ARCHITECT
Bhide & Hall Architects P.A.
1329-C Kingsley Avenue
Orange Park, Florida 32073
B&H Project No.: 17072

CIVIL ENGINEER
Michele M. Agee P.E., P.A.
1329-C Kingsley Ave.
Orange Park, Florida 32073

STRUCTURAL ENGINEER
Structures International LLC.
7563 Philips Highway, Building 600
Jacksonville, Florida 32256

MECHANICAL / FIRE PROTECTION
MV Cummings Engineers Inc.
6501 Arlington Expressway, Suite B-211
Jacksonville, Florida 32211

ELECTRICAL ENGINEER
Haddad Engineering Inc.
3030 Hartley Road, Suite 290
Jacksonville, Florida 32257
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INVITATION TO BID

Non-Sealed bids will be received by Pegasus Technologies, Inc. [December 20, 2019 at 2:00 pm,] at Bhide & Hall Architects, P.A. offices at 1329 Kingsley Avenue, Suite C in Orange Park, Florida at which time and place all bids received will be privately reviewed for the construction of:

NEW BUSINESS OPERATIONS BUILDING
932 PILOT DRIVE
GREEN COVE SPRINGS, FL 32043

In accordance with plans and specification prepared by:

Bhide & Hall Architects, P.A.
1329-C Kingsley Ave.
Orange Park, FL 32073
(904) 264-1919
AAC 000569

Plans are on file and open for inspection at the office of the Architect. General Contractors and Subcontractors may purchase hard-copy sets of Drawings and Specifications from the office of the Architect upon payment of $200.00 per set, or may purchase an electronic copy of the plans and specs on CD for $50.00 per disk. Partial sets of Drawings and/or Specifications will not be issued in any format.

Hard-copy bidding documents will be mailed only upon receipt of payment of $30 per set for UPS Ground Service, or upon request, will be forwarded by Federal Express or UPS with contractors account number.

There will be a NON-Mandatory Pre-bid site visit on Tuesday, December 3 at 9:00 AM.

The owner reserves the right to waive any irregularities and minor technicalities, or to reject any and all bids.

The successful bidder may be required to provide a Performance Bond, and a Labor and Material Payment Bond in the amount of 100% of the accepted Bid amount, the premium for which shall be listed as an alternate on the Bid Proposal Form.

No bidder may withdraw his bid within forty-five (45) days after the actual date of the opening thereof.

All bidders will be notified of the award of the Bid Contract to the successful bidder, or of the rejection of all bids, within thirty days of the Owner’s decision.

Signed: Jeff Heyse, Vice President - Support Services
**SECTION 01100**
**INSTRUCTION TO BIDDERS**

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1. SPECIFICATION TERMINOLOGY

1.1 Definitions of Terms: Whenever in these specifications the following terms (or pronouns, which replace these terms) are used, their intent and meaning shall be interpreted as follows:

1.1.1 OWNER: Pegasus Technologies Inc.
932 Pilot Drive
Green Cove Springs, FL 32043

1.1.2 CONTRACTOR: Any individual, firm, partnership or corporation entering into an agreement to perform the work specified herein.

1.1.3 ARCHITECT/ENGINEER (Or Architect or Engineer): The firm of Bhide & Hall Architects, P.A. acting directly or through a duly authorized representative.

1.1.4 PROJECT REPRESENTATIVE: An authorized representative of the Design Professional assigned to assist the Design Professional in carrying out his responsibilities at the project site.

1.1.5 BIDDER: An individual, firm, partnership, or corporation submitting a proposal for the work contemplated.

1.1.6 SURETY: The corporation body, which is bound with and for the Contractor, which is primarily liable and which guarantees the faithful performance of the agreement.

1.1.7 PROPOSAL: A bid for the work contemplated which the Bidder shall submit on approved forms.

1.1.8 DRAWINGS: The drawings or reproductions thereof pertaining to the work to be performed and which have been prepared under the supervision of the Architect-Engineer.

1.1.9 PROJECT MANUAL: The condition of the contract, detailed technical specifications and such other descriptions of the work as are set forth in any of the contract documents.

1.1.10 AGREEMENT: “Agreement” shall mean the document entitled “Standard Form of Agreement between Owner and Contractor”.

1.1.11 CONTRACT “Contract” shall mean the Agreement and Contract Documents as defined and listed in the Agreement.
2. QUALIFICATION OF BIDDERS

2.1 In order to be qualified, a Bidder shall hold a valid un-expired certificate issued by the Florida Construction Industry Licensing Board in accordance with Chapter 489, Florida Statues, as a State Certified General Contractor or Building Contractor. A copy of the Contractor’s State Certificate may be provided in the bid proposal envelope. If not contained within bid proposal envelope, the Contractor shall provide a copy within 48 hours after the bid opening if requested by the Owner.

2.2 The agreement will only be entered into with responsible Contractors, found to be satisfactory by the Owner, qualified by experience and in a financial position to do the work specified. If the Bidder is a corporation the corporation shall be incorporated in the State of Florida and hold a current and valid license from the Secretary of State’s Office.

3. FAMILIARITY WITH LAWS:

3.1 The Bidder is required to be familiar with the following codes to which this project must conform:
   (a) The Florida Building Code, 2017 Edition
   (b) Florida Fire Prevention Code, 2017
   (c) NFPA 101 Life Safety Code, 2015
   (d) 2017 Florida Accessibility Code for Building Construction
   (e) 2017 Florida Energy Conservation Code
   (f) 2014 NFPA 70 National Electric code

3.2 The Bidder is required to be familiar with all Federal, State, and local laws, ordinances, rules and regulations that affect the work. Unfamiliarity or misinterpretation on the part of the Bidder will in no way relieve him from applicable responsibilities.

4. TAXES

4.1 All applicable state and local taxes shall be included.

5. PROGRESS PAYMENTS

5.1 Based upon Application 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 and paragraph 2, Section 01350.
6. BIDDING DOCUMENTS

6.1 Drawings, Specifications and Informational Documents furnished to the Bidder for his use in preparing a bid for the work involved in the project comprise the Bidding Documents.

7. ALTERNATES

7.1 If the Owner wishes to learn the relative or additional construction cost of an alternative method of construction, an alternative material, or an increase or decrease in scope of the project, these items will be defined as Alternates and will be specifically described by the Drawings and/or specification. Alternates will be listed in the Proposal Form to clearly indicate what sums Bidder will add to, or deduct from, his Base Bid.

7.2 Alternates may or may not be accepted. An alternate will be accepted or rejected solely by the decision of the Owner.

7.3 Owner reserves the right to apply alternates in any order and in any combination when determining the final Bid Price.

8 ADDENDA

8.1 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 made known to all prospective Bidders.

9. INTERPRETATION OF BIDDING DOCUMENTS

9.1 No interpretation of the meaning of the Drawings, Specification, or other Bidding Documents and 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 interpretations and supplemental instruction will be in the form of written Addenda to the Bidding Documents.

9.2 Only the interpretation of 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.

10. EXAMINATION OF BIDDING DOCUMENTS AND SITE OF WORK
10.1 Bidders are strongly advised, before submitting their proposals, to visit the site of the proposed work and completely familiarize themselves with the nature and extent of the work, any local conditions that may affect the work to be performed, and the equipment, materials and labor required. They are also strongly advised to examine carefully the Drawings, Specifications, and other Bidding Documents to inform themselves thoroughly regarding conditions and requirements that may affect the work.

11. BASIC FOR BIDDING-TRADES NAMES

11.1 For clarity of description and as a standard of comparison, certain equipment, materials, etc. have to be specified by trade names or manufacturers. To insure a uniform basis for bidding, the Bidders shall base his proposal on the particular system, equipment or material specified. After the contract is let, other equipment, materials, etc., by other manufacturers may be accepted if, in the opinion of the Architect, same is equivalent in quality and workmanship and will perform satisfactorily its intended purpose. It should be noted that no substitution may be allowed on certain products and vendors as indicated in the documents.

12. SURETY COMPANIES ACCEPTABLE TO THE OWNER (See paragraph 20, Section 01250)

13. N/A

14. PREPARATION AND SUBMISSION OF BIDS

14.1 Bidder shall copy the proposal form on his own letterhead, in duplicate; indicate his bid prices thereon, in proper spaces, for the entire work and for any alternates listed. 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 Owner.

14.2 Bid must give full business address of the Bidder and state whether he is an individual, corporation or partnership.

14.3 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.
14.4 Proposals by partnership 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.

14.5 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.

14.6 Bidder’s proposal shall be enclosed in a sealed envelope, which shall be marked and addressed as indicated by the advertisement. That sealed envelope shall be placed within a mailing envelope, sealed, marked and addressed as above and delivered to the Owner/Owner Agent at the Bid Opening.

14.7 Bid Period:

14.7.1 Any bid submitted cannot be withdrawn for a period of 45 days subsequent to the date of the bid opening, a fact which shall be incorporated in all bids.

15. RECEIPT AND OPENING OF BID

15.1 Bids will be opened privately at the time and place stated in the Invitation to Bid. The representative whose duty it is to open them will decide when the specified time has arrived and no bids received thereafter will be considered.

16. REJECTION OF BIDS

16.1 The Owner reserves the right to reject any and all bids when rejection is in the interest of the Owner and to reject the proposal of a Bidder who is not in position to perform the contract.

17. AWARD OF CONTRACT

17.1 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.
17.1.1 The Owner reserves the right to negotiate the contract with the lowest qualified Bidder, if the bid exceeds the project construction budget.

17.2 The Owner reserves the right to waive minor technicalities and/or any informality in bids received when such waiver is in the interest of the Owner.

18. EXECUTION OF AGREEMENT AND BONDS

18.1 Agreement between the Owner and Contractor: If the Contractor is to be an individual, the agreement shall be signed with his manual signature.

18.2 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.

18.3 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.

18.4 If the Contractor is a corporation, the agreement shall be executed in the name of the corporation and shall bear the corporate seal. If 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 and 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.

18.5 Performance Bond and Labor and Material Payment Bond. These bonds shall be on behalf of the Contractor in the same manner and by the same person who executed the contract.

19. TIME OF COMPLETION AND LIQUIDATED DAMAGES

19.1 The work performed under this contract shall be commenced and completed as set forth in paragraph 21, Section 01250, of the Project Manual.

19.2 Liquidated Damages shall be as described in paragraph 22, Section 01250, of the Project Manual.
20. CHECKLIST FOR BID SUBMITTAL

20.1 The following items shall be included within the bid envelope.
A. Bid Proposal on Bid Proposal Form, Section 01150
B. Copy of license per Article 2.1, Section 01100

21. PERMITS
21.1 It shall be the responsibility of the General Contractor to file the application for the Building Permit, and any other permits required. The General Contractor shall pay for the Building Permit. The Owner shall pay all other fees.

END OF SECTION
SECTION 01 10 00.10

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Project Identification: PEGASUS TECHNOLOGIES INC.
   BUSINESS OPERATIONS CENTER
   932 PILOT DRIVE, GREEN COVE SPRINGS, FL
   32043

B. Project Summary: 25,000 GSF SINGLE STORY TYPE IIA BUILDING,
   FULLY SPRINKLERED. EXTERIOR LOAD
   BEARING MASONRY CONSTRUCTION.

C. Particular Project Requirements:
   1. Existing site conditions and restrictions: PROJECT SITE IS
      OCCUPIED AND OPERATIONAL. CONTRACTOR SHALL
      NOT OBSTRUCT THE OPERATIONS OF THE EXISTING
      FACILITY DURING CONSTRUCTION.
   2. Requirements for sequencing, scheduling and completion date:
      N/A
   3. Pre-purchased and pre-ordered items: N/A
   4. Owner-purchased, Owner-installed items: N/A
   5. Owner-purchased, Contractor-installed items: N/A
   6. Owner's early or partial occupancy: N/A
   7. Occupancy of adjacent facilities: ALL ADJACENT BUILDINGS
      AND FACILITIES WILL BE OCCUPIED AND FULLY
      OPERATIONAL DURING CONSTRUCTION
   8. Contractor's use of new and existing facilities: TBD
   9. THIS IS NOT A LEED PROJECT

D. Permits and Fees: Contractor shall apply for, obtain, and pay for
   permits, fees, and utility company back charges required to perform
   the work. Submit copies to Architect and owner.

E. Codes: Comply with applicable codes and regulations of authorities
   having jurisdiction. Submit copies of inspection reports, notices and
   similar communications to Architect.

F. Dimensions: Verify dimensions indicated on drawings with field
   dimensions before fabrication or ordering of materials. Do not scale
   drawings.

G. Existing Conditions: Notify Architect of existing conditions that differ
   from those indicated on the drawings. Do not remove or alter
   structural components without prior written approval.
H. Coordination:
1. Coordinate the work of all trades.
2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.
3. Verify location of utilities and existing conditions.

I. Installation Requirements, General:
1. Inspect substrates and report unsatisfactory conditions in writing.
2. Do not proceed until unsatisfactory conditions have been corrected.
3. Take field measurements prior to fabrication where practical. Form to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
4. Install materials in exact accordance with manufacturer's instructions and approved submittals.
5. Install materials in proper relation with adjacent construction and with proper appearance.
6. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner.
7. Refer to additional installation requirements and tolerances specified under individual specification sections.

J. Limit of Use: Limit use of work as indicated. Keep driveways and entrances clear.


L. Definitions:
1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
3. Match Existing: Match existing as acceptable to the Owner.

M. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.

N. Writing Style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all
imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

PART 2 PRODUCTS - Not applicable to this Section

PART 3 EXECUTION - Not applicable to this Section

END OF SECTION
SECTION 01150
BID PROPOSAL FORM

(SUBMIT ON CONTRACTOR’S LETTERHEAD)

DATE: _______________

TO: Jeff Heyse
Vice President - Support Services
Pegasus Technologies, Inc.
Green Cove Springs, Florida

PROPOSAL FROM: __________________________
______________________________
______________________________
(here-in-after called Bidder)

To Whom It May Concern:

The undersigned, here-in-after 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 Contract Documents, proposes to furnish all labor, materials, and services for the proper execution and completion of:

New Business Operations Center
932 Pilot Drive
Green Cove Springs, Florida 32043

In full accordance with the drawings and specifications prepared by the firm of Bhide & Hall Architects, P. A., 1329-C Kingsley Avenue, Orange Park, Florida 32073, and in full accordance with the Invitation to Bid, 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 prices:

Bid Price:

_____________________________________________________ Dollars
($__________________).

17072
01150-1
With the foregoing as a Base Bid, the following costs of Alternates is submitted in accordance with the plans and specifications:

**Additive Alternate No. One: Performance and Payment Bond**

Add: ________________________________________________ Dollars ($___________)

**Additive Alternate No. Two: Concrete Water Vapor Reducing Add Mixture - Specification Section 03 05 13**

Add: ________________________________________________ Dollars ($___________)

**Deductive Alternate No. Three: Concrete Masonry Screen Wall surrounding Emergency Generator**

Add: ________________________________________________ Dollars ($___________)

**Deductive Alternate No. Four: Acoustic Panels**

Add: ________________________________________________ Dollars ($___________)

**TIME OF COMPLETION:** The work performed under this contract shall be commenced within 15 calendar days from date of Notice to Proceed, and shall be substantially completed, as set forth in paragraph 21, Section 01250, of the Project Manual.

The Bidder hereby agrees that:

a) The above proposal shall remain in full force and effect for a period of **forty five (45)** 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 forty-five (45) calendar days.

b) In the event the contract is awarded to 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.
Acknowledgement is hereby made of receipt of the following Addenda issued during the bidding period:

Addendum No. __________ Dated __________
Addendum No. __________ Dated __________
Addendum No. __________ Dated __________
Addendum No. __________ Dated __________
Addendum No. __________ Dated __________
Addendum No. __________ Dated __________

In witness whereof, the Bidder has hereunto set his signature and affixed his seal this _____ day of ____________________, 2019.

_________________________________(Seal)

By: _______________________________

Title: _______________________________
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Price and Payment Procedures:
   1. Alternates.
   2. Allowances.

1.2 ALTERNATES

A. Total Price: Provide total price for each alternate in Bid Form. Include cost of modifications to other work to accommodate alternate. Include related costs such as overhead and profit.

B. Acceptance of Alternates: Owner will determine which alternates are selected for inclusion in the Contract.

C. Coordination of Alternates: Modify or adjust affected adjacent work as necessary to integrate work of the alternate into Project. Coordinate alternates with related work to ensure that work affected by each selected alternate is properly accomplished.

D. List of Alternates:
   **Additive Alternate Option 01:**
   Payment and Performance Bond

   **Additive Alternate Option 02:**
   This Additive Alternate is for the inclusion of a Concrete Water Vapor Reducing Add Mixture to the slab Foundation. Ref Section 03 05 13

   **Deductive Alternate Option 03:**
   This deductive alternate provides for the elimination of the concrete masonry screen wall that surrounds the emergency generator.

   **Deductive Alternate Option 04:**
   This deductive alternate provides for the removal of all acoustic wall panel treatment in the design.
1.3 ALLOWANCES

A. Allowances: Lump sum allowances and unit cost allowances are listed below and as indicated on the Drawings. Amounts shall include all costs including overhead and profit except as specifically noted. Coordinate allowances with requirements for related and adjacent work.

B. Notification of Owner: Notify Owner of date when final decision on allowance items is required to avoid delays in the work.

C. Certification of Quantities: Furnish certification that quantities of products purchased are the actual quantities needed with reasonable allowance for cutting or installation losses, tolerances, mixing, waste, and similar margins.

D. Invoices and Delivery Slips: Submit invoices or delivery slips to indicate actual quantities of materials delivered and costs. Indicate amounts of applicable trade discounts.

E. Lump Sum Allowances: Include the following amounts in the base bid for materials, installation, overhead, profit and all costs for the following items.

1. **Interior Signage (Signage over Reception Desk and Wayfinding Signage):** $8,500.00

END OF SECTION
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1. PERFORMANCE AND PAYMENT BONDS (Alternate No. One)

1.1. The Contractor shall furnish the Owner with 100% Performance and Payment Bonds written by a Surety Company acceptable to the Owner and authorized to do business in the State of Florida and signed by a Florida Licensed Resident Agent. (Refer to paragraph 20 of this Section for Surety Companies acceptable to the Owner)

1.2. The cost of the Performance and Payment Bond shall be borne by the Contractor. The Bonds shall be accompanied by a duly authenticated or certified document, evidencing that the person executing the Bonds on behalf of the Surety had the authority to do so on the date of the Bond. In the usual case, the conferring of that authority has occurred prior to the date of the Bond, and the document showing the date of appointment and enumeration of powers of the person executing the Bond is accompanied by a certification that the appointment and powers have not been revoked and remain in effect. The date of that certification shall be dated the same date as the Bonds and the Bonds shall be dated the same date as the Agreement.

2. EXECUTION OF AGREEMENT AND BOND

2.1. Execution of the Agreement and the Bond shall be as described in paragraph 25, Section 110, of this Project Manual.

3. CONTRACTOR'S INSURANCE

3.1. The Contractor shall not commence any work in connection with this Agreement until he has obtained all of the following types of insurance and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved. All insurance policies shall be with insurers qualified and doing business in Florida.

3.1.1. The Owner shall be named as an Insured on all policies, including vehicle insurance policies.

3.2. Workmen's Compensation Insurance: The Contractor shall take out and maintain for the life of the Agreement, Workmen's Compensation Insurance for all of his employees connected with the work of this project and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor.
Such insurance shall comply fully with the Florida Workmen's Compensation Law. In case any class of employees engaged in work under this contract at the site of the project is not protected under the Workmen's Compensation statute, the Contractor shall provide, and cause each subcontractor to provide, adequate insurance, prior to any work is allowed to be performed by unprotected employees. Insurance thus provided shall be satisfactory to the Owner.

3.2.2 Contractor, subcontractors, and all employees shall be covered and protected by Workman's Compensation Insurance without exception. No individual shall be exempted from Workman's Compensation Insurance.

3.3. Contractor's Public Liability and Property Damage Insurance: The Contractor shall take out and maintain during the life of this Agreement, Comprehensive General Liability and Comprehensive Automobile Liability Insurance which shall protect him from claims for damage for personal injury, including accidental death, as well as claims from property damages which may arise from operating under this Agreement whether such operations is by himself or by anyone directly or indirectly employed by him, and the amount of such insurance shall be in the minimum limits as follows:

(1) Contractor's Comprehensive General Liability Coverages, Bodily Injury and Property Damage
    Contractor's Comprehensive General Liability Coverages, Bodily Injury Each Occurrence, and Property Damage Combined Single Limit
    $1,000,000.00

(2) Automobile Liability Coverages, Bodily Injury and Property Damage
    Automobile Liability Coverages, Bodily Injury and Property Damage Each Occurrence, Combined Single Limit
    $100,000.00

3.3.1. Insuring clause for both Bodily Injury and property Damage shall be amended to provide coverage on an Occurrence Basis.

3.4. Subcontractor's Public Liability and Property Damage Insurance: The Contractor shall require each of his subcontractors to procure and maintain during the life of this subcontract, insurance of the type specified above or insure the activities of his subcontractors in his policy, as specified above.

3.5. Owner's and Contractor's Protective Liability Insurance: The Contractor shall procure and furnish an Owner and Contractor's Protective Liability Insurance Policy with the following minimum limits:

Bodily Injury Liability and Property Damage Liability $300,000.00 Each Occurrence, Combined, Single Limit
3.6. "XCU" (Explosion, Collapse, Underground Damage): The Contractor's Liability Policy shall provide "XCU" coverage for those classifications in which they are applicable.

3.7. Broad Form Property Damage Coverage and Completed Operations: The Contractor's Liability Coverage shall include Broad Form Property Damage Coverage and Completed Operations.

3.8. Contractual Liability-Work Contracts: The Contractor's Liability Policy shall include Contractual Liability Coverage designed to protect the Contractor for contractual liabilities assumed by the Contractor in the performance of this Contract.

3.9. Indemnification Rider: The Contractor's Liability Policy shall provide a "Hold Harmless" rider to cover the provisions of Article 3.18 of the referenced AIA General Conditions and this shall be so noted on the Contractor's Certificate of Insurance.

3.10. Builder's Risk Coverage: The contractor shall secure and maintain, on the project a Builder's Risk Insurance policy, All Risks Form, which shall be issued on a completed value basis with a $5000 deductible, in the following manner:

3.10.1 Contractor's Builders Risk Policy may be allowed to lapse 48 hours after Owner occupancy.

3.10.2 The contractor shall be responsible for the deductible.

3.11. Proof of Insurance: Contractor shall furnish the owner proof of insurance coverage in the form of an acceptable Certificate of Insurance similar to the type required by the Florida Construction Industry Licensing Board. These shall be completed, signed by the authorized licensed Resident Agent. These certificates shall be dated and shall show:

A. The Owner as an additional insured on all policies.
B. The name of the insured contractor, the specific job by name and job number, the name of the Insurer, the number of the policy, its effective date, and its termination date.
C. Statement that the Insured will mail notice to the Owner and a copy to the Architect at least thirty (30) days prior to any material changes in provisions or cancellation of the policy.

3.12 Loss Deductible Clause: The owner shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy, including the Builders Risk Policy. The payment of such deductible shall be the sole responsibility of the
General Contractor and/or Sub-Contractor submitting a claim against the policy.

4. PROGRESS SCHEDULE:

4.1. **Within thirty (30) days** after the date of the Owner's issuance of a Notice to Proceed, the Contractor shall prepare and submit to the Architect a construction schedule in quadruplicate graphically depicting the activities contemplated to occur as a necessary incident to performance of the work required to complete the Project, showing the sequence in which the Contractor proposes for each such activity to occur and the duration (dates of commencement and completion, respectively) of each such activity.

4.2. The Contractor shall, **at the end of each calendar month** thereafter during the period of time required to finally complete the project, update the construction schedule to show the actual progress of the work performed.

4.3. The Contractor shall have the option of scheduling a substantial completion date occurring earlier than the date established by the Contract Documents completed; provided, however, in such event, such earlier substantial completion date will be recognized by the Owner 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 either the Owner or the Contractor.

5. USE OF OWNER'S SURVEY DATA

5.1. The contractor shall rely on the Owner's survey data. Any discrepancies discovered shall be reported to the Architect for necessary action.

6. CONSTRUCTION FACILITIES

6.1. Sanitary Provisions: The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with regulations of the State Board of Health. No nuisance will be permitted.

6.2. Temporary Wiring: The Contractor shall meet all safety requirements of the National Electric Code, Florida Department of Commerce, Bureau of Workmen's Compensation or local requirements. In addition, all wire shall be so sized that it is not overloaded according to the National Electric Code, and any wire used shall be fused to adequately protect that wire according to the Code referenced.
6.2.1. The Contractor shall have an adequate number of outlets and each outlet shall be properly and clearly labeled with the maximum voltage and fuse protection.

6.2.2. Where temporary lighting is used, outlet shall consist of weatherproof socket insulated and provided with a locking type wire guard.

6.2.3. All devices shall be properly grounded.

6.3. Storage and work areas: At the start of the operations the Contractor shall make arrangements with the Architect's field representative and the Owner's representative for the assignment of storage and work areas. Contractor shall fence these areas and shall maintain the areas in a neat condition for the duration of the project. A safe passage of at least 12 feet wide shall be maintained for owner access to the occupied site.

6.4. Contractor's Field Offices: Trailers may be used for field offices, but their use as living quarters for personnel is not permitted.

6.5. Additional instructions regarding Construction Facilities are set forth in Section 140, "Special Conditions".

7. PROJECT DRAWINGS-COPIES FURNISHED TO CONTRACTOR

7.1 As a supplement to the set of drawings acquired by the contractor during bidding, the Owner will furnish 5 sets of plans and specifications free of charge to the Contractor. Additional sets can be purchased. This cost is ($250 per set of plans and specifications.) In lieu of these 5 sets, contractor may request one set of reproducibles from which he may make as many copies, at his expense, as he desires. Such a request must be in writing and be directed to the Architect's attention.

8. PROJECT DRAWINGS-CHANGES

8.1. The Contractor shall immediately indicate plainly and conspicuously on the field set of drawings and at appropriate paragraphs in the specifications, all changes or corrections made by Addenda and Change Orders as they are issued. The contractor shall keep a "red-lined" set of documents in the job site trailer for easy access by the owner and architect at all times. This is in addition to the official Permit Set that is required by the local Authority Having Jurisdiction (AHJ).

9. SHOP DRAWINGS

9.1. Shop drawings shall be submitted for manufactured or fabricated materials as called for in the separate specification sections. Drawings shall be fully
identified by project name, location, supplier's name, date, drawing number, specifications section reference, etc. The Contractor shall submit, with such promptness as to cause no delay in his work, or in that or any other Contractor, four (4) copies (in addition to those copies necessary for his own requirements) of all shop drawings, and schedules, required for the work of the various trades, to the Architect for approval. The Contractor shall make no deviation from the approved drawings, and the changes made there to by the Architect, if any. **PDF Transmittal of shop drawings is acceptable, provided that the contractor and/or sub-contractor affix a stamp indicating that the said shop drawing(s) has been reviewed for errors prior to transmittal to the Architect.**

9.2. It shall be the responsibility of the Contractor to properly schedule the submission of shop drawings for approval to allow adequate time for checking of drawings, manufacture and shipment of items to job site in sufficient time to prevent delay in Progress Schedule. The term "adequate time" shall be defined as that time period mutually established between the Contractor and the Architect and recorded on a Shop Drawing Schedule prepared by the Contractor and reviewed and approved by the Architect.

9.3. It shall also be the responsibility of the Contractor to coordinate the preparation of shop drawings of items, which will be furnished by more than one manufacturer but are designed to interface when installed.

9.4. Shop drawings submitted to the Architect for his approval shall first be checked and approved by the Contractor, the prima-facie evidence of which shall be a "checked" stamp marked "Approved", or "Approved as Noted" on each copy of each shop drawing, placed thereon by the Contractor. Should it become apparent to the Architect during review, that the shop drawing were not reviewed by the Contractor, or **if they are received without the Contractor's "checked" stamp they will be subject to immediate return without further action.**

Each drawing correctly submitted will be checked by the Architect and marked by him in one of the following ways:

1. No Exception Taken
2. Make Corrections Noted
3. Revise and Resubmit
4. Submit Specified Item
5. Rejected

9.5. **Submission and Approval Schedule:** If and when required by the Architect the Contractor shall prepare and submit to the Architect a completely itemized Schedule of Shop Drawings, brochures and other descriptive
literature, listing each and all such items as required under these specifications, which schedule shall indicate for each required item

1. Identification as to pertinent Specification Division.
2. Item(s) involved.
3. Name of pertinent subcontractor or supplier and the name of pertinent manufacturer.
4. Schedule date of delivery of pertinent items to the project.

9.6. The subcontractors for all phases of the Contract shall submit through the General Contractor complete brochures covering all materials and/or equipment proposed for use in the execution of the work as required by their respective Divisions of the Specifications. These brochures shall be indexed and properly cross-referenced to the plans and specifications for easy identification.

9.7. All shop drawings, setting drawings, material brochures; samples and/or color selection materials, which are required and are not included in the foregoing, shall be submitted via the General Contractor. Insofar as is possible or practical, all shop drawings or descriptive literature of equipment for the mechanical or electrical trades shall be submitted in a complete brochure for each trade as soon as possible after Notice to Proceed is executed.

9.8. The Owner will not grant time extension based on delays due to improper scheduling of work; and the Owner, at his discretion, may withhold progress payments until such time as these requirements are fully satisfied.

10. REFERENCE TO A.S.T.M. OR FEDERAL SPECIFICATIONS

10.1. Where reference is made to the Standard Specifications of the American Society for Testing and Materials (A.S.T.M.) United States Government Federal Specifications, (Fed. Spec.) or to other standard specifications of Manufacturer's Organization, or Trade Groups, in connection with the required quality of materials, methods, etc., then the applicable specifications shall be of the latest revised edition effective as of the date bids are opened by the Owner, unless otherwise expressly provided in the Contract Documents.

11. MANUFACTURER'S SPECIFICATIONS

11.1. Where the name of a concern or manufacturer is mentioned on 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 manufacture, finish, etc., shall be in accordance with his standard practice, direction or specifications. The Contractor shall be responsible for
any infringement of patents, royalties, or copyrights, which may be incurred thereby.

12. SUBSTITUTIONS

12.1. Substitutions for a specified system, product or material may be requested of the Architect. The Architect's written approval must be obtained before substitutions will be allowed. All requests for substitutions shall be submitted within thirty (30) days of award of Contract. Substitutions requested after that date may receive no consideration.

12.2. In making requests for substitutions the Contractor shall list the particular system, product, or material he wishes to substitute, the justification for such a request, and the amount he will add or deduct from the contract sum if the substitution be authorized by the Owner and approved by the Architect. If no addition or deduction to the base contract sum is allowed by the Contractor for such substitution, it shall be so stated on the request. Request submitted should include any and all adjustments of that and any other work affected thereby.

13. CONSTRUCTION CLIMATE CONTROL

13.1. It shall be the responsibility of the Contractor to provide at his expense, the power, fuel and equipment necessary to maintain climatic conditions and humidity when specified or required for work in progress.

14. RECORD DRAWINGS

14.1. During the progress of the work, the Contractor shall require his superintendent to record on field sets of drawings the exact locations, as installed, of all conduit, pipe and duct lines whether concealed or exposed which were not installed exactly as shown on the contract drawings.

14.1.1 Upon completion of the work, the Contractor shall retain a competent draftsman to record this data to scale on a fresh set of drawings provided for this purpose by the owner free of charge. Drawings which are altered, and drawings requiring no alteration, shall be marked “Record Drawings”. In altering drawings, use the same symbols for materials and components as originally shown. All changes, including electrical, plumbing, HVAC, etc. shall be shown. Each altered drawing shall show the name and address of the subcontractor(s) who provided the information used in the alteration.

14.1.2 With reference to electrical work the exact routing of conduit runs shall be shown on the Record Drawings. Identification of emergency circuits and runs shall be clearly recorded from panel to device.
14.2 The Contractor shall review the completed record drawings and ascertain that all data furnished are accurate and truly represent the work as actually installed. The record drawings, including those unchanged and those changed, shall be submitted to the Architect when completed in a digital format and placed on a CD. The Architect shall forward to the Owner, at the time of Final Completion, prior to the Owner's release of final payment on the project.

15. GUARANTEES AND OPERATING INSTRUCTIONS

15.1. All work performed by the Contractor in completing the subject project shall be guaranteed by the Contractor against all defects resulting from the use of materials, equipment and workmanship for a period of one year from the Date of Substantial Completion. (Refer to paragraph 5, Section 135, for definition of Substantial Completion.)

15.1.1. If, within any guarantee period, repairs or changes are required in connection with the guarantee work, which in the opinion of the Architect is rendered necessary as a 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-Engineer, is 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 and such guarantee.

15.1.2. If the Contractor, after receipt of any such written notice, fails within seventy-two (72) hours to commence at the job site with performance of the work necessary to remedy all defects in the work described in such notice so as to provide the Owner with the subject project completed in accordance with all requirements of the Contract Documents, or fails to complete the performance of such remedial work within a reasonable time after commencing same, the Owner shall be entitled to have such defective work remedied on the account of the Contractor and his Surety, in which event, the Contractor and
his Surety shall be fully liable for all costs and expenses reasonably incurred by the Owner in having such defective work remedied.

15.2. The General Contractor shall be responsible for collecting, identifying, indexing, and collating the following materials from the subcontractors, and will deliver five (5) copies of the completed documents to the Architect for verification. These documents are required to achieve final completion of the project. (One copy of all items bound within a loose-leaf binder constitutes one copy of the document.) The Architect will deliver required copies to the Owner, at the time of Final Completion and prior to Owner’s release of final payment.

15.2.1. Complete equipment diagrams, operating instructions, maintenance manuals, parts lists, wiring diagrams, pneumatic and/or electrical control diagrams, test and balance reports, inspection reports, guarantees and warranties, as applicable, for each and every piece of Fixed Equipment furnished under this contract to be supplied in a ring binder, hard-cover book, properly indexed for ready reference. Also, specific information regarding manufacturer's name and address, nearest distributor and service representative's name, address, office and home phone numbers, make and model numbers, operating design and characteristics, etc., will be required. All information submitted shall be updated to reflect existing conditions.

15.3. Subsequent to the time of Substantial Completion and upon receipt of Record Drawings, Operations and Maintenance Books but prior to the date of Final Acceptance, the Contractor and/or Subcontractor shall provide a competent and experienced individual(s) thoroughly familiar with the work for a reasonable period of time to instruct and comprehensively orient the Owner's designated maintenance personnel in operation and maintenance of equipment and control systems. This instruction will include normal start-up, run, stop, and emergency operations, location and operation of all controls, alarms and alarm systems, etc. The instruction will include tracing the system in the field and on the diagrams in the instruction booklets so that operating personnel will be thoroughly familiar with both the system and the data supplied.

16. CLEANING (Contractor is advised this is a big deal to the owner.)

16.1. On-Going Cleaning: The project shall be kept clean during construction. A weekly clean-up program shall be established to maintain the project relatively free of construction debris. The Owner reserves the right to obtain independent service for clean-up purposes at the Contractor's expense should the Contractor not be diligent in the pursuit of the established clean-up program after three days written notice. A similar right shall be
vested in the Contractor relative to his subcontractors. The Contractor shall be able to backcharge his subcontractors for clean-up costs as appropriate.

16.2. Final Cleaning: Entire area within scope of this work shall be completely cleaned, including all window glass, hardware, plumbing fixtures, electrical fixtures, tile work, etc., and shall be kept clean for the completion of this job. Replace all broken or defective glass or items.

17. **PUNCH LIST PROCEDURE**

17.1. When requested by the Contractor, the Architect shall inspect the project for the purpose of establishing the Punch List. The Contractor shall designate a responsible employee to accompany the Architect for the duration of the inspection. The Architect's consulting engineers shall also be in attendance to inspect their respective portions of the work. The Owner may participate in the inspection at his option and election.

17.2. Inspection will be on a space by space basis and shall also include the exterior of the building and the site improvements.

17.3. Within five (5) calendar days subsequent to the completion of the inspection, the Architect will forward to the Contractor a list (to be designated the Punch List) of those items noted during the inspection requiring correction or attention.

17.4. Punch List shall be completed within the 28 days provided between Substantial Completion and Final Completion. (Refer to paragraph 21, Section 125.)

17.5. Non-listed Items: Items not listed on the Punch List yet which are in need of attention or correction shall be addressed by the Contractor as if the item were noted during the original punch list inspection. Failure to list an item needing attention or correction on the Punch List will not relieve the Contractor or his subcontractors from complying with the plans and specifications. However, the architect shall endeavor to prevent the owner from nit picking, a condition to which owner's are often prone.

18. **FINAL PAYMENT**

18.1. Final payment shall be made to the Contractor as provided by the Agreement.

18.2. The following form shall accompany the Contractor's application for final payment:
   1. A completed and notarized Certificate of Contract Completion. (Section 160 of this Project Manual)
2. A completed and notarized consent of Surety to Final Payment (AIA G707), if Alternate No. One was accepted.
3. A completed and notarized Release of Lien from each Subcontractor and Supplier who furnished labor and/or materials.
4. Record drawings specified in paragraph 14 of this specification section.
5. Five copies of the Operation and Maintenance document specified in paragraph 15 of this Section, which have been received and accepted in writing by the Architect.

19. PROGRESS PAYMENTS

19.1. Based upon Application for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make monthly progress payments to the Contractor as provided in the Agreement and paragraph 2, Section 135.

20. SURETY COMPANIES ACCEPTABLE TO THE OWNER

20.1. To be acceptable to the Owner as Surety for Performance Bonds and Labor and Material Payment Bonds, a Surety Company shall comply with the following provisions.

20.1.1. The Surety Company must be admitted to do business in the State of Florida.

20.1.2. The Surety Company shall have been in business and have a record of successful continuous operations for at least five years.

20.1.3. The Surety Company shall have at least the following minimum ratings:

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<th>POLICY REQUIRED HOLDER'S FINANCIAL</th>
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<td>0 to 100,000</td>
<td>B Class VII</td>
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<td>100,000 to 500,000</td>
<td>A Class VIII</td>
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<tr>
<td>500,000 to 750,000</td>
<td>A Class IX</td>
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<tr>
<td>750,000 to 1,000,000</td>
<td>A Class X</td>
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<tr>
<td>1,000,000 to 1,250,000</td>
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<tr>
<td>1,250,000 to 1,500,000</td>
<td>A Class XI</td>
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<tr>
<td>1,500,000 to 2,000,000</td>
<td>A Class XII</td>
</tr>
<tr>
<td>2,000,000 to 2,500,000</td>
<td>A Class XII</td>
</tr>
<tr>
<td>2,500,000 or more</td>
<td>A Class XII</td>
</tr>
</tbody>
</table>

*From Best's Key Rating Guide.
(b) Best's Policy Holders Rating of "A" and "B" (which signifies A = Excellent, and B = Good, based upon good underwriting, economic management, adequate reserves for undisclosed liabilities, net resources for unusual stock and sound investment) Or an equivalent rating from the Insurance Commissioner if not rated by Best's.

20.1.4. 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 policyholders, provided:

20.1.4.1 Any risk or portion of any risk shall have been reinsured (in which case these minimum requirements contained herein also apply 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.

20.1.4.2 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.

20.1.4.3 The value of any security deposited, pledged or held subject to the content of the Surety and for the protection of the Surety.

21. TIME OF COMPLETION

21.1. The work to be performed under this contract shall be commenced within Fifteen (15) calendar days after date of Notice to Proceed, shall be Substantially Completed within 390 calendar days and shall be finally completed within 28 calendar days after the date of Substantial Completion. Refer to paragraph 5, Section 01350. For Liquidated Damages, refer to paragraph 22 of this Section.

21.2 Project Schedule

21.2.1 The owner must remain on the ready during hurricane season from June 1 through September 30. Disruptions during this period are not acceptable. As a consequence, the Owner will retain full use and utilization of adjacent buildings and roadways.

22. LIQUIDATED DAMAGES

22.1 Inasmuch 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" provided in paragraph 5, Section 135 of this Project Manual or within such further time, if any as in accordance with the provisions of the contract documents shall be allowed for such substantial completion the Contractor shall pay to the Owner as liquidated damages for such delay, and not as a penalty, the amount of $200 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. It is also hereby agreed that if this project is not finally completed in the time frame after Substantial Completion established above in accordance with the Owner as liquidated damages for such delay, and not as a penalty, one-fourth of the rate indicated. Said liquidated damages shall be payable in addition to any excess expenses or costs payable by the Contractor to the Owner under the provision of the General Conditions and shall not exclude the recovery of damage by the Owner under other provisions of the contract documents, except for Contractor’s delay.

22.2 This provision of 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 Contractor from his obligation to pay said liquidated damages in the amounts set out in the agreement.

23. USUAL AND CUSTOMARY PERFORMANCE OF THE WORK

23.1. It is not realistic to expect every item or component needed for each system and subcontract to be described on the drawings or to be specified. The Owner expects a complete and thorough job. The contractor and his subcontractors and suppliers shall be held responsible to furnish and install all items and components that are usual and customarily needed to complete the work whether or not each item or component has been specified as shown. By submitting a bid to supply materials and/or to perform work on the project a supplier and/or a sub-contractor is acknowledging his full understanding of this provision and, in full awareness of its implications, agrees to perform accordingly with diligence and good cheer all aspects of his work that are usual and customary. In cases of dispute, the Architect shall be the sole judge and shall decide on what constitutes usual and customary. Both the Owner and the Contractor shall be bound by his decision.

24. CONTRACTOR’S RESPONSIBILITY TO OWNER-FURNISHED ITEMS: (IF ANY)

24.1 OFCI ITEMS: Items, components, and equipment identified as OFCI (Owner-furnished, Contractor-installed) shall be delivered to the job site by the
Owner. Contractor shall be responsible for unloading, uncrating, setting in place, making all final connections thereto, and testing and adjusting for proper operation.

25. VOIDS IN BUILDING ENVELOPE:

25.1 General Contractor shall be responsible for closing and sealing all voids in the building envelope, unless specifically instructed otherwise in writing by the Architect. A void is defined as any opening in the floor, exterior walls, or roof, except doors and windows, which allow the entry of water or moisture-laden air into the interior of the building. Additionally, a void is also defined as a hole or the annular space around a pipe or conduit that penetrates the foundation wall below grade.

END OF SECTION
SECTION 01270
INCLUSIVE REQUIREMENTS

1. GENERAL:

1.1 The general provision of the Contract, General Conditions, Supplementary Conditions, Special Conditions (if any) along with the General Requirements, apply to all work specified in every section of the Project Manual.

1.2 Subcontractors shall examine all drawings and all other Sections of the Specifications for requirements therein affecting the work of their trade. Some tasks and work items may not be shown on the drawings in locations to a subcontractor’s liking. Such is not intended as an affront to any subcontractor’s sensitivities. Regardless of mutterings to the contrary, such work remains a requirement of the project.

1.3 Responsibility: The General Contractor shall be responsible to inform all subcontractors and vendors of this requirement, and to enforce compliance.

END OF SECTION
1. INCLUSION OF AIA DOCUMENT A201

1.1. The General Conditions of the Contract for Construction, American Institute of Architects Document A201-2017 shall apply to and form a part of this Section. A copy of the AIA General Conditions may be examined at the office of the Architect.

2. SCOPE

2.1. This Section sets forth modifications and additions to the General Conditions described above.

3. ARTICLE 1, GENERAL PROVISIONS

3.1. The Contractor's BID PROPOSAL FORM, as accepted by the Owner, shall become a part of the Contract Documents as listed in Article 1.1.1.

3.2 The following paragraph is added as Article 1.1.9:

“1.1.9 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

a. The Agreement.
b. Addenda, with those of later date having precedence over those of earlier date.
c. The Supplementary Special Conditions, General Conditions.
d. The Inclusion of, and Modifications to, AIA General Conditions.
e. Drawings and Specifications.
f. Technical specifications shall control over plans; plan schedules shall control over general plans, large scale details over small scale and figure dimensions over scaled dimensions. Addenda and change orders supersede only affected portions of the Documents.

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

4. ARTICLE 3, CONTRACTOR

4.1 Add the following as Article 3.4.3.1:

"Should the Architect-Engineer find any person(s) employed on the project incompetent, unfit or otherwise objectionable for his duties and so certified
the facts to the Contractor, the Contractor shall immediately cause the
employee to be dismissed and said employee shall not be reemployed on
this project without written consent of the Architect-Engineer."

4.2. Add the following as Article 3.8.1.1:
"If directed by the Architect, the Contractor shall solicit not less than three
bids for the item(s) the cost of which is provided for by a specified allowance
sum. The Contractor shall purchase the item(s) from one of the three
Bidders as directed by the Architect-Engineer."

5. ARTICLE 11, INSURANCE AND BONDS

5.1 Add the following as a part of Article 11.1.1:
"The Contractor shall be responsible for purchasing and maintaining
insurance with minimum limits as described in "Instructions to Contractors",
Section 01250 of the Project Manual".

5.2 Article 11.3.2 is hereby deleted in its entirety.

6. ARTICLE 13, MISCELLANEOUS PROVISIONS

6.1 Add the following as Article 13.4.6.1:
"Authorization for Tests: The Architect shall designate the test, which shall be
made, and the Contractor shall not obligate the Owner for tests without the
Architect-Engineer’s approval".

7. ARTICLE 15 CLAIMS AND DISPUTES

7.1. Article 15.4, Arbitration, shall be expanded to state that arbitration may not
be demanded by one party unilaterally nor shall the use of any arbitration
proceeding preclude nor eliminate other legal remedies which may be
available to the parties involved. Any award rendered by the arbitrators shall
not be final unless such stipulation was mutually agreed to and set forth in
writing prior to commencement of arbitration proceedings.

END OF SECTION
1.01 Submittals

A. The following submittals are required by the Contract Documents and are briefly explained herein:
   1. Construction Schedule
   2. Schedule of Values
   3. Product Data

B. Information regarding submittal administration is also included herein.

1.02 Construction Schedule

A. The Contractor shall submit to the Owner and the Architect/Engineer two (2) copies of his Construction Schedule.

B. Upon acceptance by the Owner and ARCHITECT/ENGINEER, the Contractor shall post a copy of the Schedule within the Field Office where it can be readily referenced.

1.03 Schedule of Values

A. The Contractor shall submit to the Owner and the Architect/Engineer, two (2) copies of his Schedule of Values within ten (10) days of the Notice to Proceed.

B. The Schedule shall be in an outline format divided into major categories of construction as established by the Table of Contents. A value (amount) for each category shall be assigned thereto.

C. Submit on AIA Form G703, Continuation Sheet for the Application and Certificate for Payment, AIA Form G702.

1.04 Product Data

A. Product Data includes:
   1. Shop drawings
   2. Descriptive data
   3. Samples
   4. Schedules
   5. Certificates
   6. Guarantees
   7. Warranties
8. Maintenance manuals

B. Submittal requirements for Product Data are listed in the technical sections of the Project Manual. The ARCHITECT/ENGINEER may, at his option, request additional Product Data.

1.05 Submittal Routing

A. Submittals shall be routed in the following manner:

1. Subcontractors, suppliers and others shall route to the Contractor.
2. Following a preliminary review by the contractor for accuracy and conformance to the design documentation, the Contractor shall route to the ARCHITECT/ENGINEER for review.
3. The ARCHITECT/ENGINEER shall route to the Owner (certain approved Product Data only) following a review for conformance.

B. Return shall be in the reverse order.

C. The Contractor shall furnish copies of approved Submittals to the owner as may be required or requested.

1.06 Review Procedures

A. Contractor's Review: The Contractor shall thoroughly review data submitted for compliance with the Contract Documents.

1. Data found not to be in accordance with the Contract Document's shall be returned for compliance.
2. Data found to be acceptable shall be:
   a. Noted as required.
   b. Stamped indicating action taken.
   c. Forwarded to ARCHITECT/ENGINEER.

B. ARCHITECT/ENGINEER Review: The ARCHITECT/ENGINEER will review submittals and advise of his findings.

1. ARCHITECT/ENGINEER will not accept material for review that has not been reviewed and approved by the Contractor, and he will return data immediately without review.
2. The ARCHITECT/ENGINEER will review data which has been properly approved by the Contractor and will either mark it "NO EXCEPTION TAKEN", "MAKE CORRECTIONS NOTED", "REVISE AND RESUBMIT", "SUBMIT SPECIFIED ITEM", or "REJECTED".
3. Items marked "REJECTED" shall be resubmitted by the Contractor after making any required corrections or additions.
4. Items marked "MAKE CORRECTIONS NOTED" may be resubmitted for further clarification.
5. ARCHITECT/ENGINEER approval does **NOT** relieve the Contractor of his responsibility for deviations from the Construction Documents.

C. ARCHITECT/ENGINEER Review Time Limit: Submittals shall be processed by the ARCHITECT/ENGINEER and returned to the Contractor within fourteen (14) days of receipt. The ARCHITECT/ENGINEER will make every effort to expedite review. The Owner shall not be liable to the Contractor for any delay in processing the submittals.

