Florida Department of Transportation | District VI

Adam Leigh Cann Headquarters Building| 1000 N.W. 111th Avenue| Miami |

Scope of Work for a new Exterior Insulation Finishing System (EIFS), exterior storefronts within EIFS walls and related interior and exterior remedial work as a consequence of the new EIFS system.

October 18, 2013

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Applicable Codes & Standards - 1

1. APPLICABLE CODES AND STANDARDS:

Comply with the Florida Building Code (FBC), all or portions of following codes and requirements: Incorporated into and made a part of FBC.

- Florida Building Code, 2010 edition.
- NFPA 101, Life Safety Code, 2012 with Florida modifications.

It is the responsibility of the future Design Professional Team to conduct a thorough Florida Building Code Analysis.

General

- The Adam Leigh District VI Headquarters is located at 1000 NW 111th Street, Miami Florida. Its location places it within the jurisdiction of the City of Doral Building Department.
- Built under the *South Florida Building Code* in force at the time, the original 1985 structure houses various FDOT departments.
- Approximate area of 81,760 square feet distributed over two stories.

Occupancy (per FBC, Chapter 3)
Business Group B – "*Building or structure for office, professional or service type transactions…"* Any improvement or building envelope replacement will not change the use of the building.

Construction Classification (per FBC, Chapter 6)
Construction Classification, Type II A, per section 602, *"where the primary structural frame as defined in section 202 is of noncombustible materials…"*

Classification of Work (Per FBC for Existing Buildings, Chapter 4)
To be determined by future Design Professional Team however, the Florida Building Code for Existing Buildings, classifies any repair, alteration or construction into Alteration Levels 1, 2 or 3 depending on the extent, type or cost of the proposed construction.

End of Section

Project Intent - 2

2. PROJECT INTENT:

The nature of this project is to provide water mitigation to portions of the exterior and interior of the existing building that have been damaged due to the affects of rain water incurred by storms and hurricanes. **The contractors perusing this project shall be responsible for visiting the site in order to familiarize themselves with the site and scope of work needed to provide new construction as indicated herein and in addition, estimate the quantities needed for the project.**

The areas requiring demolition and new construction will be limited to the locations indentified on the Schematics Drawings. The existing construction pertaining to this project consists of the follows building systems:

Exterior Stucco Wall System

- Cement plaster on metal lath.
- Gypsum wall board sheathing.
- Aluminum storefront and glazing.
- Aluminum sunscreen shutters.
- 6 inch cold formed metal framing.
- Fiberglass batt insulation.

Exterior Insulation and Finish System (EIFS)

- EIFS.
- Gypsum wall board sheathing.
- Aluminum storefront and glazing.
- Existing aluminum louver and sill at second floor mechanical equipment room.
- Aluminum sunscreen shutters.
- 6 inch cold formed metal framing.
- Fiberglass batt insulation.

Existing Exterior Appurtenances

- Security cameras.
- Electrical conduits.
- Abandoned pvc perimeter drainage.

Existing Roofing

- Aluminum copings.
- Lightning protection.
- Bituminous roofing felts.
- Rigid insulation.
- Roof drains.
- Aluminum fiber reinforced bituminous flashing.

Existing Interior Conditions

- Painted gypsum wall board.
- Acoustical tile suspended ceiling.
- Carpet and/or VCT floor covering.

End of Section

Scope of Work - 3

3. SCOPE OF WORK:

The following scope of work is general in nature**.**

The objective of this Scope of Work is for the demolition of the existing material, as outlined in items 3 above, associated with the replacement for new walls. The new exterior walls shall be replaced with an Exterior Insulation Finishing System (EIFS). The materials used for this project shall be as identified in the Specification section. **The contractor shall be responsible for providing materials, labor, permitting and all other associated cost for a complete and watertight project.**

All materials used on the project shall be new and provided with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

The new exterior walls shall consist of the materials indentified in the project specifications and summarized as follows:

New Exterior Insulation Finishing System (EIFS)

- EIFS.
- Remove and replace rusted steel studs (if any).
- Glass-Mat Gypsum Wall Sheathing barrier to steel stud framing. Fasteners to have corrosion-protective coating.
- Weather barrier.
- Batt insulation.
- Aluminum storefront and glazing.
- Aluminum louver at the second floor mechanical equipment room.

