumbing contractors as indicated or required.
- B. For air handling equipment with separate "field installed" heater unit, provide fuse block with

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- fuses, wiring and power connections for fan motor tapped to unit disconnect switch.
- C. Verify all equipment for service and characteristics provided prior to rough-in and connection. Provide a grounding conductor for all equipment connected with flexible conduit and bond to conduit system and metallic frame of equipment.
  - D. Be responsible for securing and installing proper insulated conductors required for equipment of higher temperature range beyond that of specified branch circuit type.

END OF SECTION 16010

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