D. No work for which submittals are required (with the exception of test certificates for completed work, final guarantees and maintenance manuals) shall be performed until submittals are approved by the ARCHITECT/ENGINEER except at the Contractor's risk.

### 1.07 Definitions

A. Shop Drawings:
   1. Fabrication drawings for custom products.
   2. Modified catalog data annotated for a specific condition of service.
   3. Installation drawings for product assemblies or systems.

B. Description Data: Manufacturer's catalog data, literature, etc., on product or system.

C. Samples: Physical examples of products proposed for use.

D. Schedules: Itemized listing of products and proposed locations.

E. Certificates: Notarized statements made and signed by authorized company representatives attesting to their product having met the Contingent Document requirements.

F. Guarantee or Warranty: Specific guarantees required in Project Manual in addition to the completed work guarantee required of Contractor. See Section 01700, Contract Closeout.

G. Maintenance Manuals:
   1. Three-ring (minimum) 8-1/2" x 11" hardback, vinyl-covered binder for Owner's permanent record.
   2. Contents to include reproductions of shop drawings, descriptive data, schedules, etc., corrected through final approval, plus operation, maintenance, parts listing, service availability, cleaning instructions, etc.
   3. Permanently mark edge of binder to indicate contents and project title.
1.08 Required Information to be Included with all Submittals

A. Date of Submittal
B. Name of Project
C. Name of Contractor
D. Reference to a specific section, drawing or detail
E. Manufacturer's or fabricator's name
F. Owner's name
G. Installer's name

1.09 Required Information to be Included with Shop Drawings and Descriptive Data

A. Factory or shop applied finish or protective coating.
B. Installation requirements and recommendations.
C. Product protection requirements.
D. Cleaning precautions and/or requirements.
E. Applicable activation requirements or procedures.

1.10 Quantities (Minimum)

A. Shop Drawings
   1. Custom Fabrications or Assemblies: Either six copies of each sheet, etc., or one reproducible transparency of each drawing.
   2. Modified Catalog Data: Six copies.
B. Descriptive Data and Schedules: Six copies
C. Physical Samples/Examples: Two copies
D. Mockups: One site constructed example
E. Certificates: Four copies
F. Guarantees or Warranties
   1. Examples for initial review and approval: Two copies.
   2. After approval, actual construction completion documents: Two copies
G. Maintenance Manual: Two copies

END OF SECTION 01 30 00
SECTION 01350
SUPPLEMENTARY GENERAL CONDITIONS

1. CHANGES IN THE WORK

1.1. During the course of the Contractor's performance of the work, certain events may occur which have the effect of changing the conditions under which the work is to be performed or the nature and extent of the work. The occurrence of such events may cause the Contractor to incur greater or less cost to perform the work than planned in the Contractor's successful bid. In such event, the Contractor or the Owner shall respectively be entitled to either an increase or decrease in the Contract Sum to the extent such greater or less cost results, and in which event the party entitled to the benefit of any such adjustment to the Contract Sum shall, within twenty (20) days from the first occurrence of such event(s), present written demand therefore on the other party through the Architect. Should the Contractor and Owner be unable to settle and dispose of such demand within thirty (30) days from the date any such claim is presented, then such demand shall be referred to the Architect for determination, which determination shall be final and binding upon the Contractor and the Owner, unless appealed in accordance with applicable provisions of the Contract Documents. If the Architect, upon considering any such demand, determines that the Contract Sum should be increased or decreased, the Architect's determination of the amount of any such increase or decrease in the Contract Sum shall be governed and controlled by strict adherence to the following described guidelines and limitations. Neither the Contractor nor the Owner shall be entitled to receive any monetary consideration beyond that which is authorized herein below.

1.2. All adjustments to the Contract Sum resulting from a change in the work shall be determined by the measure of actual, or estimated as the case may be, out-of-pocket costs and expenses incurred or spared by the Contractor for labor, materials, equipment, and equipment rental, plus overhead and profit thereon, for performing the changed work. A different percentage rate for overhead, profit, labor burden and similar items, shown as allowable for mark up on changes in the work may be negotiated between the Owner and Contractor at the time of Contract Award, and noted in the Agreement, or the percentages listed below shall prevail.

1.2.1. Labor costs shall be direct costs of mechanics' wages and laborers' wages, without payroll taxes, payroll assessments, and insurance premiums paid for such labor.

1.2.2. All material costs, equipment costs and equipment rental costs shall be trade discount rates, plus State Sales Tax, where applicable.
1.2.3. Overhead and profit shall be inclusive of all job site supervision, estimation, laying out, project management, project administration, project coordination, project scheduling and other administrative support functions and services, whether performed on the job site or off the job site.

1.2.5. In addition to the foregoing, all adjustments to the Contract Sum resulting from a change in the work shall include all out-of-pocket expenses, incurred or spared, for:

1.2.5.1 Paying the premiums required to obtain Performance and Payment Bonds called for by the Contract Documents;

1.2.5.2 Paying for delivery of materials or equipment to the job site.

1.2.5.3 Paying for storage of materials or equipment before use thereof in performing changes in the work, and

1.2.5.4 Paying for testing required by the changes in the work.

1.3. In the event Contractor demands an adjustment in the Contract Sum, such demand shall be accompanied by paid receipts or other such written evidence satisfactory to the Owner itemizing the costs and expenses incurred as a result of the event(s) constituting the changes in the work.

1.4. In no event shall fees or permits be paid by the Owner, or by the Contractor acting as his Agent. Solely the Contractor shall pay all fees and permits.

1.5. Contractor may not charge for additional supervision time, layout, or engineering expenses or similar charges on any change unless he can show that the change impacts directly on the established critical path of the work. In those cases where the impact of the change is shown to delay the work, the remaining construction to complete the work shall be adjusted by the actual number of days delay as shown and additional compensation shall be paid to the Contractor for the delay in an amount not to exceed 2.0 times the direct wages paid to the project superintendent on a daily basis. No other charges, including the percentage markups noted in paragraphs 1.2.3.1, 1.2.3.2, and 1.2.4, Section 135, shall be applied, or added to, the multiple of the project superintendent's direct wage to compensate the contract for delays in the work caused by changes in the work. (The percentage mark-up provided in paragraphs 1.2.3.1, 1.2.3.2, and 1.2.4, Section 135, applies to changes in the work other than compensation for delays.)

1.6 There shall be no compensation for delays in the work for any reason.
2. PROGRESS PAYMENTS

2.1. The Owner will, at intervals, make progress payments to the Contractor as provided in the Agreement. Owner shall require a full 30 days to process contractor's pay request from date it is received by the Owner.

2.1.1 Retainage

Retainage of 10% (ten percent) will be applied to each contractor's pay request.

2.2. The Contractor shall request such compensation as well as final payment by submitting:
3. Affidavits of Payments from the Contractor to his Sub-Contractors, materials and equipment suppliers, as each payment are made to the Contractor.

2.3. The Contractor shall, within ten (10) days from date of Agreement, submit to the Architect for approval three copies of a Schedule of Contract Values which will reflect the estimated cost of each subdivision of work of each specification section. The value of each item shall include a true proportionate amount of the Contractor's overhead and profit. The sum of all such scheduled values shall equal the Contract Sum as evidenced by the Agreement.

2.4. The approved form of Schedule of Contract Values will accompany and support the Contractor's periodic Applications for Payment and shall indicate the value of suitably stored material on site 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.

3. EXCLUSION OF OWNER FROM LIABILITY

3.1. 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 is otherwise available at law from persons and/or entities other than the Owner.
4. TIME OF COMPLETION

4.1. Time of Completion shall be as specified in Paragraph 21 of Section 01250.

5. SUBSTANTIAL COMPLETION

5.1. The traditional understanding of Substantial Completion relates to the Owner being able to use the project for the purposes for which it was designed. The date on the Certificate of Occupancy issued by Clay County Building Department or City of Green Cove Springs, shall establish the date of substantial completion.

6. FINAL COMPLETION

6.1. Final completion shall be the date the Contractor demonstrates to the Architect that he has completed the punch list. To demonstrate final completion, contractor shall schedule a walk-through of the project with the Architect where each punch list item is revisited and then crossed off the list.

6.2. The Architect is the only person who may determine the date of Final Completion.

6.3. The Owner may attend and participate in the walk-through inspection called for in paragraph 6.1 above.

END OF SECTION
SECTION 01370

ATTIC STOCK

1 GENERAL

1.1 Material provided in this section shall be delivered in un-opened containers. The quantities listed are minimums. Should standard manufacturer's packaging provide for a greater quantity than listed above, provide the greater quantity. Unopened boxes or cartons are required to be delivered to the Owner.

2 MATERIALS

2.1 Lamps for lighting Fixtures: as attic stock for the Owner, the contractor shall provide either one lamp of each type or two percent of the total number of lamps of each type, whichever quantity is greater.

2.2 Contractor shall provide additional materials for the Owner's use in building maintenance as follows:

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<th>Section</th>
<th>Material</th>
<th>Quantity</th>
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</thead>
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<td>095000</td>
<td>Acoustical Treatment</td>
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<tr>
<td>096813</td>
<td>Carpet Tile</td>
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<td>and base</td>
</tr>
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<td></td>
<td></td>
<td>1 box each color</td>
</tr>
<tr>
<td>096813</td>
<td>Rubber base</td>
<td>Rubber base</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20' each color</td>
</tr>
<tr>
<td>099000</td>
<td>Painting</td>
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</tr>
<tr>
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</tr>
</tbody>
</table>

3. At Final Inspection, provide list of each Attic Stock's quantity and location in the building. Locate each type of attic stock in the building and room to be determined by the Owner.

END OF SECTION
1. TELEPHONE/FAX

1.1. A telephone shall be installed at the Contractor's job-site office and it shall remain until the full completion of the project. Long distance toll charges shall be paid for by the person making the calls. The Contractor shall pay for all other charges in connection with the telephone. A cell phone carried by the Project Superintendent shall satisfy the requirements of this paragraph.

1.2. A fax machine or printer shall be installed in the on-site contractor's field office as well as a computer that will receive and send electronic mail.

2. WATER

2.1. The contractor shall provide all water necessary for construction of the building and testing its plumbing and mechanical systems. Contractor shall make all arrangements necessary for obtaining needed water and shall restore the site to original condition at completion of the project as necessary.

3. ELECTRICITY

3.1. The Contractor shall provide all electricity for light and power necessary for the construction and testing of their electrical and mechanical systems for the new building. The Contractor shall make all necessary arrangements for this service, perform the work required, and remove all evidence of it at project completion.

4. PROJECT SIGN

4.1. One sign shall be erected at the site by the Contractor and shall be 1/2" exterior grade plywood, mounted on 4 X 4 wood posts, in a prominent location approved by the Architect and Owner. Sign shall be as designed by Architect not to exceed 32 square feet each in area. Owner's logo and colors will be used. Additionally, Contractor and Architect will be identified on the sign. Cost of the project signs shall be borne by the Contractor and shall not be part of the cash allowance for graphics. No other signs may be erected relative to this project without the written approval of the Owner.

5. PRE-CONSTRUCTION CONFERENCE

5.1. Before beginning work at the site the General Contractor shall attend a pre-construction conference and bring with him the superintendent employed
for this project. Attendance by both the General Contractor and his superintendent is required.

All subcontractors involved in the work are encouraged to attend. 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. The Superintendent shall henceforth make every effort to expeditiously coordinate all phases of the work, including the required reporting procedure, to obtain the end result within the full purpose and intent of the plans and specifications for the project.

5.1.1 The following topics will be on the Agenda of the Pre-Construction Conference:

a. Project Security
b. Project Schedule, with calendar dates established for official start date, and completion dates.
c. Definitions of Substantial Completion and Final Completion
d. Liquidated Damages
e. Construction Delays (definition and procedure for documentation)
f. Licensing requirements
g. Pay request procedures
h. Workman's Compensation Insurance
i. Utilities for construction

6. BARRICADES

6.1. General Contractor shall erect temporary barricades, with battery operated lights where required, so as to prevent the public, and other unauthorized persons from coming in contact with trucks, equipment, excavations and other construction operations

7. SANITARY FACILITIES

7.1. The Contractor shall provide temporary toilet facilities for his employees and subcontractors in compliance with local ordinances. No nuisance will be permitted.

8. CONSTRUCTION PROGRESS MEETINGS

8.1 A construction progress meeting shall be conducted on site normally every two weeks. The purpose shall be to assess the construction progress, to discuss and resolve what issues may be current, and to project the anticipated construction progress for the next two weeks. These meetings shall be attended by the Contractor's superintendent and his project manager, the Owner's representative, the Architect's representative, the

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mechanical subcontractor, the electrical subcontractor, and any other subcontractor who wishes to attend and participate.

9. START DATE

9.1 Official Start Date will be 15 calendar days after date of Notice to Proceed. The Notice to Proceed will identify the official Start Date.

9.2 Two copies of the Notice to Proceed, whereon the official Start Date is identified, shall be signed by the General Contractor and notarized, and returned to the Owner prior to submission of the contractor’s first request for payment. No requests for payment shall be honored until the notarized Notice to Proceed is received by the Owner.

10. LICENSING

10.1 All Contractors and Subcontractors employed in the construction of this project shall be licensed. Such license shall be recognized by the State of Florida Construction Licensing Board.

10.2 Copies of each license shall be submitted to the Architect upon request for subsequent delivery to the Owner.

11. SECURITY

11.1 General Contractor shall be responsible for providing his own job-site security for the duration of the contract.

END OF SECTION
SECTION 01 40 00.10
QUALITY REQUIREMENTS

PART 1  GENERAL

1.1  SECTION INCLUDES

A. Quality Monitoring: Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality. Perform quality control procedures and inspections during installation.

B. Standards: Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

C. Tolerances: Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.

D. Reference Standards: For products or workmanship specified by association, trade, or other consensus standards comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

E. Manufacturer's Field Services: When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.
   1. Observe site conditions.
   2. Conditions of surfaces and installation.
   3. Quality of workmanship.
   4. Start-up of equipment.
   5. Test, adjust and balance of equipment.

F. Mock-Ups: As required in the contract documents, assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work or as directed by the Architect/Engineer, shall be approved to be included as a part of the finalized work.

G. Removal of Mock-Ups: Where mock-up has been accepted by Architect and no longer needed, remove mock-up and clear area when directed to do so.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Services: Provide temporary services and utilities, including payment of utility costs including the following.
   1. Water (potable and non-potable).
   2. Lighting and power.
   4. Telephone.
   5. Toilet facilities.

B. Construction Facilities: Provide construction facilities, including payment of utility costs including the following.
   1. Construction equipment.
   2. Dewatering and pumping.
   3. Enclosures.
   5. Lighting.
   7. Roads.

C. Security and Protection: Provide security and protection requirements including the following.
   1. Fire extinguishers.
   2. Site enclosure fence, barricades, warning signs, and lights.
   3. Building enclosure and lock-up.
   4. Environmental protection.
   5. Pest control during and at the end of construction.
   6. Snow and ice removal if applicable.

D. Personnel Support: Provide personnel support facilities including the following.
   1. Contractor's field office.
   2. Sanitary facilities.
   3. Drinking water.
   4. Project identification sign.
   5. Cleaning.

END OF SECTION
SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Manufacturers: Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.

B. Product Selection: Provide products selected or equal approved by Architect. Products submitted for substitution shall be submitted with complete documentation, and include construction costs of substitution including related work.

C. Substitutions: Request for substitution must be in writing. Conditions for substitution include:
   1. An 'or equal' or 'similar to' phrase in the specifications.
   2. Specified material cannot be coordinated with other work.
   3. Specified material is not acceptable to authorities having jurisdiction.
   4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.

D. Substitution Requests: Substitutions shall be submitted prior to award of contract during the bidding process, unless otherwise accepted. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless an item is clearly presented as a substitution at the time of submittal.

END OF SECTION
SECTION 01 70 00
CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Substantial Completion: The following are prerequisites to substantial completion. Provide the following.
1. Punch list prepared by Contractor and subcontractors as applicable.
2. Supporting documentation.
3. Warranties.
4. Certifications.
5. Occupancy permit.
6. Start-up and testing of building systems.
7. Change-over of locks.
8. Meter readings.
9. Commissioning documentation as applicable.

B. Final Acceptance: Provide the following prerequisites to final acceptance.
1. Final payment request with supporting affidavits.
2. Completed punch list, verified and accepted by Owners representative.

C. As-Built Drawings: Provide a marked-up set of drawings including all changes, which occurred during construction.

D. Project Closeout: Provide the following during project closeout.
1. Submission of record documents.
2. Submission of maintenance manuals.
3. Training and turnover to Owner's personnel.
4. Final cleaning and touch-up.
5. Removal of temporary facilities.

END OF SECTION
1.01 Purpose

This section provides Contractor guidance for the creation, preparation and maintenance of:

A. "Job Set" Record Documents (RD's)
B. Final Record Documents
C. Visitor's Log

1.02 Quality Assurance

A. The Contractor shall delegate the responsibility for the maintenance of Record Documents and the Visitor's Log to one person on his staff as approved by the ARCHITECT/ENGINEER.

B. The contractor shall insure the accuracy of RD's and shall:
   1. Thoroughly coordinate all changes.
   2. Make adequate and proper entries.

C. Timeliness of Entries: The Contractor shall make all entries within a reasonable amount of time (24 hours) after receipt of information or the need for an entry arises.

1.03 Submittals

A. The ARCHITECT/ENGINEER's approval of current Job Set RD's will be a prerequisite to his approval of the Contractor's monthly Applications for Payment.

B. The ARCHITECT/ENGINEER's approval of the Final RD's will be a prerequisite to his approval of the Contractor's Application for Final Payment.

C. The Contractor shall submit his Visitor's Log for the inspection of the ARCHITECT/ENGINEER or Owner as may be requested.

D. The Contractor shall submit a copy of his prior month's Visitor's Log with each Application for Payment. He shall indicate the name of the project and the period covered by the log.
1.04 Protection of RD's

Take precautions to protect RD's from deterioration, loss or damage. Conserve, as necessary, the "Job Set" until the completion of work and the transfer of information from the "Job Set" to the "Final Record Documents."

1.05 "Job Set" Record Documents

A. Identification

Upon receipt of the set of documents to be used as the job set, identify each of the documents with the title, "Record Documents - Job Set."

B. Preservation

1. Devise a suitable method for protecting the "Job Set" from anticipated user wear.
2. Use the "Job Set" only for the entry of new data and the ARCHITECT/ENGINEER's review.
3. Maintain the "Job Set" at the project work site designated by the ARCHITECT/ENGINEER.

C. Making Entries

1. Use an erasable colored pencil.
2. Clearly describe the change by note or by graphic line.
3. Date all entries.
4. Highlight the change by the use of a "cloud" around the area(s) affected.
5. Use different colors for overlapping changes.

D. Other Entries

1. Indicate any ARCHITECT/ENGINEER directed changes by note; i.e., "ARCHITECT/ENGINEER directed change."
2. Contractor originated changes and inadvertent errors which are approved by the ARCHITECT/ENGINEER shall be clearly indicated by note.

E. Schematic Layout Conversion

1. General Background: Most mechanical, electrical, and plumbing drawings are schematic in nature and not intended to portray precise physical layout or location.
   a. Final physical layout is determined by the Contractor and may
be different from that shown on the Drawings.

b. Future modifications or maintenance will require accurate, final, physical arrangement information.

2. "Job Set" RD's: The Contractor shall annotate the "Job Set" RD's to show:

a. Plan Location: Dimension layout of mechanical/electrical runs to within 1" of the centerline of each run.

b. Identification: Identify the item by accurate note showing size, material, and function; i.e., "4" cast iron drain," "1/2" copper water," etc.

c. Show the vertical (height) location by symbol or note; i.e., "in ceiling plenum," "exposed ceiling mounted," "under slab," etc.

d. Make identifications sufficiently descriptive so that they may be easily related to the Specifications.

1.06 Final Record Documents

A. General: The Contractor shall furnish Final Record Documents that provide factual reference information of a permanent nature, enabling future modifications and maintenance to proceed without expensive site investigation.

B. Final Record Documents shall be in CD format. Contractor, at his own expense, shall obtain a set of Record Documents in ACAD format from the ARCHITECT/ENGINEER to be used for Final Record Documents.

C. Prior to the transfer of information from the "Job Set" to the Final RD's, the Contractor shall obtain a review by the ARCHITECT/ENGINEER of all recorded data. Make all required revisions.

D. Transfer of Data to Drawings

1. Carefully transfer all change data from the "Job Set" to ACAD.
2. Coordinate all changes as required. Clearly indicate changes to all drawings affected; i.e., plans, sections, details, etc. Give the full description of changes to provide a comprehensive record. Show actual locations, dimensions, notes, etc.
3. Call attention to each entry by drawing a "cloud" around it.
4. Make changes neatly and consistently. Drawings shall be modified with either ink or black pencil. Line quality shall be crisp, consistent, and equal to the original.
E. Transfer of Data to other Documents (Project Manual)

1. Seek ARCHITECT/ENGINEER approval of changes made on the "Job Set" Project Manual. If changes are neat, legible, and clean, the ARCHITECT/ENGINEER is authorized to approve the "Job Set" as the Final.

2. If ARCHITECT/ENGINEER approval is not forthcoming, obtain a new copy of the Project Manual and make all data changes necessary.

F. Review and Approval: Submit the complete set of Record Documents to the ARCHITECT/ENGINEER for his approval. Revise as necessary.

1.07 Changes Subsequent to Acceptance

The Contractor’s responsibility for recording change ends upon acceptance of the Work by the Owner (Approved Certificate of Final Inspection by State DOE). However, changes resulting from replacements, repairs, and alterations required as a result of the Contractor guarantee work shall be recorded.

1.08 Visitor’s Log

1. The Contractor shall maintain a log in the Field Office to record visits by the ARCHITECT/ENGINEER, his consultants, and all visitors, including Owner's representatives and inspectors.

2. This log shall become the official record of all job visits and shall show:
   a. Date
   b. Time of Arrival
   c. Time of Departure
   d. Person's Name
   e. Entity Represented

3. The Contractor shall furnish a copy of the log to the Architect/Engineer or Owner.

1.09 Contractors’ Project Related Documents

All documents shall be made available to the Owner upon request.

END OF SECTION
SECTION 01950

GEOTECHNICAL REPORT
REPORT OF PRELIMINARY GEOTECHNICAL EXPLORATION & ENGINEERING EVALUATION
PEGASUS TECHNOLOGIES OFFICE BUILDING & PARKING LOT EXPANSION
932 PILOT DRIVE
GREEN COVE SPRINGS, FLORIDA
AGES JOB NO. J18039, REPORT 001

FOR
BHIDE & HALL ARCHITECT, PA
1329 Kingsley Avenue, Suite C
Orange Park, Florida 32073
Attn: David S. Shively

APRIL 4, 2018
March 31, 2018

BHIDE & HALL ARCHITECT, PA
1329 Kingsley Avenue, Suite C
Orange Park, Florida 32073

Attn: David S. Shively

Re: Report of Preliminary Geotechnical Exploration & Engineering Evaluation
Pegasus Technologies Office Building & Parking Lot Expansion
932 Pilot Drive
Green Cove Springs, Florida
AGES Job No. J18039, Report 001

Ladies and Gentlemen:

AGES of JAX, (AGES), Inc. has completed a preliminary geotechnical exploration and engineering evaluation of the subsurface conditions beneath the construction area of the referenced project. Our services were performed as requested and authorized by Mr. David S. Shively of Bhide & Hall. This report includes: (1) a brief outline of the project information provided; (2) a review of site and subsurface conditions encountered; (3) site preparation and shallow foundation design recommendations for the planned building structure; and (4) guideline pavement design and construction recommendations.

We appreciate the opportunity to be of service as the geotechnical consultant during this phase of your project. Should you have any questions concerning this report or if we may be of any further service to you, please feel free to contact us.

Very truly yours,

AGES of JAX, INC.

Bill C. McMahan, Jr., P.E.
Principal Engineer/Vice-President
Registered, Florida No. 42677
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DATA ATTACHMENTS

- Site Location Map
- Field Exploration Plan
- Generalized Subsurface Profile
- Key to Soil Classification
- Test Boring Records
- Auger Boring Records
- Field Exploration Procedures
REPORT ATTACHMENTS
1.0 PROJECT BACKGROUND INFORMATION

Project information has been provided by Bhide & Hall Architects representative, Mr. David Shively during recent phone and email correspondence. We have been provided with an Architectural Site Plan (Sheet A101E, prepared by Bhide and Hall, dated 3/19/18) which shows the site boundaries, existing buildings, the proposed new building and parking lot locations, and the requested scope of geotechnical testing.

Based upon the information that was provided, we understand that planning and design are underway for the office building and parking lot expansion at the existing Pegasus Technologies facility which is located at 932 Pilot Drive in Green Cove Springs, Florida. The development will include a 2,400 square foot CMU single story structure and asphalt and or concrete paved parking lot.

Detailed structural loading information has not been provided at this time. Therefore we have assumed that maximum individual column loads of 100 kips, maximum wall loads on the order of 2 klf and total floor slab loads of 200 pounds per square foot or less. The proposed building finish floor and existing site topography data have not been provided. However, we understand that 3 feet or less of elevating fill will be added in the building and parking areas.

2.0 PRELIMINARY GEOTECHNICAL EXPLORATION

2.1 Purpose of Exploration

The objective of this preliminary geotechnical exploration was to obtain site and subsurface data for use in: (1) evaluation of the site with respect to the proposed construction, (2) the development of preliminary foundation design and construction recommendations for the proposed building structure; and (3) development of guideline pavement design and construction recommendations. The assessment of the environmental condition of the soil, rock or groundwater at this site is beyond the requested scope of services.

2.2 Subsurface Testing

The field testing program, which was conducted during the period of March 26-28, 2018, included two(2) 30-foot deep standard penetration test borings (B1 & B2) in the building area and one(1) 10-foot deep auger boring (A1) in the parking area. The field testing locations were requested by Bhide and Hall and were established in the field by our personnel using handheld GPS location devices and/or taped and paced measures relative to existing site features. The boring locations, as shown on the attached Field Exploration Plan, should be considered as approximate. The ground surface elevations at the boring locations was not determined.

The attached Test Boring Records and Auger Boring Records present the descriptions of the subsurface soils encountered, the groundwater levels encountered, the estimated seasonal high groundwater levels, and the penetration resistance values (blow counts) recorded when drilling and sampling the test borings. The soils conditions are graphically illustrated on the attached Generalized Subsurface Profile (GSP). The stratification lines and depth designations on the boring/test records and GSP represent the approximate boundary between the various soils encountered, as determined in the field by our drillers, and the transition from one strata to the next should be considered approximate. A brief discussion of the drilling, sampling, and field testing techniques used during the geotechnical exploration is provided in the attached Field Exploration Procedures section.
3.0 GEOTECHNICAL FINDINGS

3.1 Site Conditions

As shown on the attached Site Location Map and Field Exploration plan the new building and pavement will be constructed in a partially wooded and grassed lot which is located on the east of the existing Pegasus facility in Green Cove Springs, Florida. The site is relatively level in topography. Some standing surface water was encountered at the site at the time of our exploration.

3.2 Subsurface Conditions

The subsurface conditions outlined below highlight the major subsurface stratifications encountered during our geotechnical exploration of the site. When reviewing the boring records, GSP and the subsurface condition as outlined below, it should be understood that the subsurface conditions will vary across the proposed construction area and between the boring locations. Furthermore, natural subsurface conditions may be altered over time by natural and manmade processes.

3.2.1 Soil Conditions - Building area penetration test borings (B1 & B2) typically encountered 12-inches or less of soil containing shell and gravel. The surface stratum was underlain by loose to very loose silty fine sand (SM) with varying amounts of shell which extended to a depth of 12 feet and exhibited blow counts ranging from 1 to 11 blows/foot. Below a depth of 7 feet and extending to the boring termination depth of 30 feet, alternating strata of stiff to very stiff clay (CH) and firm very silty fine sand (SM) were encountered. Penetration resistance values typically ranged from 7 to 18 blows/foot.

Auger borings A1 encountered 12-inches of top soil which was underlain by silty fine sand with varying amounts of shell which extended to the boring termination depth of 15 feet.

3.2.2 Groundwater Conditions - The groundwater level was encountered at the time of drilling at depths of 3 to 4 feet below the ground surface. These water levels are estimated to be at or near season average levels. Based upon a review of the USDA soil survey, an inspection of the soil samples obtained as part of this investigation, and the current groundwater levels, we estimate that the seasonal high groundwater level will be 1.5 feet below the existing ground surface. The groundwater level should be expected to fluctuate due to seasonal climatic variations, changes in surface water runoff patterns across the site, construction activity and the subsequent development as planned, and other interrelated factors. Since groundwater variations are anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

4.0 PRELIMINARY GEOTECHNICAL ENGINEERING EVALUATION

4.1 Basis of Evaluation & Recommendations

Our preliminary geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned construction, and our recommendations for foundation design and site preparation/earthwork construction, are based upon: (1) our site observations; (2) the field test data obtained during this geotechnical exploration of the site; and (3) our understanding of the project information and structural loading conditions as presented in this report. If the structural information or the site plan are altered, please contact us so we may review our recommendations. If any site or subsurface conditions are encountered during construction which appear to deviate from data obtained during this geotechnical exploration (as documented herein), please contact us so that we may visit the site, observe the differing conditions, and evaluate the new information relative to our geotechnical evaluation and recommendations.
4.2 Foundation System Evaluation

Based upon our geotechnical findings and our understanding of the proposed construction, we consider the site and subsurface conditions adaptable for support of the proposed structure upon a properly designed and constructed shallow foundation following proper site preparation procedures. The shallow foundation system may be designed using an allowable bearing pressure of 2,500 psf. Provided that the design and construction recommendations outlined subsequently are implemented, we estimate that total structural settlement due to fill and structural loads should be on the order of one inch or less. In addition, post construction differential settlements should be within tolerable magnitudes. The settlements should occur concurrently with construction due to the generally sandy nature of the soils encountered. Site preparation necessary for proper foundation performance includes:

* Clearing of existing ground cover and stripping any existing topsoil within the proposed construction areas;
* Compaction of the exposed natural soils to densities equivalent to 95 percent of the Modified Proctor maximum dry density (ASTM D 1557) using a moderate weight vibratory drum roller;
* Placement and compaction of any required structural fill to densities equivalent to 95 percent of the Modified Proctor maximum dry density (ASTM D 1557) within the building areas.

5.0 PRELIMINARY FOUNDATION DESIGN & SITE PREPARATION RECOMMENDATIONS

5.1 Foundation Design Recommendations

5.1.1 Foundation Type - We consider a conventional shallow foundation system applicable for this project if the site preparation recommendations presented in section 5.2 of this report are performed.

5.1.2 Bearing Pressure & Depth - The maximum allowable soil bearing pressure for use in shallow foundation design should not exceed 2,500 psf. The foundations should be designed based upon the maximum load which could be imposed by all loading conditions. The exterior footings should bear at a depth of at least 12 inches below the exterior final grades and the interior footings should bear at least 12 inches below the interior floor slab. These minimum bearing depths should provide the necessary confinement for the soils at the foundation bearing levels.

5.1.3 Foundation Size - The minimum widths recommended for isolated spread-type footings and continuous wall footings are 24 and 18 inches, respectively. Even though the maximum allowable soil bearing pressure may not be achieved, these minimum width recommendations should still control the size of the foundations.

5.1.4 Bearing Material - The foundations may bear in either the compacted suitable natural granular soils or compacted structural backfill or fill. The bearing level soils, after compaction, should exhibit densities equivalent to 95 percent of the Modified Proctor maximum dry density (ASTM D 1557) to a depth of at least one-foot below the foundation bearing levels.

5.2 Site Preparation Recommendations

5.2.1 Temporary Groundwater Control - During our geotechnical exploration, the groundwater level was encountered at depths of 3 to 4 feet below the existing site grades. Dependent upon the groundwater levels encountered at the time of construction, temporary de-watering may be required in some areas of the site. The groundwater should be controlled at all times at a depth of at least two feet below the construction level. Groundwater drawdowns on the order of one to two feet, if required, can probably be
best achieved using temporary perimeter drainage ditches, four to five feet deep, which are graded: (1) to a positive gravity outfall away from the site; or (2) to sumps where the collected groundwater and surface water runoff can be removed by pumping.

5.2.2 Site Clearing/Stripping - Initial site preparation should include clearing any existing trees, vegetation, root systems and surficial topsoil. The clearing/striping work should be performed within and to a distance of at least five feet beyond the perimeter of the planned building areas and three feet beyond the perimeter of the proposed pavement areas. It should be anticipated that surficial topsoil will be encountered in thicknesses of up to 12-inches. The perimeter areas may then need to be graded to help direct surface water runoff away from the construction areas.

5.2.3 Site & Fill Compaction - After completing the initial site preparation, the exposed sandy soils should be compacted to densities of at least 95 percent of the Modified Proctor maximum dry density to a depth of 12 inches using a vibratory drum roller which has a minimum at-drum weight on the order of five tons and a minimum drum diameter on the order of three feet, with the exception that a lightweight vibratory drum or sled compactor having a maximum static weight on the order of 1000 pounds should be used within 50 feet of existing structures. The roller or dozer will be required to improve the density of the upper approximate two feet of loose fine sands at this site. The structural fill required to raise the site to the planned finished grades may then be placed in loose lifts not exceeding 12 inches in thickness, and should be compacted to densities as recommended above. Loose lifts should not exceed eight inches in areas of the site in which lightweight vibratory equipment is used. Structural fill is defined as a non-plastic, inorganic, granular soil containing less than 10 percent material passing the No. 200 mesh sieve (i.e. a relatively clean sand).

5.2.4 Disturbed Soil Conditions - Should the near-surface soils and/or structural fill material experience "pumping" and subsequent soil strength loss during site work construction, work upon these areas should be immediately terminated and: (1) the disturbed soils removed and backfilled with "dry" structural fill soils, (i.e. percent water content on the order of five to 10 percent) which are then compacted; or (2) the excess moisture content within the disturbed soils allowed to dissipate before recomping. Furthermore, the groundwater table should be checked and controlled as necessary to help insure proper draw-down of any high groundwater conditions that may be causing the "pumping" conditions during compaction or construction activity upon these soils.

5.2.5 Foundation Areas - After placement and compaction of all structural fill, the foundations may be excavated to their planned bearing levels using a "smoothed" bucket backhoe. All fine sandy soils present at the bearing level should be compacted to densities equal to 95% of the Modified Proctor maximum dry density. Compaction of the fine sandy bearing level soils in the small footing areas may be best achieved using lightweight, walk-behind sleds, rollers, or tampers having a minimum total weight of 100 lbs. Loose lifts of backfilled fine sandy soil in the footing excavations, if needed, should be placed in thicknesses of up to 6 inches, prior to densification with the lightweight compaction equipment.

6.0 GUIDELINE PAVEMENT DESIGN & CONSTRUCTION RECOMMENDATIONS

The subsurface conditions at this site appear favorable for use of a combination of flexible and/or rigid pavements in the parking/drive areas, provided that the recommendations outlined below are implemented. The pavement thickness recommendations and construction recommendations presented in this report are based upon our past experience on similar paving projects. Detailed flexible and rigid pavement design calculations have not been performed to verify adequacy of the recommended pavement sections since detailed traffic loading information is unavailable at this time. We request that AGES be retained to review the final pavement design, paving and drainage plans, and specifications to evaluate whether our guideline recommendations have been properly interpreted and implemented into the project design.
6.1 Guideline Pavement Design Recommendations

6.1.1 Asphalt Pavement - The recommended flexible pavement structure thicknesses for the parking and service drives are provided in the following table.

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<th>Light Duty</th>
<th>Heavy Duty</th>
</tr>
</thead>
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<tr>
<td>Asphalt Wearing Surface (In.)*</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Limerock Base Course (In.)**</td>
<td>6.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Prepared Subgrade (In.)*****</td>
<td>12.0</td>
<td>12.0</td>
</tr>
</tbody>
</table>

* Type S-1 or Superpave 9.5 Asphaltic Concrete, as defined by the Florida DOT Standard Specifications for Road and Bridge Construction Manual.
** Florida Limerock, exhibiting an LBR Value of 100, and meeting the specifications outlined in the Florida DOT manual (Section 200).
*** Stabilized and compacted subgrade should exhibit a Maximum LBR value of at least 30. Subgrade stabilization should be performed in accordance with Section 160 of the standard FDOT specifications.

6.1.2 Concrete Pavement Design Recommendations - The following rigid pavement design recommendations are based on a concrete Modulus of Elasticity of 3.0 x 10^6 psi, 28-day Modulus of Rupture of 500 psi, 28-day compressive strength of 3,000 psi, soil Modulus of Subgrade Reaction of 100 pci, and a reliability of 95% based on the Municipal Concrete Pavement Design Manual of the American Concrete Pavement Association.

Auto Parking Areas (Light Duty)

4" (min) of wire woven mesh reinforced concrete with maximum transverse joint spacings of eight feet and longitudinal joints along travel lane lines. Joint doweling should be considered at all cold joints and expansion joints.

12" Type B Stabilized Subgrade (non-plastic, inorganic granular soil containing less than 10 percent material passing the No. 200 mesh sieve and containing less than four percent organic materials) compacted to a density of at least 98 percent of the Modified Proctor maximum dry density (ASTM D 1557) and stabilized to a minimum LBR of 40.

Auto and Truck Travel Lanes (Heavy Duty)

5" (min) of unreinforced concrete with maximum transverse joint spacings of ten to 15 feet and longitudinal joints along travel lane lines. Joint doweling should be considered at all cold joints and expansion joints.

12" Type B Stabilized Subgrade (non-plastic, inorganic granular soil containing less than 10 percent material passing the No. 200 mesh sieve and containing less than four percent organic materials) compacted to a density of at least 98 percent of the Modified Proctor maximum dry density (ASTM D 1557) and stabilized to a minimum LBR of 40.

6.2 Guideline Pavement Construction Recommendations

6.2.1 Pavement Subgrade Preparation - Site preparation in the pavement areas should include: (1) demolition of conflicting structures (parking lots, sidewalks, etc), (2) clearing/stripping of surface vegetation and topsoil, (3) placement/compaction of structural backfill and fill (if any) to densities of at least 95 percent of the Modified Proctor maximum dry density. In addition, the upper one foot of sub-grade in the pavement areas should be compacted to densities of at least 98 percent of the Modified Proctor maximum dry density. Shell and/or clay additives may be required to obtain the required design LBRs.
6.2.2 Limerock Base Course Preparation (for Asphalt Pavement Option, only) - The limerock base course (for the flexible pavement areas) should be placed and compacted to densities equivalent to 98 percent of the Modified Proctor maximum dry density (ASTM D 1557). The surface of the limerock base course material should be "primed" with any of the following cutback asphalt grades: RC-70, RC-250, MC-70, or MC-250. Approximately 0.15 gallons per square yard should be applied to the base course surface. Care should be exercised to prevent over-priming of the base course surface. Prior to asphalt placement, the prime coat should be fully set and cured. The specifications governing the placement of prime coats on pavement base course surfaces and sanding is outlined in Section 300 of the Florida DOT Standard Specifications for Road and Bridge Construction (latest edition).

The primed base course should be sanded if: (1) more than one day (24 hours) will elapse prior to laying the asphalt wearing surface and excess prime is not absorbed, or (2) construction equipment will operate over the unprotected primed base course. If sanding is required, approximately 10 pounds of sand per square yard of surface (i.e., about 1/4 inch of sand) should be spread over the primed base course. The sand surface coating should contain less than 10 percent fines (i.e., material passing the No. 200 sieve) and be composed of non-plastic, inorganic, granular soil.

6.2.3 Asphalt Preparation - The placement and compaction of an asphaltic concrete wearing surface should be performed in general accordance with specifications outlined in the Florida DOT Road and Bridge Construction manual. Prior to asphalt placement, the base course should be broomed to remove any excess sand and then tacked with a bituminous binder.

6.3 Permanent Groundwater Control Measures

Groundwater control is of utmost importance in maintaining the integrity of flexible and rigid pavement structures. In areas where groundwater is anticipated to exist within 24 inches of the bottom of the flexible pavement base course or the bottom of a rigid pavement, a properly designed and constructed underdrain system will be necessary to maintain the recommended separation between the pavement base course and the groundwater level. We would be pleased to review the civil grading plans and evaluate the need for an underdrain system. If required, we can design an underdrain system for this site.

7.0 QUALITY CONTROL TESTING GUIDELINES

Prior to initiating compaction operations, we recommend that representative samples of the structural fill material and exposed in-place fine sandy soils be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and existing soils and to determine if the fill material is acceptable.

A representative number of field in-place density tests should be performed in the compacted existing soils and in each one foot lift of structural fill/backfill to confirm that the required degree of compaction has been obtained. At each test level, we recommend one density test be performed for every 5,000 square feet of building area (minimum of three locations). In-place density tests should also be performed at representative locations in the bearing level soils of the footings. We recommend that at least one density test be performed at a minimum of 25 percent of the isolated column footing bearing areas, and for every 100 linear feet of continuous footing bearing surface. In addition, in-place density tests should be performed at one location for every 10,000 square feet of pavement area (minimum of three locations).
8.0 CONSTRUCTION PLANS & SPECIFICATIONS REVIEW

We recommend that AGES be provided the opportunity to review the plans and the specifications prepared from the recommendations presented in this report. If necessary, we will suggest any modifications that may be required to verify that our recommendations have been properly interpreted and implemented. Our report has been written in a guideline recommendation format and is not appropriate for use as (or inclusion into) the specifications without being reworded in a specification type format. It is recommended that this report not be made part of the contract documents. However, it should be made available to prospective contractors for information purposes only.
DATA ATTACHMENTS

Site Location Map
Field Exploration Plan
Generalized Subsurface Profile
Key to Soil Classification
Test Boring Records
Auger Boring Records
Field Exploration Procedures
LEGEND:

- Penetration Test Boring Location (approximate)
- Auger Boring Location (approximate)

REFERENCE:

Site Plan, Dated 03/19/18, prepared by Bhide and Hall Architects, P.A.

NOTES:

The boring locations were established by AGES personnel using handheld GPS Locater Units. Boring locations as shown on this plan are approximate.
## Key to Soil Classification

**Correlation of N-Value with Relative Density & Consistency**

### Sands and Gravel

<table>
<thead>
<tr>
<th>No. of Blows, N*</th>
<th>Relative Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>Very Loose</td>
</tr>
<tr>
<td>5 - 10</td>
<td>Loose</td>
</tr>
<tr>
<td>11 - 20</td>
<td>Firm</td>
</tr>
<tr>
<td>21 - 30</td>
<td>Very Firm</td>
</tr>
<tr>
<td>31 - 50</td>
<td>Dense</td>
</tr>
<tr>
<td>OVER 50</td>
<td>Very Dense</td>
</tr>
</tbody>
</table>

### Silts and Clays

<table>
<thead>
<tr>
<th>No. of Blows, N*</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>Very Soft</td>
</tr>
<tr>
<td>3 - 4</td>
<td>Soft</td>
</tr>
<tr>
<td>5 - 8</td>
<td>Firm</td>
</tr>
<tr>
<td>9 - 15</td>
<td>Stiff</td>
</tr>
<tr>
<td>16 - 30</td>
<td>Very Stiff</td>
</tr>
<tr>
<td>31 - 50</td>
<td>Hard</td>
</tr>
<tr>
<td>OVER 50</td>
<td>Very Hard</td>
</tr>
</tbody>
</table>

## Particle Size Identification

(Uniform Soil Classification System)

<table>
<thead>
<tr>
<th>Category</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boulders</td>
<td>Diameter exceeds 12 inches</td>
</tr>
<tr>
<td>Cobbles</td>
<td>3 to 12 inches</td>
</tr>
<tr>
<td>Gravel</td>
<td>Coarse - 0.75 to 3 inches in diameter</td>
</tr>
<tr>
<td>Sand</td>
<td>Coarse - 2.0 mm to 4.76 mm diameter</td>
</tr>
<tr>
<td></td>
<td>Medium - 0.42 mm to 2.0 mm diameter</td>
</tr>
<tr>
<td>Silt and Clay</td>
<td>Less than 0.074 mm (invisible to the naked eye)</td>
</tr>
</tbody>
</table>

### Modifiers

These modifiers provide our estimate of the amount of minor constituents (sand silt or clay size particles) in the soil sample.

<table>
<thead>
<tr>
<th>Percentage of Minor Constituent</th>
<th>Modifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% to 12%</td>
<td>Slightly Silty, Slightly Clayey, Slightly Sandy</td>
</tr>
<tr>
<td>12% to 30%</td>
<td>Silty, Clayey, Sandy</td>
</tr>
<tr>
<td>30% to 50%</td>
<td>Very Silty, Very Clayey, Very Sandy</td>
</tr>
</tbody>
</table>

These modifiers provide our estimate of the amount of other components in the soil sample.

<table>
<thead>
<tr>
<th>Approximate Content of Other Components (Shell, Gravel, Etc.)</th>
<th>Modifiers</th>
<th>Approximate Content of Organic Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% to 5%</td>
<td>Trace</td>
<td>1% to 2%</td>
</tr>
<tr>
<td>5% to 12%</td>
<td>Few</td>
<td>2% to 4%</td>
</tr>
<tr>
<td>12% to 30%</td>
<td>Some</td>
<td>4% to 8%</td>
</tr>
<tr>
<td>30% to 50%</td>
<td>Many</td>
<td>&gt;8%</td>
</tr>
</tbody>
</table>
### Test Boring Record

**Project:** Pegasus Technology - Office and Parking Lot  
**Boring Location:** See Field Exploration Plan

<table>
<thead>
<tr>
<th>Ground Elevation</th>
<th>Datum</th>
<th>Groundwater Depth</th>
<th>Time:</th>
<th>Datum</th>
<th>Boring Begun</th>
<th>Boring Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>NA</td>
<td>3.5'</td>
<td>Drilling</td>
<td>Date:</td>
<td>03/28/18</td>
<td>03/28/18</td>
</tr>
</tbody>
</table>

**Lat/Long:** N29.97154° / W81.65405°

**Driller:** R. Epps, N. & A. Wheeler

**Soil Inspected By:** B. McMahan

**Date:** 03/28/18

**Boring Begun:** 03/28/18

**Boring Completed:** 03/28/18

**Sheet:** 1 of 1

### Standard Penetration Test

<table>
<thead>
<tr>
<th>ELEV. (FT)</th>
<th>DEPTH (FT)</th>
<th>MATERIAL DESCRIPTION (USCS CLASSIFICATION)</th>
<th>COUNT NO.</th>
<th>BLOWS PER 6-IN. INTERVAL</th>
<th>BLOW COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>LOOSE Dark Brown Slightly Silty Fine SAND with Some Rocks (SP-SM)</td>
<td>1</td>
<td>3 3 4 6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FIRM to LOOSE Brown Silty Fine SAND with Some Shell Fragments (SM)</td>
<td>2</td>
<td>5 5 6 7</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>LOOSE Grey Brown Silty Fine SAND with Some Shell Fragments (SM)</td>
<td>3</td>
<td>5 3 4 3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VERY LOOSE Grey Very Silty Fine SAND with Many Shell Fragments (SM)</td>
<td>4</td>
<td>5 4 3 3</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>VERY STIFF Grey Sandy CLAY (CL)</td>
<td>5</td>
<td>2 1=12&quot;</td>
<td>1=12&quot;</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>FIRM Grey Very Silty Fine SAND (SM)</td>
<td>6</td>
<td>7 8 9</td>
<td>17</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>STIFF Dark Grey CLAY (CL)</td>
<td>7</td>
<td>6 7 6</td>
<td>13</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>STIFF Grey CLAY (CL)</td>
<td>8</td>
<td>3 4 5</td>
<td>9</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>STIFF Grey CLAY (CL)</td>
<td>9</td>
<td>7 6 7</td>
<td>13</td>
</tr>
</tbody>
</table>

**BORING TERMINATED**

**REMARKS:**

BORING & SAMPLING, ASTM D1586/CORE DRILLING, ASTM D213

BLOW COUNT IS THE NUMBER OF BLOWS OF A 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
# TEST BORING RECORD

**JOB NO:** J18039  
**BORING NO:** B2  
**Sheet 1 of 1**

**Project:** Pegasus Technology - Office and Parking Lot  
**Boring Location:** (See Field Exploration Plan)

<table>
<thead>
<tr>
<th>Ground Elevation</th>
<th>Datum</th>
<th>NA</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater Depth</td>
<td>3.0'</td>
<td>Time:</td>
<td>Drilling Date: 03/26/18</td>
</tr>
</tbody>
</table>

**Driller:** R. Epps  
**Date:** 03/26/18  
**Soil Inspected By:** B. McMahan

**Datum**  
**Date:** 03/26/18  
**Boring Completed:** 03/26/18

**Lat/Long:** N29.97124° / W81.65388°

---

## STANDARD PENETRATION TEST

<table>
<thead>
<tr>
<th>ELEV. (FT)</th>
<th>DEPTH (FT)</th>
<th>MATERIAL DESCRIPTION (USCS CLASSIFICATION)</th>
<th>SAMPLE NO</th>
<th>BLOW COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>LOOSE Light Brown Slightly Silty Fine SAND with Some Shell Fragments (SP-SM)</td>
<td>1</td>
<td>3 4 5 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>8 6 4 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>3 3 3 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOOSE to VERY LOOSE Grey Slightly Silty Fine SAND (SP-SM)</td>
<td>4</td>
<td>2 3 2 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>2 1 2 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>3 2 2 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOFT to FIRM Grey Silty CLAY with Trace Shell (CL)</td>
<td>7</td>
<td>3 3 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>2 2 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STIFF to VERY STIFF Green Grey Silty CLAY (CL)</td>
<td>9</td>
<td>6 8 10</td>
</tr>
</tbody>
</table>

**BORING TERMINATED**

**REMARKS:**

BORING & SAMPLING, ASTM D1586/CORE DRILLING, ASTM D213  
BLOW COUNT IS THE NUMBER OF BLOWS OF A 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.
AUGER BORING RECORDS
Pegasus Technology - Office and Parking Lot
Green Cove Springs, Florida
AGES Job No. J18039; Report No. 001

Date Performed: 03/28/18                                   Performed By: N. and A. Wheeler

<table>
<thead>
<tr>
<th>Auger ID</th>
<th>Lat/Long</th>
<th>Depth (Feet)(^a)</th>
<th>SOIL DESCRIPTION (AASHTO CLASSIFICATION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>N 30.97182' W 81.65350'</td>
<td>0.0 - 1.0</td>
<td>Root Mat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.0 - 3.0</td>
<td>Grey Brown Silty Fine SAND (A-2-4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0 - 4.0</td>
<td>Grey Brown Silty Fine SAND with Trace Shell Fragments (A-2-4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.0 - 7.0</td>
<td>Dark Grey Silty Fine SAND with Clay Layers (A-2-4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.0 - 15.0</td>
<td>Grey Silty Fine SAND with Some Shells (A-2-4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.B.T.(^b)</td>
<td>GWL(^c)= 4.0 Feet</td>
</tr>
</tbody>
</table>

\(^a\) - Depth measured below ground surface existing at boring location at time of drilling

\(^b\) - Auger Boring Terminated (A.B.T.)