Exterior Appurtenances

- Reinstall security cameras.
- Remove any abandoned electrical conduits and/ or reinstall electrical conduits pertaining to exterior electrical equipment.
- Remove abandoned pvc perimeter drainage.

Roof Patching Associated with the New Installation of the EIFS

- Aluminum copings.
- Reinstalling the lighting protection.
- Bituminous roofing felts.

- Rigid insulation.
- Aluminum fiber reinforced bituminous flashing.

Interior Conditions

- Gypsum wall board.
- Painting of all new gypsum wall boards.
- Floor finishes including but not limited to carpet, resilient floor tile and resilient base.

Structural Conditions

- The Contractor and Design Professional team will be responsible for performing a complete survey of all of the rusted the structural steel. Refer to “Structural Criteria”.

End of Section

Structural Criteria - 4

4. STRUCTURAL CRITERIA:

In addition to the water infiltration affecting the exterior wall systems, water has also migrated to the interior structural steel and has caused rusting, which may or may not affect the structural integrity of the steel. The Contractor and Design Professional team will be responsible for performing a complete survey of all of the rusted the structural steel. The steel shall be calibrated to determine the percentage of the rusted steel and whether any structural modifications will be required. A professional structural engineer licensed in the State of Florida shall perform the inspection of the structural steel. The report shall include the findings of the survey. If it is determined that any of the steel must be reinforced, the engineer shall provide calculations and details. The details should indicate all of the components necessary and sizes to reinforce the existing structural members. In addition, show the attachments, such as bolts and/ or welding, required to support the existing loads. The report and any calculations and details must be signed and sealed by the engineer of record conducting the survey. Refer to pictures on next page for examples where water instruction has caused rusting.

In event the steel must be reinforced, the following minimum standard should be followed:

- Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges.
- Welding Qualifications: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code - Steel."
- W-Shapes: ASTM A 992.
- Channels, Angles, Plates and Bars: ASTM A 36.
- High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint required.
- Weld Connections: Comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

End of Section

4. STRUCTURAL CRITERIA

Specifications - 5

5. SPECIFICATIONS:

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 **PROJECT REQUIREMENTS**

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. The purpose of this project is to rectify the water infiltration problems associated with the exterior walls constructed of Exterior Insulation and Finish Systems (EIFS) and cement stucco and provide new materials as specified herein.
   1. Remove and dispose of all of the existing exterior walls consisting of Exterior Insulation and Finish Systems (EIFS), stucco walls and all associated materials including but not limited to the following:
      a. Windows and louvers and associated storm shutters
      b. Rusted steel stud framing
      c. Water damaged fire proofing
      d. Interior materials damage due to water infiltration including materials containing mold.
   2. Install new materials, but not limited to the materials as described herein, to provide a complete watertight building.
   3. Inspect and provide roof patching in areas associated with the installation of the new EIFS.
   4. Remove and reinstall all security cameras, lightning protection and any other systems associated and/ or appurtenances with the removal and construction of the new EIFS.

B. The Contractor will be responsible for visiting the site, inspecting areas requiring water mitigation and noting areas and quantities require for corrective measures necessary to provide a complete watertight building at the afore mentioned exterior walls and roof locations.

1.3 PROJECT INFORMATION

A. Project Identification:

   1. Project Location: Adam Leigh Cann District Headquarters (excluding the executive offices annex), 1000 NW 111th Avenue, Miami, Florida 33172.

B. Owner: Florida Department of Transportation (FDOT).

   1. FDOT's Representative: Ruel Umbay

1.4 PHASED CONSTRUCTION

A. The Work shall be conducted in phases:

1. Phasing Plan: The Contractor, before proceeding with any work, shall develop a Phasing Plan with FDOT's input, to determine the best course of action to provide the least amount of disturbance to FDOT's daily operations. Upon FDOT's approval, each phase shall be substantially completed before proceeding to the next phase.

B. Before commencing Work of each phase, the Contractor shall submit an updated copy of the construction schedule showing the sequence, commencement and completion dates**,** and move-out and -in dates of FDOT's personnel for all phases of the Work.

1.5 ACCESS TO SITE

A. General: Before proceeding with any work the Contractor shall have a meeting with FDOT to discuss site access for demolition and construction operations.

B. Use of Site: Limit use of Project site to work in areas of demolition and new construction. Do not disturb portions of Project site beyond areas in which the Work is necessary.