\(^c\) - Groundwater Level (GWL) depth below existing ground surface, recorded at time of drilling, unless otherwise noted

J18039aug.wpd
FIELD EXPLORATION PROCEDURES

Penetration Borings

The penetration borings were made in general accordance with ASTM D 1586-67, "Penetration Test and Split-Barrel Sampling of Soils". The borings were advanced to the water table by augering and, after encountering the groundwater table, further advanced by rotary drilling techniques using a circulating bentonite fluid for borehole flushing and stability. At two-foot intervals within the upper 10 feet and at five-foot intervals thereafter, the drilling tools were removed from the borehole and a split-barrel sampler inserted to the borehole bottom and driven 18 inches into the material using a 140-pound SPT hammer falling, on the average, 30 inches per hammer blow. The number of hammer blows for the final 12 inches of penetration is termed the "penetration resistance, blow count, or N-value". This value is an index to several in-place geotechnical properties of the material tested, such as relative density and Young’s Modulus.

After driving the sampler 18 inches (or less, if in hard rock or rock-like material) at each test interval, the sampler was retrieved from the borehole and a representative sample of the material within the split-barrel was placed in a glass jar and sealed. After completing the drilling operations, the samples for the borings were transported to our laboratory where they were examined by our engineer in order to verify the driller's field classifications. The samples will be kept in our laboratory for a period of two months after submittal of formal written report, unless otherwise directed by the client.

Auger Borings

The auger borings were drilled in general accordance with ASTM D 1452-80 ("Soil Investigation and Sampling by Auger Borings"). Representative samples of the soils brought to the ground surface by the augering process were placed in glass jars, sealed, and transported to our laboratory where they were examined by a geotechnical engineer to verify the driller’s field classification.
SECTION 02 41 19
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Selective Site Demolition:
   1. Demolition of designated site improvements including paving, curbing, site walls, and utility structures for areas designated as a part of construction.
      Reference Civil drawings for additional information.
   2. Demolition of below-grade foundations and site improvements to a depth to avoid conflict with new construction or site work.
   3. Removal of hollow items or items which could collapse.
   4. Salvage of designated items.
   5. Protection of site work and adjacent structures, INCLUDING EXISTING GROUND WATER MONITORING WELL, EXISTING ELECTRICAL TRANSFORMERS AND ASSOCIATED UTILITIES, AND EXISTING POWER POLES AND INFRASTRUCTURE FOR EXISTING BUILDINGS ON SITE.
   6. Disconnection, capping, and removal of utilities.
   7. Pollution control during building demolition, including noise control.
   8. Removal and legal disposal of materials.
   9. Designated site improvements and adjacent construction.
   10. Interruption, capping or removal of utilities as applicable.
   11. Coordinate with Civil drawings for any trees that may require protections.
   12. Coordinate with OWNER/LANDLORD provided site survey for additional information on existing utilities.

B. Hazardous Materials:
   1. Not present or known

1.2 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Schedule: Submit for approval selective site demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

1.3 QUALITY ASSURANCE
A. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers only.

1.4 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to starting work of this section. Coordinate meeting with owner and or owner’s representative.

1.5 SEQUENCING

A. Immediate areas of work will not be occupied during selective demolition. The public may occupy adjacent areas.

B. No responsibility for site areas to be demolished will be assumed by the Owner.

C. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 EXECUTION

2.1 SCHEDULE

A. Items for Protection During Demolition and Construction: (The following are samples only)
   1. Designated site improvements, trees, and plantings
   2. Utilities and existing below ground or above ground services to remain

B. Utilities Requiring Interruption, Capping, or Removal: Coordinate interruptions with Owner minimum of 72 hrs in advance of interruption.
   1. Electric
   2. Water
   3. Sewerage
   4. Cable television

END OF SECTION
SECTION 03000

CONCRETE TESTING

PART 1 GENERAL

1.1 SUMMARY

A. The General Requirements, Section 01000, are made part of this section as fully repeated herein.

B. Section includes the following:
   1. Field sampling and testing of fresh, structural concrete.
   2. Laboratory testing of concrete specimens

C. Related Work Specified Elsewhere:
   1. Cast-in-place concrete: Section 03300 – Cast-in-Place Concrete

1.2 TESTING AGENCY

A. As selected by the Owner.

B. Request for testing services: Scheduled by the Contractor

C. Qualifications:
   1. Equipped and staffed in accordance with appropriate sections of ASTM E 329.
   2. Participation in periodic inspection program of its procedures and equipment by recognized national/state authority or trade association.
   3. Upon request by Architect/Engineer, provide latest inspection report.

D. Duties:
   1. Perform all work specified herein.
   2. Perform sampling and testing in accordance with specified ASTM test procedures using calibrated testing equipment.
   3. Issue test reports as directed by Architect/Engineer.
      a. Communicate nonconforming field tests to Job Superintendent prior to leaving job site.
      b. Communicate nonconforming laboratory tests to Contractor and Architect/Engineer within 24 hours.
   4. The Testing Agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of contract documents, nor to approve or accept any portion of work.
PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 SAMPLING

A. Frequency:
   1. Sample each class of structural concrete not less than once a day, nor less than once for each 100 cubic yards, nor less than once for each 5,000 square feet of slab area.
   2. Contractor is responsible for scheduling required testing services at least 15 hours in advance.

B. Method:
   1. Sample concrete in accordance with ASTM C 172 with exception that composite sample is not required; obtain one sample from middle half of load during discharge.
   2. Sample pumped concrete at hose discharge.

3.2 FIELD TESTING

A. Slump Test: Perform slump test in accordance with ASTM C 143.

B. Temperature: Measure and record concrete and air temperature.

C. Test Cylinders:
   1. Mold 3 test cylinders in accordance with ASTM C 31.
   2. Protect cylinders from moisture loss by providing plastic cylinder caps or "baggies"
   3. Store cylinders at job site for initial 16 to 24 hours in area protected from damage and extreme temperature.
   4. Transport to testing laboratory at appropriate time for stripping and final curing.

D. Air Content Test: Determine air content in accordance with ASTM C 173 or ASTM C 231.

3.3 LABORATORY TESTING

A. Compressive Strength:
   1. In accordance with ASTM C 39.
   2. Test 1 cylinder at 7 days and 2 cylinders at 28 days.

B. Flexural Strength Tests:
   1. Required only if concrete mix submittal does not have flexural strength data.
   2. In accordance with ASTM C 78.
3. Test 1 beam at 7 days and 2 at 28 days.

3.4 REPORTING

A. For each sample of concrete tested, complete test report indicating the following:
   1. Sample date
   2. Mix designation.
   3. Concrete supplier.
   4. Time batched.
   5. Time sampled.
   6. Air and mix temperatures.
   7. Location of concrete placement.
   8. Load size.
   9. Amount of water added at job site.
   10. Slump test.
   11. Air content (air entrained concrete only)
   12. Other field test results.
   13. Laboratory test results.
   14. All other information required by ASTM C 39.

B. Sequentially number test reports for easy identification.

C. Prepare and issue typed test reports not later than one working day following laboratory testing.

D. Distribute reports as directed by Contractor.

END OF SECTION
SECTION 03 05 13
CONCRETE WATER VAPOR REDUCING ADMIXTURE

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

A. The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

1.2 SECTION INCLUDES

A. Water vapor reducing admixture (WVRA).

1.3 RELATED SECTIONS

A. Division 09
   1. Section 09 30 00 TILE
   2. Section 09 68 13 Carpet Tile
   3. Section 09 66 00 Vinyl Composition Tile

1.4 REFERENCES

A. ASTM International (ASTM):
   1. ASTM C494-Standard Specification for Chemical Admixtures for Concrete
   4. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
   5. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 33 00

B. Product Data: Submit for each product specified.

C. Material Certificates: For each material specified, signed by the manufacturer, certifying that materials meet or exceed specified requirements.
D. Material Test Reports: For each material specified, from a qualified testing agency, indicating compliance with requirements.

E. Warranty: Submit sample special warranty specified in this section.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm with not less than [10] years experience in manufacturing concrete water vapor reducing admixture of the type specified, capable of providing test reports indicating compliance with specified performance requirements, and able to provide on-site technical representation. Selected product must have ASTM C494 Type S Concrete Admixture approval from and independent AASHTO approved laboratory.

B. Preinstallation Conference: Conduct conference at [project site] with Contractor, concrete water vapor reducing admixture manufacturer or authorized representative, concrete supplier, and concrete finisher to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements. Concrete suppliers and finishers must be certified.

C. Concrete Supplier Qualifications: The concrete supplier must be Certified by the WVRA manufacturer prior to bid, Certificates issued by the manufacturer must be submitted with bid documents.

D. Concrete Finishers Qualifications: The concrete finisher must be Certified by the WVRA manufacturer prior to bid, Certificates issued by the manufacturer must be submitted with bid documents.

E. Source Limitations: Obtain each type of concrete water vapor reducing admixture from same manufacturer.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original, undamaged containers with identification labels intact.

B. Comply with manufacturer's written instructions for handling prior to adding to concrete batch.

C. Comply with manufacturer's written instructions for storage of WVRA.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard form warranty document executed by an authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights the Owner may have under provisions of the Contract Documents.

1. Warranty Period: [10] [Insert number] years from date of Substantial Completion.
2. Warranty covers performance of concrete water vapor reducing admixture as well as labor and material for flooring replacement in accordance with manufacturer’s current standards and applicable test results performed in accordance with ASTM D5084.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The concrete water vapor reducing admixture is based on Vapor Lock 20/20 manufactured by Specialty Products Group (SPG), 6254 Skyway Road, PO Box 915, Smithville ON, LOR 2A0, Canada; telephone: 877-957-4626; fax: 905-527-0606; Email: info@spggogreen.com; Web Site: http://spggogreen.com.

B. Substitutions will be considered, subject to compliance with requirements of this section, under provisions of Section 01 60 00.

2.2 MATERIALS

A. Concrete Water Vapor Reducing Admixture (WVRA): A complex admixture for cementitious materials, free of volatile organic compounds (VOC), designed to naturally chemically react with pre-existing elements within the cementitious material to eliminate the route of moisture vapor emission by integrally and permanently closing the capillary system in the concrete with the following characteristics:

1. Waterproofing: Minimum $1 \times 10^{-8}$ cm/s in accordance with ASTM D5084.
2. Toxicity: None.
3. Flammability: None.
5. Acid Resistance: Excellent.
6. Hazardous Vapors: None.
7. Capillary Break: Calcium Silicate Hydrate.
8. Installation: All cementitious materials.
9. VOC Levels: Zero (0).
10. Inhibit mold and bacteria growth by eliminating moisture vapor emission.

2.3 RELATED MATERIALS

A. Sheet Vapor Retarder: ASTM E1745, Class A, except with a permeance of less than 0.01 perms. Minimum thickness of material equal to 15 mils. Include manufacturer's recommended adhesive or pressure-sensitive tape.
PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with requirements of Section 03300 for concrete mixing, placement, and curing.

B. Sheet Vapor Retarders for Slabs on Grade: Place, protect, and repair sheet vapor retarder under provisions of ASTM E1643 and manufacturer’s written instructions.

C. Add water vapor reducing admixture to concrete in accordance with supplier’s written instructions.

D. Obtain approval of the WVRA supplier for the mix design. WVRA supplier will provide specific testing and warranty information in accordance with application requirements.

E. Notify WVRA supplier a minimum of 10 days prior to the placement of the first batch of treated concrete.

F. Dispense WVRA in compliance with mix design and supplier’s recommendations.

G. The use of other admixtures with WVRA in the same concrete batch is acceptable when included in the approved mix design.

3.2 CURING

A. Curing is typically not necessary for WVRA treated slabs except in hot, cold, rainy or windy conditions. Cure finished concrete by placing 2-mil thick polyethylene plastic on top of the concrete slab. Consult with manufacturer for additional recommendations in accordance with application requirements.

3.3 FIELD QUALITY CONTROL

A. Testing: Retain a qualified testing agency to perform tests and to submit reports.

B. Concrete Tests:
   1. Maintain four (4) inch concrete cylinders for a minimum of one (1) year from date of Substantial Completion.
   2. Test cylinders as required by warranty or in accordance with supplier’s recommendations.
   3. Test cylinders to demonstrate that the minimum waterproofing is $6 \times 10^{-8}$ cm/s in accordance with ASTM D5084.
   4. Frequency: Test one (1) cylinder per project with the cost borne by the admixture supplier.
conditions shall be 70 F and 50% Relative Humidity and the moisture rise shall be no more than 0.5%. Consult with manufacturer for testing protocols.

6. Bond Testing: Warranted moisture sensitive coatings and adhesives must be installed by each subcontractor in coordination with WVRA manufacturer. Bond test results will be evaluated by WVRA manufacturer as part of the Warranty process.

7. Report test results in writing to Architect, WVRA supplier, and Contractor within 48 hours of testing. Test reports shall contain project name and number, date of WVRA application, name of testing agency, location of concrete batch in Work, concrete mix proportions and materials, and waterproofing capability.

8. Additional Tests: Testing agency shall make additional tests of concrete when test results indicate that water vapor reducing admixture capability requirements have not been met, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders or by other methods as directed by Architect.

9. Additional testing, at Contractor’s expense, will be performed to determine compliance of replaced or additional work with specified requirements.

10. Correct deficiencies in the Work that test reports indicate do not comply with the Contract Documents.

3.4 REPAIRS

A. Repair concrete slabs in accordance with other Division 03 sections and as recommended in manufacturer’s written instructions.

END OF SECTION
SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes the following:
   2. Forms, braces, and appurtenances.
   3. Reinforcing Bars, welded wire fabric, and accessories.
   4. Control, expansion and contraction joint devices.

B. Installed But Specified Elsewhere:
   1. Built-in anchors, inserts, and bolts for connection of other materials.
   2. Built-in anchors, inserts, and bolts for equipment anchorage.
   3. Pipe sleeves and supports.

C. Related Sections:
   1. Section 02320 – Excavation: Earthwork, Fill and Backfill.
   2. Section 02630 – Sanitary sewer manholes: Sanitary Sewer Piping
   3. Section 02630 – Storm Drainage: Piping Drainage Structures
   4. Section 02750 – Portland Cement Concrete Paving: Exterior concrete paving, concrete curbs, gutters, sidewalks
   5. Section 03300 – Concrete testing
   6. Section 03390 – Concrete Curing
   7. Section 07900 – Joint Sealers

D. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 305 - Hot Weather Concreting.
   4. ACI 318 - Building Code Requirements for Structural Concrete.

E. American Society for Testing and Materials:
   1. ASTM A 185 – Steel Welded Wire, Fabric, Plain for concrete reinforcement
   2. ASTM A615 – Deformed and Plain Billet Steel Bars for concrete reinforcement
   7. ASTM C494 - Chemical Admixtures for Concrete
   8. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

1.2 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Concrete Mix Designs:
   1. Submit by concrete supplier in accordance with ASTM C 94, ACI 302.1 or ACI 318.
   2. Prepare mix design for each strength of concrete and each mix variation specified herein.
   3. Clearly indicate all mix proportions and yields for each mix design.
   4. Submit separate mix designs when admixtures are required for the following:
      a. Hot and cold weather work.
      b. Air entrained concrete work.
   5. Admixtures:
      a. Include specific designation of all admixtures.
      b. List product name, type, and dosage.
   6. Include the following test data:
      a. Slump.
      b. Air Content.
      c. Compressive strength test results performance record of proposed mixes.
      d. Aggregate gradation, fineness modulus and specific gravity of fine and coarse aggregates.
      e. Specific gravity of cement and pozzolans used in mix.

C. At discretion of Architect/Engineer, mix design will be considered based on recent satisfactory field experience and test results of similar mixes.

D. Material Certificates:
   1. Cement Mill certificates: Include alkalis content.
   2. Fly Ash or other Pozzolan Mill Certificate: Submit as applicable to project.
   3. Reinforcing Steel Mill Certificates: Available for review by Architect/Engineer upon request.
   4. Aggregates: Written statement that aggregates meet ASTM C 33 or State of Florida Department of Transportation (DOT) specifications.
E. Shop Drawings:
   1. Submit shop drawings for reinforcing steel.
   2. Include placement drawings, bending diagrams, and grade of reinforcing.

F. Manufacturer’s Literature: Manufacturer’s descriptive data for the following:
   1. Curing compounds (include rate of application).
   2. Sealing compounds (include rate of application).
   3. Joint filler material.

1.3 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Closeout procedures.

B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301.

B. Maintain one copy copies of each document on site.

C. Acquire cement and aggregate from one source for Work.

D. Conform to ACI 305 when concreting during hot weather.

E. Conform to ACI 306.1 when concreting during cold weather.

F. Criteria: Comply with American Concrete Institute (ACI) publications ACI 301, Structural Concrete for Buildings and ACI 318, Building Code Requirements for Structural Concrete unless specified otherwise.

G. Inspection and Testing:
   1. General: All concrete work will be subject to inspection and testing.
   2. Notify testing agency at least 15 hours in advance of time and place of each concrete placement requiring testing.
   3. Owner will pay for costs of testing.

1.5 COORDINATION

A. Section 01300 – Administrative requirements: Coordination and project conditions

B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.
PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Ready mixed, conforming to ASTM C 94.
B. Cement: ASTM C150, Type I - normal, low alkali, Portland type.
C. Cementitious Admixtures:
   1. The use of more than one cementitious admixture is not allowed.
   2. Fly Ash:
      a. ASTM C 618, Class F.
      b. Not to exceed 20 percent of cementitious material.
      c. Not to be used if temperature at time of pour will be below 50 degrees F or if high early strength is used.
D. Aggregates:
   1. Normal Weight:
      a. Unless otherwise specified or shown on drawings, conform to ASTM C 33 of Department of Transportation (DOT) specifications of the State of Florida.

2.2 ADMIXTURES

A. Use in accordance with ASTM C 94, and strict conformance with manufacturer's instructions.
B. Air Entrainment: ASTM C260 and compatible with other ingredients.
C. Chemical: ASTM C494 Type A - Water Reducing or Type D - Water Reducing and Retarding
D. Use no other admixtures such as accelerators, including calcium chloride, or pumping aids without written approval of Architect/Engineer.
E. Water: Clean and free from oils, acids, salts, chlorides and other deleterious substances.

2.3 CONCRETE REQUIREMENTS

A. Schedule:
   1. Concrete Paving – see Portland Cement Concrete Paving, Section 02750.
   2. All Other (unless otherwise noted or specified)
      a. Compressive Strength (28 day) – 3,000 psi as shown on drawings.
      b. Slump (inches) – 4 plus/minus 1
      c. Air Content (percent) -5 plus/minus 1
B. Strength in accordance with ACI standards will be criteria for acceptance of concrete.

2.4 FORMWORK

A. General: Conform with ACI 347; wood, metal structure hardboard, or other suitable material that will produce required surface finish.

B. Ties:
   1. Metal, removable type or snap ties.
   2. Wire ties will not be permitted where concrete remains exposed to view.

C. Tolerances: Conform with all applicable suggested tolerances of ACI 347.

2.5 REINFORCING

A. Bars: Deformed billet conforming to ASTM A 615, Grade 60, unless otherwise shown on drawings.


C. Bar Supports:
   1. In Contact with Exposed Concrete Surfaces: Plastic protected.
   2. On Ground: Concrete brick or galvanized chair type with plate.
   3. All other locations: Plain wire.

2.6 CURING MATERIALS

A. Acrylic based, meeting requirements of ASTM C 309, containing minimum of 14 percent solids, and compatible with subsequent floor finishes such as resilient flooring.

2.7 SEALING MATERIALS

A. Acrylic based, meeting requirements of ASTM C 309, containing minimum of 14 percent solids, and compatible with subsequent floor finishes such as resilient flooring.

2.8 NONSHRINK GROUT

A. Type: Grade A, premixed, non-shrink, natural-aggregate grout.

B. Conform with ASTM C 1107.

C. Acceptable:
   1. Euclid: Chemical Co., Euco N-S.
   2. Type: Polyvinyl chloride
   3. Mater Builders, Masterflow 713
   4. Substitutions: Items of same function and performance by other manufacturers are acceptable as approved by Architect/Engineer.
2.9  JOINT FILLER

A.  Typical:
  1.  Two component, 100 percent solids polymer type industrial floor joint filler.
  3.  Elongation:  Minimum 150 percent.
  4.  Acceptable:
      b.  Versa Flex, SL/75 (Full Depth)
      c.  Substitutions:  Items of same function and performance by other manufacturers are acceptable as approved by the Architect/Engineer.

PART 3  EXECUTION

3.1  EXAMINATION

A.  Perform all work under personal and constant supervision of competent superintendent or foreman.
B.  Concrete Testing:  See Section 03000, Concrete Testing.
C.  Layout work to minimize number of construction joints.
D.  Properly locate and install all sleeves, inserts and similar items.
E.  Verify requirements for concrete cover over reinforcement.
F.  Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2  FORMWORK

A.  Conform to ACI 347.
  1.  Design and build to conform to shape, form line and grade required.
  2.  Adequate rigidity and strength to prevent deformation under load.
  3.  Tight joints to prevent leakage.
  4.  Fit forms placed for successive pours continuous surfaces to accurate alignment to assure smooth continuous completed surface.
  5.  Provide temporary openings in formwork for concrete placement.
  6.  Provide 3/8 inch chamfer strips at all exposed corners of beams, columns and similar surfaces unless specifically noted otherwise on drawings.

B.  Earth Forms:  Where stability and firmness of soil permit, concrete for footings may be placed in excavation without additional formwork.
C. Set in or attach all embedded pipes, inserts, and other metal objects as shown on drawings or specified.

D. Form Coating:
   1. Coat forms or exposed surfaces with form oil prior to placing reinforcing.
   2. Remove surplus oil.

3.3 REINFORCEMENT

A. Fabrications: In accordance with ACI 315.

B. Bar placement: In accordance with ACI 315.
   1. Concrete cover: As shown on drawings.
   2. Place reinforcing in accordance with approved shop drawings.
   3. Provide corner bars at all corner conditions.
   4. Do not weld reinforcing or other items to reinforcing.
   5. Do not heat, bend, or cut bars without approval of Architect/Engineer.

C. Adjustment of Reinforcing:
   1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduit, or embedded items.
   2. Do not move bars beyond allowable tolerances specified in ACI 318 without approval of Architect/Engineer.

D. Wire Fabric: Lap adjoining pieces 8 inches minimum.

3.4 ACCESSORIES

A. Dowels:
   1. Maintain alignment.
   2. Do not bend dowels after placement of concrete.
   3. Use basket or other support means where dowels are required at contraction (saw cut) joints.
   4. Grease dowels full length.

B. Setting Anchor Bolts:
   1. Install in accordance with approved anchor bolt setting shop drawings.
   2. Use templates to insure accurate placement of bolts and secure in place to prevent movement during concrete placement.

C. Install 10 mil vapor retarder under interior slabs on grade in accordance with ASTM E1745. Lap joints minimum 6 inches (150 mm) and seal watertight by taping edges and ends.
D. Repair vapor barrier damaged during placement of concrete reinforcing. Repair with vapor barrier material; lap over damaged areas minimum 6 inches (150 mm) and seal watertight.

3.5 CONCRETE

A. Preparation:
   1. Remove excess water, debris and foreign matter from formwork and/or excavation prior to placing concrete.
   2. Insure that subgrade is moist prior to concrete placement where polyethylene film is not used.

B. Placing
   1. Monitor slump of concrete loads and be prepared, with appropriate equipment, to perform slump tests of individual loads which appear to be outside slump limits specified herein.
      a. Excessive slump is cause for rejection of concrete.
      b. Do not retamper or use concrete which has begun to set.
   2. Use mechanical vibrating equipment for consolidation to eliminate air bubbles or stone pockets which may cause honeycombing, pitting, or planes of weakness.
   3. Vibrate concrete minimum amount required for consolidation.
      a. Do not allow consolidation to segregate ingredients.
      b. Do not use vibrating equipment to move concrete horizontally in forms.
   4. Use concrete trunk or tremie when excessive free fall could cause segregation of ingredients.
   5. Maximum Free Fall: Five feet.

C. Construction Joints: Locate construction joints as shown.

D. Joint Filler:
   1. Joint Width: In accordance with manufacturer’s instructions.
   2. Clean joints thoroughly removing all curing material.
   3. Fill joint full depth with joint filler.
   4. Fill all construction joints and contraction (saw cut) joints with polymer joint filler.
   5. Fill joints 120 days (minimum) after concrete is placed, in accordance with manufacturer’s instructions unless otherwise approved by Architect/Engineer.

E. Form Removal:
   1. Remove in such manner as to assure complete safety of structure and prevent damage to concrete.
   2. Do not remove forms supporting structural concrete until has reached following percentages of its 28 day compressive strength or Architect/Engineer gives specific written approval:
      a. Vertical surfaces 40 percent
b. Horizontal surfaces (beams and slabs): To be determined by structural engineer.

F. Repair of Defective Areas:
1. Patch all honeycombs, voids, stone pockets and tie holes as soon as practicable after form removal.
2. Chip away defective area to a depth of not less than one inch with edges at tight angles to surface.
3. Wet area to be patched including adjacent surrounding area approximately 6 inches wide.
4. Patch with cement grout of same sand-cement ratio and material source concrete.
5. Any other structural repair method and products require approval of Architect/Engineer.

G. Finishes –Floors and Other Wearing Surfaces:
1. General:
   a. For floors in which drains occur, exercise special care to slope floors to drain.
   b. Screed all slabs carefully to grades shown on drawings.
   c. Do not work surface until ready for floating.
2. Screed: Vibratory types and arranged not to interfere with top of steel slab.
3. Float Finish:
   a. Float surface on disappearance of water sheen.
   b. Do not dust on dry sand or cement.
   c. Lightly tool all edges of construction joints.
   d. Hand float areas inaccessible to power float.
4. Trowel Finish:
   a. Conventional Straightened:
      1) Trowel surface to smooth, dense finish free of trowel marks.
      2) Flatness/Levelness:
         a) Specified Overall Value: Ff 20/Fl 15.
         b) Minimum Local Values: Ff 15/Fl10.
5. Broom Finish: Float finish and brush surface at right angles to traffic with soft bristled brush.

H. Schedule:
1. Trowel Finish:
   a. Conventional Straightened: All surfaces unless otherwise noted.
   b. Flat: Industrial floors.
2. Broom Finish:
   a. Sidewalk and other exterior surfaces subject to pedestrian traffic.
   b. Ramps

I. Contraction (Control) Joints:
1. Locate as shown on drawings.
2. Cut after concrete has set enough to prevent raveling of edges, but within 8 hours of placement.

J. Curing:
1. General: Begin curing all concrete as soon as practicable after placing and finishing concrete.
2. Flatwork: Cure by one of the following:
   a. Moist Curing:
      1) Keep concrete moist and above 50 degrees by use of saturated covering with ponding or spraying, waterproof paper or polyethylene film.
      2) Lap joints 3 inches and seal.
      3) Continue moist curing for a minimum period of 7 days.
   b. Membrane Curing Compound:
      1) Apply liquid membrane curing compound immediately after final finishing.
      2) Apply curing compound in accordance with manufacturer’s recommendations and approved submittals.

3.6 FLOOR SEALER
A. After final clean up apply floor sealer to all exposed areas.
B. Apply in accordance with manufacturer’s instructions.
C. Coordinate with Architectural finishes specified.

3.7 STRUCTURAL GROUTING
A. Install non-shrink grout under all steel base plates.

3.8 PROTECTION AND CLEAN-UP
A. Protection: During curing period protect concrete from damaging mechanical disturbances, water flow, loading, shock and vibration.
B. Clean-Up: Remove all unused material, debris and equipment from site upon completion of work

END OF SECTION
SECTION 03390
CONCRETE CURING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes initial and final curing of horizontal and vertical concrete surfaces.

B. Related Sections:
   1. Section 03300 - Cast-In-Place Concrete.

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.
   3. ACI 308 - Standard Practice for Curing Concrete.

B. American Society for Testing and Materials:
   3. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on curing compounds and moisture-retaining sheet, including compatibilities, and limitations.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301 and ACI 302.1.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.1 MATERIALS

A. Curing Materials:
1. Acrylic based, meeting requirements of ASTM C 309, containing minimum of 14 percent solids, and compatible with subsequent floor finishes such as resilient flooring.

B. Moisture-Retaining Sheet: ASTM C 171.
   1. Curing paper, regular.
   2. Polyethylene film, clear, minimum nominal thickness of 0.0040.
   3. White-burlap-polyethylene sheet, weighing not less than 10 oz/per linear yd., 40 inches wide.

C. Polyethylene Film: ASTM D 2103, 4 mil thick, clear.

D. Water: Potable, not detrimental to concrete.

PART 3 EXECUTION

3.1 EXAMINATION
   A. Verify substrate surfaces are ready to be cured.

3.2 EXECUTION – HORIZONTAL SURFACES
   A. Cure floor surfaces in accordance with ACI 308R-16.
   B. Spraying: Spray water over floor slab areas and maintain wet for 7 days.
   C. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges; maintain in place for not less than 7 days.
   D. Membrane Curing Compound: Apply curing compound in accordance with manufacturer’s instructions in two coats, with second coat applied at right angles to first.

3.3 EXECUTION – VERTICAL SURFACES
   A. Cure surfaces in accordance with ACI 308.
   B. Spraying: Spray water over surfaces and maintain wet for 7 days.
   C. Membrane Curing Compound: Apply curing compound in accordance with manufacturer’s instructions in two coats, with second coat applied at right angles to first.

3.4 PROTECTION OF FINISHED WORK
   A. Do not permit traffic over unprotected floor surface.
B. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

END OF SECTION
SECTION 04 09 00
MASSORY ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Masonry accessories including the following:
      (Block-Flash™)

1.2 RELATED SECTIONS

A. Section 04 20 00 – Unit Masonry Assemblies

B. Section 07 21 19 – Foamed in place insulation.

C. Section 07 92 00 – Sealants and Caulking

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage, handling requirements and recommendations.

C. Verification Samples: For each Mortar-Net Weep-Vent specified, two samples representing actual product, color, and configuration.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 2 years experience with similar masonry installations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer’s unopened packaging until ready for installation.

B. Protect products from exposure to direct sunlight.
PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Mortar Net Solutions; 326 Melton Rd., Burns Harbor, IN 46304. Tel: (800) 664-6638. Fax: (219) 787-5088. Email: sfechino@mortarnet.com. Web: www.mortarnet.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

A. Single-Wythe Concrete Masonry Unit Drainage System: BlockFlash™
   1. Install CMU cell flashing pans with built in adjoining bridge made from recycled polypropylene with chemical stabilizers that prevent UV degradation. Flashing pans have a sloped design to direct moisture to the integrated weep spout. Designed to be built into mortar bed joints to expel moisture (unimpeded by mortar droppings) to the exterior of CMU walls. Drainage Mats and Insect Guards shall be included.

   Product: Subject to compliance with requirements, provide “BlockFlash™” as manufactured by Mortar Net Solutions™.

   Manufacturer
   Mortar Net Solutions™
   326 Melton Road, Burns Harbor, IN 46304
   Telephone: (800) 664-6638
   Fax: (219) 787-5088
   Email: info@mortarnet.com
   Website: www.MortarNet.com

B. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.3 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from [neoprene] [urethane] [or] [PVC].

B. Preformed Control-Joint Gaskets: Made from [styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805] [or] [PVC, complying with ASTM D 2287, Type PVC-65406] and designed to fit
standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D 226/D 226M, Type I (No. 15 asphalt felt).

2.4 MASONRY-CELL FILL
A. Loose-Fill Insulation: Perlite (or similar) complying with ASTM C 549, Type II (surface treated for water repellency and limited moisture absorption) or Type IV (surface treated for water repellency and to limit dust generation).
B. Lightweight-Aggregate Fill: ASTM C 331/C 331M.

PART 3 EXECUTION

3.1 EXAMINATION
A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify General contractor and architect of unsatisfactory preparation before proceeding.

3.2 INSTALLATION
A. Flashing system for single-wythe concrete masonry walls: BlockFlash as manufactured by Mortar Net Solutions. Install in strict accordance with manufacturer's instructions. Tool all head and bed joints at completion and remove any obstructions from weeps.

3.3 PROTECTION
A. Protect installed products from damage until completion of project.
B. Repair or replace damaged products before covering with construction.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Summary: Provide Cast Stone (PRECAST) masonry as shown on the Drawings, as specified herein, and as necessary for a complete and proper installation.

1.2.1 Cast Stone Trim (Including the following):
A. Window Sills
B. Wall Caps

1.2.2 Related Sections:
A. Section 040900 Masonry Accessories
B. Section 042000 Unit Masonry

1.3 Submittals:

1.3.1 Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:

A. Materials list of items proposed to be provided under this Section;
B. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
C. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades. Include building elevations showing the layout of units and locations of joints and anchors.
D. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.
E. Samples for initial selection: For colored mortar.
F. Full-size samples: for each type
   1. Make available for architects review at project site
   2. Make samples from materials to be used for units on project.
   3. Approved samples may be installed in the work.
G. Material Test Reports: For mix required to produce stone, provide test reports based on testing within previous 2 years for compliance with ASTM C 1364 (current version).
1.4 Quality Assurance:

1.4.1 Manufacturer Qualifications: A qualified manufacturer of cast stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute or Architectural Precast Association.

1.4.2 Obtain Cast Stone units through a single source from a single manufacturer.

1.4.3 Obtain mortar ingredients of a uniform quality, including color, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

1.5 Delivery, Storage & Handling:

1.5.1 Coordinate delivery to avoid delaying work

A. Pack, handle, and ship cast stone units in suitable packs or pallets.

B. Store units on wood skids or pallets under cover and in dry location. DO NOT use cementitious units that have become damp.

2. PRODUCTS:

2.1 CAST STONE MATERIALS

General: Comply with ASTM C 1364 and the following:

2.1.1 Portland Cement: ASTM C 150, Type I or Type I I, containing not more than 0.60 percent total alkali when tested according to ASTM C 114. Provide natural color or white cement as required to produce cast stone color indicated.

2.1.2 Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C 33; gradation and colors as needed to produce required cast stone textures and colors.

2.1.3 Fine Aggregates: Natural sand or crushed stone complying with ASTM C 33, gradation and colors as needed to produce required cast stone textures and colors.

2.1.4 Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, [free of carbon black,] nonfading, and resistant to lime and other alkalis.

2.1.5 Admixtures: Use only admixtures specified or approved in writing by Architect.

A. Do not use admixtures that contain more than 0.1 percent watersoluble chloride ions by mass of cementitious materials. Do not
use admixtures containing calcium chloride.

B. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.

C. Air-Entraining Admixture: ASTM C 260.[Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.]

D. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

E. Water-Reducing, Retarding Admixture: ASTM C 494/C 494M, Type D.

F. Water-Reducing, Accelerating Admixture: ASTM C 494/C 494M, Type E.

2.1.6 Reinforcement: Deformed steel bars complying with ASTM A 615/A 615M, Grade 60 (Grade 420). Use galvanized or epoxy-coated reinforcement when covered with less than 1-1/2 inches (38 mm) of cast stone material.

A. Epoxy Coating: ASTM A 775/A 775M.

B. Galvanized Coating: ASTM A 767/A 767M.

2.1.7 Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666, Type 304]

2.2 Cast Stone Units

2.2.1 General:

A. Provide units complying with ASTM C 1364 using either the vibrant dry tamp or wet-cast method.

B. Provide freeze/thaw resistant units as tested per ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.

C. Fabricate units with sharp arris and accurately reproduced details, with texture on all exposed surfaces, unless otherwise indicated.

1. Slope exposed horizontal surfaces 1:12 to drain unless indicated otherwise.

2. Provide raised fillets at back of sills and at ends indicated to be built into jambs.

3. Provide drips on projecting elements unless otherwise indicated.

4. 1/8” fabrication tolerance in all dimensions (MAX)

D. Acid Etch units after curing to remove cement film from surfaces exposed to view.

E. Colors and textures: Provide units with fine-grained texture and light buff color, resembling approved masonry on building.
2.3 Mortar Materials:

2.3.1 Provide Mortar Materials that comply with Section 042000 Unit Masonry

3. EXECUTION:

3.1 Examination
Examine substrate and conditions with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

3.2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 Installation:

3.3.1 General:

A. Install cast stone units to comply with requirements in Section 042000 "Unit Masonry."

B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
   1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
   2. Coordinate installation of cast stone with installation of flashing specified in other Sections.

C. Set units in full bed of mortar with full head joints, unless otherwise indicated.

D. Rake out joints for pointing with mortar to depths of not less than ¾”. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces to remove excess mortar as joints are raked.

E. Provide sealant joints at copings and other horizontal surfaces, at expansion, control, and pressure relieving joints, and at locations as indicated.
   1. Keep joints free of mortar
   2. Form joint of width indicated, but not less than ½”
   3. Prime cast stone surface to receive sealant and install compressible backer rod in joints before applying sealant, unless otherwise indicated.

3.3.2 Adjusting and Cleaning:

A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.

B. In-Progress Cleaning: Clean cast stone as work progresses.

C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of cast stone.
   3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
   4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
   5. Clean cast stone with approved acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION
SECTION 04810
UNIT MASONRY ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes concrete masonry units; reinforcement, anchorage, and accessories.

B. Related Sections:
   1. Section 05120 - Structural Steel: Product requirements for steel anchors for placement by this section.
   2. Section 05210 - Steel Joists: Product requirements for steel bearing pads for joists for placement by this section.
   3. Section 05500 - Metal Fabrications: Product requirements for loose steel lintels, fabricated steel items, and for placement by this section.

1.2 REFERENCES

A. American Society for Testing and Materials:
   1. ASTM A153/A153M - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   3. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
   5. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
   6. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.
   7. ASTM C140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units.

B. The Masonry Society:
   1. TMS MSJC - Building Code for Masonry Structures (ACI 530/ASCE 5/TMS 402), Specification for Masonry Structures (ACI 530.1/ASCE 6/TMS 602) and Commentaries.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Product Data: For each different masonry unit, accessory, and other manufactured product specified.

C. Shop Drawings: Show fabrication and installation details for the following:
1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, “Details and Detailing of Concrete Reinforcement.” Show elevations of reinforced walls.

2. Fabricated Flashing: Detail corner units, end-dam units and other special applications.

D. Qualification Data: For firms and persons specified in “Quality Assurance” Article.

E. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:
   1. Each type of masonry unit required.
      a. Include size-variation data for brick, verifying that actual range of sizes falls within specified tolerances.
      b. Include test results, measurements, and calculations establishing net-area compressive strength of masonry units.
   2. Mortar complying with property requirements of ASTM C 270.
   3. Grout mixes complying with compressive strength requirements of ASTM C 476. Include description of type and proportions of grout ingredients.

F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
   1. Each type of masonry unit required.
      a. Include size-variation data for brick, verifying that actual range of sizes falls within specified tolerances.
      b. Include test data, measurements, and calculations establishing net-area compressive strength of masonry units.
   2. Each cement product required for mortar and grout, including name of manufacturer, brand, type and weight slips at time of delivery.
   3. Each combination of masonry unit type and mortar type, include statement of net-area compressive strength of masonry units, mortar type, and net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
   4. Each material and grade indicated for reinforcing bars.
   5. Each type and size of joint reinforcement.
   6. Each type and size of anchor, tie, and metal accessory.

G. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with TMS MSJC Code and TMS MSJC Specification.

B. Maintain one copy of each document on site.
1.5 Qualifications

A. Installer: Company specializing in performing Work of this section with minimum five years documented experience.

1.6 Delivery, Storage, and Handling

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
   1. Protect concrete masonry units from moisture absorption so that, at the time of installation, the moisture content is not more than the maximum allowed at the time of delivery.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

Part 2 Products

2.1 Unit Masonry Assemblies

2.2 Components

A. Hollow Load Bearing Concrete Masonry Units (CMU): ASTM C90, Type II - Non-moisture Controlled; normal weight.

B. Concrete Masonry Unit Size and Shape: Nominal modular size of 8 x 8 x 16 inches and 12 x 8 x 16 inches. Furnish special units for 90 degree corners, bond beams, lintels.

2.3 Accessories

A. Single Wythe Joint Reinforcement 3/16 inch side rods with 3/16 inch cross ties.

B. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, uncoated finish.

C. Wall Ties: Formed steel wire.

D. Concrete Attachment: Dovetail anchors.

E. Anchor Bolts: Headed, J-shaped or L-shaped.

F. Mortar and Grout: As specified in this section.

G. Weeps: Preformed plastic tubes, cotton wick filled hollow, cotton rope.

I. Precast Concrete Lintels: U type, size, as indicated on Drawings 8 x 8 inch size, 3000 psi strength at 28 days.

J. Mortar and Grout Materials
1. Portland Cement-Line Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.
2. Aggregate for Mortar: ASTM C 144; except for joints less than ¼ inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
5. Cold-Weather Admixture: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.
7. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Cold-Weather Admixture:
      1) Accelguard 80; Euclid Chemical Co.
      2) Morseled; W.R. Grace & Co., Construction Products Division.
      3) Trimix-NCA; Sonneborn, Div. of ChemRex, Inc.
   b. Water-Repellent Admixture:
      1) Mortar Tite; Addiment Inc.
      2) Dry-Block Mortar Admixture; W.R. Grace & Co., Construction Products Division.
      3) Rheopel; Master Builders.

PART 3 EXECUTION

3.1 EXAMINATION
A. Section 01300 - Administrative Requirements: coordination and project conditions.
B. Verify field conditions are acceptable and are ready to receive work.
C. Verify items provided by other sections of work are properly sized and located.
D. Verify built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION
A. Direct and coordinate placement of metal anchors supplied to other sections.
B. Furnish temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent support.

3.3 INSTALLATION

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.

C. Coursing of Concrete Masonry Units:
1. Bond: Running.
2. Coursing: One unit and one mortar joint to equal 8 inches.

D. Placing And Bonding:
1. Lay hollow masonry units with face shell bedding on head and bed joints.
2. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
3. Remove excess mortar as work progresses.
4. Interlock intersections and external corners.
5. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
6. Perform job site cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
7. Cut mortar joints flush where wall tile is scheduled, cement parging is required, resilient base is scheduled, cavity insulation vapor barrier adhesive is applied, or bitumen dampproofing is applied.
8. Isolate masonry from vertical structural framing members with movement joint.
9. Isolate top of masonry from horizontal structural framing members and slabs or decks with compressible joint filler.

E. Joint Reinforcement And Anchorage - Single Wythe Masonry:
1. Install horizontal joint reinforcement 16 inches o.c.
2. Place masonry joint reinforcement in first horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
3. Place joint reinforcement continuous in first joint below top of walls.
4. Lap joint reinforcement ends minimum 6 inches.
5. Reinforce corners and intersections with pre-fab corner and tee sections matching horizontal reinforcement.

F. Lintels:
1. Install precast concrete lintels over openings.
2. See drawings for sizes and reinforcements.
G. Grouted Components:
   1. Reinforce bond beam as noted in the Drawings 1 inch from bottom web.
   2. Lap splices bar diameters required by code.
   3. Support and secure reinforcing bars from displacement.
   4. Place and consolidate grout fill without displacing reinforcing.
   5. At bearing locations, fill masonry cores with grout for minimum 16 inches both sides of opening.

H. Reinforced Masonry:
   1. Lay masonry units with [core] [cells] vertically aligned and [cavities between wythes] clear of mortar and unobstructed.
   2. Place reinforcement bars as indicated on Drawings.
   3. Splice reinforcement in accordance with Drawings.
   4. Support and secure reinforcement from displacement.
   5. Place and consolidate grout fill without displacing reinforcing.
   6. Place grout in accordance with TMS MSJC Specification.

I. Built-In Work:
   1. As work progresses, install built-in metal door and glazed frames, fabricated metal frames, window frames, wood nailing strips, anchor bolts, plates, and other items to be built-in the work and furnished by other sections.
   2. Install built-in items plumb and level.
   3. Bed anchors of metal door [and glazed] frames in adjacent mortar joints. Fill frame voids solid with grout or mortar: Fill adjacent masonry cores with grout minimum 16 inches from framed openings.
   4. Do not build in materials subject to deterioration.

J. Cutting And Fitting:
   1. Cut and fit for pipes, conduit, sleeves, grounds, Coordinate with other sections of work to provide correct size, shape, and location.
   2. Obtain Architect/Engineer’s approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

K. Install Work in accordance with State of Florida standards.

3.4 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

H. Maximum Variation for Steel Reinforcement:
   1. Plus or minus 1/2 inch when distance from centerline of steel to opposite face of masonry is 8 inches or less.
   2. Plus or minus 1 inch when distance is between 8 and 24 inches.
   3. Plus or minus 1 1/4 inch when distance is greater than 24 inches.
   4. Plus or minus 2 inches from location along face of wall.

3.5 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing and Inspection Services 01700 - Execution Requirements: Testing, adjusting, and balancing.

B. Concrete Masonry Units: Test each type in accordance with ASTM C140.

3.6 CLEANING

A. Section 01700 - Execution Requirements: Final cleaning.

B. Remove excess mortar and mortar smears as work progresses.

C. Replace defective mortar. Match adjacent work.

D. Clean soiled surfaces with cleaning solution.

E. Use non-metallic tools in cleaning operations.

END OF SECTION
SECTION 05120

STRUCTURAL STEEL

PART 1 GENERAL

1.1 SUMMARY

A. Section includes structural steel framing members, support members, base or bearing plates, anchor bolts for structural steel; beams, girders; bearing of steel for girders, bracing; columns, posts; connecting materials for framing structural steel to structural steel; fasteners for connecting structural steel items; permanent shop bolts; shop bolts for shipment; field bolts for permanent connections; permanent pins; hangers essential to structural steel frame; leveling plates, wedges, shims, and leveling screws; lintels, when attached to structural steel frame; and grouting under base plates.

B. Related Sections:
   1. Section 05210 - Steel Joists.
   2. Section 05312 - Steel Roof Deck: Support framing for small openings in roof deck.
   3. Section 05500 - Metal Fabrications: Steel fabrications affecting structural steel work.

1.2 REFERENCES

A. American Institute of Steel Construction:

B. American Society for Testing and Materials:
   6. ASTM A490 - Standard Specification for Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength.
   7. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
C. American Welding Society:
   1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
   2. AWS D1.1 - Structural Welding Code - Steel.

D. Research Council on Structural Connections:
   1. RCSC - Specification for Structural Joints Using ASTM A325 or A490 Bolts.

E. SSPC: The Society for Protective Coatings:
   1. SSPC - Steel Structures Painting Manual.

F. Underwriters Laboratories Inc.:
   1. UL - Fire Resistance Directory.

G. Warnock Hersey:
   1. WH - Certification Listings.

1.3 SUBMITTALS

A. Section 01330 - Submittals Procedures: Submittal requirements.

B. Shop Drawings:
   1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   2. Connections.
   3. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.

C. Mill Test Reports: Submit indicating structural strength, destructive and non-destructive test analysis.

D. Manufacturer’s Mill Certificate: Certify products meet or exceed specified requirements.

E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.

1.4 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC S303.

B. Perform Work in accordance with AISC S303, Section 10.

C. Maintain one copy of each document on site.

D. Fabricator: Company specializing in performing Work of this section with minimum 5 years experience and holding current AISC Certification.
E. Erector: Company specializing in performing Work of this section with minimum 5 years experience.

PART 2 PRODUCTS

2.1 MATERIALS

A. Structural Steel Members: ASTM A36/A36M. ASTM A572/A572M, Grade 50.
B. Structural Tubing: ASTM A500, Grade B, 46 ksi.
C. Pipe: ASTM A53, Grade B 35 ksi.
D. Bolts, Nuts, and Washers: ASTM A325 bolts.
F. Welding Materials: AWS D1.1; type required for materials being welded.
G. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 7,000 psi at 28 days.
H. Shop and Touch-Up Primer: SSPC 15, Type 1, light grey.

2.2 FABRICATION

A. Fabricate members with longest components possible.
B. Fabricate connections for bolt, nut, and washer connectors.
C. Develop required camber for members.

2.3 FINISH

A. Prepare structural component surfaces in accordance with SSPC SP 2.
B. Shop prime structural steel members.

2.4 SOURCE QUALITY CONTROL AND TESTS

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.
3.2 ERECTION

A. Allow for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.

B. Field weld components indicated on Drawings and shop drawings.

C. Field connect members with threaded fasteners; torque to required resistance tighten to snug tight for bearing type connections.

D. Do not field cut or alter structural members without approval of Architect/Engineer.

E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

F. Grout under base plates. Trowel grouted surface smooth, splay neatly to 45 degrees.

3.3 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Plumb: 1/4 inch per story.

C. Maximum Offset From Alignment: 1/4 inch.

3.4 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing and Inspection Services 01700 - Execution Requirements: Testing, adjusting, and balancing.

END OF SECTION
SECTION 05210

STEEL JOISTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Open web steel joists and joist girders, with bridging, attached seats and anchors.
   2. Framed openings greater than 12 inches.

B. Related Sections:
   1. Section 05120 - Structural Steel: Superstructure framing.
   2. Section 05312 - Steel Roof Deck: Support framing for openings less than 12 inches in decking.
   3. Section 05500 - Metal Fabrications: Non-framing steel fabrications attached to joists.

1.2 REFERENCES

A. American Society for Testing and Materials:
   2. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.

B. American Welding Society:
   1. AWS D1.1 - Structural Welding Code - Steel.

C. Steel Joist Institute:
   1. SJI - Standard Specifications and Load Tables.

D. SSPC: The Society for Protective Coatings:
   1. SSPC - Steel Structures Painting Manual.
   2. SSPC SP 1 - Solvent Cleaning.
   3. SSPC SP 10 - Near-White Blast Cleaning.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Shop Drawings:
1. Indicate standard designations, configuration, sizes, spacing, locations of joists, joist girders, and joist leg and top chord extensions.
2. Joist and joist girder coding, bridging, connections, attachments.
3. Connection details.

C. Welders' Certificates: Submit manufacturer’s certificates, certifying welders employed on the Work, verifying AWS qualification within previous 24 months.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with SJI, Load Tables, and SJI Technical Digest #9 including headers and other supplementary framing.

B. Design joists and joists girders under direct supervision of a Professional Engineer experienced in the design of this work and licensed in the State of Florida

C. Maintain one copy of each document on site.

1.5 QUALIFICATIONS

A. Fabricator: Company specializing in performing Work of this section with minimum 5 years documented experience.

B. Erector: Company specializing in performing Work of this section with minimum 5 years documented experience.

C. Design joists and joist girders.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

PART 2 PRODUCTS

2.1 MATERIALS

A. Open Web Joists Members: SJI Type K.

B. Joist Girders: SJI Type G.


D. Structural Steel For Supplementary Framing and Joist Leg and Top Chord Extension Extensions: ASTM A36.

E. Welding Materials: AWS D1.1; type required for materials being welded.
2.2 FABRICATION

A. Furnish bottom and top chord extensions as indicated on drawings.

B. Fabricate to achieve end bearing of:
   1. 2-1/2 inches on steel for K-series joists.
   2. 4 inches on steel for G-series joist girders.

C. Frame special sized openings in joist web framing as detailed.

D. Fabricate joists, joist girders, and bridging with sections conforming to UL Assembly Design No. P701.

2.3 FINISH

A. Prepare joist and joist girder component surfaces in accordance with SSPC SP 2 light grey.

B. Shop prime joists, joist girders, and supplementary framing members. Do not prime surfaces that will be fireproofed, field welded, or in contact with concrete.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

3.2 ERECTION

A. Erect and bear joists and joist girders on supports.

B. Allow for erection loads. Install sufficient temporary bracing to maintain framing safe, plumb, and in alignment.

C. Coordinate placement of anchors in concrete construction for securing bearing plates, and angles.

D. After joist (joist girder) alignment and installation of framing, field weld joist (joist girder) seat to bearing plates.

E. Position and field weld joist chord extensions and wall attachments as detailed.

F. Frame roof openings greater than 12 inches with supplementary framing.
G. Do not permit erection of decking until joists and joist girders are braced, bridged, and secured or until completion of erection and installation of permanent bridging and bracing.

H. Do not field cut or alter structural members without approval of Architect/Engineer.

I. After erection, prime welds, abrasions, and surfaces not shop primed except surfaces to be in contact with concrete.

3.3 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Plumb: 1/4 inch.

C. Maximum Offset From Alignment: 1/4 inch.

3.4 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing and Inspection Services: Field inspection of members, connections, welds, and tightening of high strength bolts in slip-critical connections. 01700 - Execution Requirements: Testing, adjusting, and balancing.

END OF SECTION
SECTION 05312

STEEL ROOF DECK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Steel roof deck and accessories.
   2. Framing for openings up to and including 12 inches.

B. Related Sections:
   1. Section 05120 - Structural Steel: Support framing for openings larger than 12 inches.
   2. Section 05210 - Steel Joists: Support framing for openings larger than 12 inches.

1.2 REFERENCES

A. American Society for Testing and Materials:

B. American Welding Society:
   1. AWS D1.1 - Structural Welding Code - Steel.

C. Steel Deck Institute:
   1. SDI 29 - Design Manual for Composite Decks, Form Decks and Roof Decks.

D. SSPC: The Society for Protective Coatings:
   1. SSPC Paint 15 - Steel Joist Shop Paint.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Shop Drawings: Indicate deck plan, support locations, Projections, openings and reinforcement, pertinent details, and accessories.

C. Product Data: Submit deck profile characteristics and dimensions, structural properties, finishes.

D. Manufacturer’s Installation Instructions: Submit manufacturer’s installation instructions.
E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 24 months.

1.4 QUALITY ASSURANCE

A. Conform to requirements of American Iron and Steel Institute (AISI) “Specifications for the Design of Light Gauge Cold Formed Steel Structural Members” and Steel Deck Institute (SDI) “Design Manual for Composite Decks, Form Decks, Roof Decks, Cellular Metal Floor Deck with Electrical Distribution.”

B. Conform to American Welding Society (AWS) “Structural Welding Code.”

C. Acceptable Manufacturer: Regularly engaged in production of specified products.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Load, ship and unload in manner that will avoid denting, bending and twisting.

B. Store off ground and slightly slope to facilitate drainage.

C. Replace all units delivered with excessive damage, as determined by Architect/Engineer, at no additional cost.

PART 2 PRODUCTS

2.1 MATERIALS

A. Sheet Steel: ASTM A611, Grade C painted.


C. Welding Electrodes: AWS E6022.

D. Shop and Touch-Up Primer: SSPC 15, Type 1 light grey.

E. Self-Drilling Screws

1. Over supports
   b. Point:
      1. Material thickness over 3⁄4 inch: T/5.
      2. Material thickness 3⁄4 inch or less: T/4.


3. Acceptable:
   a. ITW Buildex, Teks
2.2 FABRICATION

A. Metal deck: Sheet steel, configured as follows:
   1. Span design: multiple
   3. Profile: 1½ inch, type B, wide ribbed.
   4. Formed Sheet Width: 36 inches.
   5. Flute Sides: plain vertical face.

B. Related Deck Accessories: Metal closure strips, cover plates, cant strips, of galvanized sheet steel; of profile and size as indicated on drawings.

C. Roof Sump Pan: Fabricate of 14 gage sheet steel, flat bottom, sloped sides, [recessed 1-1/2 inches below roof deck surface,] bearing flange 3 inches wide, sealed watertight.

D. Fasteners: Stitch Fasteners, #10 TEK or equal with supports with 5/8” puddle welds.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

3.2 INSTALLATION

A. Erect metal deck in accordance with SDI Manual, manufacturer instructions, and approved shop drawings. Align and level.

B. Provide 3” end lap; side laps nested as recommended by manufacturer.

C. Bear deck on steel supports with 1-1/2 inch minimum bearing. Align and level.

D. Cutting and Fitting:
   1. Cut and fit deck units and accessories around projections through deck.
   2. Make cuts neat and trim.

E. Attachment:
   1. Use puddle welds 5/8 inch diameter or equivalent area.
   2. Minimum four attachments at each support, two side lap attachments at 1/3 points of deck span and side support attachments at 12 inches on center.
   3. Provide attachments at 6 inches on center around all openings unless otherwise indicated.
   4. Penetrate all layers of deck with metal to provide positive attachment to supporting structure.
6. Reweld connections with incomplete attachment of deck to support.

F. Position roof sump pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

G. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up prime paint.

3.3 PROTECTION

A. Do not use units for storage or working platforms until permanently secured in place.
B. Assure that construction loads do not exceed carrying capacity of the deck.
C. Do not attach or suspend items from metal deck.

END OF SECTION
SECTION 05 40 00
MISCELLANEOUS METAL

1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Summary: Provide miscellaneous metal work shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.3 Submittals:

1.3.1 Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:

A. Materials list of items proposed to be provided under this Section;
B. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
C. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades. All shop drawings must be prepared under the supervision of a registered structural engineer in the State of Florida, and must bear his seal and signature on each print;
D. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.4 Quality Assurance:

1.4.1 Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section

1.4.2 Perform shop and/or field welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society.

2. PRODUCTS:

2.1 Materials:

2.1.1 In fabricating items which will be exposed to view, limit to the use of
materials which are free from surface blemishes, pitting, rolled trade names, and roughness.

2.1.2 Comply with following, as pertinent:

A. Steel plates, shapes, and bars: ASTM A36;
B. Steel plates to be bent or cold-formed: ASTM A283, grade C;
C. Steel tubing (hot-formed, welded, or seamless): ASTM A501;
D. Steel bars and bar-size shapes: ASTM A306, grade 65, or ASTM A36;
E. Cold-finished steel bars: ASTM A108;
F. Cold-rolled carbon steel sheets: ASTM A336;
G. Galvanized carbon steel sheets: ASTM A526, with G 90 zinc coating in accordance with ASTM A525;
H. Stainless steel sheets: AISI type 302 or 304, 24 gauge with number 4 finish;
I. Gray iron castings: ASTM A48, class 10;
J. Malleable iron castings: ASTM A47;
K. Steel pipe: ASTM A53, grade A, schedule 40, black finish unless otherwise noted;
L. Concrete inserts:
   1. Threaded or wedge type galvanized ferrous castings of malleable iron complying with ASTM A27;
   2. Provide required bolts, shims, and washers, hot-dip galvanized in accordance with ASTM A153.

2.2 Fasteners:

2.2.1 General:

A. For exterior use and here built into exterior walls, provide zinc-coated fasteners.
B. Provide fasteners of type, grade, and class required for the particular use.

2.2.2 Comply with following standard as pertinent:

A. Bolts and nuts: Provide hexagon-head regular type complying with ASTM A307, grade A;
B. Lag bolts: Provide square-head type complying with Fed Spec FF-B-561;
C. Machine screws: Provide cadmium plated steel type complying with Fed Spec FF-S-111;
D. Washers:
1. Plain washers: Comply with Fed Spec FF-W-92; round, carbon steel;  
2. Lock washers: Comply with Fed Spec FF-W-84, helical spring type carbon steel;  
   E. Toggle bolts: Provide type, class, and style needed but complying with Fed Spec FF-B-588;  
   F. Anchorage devices: Provide expansion shield complying with Fed Spec FF-S-325.  

2.3 Other Materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.  

2.4 Shop Paint:  
   2.4.1 Primer: Use "10-99 Tnemec Primer" or "Rustoleum Number 5769 Primer" or an approved equal.  
   2.4.2 For repair of galvanizing, use a high zinc-dust content paint complying with MIL-P-21035.  

2.5 Fabrication:  
   2.5.1 Except as otherwise shown on the Drawings or the approved Shop Drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of this Section.  
   2.5.2 Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush, forming exposed connections with hairline joints, and using concealed fasteners whenever possible.  
   2.5.3 Prior to shop painting or priming, properly clean metal surfaces as required for the applied finish and for the proposed use of the item.  
   2.5.4 On surfaces inaccessible after assembly or erection, apply two coats of the specified primer. Change color of second coat to distinguish it from the first.  

3. EXECUTION:  

3.1 Surface Conditions: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
3.2 Coordination: Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

3.3 Installation:

3.3.1 General:

A. Set work accurately into position, plumb, level, true, and free from rack.
B. Anchor firmly into position.
C. Where field welding is required, comply with AWS recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for methods to be used in correcting welding work.
D. Grind exposed welds smooth, and touch up shop prime coats.
E. Do not cut, weld, or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or screwed field connections.

3.3.2 Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

END OF SECTION
SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

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

1.2 SUMMARY
   A. This Section includes the following:
      1. Steel framing and supports for mechanical and electrical equipment.
      2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
      3. Steel weld plates and angles for casting into concrete not specified in other Sections.
      4. Metal bollards.
   B. Products furnished, but not installed, under this Section include the following:
      1. Anchor bolts, steel pipe sleeves, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
   C. Related Sections include the following:
      1. Division 3 Section "Cast-in-Place Concrete" for installing anchor bolts, steel pipe sleeves, wedge-type inserts and other items indicated to be cast into concrete.
      2. Division 4 Section "Unit Masonry Assemblies" for installing loose lintels, anchor bolts, and other items indicated to be built into unit masonry.
      3. Division 5 Section " Structural Steel."
      4. Division 5 Section "Pipe and Tube Railings."

1.3 PERFORMANCE REQUIREMENTS
   A. Thermal Movements: Provide exterior metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
      1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.4 SUBMITTALS
   A. Shop Drawings: Show fabrication and installation details for metal fabrications.
      1. Include plans, elevations, sections, details and erection drawings of metal fabrications and their connections. Show anchorage and accessory items.
      2. Provide templates for anchors and bolts specified for installation under other Sections.
   B. Welding certificates.
1.5 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."
   2. AWS D1.3, "Structural Welding Code--Sheet Steel."

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
   1. Provide allowance for trimming and fitting at site.

1.7 COORDINATION

A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Coordinate installation of steel weld plates and angles for casing into concrete that are specified in this Section but required for work of another Section. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
B. Steel Tubing: ASTM A 500, Grade B, cold-formed steel tubing.
C. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

2.3 FASTENERS

A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 325, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
B. Anchor Bolts: ASTM F 1554, Grade 36.
1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts where item being fastened is indicated to be galvanized.

C. Eyebolts: ASTM A 489.

D. Machine Screws: ASME B18.6.3.

E. Lag Bolts: ASME B18.2.1.


H. Cast-in-Place Anchors in Concrete: Anchors capable of sustaining, without failure, a load equal to four times the load imposed, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
   1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.

I. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

2.4 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Shop Primers: Provide primers that comply with Division 9 painting Sections.


D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

E. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.

F. Concrete Materials and Properties: Comply with requirements in Division 3 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.
2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed Welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
   1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
   1. Fabricate units from slotted channel framing where indicated.

C. Galvanize miscellaneous framing and supports where indicated.
2.7 SHELF ANGLES

A. Fabricate shelf angles from steel angles of sizes indicated and for attachment to concrete framing. Provide horizontally slotted holes to receive 3/4-inch bolts, spaced not more than 6 inches from ends and 24 inches o.c., unless otherwise indicated.
   1. Provide mitered and welded units at corners.
   2. Provide open joints in shelf angles at expansion and control joints. Make open joint approximately 2 inches larger than expansion or control joint.

B. Galvanize shelf angles located in exterior walls.

C. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place concrete.

2.8 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with not less than two integrally welded steel strap anchors for embedding in concrete.

2.9 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
   1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.

C. Galvanize exterior miscellaneous steel trim and interior miscellaneous steel trim, where indicated.
   1. Galvanize exterior ladders and interior ladders, where indicated, including brackets and fasteners.
   2. Galvanize exterior ladder cages and interior ladder cages, where indicated, including fasteners.

2.10 METAL BOLLARDS

A. Fabricate metal bollards from Schedule 40 steel pipe.

2.11 PIPE GUARDS

A. Fabricate pipe guards from 3/8-inch thick by 12-inch wide steel plate, bent to fit flat against the wall or column at both ends and to fit around pipe with 2-inch clearance between pipe and pipe guard. Drill each end for two 3/4-inch anchor bolts.

B. Galvanize pipe guards after fabrication.
2.12 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

2.13 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
   1. ASTM A 123/A 123M, for galvanizing steel and iron products.
   2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.

B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
   1. Exteriors (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
   2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

C. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
   1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Examination: Verify that field conditions are acceptable and are ready to receive work.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Obtain Architect’s approval prior to site cutting or making adjustments not indicated.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

E. Field Welding: Comply with the following requirements:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

G. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 INSTALLING METAL BOLLARDS

A. Anchor bollards to existing construction with expansion anchors. Provide four 3/4-inch bolts at each bollard, unless otherwise indicated.

B. Fill bollards solidly with concrete, mounding top surface to shed water.

3.4 INSTALLING PIPE GUARDS

A. Provide pipe guards at exposed vertical pipes where not protected by curbs or other barriers. Install by bolting to wall or column with expansion anchors. Provide four 3/4-inch bolts at each pipe guard. Mount pipe guards with top edge 26 inches above driving surface.

3.5 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500
SECTION 06 05 73.13
FIRE RETARDANT TREATED WOOD (FTRW) - PRESSURE TREATED WOOD

PART 1  GENERAL

1.1 SECTIONS INCLUDES

A. Fire-retardant treatment of lumber and plywood.

1.2 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 20 00 - Finish Carpentry.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A653 / A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. American Wood-Protection Association (AWPA):
   1. AWPA E12 - Standard Method of Determining the Corrosion of Metal in Contact with Wood.
   2. AWPA M4 - Standard for the Care of Preservative Treated Wood Products.
   3. AWPA P5 - Standard for Waterborne Preservatives.
   4. AWPA P17 - Fire Retardant Formulations.
   6. AWPA T1 - Use Category System: Processing and Treatment Standard.
   7. AWPA U1
C. GREENGUARD Environmental Institute: GREENGUARD Green Certified Products.


1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's instructions for use, including requirements for storage, cutting, and finishing.

C. Preservative Treatment Certification: Treating plant's certification of compliance with specified standards, process employed, and preservative retention values.

D. Fire-Retardant Treatment Certification: Treating plant's certification of compliance with specified requirements.

1.5 QUALITY ASSURANCE

A. Wood Treatment Plant Qualifications: Wood treatment plant experienced in performing work of this section licensed by Viance, LLC.

B. Source Quality: Obtain treated wood products from a single approved source.

C. Preservative Treatment: Mark each piece of plywood and lumber to show compliance with specified standards.

D. Fire-Retardant Treatment: Mark each piece of plywood and lumber to show compliance with specified standards.

E. Regulatory Requirements: Provide fire retardant treatment which complies with the following regulatory requirements:


F. Kiln Dry after Treatment (KDAT): Provide kiln dry material as indicated or required.

1.6 DELIVERY, STORAGE, AND HANDLING
A. Exposure: Prevent wood products against moisture and dimensional changes, in accordance with instructions from treating plant.

1.7 WARRANTY

A. Manufacturer’s Warranty: Provide manufacturer’s standard 50-year limited warranty for pressure-treated FRTW wood.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Viance - Treated Wood Solutions, which is located at: 8001 IBM Dr. Building 403; Charlotte, NC 28262; Toll Free Tel: 800-421-8661; Tel: 704-522-0825; Fax: 704-527-8232; Email: request info (Productinfo@viance.net); Web: www.treatedwood.com

B. Acceptable Manufacturer: Hoover – Treated Wood Products, Inc.; located at: 3031 Westside Blvd, Jacksonville, FL 32209; Toll Free Tel: 1.800.531.5558; Tel: 904-387-8444; Web: www.frtw.com

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MATERIALS

A. Dimension Lumber: As specified in Section 06 10 00 - Rough Carpentry.

B. Structural Plywood: As specified in Section 06 10 00 - Rough Carpentry.

C. Finish Lumber and Plywood: As specified in Section 06 20 00 - Finish Carpentry.

D. Fasteners and Metal Hardware: Provide corrosion resistant steel fasteners with hot-dip zinc coating per ASTM A153/A153M, provide corrosion resistant hardware per ASTM A653 / A653M Class G-185 in compliance with building code requirements.

E. Fasteners used in Fire-Retardant Treated Wood: Use only code approved fasteners as specified in ICC-ES ESR 2645. Fasteners must be galvanized steel, stainless steel, silicon bronze or copper, in accordance with 2017 FBC.

2.3 FIRE RETARDANT PRESSURE TREATMENT OF LUMBER AND PLYWOOD

A. Fire retardant treatment for wood, roof decks and sheathing; concealed blocking and furring.

1. Lumber: Comply with AWPA U1 UCFA, Type A or ICC-ES ESR
2. Plywood: Comply with AWPA U1, UCFA, Type A or ICC-ES ESR 2645.

3. Surface Burning Characteristics: UL FR-S rating; or flame spread and smoke developed ratings of 25 or less in a test of 30 minutes' duration in accordance with IBC section 2303.2.

4. Treatment: as provided by accepted manufacturer.

5. Kiln dry after treatment to 19 percent maximum moisture content for lumber and 15 percent for plywood.

6. Treat wood used for the following applications:
   a. Roof decks and sheathing.
   b. Subflooring.
   c. Concealed blocking and furring.

PART 3 EXECUTION

3.1 INSTALLATION

A. Fire-Retardant Treated Wood:
   1. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.
   2. End cuts and drilling are permitted. Do not rip or mill lumber after fire-retardant treatment.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Items of work to be performed shall include, but are not limited to, the following:

1.2.1 Framing lumber, furring, backup lumber and blocking as required for the finish installation of materials and equipment by other trades.

1.2.2 Nail strips, grounds.

1.2.3 Hardware for securing rough carpentry materials.

1.2.4 Installation of finish carpentry items and other items and materials installed by carpentry trade.

1.3 Related work specified under other sections of these specifications.

1.3.1 Forms for Concrete.

2. MATERIALS:

2.1 Lumber shall be well-seasoned, sound stock, free from sap shakes and/or other defects which may impair the appearance, utility or strength of the materials.

2.2 Framing lumber, furring strips, blocking, etc., shall be dimension Southern Yellow Pine, No. 2 common, or better. Minimum bending stress (Fb) of 1400 psi.

2.2.1 Moisture content for framing lumber, blocking and other miscellaneous woodwork shall conform to the moisture content provision of the Grading Rules by the Southern Pine Inspection Bureau.

2.2.2 Lumber to be surfaced 4 sides to conform to simplified Practice Recommendation R16.

2.4 Ground Contact Preservative Treatment: All lumber, such as nailers, furring strips or others, which is to be placed in contact with concrete or masonry
inside and outside the building envelope shall be pressure treated with Wolman Salts to a retention level of 0.60 pounds per cubic foot and then re-dried after treatment in accordance with AWPA 22. Provide pressure treated lumber at other locations as shown. All lumber used for edge blocking of the built-up roof shall be pressure treated.

2.5 Wood blocking: Provide solid P.T/Fire Treated 2 x wood blocking in the following locations:

1. Backing for all cabinets wall hung and other wall supported accessories or fixtures (wall hung TV Monitors, etc.)

2. Backing for all grab bars in metal stud walls.

2.6 Fasteners shall be of the type and size best suited for the work. All nails used exterior shall be hot dip galvanized, unless specified otherwise.

2.7 Finishes are specified in Section 09 90 00.

3. INSTALLATION:

3.1 Fasten securely all parts of carpentry work in their proper place.

3.2 Sort material to suit its placement so that permitted defects will have the least detrimental effect on the stability and appearance of the work.

3.3 Installation of various carpentry materials and components shall follow standard industry practices of good construction and the instructions of the manufacturer's of the component being installed.

4. STORAGE AND PROTECTION: Stack framing lumber and plywood to insure proper ventilation and drainage. Protect lumber and plywood from elements. All stored material shall be placed on dunnage at nominal 4” above grade. No contact between stored material and ground shall be permitted.

END OF SECTION
SECTION 06 16 43

GYPSUM SHEATHING

1 GENERAL

1.1 SUMMARY

A. Section Includes: Fiberglass-mat faced, moisture and mold resistant gypsum sheathing.
B. Related Sections:
   1. Section 05 41 00 Structural Metal Stud Framing.
   2. Section 06 10 00 Rough Carpentry.
   3. Section 09 21 16 Gypsum Board Assemblies.

1.2 REFERENCES

A. ASTM International (ASTM):
   3. ASTM C1002 Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

10. ASTM C1396 Standard Specification for Gypsum Board


1.3 SUBMITTALS

A. Product Data: Manufacturer’s specifications and installation instructions for each product specified.

1.4 WARRANTY

A. Provide products that offer twelve months of coverage against in-place exposure damage (delamination, deterioration and decay) commencing with the date of installation of the product in such structure.

B. Manufacturer’s Warranty:
   1. Five years against manufacturing defects from the date of purchase of the product for installation

2 PRODUCTS

2.1 MANUFACTURERS

A. Georgia-Pacific Gypsum LLC:
   2. Fiberglass-Mat Faced Gypsum Sheathing, Type X for Fire Rated Designs: DensGlass Fireguard Sheathing.

B. US Gypsum Corp.
   1. Fiberglass-Mat Faced Gypsum Sheathing: Securock Regular
   2. Fiberglass-Mat Faced Gypsum Sheathing: Firecode X for Fire Rated Assemblies: Securock Firecode X Sheathing

C. OR Approved Alternatives

2.2 MATERIALS

A. Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177:
   1. Thickness: 1/2 inch.
   2. Width: 4 feet.
   3. Length: 8 feet
   4. Edges: Square.
   5. Surfacing: Fiberglass mat on face, back, and long edges.
   6. Acceptable Products:
      a. 1/2 inch DensGlass Sheathing, Georgia-Pacific Gypsum LLC.
      b. 1/2 inch Securock Brand Glass-Mat Sheathing, US Gypsum Corp.
      c. OR Approved Alternative

B. Fire-Rated Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177, Type X:
   1. Thickness: 5/8 inch.
   2. Width: 4 feet.
3. Length: 8 feet
4. Edges: Square.
5. Surfacing: Fiberglass mat on face, back, and long edges.
6. Acceptable Products:
   a. 5/8 inch DensGlass Fireguard Sheathing, Georgia-Pacific Gypsum LLC.
   b. 5/8 inch Securock Brand Glass-Mat Sheathing – Firecode X, US Gypsum
   c. OR Approved Alternative

2.3 ACCESSORIES

   A. Screws: ASTM C1002, corrosion resistant treated.

3 EXECUTION

3.1 EXAMINATION

   A. Verification of Conditions:
      1. Inspection: Verify that project conditions and substrates are acceptable, to the installer, to begin installation of work of this section.

3.2 INSTALLATION

   A. General: In accordance with ASTM C1280 and the manufacturer’s recommendations.

3.3 PROTECTION

   A. Protect gypsum board installations from damage and deterioration until date of Substantial Completion.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 SUMMARY: Architectural woodwork includes items of miscellaneous finish carpentry and laminate millwork unless such items are specified under another Section of these Specifications:

1.2.1 Work included in this section includes:

1. Reception Desk Cabinets.
2. Breakroom Cabinets
3. Training Room Cabinets
4. Any custom millwork item.

1.3 Work specified in other sections and not included in this section includes:

1.3.1 Priming and back-priming, except as specified herein.
1.3.2 Finish hardware – Section 08 71 00.
1.3.3 Carpentry – Section 06 10 00.

1.4 Related Work Specified Elsewhere:

1.4.1. Sinks and Service Fixtures: Furnished and installed under Mechanical and Electrical Divisions.

1.4.2 Vinyl Base: Furnished and installed under Section 09 66 60.

1.4.3 Blocking in walls, specified in Section 06 10 00.

1.5 Quality Assurance:

1.5.1 Manufacturers shall show evidence of at least five (5) years experience and installations for similar types of projects.

1.5.2 Installer Qualifications: At least (5) years’ experience in the installation of the Types of cabinets on this project.

1.5.3 Quality Standards: The Quality Standards of the Architectural Woodwork Industry (AWI) shall apply and by reference are made a
part of this Specification. Any item not given a specific quality grade shall be AWI "Custom".

1.6 Submittals:

1.6.1 Submit shop drawings for shelving and countertops showing layout, elevations, ends, cross-sections, service run spaces, and location of services. Show details and location of anchorages. Include layout of units with relation to surrounding walls, doors, windows and other building components. A cabinet sample shall be submitted upon the Architect’s request.

1.7 Product Handling: Deliver completed units only after wet operations in building are completed and building is ready for cabinet installation. Do not store woodwork in a trailer or other unconditioned storage units.

1.8 Warranty: All materials and workmanship covered by this section will carry a three (3) year warranty from date of project Substantial Completion. This warranty shall cover repair or replacement without cost to the Owner.

2. DEFINITIONS AND MATERIALS:

2.1 Listed are definitions and materials commonly used in defining laminate clad woodwork. Refer to FABRICATION section for those items selected for use on this project.

2.1.1 Open Interiors: Any open storage unit without solid doors or drawer fronts and units with glass doors. Material GP28 HPDL.

2.1.2 Closed Interiors: Any closed storage unit behind hinged solid door or drawer fronts and sliding solid doors. Material, thermal-fused melamine or CL20 light gray.

2.1.3 Exposed Surfaces: Any unit door/drawer front when closed and exposed ends Material GP28 high pressure decorative laminate. (Colored melamine is not acceptable).

2.1.4 Semi-Exposed Surfaces: Tops of wall and tall cabinets and exterior bottoms of wall cabinets, unless otherwise designated, shall be thermal-fused melamine or CL20 cabinet liner, white, light gray or almond.

2.1.5 Concealed Surfaces: Any surface not normally visible after installation such as cabinet backs to wall and cabinet sides to cabinet sides. Material shall be a balanced backer. These flat surfaces shall be laminated and not left raw or painted.
2.1.6 Balanced construction of all laminated panels is mandatory.

2.2 Cabinet Core Materials

2.2.1 Particleboard – Industrial grade 47 lb. Meeting or exceeding ANSI A208.1-1993, M-3 requirements. Provide thickness as noted in this specification and on the drawings.

2.3 Decorative Laminates/Veneer and Materials Where Applicable.

2.3.1 Solid surface material as scheduled for countertops. Reference finish schedule and section 12 36 00 for additional information.

2.3.2 Solid or pattern color high pressure decorative laminated GP28 (.028). NEMA test LD-3-1985. For cabinet exposed surfaces. Thermal fused melamine is not acceptable. Reference Finish schedule for selected colors/patterns.

2.3.3 High pressure cabinet liner CL20 (.020) for balance to GP28. NEMA test LD-3-1985.

2.3.4 Thermal fused melamine accredited by A.L.A 1988 requirements or NEMA test LD – 3-1991. Light gray for open and closed interiors, including drawer boxes.

2.3.5 High pressure backer BK20 (.020).

2.3.6 Finishes: Reference Finish schedule – Sheet A-901

2.4 Edging Materials.

2.4.1 Interior shelving of cabinets shall have 1mm PVC banding to match shelf color.

2.4.2 For cabinet drawer and door edges and all exposed edges, match facing material.

2.5 Cabinet Hardware

2.5.1 Hinges

   Compact BLUMOTION by BLUM – Overlay

   Or Approved Equal.

2.5.2 Door/Drawer Pulls:

   6 5/16” Drawer Pull (similar to Doug Mockett DP241-17S).
2.6 Fabrication

2.6.1 Fabricate casework to dimensions, profiles and details as shown on drawings.

2.6.2 Cabinet Body Construction

2.6.2.1 Joinery shall be 8mm or 10mm hardwood dowels or through-dovetail. **Completely glued Dowels used for alignment with panels secured by screws or staples are not permitted.** Tops and bottoms to cabinet ends, cabinet components such as fixed horizontal rails, verticals, and anchor rails shall be doweled or through dovetailed. Dowel spacing shall not exceed 3.5 inches on center.

2.6.2.2 Unless specifically indicated, core shall be **3/4” thick** particleboard before lamination. Edging and surface finishes as indicated herein.

2.6.2.3 Unit backs on fixed cabinets shall be 3/8” or 1/2” thick particleboard, laminated both sides with thermally fused melamine, captured four sides and glued. Exposed backs shall be 3/4” particleboard with exterior surface laminate as selected.

2.6.2.4 All fixed base and tall units shall have a separate and continuous pressure treated pine or exterior grade plywood base. **Cabinet sides continuous to floor without base are not allowed.**
2.6.2.5 All under counter units, except sink base units, shall be provided with a full sub-top. All sink cabinet bodies shall be exterior grade plywood core laminated with CL20 cabinet liner.

2.6.2.6 All exposed and semi-exposed edges of the cabinet body shall be factory edged with material to match face laminate. Machine applied with waterproof hot melt adhesive.

2.6.2.7 Adjustable shelf core shall be ¾” thick plywood up to 30” wide. Cabinets over 30” wide shall have a vertical divider.

2.6.2.8 All upper wall cabinets shall provide a clear inside depth of 12” or 15” as indicated.

2.6.3 Drawers

2.6.3.1 Back and sides shall be ½” thick particleboard or fiberboard, laminated with thermal-fused melamine. Sub-front shall be 5/8” particleboard or fiberboard. Sides, back, and sub-front shall be connected by glued lock shoulder, doweled, or dovetail joinery. No screw or stable fasteners are allowed in end (narrow dimension) of fiberboard construction. Top edge shall be banded with 1mm PVC edging in matching color.

2.6.3.2 Drawer bottoms shall be 3/8” thick with the drawer box bottom sides, hardwood edged. All surfaces shall be laminated with thermal-fused melamine. Drawer bottom shall be captured four sides with a continuous bead of glue. Drawers over 24” shall have the bottoms reinforced.

2.6.4 Door/Drawer Fronts

2.6.4.1 Core for all doors and applied drawer fronts shall be ¾” thick particleboard. All edges shall be finished with high pressure decorative laminate to match drawer and door front. Reference Finish Schedule.

2.6.4.2 Exterior faces shall be laminated with high pressure decorative laminated GP28, color/pattern as selected, balanced with cabinet liner CL20 to match basic cabinet interior body color.
2.7 Countertops: Homogenous Quartz Surface Material: 1 1/8” thick set on 1/2” plywood base layer, color/finish shall be as indicated in the drawings on the finish schedule. Edge style shall be top and bottom beveled: 1 1/2” thickness thickness. Reference Section 12 36 00 for additional information.

2.9 Exposed Shelving (Team Room):

2.9.1 1 – 1/2” thick Ash (Plain Sawn): Provide continuous 1 1/2” thick planks for full length of shelf as indicated on drawings. Provide a smooth fine sanded finish with 2 clear satin polyurethane top coats. Sand with 400 grit sandpaper between applications.

2.9.2. Shelf Wall Brackets: Similar to Cascade Iron Co. – Iron Shelf Bracket with Lip, 10”. Finish – Natural Waxed. Provide number/quantity of brackets as required to support length of shelf. No less than 3 per shelf.

2.10 Wood base, window trim, chair rails, and miscellaneous exposed wood moldings:

2.10.1 Typical: Custom Grade is acceptable. Final finish is to be stained and sealed per the architectural finish schedule A-901.

2.10.2 Species shall be Select Hard White Maple, plain sawn with no finger joints acceptable. Follow AWI standards for Custom Grade millwork. Final Stain color to be selected by architect.

3. EXECUTION

3.1 Inspection: The installer must examine the job site and the conditions under which the work in this section is to be performed and notify the contractor in writing of unsatisfactory conditions. Do not proceed with work under this section until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.2 Preparation: Condition casework to average prevailing humidity conditions in installation areas prior to installing.

3.3 Installations

3.3.1 Install casework with factory trained supervision authorized by manufacturer. Erect casework, plumb, level, true, and straight. Cut out for all sink or electrical openings in tops and splashes.

3.3.2 Adjust casework and hardware so that doors and drawers operate smoothly without warp or bind.
3.4 Cleaning and Protection

3.4.1 Clean plastic surfaces, repair minor damage per plastic laminate manufacturer’s recommendations. Replace other damaged parts or units.

3.4.2 Advise contractor of instructions for protection of casework and tops from damage by other trades until acceptance of the work by the Owner.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Particleboard with ultra-low emitting formaldehyde resins (ULEF).
B. Medium density fiberboard panels with no added formaldehyde resins (NAF).

1.2 RELATED SECTIONS

A. Section 06 40 00 – Architectural Woodwork.
B. Section 12 32 00 – Manufactured Wood Casework.

1.3 REFERENCES

A. American National Standards Institute (ANSI):
   1. ANSI A208.1 - Particleboard, Mat-Formed Wood.
   2. ANSI A208.2 - Medium Density Fiberboard for Interior Use.

B. ASTM International (ASTM):

C. Architectural Woodwork Institute (AWI):
   1. AWI Quality Standards; Sections 100, 200, 400, 500, 600, 700, 1500, and 1700.

D. Composite Panel Association (CPA):
   1. CPA-4-11 - Eco-Certified Composite (ECC) Sustainability Standard.

E. International Organization for Standardization (ISO):
   1. ISO 14021 - Environmental Labels and Declarations - Self-Declared Environmental Claims (Type II Environmental Labelling).

F. UL Environment: A business unit of Underwriters Laboratories.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
B. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Manufacturer’s printed installation instructions, showing required preparation and installation procedures.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Cleaning and maintenance instructions.

C. Manufacturer’s Certification: Materials comply with specified requirements and are suitable for the intended application.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. Panel manufacturer shall have 2 consecutive years of experience in manufacture of no-added formaldehyde medium density fiberboard panels.

B. Fabricator Qualifications:
   1. Woodwork fabricator shall have 5 consecutive years of experience in fabrication of casework, paneling, and trim.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged pallets with identification labels intact.

B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions in strict compliance with manufacturer's instructions and industry standards.
   1. If unloaded outdoors, move and store under shelter as soon as possible. Avoid unloading in inclement weather.
   2. Inspect delivered products to verify products are not damaged, soiled or have been exposed to water.

C. Handling: Protect materials during handling and installation to prevent damage.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard limited warranty against defects in manufacturing.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: Roseburg, which is located at: 3660 Gateway St.; Springfield, OR 97477; Toll Free Tel: 800-245-1115; Tel: 541-679-3311; Fax: 541-679-2543; Email: request info (MarkN@rfpco.com); Web: www.roseburg.com

B. Acceptable Manufacturer: MJB Wood Group, which is located at: 1411 Commerce Way; Miami Lakes, FL 33016; Tel: 305-653-6466; Email:wcorbo@mjbwood.com; Web: www.mjbwood.com

C. Or Equal: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 PARTICLEBOARD *(not all of the below products are to be used in the project)*

A. Particleboard
   1. Type: Particleboard with ultra-low emitting formaldehyde resins (ULEF).
   3. Grade: Industrial.
   4. Panel Thickness: as indicated in drawings

B. Moisture Resistant Medium Density Fiberboard Panels made with NAF Resin:
   1. Medium Density Fiberboard (Moisture Resistant) Sustainable, Moisture Resistant.

C. Interior Medium Density Fiberboard Panels made with NAF Resin:
   a. Standards Compliance: ANSI A208.2 - Grade 130; MR10 for panels greater than or equal to 5/8 in (16 mm).

D. Interior Medium Density Fiberboard Panels for Profile Machining made with CARB compliant Resin:
   a. Standards Compliance: ANSI A208.2 - Grade 130;

E. Interior Medium Density Fiberboard Panels made with NAF Resin:
   a. Standards Compliance: ANSI A208.2 - Grade 155; MR30 for panels greater than or equal to 5/8 in (16 mm).

F. Flame-Retardant Medium Density Fiberboard Panels made with NAF Resin:
a. Standards Compliance:
   1) ANSI208.2 - Grade 130.
   2) ASTM E 84.
   3) MEA 244.

G. Interior Medium Density Fiberboard Panels made with NAF Resin for Profile Machining and Powder Coat Finishing.
   a. Standards Compliance: ANSI A208.2 - Grade 155; MR30 for panels greater than or equal to 5/8 in (16 mm).

H. Hardwood Panel Facings with Particleboard- CARB ULEF Exempt Core or MDF-NAF Core:
   a. Face Sheet: Premium grade, plain sliced hardwood.
   b. Species: As indicated on Drawings.
   c. Minimum Face and Backing Sheet Thickness: 1/50 in (0.51 mm).
   d. Backing Sheet: Hardwood.
   e. Edge Trim: Premium grade solid hardwood in species and cut-to-match paneling face sheet.
   f. Primer: Prime painted panel finish. Shop primed with primer acceptable to panel manufacturer.

I. High Pressure Laminate Panel Facings:
   1. Standards Compliance:
      a. NEMA LD 3, General Purpose 50.
      b. ANSI Z124.3, Type 5 or 6.
   2. Facing Thickness; Square Edge Countertops: 0.050 in (1.27 mm).
   3. Facing Thickness; Vertical Surfaces: 0.030 in (0.76 mm).
   4. Backing Thickness: 0.020 in (0.51 mm).
   5. High pressure laminate panel facings.

J. Fasteners:
   1. Panel Z-Clips: As furnished by panel fabricator.
   2. Plated Fasteners: Wood screws, finish nails, bolts, and nuts.
   3. Screw Withdrawal Force: (varies by product)
      a. For number 10 sheet metal screw.
      b. Panel Face: 225 lbs (102 kg).
      c. Panel Edge: 200 lbs (91 kg).

PART 3 EXECUTION

3.1 EXAMINATION

   A. Examine substrates and conditions to ensure that work can be completed with no adverse effects.

3.2 PREPARATION
A. Prepare substrates using methods recommended by the manufacturer to achieve the best results for the panels under proper conditions.

B. Do not proceed with installation until substrates have been fabricated based on recommended methods from the manufacturer. Commencement of installation constitutes acceptance of conditions of substrate.

3.3 INSTALLATION

A. Comply with AWI AWS fabrication and installation standard as applicable to the project.

B. Install fabricated TFL panels according to approved architectural drawings, shop drawings and manufacturer's published installation instructions, Shim as required for proper installation.

3.4 CLEANING AND PROTECTION

A. Clean panels in accordance to manufacturer's published care and maintenance instructions.

B. Touch up, repair or replace damaged products before completing installation.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Cold fluid-applied waterproofing and accessories.

1.2 RELATED SECTIONS
   A. Section 03 30 00 - Cast-in-Place Concrete.
   B. Section 04 81 00 – Unit Masonry Assemblies.
   C. Section 07 90 00 - Joint Protection.

1.3 REFERENCES
   A. ASTM C 836 - 100% Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for use with Separate Wearing Course.

1.4 SYSTEM DESCRIPTION
   A. Product provided by this Section shall be a coal-tar and solvent-free, single component, elastomeric liquid designed to create a seamless reinforced waterproofing membrane at 120 mil (3.0 mm) thickness.

1.5 SUBMITTALS
   A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
   B. Product Data: Manufacturer's data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Installation methods.
   C. Installer's approval by Manufacturer: Submit document stating manufacturer's acceptance of Installer as an Approved Applicator for the specified materials.
   D. Warranty: Submit a sample warranty identifying the terms and conditions stated in Warranty article.

1.6 QUALITY ASSURANCE
A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.

B. Applicator Qualifications: Experienced in applying the same or similar materials and shall be specifically approved in writing by the membrane system manufacturer.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship is approved by Architect.
   3. Rework mock-up area as required to produce acceptable work.

1.7 PRE-INSTALLATION MEETINGS

A. Pre-Installation Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

B. Convene minimum two weeks prior to starting work of this section.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
   1. Name of material.
   2. Manufacturer's stock number and date of manufacture.

B. Recommended storage and application temperature is 75 degrees F (24 degrees C). Store materials in protected and well ventilated area.

C. Handling: Handle materials to avoid damage.

1.9 PROJECT CONDITIONS

A. Do not apply membrane if temperature is less than 40 degrees F (4.4 degrees C), if precipitation is imminent or the surface is wet or has frost. Substrate may be saturated surface dry.

B. Coordinate waterproofing work with other trades to ensure adequate illumination, ventilation, and dust-free environment during application and curing of membrane. The applicator shall have sole right of access to the specified areas for the time needed to complete the application and allow the membrane to cure adequately.

C. Protect adjoining surfaces not to be coated against damage or soiling. Protect plants, vegetation and animals which might be affected by
waterproofing operations.

D. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.

E. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

1.10 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.11 WARRANTY

A. Warranty: Provide manufacturer's standard limited material warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Carlisle Coatings & Waterproofing, which is located at: 900 Hensley Ln.; Wylie, TX 75098; Toll Free Tel: 888-229-0199; Tel: 972-442-6545 ; Fax: 972-442-0076; Email: request info (Caitlyn.Ruhl@carlisleccm.com); Web: www.carlisle-ccw.com

2.2 WATERPROOFING MEMBRANE

A. Waterproofing membrane shall be CCW-MIRASEAL for horizontal surfaces applied at 60 mils (1.5 mm) for each coat, reinforced by DCH Fabric between coats and CCW-MIRASEAL for vertical surfaces applied at 60 mils (1.5 mm) for each coat, reinforced by DCH fabric between coats and shall meet or exceed the requirements of ASTM C 836.

2.3 WATER REPELLENT COATING

A. Tnemec Series 633 Prime-A-Pell H2O: Clear non-yellowing water repellent. Apply 2 coats at 100 – 125 sq ft gallon for the first coat. A second coat is required and requires slightly less material. Check the product literature for the accurate application details.

2.4 ACCESSORY PRODUCTS

A. Surface Primer: Not required for concrete or wood. All other surfaces as recommended by manufacturer for each surface encountered.

B. Sealants: CCW-201 two-component Polyurethane Sealant.

C. Backing Rod: Closed-cell polyethylene foam rod.

D. Flexible Flashing: As recommended and supplied by coating manufacturer.
E. Protection Course: CCW Protection Board-H/HS for horizontal surfaces or CCW Protection Board-V for vertical surfaces.

F. Drainage Composite: CCW MiraDrain as recommended by the manufacturer for each condition.

G. Perimeter Drainage System: CCW HC - DRAIN where required.

H. Reinforcing: CCW DCH Fabric.

PART 3 EXECUTION

3.1 EXAMINATION

A. Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies. Where deficiencies exist, the Architect, Owner, or Contractor shall be notified in writing and corrections made.

B. Condition of Concrete Surfaces:
   1. The concrete surfaces shall be of sound structural grade, minimum of 2500 psi (17,237 kPa) compressive strength, and shall have a wood float or fine broom finish, free of fins, ridges, voids or entrained air holes.
   2. Concrete shall be cured by water curing method. Curing compounds shall be of the pure sodium silicate type and be approved by the Carlisle representative.
   3. Concrete shall be cured at least three days and shall be sloped for proper drainage.
   4. Control joints and/or expansion joints shall have been properly installed at strategic points throughout the field of the deck to control cracking caused by deflection and shrinkage.
   5. Required crickets or drains shall be installed at the time the main deck is poured. Deck shall be monolithic.
   6. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the unrepaired areas.
   7. Two-stage drains shall have a minimum 3 inches (76 mm) flange and be installed with the flange flush and level with the concrete surface.
   8. Surfaces at cold joints shall be on the same plane.

3.2 SURFACE PREPARATION

A. The concrete surface shall be thoroughly clean, dry and free from any surface contaminates or cleaning residue that may harmfully affect the adhesion of the membrane.

B. Install a 1 inch (25.4 mm) face, 45 degree cant of CCW-201 polyurethane sealant at all angle changes and inside corners including projections through
the deck, walls, curbs, bumpers, etc.

C. All cracks over 1/16 inch (1.59 mm) in width and all moving cracks under 1/16 inch (1.59 mm) in width shall be saw cut to 1/4 inch (6.35 mm) minimum in width and depth. Saw cut a 1/4 inch by 1/4 inch (6.35 mm by 6.35 mm) kerf around drain flanges. Clean, prime and fill saw cuts flush with CCW-201 polyurethane sealant.

D. All moving cracks over 1/16 inch (1.59 mm) wide and all expansion joints less than 1 inch (25.4 mm) wide shall be cleaned, primed, fitted with a backing rod and caulked with CCW-201 polyurethane sealant. For larger joints, contact Carlisle representative.

E. Allow all sealant to cure thoroughly.

F. Apply a 6 inches (152 mm) wide, 45 mils (1.1 mm) thick stripe-coat of CCW-MIRASEAL centered over all sealed cracks, hairline cracks, joints, and outside corners.

G. Apply a 45 mil (1.1 mm) thick stripe-coat of CCW-MIRASEAL over sealant cant and extending 4 inches (102 mm) onto the horizontal deck and up the vertical wall to the height called out on the drawings (minimum 8 inches (203 mm) recommended).