1. Limits: Confine demolition and constructions operations to the building areas requiring water mitigation work.
2. Driveways, Walkways and Entrances: Keep driveways parking areas, loading areas, and entrances serving premises clear and available to FDOT's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair any damage caused by construction operations.

D. Meet with FDOT to discuss security measures necessary during demolition and construction activities

1.6 COORDINATION WITH OCCUPANTS

A. FDOT will be occupying the building or portions of the building during demolition and construction.

1.7 HURRIACANE EVENT REQUIEMENTS

A. In the event of a hurricane, the Contractor shall take all necessary precautions to secure all materials and equipment.

1. Secure all materials and equipment before the anticipated hurricane arrival.
2. Secure and/or remove all materials and equipment in a manner that will prevent wind blow debris from causing damage to the existing building and/or surrounding buildings.
3. Secure all temporary construction.
4. After the hurricane event clears, remove and dispose of all wind blow debris around the construction areas before proceeding with work.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Monday – Friday; 8:00 AM-4:30PM.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by FDOT or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify FDOT not less than two days in advance of proposed utility interruptions.
2. Obtain FDOT's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to FDOT.

1. Notify FDOT not less than two days in advance of proposed disruptive operations.
2. Obtain FDOT's written permission before proceeding with disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building and Project site is not permitted.

G. Employee Identification: Coordinate with FDOT the types of identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times

H. Employee Screening: Comply with FDOT's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with FDOT's representative.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

Exhibit "A", Scope of Work: District Six-Adam Leigh Cann Building Envelope Water Proofing Project.

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building systems for the installation of water mitigation new materials.

2. Salvaging materials for reuse.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

C. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, ready for reuse.

1.4 MATERIAL OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 FIELD CONDITIONS

A. FDOT will occupy portions of building immediately adjacent to selective demolition areas. Conduct selective demolition so as FDOT's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by FDOT as far as practical.

C. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation will be performed under a separate contract..
2. FDOT will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Review record documents of existing construction provided by FDOT. FDOT does not guarantee that existing conditions are same as those indicated in record documents.

B. Survey existing conditions and correlate with requirements to determine extent of selective demolition required.
1. Remove and dispose materials in areas where new materials will be installed.
2. At portions of the interior that require demolition, all of the adjacent materials which have not been damaged by water infiltrations, shall be removed and salvaged for reuse such as the suspended ceiling system.

3.2 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection and security during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent unwanted entrance to the facility, water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Provide temporary dust control to prevent the spread of dust to all occupied areas.

C. Temporary Shoring: Based on the engineering report (see Section 4)if required for removal of rusted steel, provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.
2. All temporary structural supports shall be designed by a structural engineer licensed in the State of Florida.

3.3 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to the extent necessary for the installation of the new materials. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations as required by NFPA.
4. Maintain adequate ventilation when using cutting torches.
5. Remove all water damaged materials or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
6. Where required by the engineering report (see Section 4) the contractor shall remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
8. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing in a manner not to damage the materials.
3. Reinstall items in locations where originally removed. Comply with installation requirements for new materials and equipment. See individual specification sections. Provide connections, supports, and miscellaneous materials necessary to make item functional for intended use.

C. Existing Items to Remain: Protect construction to remain against damage and soiling during selective demolition. When permitted by FDOT, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain FDOT's property, remove demolished materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off FDOT's property and legally dispose of them.

3.5 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.6 SELECTIVE DEMOLITION SCHEDULE

A. The contractor shall exercise care during the course of demolition. Only remove and demolish the materials necessary for the installation of the new construction as indicated on the Schematic Drawings. Any existing material, scheduled to remain, damaged during the course shall be replaced by the contractor at no additional cost to FDOT.

B. Existing Construction to Be Removed but not limited to the following:

1. All aluminum storefronts (strip windows) at location of existing EIFS and stucco only.
    a. After the removal, thoroughly clean all openings of sealant, fasteners, mildew and any other materials that may affect the installation of the new aluminum storefronts.
2. All Exterior Insulation Finishing System (EIFS), and sheathing to existing steel studs. Remove all water damage and molded batt insulation.
    a. Inspect all of the existing steel stud framing and tracks. Remove all rusted framing, tracks and associated interior gypsum wall board and clean areas for new framing. Cut interior gypsum wall board at center line of vertical steel studs to allow for the installation of gypsum wall board from centerline to centerline of existing stud. Care is to be taken not to disturb the existing fire resistive material when removing the existing steel studs and tracks.
    b. Where possible cut tracks between studs to allow nesting of new tracks.
3. All water damaged stucco, mesh and sheathing to existing steel studs. Remove all water damage and molded batt insulation.
    a. Inspect all of the existing steel stud framing and tracks. Remove all rusted framing, tracks and associated interior gypsum wall board and clean areas for new framing. Cut interior gypsum wall board at center line of vertical steel studs to allow for the installation of gypsum wall board from centerline to centerline of existing stud. Care is to be taken not to disturb the existing fire resistive material when removing the existing steel studs and tracks.
    b. Where possible cut tracks between studs to allow nesting of new tracks.
4. Remove all storm proof shutters and fasteners located at the existing EIFS and stucco exterior walls only.
5. Remove existing second floor louvers in the mechanical room.
6. Remove all abandoned pvc piping at the locations of the new work.
7. Remove all interior ceiling tiles and suspension systems a minimum distance of 4 feet to the next full ceiling tile.
8. Remove all damaged or undamaged vct, carpet, bases and adhesives to a minimum distance of 3 feet to the next full tile from the face of the interior gypsum wall board.

C. Existing Items to Be Removed and Reinstalled:
1. Ceiling systems that have not been damage due to water infiltration and located on the exterior walls where the new EIFS will be installed.
2. Existing security cameras
3. Existing lightning protection
4. Existing conduits and outlets

D. Existing Items to Remain:
1. Interior gypsum wall board where the steel studs have not been removed due to rusting or damage by water infiltration.
2. All interior finishes not damaged by water or mold.

END OF SECTION 024119

SECTION 030130 – CONCRETE PATCHING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Removal of deteriorated concrete and subsequent replacement and patching for placement of new waterproofing.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Each manufacturer shall employ factory-trained technical representatives who are available for consultation and Project-site inspection and assistance at no additional cost.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer to applying materials specified herein.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

B. Store cementitious materials off the ground, under cover, and in a dry location.

C. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.

1.5 FIELD CONDITIONS

A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.

1. Use only Class A epoxies when substrate temperatures are below or are expected to go below 40 deg F within 8 hours.
2. Use only Class A or B epoxies when substrate temperatures are below or are expected to go below 60 deg F within 8 hours.
3. Use only Class C epoxies when substrate temperatures are above and are expected to stay above 60 deg F for 8 hours.

B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless concrete-surface and air temperatures are above 40 deg F and will remain so for at least 48 hours after completion of Work.

C. Cold-Weather Requirements for Cementitious Materials: Comply with the following procedures:

1. When air temperature is below 40 deg F, heat patching-material ingredients and existing concrete to produce temperatures between 40 and 90 deg F.
2. When mean daily air temperature is between 25 and 40 deg F, cover completed Work with weather-resistant insulating blankets for 48 hours after repair or provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for 48 hours after repair.
3. When mean daily air temperature is below 25 deg F, provide enclosure and heat to maintain temperatures above 32 deg F within the enclosure for 48 hours after repair.

D. Hot-Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90 deg F and above.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations: Obtain each color, grade, finish, type, and variety of product from single source with resources to provide products of consistent quality in appearance and physical properties.

B. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

2.2 BONDING AGENTS

A. Epoxy Bonding Agent: ASTM C 88, Type V and free of VOCs.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Construction Chemicals - Building Systems.
b. Euclid Chemical Company (The); an RPM company.
c. Sika Corporation; Construction Product Division.

2.3 PATCHING MORTAR

A. Patching Mortar, General:

1. Only use patching mortars that are recommended by manufacturer for each applicable vertical use orientation.
2. Color and Aggregate Texture: Provide patching mortar and aggregates of colors and sizes necessary to produce patching mortar that matches existing, adjacent, exposed concrete. Blend several aggregates if necessary to achieve suitable matches.
3. Coarse Aggregate for Patching Mortar: ASTM C 33, washed aggregate, Size No. 8, Class 5S. Add to patching-mortar mix only as permitted by patching-mortar manufacturer.

B. Cementitious Patching Mortar: Packaged, dry mix for repair of concrete.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Construction Chemicals - Building Systems.
b. Euclid Chemical Company (The); an RPM company.
c. Sika Corporation; Construction Product Division.