H. Allow all detail work to cure overnight.

I. All required metal shall be installed at this time. Apply a stripe coat of CCW-MIRASEAL, 45 mils (1.1 mm) thick, 6 inches (152 mm) wide, centered over all transitions from concrete to metal flashings and reinforce with CCW DCH Fabric. Allow the stripe coat to cure a minimum of three hours to a firm consistency.

3.3 APPLICATION

A. Priming: Not required for adhesion to dry surfaces, non-porous concrete or wood. Consult CCW for other substrates.

B. Apply the CCW-MIRASEAL in one uniform coat at the rate of one gallon minimum per 25 square feet or as needed in order to obtain a minimum thickness of 60 wet mils (1.5 mm), including coverage of detail work. Use a 1 inch (25.4 mm) notch squeegee to achieve a uniform thickness, then back roll to smooth coating.

C. Immediately install Carlisle’s DCH fabric working the fabric into the wet CCW-MIRASEAL until fabric is saturated, avoiding trapped air, wrinkles and fish mouths. Cut and lay flat wrinkles and fish mouths.

D. In the event the entire surface is not completed in one day and becomes contaminated, prior to beginning application clean an area 6 inches (152 mm) wide along the edge of the previously applied membrane with a cloth.
wet with xylene solvent. New work shall overlap the existing work by 6 inches (152 mm).

E. Allow the first coat of CCW-MIRASEAL to cure three hours minimum to a firm consistency.

F. Apply the second coat of CCW-MIRASEAL at 25 sf/gallon in a uniform consistency of 60 mils (1.5 mm) over the first coat of CCW-MIRASEAL. Cover the DCH fabric for complete encapsulation.

3.4 FLOOD TEST

A. Allow CCW-MIRASEAL Membrane to cure for at least 24 hours. Plug drains and provide barriers necessary to contain flood water.

B. Flood surface with 1 inch (25.4 mm) head of water for 24 hours. Inspect for leaks and repair membrane if leaks are found. Retest after making repairs.

3.5 PROTECTION COURSE

A. Install MiraDrain Drainage Composite and CCW Protection Board-H/HS Protection Course immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW-MIRASEAL membrane from damage by other trades.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Continuous Insulation for Roofs:
   1. Nailable Base-3.

B. Flashings and tapes.

C. Insulation clips.

D. Nail-board fasteners.

1.2 REFERENCES

A. AAMA 2605 - ANSI/SBCA FS 100-2012 Standard Requirements for Wind Pressure Resistance of Foam Plastic Insulating Sheathing Used in Exterior Wall Covering Assemblies.

B. AATCC Test Method 127 - Water Resistance: Hydroystatic Pressure Test

C. ASTM International (ASTM):


E. NFPA 286: Standard Methods Of Fire Tests For Evaluating Contribution Of Wall And Ceiling Interior Finish To Room Fire Growth

F. SBCRI Single Element Lateral Load Testing.

G. UL 1715 - Fire Test of Interior Finish Material.

1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Show fabrication and installation layouts of metal wall panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
   1. Accessories: Include details of all integral panel components and their interface with adjacent materials.
   2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Verification Samples: For each finish product specified, two samples, minimum size 4 inches by 6 inches (102mm x 150 mm).

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.

B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in
installing products of the same type and scope as specified.

C. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, foundation/structural system/substrate conditions, and insulation manufacturer's installation instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store and handle products per manufacturer's instructions until ready for installation.

1.6 SEQUENCING

A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.

B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

A. Insulation Warranty: At project closeout, provide to Owner an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Rmax Operating, LLC, which is located at: 13524 Welch Rd.; Dallas, TX 75244-5227; Toll Free Tel: 800-527-0890; Tel: 972-387-4500; Fax: 972-387-4673; Email: request info (rmax@rmax.com); Web: www.rmax.com


B. Or Equal: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 CONTINUOUS INSULATION FOR ROOFS

A. Nailable Base-3: Composite product composed of a closed-cell
polyisocyanurate roof insulation with glass fiber / organic mat facer on one side and a nailing panel on the top surface, such 7/16 inch or 5/8 inch OSB or CDX plywood (APA rated). Following physical properties are for the insulation component only.

1. Compliance:
   a. ASTM C1289 Type V.
   b. Florida Building Code (FBC) Section 2603, Foam Plastic.
   c. ASHRAE 90.1.
   d. Factory Mutual - Class 1 roofing per FM Standard 4470 (2.0 inches minimum thickness).

2. Density (Nominal) in accordance with ASTM D1622: 2.0 pcf.

3. Compressive Strength: ASTM D 1621 and ASTM C 1289, Type II, 20 psi (138 kPa) minimum for Grade 2 and 25 psi (172 kPa) for Grade 3.

4. Flame Spread in accordance with ASTM E84: 25 to 60.

5. Smoke Developed in accordance with ASTM E84: 75 to 160.

6. Water Vapor Transmission in accordance with ASTM E96: Less than 1.5 perms.

7. Water Absorption in accordance with ASTM C209: Less than 1 percent by volume.

8. Dimensional Stability in accordance with ASTM D2126: Less than 2 percent linear change.

9. Class 1 roof insulation per FM Standard 4450 (2 inches minimum thickness).

10. Service temperature: -40 degree F to +250 degree F (-38 degree C to 121 degree C).

11. Thickness: 4.0 inches (102mm).

2.3 FLASHINGS AND TAPES

A. R-SEAL 3000: Foil insulation flashing tape with acrylic pressure sensitive adhesive.
   2. Width: 4 inches (102mm).
   3. Width: 5 inches (127mm).
   4. Thickness: 3.4 mils (0.08mm).

2.4 NAILBOARD FASTENERS

A. Nailboard Fasteners: Insulation Panel fasteners for use in vented or composite nail board application
   1. Head: 5/8 inch (15.85 mm) oversized flat head.
   2. Thread Major Diameter: 0.245 inch (6.22 mm).
   3. Shank Diameter: 0.190 inch (4.82 mm).
   4. Point: #14 #3 square drive, drill point.
   6. 3-1/2 Inches (89 mm): Material No. 1119481.
PART 3 EXECUTION

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

3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for
      achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION, GENERAL
   A. Install in accordance with manufacturer's instructions and in proper
      relationship with adjacent construction.

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

END OF SECTION
PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including Contractual Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section Includes: Closed cell, polyurethane spray foam insulation.
B. Coordinate mechanical ventilation and fresh air supply with Mechanical Sections and ASHRAE Guidelines for optimum indoor air quality.

1.3 REFERENCES
A. American Society for Testing and Materials International (ASTM)
   2. ASTM C 1338: Standard Test method for Determining Fungi Resistance of Insulation Materials and Facings
   8. ASTM E 2357: Standard test Method for Determining Air Leakage of Air Barrier Assemblies

1.4 SUBMITTALS
A. Product Data for type of insulation product specified.
B. Product test reports performed by a qualified third-party testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, and other properties, based on comprehensive testing of current products.


D. Manufacturer’s certificate certifying insulation provided meets or exceeds specified requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer’s Qualifications: Product produced in an ISO 9001 registered factory.

B. Single Source Responsibility: Single source insulation product from one manufacturer.

C. Installer Qualifications: Engage an Icynene Licensed Contractor (installer) who has been trained and certified by Icynene.

D. Fire-Test-Response Characteristics: Provide materials specified as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84
2. Rated Wall Assembly Testing: ASTM E119 and NFPA 285

E. Toxicity/Hazardous Materials
1. Provide products that are “Low-emitting”.
2. Provide products that contain no PBDE’s.
3. Provide products that contain no urea-formaldehyde.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturers written instructions for handling and protection prior to and during installation.

B. Store both insulation components in a temperature controlled area between 60 and 85 degrees F, out of direct sunlight and avoid cold temperatures less than 60 F.

C. Use only those insulation components that are supplied by the Manufacturer.
1.7 PROJECT CONDITIONS
A. Do not expose insulation to sunlight, except to extent necessary for period of installation and concealment.

1.8 WARRANTY
A. Residential projects: Manufacturer’s standard limited lifetime warranty.
B. Refer to www.icynene.com for full warranty terms.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. Polyurethane Spray Foam Insulation: Icynene ProSeal LE™ by Icynene Inc.
B. Intumescent paint:
   1. DC-315 by International Fireproof Technology Inc.
   2. Flame Seal TB by Flame Seal Products Inc.
   3. Fireshell F10E by TPR Corp.
C. Transition Membranes – Self-Adhered:
   1. Blueskin SA by Henry Company
   2. AirShield by W.R. Meadows
D. Transition Membranes – Liquid:
   1. AirShield LM by W.R. Meadows
   2. Fast Flash by Prosoco
   3. Dymonic 100 by Tremco

2.2 MATERIALS
A. General: Provide insulating materials that comply with requirements and with referenced standards.
B. Icynene ProSeal LE™ Spray Foam Insulation: Medium-density, closed-cell, conforming to the following material performance:
   1. Thermal Resistance (for 1 inch of material) (R-Value/inch @75 deg F): ASTM C 518; 7.1 hr.sq ft.degree F/BTU
   2. Air Permeance (for 1 inch of material): ASTM E 2178; less than 0.02 L/s*m² @75 Pa
   3. Air Barrier System (for 1 inch of material): ASTM E 2357; less than 0.0106 L/s*m² @75 Pa
   4. Water Vapor Transmission (for 1.5 inches of material): ASTM E 96; 0.97 perm
   5. Water-Resistive Barrier (for 1 inch of material): ASTM E331 evaluated per ICC-ES AC71; Pass
   7. Flame Spread and Smoke Developed Rating: ASTM E 84
a. Flame Spread: 25
b. Smoke Development: 300
8. Greenguard Gold Certified

2.3 SOURCE QUALITY CONTROL
A. Insulation product components produced in an ISO 9001 registered factory.

PART 3 - EXECUTION
3.1 EXAMINATION
A. Examine substrates and conditions, under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.
   1. Review placement area to determine final location will not be within 3 inches of any heat source where the temperature will exceed 180 deg F per ASTM C 411 or in accordance with authorities having jurisdiction.

3.2 PREPARATION
A. Clean substrates and cavities of loose materials capable of interfering with insulation placement.

3.3 APPLICATION
A. Site mix liquid components supplied by Icynene and installed by Independent Icynene Licensed Dealer.
B. Apply insulation to substrates in compliance with manufacturer's written installation instructions. Apply to maximum of 1 1/2 inch pass, in a full 1 1/2 inch lift. Consult manufacturer’s installation instructions
C. Apply insulation to produce thickness required for indicated R Value.
D. Extend insulation in thickness indicated to envelop entire area to be insulated.
E. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
F. If required, install intumescent paint to required wet or dry mil thickness or coverage rate as confirmed by assembly tests, in accordance with manufacturer’s instructions, by brush, roller, conventional or airless spray.

3.4 REPAIRS
A. Any repairs must be effected by an Icynene Licensed Contractor.

3.5 PROTECTION
A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse.
SECTION 07 41 20
PREFORMED METAL SIDING, CONCEALED FASTENING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. This Section covers the pre-finished, pre-fabricated Factory Manufactured Architectural Concealed attachment Metal Wall system. All metal trim, accessories, fasteners, insulation, and sealants indicated on the drawings as part of this section.
B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
C. Related Work Specified Elsewhere
   1. Roof Deck structural steel, flat roof systems, preformed metal standing seam roofing, perimeter edge systems, fire-stopping not included in this section.

1.2 SUMMARY

A. Section Includes
   1. Factory formed metal wall panels

B. Related work specified elsewhere (Note: select from the below or add appropriate sections)
   2. Metal Roof Deck: Division 5 – Metal Deck Sections
   3. Flashing and Trim: Division 7- Flashing and Sheet Metal
   4. Sealants: Division 7 Joint Sealers Sections

1.3 QUALITY ASSURANCE

A. Petersen Aluminum Corp products establish a minimum of quality required.
   1. Acworth, GA, 800-272-4482

B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
D. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted

1.4 SUBSTITUTIONS

A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.5 SYSTEM DESCRIPTION

A. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated by the Hot-Dip Process

1.6 WALL PANEL SYSTEM PERFORMANCE TESTING

A. Air Penetration: When tested per ASTM E-283 @ 6.24 PSF the air penetration shall be .005 or less when tested in accordance here.
B. Water Penetration: When tested per ASTM E-331 @ 12.48 PSF for the 15 minute test period, the water penetration shall be none.
C. Dynamic Water Penetration: When tested per AAMA 501 @ 15 PSF, the water penetration shall be none.
D. Structural Performance: When tested per ASTM E 1592, withstand the effects of wind loads and deflection limits of the span as indicated on the drawings.
E. Negative Load Testing per ASTM E-330: The panel shall have been tested per ASTM E-330 to show negative wind uplifts at spans of 1’0” through 4’0” spans, both double and triple spans and the Manufacturer shall provide a Negative Wind Uplift Table for this panel at the above-listed spans, with current 2.0 Safety Factor as per IBC current code and 1.65 Safety Factor as per US Corps of Engineers.

1.7 WARRANTIES

A. Finish warranty: Manufacturer’s standard form in which manufacturer agrees to repair finish or replace wall panels that show evidence of deterioration of factory-applied finish within specified warranty period.

1. Exposed Panels Finish – deterioration includes the following:
   a. Color fading more than 5 hunter units when tested according to ASTM D 2244
   b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
   c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
2. Warranty Period
   a. 20 Years from the date of substantial completion
1.8 SUBMITTALS

A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and type of sealants, and any other details as may be required for a weather-tight installation.
B. Provide finish samples of all colors specified.
C. Shop drawings: Show fabrication and installation layouts of metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work.
D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved:

1.9 DELIVERY, STORAGE AND HANDLING

A. Ordering: Comply with manufacturer’s ordering instruction and lead time requirements to avoid construction delays.
B. Deliver components, sheets, metal soffit panels and other manufactured items so as not to be damaged or deformed. Package metal soffit panels for protection during transportation and handling.
C. Unload, store and erect metal soffit panels in a manner to prevent bending, warping, twisting and surface damage.
D. Stack metal wall panels on platforms or pallets, covered with suitable weathertight and ventilated covering.
E. Store metal wall panels to ensure dryness. Do not store metal wall panels in contact with other materials that might cause staining, denting or other surface damage.
F. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.10 PROJECT CONDITIONS

A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal panel work to be performed.
B. Field Measurements: Verify actual dimensions of construction contiguous with metal panels by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PANEL DESIGN

C. Provide factory-formed wall panels that shall be concealed attachment in nominal 16" width with 7/8" high panel corrugations that are mechanically...
attached to wall supports and do not have any exposed fasteners on the panel face for attachment to the wall supports. Panels are specified for clip attachment.

1. **PAC Precision Series HWPC panel, 16" width, 7/8" High, Four-rib profile with clip attachment.** *Attach with clip using clips and fasteners as prescribed in the manufacturers testing for the substrate provided.*

2.2 ACCEPTABLE MANUFACTURERS

A. This project is detailed around the wall panel product of Petersen Aluminum Corporation, Elk Grove Village, IL: **PAC Precision Series HWP and Highline panels.**

2.3 MATERIAL AND FINISHES

A. Preformed metal panels shall be fabricated of 24 GA G-90 Galvanized steel.

B. Color shall be PAC-CLAD Burnished Slate, Slate Grey, or Graphite (submit color samples for final approval)

C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over 0.25 to 0.31 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.

D. Field protection must be provided by the Contractor at the job site so material is not exposed to weather and moisture.

E. Forming: use continuous and rolling method. No “portable rollforming” machines will be permitted for wall panels; no installer-owned or installer-rented machines shall be permitted. It is the intent of the Architect to provide Factory-Manufactured wall panel systems only for this project.

F. Trim: Trim shall be fabricated of the same material and finish to match the profiled sheeting and press broken in lengths of 12 feet maximum. Trim shall be formed only by the manufacturer or their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.

G. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the wall panel system.

H. Exposed fasteners shall not restrict free movement of the wall panel system resulting from thermal forces, except at designed points of wall panel fixity. May require the use of PAC factory clips to alleviate thermal movement for panels over 20’ in length. Consult PAC factory on use of wall panel clips.
I. Closures: Use composition or metal profiled closures at top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.

J. Fasteners: Fasteners shall be galvanized steel, dished washers, galvanized steel with bonded neoprene.

K. Zees: Where required by design of primary structural framing system shall be used to span between beams and/or joists.

L. Insulation: See Section 07 210: Building Insulation.

M. Sealants

   1. Exterior grade silicone sealant recommended by roofing manufacturer, or;
   2. One part non-sag, gun grade, exterior type polyurethane recommended by roofing manufacturer.

2.4 FABRICATION

   A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown and, if not shown, provide manufacturer's standard product fabrication.
   B. Fabricate components of the system in factory, ready for field assembly.
   C. Fabricate components and assemble units to comply with fire and performance requirements specified.
   D. Apply specified finishes in conformance with manufacturer's standards, and according to manufacturer's instructions.

PART 3 - EXECUTION

3.1 INSPECTION

   A. Examine alignment of structural steel and related supports prior to installation and do not proceed until the defects are corrected by the responsible contractor.
   B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
   C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FASTENERS

   A. Secure units to supports.
   B. Place fasteners as indicated in manufacturer's standards.
3.3 INSTALLATION

A. Panels shall be installed plumb and true in proper alignment and relation to the structural framing. The erector must have at least five years successful experience with similar applications.
B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be by manufacturer’s installation instructions and details for this wall panel system.
C. Remove all strippable coating and provide a dry wipe-down cleaning of the panels as they are erected.
D. Panels attached to any TREATED LUMBER MUST HAVE AN APPROPRIATE VAPOR BARRIER INSTALLED OVER IT PRIOR TO INSTALLING ANY SOFIT PANELS OR RELATED FLASHINGS. DO NOT ALLOW ANY METAL PRODUCTS TO COME INTO DIRECT CONTACT WITH TREATED LUMBER.

3.4 DAMAGED MATERIAL

A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION
SECTION 07 61 00
PRE-FORMED METAL STANDING SEAM ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Metal roofing, including flashing and accessories.

1.2 RELATED SECTIONS
Roof Deck structural steel, and Fire-stopping not included in this section.

1.3 REFERENCES
I. Dade County County (Florida) Acceptance Report Numbers: 01-1106-01 and 01-1106-02.
J. FM - Tests Requirements for Class 1 Panel roofs, Factory Mutual Research Corporation.


1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Operation and Maintenance Data: Include methods for maintaining installed products and precautions relating to cleaning materials and methods that might be detrimental to finishes and performance.


1.5 QUALITY ASSURANCE

A. Petersen Aluminum Corp products establish a minimum of quality required.

   Acworth, GA, 800-272-4482

B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.

C. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
Architectural Sheet Metal Manual and National Roofing Contractors Association (NRCA) details applicable to wall panels and wall flashings.

D. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted

E. Installer Qualifications: Installer with documented experience in performing work of this section who has specialized in the installation of work similar to that required for this project.

F. Pre-Installation Meeting: Conduct pre-installation meeting to acquaint installers of roofing and related work with project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

1.6 SUBSTITUTIONS
A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.7 DELIVERY, STORAGE, AND HANDLING
A. Store products in manufacturer's unopened packaging with identification labels intact until ready for installation.

B. Store materials protected from exposure to harmful conditions. Store material in dry, above ground location.
1. Stack pre-finished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture to run off.
2. Prevent contact with material that may cause corrosion, discoloration or staining.
3. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

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

1.9 ROOF SYSTEM PERFORMANCE TESTING
A. Water Penetration: When tested per ASTM E-283/1680 and ASTM E-331/1646 there shall be no uncontrolled water penetration or air infiltration through the panel joints.
B. Roof System shall be designed to meet Florida Building Code wind load requirements. Panel system shall have a Miami-Dade® NOA APPROVAL with current NOA approval number available to Architect upon request.

C. Roof System shall be designed to meet a UL Class 90 wind uplift in accordance with UL standard 580. Panel attachment and spacing of clip attachment will be certified by a Registered Florida Professional Engineer to show the applicable spacing for Zones 1, 2 and 3 per current Florida Building Code and per the Structural Engineer-of-Record “Cladding & Component pressures” for the roof system on Bid Drawings S001 structural drawings.

1.10 WARRANTY

A. Manufacturer’s Warranty: Provide manufacturer’s standard warranty document executed by authorized company official covering: finish, including color, fade, chalking and film integrity.

B. The Manufacturer shall warrant for twenty years (20) from the date of substantial completion of the Work related to this section, that the work is not defective in workmanship or material, and that the roof will be adequate to prevent leaks. This warranty may be provided in the short term by the Contractor/Roof Installer, however must have the backing and assurance of the roof system manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Petersen Aluminum Corp., which is located at: 1005 Tonne Rd. ; Elk Grove Village, IL 60007; Toll Free Tel: 800-323-1960; Tel: 847-228-7150; Fax: 800-722-7150; Email: request info (bbatkoff@petersenmail.com); Web: www.pac-clad.com

Other acceptable Manufacturers:
- IMETCO: Tucker, GA "Series 300" system 770-908-1030
- Whirlwind Building Systems, Douglasville, GA
- MBCI, Douglasville, GA "Batten-Lock" 770-948-7568

2.2 SHEET METAL ROOFING

A. Roof Panels.
   1. Performance Requirements: Provide sheet metal roofing that has been manufactured, fabricated and installed to achieve the
following performance without defects, damage, failure or infiltration of water.

a. Wind Uplift: Provide UL 580 Class 90 rated assembly.
b. FM: Test Requirements for Class 1 panel roofs.
c. Static Air Infiltration: 0.06 cu ft/min/sq ft (1.1 cu m/h/sq m) at 6.24 lb/sq ft (300 Pa) air pressure differential, maximum, when tested in accordance with ASTM E 283 or ASTM E 1680.
d. Water Infiltration: No evidence of water penetration at inward static air pressure differential of 12.0 lb/sq ft (575 kPa), when tested in accordance with ASTM E 331 or ASTM E 1646.
e. Thermal Movement: Accommodate movement expected due to ambient and surface temperature ranges likely to occur at project site.

2. Panel Lengths: As indicated on drawings. Maximum length indicated is 98 feet. These panels will require field fabrication. Panels over 55’ in length required to be in one continuous roll.

3. Design Basis: Petersen Aluminum Tite-Loc Plus Panels with Striations & Pencil Ribs; tension-leveled panels with 2 inch (50 mm) high mechanically crimped standing seams.

4. Seam Style: Mechanically seamed together, triple-folded to 180 degrees (Tite-Loc Plus) per FM approval.


6. Panel Width: 18 inch wide, center to center.

7. Provide Striations with Pencil Ribs on the panel pan to prevent “oil-canning”


10. Texture: Striated with Pencil-Ribs to prevent “oil-canning”

11. Finish: Factory applied PAC-CLAD finish:
   a. Topside: Full-strength fluoropolymer, 70 percent Kynar 500 or Hylar resin, 1.0 mil (0.025 mm) total dry film thickness.
   b. Underside: Wash coat of 0.3 to 0.4 mil (0.076 to 0.1 mm) dry film thickness.
   c. Color: Standard Colors: Burnished Slate, Slate Grey, or Graphite (Submit color samples for final approval)

12. Exposed Flashing and Trim:
    Unless otherwise specified, all exposed adjacent flashing and trim shall be of the same material and finish as panel system.
   a. Forming: Use continuous end rolling method. No end laps on panels.
   b. Trim: Trim shall be fabricated of the same material and
finish to match the profiled sheeting and press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer or their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.

c. Closures: Use composition or metal profiled closures at top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.

d. Insulation: See Section 07 210: Building Insulation.

B. Gutters and Downspouts:
1. Aluminum: Kynar finish color to match standing seam roof:
2. High-Back Box Gutter
   a. Depth: 8in, Aluminum .032in, 10’ length min.
3. Square/Rectangular Downspouts and Elbows and Offsets:
   a. Profile: 8” x 8”, Material: Aluminum with Kynar Finish, 0.024 in, Length 120 in.
   b. Provide strap hangers for downspouts and fascia hangers with snap trim typical. Spacing as required to provide complete installation.
   c. Provide gutter screens: Powder coated to match gutter system.

2.3 ACCESSORY MATERIALS

A. Self-Adhered roofing underlayment: Furnish and install a 40 mil “Peel-n-stick” membrane as required by the metal panel manufacturer. Membrane shall be minimum 40 MIL thickness, smooth, non-granular, and shall be installed as required by the standing seam panel manufacturer to attain the desired 20 year weathertightness warranty. Product shall be ONE OF the following:
   1. Grace: Ice & Water Shield
   2. Carlisle: CCW WIP 300HT
   3. Interwrap: Titanium PSU
   4. MFM Corp: “Wind & Water Shield”
   5. TAMKO: TW Wile and Metal Underlayment
   6. Polyguard: Deck Guard HT or Polyglas HT

B. Polyiso-cyanurate foamed plastic, 2 pcf (32 kg/cu m) density to Meet R-25 Minimum.

C. Sealant: Provide Exterior grade silicone sealant as recommended by roofing manufacturer for the application.

D. Touch-Up Paint: Approved by panel manufacturer.
PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrates are acceptable for roofing installation in accordance with manufacturer's instructions.

B. Do not begin installation until substrates have been properly prepared.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Coordinate metal roofing with other work, including but not limited to drainage, flashing and trim, deck substrates, copings, fascia, and other adjoining work.

C. Install metal roofing panels to profiles, patterns and drainage indicated, in accordance with manufacturer's instructions, and as necessary to achieve specified performance and a leak-free installation. Allow for structural and thermal movement.

D. Separate dissimilar metals using bituminous coating to prevent galvanic action.

E. Use fasteners recommended by panel manufacturer; conceal fasteners wherever possible; cover and seal exposed fasteners. Place fasteners where indicated in manufacturers standards. Secure units to supports.

F. Provide uniform, neat seams; provide sealant-type joint where indicated and form joints to conceal sealant.

G. Panels shall be installed plumb and true in proper alignment and relation to the structural framing.

H. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.

I. Remove all strippable coatings and provide a dry wipe-down cleaning of the panels as they are erected.

J. Field Inspection of installed panel roof system by Metal Panel Manufacturer Factory-Approved/Authorized inspector will be required for the 20 Year Limited Weathertightness Warranty. Minimum of two (2) inspections by the Factory Inspector will be required with written reports of these inspections.
3.3 FIELD QUALITY CONTROL

A. Post Installation Testing: Owner reserves right to perform post installation testing of installed sheet metal roofing.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.4 CLEANING

A. Remove temporary coverings and protection of adjacent work areas.

B. Touch-up, repair or replace damaged products.

C. Clean in accordance with manufacturer's instructions prior to Substantial Completion.

D. Remove construction debris from project site and legally dispose of debris.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the architect and owner before Substantial Completion.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Summary: It is the intent of this section to provide for the furnishing and installing of sealants and caulking as described herein as is necessary to provide a complete, water-tight installation of the windows.

1.3 Submittals:
   1.3.1 Samples:
      1.3.1.1 Submit one cartridge of each type and color sealant to be used.
      1.3.1.2 Submit three (3) pieces of backing material, minimum 6” long, of each size required.

   1.3.2 Product Data:
      1.3.2.1 Submit three (3) copies of product manufacturer's specifications, recommendations, and installation instructions for sealant, backing, and associated materials.
      1.3.2.2 Submit two (2) copies of manufacturer's color chart for sealant selection.

   1.3.3 Provide minimum three (3) copies of manufacturer's specification data sheets for each product specified.

1.4 Product Handling:

   1.4.1 Deliver materials in original, tightly sealed containers or unopened packages with manufacturer's name, label, product identification and lot numbers, where appropriate, intact.

   1.4.2 Store materials out of weather as recommended by manufacturer.

   1.4.3 Protect materials from damage before, during, and after installation.

1.5 Job Conditions:
1.5.1 Environmental requirements:

1.5.1.1 Apply only when temperatures shall be a minimum of 50° F. and when rain is not forecast for 24 hours.

1.5.1.2 Observe manufacturer’s recommendations for safe handling and ventilation.

1.5.2 Protection:

1.5.2.1 Adjacent Surfaces: Protect work of other trades from damage by sealant with masking tape or other means necessary.

1.5.2.2 Damaged Work: Clean, repair, or replace damaged work, to include, but not limited to, work of other trades, at no additional cost.

1.6 Warranty:

1.6.1 Provide manufacturer’s written warranty of five- (5) year period against material failure.

1.6.2 Provide a warranty for workmanship against leakage for two- (2) year period.

2. PRODUCTS:

2.1 Sealants:

2.1.1 Sealant for window/exterior wall joints: Vertical and Inclined Joints- Vulkem # 227, as manufactured by Mameco International, Cleveland, Ohio, or approved equal, shall be used in all exterior non-horizontal joints. The use of the one-component Vulkem #116 is optional if temperatures during installation are at or above 70 degrees F.

2.1.2 Exposed locations on the building interior with no joint movement: Caulking – Acrylic Latex Caulk. Caulking shall be applied as part of preparation for interior painting to provide a smooth joint at dissimilar materials or at the intersection of surfaces.

2.1.3 Sealants for metal roofing shall be as specified in Section 07 61 00.

2.2 Backer Rod:
2.2.1 Material: Open cell compressible, resilient, non-waxing, polyurethane foam compatible with sealant.

2.2.2 Size and Shape: Variable to control depth of sealant and provide 20% to 50% compression upon insertion.

2.3 Primer: Non-staining type approved by sealant manufacturer.

2.4 Bond Breaker: Pressure sensitive adhesive polyethylene tape approved by sealant manufacturer.

2.5 Masking Tape: Pressure sensitive adhesive paper tape.

2.6 Joint Cleaner: Xylol.

3. EXECUTION:

3.1 Inspection:

3.1.1 Examine surfaces to be caulked to assure that they are sound, smooth, clean, dry, and free of visible contamination, suitable and ready for sealant application.

3.1.2 Assure that surfaces requiring curing have been properly cured and ready for sealant application.

3.1.3 Do not start work until surface conditions to be caulked are satisfactory and defects have been corrected.

3.2 Preparation:

3.2.1 Cleaning: Clean joint surfaces, using joint cleaner as necessary, to be free of dust, dirt, oil, grease, rust, lacquers, moisture, or other contaminants and matter which may adversely affect proper adhesion of sealant.

3.2.2 Masking: Mask area adjacent to joints.

3.2.3 Primer: After cleaning joints, apply primer, if recommended by sealant manufacturer, to dry surfaces.

3.2.4 Joint Backer: Where joint depth exceeds required depth of sealant, install joint backing to provide backing and uniform depth of sealant.
3.2.5 Bond Breaker: Where joint backing is not required or cannot be installed, install bond breaker tape smoothly at back of joint.

3.3 Installation / Application:

3.3.1 Sealant Application:

3.3.1.1 Apply sealant in accordance with manufacturer's application instructions.

3.3.1.2 Use hand guns or air-pressure equipment, with proper nozzle size, with sufficient pressure to drive and force sealant into and completely fill joints.

3.3.2 Tooling:

3.3.2.1 Tool joints to form smooth, uniform beads with slightly concave surfaces.

3.3.2.2 Finish joints to be straight, uniform, smooth, and neatly finished.

3.4 Cleaning:

3.4.1 Clean off excess compound or smears with cleaning agent recommended by sealant manufacturer.

3.4.2 Take care not to damage adjacent work with cleaning agent, to include but not limited to, defacing or marring finished surfaces.

3.4.3 Protect finished sealant work as required to prevent damage until acceptance of work.

3.5 Schedule:

3.5.1 Where different materials meet, adjoin, or abut.

3.5.2 Where sealant is required to prevent moisture intrusion into building.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Flush Steel Doors.
   B. Steel frames.
   C. Hollow Metal Framing Systems.

1.2 RELATED SECTIONS
   A. Section 08 14 00 - Wood Doors.
   B. Section 08 71 00 - Door Hardware.
   C. Section 08 80 00 - Glazing.
   D. Section 09 90 00 - Painting and Coating.

1.3 REFERENCES
   C. ANSI/BHMA A156.7 - Hinge Template Dimensions.
   D. ANSI A 250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.
   E. ANSI/SDI A 250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.
   F. ANSI A 250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
   G. ANSI A 250.11 - Recommended Erection Instructions for Steel Frames.
   H. ASTM - American Society for Testing and Materials
J. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

K. ASTM A 924 - Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.

L. SDI - Steel Door Institute

M. SDI-111 - Recommended Standard Details for Steel Doors & Frames.

N. NAAMM/HHMA-820 TN01 - Grouting Hollow Metal Frames

O. NAAMM/HMMA - Hollow Metal Manufacturers Association


Q. UL - Building Materials Directory; Underwriters Laboratories Inc.

R. Miami - Dade County test protocols PA 201, PA 202 and PA 203.

S. Florida Building Code test protocols TAS 201, TAS 202 and TAS 203.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's standard details and catalog data indicating compliance with referenced standards, and manufacturer's installation instructions.

C. Certificates:
   1. Manufacturer's certification that products comply with referenced standards.
   2. Evidence of manufacturer's membership in the Steel Door Institute.

D. Shop Drawings: Door, frame, and hardware schedule in accordance with SDI 111D. Show types, quantities, dimensions, specified performance, and design criteria, materials and similar data for each opening required.
   1. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive hardware.
   2. Indicate door elevations, internal reinforcement, closure method, and cutouts for glass lights and louvers.

1.5 QUALITY ASSURANCE
A. Supplier: A direct account of the manufacturer who has on permanent staff, 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 openings.


C. Acoustical Doors shall have a minimum Sound Transmission Classification (STC) Rating of 38 with standard honeycomb core and be tested in accordance with ASTM E-90-87, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements". Optional STC openings available - 42, 43, 47, 48, 50 and 52 - all tested in accordance with ASTM E90 and E413.

D. All products shall conform to the requirements of ANSI A250.8, "SDI 100 Recommended Specifications for Standard Steel Doors and Frames".

E. Manufacturer Qualifications: Member of the Steel Door Institute.

F. Installer: Minimum five years documented experience installing products specified this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Handle, store and protect products in accordance with the manufacturers printed instructions and ANSI/SDI A250.10 and NAAMM/HMMA 840.

B. Store doors vertically in a dry area, under a proper vented cover. Place on 4 inch (102 mm) high wood sills to prevent rust or damage. Provide 1/4-inch (6 mm) space between doors to promote air circulation.

C. Store frames in an upright position with heads uppermost under cover. Place on 4 inch (102 mm) high wood sills to prevent rust and damage. Store assembled frames five units maximum in a stack with 2 inch (51 mm) space between frames to promote air circulation.

D. Do not use non-vented plastic or canvas shelters to prevent rust or damage.

E. Should wrappers become wet, remove immediately.

1.7 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 Manufacturer: Steelcraft an Allegion Brand, which is located at: 11819 N. Pennsylvania St.; Carmel, IN 46032; Toll Free Tel: 888-868- 8943; Email: contactus@allegion.com; Web: us.allegion.com/brands/steelcraft/Pages/default.aspx

B. Acceptable Manufacturer: Republic Doors and Frames an Allegion Brand, which is located at: 11819 N. Pennsylvania St.; Carmel, IN 46032; Toll Free Tel: 888-868- 8943; Email: request info (contactus@allegion.com); Web: www.republicdoor.com

C. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00

D. Provide all steel doors and frames from a single manufacturer.

2.2 DOORS

A. General: Construct exterior/interior doors to the following designs and gages:

1. Exterior Doors: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60:
   a. Thickness:
      1) 18 gage (1 mm).
      2) 16 gage (1.3 mm).
      3) 14 gage (1.7 mm).
   b. Include galvannealed components and internal reinforcements with galvannealed doors.
   c. Close tops of exterior swing-out doors to eliminate moisture penetration. Galvannealed steel top caps are permitted.

2. Include galvannealed components and internal reinforcements.

3. Prime Finish Doors: Clean, phosphatize and factory prime painted doors indicated on Door Schedule as HM.
4. Hardware Reinforcements:
   a. Hinge reinforcements for full mortise hinges: minimum 7 gage (4.7 mm).
   b. Lock reinforcements: minimum 16 gage (1.3 mm).
   c. Closer reinforcements: minimum 14 gage (1.7 mm) steel, 20-inch (508 mm) 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.

B. Exterior Weather Doors: Design to resist the cyclic pressures, static pressures and missile impact loads as detailed in the Florida Building Code Approval System and meet Florida Building Code test protocols TAS 201, TAS 202 and TAS 203.
   2. Face sheets, 16 gage (1.3 mm) galvannealed steel having an A60 zinc-iron alloy coating conforming to ASTM designations A653 and A924.
   3. Bevel hinge and lock door edges, 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.
   4. Reinforce top and bottom of doors with galvannealed 14 gage (1.7 mm), welded to both panels.
   5. Vertical edge seams: Provide doors with continuous vertical mechanical inter-locking joints at lock and hinge edges. Finish edges as follows:
      a. Welded Vertical Edges (W): Continuous vertical mechanical interlocking joints; edge seams welded, epoxy filled, and ground smooth.
   6. Door faces reinforced and sound deadened as follows:
      a. Honeycomb: Reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to inside faces of both panels using contact adhesive applied to both panels and honeycomb core.

2.3 DOOR FRAMES

A. General: Construct exterior/interior metal door frames to the following designs and gauges;
   1. Exterior Frames: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60:
      a. Thickness:
      1) 14 gage (1.7 mm).
2. Interior Frames in stud wall construction: cold rolled steel, ASTM A 1008/A 1008M.
   a. Thickness:
      1) 16 gage (F16 Series).
   b. Double Rabbet Frame
   c. Mortise Hinge Prep
   d. Welded Corner – Pre-assembled (to be installed as a part of the framing sequence)

3. Include internal reinforcements as required. Include galvannealed components and internal reinforcements with galvannealed frames.

4. Include internal reinforcements as required for door closers.

5. Electrical Requirements: Coordinate all electrical requirements for doors and frames. Make provisions for installation of electrical items so that wiring can be readily removed and replaced.
   a. Provide cutouts and reinforcements required for metal door frame to accept electric components.
   b. Frame with Electrical Hinges: Weld UL listed grout guard cover box welded over center hinge reinforcing. Top or bottom hinge locations are not permitted.
   c. Provide cutouts and reinforcements required to accept security system components.
   d. Coordinate with owners security vendor prior to fabrication.

   a. Performance:
      1) Physical performance: 5 million cycles per ANSI A250.4

   a. Face welded: Weld miter joints between head and jamb faces completely along their length either internally or externally. The remaining elements of the frame profile (soffit, stop and rabbets) are not welded. Grind and finish face joints smooth.

8. Profile:
   a. 2 inches (51 mm) face dimension with 5/8 inch (16 mm) high stop, and types and throat dimensions indicated on the Door Schedule.
   b. Provide side lite for type ‘C’ (Interior Office Front Door Frames) as indicated on the Door Schedule (SHEET A1001).
   c. Reference glazing 08 80 00 for glazing accessories.
   d. Provide manufacturer’s standard tfe-fluorocarbon or polyethylene material to which sealants will NOT develop adhesion.

9. Provide following reinforcement and accessories:
   a. Preparation for 4-1/2 inches (114 mm) high, standard
weight, or heavy weight, full mortise hinges; with plaster guard. Minimum 7 gauge (4.7 mm) steel.

b. Strike preparation (single doors) for 4-7/8 inch (123 mm) universal strike; with plaster guard. Minimum 16 gauge (1.3 mm) steel.

c. Closer preparation minimum 14 gauge (1.7 mm) steel.

d. Silencers. Prepare frames to receive inserted type door silencers, 3 per strike jamb on single doors, and 2 per head for pair of doors. Stick-on silencers are not permitted.

2.4 ACCESSORIES

A. Anchors: Manufacturer’s standard framing anchors, specified in manufacturer’s printed installation instructions for project conditions.

B. Astragals for pairs of doors: Manufacturer’s standard for labeled and non-labeled openings.

C. Door Bottom:
   2. Characteristics: Electrometric, continuous strip, screw-attached to recessed bottom door channel for concealed installation; double-sealing.

D. Plaster Guards: Same material as door frame, minimum 24 gage (0.5 mm) minimum; provide for all strike boxes.

E. Silencers: Resilient rubber, Inserted type, three per strike jamb for single openings and two per head for paired openings. Stick-on silencers shall not be permitted except on hollow metal framing systems.

F. Glazing: Specified in Section 08 80 00.

2.5 FABRICATION

A. Steel Frames:
   1. Factory-welded frames: Head and jamb intersecting corners mitered at 45 degrees, with back welded joints ground smooth.
      a. 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.
      b. 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.
      c. Provide 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. Provide cutouts and reinforcements required for electrical and security components specified elsewhere in this specification.

2.6 FINISHES

A. Factory Primed Finish: Meet requirements of ANSI A 250.10. Final finish paint is to be field applied.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that project conditions are acceptable before beginning installation of frames.
   1. Verify that completed concrete or masonry openings to receive butt type frames are of correct size.

B. Do not begin installation until conditions have been properly prepared.

C. Correct unacceptable conditions before proceeding with installation.

3.2 INSTALLATION

A. Install doors and frames in accordance with manufacturer's printed installation instructions and with Steel Door Institute’s recommended erection instructions for steel frames ANSI A250.11 and NAAMM/HMMA 840.

B. Remove temporary steel spreaders prior to installation of frames.

C. Set frames accurately in position; plumb, align and brace until permanent anchors are set. After wall construction is complete, remove temporary wood spreaders.
   1. Field splice only at approved locations indicated on the shop drawings.
   2. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.

D. Grouting Hollow Metal Frames:
   1. 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 and NAAMM/HMMA 840.
   2. Comply with ANSI/SDI Standard A250.8, paragraph 4.2.2, and HMMA 820 TN01 Grouting Hollow Metal Frames, whereby grout will be mixed to provide a 4 inch (102 mm) maximum slump consistency and hand toweled into place. Do not use grout mixed to a thinner, pumpable consistency.
   3. Provide a vertical wood brace during grouting of frame at
openings over 4 foot (1219 mm) wide, to prevent sagging of frame header.

E. Apply hardware in accordance with hardware manufacturers' instructions and Section 08 71 53 - Security Door Hardware.

3.3 FIELD QUALITY CONTROL

A. Door Assembly Testing:
   1. Upon completion of the installation, test each door assembly to confirm proper operation of its closing device and verify that it meets all operational criteria.
   2. Perform inspections by individuals with documented knowledge and understanding of the operation components of the type of door being tested.
   3. Provide a written record to the Owner.
   4. Record shall list the door assembly and include the door number with an itemized list of hardware set components for each door opening and location in the facility.

3.4 ADJUST AND CLEAN

A. Adjust doors for proper operation, free from binding or other defects.

B. Clean and restore soiled surfaces. Remove scraps and debris and leave site in a clean condition.

C. 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.

3.5 PROTECTION

A. Protect installed products and finished surfaces from damage during construction.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Divisions 0 and 1 are hereby made a part of this section as if fully repeated herein.

1.1.1 DIRECT PURCHASING: This Section is subject to the terms and procedures of Direct Purchasing, whereby the Owner reserves the right to recover the sales tax on materials by purchasing directly the materials required for this Section. 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.

1.2 Related Work:
Section 08 10 00, Metal Doors and Frames
Section 09 90 00, Painting
Section 08 71 00, Finish Hardware

1.3 Handling: Keep doors in protected condition and store flat until ready for installation. Identify each as per respective openings using Architect’s door numbers.

1.4 Contractor shall repair or replace doors damaged by construction. Trade responsible for damage shall compensate contractor for repair work or replacement in amount equal to cost of repair work or replacement.

1.5 Labels: Provide UL labeled doors with the time ratings as scheduled. Labels shall be embossed metal. Self-adhering Mylar labels will not be accepted.

1.6 Submittals:
1.6.1 Manufacturer’s data for wood doors.
1.6.2 Manufacturer’s lifetime guarantee for doors specified.
1.6.3 Shop drawings indicating door sizes, UL labels, and cutouts. Use door numbers as indicated on the Door Schedule. Indicate undercuts and louvers.
2. MATERIALS:

2.1 Construction:

2.1.1 Unless otherwise specified, all doors shall be solid stave lumber core doors.
Core: Low density wood blocks, kiln dried, not more than 2 1/2 wide; random lengths; joints well staggered.

2.1.2 Crossbands: 1/16" thick hardwood. Crossbands and faces shall be laminated to the core with water-resistant glue by the hot press process.

2.1.3 Face Veneer: **PL-1** (Plastic Laminate - Reference Finish Schedule)

2.1.4 Pre-fitting Machining: Lock and hinge stile beveled 1/8" in 2" with a pre-fit door clearance of 1/8" at top and sides and 1/2" maximum at the bottom unless otherwise noted. (Under no circumstances shall labeled doors be undercut greater than 3/4" above structural floor, measured after the door is hung.)

2.1.5 Door Cutouts: Factory cut locations, not to exceed 40% of door face or 50% of door height. Must be at least 6" from door edge, including hardware preps.

2.2 Manufacturers:
- Design Basis: Masonite – Aspiro Series Doors
- Construction Specialties, Inc.

2.3 Label: Provide labels as scheduled. Labels shall be embossed or engraved metal plates clearly indicating time rating specified. Protect labels during shipping and construction.

2.4 Warranty: Provide full warranty for the life of the original installation, subject to industry regulations for storage, hanging, finishing, and maintenance.

2.5 Finish: Doors shall receive HPDL (High-Pressure Decorative Laminate) finish: **PL-1** as indicated on Drawing A-901 finish schedule. Plastic Laminate surface material shall be factory applied.

2.5.1 Metal lite frame of door glazing shall be painted to match door frame.

3. COORDINATION OF RESPONSIBILITIES:

3.1 Contractor shall furnish the following information to the door manufacturer:
- Approved metal door frames schedule and shop details; approved hardware
schedule and list of templates required; Architect’s floor plan and door schedule.

3.2 Door frames improperly set shall be corrected by the Contractor to receive factory fit doors.

3.3 Door manufacturer will be responsible for properly coordinating information received by him so that doors are properly fitted, machined and ready to hang.

3.4 Store doors in a well-ventilated building, cover to keep clean, but allow circulation. Relative humidity must be between 30% and 60%.

3.5 Install wood doors in accordance with manufacturer’s instructions.

3.6 Job fit doors: Seal cut surfaces immediately after fitting and machining.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Acoustic pressed steel doors.
B. Acoustic steel overhead doors.
C. Acoustic wood doors and hollow metal frames.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.
B. Section 09 90 00 - Painting.
C. Division 26 (Electrical)

1.3 REFERENCES

B. ASTM A480/A480M - General Requirements for Flat-Rolled Stainless Heat-Resisting Steel Plate, Sheet, and Strip.
C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
F. ASTM E413 - Classification for Rating Sound Insulation.
G. AWS D1.1/D1.1M - Structural Welding Code - Steel.
I. HMMA 802 - Manufacturing of Hollow Metal Doors and Frames.
J. HMMA 840 - Installation and Storage of Hollow Metal Doors and
1.4 PERFORMANCE REQUIREMENTS

A. Acoustic Performance: Minimum Sound Transmission Class tested to ASTM E90. Label indicating sound transmission class shall be applied to the door and door frame.
   1. STC: XX (reference door schedule).

1.5 REGULATORY REQUIREMENTS

A. Installed Door and Frame Assembly: Conform to NFPA 80 and UL 10C as scheduled or required for fire rated class as scheduled or as indicated. Label indicating fire resistance shall be applied to the door and door frame.

1.6 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Indicate door and frame elevations, anchor types and closure methods, finishes, location of cut-outs for hardware, and cut outs for glazing.

D. Test Data:
   1. Submit test data indicating compliance with the Sound Transmission Class (STC) requirements. Include laboratory name, test report number, and date of test.
   2. Submit certification from test laboratory qualified under the National Voluntary Accreditation Program (NVLAP) of the U.S. Bureau of Standards.
E. Installation Instructions: Submit manufacturer's installation instructions.

1.7 QUALITY ASSURANCE
A. Manufacturer: Minimum 5 years documented experience manufacturing acoustic steel door and frame assemblies.
B. Installer Qualifications: Minimum 2 years experience installing similar products.
C. Perform work to requirements of HMMA (Hollow Metal Manufacturers Association) standards.

1.8 DELIVERY, STORAGE, AND HANDLING
A. Comply with manufacturer's recommendations including the following:
   1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification.
   2. Comply with HMMA 840.
   3. Weld minimum two temporary jamb spreaders per frame prior to shipment.
   4. Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.
   5. Store in vertical position, spaced with blocking to permit air circulation between components.
   6. Store materials out of water and covered to protect from damage.
   7. Store wood doors between 50 to 90 degrees F (10 to 32 degrees C) and 25 to 55 percent relative humidity.
   8. Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.
   9. Handle materials to avoid damage.

1.9 PROJECT CONDITIONS
A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.10 SEQUENCING
A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.11 WARRANTY
A. Manufacturer's Limited Warranty: Five years from date of supply,
covering material and workmanship.

B. Manufacturer's Limited Warranty: One year from date of supply, covering material and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Krieger Specialty Products; Tel: 404-665-7974; Fax: 562-692-0146; Email: mbowers@kriegerproducts.com; 1055 Winding Creek Trail, Atlanta, GA 30328.

B. Acceptable Manufacturer: AMBICO LIMITED, which is located at: 1120 Cummings Ave.; Ottawa, ON, Canada K1J 7R8; Toll Free Tel: 888-423-2224; Tel: 613-746-4663; Fax: 800-465-8561; Email: request info (specialized@Ambico.com); Web: www.ambico.com

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 ACOUSTIC WOOD DOORS AND HOLLOW METAL FRAMES

A. Sheet Steel:
   1. Galvanized steel to ASTM A653/A653M, ZF180, ZF75

B. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M,ZF75 (A25).

C. Wood Door Panel: Acoustic core with adhered facing.
   1. Plastic laminate Facing:
      a. Plastic Laminate: PL-1 (Reference finish schedule A-901)
      b. Where door face is plastic laminate, door edges shall be supplied with hardwood stiles and rails stained with color to match PLAM finish..

D. Wood Door Fabrication:
   1. Fabricate doors to ANSI/WDMA IS1A. Provide suitable thickness, design, and core to achieve specified STC and/or fire performance ratings.
   2. Reinforce doors where surface-mounted hardware is required.
   3. Drill and tap for mortised, templated hardware.
   4. Top and Bottom Rails: Factory sealed with wood sealer.
   5. Astragals: Metal acoustic astragals with integral acoustic seals for double doors.
   6. Exit Device Vertical Rods: Surface mounted; coordinate with exit hardware devices specified in Section 08 71 53 - Security Door Hardware.
7. Exit Device Vertical Rods: Concealed mounted; coordinate with exit hardware devices specified in Section 08 71 53 - Security Door Hardware.

E. Steel Frame Fabrication:
1. Sheet steel, metal thickness and appropriate to maintain door STC and fire ratings, mitered corners, fully welded seams.
2. Factory assembled and welded frames.

F. Accessories:
1. Glazing Stops for Frames: Formed steel channel, corner construction; prepared for countersink screws for side lite and borrowed lite frames.
   a. Steel Material: Galvanized.
   b. Steel Material: Stainless.
   c. Butted corners.
   d. Mitered corners.
   e. Tamperproof screws.
2. Glazing stops for doors: Formed blade stops, corner construction; prepared for countersink screws.
   a. Steel Material: Galvanized.
   b. Steel Material: Stainless.
   c. Butted corners.
   d. Mitered corners.
   e. Tamperproof screws.
3. Glass: Type as tested to achieve STC and fire ratings. Glazing to be factory supplied and pre-installed.
4. Primer: Rust inhibitive zinc chromate on frames.
5. Threshold: To provide a seal for door in closed position.
6. Astragal: To be supplied loose ready for field assembly.
7. Perimeter and bottom acoustic seals: to provide an acoustic seal for door is closed position.
8. Mullion: To be provided at paired and multiple leaf openings, where occasional access is required. Mullions with perimeter seals to be supplied by door and frame manufacturer.
9. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, and STC rating.

PART 3  EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION
   A. Install components to manufacturer’s written instructions.
   B. Install steel doors and frames to CSDMA and HMMA 840 standards and in accordance with NFPA 80 and UL 10C as scheduled or required, and local authority having jurisdiction.
   C. Utilize certified welders.
   D. Coordinate with wall construction for anchor placement.
   E. Set frames plumb, square, level and at correct elevation.
   F. Allow for deflection to ensure that structural loads are not transmitted to frame.
   G. Adjust operable parts for correct clearances and function.
   H. Install and adjust perimeter and bottom acoustic seals.

3.4 ERECTION TOLERANCES
   A. Installation tolerances of installed frame for square-ness, alignment, twist and plumbness are to be no more than plus or minus 1/16 inch (1.5 mm) in compliance with HMMA 841.

3.5 FIELD QUALITY CONTROL
   A. Provide qualified manufacturer’s representative to instruct installers on the proper installation and adjustment of door assemblies.
   B. Provide manufacturer’s representative to inspect door installation, and test minimum ten cycles of operation. Correct any deficient doors.

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

END OF SECTION
SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCE DOORS

1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.1.1. Work included: Furnish and install all aluminum storefront doors, including all necessary hardware, trim anchors, glazing and miscellaneous items in place, where shown on the drawings and as specified herein.

1.2 Materials specified below are intended to establish a standard of quality. Similar and equal products by other locally represented manufacturers will be considered.

1.2.1 Related Sections: Glazing shall be as specified in Section 08 80 00 "Glass and Glazing".

1.3 Submittals:

1.3.1 Manufacturers' data

1.3.2 Shop drawings showing installation and fabrication details.

1.3.2.1 It is understood that the dimensions of all materials shown are nominal dimensions. Contractor shall be responsible for verification of dimension and job conditions and shall provide window units and related materials to fit. Show actual dimension on shop drawings.

1.3.3 Test reports indicating AAMA rating and performance standards including infiltration and water resistance tests, uniform load deflection tests and uniform load structure tests.

2. PRODUCTS:

2.1 Types: Types are indicated on the drawings based on the following units supplied by KAWNEER.

2.1.1 Model AA 250 Thermal Entrance

2.1.1.1 Construction: Frames and sash members shall be constructed of aluminum alloy and tempered as
recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finishes. NOT LESS THAN 0.090" wall thickness and any location for the main frame and door leaf members. Glazing shall be as specified in Section 08 80 00. Performance Rating Testing in accordance with AAMA C55. Thermal break type of construction is required.

Vertical Stile: 2 ½”
Top Rail: 2 ½”
Bottom Rail: 10”

Major portions of door members to be 0.125” nominal thickness and glazing molding to be 0.05” thick.

Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.

Provide Adjustable glass jacks to help center the glass in the door opening.

2.1.1.2 Brackets and accessories: Provide manufacturer standard brackets, reinforcements, fasteners, anchors, and accessories.

2.1.1.2.1 Steel Anchors: Provide butyl or neoprene insulation between steel and aluminum to inhibit galvanic reaction between dissimilar metals.

2.1.1.3 Glazing: All systems shall be glazed with specified glass and shall be back bedded with butyl glazing compound. Glass shall be retained by standard snap-in glazing bead properly fitted.

2.1.1.4 Windows shall be set in a one piece sub-sill of matching finish with sealed end dams.

2.1.2 Hardware:
2.1.2.4 Weather Stripping: The door weathering on a single action butt-hinge door and frame (single or pairs) shall be comprised of a thermoplastic elastomer weathering on a tubular shape with a semi-rigid polymeric backing and a wool pile with polymeric fin.

2.1.2.5 Sill sweep strips: EPDM blade gasket sweep strip in an aluminum extrusion applied to the interior exposed surface of the bottom rail with concealed fasteners (Necessary to meet performance tests).
2.1.2.6 Threshold: Extruded aluminum, thermally broken, with ribbed surface. Similar or Equal to PEMKO 158A OFFSET SADDLE THRESHOLD. Black Anodized Finish.

2.1.2.7 Butt Hinges: Kawneer Standard: #29 Black Kalcolor

2.1.2.8 Pull (Exterior Side Only): CO-9 Pulls: Black Anodized

2.1.2.9 Exit Device: Ref Door Hardware Section (anodized Black finish)

2.1.2.10 Closer: Ref Door Hardware Section

2.1.2.11 Security Lock: Ref Door Hardware Section

2.1.2.12 Electric Strike: Ref Door Hardware Section

2.2 Finish: Manufacturer’s standard Permanodic™ Color Finish.

(1) Color: Permanodic™ Color Finish: #29 BLACK ANODIZED ALUMINUM. (AA-M10C21A44). Architectural Class I (.7 mils minimum)

3. INSTALLATION

3.1 Install in accordance with manufacturer’s instruction and recommendations.

3.2 Install door(s) plumb and level, true and square. Support properly and securely anchor.

3.3 Separate aluminum from dissimilar metals and coat dissimilar metals that are in drainage cavities, using one of the materials specified. Stainless steel, zinc, cadmium, and small areas of white bronze are not considered dissimilar metals.

3.4 Install joint sealers between frame members and adjacent surfaces as indicated.

3.5 Install glazing as specified elsewhere in Section 08 80 00.

3.6 Adjust operable hardware to operate smoothly and close tightly.

3.7 Clean glass and frames. Vacuum sill and frames. Remove excess sealant and debris.

END OF SECTION
SECTION 08 51 13

ALUMINUM WINDOWS (EXTERIOR)

1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.1.1. Work included: Furnish and install all aluminum windows, including all necessary hardware, trim anchors, glazing and miscellaneous items in place, where shown on the drawings and as specified herein.

1.2 Related Sections: Glazing shall be as specified in Section 08 80 00 "Glass and Glazing".

1.3 Submittals:

1.3.1 Manufacturers' data

1.3.2 Shop drawings showing installation and fabrication details.

1.3.2.1 It is understood that the dimensions of all materials shown are nominal dimensions. Contractor shall be responsible for verification of dimension and job conditions and shall provide window units and related materials to fit. Show actual dimension on shop drawings.

1.3.3 Test reports indicating AAMA rating and performance standards including infiltration and water resistance tests, uniform load deflection tests, uniform load structure tests. Comply with ASTM E283, ASTM E547, ASTM E330, and ASTM E331 and AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).

2. PRODUCTS:

2.1 Types: Types are indicated on the drawings based on the following units supplied by KAWNEER.

2.1.1 Model AA 6600 WINDOWS

2.1.1.1 Construction: Frames members shall be constructed of aluminum alloy and tempered as recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finishes. NOT LESS THAN 0.070" wall thickness and any location for the main frame and door leaf members.
Thermal Barrier: The thermal barrier shall be KAWNEER, consisting of two parallel glass fiber-reinforced nylon strips installed continuously and mechanically bonded to the aluminum.

Glazing shall be as specified in Section 08 80 00.

Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.

Provide Adjustable glass jacks to help center the glass in the door opening.

2.1.1.2 Brackets and accessories: Provide manufacturer standard brackets, reinforcements, fasteners, anchors, and accessories. All materials shall be compatible with aluminum window members.

2.1.1.2.1 Steel Anchors: When steel anchors are used, provide butyl or neoprene insulation between steel and aluminum to inhibit galvanic reaction between dissimilar metals.

2.1.1.3 Glazing: All systems shall be glazed with specified glass and shall be back bedded with butyl glazing compound. Glass shall be retained by standard snap-in glazing bead properly fitted.

2.1.1.4 Windows shall be set in a one piece sub-sill of matching finish with sealed end dams.

2.1.1.5 Sealant: For sealants required within fabricated windows, provide window manufacturer’s standard, permanently elastic, non-shrinking, and non-migrating type recommended by the sealant manufacturer for joint size and movement. Reference Division 7 for joint sealants.

2.2 Finish: Manufacturer’s standard Permanodic™ Color Finish.

(1) Color: Permanodic™ Color Finish: #29 BLACK ANODIZED ALUMINUM. (AA-M10C21A44). Architectural Class I (.7 mils minimum)

3. INSTALLATION

3.1 Install in accordance with manufacturer’s instruction and recommendations.
3.2 Install windows plumb and level, true and square. Support properly and securely anchor.

3.3 Separate aluminum from dissimilar metals and coat dissimilar metals that are in drainage cavities, using one of the materials specified. Stainless steel, zinc, cadmium, and small areas of white bronze are not considered dissimilar metals.

3.4 Install joint sealers between sill members and the surface below, as indicated.

3.5 Install glazing as specified in Section 08 80 00.

3.6 Clean glass and frames. Vacuum sill and frames. Remove excess sealant and debris prior to turning over to owner.

END OF SECTION
SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Door hardware for doors specified in "Hardware Sets" and required by actual conditions. Include screws, bolts, expansion shields, electrified door hardware, and other devices for proper application of hardware.

B. Products supplied but not installed under this Section:
   1. Hardware for aluminum doors will be furnished under this Section, but installed under Division 08 Openings.
   2. Electrified hardware will be furnished under this Section, but installed by the security contractor.
   3. Final replacement of cylinder cores shall be installed by Owner.
   4. Hold open wall magnets.

1.2 RELATED DIVISIONS

A. Division 08 - Openings.
B. Division 13 - Special Construction.
C. Division 26 - Electrical.
D. Division 28 - Fire Detection and Alarm.

1.3 SUBMITTALS

A. Submit in accordance with Conditions of the Contract and provisions of Section 01 30 00 - Administrative Requirements.

B. Shop Drawings: Hardware schedule shall be organized in vertical format illustrated in DHI Publications Sequence and Formatting for the Hardware Schedule. Include abbreviations and symbols page according to DHI Publications Abbreviations and Symbols. Complete nomenclature of items required for each door opening as indicated
   1. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of hardware.
   2. Architectural Hardware Consultant (AHC), as certified by DHI, who shall affix seal attesting to completeness and correctness, shall review hardware schedule prior to submittal.

C. Submit manufacturer's catalog sheet on design, grade and function of items listed in hardware schedule. Identify specific hardware item per sheet, provide index, and cover sheet.
D. Coordination: Distribute door hardware templates to related divisions within fourteen days of receiving approved door hardware submittals.

E. Electrified Hardware: Provide electrical information to include voltage, and amperage requirements for electrified door hardware and description of operation.
   1. Description of operation for each electrified opening to include description of component functions including location, sequence of operation and interface with other building control systems.
   2. Wiring Diagrams: Detail wiring for power, signal, and control system and differentiate between manufacturers installed and field installed wiring. Include the following:
      a. System schematic.
      b. Point to point wiring diagram.
      c. Riser diagram.
      d. Elevation of each door.
   3. Detail interface between electrified door hardware and fire alarm, access control, security, and building control systems.

F. Upon door hardware submittal approval, provide for each electrified opening, three copies of point to point diagrams.

G. Maintenance Tool and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware.

H. Closeout Submittals: Submit to Owner in a three ring binder or CD if requested.
   1. Warranties.
   2. Maintenance and operating manual including list of maintenance tools.
   3. Maintenance service agreement.
   4. Record documents.
   5. Copy of approved hardware schedule.
   6. Copy of approved keying schedule with bitting list.
   7. Door hardware supplier name, phone number and fax number.

1.4 QUALITY ASSURANCE

A. Electrified door hardware shall be Listed and Labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authority having jurisdiction.

B. Hardware supplier shall employ an Architectural Hardware Consultant (AHC) as certified by DHI and a member of the seal program who shall be available at reasonable times during course of work for Project hardware consultation.

C. Door hardware shall conform to ICC/ANSI A117.1. Handles, Pulls,
Latches, Locks and operating devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.

D. Fire Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C, unless otherwise indicated.

E. Pre-installation Meeting: Comply with requirements in Division 1 Section "Project Meetings".
   1. Convene meeting seven days before installation. Participants required to attend:

F. Within fourteen days of receipt of approved door hardware submittals contact Owner with representative from hardware supplier to establish a keying conference. Verify keyway, visual key identification, number of master keys and keys per lock. Provide keying system per Owners instructions.

G. Installer Qualifications: Specialized in performing installation of this Section and shall have five years minimum documented experience.

H. Hardware listed in Par.: Hardware Schedule is intended to establish a type and grade.

1.5 DELIVERY, STORAGE AND HANDLING

A. Provide a clean, dry and secure room for hardware delivered to Project but not yet installed.

B. Furnish hardware with each unit marked and numbered in accordance with approved finish hardware schedule. Include door and item number for each type of hardware.

C. Pack each item complete with necessary parts and fasteners in manufacturer's original packaging.

D. Deliver permanent key, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to Owner shall be established at "Keying Conference."

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
1.7 WARRANTY

A. General Warranty: Owner may have under provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by Contractor under requirements of the Contract documents.

B. Special Warranty: Warranties specified in this article shall not deprive Owner of other rights. Contractor, hardware supplier, and hardware installer shall be responsible for servicing hardware and keying related problems.
   1. Ten years for manual door closers.
   2. Five years for mortise, auxiliary and bored locks.
   3. Five years for exit devices.
   4. Two years for electromechanical door hardware.

C. Products judged defective during warranty period shall be replaced or repaired in accordance with manufacturer's warranty at no cost to Owner. There is no warranty against defects due to improper installation, abuse and failure to exercise normal maintenance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Hager Companies, which is located at: 139 Victor St.; St. Louis, MO 63104; Toll Free Tel: 800-325-9995; Tel: 314-772-4400; Fax: 800-782-0149; Email: request info (bwilkins@hagerco.com); Web: www.hagerco.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 HINGES

A. Hinges, including electric hinges and self-closing hinges when scheduled, shall be of one manufacturer as listed for continuity of design and consideration of warranty and shall be certified and listed by the following:
   1. Butts and Hinges: ANSI/BHMA A156.1
   2. Template Hinge Dimensions: ANSI/BHMA A156.7
   3. Self-Closing Hinges: ANSI/BHMA 156.17

B. Butt Hinges:
   1. Hinge weight and size unless otherwise indicated in hardware sets:

2.3 ELECTRIC STRIKES

A. Provide for use with type of locks shown on hardware schedule.
2.4 LOCKS AND LATCHES (GRADE 1 MORTISE)

A. Locks and latches shall be of one manufacturer as listed for continuity of design and consideration of warranty. Product to be certified and listed by following:
1. ANSI/BHMA A156.13 Series 1000 Certified to Grade 1 for Operational and Security.
2. UL/cUL Labeled and listed up to 3 hours for single doors up to 48 inches (1219 mm) in width and up to 96 inches (2438 mm) in height.
3. UL10C/UBC 7-2 Positive Pressure Rated.

B. Lock and latch function numbers and descriptions of manufacturer's series as listed in hardware sets. Material and Design:
1. Lock cases from fully wrapped, 12 gauge steel, Zinc dichromate for corrosion resistance.
2. Non-handed, field reversible without opening lock case.
3. Break away spindles to prevent unlocking during forced entry or vandalism.
4. Escutcheons are to be of solid Brass or Stainless Steel material.
5. Armor fronts are to be self-adjusting to accommodate a square edge door or a standard 1/8 inch (3 mm) beveled edge door.

C. Latch and Strike:
1. Stainless Steel latch bolt with minimum of 3/4 inch (19 mm) throw and deadlocking for keyed and exterior functions.
2. Strike is to fit a standard ANSI A115 prep measuring 1-1/4 inches (32 mm) by 4-7/8 inches (124 mm) with proper lip length to protect surrounding trim.
3. Deadbolts to be 1-3/4 inches (44.5 mm) total length with a minimum of a 1 inch (25 mm) throw and 3/4 inch (19 mm) internal engagement when fully extended and made of Stainless Steel material.

D. Electric Locks:
1. Fail Safe (power lock) outside trim is locked when power is applied and unlocked when power is removed. Lockset will unlock in the event of a power failure. (EL).
3. Door Position Monitor: Single switch SPDT Reed magnetic switch mounted inside lockset monitors whether door is fully closed. (DPM).
4. Request to Exit: Monitors inside lever rotation. (RX).

2.5 PUSH/PULL LATCH
A. Latches shall be of one manufacturer as listed for continuity of design and consideration of warranty. Product shall meet the following:
   2. UL listed.

B. Material and Design:
   1. Latch: Stainless Steel.
   2. Push/Pull levers 1-15/16 inches (49 mm) by 4-1/2 inches (114 mm), escutcheon 3-1/16 inches (78 mm) by 5 inches (127 mm), and projection 2-5/8 inches (67 mm)
   3. Latch Bolt Throw 1/2 inch (13 mm) with 2-3/4 inches (70 mm) backset or 5 inches (127 mm) backset (optional).
   4. Mounts five positions: Levers down, levers up, one lever up one lever down (push), one lever up one lever down (pull), and levers point away from latch.
   5. Engraving: "PUSH", "PULL" (optional).

C. Acceptable Manufacturer:
   1. Hager Companies: 311H or 311L for lead lined.

2.6 EXIT DEVICES (GRADE 1)

A. Shall be touch pad type, finish to match balance of door hardware. Exit Devices shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer to be certified and or listed by the following:
   1. BHMA Certified ANSI A156.3 Grade 1.
   2. UL/cUL Listed for up to 3 hours for "A" labeled doors.
   3. UL10C/UBC 7-2 Positive Pressure Rated.
   4. UL10B Neutral Pressure Rated.
   5. UL 305Listed for Panic Hardware.
   7. ANSI/BHMA A250.13 Severe Windstorm Resistant Component.

B. Material and Design:
   1. Touch pad shall extend a minimum of one half-door width. Freewheeling lever design shall match design of locks levers. Exit device to mount flush with door.
   2. Latchbolts: Rim device - 3/4 inch (19 mm) throw, Pullman type with automatic dead-latching, stainless steel. Surface vertical rod device - Top 1/2 inch (13 mm) throw, Pullman type with automatic dead-latching, stainless steel. Bottom 1/2 inch (13 mm) throw, Pullman type, held retracted during door swing, stainless steel.
   3. Fasteners: Wood screws, machine screws and thru-bolts.

C. Lock and Latch Functions: Function numbers and descriptions of
manufacturer's series and lever styles indicated in door hardware sets.

D. Electric Modifications:
1. Electric Latch Retraction: Continuous duty solenoids retract the latch bolt for momentary or maintained periods of time.
2. Provide Request to Exit (REX) switches as scheduled.
3. Electrified Trim: Outside trim locked (EL) or unlocked (EU) by electric current.
4. Delayed Egress with Wall Mounted Controller (4501 DE).

2.7 CYLINDERS AND KEYING

A. Cylinders shall be of one manufacturer as listed for continuity of design and consideration of warranty.

B. Standards: Manufacturer shall meet the following:
1. Auxiliary Locks: ANSI/BHMA A156.5
2. DHI Handbook "Keying systems and nomenclature" (1989)

C. Cylinders:
1. Manufacturer's standard tumbler type, seven-pin IC core and seven-pin conventional core supported by the Hager H1 keyway.
2. Shall be furnished with cams/tailpieces as required for locking device that is being furnished for project.

D. Keying:
1. Copy of Owners approved keying schedule shall be submitted to Owner and Architect with documentation of which keying conference was held and shall include the Owners sign-off.
2. Provide a bitting list to Owner of combinations as established, and expand to twenty five percent for future use or as directed by Owner.
3. Key into Owner's existing keying system if applicable: (Consultation with owner is required)
4. Keys to be shipped to Owner's representative, individually tag per keying conference.
5. Provide visual key control identification on keys.
6. Provide interchangeable cores with construction cores as per hardware schedule.
7. Single seven-pin key shall operate both conventional cores and SFIC small format interchangeable cores.

2.8 PUSH/PULL PLATES AND BARS

A. Push and pull plates shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer to be certified by the following:

2.9 CLOSERS (ALUMINUM BODY GRADE 1)

A. Shall be product of one manufacturer. Unless otherwise indicated on hardware schedule, comply with manufacturer's recommendations for size of closer, depending on width of door, frequency of use, atmospheric pressure, ADAAG requirements, and fire rating. Manufacturer to be certified by the following:
   1. BHMA Certified ANSI A156.4 Grade 1.
   2. ADA Complaint ANSI A117.1.
   3. UL/cUL Listed up to 3 hours.
   4. UL10C Positive Pressure Rated.
   5. UL10B Neutral Pressure Rated.

B. Material and Design:
   1. Provide aluminum non-handed bodies with full plastic covers.
   2. Closer shall have separate staked adjustable valve screws for latch speed, sweep speed, and backcheck.
   3. Provide Tri-Pack arms and brackets for regular arm, top jamb, and parallel arm mounting.
   5. Precision machined, heat-treated steel piston.
   6. Triple heat-treated steel spindle.
   7. Full rack and pinion operation.

C. Mounting:
   1. Out swing doors shall have surface parallel arm mount closers except where noted on hardware schedule.
   2. In swing doors shall have surface regular arm mount closers except where noted on hardware schedule.
   3. Provide brackets and shoe supports for aluminum doors and frames to mount fifth screw.
   4. Furnish drop plates where top rail conditions on door do not allow for mounting of closer and where backside of closer is exposed through glass.

D. Size closers in compliance with requirements for accessibility (ADDAG). Comply with following maximum opening force requirements. Interior hinged openings: 5.0 lb (2.25 Kg) Fire rated and exterior openings shall have minimum opening force allowable by authority having jurisdiction.

E. Fasteners: Provide self-drilling and tapping wood screws, machine screws and sex nuts and bolts for each closer.

2.10 LOW ENERGY POWER OPERATORS
A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty.

B. Standards: Manufacturer shall meet the requirements for:
1. Power Assist and Low Energy Power Operated Doors: ANSI/BHMA A156.19
2. ADA Complaint ANSI A117.1

C. Materials and Design:
1. Self-contained electrical control unit, including necessary transformers, relays, rectifiers, and other electronic component for proper operation and switching. Control of door up to 350 pounds shall also include time delay for normal cycle.
2. On pair of doors, either door to be opened manually without the other door opening.
3. Operates as a mechanical closer if power is disconnected. Forces consistent with ANSI A117.1 and ANSI A156.19.
4. Provide delay switches for motor activation, exit device latch retraction interfacing and hold open times. Hold open times to be adjustable from 1 second to continuous seconds.
5. Adjustable vestibule sequencing input for operation of two or more units. Specify 2-659-0240.
6. Adjustable powered swing degree from 80 degrees to 110 degrees.
7. Integral obstruction detection for closing and opening cycle.
8. Adjustable built in stop, set from 80 degrees maximum to 180 degrees manual swing.
9. When in "blow open" operation for smoke ventilation, operator will stay in the open position when loss of power.
10. Boost to close selectable on/off switch.

D. Signage: Provide signage in according to the requirements of ANSI/BHMA A156.19.

E. Acceptable Manufacturer:
1. Hager Companies: 8400 Series.

F. Actuators:
1. Opening cycle shall be activated by pressing switches with international symbol of accessibility and "PUSH TO OPEN" engraved on faceplate.
2. Switches shall be installed in standard 2-gang electrical wall box and placed in a location in compliance with ANSI A117.1.

2.11 STOPS AND HOLDERS

A. Wall Stops: Provide door stops wherever necessary to prevent door or
hardware from striking an adjacent partition or obstruction. Provide wall stops when possible. Door stops and holders mounted in concrete floor or masonry walls shall have stainless steel machine screws and lead expansion shields. Manufacturer shall meet requirements for Auxiliary Hardware: ANSI/BHMA A156.16.

2.12 PROXIMITY/ PIN READER

A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Provide access up to 650 card users and shall be a HID compatible proximity reader. Material and Design:
1. Weather resistance two-piece enclosure stand alone access control reader.
2. Access mode selectable, proximity card only, proximity card plus pin number, or key in card number only.
3. Key pad programmable does not need software or computer.
4. Key pad lockout and flashing red LED activated when wrong password is entered more than five times.
5. Lock and alarm outputs relays programmable 1-99 seconds or on-off latching.

B. Options:
1. HID ProxCards II, 25ea. cards 2-679-0021.
2. HID ProxCards II, 100ea cards 2-679-0022.
3. HID ProxKey II, 10ea key fobs 2-679-0023.
4. HID ProxKey II, 100ea. key fobs 2-679-0024.

2.13 KEYPADS

A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Standalone digital keypad, control access of single entry point with up to 500 users. Material and Design:
1. 1-6 digit PIN codes with 4 outputs, 2 relays and solid status outputs timed or latching (on/off).
2. LED status: access, lockout.
3. Tactile audible key press with selectable volume.
4. Timed anti-pass back with keypad tamper lockout.
5. Choice of door sense/relay inhibit input functions; Forced Entry/Door prop alarm; Door ajar; Inhibit relay 1 or 2; Auto re-locks when door closes;
6. Choice of 2 solid status output functions: Alarm shunt; Forced entry; Door ajar; Tamper lockout; Keypad active.

2.14 DOOR GASKETING AND WEATHERSTRIP

A. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing where indicated on hardware.
schedule. Provide non-corrosive fasteners for exterior applications.
1. Perimeter gasketing: Apply to head and jamb, forming seal between door and frame.
2. Meeting stile gasketing: Fasten to meeting stiles, forming seal when doors are in closed position.
3. Door bottoms: Apply to bottom of door, forming seal with threshold or floor when door is in closed position.
4. Sound Gasketing: Cutting or notching for stop mounted hardware not permitted.
5. Drip Guard: Apply to exterior face of frame header. Lip length to extend 4 inches (102 mm) beyond width of door.

2.15 THRESHOLDS
A. Set thresholds for exterior and acoustical openings in full bed of sealant with lead expansion shields and stainless steel machine screws complying with requirements specified in Division 7 Section "Joint Sealants". Notched in field to fit frame by hardware installer. Refer to Drawings for special details. Manufacturer to be certified by the following:

2.16 SILENCERS
A. Where smoke, light, or weather seal are not required, provide three silencers per single door frame, two per double door frame and four per Dutch door frame. Manufacturer shall meet requirements for: Auxiliary Hardware: ANSI/BHMA A156.16.

2.17 KEY CABINET
A. Provide key cabinet, surface mounted to wall. Key control system: Include two sets of key tags, hooks, labels, and envelopes. Contain system in metal cabinet with baked enamel finish. Capacity shall be able to hold actual quantities of keys, plus 25 percent. Provide tools, instruction sheets and accessories required to complete installation.

B. Acceptable Manufacturer:
   1. Lund Equipment.
   2. Telkey Incorporated.
   3. Key Control.

2.18 SIGNAGE
A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet requirements for: Signage: ANSI/BHMA A156.16. Grade 2 Braille Translation

17072
08 71 00-11
conforming to section 4.3 requirements.

B. Materials and Design: Provide 0.125 inch (3 mm) thick plastic. Size of sign to be 6 inches by 8 inches (152 mm by 203 mm) fastened with double-sided pressure sensitive tape.

2.19 FINISHES

A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if within range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved Samples.

B. Comply with base material and finish requirements indicated by ANSI/BHMA A156.18 designations in hardware schedule.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install hardware per manufacturer’s instructions and in compliance with the following as applicable:
   1. NFPA 80; NFPA 105; ICC/ANSI A117.1; ANSI/BHMA A156.115 Hardware Preparation in Steel Doors and Steel Frames; ANSI/BHMA A156.115W Hardware Preparation in Wood Doors with Wood or Steel Frames; DHI Publication - Installation Guide for Doors and Hardware; UL10C/UBC7-2; Local building code.
   2. Approved shop drawings.
   3. Approved finish hardware schedule.

B. Do not install surface mounted items until finishes have been completed on substrates involved. Set unit level, plumb and true to line location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
3.3 FIELD QUALITY CONTROL

A. Material supplier to schedule final walk through to inspect hardware installation ten business days before final acceptance of Owner. Material supplier shall provide a written report detailing discrepancies of each opening to General Contractor within seven calendar days of walk through.

3.4 ADJUSTMENT, CLEANING AND DEMONSTRATING

A. Adjustment: Adjust and check each opening to ensure proper operation of each item of finish hardware. Replace items that cannot be adjusted to operate freely and smoothly or as intended for application at no cost to Owner.

B. Cleaning: Clean adjacent surfaces soiled by hardware installation. Clean finished hardware per manufacturer’s instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer’s level of finish quality at no cost to Owner.

C. Demonstration: Conduct a training class for building maintenance personnel demonstrating the adjustment, operation of mechanical and electrical hardware. Special tools for finished hardware to be turned over and explained usage at this meeting.

3.5 PROTECTION

A. Leave manufacturer’s protective film intact and provide proper protection for all other finish hardware items that do not have protective material from the manufacture until Owner accepts Project as complete.
3.6 HARDWARE SETS

**Hardware Group No. 01 - EXTERIOR STOREFRONT**

For use on mark/door #(s):
B-01A

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MORTISE CYLINDER</td>
<td>20-062 ICX</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>FSIC CORE</td>
<td>23-030</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>POWER TRANSFER</td>
<td>EPT10 CON</td>
<td>689</td>
<td>VON</td>
</tr>
<tr>
<td>1</td>
<td>ELEC STRIKE</td>
<td>6210-FS-24-US32D-CON</td>
<td>US32D</td>
<td>VON</td>
</tr>
<tr>
<td>1</td>
<td>ELEC PANIC HARDWARE</td>
<td>LX-RX-99-L-E996-06-FSE-CON-SNB</td>
<td>626</td>
<td>VON</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4050 EDA TBSRT</td>
<td>689</td>
<td>LCN</td>
</tr>
</tbody>
</table>

ALL HARDWARE BY SYSTEM MFR.
VERIFY CYLINDER REQUIREMENTS WITH STOREFRONT SUPPLIER

CARD READER, POSITION SWITCH, MOTION SENSOR AND BALANCE OF SECURITY HARDWARE BY DIV 28

**Hardware Group No. 01A - INTERIOR STOREFRONT**

For use on mark/door #(s):
B-33       B-37

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
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<th>Catalog Number</th>
<th>Finish</th>
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<tr>
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<td>MORTISE CYLINDER</td>
<td>20-062 ICX</td>
<td>626</td>
<td>SCH</td>
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<td>1</td>
<td>FSIC CORE</td>
<td>23-030</td>
<td>626</td>
<td>SCH</td>
</tr>
</tbody>
</table>

ALL HARDWARE BY SYSTEM MFR.
VERIFY CYLINDER REQUIREMENTS WITH STOREFRONT SUPPLIER
### Hardware Group No. 02 - EXTERIOR HM - PAIR - EXIT

For use on mark/door #(#s):

C-03A

Provide each PR door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5 NRP</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>2</td>
<td>POWER TRANSFER</td>
<td>EPT10 CON</td>
<td>689</td>
<td>VON</td>
</tr>
<tr>
<td>1</td>
<td>ELEC PANIC</td>
<td>LX-RX-9927-EO-299F-SNB</td>
<td>626</td>
<td>VON</td>
</tr>
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<td>HARDWARE</td>
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<td></td>
<td></td>
</tr>
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<td>1</td>
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<td>VON</td>
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<td>HARDWARE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>RIM CYLINDER</td>
<td>20-057 ICX</td>
<td>606</td>
<td>SCH</td>
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<td>1</td>
<td>FSIC CORE</td>
<td>23-030</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>2</td>
<td>SURFACE CLOSER</td>
<td>4040XP EDA TBSRT</td>
<td>689</td>
<td>LCN</td>
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<td>11A</td>
<td></td>
<td>ZER</td>
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<td>4</td>
<td>GASKETING</td>
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<td></td>
<td>ZER</td>
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<tr>
<td>1</td>
<td>RAIN DRIP</td>
<td>142AA</td>
<td></td>
<td>ZER</td>
</tr>
<tr>
<td>2</td>
<td>MEETING STILE</td>
<td>328AA-S</td>
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<td>2</td>
<td>GASKETING</td>
<td>8150SBK PSA</td>
<td>BK</td>
<td>ZER</td>
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<tr>
<td>1</td>
<td>THRESHOLD</td>
<td>566A-223</td>
<td>A</td>
<td>ZER</td>
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</table>

CARD READER, POSITION SWITCH, MOTION SENSOR AND BALANCE OF SECURITY HARDWARE BY DIV 28

### Hardware Group No. 03 - EXTERIOR HM - SGL - EXIT

For use on mark/door #(#s):

C-01

Provide each SGL door(s) with the following:

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<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5 NRP</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>POWER TRANSFER</td>
<td>EPT10 CON</td>
<td>689</td>
<td>VON</td>
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<tr>
<td>1</td>
<td>ELEC PANIC</td>
<td>LX-RX-99-L-E996-06-FSE-CON-SNB</td>
<td>626</td>
<td>VON</td>
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<td>HARDWARE</td>
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<td></td>
<td></td>
</tr>
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<td>1</td>
<td>RIM CYLINDER</td>
<td>20-057 ICX</td>
<td>606</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>FSIC CORE</td>
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<td>4040XP EDA TBSRT</td>
<td>689</td>
<td>LCN</td>
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<tr>
<td>1</td>
<td>GASKETING</td>
<td>139A-S</td>
<td></td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>RAIN DRIP</td>
<td>142AA</td>
<td></td>
<td>ZER</td>
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<td>1</td>
<td>GASKETING</td>
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<td>ZER</td>
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<td>THRESHOLD</td>
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CARD READER, POSITION SWITCH, MOTION SENSOR AND BALANCE OF SECURITY HARDWARE BY DIV 28
**Hardware Group No. 04 - INTERIOR PAIR - IT**

For use on mark/door #(s):
B-50

Provide each PR door(s) with the following:

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<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>AUTO FLUSH BOLT</td>
<td>FB41P</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>DUST PROOF STRIKE</td>
<td>DP2</td>
<td>626</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>CLASSROOM LOCK</td>
<td>ND70PD SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>2</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>2</td>
<td>KICK PLATE</td>
<td>8400 10&quot; X 2&quot; LDW B-CS</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>2</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>2</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
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</table>

ASTRAGAL BY DOOR MFR.

**Hardware Group No. 05 - INTERIOR - SGL - CARD READER - STC - SECURE WORK/TRAINING**

For use on mark/door #(s):
B-42A   B-42B   B-42C   B-44B

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>ELECTRIC HINGE</td>
<td>5BB1 4.5 X 4.5 TW8</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PDEU SPA RX</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>119WB PSA</td>
<td>B</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>770AA-S</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>DOOR BOTTOM</td>
<td>367AA</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>THRESHOLD</td>
<td>564A-223</td>
<td>A</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>MOUNTING BRACKET</td>
<td>770SPB</td>
<td></td>
<td>ZER</td>
</tr>
</tbody>
</table>

VERIFY SEAL AND HINGE REQUIREMENTS WITH STC DOOR MFR.
CARD READER, POSITION SWITCH, AND BALANCE OF SECURITY HARDWARE BY DIV 28
Hardware Group No. 05A - INTERIOR - SGL - CARD READER - STC - SECURE WORK
For use on mark/door # (s):
B-44A

Provide each SGL door (s) with the following:

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<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
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</thead>
<tbody>
<tr>
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<td>HINGE</td>
<td>5BB1HW 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
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<td>1</td>
<td>ELECTRIC HINGE</td>
<td>5BB1HW 4.5 X 4.5 TW8</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PDEU SPA RX</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
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<tr>
<td>1</td>
<td>GASKETING</td>
<td>119WB PSA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>770AA-S</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>DOOR BOTTOM</td>
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<td>770SPB</td>
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VERIFY SEAL AND HINGE REQUIREMENTS WITH STC DOOR MFR.
CARD READER, POSITION SWITCH, AND BALANCE OF SECURITY HARDWARE BY DIV 28

Hardware Group No. 06 - INTERIOR - SGL - CARD READER - CORRIDOR
For use on mark/door # (s):
B-01B

Provide each SGL door (s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>ELECTRIC HINGE</td>
<td>5BB1 4.5 X 4.5 TW8</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PDEU SPA RX</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>

CARD READER, POSITION SWITCH, AND BALANCE OF SECURITY HARDWARE BY DIV 28

Hardware Group No. 06A - INTERIOR - SGL - CARD READER - FILE/ SERVER RM.
For use on mark/door # (s):
B-45 B-46 B-54

Provide each SGL door (s) with the following:

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<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>HINGE</td>
<td>5BB1HW 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>ELECTRIC HINGE</td>
<td>5BB1HW 4.5 X 4.5 TW8</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PDEU SPA RX</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
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<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>

CARD READER, POSITION SWITCH, AND BALANCE OF SECURITY HARDWARE BY DIV 28

17072
08 71 00-17
Hardware Group No. 07 - INTERIOR - SGL - STC - MECH. RM.

For use on mark/door #(s):
B-06A  B-41

Provide each SGL door(s) with the following:

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<tr>
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<th>Mfr</th>
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<td>5BB1HW 4.5 X 4.5</td>
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<td>IVE</td>
</tr>
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<td>STOREROOM LOCK</td>
<td>ND80PD SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>119WB PSA</td>
<td>B</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>770AA-S</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>DOOR BOTTOM</td>
<td>367AA</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>THRESHOLD</td>
<td>564A-223</td>
<td>A</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
</tbody>
</table>

Hardware Group No. 07A - INTERIOR - SGL STORAGE/ELEC/ RM.

For use on mark/door #(s):
B-20  B-32  B-35

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE 4.5 X 4.5</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PD SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>KICK PLATE</td>
<td>8400 10&quot; X 2&quot; LDW B-CS</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>

Hardware Group No. 07B - INTERIOR - SGL - STORAGE/ELEC/ RM.

For use on mark/door #(s):
B-13  B43

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE 4.5 X 4.5</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>STOREROOM LOCK</td>
<td>ND80PD SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>
**Hardware Group No. 08 - INTERIOR - SGL - STC - MEETING ROOMS**

For use on mark/door #s: B-01AA B-38 B-49

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>PASSAGE SET</td>
<td>ND10S SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>119WB PSA</td>
<td>B</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>GASKETING</td>
<td>770AA-S</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>DOOR BOTTOM</td>
<td>367AA</td>
<td>AA</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>THRESHOLD</td>
<td>564A-223</td>
<td>A</td>
<td>ZER</td>
</tr>
<tr>
<td>1</td>
<td>MOUNTING BRACKET</td>
<td>770SPB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VERIFY SEAL AND HINGE REQUIREMENTS WITH STC DOOR MFR.

**Hardware Group No. 09 - INTERIOR - SGL - RESTROOM**

For use on mark/door #s: B-01BA B-18 B-19

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>PRIVACY LOCK</td>
<td>ND40S SPA</td>
<td>626</td>
<td>SCH</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>KICK PLATE</td>
<td>8400 10&quot; X 2&quot; LDW B-CS</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>

**Hardware Group No. 10 - INTERIOR - SGL - RESTROOM**

For use on mark/door #s: B-34A B-34B B-36A B-36B

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE</td>
<td>5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>PUSH PLATE</td>
<td>8200 4&quot; X 16&quot;</td>
<td>626</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>PULL PLATE</td>
<td>8303 10&quot; 4&quot; X 16&quot;</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>SURFACE CLOSER</td>
<td>4040XP REG OR PA AS REQ</td>
<td>689</td>
<td>LCN</td>
</tr>
<tr>
<td>1</td>
<td>KICK PLATE</td>
<td>8400 10&quot; X 2&quot; LDW B-CS</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP</td>
<td>WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
</tr>
<tr>
<td>3</td>
<td>SILENCER</td>
<td>SR64</td>
<td>GRY</td>
<td>IVE</td>
</tr>
</tbody>
</table>
Hardware Group No. 11 - INTERIOR - SGL - OFFICE
For use on mark/door #(#(s):

|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

Provide each SGL door(s) with the following:

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Catalog Number</th>
<th>Finish</th>
<th>Mfr</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>HINGE 5BB1 4.5 X 4.5</td>
<td>652</td>
<td>IVE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ENTRANCE LOCK ND53PD SPA</td>
<td>626</td>
<td>SCH</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>WALL STOP WS406/407CVX</td>
<td>630</td>
<td>IVE</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>COAT AND HAT HOOK 574</td>
<td>626</td>
<td>IVE</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SILENCER SR64</td>
<td>GRY</td>
<td>IVE</td>
<td></td>
</tr>
</tbody>
</table>
3.7 PROTECTION

A. Guide: Door hardware items have been placed in sets which are intended to be a guide of design, grade, quality, function, operation, performance, exposure, and like characteristics of door hardware, and may not be complete. Provide door hardware required to make each set complete and operational.

B. Hardware schedule does not reflect handing, backset, method of fastening and like characteristics of door hardware and door operation.

C. Review door hardware sets with door types, frames, sizes and details on drawings. Verify suitability and adaptability of items specified in relation to details and surrounding conditions.

END OF SECTION
PART 1 – GENERAL

1.1 DESCRIPTION:
A. This section specifies the following:
   1. Glass.
   5. Glazing materials and accessories for both factory and field glazed assemblies.

1.2 RELATED WORK:
B. Factory glazed by manufacturer in following units:
   1. Sound resistant doors: Section 08 11 13, STEEL DOORS AND FRAMES, and Section 08 14 00, WOOD DOORS.
   2. Mirrors: Section 10 28 13, TOILET, BATH, AND LAUNDRY ACCESSORIES.
   3. Aluminum Windows: Section 08 41 13 ALUMINUM STOREFRONT SYSTEMS, 08 51 13, ALUMINUM WINDOWS.

1.3 LABELS:
A. Temporary labels:
   1. Provide temporary label on each light of glass / and plastic material // identifying manufacturer or brand and glass type, quality and nominal thickness.
   2. Label in accordance with NFRC label requirements.
   3. Temporary labels are to remain intact until glass // and plastic material // is approved by Contracting Officer Representative (OWNER).
B. Permanent labels:
   1. Locate in corner for each pane.
   2. Label in accordance with ANSI Z97.1 and SGCC label requirements.
      a. Tempered glass.
1.4 PERFORMANCE REQUIREMENTS:
A. General: Design glazing system consistent with guidance and practices presented in the GANA Glazing Manual, GANA Laminated Glazing Manual, and GANA Sealant Manual, as applicable to project. Installed glazing is to withstand applied loads, thermal stresses, thermal movements, building movements, permitted tolerances, and combinations of these conditions without failure, including loss or glass breakage attributable to defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; unsafe engagement of the framing system; deflections beyond specified limits; or other defects in construction.

B. Glazing Unit Design: Design glass, including engineering analysis meeting requirements of authorities having jurisdiction. Thicknesses listed are minimum. Coordinate thicknesses with framing system manufacturers.
   1. Design glass in accordance with ASTM E1300, and for conditions beyond the scope of ASTM E1300, by a properly substantiated structural analysis.

E. Building Enclosure Vapor Retarder and Air Barrier:
   1. Utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapor retarder seal.
   2. Maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.

1.5 SUBMITTALS:
A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
C. Manufacturer's Certificates:
   1. Certificate stating that fire-protection and fire-resistive glazing units meet code requirements for fire-resistance-rated assembly and applicable safety glazing requirements.
   2. Certificate on solar heat gain coefficient when value is specified.
   3. Certificate on "R" value when value is specified.
D. Manufacturer Warranty.
E. Manufacturer’s Literature and Data:
   1. Glass, each kind required.
   2. Insulating glass units.
   7. Sealing compound.

F. Samples:
   1. **Size: 12 inches by 12 inches FOR EACH TYPE**

1.6 DELIVERY, STORAGE AND HANDLING:

A. Delivery: Schedule delivery to coincide with glazing schedules so minimum handling of crates is required. Do not open crates except as required for inspection for shipping damage.

B. Storage: Store cases according to printed instructions on case, in areas least subject to traffic or falling objects. Keep storage area clean and dry.

C. Handling: Unpack cases following printed instructions on case. Stack individual windows on edge leaned slightly against upright supports with separators.

2. Protect sealed-air-space insulating glazing units from exposure to abnormal pressure changes, as could result from substantial changes in altitude during delivery by air freight. Provide temporary breather tubes which do not nullify applicable warranties on hermetic seals.

3. Temporary protections: The glass front and polycarbonate back of glazing are to be temporarily protected with compatible, peel-able, heat-resistant film which will be peeled for inspections and re-applied and finally removed after doors and windows are installed at destination. Since many adhesives will attack polycarbonate, the film used on exposed polycarbonate surfaces is to be approved and applied by manufacturer.

4. Edge protection: To cushion and protect glass clad, and polycarbonate edges from contamination or foreign matter, the four (4) edges are to be sealed the depth of glazing with continuous standard-thickness thermoplastic rubber tape. Alternatively, continuous channel shaped extrusion of thermoplastic rubber are to be used, with flanges extending into face sides of glazing.
1.7 PROJECT CONDITIONS:
Field Measurements: **Field measure openings before ordering tempered glass products to assure for proper fit of field measured products.**

1.8 WARRANTY:
A. Construction Warranty: Comply with the FAR clause 52.246-21 “Warranty of Construction”.
B. Manufacturer Warranty: Manufacturer shall warranty their glazing from the date of installation and final acceptance by the OWNER as follows. Submit manufacturer warranty.
   2. Insulating glass units to remain sealed for ten (10) years.
   3. Laminated glass units to remain laminated for five (5) years.
   4. Polycarbonate to remain clear and ultraviolet light stabilized for five (5) years.
   5. Insulating plastic to not have more than 6 percent decrease in light transmission and be ultraviolet light stabilized for ten (10) years.
   7. Warrant electrochromic controls against defects in material or workmanship for a period of five (5) years.

1.9 APPLICABLE PUBLICATIONS:
A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
B. American Architectural Manufacturers Association (AAMA):
   800 ....................................Test Methods for Sealants
   810.1-77 ............................Expanded Cellular Glazing Tape
C. American National Standards Institute (ANSI):
E. ASTM International (ASTM):
   C542-05(R2011)...............Lock-Strip Gaskets
   C716-06............................Installing Lock-Strip Gaskets and Infill Glazing Materials
   C794-10............................Adhesion-in-Peel of Elastomeric Joint Sealants
C864-05(R2011) ............... Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers
C920-14a ....................... Elastomeric Joint Sealants
C964-07(R2012) ............... Standard Guide for Lock-Strip Gasket Glazing
C1036-11(R2012) ............. Flat Glass
C1048-12 ....................... Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
E84-14 ......................... Surface Burning Characteristics of Building Materials
E119-14 ....................... Standard Test Methods for Fire Test of Building Construction and Material
E1886-13a ..................... Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
E2190-10 ...................... Insulating Glass Unit

F. Glass Association of North America (GANA):

G. International Code Council (ICC):
   IBC ............................ International Building Code

H. Insulating Glass Certification Council (IGCC)

I. Insulating Glass Manufacturer Alliance (IGMA):
   TB-3001-13 .................... Guidelines for Sloped Glazing
   TM-3000 ....................... North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use

J. Intertek Testing Services – Warnock Hersey (ITS-WHI)

Q. Environmental Protection Agency (EPA):
PART 2 – PRODUCT
A. Provide minimum thickness stated and as additionally required to meet performance requirements.
   1. Provide minimum 3/8 inch thick glass units unless otherwise indicated.
B. Obtain glass units from single source from single manufacturer for each glass type.