2.4 MIXES

A. General: Mix products, in clean containers, according to manufacturer's written instructions.

1. Do not add water, thinners, or additives unless recommended by manufacturer.
2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

B. Dry-Pack Mortar: Mix patching-mortar dry ingredients with just enough liquid to form damp cohesive mixture that can be squeezed by hand into a ball but is not plastic.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify FDOT seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.

B. Locate areas of deteriorated or delaminated concrete using hammer and mark boundaries. Mark areas for removal by simplifying and squaring off boundaries. At walls make boundaries level and plumb.

C. Perform surveys as the Work progresses to detect hazards resulting from concrete patching work.

3.2 PREPARATION

A. Ensure that supervisory personnel are on-site and on duty when concrete patching work begins and during its progress.

B. Remove any existing sealant or other material that may interfere with the patching work.

C. Preparation for Removal of Deteriorated Concrete: Examine construction to be patched to determine best methods to safely and effectively perform concrete patching work. Examine adjacent work to determine what protective measures, in any, will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed in the course of repair.

1. Verify that affected utilities have been disconnected and capped.
2. Inventory and record the condition of items to be removed for reinstallation or salvage, if any.

D. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from concrete patching work.

1. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
2. Use only proven protection methods appropriate to each area and surface being protected.
3. Provide barricades, barriers, and temporary directional signage to exclude public from areas where concrete patching work is being performed.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of concrete maintenance work.
5. Contain dust and debris generated by concrete patching work and prevent it from reaching the public or adjacent surfaces.
6. Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment that ensure that such water will not create a hazard or adversely affect other building areas or materials.

7. Protect the existing ground surfaces and plants along haul routes from damage and wear.
8. Protect adjacent surfaces and equipment by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
9. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
10. Dispose of debris and runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

E. Concrete Removal:
1. Remove deteriorated and delaminated concrete by breaking up.
2. Remove additional concrete if necessary to provide a depth of removal of at least 1/2 inch over entire removal area.
3. Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and disbonded concrete is completely removed.
4. Provide surfaces with a fractured profile of at least 1/8 inch that are approximately perpendicular or parallel to original concrete surfaces. At walls, make top and bottom surfaces level unless otherwise directed.
5. Thoroughly clean removal areas of loose concrete, dust, and debris.

3.3 APPLICATION

A. General: Comply with manufacturer's written instructions and recommendations for application of products, including surface preparation.

B. Epoxy Bonding Agent: Apply to reinforcing by brush, roller, or spray according to manufacturer's written instructions, leaving no pinholes or other uncoated areas. Place patching mortar or concrete while epoxy is still tacky. If epoxy dries, recoat before placing patching mortar or concrete.

C. Placing Patching Mortar: Place as follows unless otherwise recommended in writing by manufacturer:

1. Provide forms where necessary to confine patch to required shape.
2. Wet substrate and forms thoroughly and then remove standing water.
3. Pretreatment: Apply bonding agent.
4. General Placement: Place patching mortar by troweling toward edges of patch to force intimate contact with edge surfaces. For large patches, fill edges first and then work toward center, always troweling toward edges of patch.
5. Vertical Patching: Place material in lifts of not more than 1 inch nor less than 1/4 inch. Do not feather edge.
6. Consolidation: After each lift is placed, consolidate material and screed surface.
7. Multiple Lifts: Where multiple lifts are used, score surface of lifts to provide a rough surface for placing subsequent lifts. Allow each lift to reach final set before placing subsequent lifts.
8. Finishing: Allow surfaces of lifts that are to remain exposed to become firm and then finish to a surface matching adjacent concrete.

9. Curing: Wet-cure cementitious patching materials, including polymer-modified cementitious patching materials, for not less than seven days by water-fog spray or water-saturated absorptive cover.

D. Dry-Pack Mortar: Use for deep cavities where required. Place as follows unless otherwise recommended in writing by manufacturer:

1. Provide forms where necessary to confine patch to required shape.
2. Wet substrate and forms thoroughly and then remove standing water.
3. Pretreatment: Apply specified bonding agent.
4. Place dry-pack mortar into cavity by hand, and compact tightly into place. Do not place more material at a time than can be properly compacted. Continue placing and compacting until patch is approximately level with surrounding surface.
5. After cavity is filled and patch is compacted, trowel surface to match profile and finish of surrounding concrete. A thin coat of patching mortar may be troweled into the surface of patch to help obtain required finish.
6. Wet-cure patch for not less than seven days by water-fog spray or water-saturated absorptive cover.