2.2 TYPICAL INTERIOR GLAZING (NOT REQUIRING TEMPERING):
D. Provide Ultra-clear-Low-Iron Float Glass:
   1. ASTM C1036, Type I, Class 1, Quality 3 and with visible light transmission of not less than 90 percent.

2.3 HEAT-TREATED GLASS:
A. Roller Wave Limits for Heat-Treated Glass: Orient all roller wave distortion parallel to bottom surface of glazing, and provide units complying with the following limitations:
   1. Clear Tempered Glass: Interior Vision Glass such as office side-lites, glass in doors, glass within 18” of finished floor.
      A. ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3.
      B. Unit Thickness: 3/8”.
      C. Safety glazing label required

2.4 INSULATING GLASS UNITS:
A. Provide factory fabricated, hermetically sealed glass unit consisting of two panes of glass separated by a dehydrated air space and comply with ASTM E2190.
B. Assemble units using glass types as indicated below:
   1. CLEAR VISION GLASS:
      VIRACON 1” VRE1-43 Insulating HS/HS
      A. ¼” CLEAR HS, VRE-43 #2
      B. ½” airspace – black
C. ¼” CLEAR HS

D. Performance Data:
   VLT: 43%
   R OUT: 25%
   WINTER U: .29
   SUMMER U: .26
   SC: .25
   SHGC: .22
   LSG: 1.95

2. SPANDREL GLASS:
   VIRACON 1” VRE1-43 Insulating HS/HS
   A. ¼” CLEAR HS
   B. ½” airspace – black
   C. ¼” CLEAR HS, SUBDUE Gray V903 #4 (OPAQUE)

2.5 GLAZING ACCESSORIES:
   A. As required to supplement the accessories provided with the items to be glazed
      and to provide a complete installation. Ferrous metal accessories exposed in the
      finished work are to have a finish that will not corrode or stain while in service.
      Fire rated glazing to be installed with glazing accessories in accordance with the
      manufacturer’s installation instructions.
   B. Setting Blocks: ASTM C864:
      1. Silicone type.
      2. Channel shape; having 6 mm (1/4 inch) internal depth.
      3. Shore A hardness of 80 to 90 Durometer.
      4. Block lengths: 50 mm (2 inches) except 100 to 150 mm (4 to 6 inches) for
         insulating glass.
      5. Block width: Approximately 1.6 mm (1/16 inch) less than the full width of the
         rabbet.
      6. Block thickness: Minimum 4.8 mm (3/16 inch). Thickness sized for rabbet
         depth as required.
C. Spacers: ASTM C864:
   1. Channel shape having a 6 mm (1/4 inch) internal depth.
   2. Flanges not less 2.4 mm (3/32 inch) thick and web 3 mm (1/8 inch) thick.
   3. Lengths: 25 to 76 mm (1 to 3 inches).
   4. Shore A hardness of 40 to 50 Durometer.
D. Glazing Tapes:
   1. Semi-solid polymeric based closed cell material exhibiting pressure-sensitive
      adhesion and withstanding exposure to sunlight, moisture, heat, cold, and
      aging.
   2. Shape, size and degree of softness and strength suitable for use in glazing
      application to prevent water infiltration.
   3. Complying with AAMA 800 for the following types:
      a. AAMA 810.1, Type 1, for glazing applications in which tape acts as the
         primary sealant.
      b. AAMA 810.1, Type 2, for glazing applications in which tape is used in
         combination with a full bead of liquid sealant.
E. Spring Steel Spacer: Galvanized steel wire or strip designed to position glazing in
   channel or rabbeted sash with stops.
F. Glazing Clips: Galvanized steel spring wire designed to hold glass in position in
   rabbeted sash without stops.
G. Glazing Points (Sprigs): Pure zinc stock, thin, flat, triangular or diamond shaped
   pieces, 6 mm (1/4 inch) minimum size.
H. Glazing Gaskets: ASTM C864:
   1. Firm dense wedge shape for locking in sash.
   2. Soft, closed cell with locking key for sash key.
   3. Flanges may terminate above the glazing-beads or terminate flush with top of
      beads.
   4. Neoprene Soundproofing Tape: Provide at office side-lites (Frame Type C):
      Closed cell isolation gasket. Similar to: SOUNDAWAY; 2336 La Mirada Drive,
      Ste 100, Vista CA 92081 (886) 768-6381
I. Lock-Strip Glazing Gaskets: ASTM C542, shape, size, and mounting as indicated.

J. Glazing Sealants: ASTM C920, silicone neutral cure:
   1. Type S.
   2. Class 25 or 50 as recommended by manufacturer for application.
   3. Grade NS.
   4. Shore A hardness of 25 to 30 Durometer.

K. Structural Sealant: ASTM C920, silicone acetoxy cure:
   1. Type S.
   2. Class 25.
   3. Grade NS.
   4. Shore a hardness of 25 to 30 Durometer.

L. Neoprene Gasket, EPDM, or Vinyl Glazing Gasket: ASTM C864.
   1. Channel shape; flanges may terminate above the glazing channel or flush with the top of the channel.
   2. Designed for dry glazing.

M. Color:
   1. Color of glazing compounds, gaskets, and sealants used for aluminum color frames to match color of the finished aluminum and be nonstaining.
   2. Color of other glazing compounds, gaskets, and sealants which will be exposed in the finished work and unpainted are to be black, gray, or neutral color.

N. Smoke Removal Unit Targets: Adhesive targets affixed to glass to identify glass units intended for removal for smoke control. Comply with requirements of local Fire Department.

PART 3 – EXECUTION

3.1 EXAMINATION:
   A. Verification of Conditions:
1. Examine openings for glass and glazing units; determine they are proper size; plumb; square; and level before installation is started.

2. Verify that glazing openings conform with details, dimensions and tolerances indicated on manufacturer is approved shop drawings.

B. Review for conditions which may adversely affect glass and glazing unit installation, prior to commencement of installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

C. Verify that wash down of adjacent masonry is completed prior to erection of glass and glazing units.

3.2 PREPARATION:

A. For sealant glazing, prepare glazing surfaces in accordance with GANA Sealant Manual.

B. Determine glazing unit size and edge clearances by measuring the actual unit to receive the glazing.

C. Shop fabricate and cut glass with smooth, straight edges of full size required by openings to provide GANA recommended edge clearances.

D. Verify that components used are compatible.

E. Clean and dry glazing surfaces.

F. Prime surfaces scheduled to receive sealants, as determined by preconstruction sealant-substrate testing.

3.3 INSTALLATION – GENERAL:


B. Glaze in accordance with recommendations of glazing and framing manufacturers, and as required to meet the Performance Test Requirements specified in other applicable sections of specifications.

C. Set glazing without bending, twisting, or forcing of units.

D. Do not allow glass to rest on or contact any framing member.
E. Glaze doors and operable sash, in a securely fixed or closed and locked position, until sealant, glazing compound, or putty has thoroughly set.

G. Tempered Glass: Install with roller distortions in horizontal position unless otherwise directed.

K. Insulating Glass Units:
   1. Glaze in compliance with glass manufacturer’s written instructions.
   2. When glazing gaskets are used, they are to be of sufficient size and depth to cover glass seal or metal channel frame completely.
   3. Do not use putty or glazing compounds.
   4. Do not grind, nip, cut, or otherwise alter edges and corners of fused glass units after shipping from factory.
   5. Install with tape or gunnable sealant in wood sash.

3.7 INSTALLATION - WET METHOD (SEALANT AND SEALANT):
   A. Place setting blocks at // 1/4 // points and install glazing pane or unit.
   B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 600 mm (24 inch) intervals, 6 mm (1/4 inch) below sight line.
   C. Fill gaps between glazing and stops with sealant to depth of bite on glazing, but not more than 9 mm (3/8 inch) below sight line to ensure full contact with glazing and continue the air and vapor seal.
   D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.13 REPLACEMENT AND CLEANING:
   A. Clean new glass surfaces removing temporary labels, paint spots, and defacement after approval by owner.
   B. Replace cracked, broken, and imperfect glass, or glass which has been installed improperly.
   C. Leave glass, putty, and other setting material in clean, whole, and acceptable condition.
3.14 PROTECTION:
   A. Protect finished surfaces from damage during erection, and after completion of work. Strippable plastic coatings on colored anodized finish are not acceptable.

3.15 MONOLITHIC GLASS SCHEDULE:
   A. Glass Type MG: Clear fully tempered float glass.
      1. Unit Thickness: 3/8".
      2. Safety glazing label required.

END OF
SECTION 08 80 00
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-structural metal framing.
B. Gypsum board, gypsum shaftliner board and accessories.

1.2 RELATED SECTIONS

A. Section 05 40 00 - Misc. Metals.
B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. ASTM International (ASTM):
   12. ASTM E 413 - Classification for Rating Sound Insulation.

B. AISI S100 - "North American Specification for the Design of Cold-Formed Steel Structural Members."
1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer’s data sheets on each product specified, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Manufacturer’s certification of product compliance with codes and standards.

C. Submit manufacturer's certification of product compliance with codes and standards along with product literature and data sheets for specified products.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

B. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.

C. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-structural steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by, and displaying a classification label, from an independent testing agency acceptable to authority having jurisdiction.
   1. Construct fire-resistance-rated partitions in compliance with tested assembly requirements indicated on the Drawings.
   2. Rated assemblies to be substantiated from applicable testing using the proposed products, by Contractor.

D. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect and store products in manufacturer's unopened packaging
until ready for installation per requirements of AISI S202 "Code of Standard Practice for Cold-Formed Structural Framing".

B. Notify manufacturer of damaged materials received prior to installing.

C. Deliver and store gypsum board in dry area protected from moisture and humidity.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended ASTM C 840 and by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer, Metal Framing: ClarkDietrich Building Systems, 9050 Centre Pointe Dr. Suite 400, West Chester, OH 45069. Tel: (513) 870-1100. Fax: (513) 870-1300. E-mail: info@clarkdietrich.com Web: www.clarkdietrich.com.
1. ClarkDietrich Building Systems; 330 Greenwood Place, McDonough, GA 30253. Tel: (678) 304-5500.
2. ClarkDietrich Building Systems; 38020 Pulp Drive, Dade City, FL 33523. Tel: (352) 518-4400.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 METAL FRAMING COMPONENTS

A. Framing Members, General: Comply with ASTM C 645 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: Comply with ASTM C 645; ASTM A 653/A 653M G40 (Z120), Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40 (Z120) or DiamondPlus coating; roll-formed from steel meeting mechanical and chemical requirements of ASTM A 1003 with a zinc-based coating. A40 galvannealed products are not acceptable.
a. Coatings shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to the authority having jurisdiction.

B. Steel Studs and Runners: ASTM C 645.
1. Non-Structural Studs: Cold-formed galvanized steel C-studs as
per ASTM C 645 for conditions indicated below:
   a. Flange Size: 1-1/4 inch (32 mm).
   b. Web Depth: As specified on Drawings.
2. Non-Structural Track: Cold-formed galvanized steel runner tracks in conformance with ASTM C 645 for conditions indicated below:
   a. Flange Size: 1-1/4 inch (32 mm).
   b. Web Depth: Track web to match stud web size.
   c. Minimum Base-Steel Thickness: Track thickness to match wall stud thickness or as per design.
3. "EQ" (Equivalent Gauge Thickness) Steel Studs and Runners: Members that can show certified third party testing with gypsum board in accordance with ICC ES AC86 (Reapproved August 2015) need not meet the minimum thickness limitation or minimum section properties set forth in ASTM C 645. The submission of an evaluation report is acceptable to show conformance to this requirement. *Please note that Equivalent Gauge Thickness Steel Studs and Runners are NOT acceptable in the tested assemblies indicated in the drawings unless the contractor can provide an acceptable alternative tested assembly that allows for the EQ studs and runners.*

C. Slotted Deflection Track: Cold-formed galvanized steel.
   1. Minimum Base-Steel Thickness: 20 gauge, 0.0329 inches (0.84 mm).
   2. Standard leg 2-1/2 inches (64 mm).
   3. Standard Vertical Slot of 1-1/2 inches (38 mm) in leg.
   4. Minimum yield strength of 50 ksi in 16 gauge (1.37 mm) and heavier and minimum yield strength of 33 ksi in 18 gauge (1.09 mm) and lighter.
   a. Furring Channel: Cold-formed galvanized steel
   5. Designation: 20 gauge, 0.0296 inches (0.75 mm) sheet thickness, 7/8 inches (22 mm) height, 1-1/4 inches (32 mm) width.

D. U Channel: Cold-formed galvanized steel
   1. Designation: galvanized, 16 gauge, 0.0538 inches (1.37 mm) steel thickness, 1-1/2 inches (38 mm) size.
   2. Header flange length: 3 inches (76mm).
   3. Jamb flange length: 3 inches (76mm).
   4. Minimum Base-Steel Thickness: 18 gauge, 0.0428 inch.

E. H Studs and C-Runner: Cold-formed galvanized steel
   1. Designation: Unhemmed H-Stud and C-Runner; 2 inches (51 mm) wide, 10-foot (3 m) length, 25 gauge, 0.0179 inches (0.45 mm).
   2. Deflection Limitation at 10-foot (3000 mm): L/240.
3. Deflection Limitation at 20-foot (6000 mm): L/240
4. Deflection Limitation at 30-foot (9000 mm): L/240

F. CT Shaftwall Studs and J-Tabbed Track: Cold-formed galvanized steel; ClarkDietrich Building Systems CT Shaftwall Studs and J-Tabbed Track.
   1. Designation and size as indicated on the drawings.
   2. Minimum Base-Steel Thickness: 0.0329 inch, 20 gauge.

G. Metal Trims: Cold-formed galvanized steel.
   1. Type and Size as indicated on the drawings.

H. Drywall Corner Bead: Cold-formed galvanized steel sheet.
   1. Type: 103 Deluxe.
   2. Flange Length: 1-1/4 inches (32 mm).

I. Flat Strap and Backing Plate: Sheet for blocking and bracing in length and width indicated:
   a. Minimum Base-Steel Thickness: 0.0296 inch (0.75 mm).
      OR
   b. Backing Plate: Proprietary fire-retardant-treated wood blocking and bracing in width indicated.

J. Channel Bridging and Bracing: Pre-notched steel bar, 7/8 inch by 7/8 inch by 50 inches (22.2 mm by 22.2 mm by 1270 mm), 0.0329-inch (0.84-mm) minimum base-steel thickness.

K. Resilient Furring Channels: 1/2-inch (12.7 mm) deep, steel sheet members designed to reduce sound transmissions:
   1. Minimum Base-Steel Thickness: 0.022 inch (0.56 mm).
   2. Shape: Asymmetrical.

L. Fasteners: Self-drilling, self-tapping screws; steel, complying with ASTM C 1513; galvanized coating, plated or oil-phosphate coated complying with ASTM B 633 as needed for required corrosion resistance.


N. Non-Hardening, Flexible Sealant: Latex acrylic.

O. Framing: Framing components may be preassembled into panels prior to erecting.
   1. Fabricate panels square, with components attached in a manner so as to prevent racking or distortion.
   2. Cut all framing components squarely for attachment to
perpendicular members, or as required for an angular fit against abutting members. Hold members positively in place until properly fastened.


2.3 GYPSUM BOARD AND ACCESSORIES

A. Gypsum Wallboard: ASTM C 1396, of types, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.
   1. Core: Inner layer: Sound dampening viscoelastic polymer; Outer Layers: Enhanced, high density gypsum panel manufactured to the Type X requirements of ASTM C 1396 that has been bisected to eliminate inner layer of paper in final lamination.
   2. Edges: Tapered
   3. Thickness: 5/8 inch (16 mm), unless otherwise indicated.
   4. Panel complies with Type X (ASTM C 1396)

B. Sound Damped Gypsum Board (QUIETROCK® ES Type X)
   1. Type: Regular, Type X, Sag-resistant type for ceiling surfaces.
   2. Edges: Tapered.
   3. Thickness: 5/8 inch (16 mm), unless otherwise indicated.

C. Gypsum Backing Board for Multi-Layer Applications: ASTM C 1396 or, where backing board is not available from manufacturer, gypsum wallboard, ASTM C 1396, of type, edge configuration and thickness indicated below, in maximum lengths available to minimize end-to-end joints.
   1. Type: Regular, unless otherwise indicated. Type X for fire-resistant rated assemblies and where indicated.
   2. Edges: Square, non-tapered, or V-tongue and groove.
   3. Thickness: 5/8 inch (16 mm), unless otherwise indicated.

D. Mold and Mildew Resistant Backing Board: ASTM C 1177/ASTM C 1396, of type and thickness indicated below with glass mat facing embedded on both sides to resist mold and mildew; in maximum lengths available to minimize end-to-end butt joints.
   1. Type and Thickness: (Typical), 1/2 inch (12 mm) thick, unless otherwise indicated. Type X, 5/8 inch thick, for fire-resistant rated assemblies and where indicated.
   2. Manufacturer: G-P Gypsum Corporation "Dens-Shield Tile Guard."

E. Partitions Closures: Provide extruded aluminum adjustable partition closures at all junctures of partitions with other construction as indicated. Adjustable partition closures shall be spring-loaded
assemblies filled with acoustical batt insulation and with finish to match curtain wall system.
1. Manufacturer: Gordon Inc., "Mullion Mate."

F. Partition End Caps: Provide extruded aluminum partition end caps at all partition termination end. Provide at locations of all adjustable partition closures and other locations indicated. Finish to match curtain wall system.

G. Preformed Niches: Provide preformed recessed wall niches, ready to receive tile finish. Provide at showers and other locations as indicated.
1. Manufacturer: Noble Company "Pro Form."

H. Trim Accessories: Provide manufacturer’s standard plastic or metal trim accessories for gypsum board work, per ASTM C 1047. Provide with either knurled or perforated expanded flanges for nailing or stapling, and beaded for concealment of flanges, in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.
1. Subject to compliance with requirements, provide drywall trims and accessories by Vinyl Corp.; a division of ClarkDietrich Building Systems or equivalent.

I. Interior Trim Accessories: Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads complying with the following requirements:
1. Materials: Formed plastic or metal complying with one the following requirements:
   a. Rigid PVC or CPVC plastic.
2. Subject to compliance with requirements, provide drywall trims and accessories by Vinyl Corp.; a division of ClarkDietrich Building Systems.

J. Laminating Adhesive: Special adhesive or joint compound specifically recommended for laminating gypsum boards.

K. Spot Grout: ASTM C 475, setting-type joint compound for type recommended for spot grouting hollow metal door frames.

L. Gypsum Board Screws: ASTM C 1513. Fastening gypsum board to steel members less than 0.033 inch thick. Fastening gypsum board to gypsum board.

M. Steel Drill Screws: ASTM C 1513, for fastening gypsum board to steel members.
N. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing), unfaced mineral fiber blanket insulation in thicknesses shown. Fibers manufactured from glass, slag wool, or rock wool.

O. Thermal Insulation: Closed Cell - spray insulation. Thickness to fill void from metal stud framing at exterior masonry wall conditions. Ref: specification section 07 21 19

P. Isolation Strip at Exterior Walls: Asphalt-saturated organic felt, ASTM D 226, Type I (No. 15 asphalt felt), non-perforated or adhesive backed, closed cell vinyl foam strips that allow fastener penetration without foam displacement, in width to suit steel stud size.

2.4 JOINT TREATMENT AND ACCESSORIES

A. Joint Treatment Materials: ASTM C 475; type recommended by manufacturer of sheet products and joint treatment materials for application indicated, unless indicated otherwise.

B. Joint Tape:
   1. Interior Gypsum Board: Paper reinforcing tape.
   3. Mold and Mildew Resistant Backer Board: Glass mesh tape.

C. Setting Type Joint Compound: Factory prepackaged, job mixed chemical-hardening powder products for bedding and filling, formulated for uses indicated.
   1. For taping and filling only.
   2. For prefilling gypsum board joints.
   3. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile.
   4. For filling joints and treating fasteners of mold and mildew resistant backing board behind base for ceramic tile.
   5. For filling joints and treating fasteners of gypsum base for veneer plaster.
   6. For topping compound, use sandable, low dust formulation.

D. Drying-Type Joint Compounds: Factory prepackaged vinyl-based products complying with the following requirements for formulation and intended use.
   2. All-purpose compound formulated for use as both taping and topping compound; use for finish (third) coat only.

E. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard non-sag, paintable, non-staining latex sealant complying with ASTM C 834 and the following requirements.
PART 3 EXECUTION

3.1 EXAMINATION

A. Prior to installation, inspect previous work of all other trades. Verify that all work is complete and accurate to the point where this installation may properly proceed in strict accordance with framing shop drawings.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 METAL FRAMING INSTALLATION

A. Install cold-formed framing in accordance with requirements of ASTM C 754.

B. Framing Installation:
   1. Erect framing and panels plumb, level and square in strict accordance with approved drawings.
   2. Handle and lift prefabricated panels in a manner to not cause distortion in any member.
   3. Anchor runner track securely to the supporting structure. Install concrete anchors only after full compressive strength has been achieved. **For acoustically rated walls, contractor shall provide continuous bead of acoustic sealant between bottom runner and concrete substrate.**
   4. Butt all track joints. Securely anchor abutting pieces of track to a common structural element, or splice them together.
   5. Align and plumb studs, and securely attach to the flanges or webs of both upper and lower tracks.
   6. Attach wall stud bridging when required in a manner to prevent stud rotation. Space bridging rows according to manufacturer’s recommendations.
   7. Provided temporary bracing until erection is completed.
   8. Where indicated in the drawings, provide for structural vertical movement using means in accordance with manufacturer’s recommendations.

3.3 GYPSUM BOARD INSTALLATION

A. Gypsum Board:
   2. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches (610
mm) in alternate courses of board.

3. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints a minimum of 24 inches (610 mm).

4. Install wall and partition boards vertically unless otherwise noted.

5. Install exposed gypsum board with face side out. Do not install imperfect, damaged, or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) open space between boards.

6. Locate either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges, and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

7. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

8. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cut-outs.

9. Form control joints and expansion joints at locations indicated on Drawings, and as recommended by Gypsum Association, with space between edges of boards prepared to receive trim accessories.

10. Cover both faces of steel stud partition framing with gypsum board in concealed spaces except in chase walls that are properly braced internally.

11. Fit gypsum board around ducts, pipes, and conduits.

12. Isolate perimeter of non-load bearing drywall partitions at structural abutments. Provide 1/4 to 1/2 inch (6 mm to 13 mm) space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant. See also 07910.

13. **Where sound-rated drywall construction is indicated on Drawings, seal construction at perimeters, control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim, and close off sound-flanking paths around or through construction, including sealing of partitions above acoustical ceilings.**

14. Space fasteners in gypsum boards per referenced gypsum board application and finishing standard and manufacturer's
recommendations.

B. Accessories:
1. Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer’s recommendations.
2. Install metal corner beads at external corners.
3. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, except where plastic trim is indicated on Drawings. Provide type with face flange to receive joint compound except where "U" bead (semi-finishing type) is indicated.
4. Install gypsum board reveals where indicated on Drawings.
5. Install control joints at locations indicated on Drawings, or if not indicated, at spacing and locations required by referenced gypsum board application and finish standard, and approved by Architect for visual effect.

C. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch (1.5 mm) in 10 feet (3048 mm) in any direction.

D. Joint Treatment: Comply with ASTM C 840, GA 214 and GA 216.
1. Level 1: Plenums, service corridors; above ceilings.
2. Level 2: Areas of water resistant gypsum backing board under tile; exposed areas where appearance is not critical.
3. Level 3: Areas to receive heavy or medium textured coatings; heavy-grade wall coverings.
4. Level 4: Typical areas. For areas to receive flat sheen paint finish; light textured coatings; lightweight wall coverings.
5. Level 5: Areas to receive gloss, semi-gloss sheen paints; critical lighting conditions.

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

END OF SECTION
SECTION 09 30 00
TILING

PART 1  GENERAL

1.1  SECTION INCLUDES

A.  Tile and Accessories:
   1. ColorBody Porcelain floor and Wall Tile
   2. Trim and Accessories.

1.2  RELATED SECTIONS

A.  Section 07 92 00 - Joint Sealants

1.3  REFERENCES

A.  American National Standards Institute (ANSI):
   1. ANSI A108.1B - Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
   2. ANSI A108.4 - Specifications for Ceramic Tile Installed with Organic Adhesives or Water-Cleanable Tile Setting Epoxy Adhesive.
   3. ANSI A108.6 - Specifications for Ceramic Tile Installed with Chemical-Resistant, Water-Cleanable Tile-Setting and -Grouting Epoxy.
   5. ANSI A118.3 - Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive.
   6. ANSI A118.7 - Polymer Modified Cement Grouts
   7. ANSI A118.8 - Modified Epoxy Emulsion Mortar/Grout.
   8. ANSI A118.9 - Test Methods and Specifications for Cementitious Backer Units
   9. ANSI A118.10 - Load bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile and Dimensional Stone.
   10. ANSI A118.11 - Exterior Grade Plywood (EGP) Latex-Portland Cement Mortar.
   12. ANSI A137.1 - Specifications for Ceramic Tile.

B.  ASTM International (ASTM):
   2. ASTM C 1028 - Standard Test method for Determining the Static
Coefficient of Friction or Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull meter Method.


1.4 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: Tile on walkway surfaces shall be provided with the following values as determined by testing in conformance with ASTM C 1028.
   1. Level Surfaces: Minimum of 0.6 (Wet).
   2. Step Treads: Minimum of 0.6 (Wet).
   3. Ramp Surfaces: Minimum of 0.8 (Wet).

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

D. Selection Samples: Color charts illustrating full range of colors and patterns.

E. Selection Samples: Samples of actual tiles for selection.

F. Samples: Mount tile and apply grout on two plywood panels, illustrating pattern, color variations, and grout joint size variations.

G. Manufacturer's Certificate:
   1. Certify that products meet or exceed specified requirements.
   2. For each shipment, type and composition of tile provide a Master Grade Certificate signed by the manufacturer and the installer certifying that products meet or exceed the specified requirements of ANSI A137.1.

H. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

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1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum two years’ experience.

B. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer’s unopened packaging until ready for installation.

B. Protect adhesives and liquid additives from freezing or overheating in accordance with manufacturer’s instructions.

C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing or overheating.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Do not install adhesives in an unventilated environment.

B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during tiling and for a minimum of 7 days after completion.

1.9 EXTRA MATERIALS

A. Provide for Owner's use a minimum of 2 percent of the primary sizes and colors of tile specified, boxed and clearly labeled.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

Stonepeak Ceramics: 314 West Superior Suite 201; Chicago, IL, 60654; info@stonepeakceramics.com; Tel: 312-506-2800; www.stonepeakceramics.com; contact: Bedrosians Tile & Stone, 7750 Phillips Highway 32256, Jacksonville, FL, 904-458-8000, info@bedrosians.com

Pantheon Floor Solutions: 1536 Hutton Drive Suite 100, Carrollton, TX 75006; contact: Ben Garback (800) 997-7604, bgarback@spartansurfaces.com

Landmark Ceramics (Landmark Contract): 1427 N. Main St. Mt. Pleasant, TN 38474; 931-325-5700
B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 TILE

A. General: Provide tile that complies with ANSI A137.1 for types, compositions and other characteristics indicated. Provide tile in the locations and of the types colors and pattern indicated on the Drawings and identified in the Schedule and the end of this Section. Tile shall also be provided in accordance with the following:
1. Factory Blending: For tile exhibiting color variations within the ranges selected under Submittal of samples, blend tile in the factory and package so tile taken from one package shows the same range of colors as those taken from other packages.
2. Mounting: For factory mounted tile, provide back or edge mounted tile assemblies as standard with the manufacturer, unless otherwise specified.
3. Factory Applied Temporary Protective Coatings: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by pre-coating with a continuous film of petroleum paraffin wax applied hot. Do not coat unexposed tile surfaces.

B. Ceramic Floor and Wall Tile:
1. Product: Reference Drawings for Finish Schedule

2.3 TRIM AND ACCESSORIES

A. Accessories: Reference Section 10 28 13

B. Metal Trim: (Reference Finish Schedule Sheet A901) Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive; use in the following locations:
1. Open edges of floor tile.
2. Transition between floor finishes of different heights.
3. Thresholds at door openings.
4. Expansion and control joints, floor and wall.
5. Transition between wall tile and painted wall surfaces.

2.4 SETTING MATERIALS


B. Polymer modified cement grout, sanded or unsanded, as specified in ANSI A118.7; color as selected.

C. Epoxy Grout: ANSI A118.8, 100 percent solids epoxy grout; color as selected.
D. Silicone Sealant: Silicone sealant, moisture and mildew resistant type, integral color (as selected); use for shower floors and shower walls.

E. Cleavage Membrane:
   1. No. 15 (6.9 kg) asphalt saturated felt, ASTM D226, Type 1.
   2. Polyethylene film, ASTM D4397, 4.0 mil thickness.

F. Membrane at Walls and Floor: 4 mil (0.1 mm) thick polyethylene film, ASTM D4397. Similar to USG Durock or Schluter –Kerdi System product.

G. Reinforcing Mesh: 2 by 2 inch (50 by 50 mm) size weave of 16/16 wire size; welded fabric, galvanized.

H. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced with 2 inch (50 mm) wide coated glass fiber tape for joints and corners:
   1. Thickness: 1/2 inch (13 mm).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that wall surfaces are free of substances which would impair bonding of setting materials, smooth and flat within tolerances specified in ANSI A137.1, and are ready to receive tile.

B. Verify that sub-floor surfaces are dust-free, and free of substances which would impair bonding of setting materials to sub-floor surfaces, and are smooth and flat within tolerances specified in ANSI A137.1.

C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

A. Protect surrounding work from damage.

B. Remove any curing compounds or other contaminates.

C. Vacuum clean surfaces and damp clean.

D. Seal substrate surface cracks with approved filler. Level existing substrate surfaces to acceptable flatness tolerances.

E. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover
with skim coat of dry-set mortar to a feather edge.

F. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.3 INSTALLATION - GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.

B. Lay tile to pattern indicated. Arrange pattern so that a full tile or joint is centered on each wall and that no tile less than 1/2 width is used. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

E. Form internal angles square and external angles bullnosed.

F. Install ceramic accessories rigidly in prepared openings.

G. Install non-ceramic trim in accordance with manufacturer's instructions.

H. Install thresholds where indicated.

I. Sound tile after setting. Replace hollow sounding units.

J. Keep expansion joints free of adhesive or grout. Apply sealant to joints.

K. Allow tile to set for a minimum of 48 hours prior to grouting.

L. Grout tile joints. Use standard grout unless otherwise indicated.

M. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.4 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.

1. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.
2. Where epoxy bond coat and grout are indicated, install in accordance with TCA Handbook Method F131.

3.5 INSTALLATION - SHOWER WALLS

A. At tiled shower receptors install in accordance with TCA Handbook Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

B. Grout with standard grout as specified above.

C. Seal joints between tile work and other work with sealant specified in Section 07 90 00 - Joint Protection.

3.6 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCA Handbook Method W244, using membrane at toilet rooms.

3.7 CLEANING

A. Clean tile and grout surfaces.

3.8 PROTECTION OF FINISHED WORK

A. Do not permit traffic over finished floor surface for 72 hours after installation.

B. Cover floors with kraft paper and protect from dirt and residue from other trades.

C. Where floor will be exposed for prolonged periods cover with plywood or other similar type walkways.

END OF SECTION
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes

   1. Acoustical ceiling panels
   2. Exposed grid suspension system
   3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
   4. Perimeter Trim

B. Related Sections

   1. Divisions 23 - HVAC Air Distribution
   2. Division 26 - Electrical

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

   4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
   5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
   6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
   13. ASTM E 1264 Classification for Acoustical Ceiling Products


D. NFPA 70 National Electrical Code
E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

1.4 SYSTEM DESCRIPTION

Continuous/Wall-to-Wall

1.5 SUBMITTALS

A. Product Data: Submit manufacturer’s technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with, or supported by the ceilings.

D. Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

1.7 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.
1.9 PROJECT CONDITIONS

A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

1.11 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustical Panels: Sagging and warping
2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: Ten (10) years from date of substantial completion
2. Suspension: Ten (10) years from date of substantial completion
3. Ceiling System: Thirty (30) years from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.12 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.
PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panels:
   1. Armstrong Ceilings, Inc.

B. Suspension Systems:
   1. Armstrong Ceilings, Inc.

C. Perimeter Systems
   1. Armstrong Ceilings, Inc.

D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2.1 ACOUSTICAL CEILING UNITS

A. Acoustical Panels (TYPICAL)
   1. Surface Texture: Fine
   2. Composition: Fiberglass
   3. Color: White
   4. Size: 24 in x 24 in x 1 in
   5. Edge Profile: Square Tegular 15/16 in for interface with PRELUDE XL 15/16" Exposed Tee grid.
   6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton .90
   7. Ceiling Attenuation Class (CAC): N/A
   8. Sabin:N/A
   9. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton 200
   10. Flame Spread: ASTM E 1264; Class A (UL)
   11. Light Reflectance (LR) White Panel: ASTM E 1477; 0.90
   12. Dimensional Stability: HumiGuard Plus
   13. Recycle Content: Post-Consumer - 12% Pre-Consumer - 59%
2.3.1 METAL SUSPENSION SYSTEMS

A. Components:

Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.

a. Structural Classification: ASTM C 635 **Heavy Duty**.

b. Color: **White** and match the actual color of the selected ceiling tile, unless noted otherwise.

d. Acceptable Product: **PRELUDE XL 15/16" Exposed Tee** as manufactured by Armstrong Ceilings

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

1. 7807 - 10ft Wall Molding

E. Accessories:

1. 7908 - 15/16" Tegular Act. to Drywall Transition Molding

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

C. Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling.

END OF SECTION
1. GENERAL

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Maintenance Program: At completion of this phase of work sub will deliver ONE (1) un-opened carton of tile of each type and color installed in the work for the Owner's future use in maintenance and repair.

1.3 Submittals:

1.3.1 Materials list of items proposed to be provided under this section;

1.3.2 Manufacturer's specification and other data need to prove compliance with the specified requirements;

1.3.3 Samples of each item color, and pattern available in the specified grades from the proposed manufacturers.

1.3.4 Manufacturers recommended installation procedure which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the work.

1.3.5 Certificate of Compliance from manufacturer stating that resilient tile is Class I per NFPA 253. Critical radiant flux shall be a minimum of 0.45 watts per square centimeter.

1.4 Quality Assurance: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

2. MATERIALS:

2.1 Reference Finish Schedule

2.1.1 Floor Patterns: Random / Directional. Reference Finish Schedule.

2.2 VCT-1 Color: Reference Finish Schedule

2.3 Reducer strip: Reference A901 Series for transition strips

2.4 Adhesive: Trowel-On-Adhesive as recommended by Tile Manufacturer.
Adhesive shall be rated for moisture at a minimum of 7-10lbs with a pH of 10-12.

2.5 Rubber Wall Base: Reference Finish Schedule.

3. INSTALLATION:

3.1 Maintain all rooms at a minimum of 70 degrees F for at least 48 hours prior to application of tile, during application of tile and 48 hours after application of tile.

3.2 Surface Conditions: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until satisfactory conditions are corrected.

3.3 Preparation:

3.3.1 Subfloors: (Concrete slabs):

3.3.1.1 Verify that substrate is smooth, level, at required finish elevation, and without more than 1/8” in 10’0” variation from level or slopes shown on the drawings.

3.3.1.2 Prior to laying materials, broom clean or vacuum the surfaces to be covered, and inspect the subfloors.

3.3.2 Priming:

3.3.2.1 Apply concrete slab primer if so recommended by the resilient flooring manufacturer.

3.3.2.2 Apply in accordance with the manufacturer's recommendations as approved by the Architect.

3.4 Reducer strip: Install reducer strip in doorways and elsewhere where resilient tile abuts exposed concrete flooring. Reducer strip shall transition from VCT to concrete floor.

3.5 Installation:

3.5.1 General:

3.5.1.1 Install materials only after finishing operations including painting have been completed and after permanent heating system is operating.
3.5.1.2 Verify that moisture content of concrete slabs, building air temperature, and relative humidity are within the limits recommended by the manufacturers of the material used. The owner shall be provided with written documentation of slab moisture content prior to installation. The flooring contractor shall accept this moisture level as non-detrimental to the product and installation components and guarantee accordingly.

3.5.1.3 Maintain reference markers, holes, and openings that are in place of plainly marked for future cutting by repeating on the finish surface as marked in the sub-floor. Use chalk or other non-permanent marking device.

3.5.2 Installing resilient tiles:

3.5.2.1 Place units with adhesive cement in strict compliance with the manufacturer's recommendations as approved by the Architect. Trowel notch size shall not exceed 1/16 inch.

   a) Butt units tightly to vertical surfaces, nosings, edgings, and thresholds.
   b) Scribe as necessary around obstruction and to produce neat joints.
   c) Place tiles tightly laid, even, and in straight parallel lines.
   d) Extend units into toe spaces, door reveals, and in closets and similar spaces.

3.5.2.2 Lay units from center marks established with principal walls, discounting minor offsets, so that units, at opposite edges of the room are of equal width.

   a) Adjust as necessary to avoid use of cut widths less than 3" wide at room perimeters.
   b) Lay units square to axis of the room or space.

3.5.2.3 Match units for color and pattern by using materials from cartons in the same sequence as manufactured and packaged.

3.5.2.4 Verify the layout of the tile grain with the Architect prior to installation.

3.5.2.5 Place reducer edge strips tightly butted to VCT units and secured with adhesive, at all edges where VCT terminates at a
concrete floor, such as at mechanical and electrical closets.

3.6 Cleaning and Protection:

3.6.1 Remove excess adhesive and other blemishes from exposed surfaces, using neutral cleaner recommended by the manufacturer of the resilient materials.

3.6.2 Prior to substantial completion, the flooring sub-contractor shall strip the VCT of its factory applied protective coating and install (3) coats of floor finishing product containing a minimum of 25% floor solids.

Approved Products:
- Spartan On & On
- Spartan 1-shine
- Johnson Time Saver
- or Approved Equivalent

3.6.3 Clean Up: All vinyl composition tile flooring and reducer strips upon completion shall be cleaned, waxed, and mechanically buffed.

3.6.4 The contractor shall furnish to the school no less than one box for each 50 boxes installed (or fraction thereof) for each type, color, pattern, and size installed.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Carpet tile.

1.2 RELATED SECTIONS
   A. Section 03 30 00 - Cast-in-Place Concrete.

1.3 SUBMITTALS
   A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
   B. Product Data: Manufacturer’s data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Installation methods.
   C. Verification Samples: For each finish product specified, two samples, representing actual product and finish.
   D. Extra Stock: Submit extra stock equal to 2% of total installed.

1.4 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
   B. Installer Qualifications: Minimum 2 year experience installing similar products.
   C. Performance: Fire performance meeting requirements of building code and local authorities.

1.5 PRE-INSTALLATION MEETINGS
   A. Convene minimum two weeks prior to starting work of this section.

1.6 DELIVERY, STORAGE, AND HANDLING
   A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
   B. Handling: Handle materials to avoid damage.
1.7 PROJECT CONDITIONS
   A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer’s recommended limits.

1.8 SEQUENCING
   A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS

2.1 MANUFACTURERS
   A. Acceptable Manufacturers: Shaw Contract.
   B. Substitutions: Not permitted.

2.2 MATERIALS
   A. Carpet Tile: CPT-1 (Field)
      1. Collection: Vertical Layers
      2. Style: Tinge tile 5T156
      3. Color Name: Oxidized Iron
      4. Color No.: 56506
      5. 100% Solution dyed
      6. Primary Backing: Synthetic
      7. Secondary Backing: EcoWork Tile
      8. Protective Treatment: ssp® Shaw Soil Protection
      9. Primary Backing: Synthetic
      10. Installation Method: Ashlar (or as indicated on drawings)
      11. Auxiliary Materials:
          a. Edge guards.
          b. Adhesives, cements and fasteners.
          c. Leveling compound.

   B. Carpet Tile: CPT-2 (Border)
      1. Collection: Vertical Layers
      2. Style: Expose tile 5T151
      3. Color Name: ERA
      4. Color No.: 50505
      5. 100% Solution dyed
      6. Primary Backing: Synthetic
      7. Secondary Backing: EcoWork Tile
      8. Protective Treatment: ssp® Shaw Soil Protection
      9. Primary Backing: Synthetic
      10. Installation Method: Monolithic (or as indicated on drawings)
11. Auxiliary Materials:
   a. Edge guards.
   b. Adhesives, cements and fasteners.
   c. Leveling compound.

C. Vinyl Base:
   1. MFR.: Johnsonite
   2. Style: Traditional Wall Base (CB-XXX-4) (WITH TOE)
   3. Color Name: 40 Black
   4. Profile Height: 4”

PART 3 EXECUTION

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

3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.
   B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION
   A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction. Test for proper operation and adjust until satisfactory results are obtained.
   B. Comply with recommendations of Carpet and Rug Institute 'Specifier's Handbook'.

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

END OF SECTION
PART 1

1.1 SECTION INCLUDES

A. Acoustical wall panels.

1.2 RELATED SECTIONS

A. Section 092116 - Gypsum Board Assemblies.

B. Section 095000 - Acoustic Ceilings

C. Section 099000 - Painting and Coatings.

1.3 REFERENCES


1.4 PERFORMANCE REQUIREMENTS

A. Acoustical Absorption: Perform testing in accordance with ASTM C 423, Type A mounting method unless otherwise specified.

B. Flame Spread Rating: Provide all components with Class A flame spread rating when tested in accordance with ASTM E 84, unless otherwise specified.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Independent testing agency test reports.

C. Selection Samples: For each product specified, two complete sets of color samples representing manufacturer's full range of available colors and patterns.
D. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10 years of experience in producing acoustical products of the types specified herein.

B. Installer Qualifications: Acceptable to the manufacturer of the acoustical products being installed.

C. Mock-Up: Provide a mock-up for evaluation of installed appearance.
   1. Install acoustical products in areas designated by Architect.
   2. Mockup panel may be 24” x 24” to match specified product including finish and edge treatment.
   3. Do not proceed with remaining work until Architect approves workmanship and appearance.
   4. Approved mock-up will be retained by Owner for comparison to installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect acoustical products from moisture during shipment, storage, and handling.

B. Store products in manufacturer’s unopened packaging until ready for installation.
   1. Store materials flat, in dry, well-ventilated space.
   2. Do not stand panels on end.
   3. Protect edges from damage.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

A. Do not begin installation of acoustical products until building has been enclosed and environmental conditions approximate those that will prevail when building is occupied.

B. Environmental Requirements: Do not install panels until wet work, such as concrete and plastering, is complete; the building is enclosed; and the temperature and relative humidity are stabilized at 60 – 80 degrees F (16 – 27 degrees C) and 40% to 50%, respectively.
1.9 EXTRA MATERIALS

A. See Section 01600 - Product Requirements, for additional provisions.

B. Provide 5 percent, but not less than 1 of each type of acoustical unit actually installed, for Owner’s use in maintenance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: AVL Systems Inc. 5540 SW 6\textsuperscript{th} Place, Ocala, FL 34474. Tel: (800) 288-7842, www.avlonline.com. Product: ACOUSTECH. Ref: Finish Schedule on drawings for additional information)

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

C. Provide all acoustical products specified herein by a single manufacturer.

2.2 ACOUSTICAL WALL PANELS

A. Wrapped Fiberglass Panels: ACOUSTECH WALL AND CEILING PANELS; fiberglass core of 6 to 7 pcf (96 to 112 kg/cu m) with chemically hardened edges, seamless finish material wrapped and bonded to back side of panels.
   1. Thickness: 1 inch (25.4 mm); NRC 0.85.
   2. Size: As indicated in drawings
   3. Finish Material: as indicated in drawings.
   4. Color: As indicated in drawings
   5. Edges: Beveled.
   7. Mounting: Mechanical clips.

2.3 ACCESSORIES

A. Two-Part Z-Clips: Manufacturer’s standard mounting bar and matching clips for mounting on rear of acoustical panels.

PART 3 EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install acoustical units in accordance with manufacturer's instructions.

B. Two-Part Clips: Fasten bars to wall at 48 inches (1220 mm) on center in both directions. Impale matching mechanical clips into back of panels in matching pattern and drop panel into position so clips fully engage into wall-mounted bars.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION
1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 The following specifications cover the complete painting and finishing of all surfaces, interior and exterior, as shown on the drawings and described in the specifications except as otherwise specified.

1.3 Work not included:

1.3.1 Copper, bronze, chromium plate, nickel, stainless steel, anodized aluminum, lead, and bright metals normally not intended to be painted.

1.3.2 Factory applied finishes.

1.3.3 Shop painting of structural and miscellaneous iron and steel.

1.3.4 Face masonry (with the exception of the specified sealer).

1.3.5 Concealed ducts, pipes and conduit.

1.4 The painting contractor shall supply all labor, materials, tools, ladders, scaffolding and equipment necessary for the completion of the work according to the drawings and specifications.

1.5 The painting contractor is responsible for inspecting the work of others prior to the application of any paint or finishing material. If any surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding and puttying operations, the painting contractor will immediately notify the general contractor or the Architect in writing, and shall not proceed with this work until conditions have been corrected and are acceptable.

1.6 Before proceeding with any painting, the painting contractor shall prepare and finish a sample room complete or in part, as directed by the Architect. Finish all areas or items in accordance with the specification and in colors selected by the Architect. These areas or items will be inspected by the Architect. When approved, they shall serve as a standard for workmanship, appearance, and materials approved for similar areas or items throughout this project.
1.7 Submittals: Manufacturer's data on painting products item by item and warranties.

1.7.1 Colors:

1. The Architect will furnish to the Contractor a set of color cards and a schedule showing where the various colors shall be used. The contractor shall then prepare duplicate 8-1/2" x 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.

2. STORAGE: Store all materials used on the job in a single place designated by Architect. Keep storage place neat and clean. All damaged areas shall be corrected by cleaning, repairing or replacing. All 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.

3. EXTRA MATERIAL: Upon substantial completion, the Contractor shall deliver to the Owner an extra stock consisting of one gallon of each color used in painting. Such stock shall be new, tightly sealed in clearly labeled containers.

4. MATERIALS:

4.1 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 shall be used from the original containers.

4.2 Use only first line products of approved manufacturers.

4.3 Use materials only in accordance with the manufacturer's directions.

4.4 The Architect shall select colors and determine the number of colors to be used on the job. Refer to paragraph 1.7.1.

4.5 Fungicidal agent shall be incorporated into the paint by the manufacturer.

4.6 Colors: Color of the final coat shall match the color selections furnished by the Architect. Preceding coats shall vary slightly in shade of color. Upon request, finish one room completely, space or item of each color scheme prior to proceeding with the painting. Approved color schemes shall serve as a standard for the similar work throughout the project.
5. **WORKMANSHIP:**

5.1 Employ skilled mechanics to insure the very best workmanship. Quality workmanship is required. Materials to be applied by craftsman experienced in the use of the specific product involved.

5.2 Where interior or exterior wood and metal are primed in the mill or shop as a part of the painting contract, use materials specified in every case for such surfaces and use in accordance with manufacturer’s directions for the first or priming coat.

5.3 When surface temperature is below 50 degrees F., do not apply paints, varnishes, and special coatings, unless otherwise specified. Do not prime exteriors during frosty or rainy weather. Avoid painting surfaces while they are exposed to direct sunlight.

5.4 Clean floors and adjacent surfaces as well as all surfaces to be painted, before painting. Painting environment shall be relatively dust free.

5.5 Touch up knots, pitch streaks and sappy spots with recommended sealer before priming.

5.6 Putty nail holes, cracks and other defects after the first coat, with putty color to match the finish. Bring putty flush with the adjoining surface.

5.7 Wash metal surfaces with mineral spirits to remove dirt, oil and grease, before applying materials. Remove rust and scale by wire brushing or sanding clean before painting. Clean and touch up shop coats of paint that have become badly weathered, worn or marred with the primer specified.

5.8 Clean galvanized metal thoroughly and apply recommended primer.

5.9 Back-prime interior and exterior trim before installation with primer specified.

5.10 Apply all materials under adequate illumination, spread evenly and flow on smoothly without runs or sags.

5.11 All coats must be thoroughly dry before applying succeeding coats.

5.12 Sand smooth all woodwork to be finished with enamel or varnish. Clean surface before proceeding with the application of the first coat.

5.13 After doors are fitted, finish tops, bottoms and edges same as face and back.

5.14 Secure color schedules before applying paint or finish. Tint primer and
undercoat to the approximate shade of the finish coat.

5.15 Masonry surfaces shall be dry and clean from all dust, dirt, oil and efflorescence before painting. When recommended, etch concrete that is dense and smooth or that has had a hardener applied before painting. Prepare masonry surface with approved high-build masonry primer/block filler prior to painting.

5.16 Do not paint drywall containing more than 15% moisture. Touch up suction spots or "hot spots" as recommended after application of the first coat and before applying the second coat.

5.17 Repair scratches, cracks and abrasions in drywall surfaces and openings adjoining trim with a spackling compound, flush with adjoining surface, and when dry, sand smooth and seal before applying prime coat.

5.18 Cover surfaces to be stained with a uniform coat and wipe off if required.

5.19 Between coats, sand enamel or varnish finish, applied to wood or metal, with fine sandpaper and clean to produce an even, smooth finish.

5.20 Finish closets the same as adjoining rooms, unless otherwise specified. Finish all other surfaces the same as nearest or adjoining surfaces unless specified or directed otherwise by the Architect.

5.21 Protect work, adjacent work, and materials at all times, by suitable covering. Upon completion of the work, remove all paint and varnish spots from the floors, glass and other surfaces. Remove from the premises all rubbish and accumulated materials of whatever nature not caused by others and leave work in clean, orderly and acceptable condition.

6. PAINTING SCHEDULE: (DESIGN BASIS: Products by Sherwin Williams)

6.1 Painting Schedule – Interior: Refer to Drawings A901 for color schedule)

6.1.1 Drywall Conditions

Latex Systems

b. Eg-Shel/Satin Finish

1st Coat: S-W Harmony Low Odor Interior Latex Primer, B11W900 (4-mil wet, 1.3-mil dry)

2nd Coat: S-W Harmony Low Odor Interior Latex Eg-Shel, B9 Series

3rd Coat: S-W Harmony Low Odor Interior Latex Eg-Shel, B9 Series (4-mil wet, 1.6-mil dry per coat)

c. Flat Finish – Ceilings Only

1st Coat: S-W Harmony Low Odor Interior Latex Primer, B11W900 (4-mil wet, 1.3-mil dry)
2\textsuperscript{nd} Coat: S-W Harmony Low Odor Interior Latex Flat, B5 Series
3\textsuperscript{rd} Coat: S-W Harmony Low Odor Interior Latex Flat, B5 Series (4-mil wet, 1.6-mil dry per coat)

6.1.2 Metal Components:
Exposed conditions for Metal Roof Deck and Structure: Team Room Ceiling
Clean surfaces of dust and contaminants
2 coats of SW Pro Industrial Waterborne Acrylic Dry-Fall Finish: FLAT
Waterborne Acrylic Latex – LOW VOC
Color: \textit{Inkwell 6992 (SW)}

6.1.3 Stained and Sealed Wood Components:
Wood Chair Rail, Base Molding, Team Room Shelving, and Team Room Bar.
Quality: Custom Grade finish and installation
Species: Varies by location. Ref: plans for additional information.
Reference section 06 10 00 and refer to AWI standards for acceptable finish and installation of millwork grade specified.
For chair rail and base molding, provide pieces in minimum 10 foot nominal length x full width with no finger joints.

ST-1: Base Molding (type B-2), Chair Rail
MFR: General Finishes
Color: \textit{WALNUT}
Sealant: Polyurethane

ST-2: Team Room Shelving and Team Room Bar
MFR: General Finishes
Color: \textit{TBD}
Sealant: Polyurethane
Sheen: Satin
Coats: 2 MIN

6.2 Painting Schedule - Exterior:
6.2.1 Concrete: N/A

6.2.2 Concrete Masonry: N/A

6.2.3 EXTERIOR METALS – (Ferrous Metal)
Latex Systems – Sheen to be selected.
a. Semi-Gloss Finish
1\textsuperscript{st} Coat: S-W Pro Industrial Pro-Cryl® Universal Primer, B66-310 Series (2.0 – 4.0-mil dry)
2\textsuperscript{nd} Coat: S-W Pro Industrial Zero VOC Semi-Gloss Acrylic B66W651 Series
3rd Coat:  S-W Pro Industrial Zero VOC Semi-Gloss Acrylic
B66W651 Series (2.5 – 4.0-mil dry per coat)

7. APPROVED MANUFACTURER:

7.1 All painting products shall be first line products from a single source manufacturer. Products from recognized major manufacturers shall be submitted to the Architect for approval. Approved manufacturers are: PPG or Sherwin Williams (design basis), ICI, Benjamin Moore. **Substitutions will be reviewed and accepted based on approved equal status only. Ref section 01 60 00 for additional information.**

7.2 Colors will be as indicated in documents or as chosen from manufacturer’s color line

END OF SECTION
SECTION 10 14 00
INTERIOR SIGNAGE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Signage of the following types:
   2. Panel plaques for ADA/wayfinding.

1.2 RELATED SECTIONS

A. Section 01 20 00 Price and Payment
B. Section 09 21 16 - Gypsum Board Assemblies.

1.3 REFERENCES

B. Underwriter's laboratory (UL) 94 and 94v-0 - Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances.
C. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
B. Product Data: Manufacturer’s illustrated product literature and specifications to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
C. Shop Drawings: Submit detailed drawings of products and assemblies.
D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE
A. Manufacturer Qualifications: Manufacturer to have a minimum of 20 year experience in manufacturing letters.

B. Installer Qualifications: Minimum 2 year experience installing similar products.

C. Sourcing: All signage shall be manufactured by one manufacturer.

1.6 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer’s unopened packaging bearing the brand name and manufacturer’s identification until ready for installation.

B. Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer’s recommended limits.

1.9 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 WARRANTY

A. Manufacturer’s Warranty: Provide manufacturer’s standard warranty against defects in materials and workmanship. Letters shall be guaranteed for the life of the business against defects.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Gemini Inc., which is located at: 103 Mensing Way; Cannon Falls, MN 55009; Toll Free Tel: 800-538-8377; Tel: 507-263-3957; Fax: 800-421-1256; Email: request info (kenan.hanhan@geminisignproducts.com); Web: www.geminisignproducts.com | www.geminiplaques.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
2.2 Flat Cut - Logo and Text (Lobby)

*Logo and Text CAD file to be provided by owner*

A. Signage shall be manufactured by Gemini Inc.
   1. Material: 5052 Anodized Aluminum - 1/8” (Flat Cut)
   2. Finish: Powder Coated (Black 2025)

B. Design:
   1. Text shall be ARIAL letter style with letters that are 1/8” deep x 3 5/8” inches high, as indicated on drawings.
   2. Edges: Square Edge.
   3. Text and Logo shall be clear-coated and oven-baked with a two-part hardened seal of clear acrylic polyurethane.

C. Mounting:
   1. Hardware: Blind Stud standard mounting. To be mounted on WC-1 (sealed steel panel - pre-mounted on MDF. Core drill hole and mount directly to panel.)
      a. Letters to stand off from wall to achieve desired halo effect.
      b. Studs provided threaded into custom mounting bracket
      c. Spacer Sleeves: Provided per stand-off requirements. (1” standoff)
   2. Mounting shall be templated designating stud locations required for mounting on substrate surface as indicated.
   3. Brackets shall be soldered on the inside of the letters to receive threaded studs.
   4. Standard fabricated letters shall use 3/16 inch (4.8 mm) aluminum studs.

2.3 PANEL PLAQUES FOR WAYFINDING / ADA

A. Design: Wayfinding / ADA
   1. ADA compliant with raised copy, emblems and Braille shall be integral to the body of the wayfinding plaque (one-piece construction).
   2. Letter shall be Arial letter style or as directed by owner.
   3. TYPE A: STANDARD ADA RESTROOM SIGNAGE: Similar to Gemini ADA Wayfinding Aluminum Plaque - Style F
   4. TYPE B: Similar to Gemini Standard Aluminum Basic Signage: Powder coated Black with standard white copy - copy to be room number only; Text: Arial or as determined by owner
   5. TYPE C: Similar to Gemini Standard Aluminum Basic Signage: Powder Coated Black with standard white copy - copy to be as determined by owner/architect, Text: Arial or as determined by owner
B. Fabrication:
   1. Material Thickness: 1/8 inch (3 mm).
   2. Edges: Single Line.
   3. Background Colors:

C. Mounting:
   1. Hardware and instructions are provided for selected mounting methods.

2.4 WAYFINDING / ADA SIGNAGE SCHEDULE

A. SIGNAGE SCHEDULE

*Standard rooms shall not receive signage. Use schedule below for pricing:

<table>
<thead>
<tr>
<th>ROOM NO.</th>
<th>ROOM NAME</th>
<th>SIGN TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-01BA</td>
<td>RESTROOM</td>
<td>A</td>
</tr>
<tr>
<td>B-06A</td>
<td>MECHANICAL</td>
<td>B</td>
</tr>
<tr>
<td>B-06B</td>
<td>MECHANICAL</td>
<td>B</td>
</tr>
<tr>
<td>B-13</td>
<td>ELECTRICAL/TEL</td>
<td>B</td>
</tr>
<tr>
<td>B-18</td>
<td>MEN’S RESTROOM</td>
<td>A</td>
</tr>
<tr>
<td>B-19</td>
<td>WOMEN’S RESTROOM</td>
<td>A</td>
</tr>
<tr>
<td>B-20</td>
<td>JANITOR</td>
<td>B</td>
</tr>
<tr>
<td>B-32</td>
<td>ELECTRICAL</td>
<td>B</td>
</tr>
<tr>
<td>B-34A</td>
<td>MEN’S RESTROOM</td>
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</tr>
<tr>
<td>B-36A</td>
<td>WOMEN’S RESTROOM</td>
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</tr>
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<td>B-35</td>
<td>JANITOR</td>
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</tr>
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<td>MECHANICAL</td>
<td>B</td>
</tr>
<tr>
<td>B-42A</td>
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<td>C</td>
</tr>
<tr>
<td>B-42B</td>
<td>TRAINING ROOM</td>
<td>C</td>
</tr>
<tr>
<td>B-42C</td>
<td>TRAINING ROOM</td>
<td>C</td>
</tr>
</tbody>
</table>

PART 3 EXECUTION
3.1 EXAMINATION
   A. Do not begin installation until substrates have been properly prepared.
   B. If substrate preparation is the responsibility of another installer, notify
       Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION
   A. Clean surfaces thoroughly prior to installation.

3.3 INSTALLATION
   A. Install in accordance with manufacturer's instructions and in proper
      relationship to adjacent construction.

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

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES

A. Stainless steel partitions.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 10 28 13 - Washroom Accessories.

1.3 REFERENCES


1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Manufacturer’s data sheets on each product to be used, including:
   1. Literature indicating typical panel, pilaster, door, hardware and fastening.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. Shop Drawings:
   1. Dimensioned plans indicating layout of toilet compartments.
   2. Dimensioned elevations indicating heights of doors, pilasters, separation partitions, and other components; indicate locations and sizes of openings in compartment separation partitions for toilet and bath accessories to be installed in partitions; indicate floor and ceiling clearances.
   3. Details indicating anchoring components (bolt layouts) and methods for project conditions; indicate components required for installation, but not supplied by toilet compartment manufacturer.

D. Selection Samples: For each finish product specified, one complete set of color selection guides representing manufacturer’s full range of available colors, textures and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product,
color, texture and pattern.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer’s instructions and recommendations and industry standards.

B. Store products indoors in manufacturers or fabricator’s original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

C. Lay cartons flat, with adequate support to ensure flatness and to prevent damage to pre-finished surfaces.

D. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

1.6 PROJECT CONDITIONS

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

B. Do not deliver materials or begin installation until building is enclosed, with complete protection from outside weather, and building temperature maintained at a minimum of 60 degrees F (15.6 degrees C).

1.7 WARRANTY

A. Manufacturers Standard Warranty: Provide warranty for Stainless Steel Material: Against corrosion or discoloration for 5 years, assuming proper maintenance according to manufacturer's recommendations.

1.8 COORDINATION

A. Coordinate Work with placement of support framing and anchors in walls and ceilings.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Acceptable Manufacturer: ASI Global Partitions, which is located at: 2171 Liberty Hill Rd.; Eastanollee, GA 30538; Tel: 706-827-2700; Fax: 706-827-2710; Email: request info (sales@asi-globalpartitions.com); Web: asi-globalpartitions.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 COMPARTMENTS AND SCREENS

A. Toilet Compartments: Floor anchored - **Ultimate Privacy - 64**
   1. Compartment Depth and Width: As scheduled and indicated on Drawings.
   2. Door Width: 24 inches (610 mm), minimum; at ADA accessible compartments 36 inches (915 mm) minimum.
   3. Height Above Floor: 12 inches
   4. Door/Panel Height: 64 inches - **Ultimate Privacy - 64**
   5. Pilaster Height: 64 inches

B. Privacy and Urinal Screens: Wall hung.
   1. Screen Panel Size: As scheduled and indicated on Drawings.
   2. Screen Panel Size: 24 inches wide by 42 inches high.
   3. Height Above Floor: 18 inches

2.3 STAINLESS STEEL TOILET COMPARTMENTS

A. Doors, Panels, Screens, and Pilasters: **Tension leveled stainless steel face sheet with number 4 finish, bonded under pressure to honeycomb core with non-toxic adhesive.**
   1. Doors, Screens, and Panels: 1 inch thick, 22 gage steel.
   3. Edge Moldings: Continuous roll-formed, interlocking 22 gage (0.793 mm) steel crown molding, welded and ground smooth at corners.
   4. Finish: Type 304 stainless steel #4 Satin finish.

B. No-Sight System: Required.

C. Door Hardware:
   1. Finish: Type 304 Stainless Steel, No. 4 satin finish attached with theft resistant barrel nuts and shoulder screws.
   2. Hinges: continuous – Ultimate Privacy
   5. Coat Hook and Bumper: Manufacturer's standard surface mounted. No tamper-resistant screws required.
   7. Fastening Hardware: Theft resistant heads.
D. Mounting Brackets: Type 304 Stainless Steel, No. 4 satin finish, stirrup brackets with theft resistant screws.

E. Pilaster Shoes: Type 304 stainless steel with number 4 finish. Minimum 3 inches high secured to floor w/internal clips.

F. Pilaster Anchors: Floor Anchored
   1. Inverted stirrup with jack bolt for leveling during installation and permanent height adjustment.
   2. Welded to base of pilaster, with "L" brackets coupled to stirrup bracket and floor for full range adjustment; concealed by pilaster shoe after installation.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions. Clean surfaces thoroughly prior to installation.

B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   1. Verify dimensions of areas to receive compartments.
   2. Verify locations of built-in framing, anchorage, bracing, and plumbing fixtures.

3.2 INSTALLATION

A. Install in accordance with approved shop drawings and manufacturer's instructions.

B. Fasten components to adjacent materials and to other components using purpose-designed fastening devices.

C. Adjust pilaster anchors for substrate variations; conceal anchors with pilaster shoes.

D. Equip each compartment door with top and bottom hinges and door latch.

E. Install door strike keeper on pilasters in alignment with door latch.

F. Equip each compartment door with one coat hook and bumper.
G. Installation Tolerances:
   1. Maximum variations from plumb or level: 1/8 inch (3 mm).
   2. Clearance between wall surface and panels or pilasters: 1-1/2 inch (38 mm) maximum.

3.3 ADJUSTING
   A. Adjust and align hardware to uniform clearance at vertical edge of doors.
   B. Adjust adjacent components for consistency of line or plane.

3.4 PROTECTION
   A. Protect installed products until completion of project.
   B. Touch-up, repair or replace damaged products before Substantial Completion.
   C. Remove factory protective coverings and clean finish surfaces in accordance with manufacturer's instructions before substantial completion.

END OF SECTION
PART 1  GENERAL

1.1 SECTION INCLUDES
   A. Paired panel partitions, 3 inch (76 mm) thick panels.

1.2 RELATED SECTIONS
   A. Section 03 30 00 - Cast-in-Place Concrete.
   B. Section 05 50 00 - Metal Fabrications.
   C. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES
   B. ASTM E 413 - Classification for Rating Sound Insulation.
   D. ASCE 7 - Minimum Design Loads of Buildings and Other Structures
   F. NFPA 70 - National Electrical Code.
   G. UL 508A - Industrial Control Panels.

1.4 SUBMITTALS
   A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
   B. Product Data: Material descriptions, construction details, finishes, installation details, and operating instructions for each type of operable partition, component, and accessory specified.
   C. Shop Drawings: Show location and extent of operable partitions. Include plans, elevations, sections, details, attachments to other construction, and accessories. Indicate dimensions, weights, conditions at openings, and at storage areas, and required installation, storage, and operating clearances. Indicate location and installation requirements for hardware and track, including floor tolerances.
required and direction of travel. Indicate blocking to be provided by others.

D. Setting Drawings: Show imbedded items and cutouts required in other work, including support beam punching template.

E. Samples: Color samples demonstrating full range of finishes available. Verification samples shall be available in same thickness and material indicated for the work.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of all components.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Experienced installer, certified by the operable partition manufacturer, as qualified to install the manufacturer's partition systems for work similar in material, design, and extent to that indicated for this Project.

B. Acoustical Performance: Test operable partitions in accordance with ASTM E 90 test procedure to attain no less than the STC rating specified. Provide a complete and unedited written test report by the testing laboratory upon request.

C. Preparation of Opening: Conform to ASTM E 557.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Clearly mark packages and panels with numbering systems used on Shop Drawings. Do not use permanent markings on panels.

B. Protect panels during delivery, storage, and handling to comply with manufacturer's instructions and as required to prevent damage.

1.7 WARRANTY

A. Provide operable partition manufacturer's written warranty agreeing to repair or replace components with manufacturing defects for a period of two years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Modernfold, Inc., which is located at: 215 W. New Rd.; Greenfield, IN 46140; Toll Free Tel: 800-869-9685; Tel:
2.2 PAIRED PANEL PARTITIONS, THREE INCH (76 MM) THICK PANELS

A. Product: Acousti-Seal 932 Operable Partition by Modernfold, Inc., manually operated paired flat panels, top supported with operable floor seals.
   1. Final closure:
      a. Horizontally expanding panel edge with removable crank.
      b. Hinged panel closure
      c. Enclose
      d. Pass Door closure
      e. Spinner panel

B. Panel Construction and STC Rating: Nominal 3 inch (76 mm) thick in manufacturer's standard 48 inch (1220 mm) width by height required, with horizontal and vertical framing elements fabricated from 18 gage formed steel with overlapped and welded corners; reinforced top channel to support suspension system components; frame with concealed formed steel at vertical edges.
   1. Panel Skin: 1/2 inch (12.7 mm) NAUF medium density fiberboard, single material or composite layers continuously bonded to panel frame with minimum STC as follows:
      a. STC 50.
   2. Hinges for Closure Panels, Pass Doors and Pocket Doors: Full leaf butt hinges, attached directly to the panel frame with welded hinge anchor plates within panel to further support hinge mounting to frame. Hinges mounted into panel edge or vertical astragal are not acceptable.
   3. Panel Trim: No vertical trim required or allowed on vertical edges of panels; minimal groove appearance at panel joints.
   4. Panel Weight: As standard with manufacturer for STC selected, 6.5 to 8.5 lbs/SF.

C. Panel Finish and Exposed Trim: Factory applied as follows:
   1. Panel Finish: Reinforced heavy duty vinyl with woven backing weighing not less than 30 oz./lineal yd.

D. Sound Seals and Bottom Seals:
   1. Vertical Interlocking Sound Seals Between Panels: Roll-formed steel astragals, with reversible tongue and groove configuration in each panel edge for universal panel operation. Rigid plastic or aluminum astragals or astragals in only one panel edge are not acceptable.
   2. Horizontal Top Seals: Continuous contact extruded vinyl bulb shape with pairs of non-contacting vinyl fingers to prevent distortion without the need for mechanically operated parts.
3. Horizontal Bottom Floor Seals: Modernfold IM2 Bottom Seal. Manually activated operable bottom seals with self contained handle providing nominal 2 inches (51 mm) operating clearance with an operating range of plus 1/2 inch (12.7 mm) to minus 1-1/2 inches (38 mm), operable from either panel edge to permit multiple panel positioning and reversible operation.

E. Suspension System:
1. Suspension System: Modernfold No. 14 Suspension System:
   a. Track: Nominal 7 gage formed steel track with adjustable steel hanger brackets supporting the load bearing surface of the track, connected to structural support by pairs of 1/2 inch (12.7 mm) diameter threaded rods; no failure of track or brackets at 5,000 lb. (2268 kg) static point loading at mid-span with brackets at 48 inch (1220 mm) centers.
   b. Exposed Track Soffit: Steel, removable for service and maintenance, attached to track bracket without exposed fasteners and pre-painted off-white. Wood or aluminum soffits are not acceptable.
   c. Carriers: All-steel with four or eight steel tired ball-bearing wheels. Non-steel tires are not acceptable.

F. Special Components:
1. Single Pass Door: Standard hollow metal door hung in a steel frame, prime painted for field finishing. ADA compliant pass door with friction latch, automatic door closures and flush pulls for panic operation, located in the center panel of a three-panel group. Threshold is not acceptable. Door finish as follows:
   a. Prime painted for field finishing.
   b. Painted dark bronze.
   c. Painted smoke gray.
   d. Painted natural choice.
2. Hardware: Self-illuminated exit signs.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until supports and substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION
A. Install in accordance with manufacturer's instructions and ASTM E 557 installation procedures. Test for proper operation and make necessary adjustments until satisfactory results are obtained.

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

END OF SECTION
SECTION 10 26 13
ALUMINUM CORNER GUARDS

1. GENERAL:

1.1 Related Documents: The requirements of Division 1 are hereby made a part of this section as if fully repeated herein.

1.2 Description of Work: Furnish and install corner guards at all outside corners of gypsum board walls in corridors and as indicated on drawings.

1.3 Submittals: Manufacturer’s installation instructions, product data, and warranty.

1.3.1 Five year manufacturer’s warranty.

1.3.2 Submit samples of manufacturer’s standard colors.

1.4 Work specified Elsewhere: Stainless steel corner guards. Refer to kitchen equipment.

2. PRODUCTS:

2.1 Model 2340 1” x 1” x 90° Surface Mounted Aluminum Corner Guard with 1/8” radius corner. Single piece construction only. Edge burrs removed prior to installation. Manufacturer: Wallguard.com; PO Box 1109, Dover Plains, NY 12522; Tel 877-943-6826; Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 – Product Requirements.

2.2 Height: Approximately 2'-10” above wall base (extend to underside of Wood Chair Rail *requires coordination in field)

2.3 Profile: 90 degrees

2.5 Ends shall terminate at base and underside of wood chair rail.

2.6 Aluminum Mill Finish #405

2.7 .080 Thick

2.8 Fully Adhered to wall substrate. Similar to Model ADH-50 low VOC Polyurethane based construction adhesive.

3. EXECUTION:

3.1 Install corner guards to walls securely in accordance with manufacturer’s written instructions.

3.2 Provide solid metal studs blocking within wall to provide effective back-up for mechanical fastening.

END OF SECTION
SECTION 10 26 16
HANDRAILS AND GUARDRAILS

PART 1 - GENERAL

1.1 SUMMARY

A. Handrail systems for pedestrian safety and wall protection

1.2 SECTION INCLUDES

A. Handrails
B. Guardrails

1.3 REFERENCES

A. American National Standards Institute (ANSI)
B. American with Disabilities Act (ADA)

1.4 SYSTEM DESCRIPTION

A. Performance Requirements: Provide handrail systems that conform to the following requirements:
   1. Code Compliance: Provide handrails that comply with all current ANSI federal ADA (Americans with Disabilities Act). And Florida Accessibility Standards requirements.

1.5 SUBMITTALS

A. Product Data: Provide the manufacturer's printed product data for each product indicated in this section.
B. Detail Drawings: Provide typical mounting details with appropriate fasteners for specific project substrates.
C. Samples: Provide verification samples of handrail, 7” (178mm) long, in full size profiles with mounting brackets of each type indicated.
D. Manufacturer’s Installation Instructions: Provide manufacturer’s printed installation instructions for each type of handrail.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in unopened factory packaging to the jobsite.
B. Inspect materials at delivery to assure that specified products have been received.
C. Store in original packaging in a climate controlled environment away from direct sunlight.
1.7 WARRANTY

A. Standard manufacturer limited lifetime warranty against material and manufacturing defects.

2.1 MANUFACTURERS

A. Acceptable Manufacturer:
   CR Laurence Co., Inc.
   2503 E. Vernon Ave.,
   Los Angeles, CA 90058
   PH: (800) 421-6144 x 17780

B. SUBSTITUTIONS WILL BE PERMITTED. CONTRACTOR SHALL PROVIDE INFORMATION FOR REVIEW AND APPROVAL PRIOR TO ACCEPTANCE OF BID.

C. Provide all handrails and wall protection from a single manufacturer.

2.2 Handrail / Guardrail

A. Metal Handrail System (wall mounted)
   1. 1.9” gripping diameter, system extends approximately 3” (76mm) from the face of wall. System includes 1.9” diameter top rail with stainless steel brackets. Brackets shall be mounted to wall surface with spacers as required. Prep wall block surface as required to receive brackets. *split face CMU may require a small amount of grinding to ensure the brackets are seated correctly. Contractor shall account for this in their proposal.
   2. Guardrail: Standalone 1.9” gripping diameter. Provide intermediate support posts as required to facilitate overall length of railing. Reference drawings for additional information.

2.3 MATERIALS

A. Aluminum
   1. Continuous Aluminum GRADE 6063 schedule 40 rail tubing with a satin anodized finish. Railing similar to: CR Laurence HR19SA
   2. Pipe Connector Sleeves shall be made of aluminum and shall be compatible with the top rail tubing similar to: CR Laurence GR19CSM
   3. Provide Flat End Caps for Top railing similar to: CR Laurence GR19ECM

B. Stainless Steel
   1. Wall mounting Bracket: similar to: CR Laurence HR20B4BS, Grade 316 Brushed Stainless Steel

2.4 COMPONENTS

A. Handrail returns, outside corners and inside corners shall be of material compatible with railing and a finish to match handrails.

B. Stainless steel wall brackets shall be fabricated from cast stainless steel with a brushed finish.
C. Fasteners: All mounting systems accessories appropriate for substrates indicated on the drawings shall be provided.

2.5 FINISHES

A. Handrail and guardrail: As Indicated
B. Stainless steel brackets shall have a brushed finish.

3.1 INSTALLERS

A. Installer should be familiar with the installation of the products.

3.2 EXAMINATION

A. Examine areas and conditions in which handrail will be installed.
   1. Complete all finishing operations, including painting, before beginning installation of handrail system materials.
   2. Wall surface shall be dry and free from dirt, grease and loose paint.

3.3 PREPARATION

A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.
B. Corrosion Protection: For aluminum alloys that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, use a heavy coat of bituminous paint on surface of metal.

3.4 INSTALLATION

A. General: Locate the handrail as indicated on the approved detail drawing for the appropriate substrate and in compliance with manufacturer installation instructions. Install handrail with mounting hardware level and plumb at the height indicated on the drawings.

B. For non-welded connections use mechanical joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. For hand rail and pipe rail connector sleeves use Metal Contact Cement to achieve a secure and permanent bond at all connections. Wall mounting brackets shall be seated flush to concrete block substrate. Contractor shall grind local area as required to obtain a clean, flat surface for mounting.

C. For core mounted installation use corrosion protection on aluminum post as indicated above. Provide aluminum cover flange as indicated.

3.5 CLEANING

A. At completion of the installation, clean surfaces in accordance with the manufacturer’s clean-up and maintenance instructions.

END OF SECTION
SECTION 10 28 13

WASHROOM ACCESSORIES

PART 1  GENERAL

1.1  SECTION INCLUDES

A. Washroom Accessories:
   1. Soap dispensers.
   2. Paper towel dispensers.
   3. Combination towel dispenser and waste receptacle units.
   4. Toilet tissue dispensers.
   5. Toilet seat cover dispensers.
   6. Mirrors.
   7. Shower curtains.
   8. Folding shower seats.
  10. Grab bars.
  11. Towel bars.
  13. Door bumpers.
  14. Combination clothes hooks and bumpers.
  15. Custodial/janitorial accessories.

1.2  RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 10 21 00 - Compartments and Cubicles.

1.3  SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Submit manufacturer’s data sheets for each product specified, including the following:
   1. Installation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Cleaning and maintenance instructions.
   4. Replacement parts information.

C. Schedule: Submit an accessory schedule, indicating the type and quantity to be installed in each space. Use room numbers as indicated on the Drawings.
D. Selection Samples: For each finished product specified, provide two complete sets of color chips representing the manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finished product specified, provide two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 2 year experience installing similar products.

B. Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.

C. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.

D. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to FBC 2017 ADA and ICC/ANSI A117.1 requirements as applicable.

1.5 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to starting work of this section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

B. Handling: Handle materials to avoid damage.

1.7 PROJECT CONDITIONS

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

1.8 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 WARRANTY

A. Manufacturer's Warranty for Washroom Accessories: Manufacturer's
PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Bobrick Washroom Equipment, Inc., which is located at: 6901 Tujunga Ave.; North Hollywood, CA 91605-6213; Tel: 818-764-1000; Fax: 818-765-2700; Email: info@bobrick.com; Web: www.bobrick.com


C. Substitutions: The Architect will consider products of comparable manufacturers as a substitution, pending the Contractor’s submission of adequate documentation of the substitution in accordance with procedures in Division 1 of the Project Manual.
   1. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 SOAP DISPENSERS

A. Countertop mounted Soap Dispenser: SD-1
   1. Basis of Design: B-822; Bobrick Manual Soap Dispenser, Liquid

B. Wall mounted Soap Dispenser: SD-2
   1. Basis of Design: B-4112; Bobrick Manual Soap Dispenser, Liquid

2.3 COMBINATION TOWEL DISPENSER AND WASTE RECEPTACLE UNITS

A. Recessed Paper Towel Dispenser and Waste Receptacle: PTW-1
   1. Basis of Design: Bobrick Trim Line Series Model B-3803 furnished with Bobrick Part No. 3803-130 Towel Mate Accessory.
      a. Bobrick Towel Mate Accessory: Dispenses one paper towel at a time without towels sagging or falling through the towel tray opening. Round nylon rod and stainless steel rod screws support stack of paper towels.

2.4 TOILET TISSUE DISPENSERS

A. Surface-Mounted Multi-Roll Toilet Tissue Dispensers: TD-1
      a. Finish: Satin finish, Stainless Steel.
      b. Install at each toilet location. Mount as indicated on plans.
2.5 TOILET SEAT COVER DISPENSERS
A. Surface-Mounted Toilet Seat Cover Dispensers: **ND-1**

2.6 MIRRORS
A. Stainless Steel Channel Frame Mirrors:
   1. Overall Size: 24 inches W x 30 inches H: **MIR-1**
   2. Overall Size: 24 inches W x 30 inches H: **MIR-2**
B. Frameless Glass Mirrors:
   a. Overall Size: As indicated on Plans: **MIR-3**
   b. Glass: ¼”, Tempered

2.7 SHOWER CURTAINS AND CEILING TRACK
A. Ceiling Mounted Track:
   1. Basis of Design: RECMAR 32124 Aluminum ceiling mounted track. Silver satin finish. Provide 7127 end stops (both ends) for each track.

B. Shower Curtain Hooks:
   1. Basis of Design: Bobrick Part No. 204-1 Shower Curtain Hook.

C. Vinyl Shower Curtains:
      a. Width: 42 inch (1065mm), requires 7 hooks (not included).

2.8 FOLDING SHOWER SEATS
A. Reversible Folding Shower Seats: **SH-1**
   3. Provide treated wood blocking in wall framing as required.

2.9 SOAP DISHES (SHOWERS ONLY): **S-1**
A. Surface-Mounted Soap Dishes:

2.10 GRAB BARS
A. Stainless Steel Grab Bars: With snap flange covers.
   1. Satin Finish:
         1) Length: 36 inches (914mm).
      b. Basis of Design: Bobrick Model B-5806.99 x 42.
         1) Length: 42 inches (1067mm).
2.11 TOWEL BAR
   A. Surface-Mounted Towel Bar:
      1. Basis of Design: Bobrick Model B-6737 x 24

2.12 HOOKS
   A. Robe Hooks/Coat Hooks:

2.13 CUSTODIAL/JANITORIAL ACCESSORIES
   A. Utility Shelf With Mop and Broom Holders and Rag Hooks:
      1. Basis of Design: Bobrick Classic Series Model B-239 x 34; with 3
         mop/broom holders and 4 rag hooks.

PART 3 EXECUTION

3.1 INSTALLATION
   A. Install products in strict compliance with manufacturer's written
      instructions and recommendations, including the following:
      1. Verify blocking has been installed properly.
      2. Verify location does not interfere with door swings or use of
         fixtures.
      3. Comply with manufacturer's recommendations for backing and
         proper support.
      4. Use fasteners and anchors suitable for substrate and project
         conditions.
      5. Install units rigid, straight, plumb, and level, in accordance with
         manufacturer's installation instructions and approved shop
         drawings.
      6. Conceal evidence of drilling, cutting, and fitting to room finish.
      7. Test for proper operation.

3.2 CLEANING AND PROTECTION
   A. Clean exposed surfaces of compartments, hardware, and fittings
      using methods acceptable to the manufacturer.

   B. Touch-up, repair or replace damaged products until Substantial
      Completion.

END OF SECTION
SECTION 10 44 13
FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 DESCRIPTION
This section covers recessed fire extinguisher cabinets.

1.2 RELATED WORK
A. Acrylic glazing: Section 08 80 00, GLAZING.
B. Field Painting: Section 09 90 00, PAINTING.

1.3 SUBMITTALS
A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
B. Manufacturer's Literature and Data: Fire extinguisher cabinet including installation instruction and rough opening required.

1.4 APPLICATION PUBLICATIONS
A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
B. American Society of Testing and Materials (ASTM):
   D4802-10..........................Poly (Methyl Methacrylate) Acrylic Plastic Sheet

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINET
Recessed type with flat trim of size and design shown.

2.2 FABRICATION
A. Form body of cabinet from 0.9 mm (0.0359 inch) thick sheet steel.
B. Fabricate door and trim from 1.2 mm (0.0478 inch) thick sheet steel with all face joints fully welded and ground smooth.

1. Glaze doors with 6 mm (1/4 inch) thick ASTM D4802, clear acrylic sheet, Category B-1, Finish 1.
2. Design doors to open 180 degrees.
3. Provide continuous hinge, pull handle, and adjustable roller catch.

2.3 FINISH

A. Finish interior of cabinet body with baked-on semi-gloss white enamel.
B. Finish door, frame with manufacturer's standard baked-on prime coat suitable for field painting. Final color to match adjacent wall surface.

PART 3 – EXECUTION

A. Install fire extinguisher cabinets in prepared openings and secure in accordance with manufacturer's instructions.
B. Install cabinet so that bottom of cabinet is 914 mm (36 inches) above finished floor.

END OF SECTION
PART 1 GENERAL

1.1 SECTION INCLUDES
   A. Solid plastic HDP lockers.

1.2 RELATED SECTIONS
   A. Section 03300 - Cast-in-Place Concrete.
   B. Section 05500 - Metal Fabrications.
   C. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES
   A. ADAAG - Americans with Disabilities Act, Accessibility Guidelines.

1.4 SUBMITTALS
   A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
   B. Manufacturer's data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Installation methods.
   C. Shop Drawings:
      1. Dimensioned drawings including plans, elevations, and sections to show locker locations and interfaces with adjacent substrates.
      2. Details of assembly, erection, anchorage and clearance requirements.
   D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
   E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Minimum of 10 years experience
manufacturing products specified in this section.

B. Installer Qualifications: Single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified in this section will install all products listed.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened, labeled packaging until ready for installation.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

A. Warranty: Provide locker manufacturer's limited 20-year warranty against delamination or breakage of any of the plastic components under normal use shall apply. Manufacturer's standard limited 1 year warranty against defects in material or workmanship also applies.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: General Partitions Mfg. Corp., which is located at: 1702 Peninsula Dr. P. O. Box 8370; Erie, PA 16505; Tel: 814-833-1154; Fax: 814-838-3473; Email: request info. (mikez@generalpartitions.com); Web: www.generalpartitions.com

B. Equal substitutions are accepted. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 LOCKERS

A. Solid Plastic HDP Lockers: Fully assembled high density polyethylene lockers as manufactured by General Partitions Mfg. Corp.
   1. Depth: 18 inches
   2. Width: 15 inches
   3. Height: 72 inches
   5. Color: To Be Determined; 236 Sterling, 250 Onyx.

B. Materials:
   1. Sides, shelves, sloped tops and bottoms shall be made from 3/8
inch thick polymer with homogeneous color.
2. Doors, door frames, and flat tops shall be made from 1/2 inch (13 mm) thick polymer with homogeneous color.

C. Fabrication: Fabricate locker components square and rigid, with finish free from scratches and chips.
1. Assembly: Locker shall ship fully assembled, requiring only attachment of interior accessory items.
2. Attachment: Separate solid plastic components will be secured using perimeter dado routing to provide a continuous and solid joint that slides together for assembly.
3. Locker Sides and Backs: Form a one-piece unit constructed from a single and contiguous sheet of solid plastic requiring no hardware.
4. Doorframes: Bonded to locker bodies using plastic welding process.
5. Latch: Continuous spring-loaded latch mechanism provides a vertical finger lift that is capable of accepting a padlock and is securely fastened to the door. Latch mechanism is attached to the length of the door, providing a continuous security latch.
6. Door Hinge: Continuous and integrate into the full length of the door and main locker body, with no metallic knuckles or pins.
7. Ventilation: Pattern of 6 horizontal slots in upper and lower ranges of door.
8. Coat Hooks: Steel, zinc plated, attached to intermediate shelves at locker sides using hardware supplied by manufacturer.
   a. Provide two per opening on 12 inch (254 mm) and 15 inch (381 mm) wide single, double and triple tier openings.
   b. 2 additional hooks provided at rear of 18 inch (457 mm) wide lockers.
10. Handle: All lockers with doors 12 inches (305 mm) and higher shall have a vertical lift handle that requires no pinching, twisting, grasping or lateral motion to disengage.

D. Accessories:
1. Number Plates: Provide lockers with a polished aluminum number plate, 2-1/4 inches (57 mm) wide by 1 inch (25 mm) high, with Contrasting color numerals not less than 3/8 inch (9.5 mm) high; attach to face of door with two aluminum rivets.
2. Base: Continuous recessed locker base constructed of 3 inches (76 mm) x 3/4 inches (19 mm) HDPE providing a 3 inch (76 mm) high and deep toe-kick.
3. Finished End Panels: Constructed of one piece of 1/2 inch (13 mm) thick HDPE and attached using concealed tamper resistant fasteners.
4. Finished Flat Top Panel: Constructed of one piece of 1/2 inch (13 mm) thick HDPE and attached using concealed tamper resistant fasteners.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Commencement of installation constitutes acceptance of conditions.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions. Test and adjust doors and latches for smooth operation without binding.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Repair or replace damaged products before Substantial Completion.

END OF SECTION
SECTION 12 20 00
WINDOW TREATMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Horizontal blinds systems.
   1. Cord or wand operation.
   2. Aluminum blinds.

1.2 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer’s data sheets on each product to be specified, including:
   1. Style, dimensions, profiles, finishes and material descriptions.

C. Shop Drawings: Submit manufacturer’s shop drawings, including plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams, assembly and mounting details, typical installation details and recommendations and fit-up to adjacent work, finishes, options and accessories.

D. Window Treatment Schedule: With same room designations indicated on the Drawings; including but not limited to opening sizes and key to typical mounting details. Window treatments shall be provided at all exterior window locations (typical) and as indicated on drawings.

E. Maintenance Data: Instructions and precautions for cleaning shade cloth material, operating hardware and controls.

F. Verification Samples:
   1. Finishes: Submit 2 samples, minimum 4 x 6 in (102 x 152 mm) representing actual finishes specified for steel and aluminum.

1.3 QUALITY ASSURANCE

A. Manufacturer’s Qualifications: Engaged in manufacturing of products of similar type to that specified, with a minimum of 20 years successful experience.

B. Installer Qualifications: The installer shall be a firm qualified to install the product specified, as demonstrated by prior experience. Minimum 10 years successful experience installing like products.
C. **Single Source Requirements:** To the greatest extent possible provide products specified in this section from a single manufacturer.

### 1.4 DELIVERY, STORAGE, AND HANDLING

A. **Delivery:** Deliver materials to site protected from damage.

B. **Storage:**
   1. Store materials in manufacturer’s unopened packaging until ready for installation and in accordance with manufacturer’s instructions.
   2. Materials shall be stored in a clean area free of corrosive fumes and dust, and away from construction activities.
   3. Materials shall be stacked horizontally using plastic or wood shims such that drainage and ventilation are provided for, and such that water cannot accumulate in, about, or upon the containers.

### 1.5 PROJECT CONDITIONS, COORDINATION AND SEQUENCING

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

B. **Conference:** Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
   1. Building shall be enclosed; windows, frames and sills shall be installed and glazed.
   2. Wet work shall be complete and dry; including but not limited to concrete, masonry, plaster, stucco, terrazzo, sheet rock, spackling, and taping (including sanding).
   3. Ceilings, window pockets, electrical and mechanical work above window treatments shall be complete.

### 1.6 WARRANTY

A. **Manufacturer’s Warranty:** Provide manufacturer’s standard limited warranty against manufacturing defects in materials and workmanship.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

A. **Acceptable Manufacturer:** Vertilux, which is located at: 7300 N.W. 35th Terrace; Miami, FL 33122; Toll Free Tel: 800-356-8837; Tel: 305-593-9494; Fax: 800-275-1719; Email: request info
B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 HORIZONTAL BLINDS SYSTEMS

A. Horizontal Blinds; Aluminum:
      a. Solid colors, 2 in
         1) Color: As selected by the Architect from manufacturer's standard selections.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

B. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction.

A. Install support brackets and with clearance sufficient to permit unencumbered operation of shade and hardware as recommended by manufacturer.

B. Test for proper operation and adjust until satisfactory results are obtained.

3.3 Demonstration: Installer shall demonstrate shade to be in uniform and smooth working order.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial completion.

END OF SECTION
PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Solid surfacing countertops.
B. Solid surfacing sinks.
C. Adhesives and sealants.

1.2 RELATED REQUIREMENTS

A. Section 01300 - Submittals.
B. Section 01780 - Closeout Submittals.
C. Section 06100 - Rough Carpentry.
D. Division 22 - Plumbing Sections.

1.3 REFERENCES

A. Reference Standards:

1.4 SUBMITTALS

A. Submit under provisions of Section 01 3000 - Submittals.

B. Product Data:
   1. Submit product data for each specified product. Include manufacturer’s technical data sheets and published instruction instructions.
   2. Submit Material Safety Data Sheets (MSDS) for adhesives and sealants.

C. Shop Drawings:
   1. Submit fully dimensioned shop drawings showing countertop layouts, joinery, terminating conditions, substrate construction, cutouts and holes. Show plumbing installation provisions. Include elevations, section details, and large scale details.

D. Samples:
   1. Submit selection and verification samples for each color, pattern, and finish required.

E. Quality Assurance Submittals:
   1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties, if required.
   2. LEED Submittals: Submit applicable LEED documentation for potential credits specified in this Section.

F. Maintenance Data: Submit manufacturer’s published maintenance manual with closeout submittals.

1.5 REGULATORY REQUIREMENTS

A. Accessibility Requirements: Comply with the U.S. Architectural & Transportation Barriers Compliance Board ADA-ABA Accessibility Guidelines for Buildings and Facilities.

B. Adhesives, Sealants, and Sealant Primers:
   1. SCAQMD (South Coast Air Quality Management District) Rule 1168.

1.6 QUALITY ASSURANCE

A. Qualifications:
   1. Fabricator Qualifications: Minimum of three years documented experience in fabricating solid surfacing countertops similar in scope
and complexity to this Project. Currently certified by the manufacturer as an acceptable fabricator.

2. Installer Qualifications: Minimum of three years documented installation experience for projects similar in scope and complexity to this Project, and currently certified by the manufacturer as an acceptable installer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver in original containers.

B. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer. Store sheet materials flat on pallets or similar rack-type storage to preclude damage.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements and openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

B. Adhesive: Acclimatize adhesives to occupancy room temperatures with maximum temperature not to exceed 75 deg F.

1.9 WARRANTY

A. Manufacturer’s Limited Warranty: Provide manufacturer’s standard 10 Year Commercial Limited Warranty against defects in solid surface sheet materials.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: Dupont, Cosantino

B. Or approved equal.

2.2 SOLID SURFACE SHEET MATERIAL

A. Acceptable Product: “ZODIAQ”, “Silestone”

B. Composition: Acrylic resins, fire-retardant mineral fillers, and proprietary coloring agents. Through-the-body color for full thickness of sheet material.

C. Material Thickness: 3/4 inch, nominal.

D. Color, Pattern, and Finish Design: Indicated on Drawings, Final Approved Color to be determined from manufacturer’s standard line of colors.

E. Edge Detail: if not indicated provide double beveled edge at exposed conditions or
F. Provide applied 4" backsplash with beveled exposed edges.

2.3 INTEGRATED SOLID SURFACE CAST SINKS

A. Acceptable Product: Provide integrated Solid Surface Cast Sinks per manufacturer.


C. Conformance

2. Lavatories (Vanities): ANSI Z 124.3.

D. Product Selections: As follows; specified dimensions as inside bowl dimensions:


2. Color: Bright White

2.4 ACCESSORY MATERIALS

A. Mounting Adhesive: 100% silicone sealant

B. Joint Adhesive: Methacrylate-based adhesive for chemically bonding solid surfacing seams. Color complementary to solid surfacing sheet material. GREENGUARD Gold certified and complies with SCAQMD Rule 1168.

1. Product: Dupont Joint Adhesive 2.0

C. Elastomeric Sealant: Mildew-resistant silicone sealant for filling gaps between countertops and terminating substrates in wet environment applications. Complies with ASTM C 920, Type S (single component), Grade NS (nonsag).

1. Product: Acceptable to countertop manufacturer.
2. Color: [Selected from sealant manufacturer's standard offerings].

D. Siliconized Acrylic Sealant: Siliconized acrylic latex sealant. For general applications to fill gaps between countertops and at terminating substrates. Complies with ASTM C 834, Type OP, Grade NF, and SCAQMD Rule 1168.

2. Color: Complementary to solid surfacing color.

E. Mounting Brackets: as required for concealed countertop support (breakroom island countertop, shower room vanity countertop, restroom vanity countertops) provide the following countertop supports:
1. **Product:** Centerline Brackets: **Floating Countertop Support Bracket.**
2. **Size:** 22"
3. **Spacing:** Provide on suspended countertops every 36" maximum.
4. **Color:** Black
5. Secure directly to stud face in wall. Bracket should be installed prior to drywall being completed. Provide concealed blocking for metal studs @ bracket supports. ALL concealed blocking shall be PT/FT.

**F.** Construction Adhesive: Countertop manufacturer’s recommended silicone-based construction adhesive for backsplashes, end-splashes, and other applications according to manufacturer’s published fabrication instructions.


### 2.5 FABRICATION

**A.** Fabricate components in shop, to greatest extent practicable, in sizes and shapes indicated according to approved shop drawings and manufacturer’s published fabrication requirements.

**B.** Form joint seams between solid surfacing components with specified seam adhesive. Completed joints inconspicuous in appearance and without voids. Provide joint reinforced if required by manufacturer for particular installation conditions.

**C.** Provide holes and cutouts indicated on approved shop drawings. Rout cutouts and complete by sanding all edges smooth.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

**A.** Examine substrates and conditions that could adversely affect the work of this Section.

**B.** Substrates must be sound, flat, smooth, and free from dust or other surface contaminants.

**C.** Commencement of work will constitute acceptance of substrates and conditions to receive the work.

#### 3.2 COUNTERTOP INSTALLATION

**A.** Install solid surfacing components plumb, level, and true according to approved shop drawings and manufacturer’s published installation instructions.
Use woodworking and specialized fabrication tools acceptable to manufacturer.

B. Form joint seams with specified seam adhesive. Seams shall be inconspicuous in completed work. Seams in locations shown on approved shop drawings and acceptable to manufacturer. Promptly remove excess adhesive.

C. Provide minimum 1/2 inch radius for countertop inside corners.

D. Fill gaps between countertop and terminating substrates with specified silicone sealant.

E. Rout sink cutouts to manufacturer’s template. Adhere solid surface cast sink units to countertops with specified adhesive.

F. Install backsplashes and end-splashes where indicated on Drawings. Adhere to countertops with specified construction adhesive.

G. Vanities: Secure front panels to solid substrate with specified construction adhesive. Maintain 1/16 inch gap between fixed and removable panels.

1. ADA Vanities: NO Angled front panel required. Open below vanity.

3.3 REPAIRS

A. If permissible to Architect, minor surface marring for solid surfacing components may be repaired according to manufacturer’s published installation instructions.

B. Remove and replace solid surfacing components that are damaged and cannot be satisfactorily repaired.

3.4 CLEANING AND PROTECTION

A. Clean solid surfacing components according to manufacturer’s published maintenance instructions. Completely remove excess adhesives and sealants from finished surfaces.

B. Protect completed work from damage during remainder of construction period.

END OF
SECTION 12 36 00