END OF SECTION 030130

SECTION 054000 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:
   1. Exterior non-load-bearing wall framing.

1.3 QUALITY ASSURANCE

A. Product Tests: Mill certificates or data from a qualified independent testing agency**,** indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.

B. Welding Qualifications: Qualify procedures and personnel according to the following:

   1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
   2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. ClarkWestern Building Systems, Inc.
   2. Dietrich Metal Framing; a Worthington Industries Company.
   3. MarinoWARE.

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads of the existing steel studs and tracks.

1. Conform to the requirements of the Florida Building Code.
2. Contractor to verify the thickness of the existing steel studs and tracks.

B. Cold-Formed Steel Framing Design Standards:
1. Wall Studs: AISI S211.

C. AISI Specifications and Standards: Comply with AISI S100 and AISI S200.

D. Fire-Resistance Ratings: Confirm the existing fire resistance requirements of the existing exterior wall and provide similar rating complying with the requirements of ASTM E119.

2.3 COLD-FORMED STEEL FRAMING, GENERAL

A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:

1. Grade: As required for structural performance but not less than the existing.
2. Coating: G60.

2.4 EXTERIOR NON-LOAD-BEARING WALL FRAMING

A. Steel Studs: Manufacturer's standard C-shaped steel studs, punched, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: Not less than the existing steel studs.
2. Flange Width: To match existing.

B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: Not less than the existing.
2. Flange Width: To match existing.

C. Kickers: To match existing.

2.5 ANCHORS, CLIPS, AND FASTENERS

A. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

B. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

C. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

D. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B.

B. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.

C. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

D. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, with fluid consistency and 30-minute working time.

E. Urethane Joint Sealant: Single component, nonsag, Class 50.

2.7 FABRICATION

A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that all of the existing rusted steel studs and tracks have been removed along with any mildew.

B. Examine supporting substrates and abutting structural framing for conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Remove existing spray on fireproofing only as much of the materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect existing spray on fireproofing from damage.

B. Where required, install load bearing shims or grout between bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete construction.

3.3 INSTALLATION, GENERAL

A. Install cold-formed steel framing according to AISI S200 and to manufacturer's written instructions.

B. Install cold-formed steel framing and accessories plumb, square, and true to line with the existing framing, and with connections securely fastened.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed steel framing members in the same manner as the existing to support the required loading.

C. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

D. Install insulation, specified in Section 072100 "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

3.4 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Install new tracks nested into the existing.

B. Fasten both flanges of studs to top and bottom track. Space studs to match existing.

C. Isolate non-load-bearing steel framing, similar to the existing, from building structure to prevent transfer of vertical loads while providing lateral support..

D. Install horizontal bridging in wall studs, spaced vertically in rows but not more than the existing bracing.

E. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system to match the existing.

F. Install a continuous bead of sealant along the exterior perimeter between the bottom track and the foundation walls.

3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions. Repair all new and existing that may have been damaged during the installation of the new framing.

END OF SECTION 054000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:
   1. Wood blocking and nailers
   2. Roof sheathing.
   3. Cant strips

1.3 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
   2. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.]

D. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

E. Application: Treat all miscellaneous carpentry.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

E. Application: Treat the following items

1. Nailers, cant strips, blocking, and similar members in connection with roofing, and flashing.

2. Wood sills, blocking, and similar concealed members in contact with masonry or concrete.
3. Plywood roof sheathing.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Cant strips
3. Nailers.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species

C. For blocking , cant strips and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.5 ROOF SHEATHING

A. Plywood Roof Sheathing: Exterior sheathing.
1. Nominal Thickness: As required to match existing.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Metal Framing: ASTM C 954, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1.

G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

3.2 WOOD BLOCKING, CANT STRIPS AND NAILER INSTALLATION

A. Install where required for attaching other work. Form to shapes required and cut as required for true line and level of attached work. Coordinate locations with other work involved.

END OF SECTION 061053

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Wall sheathing.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 EXTERIOR WALL SHEATHING

A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. G-P Gypsum Corporation; Dens-Glass Gold.
   b. National Gypsum Company; Gold Bond e(2)XP.
   c. United States Gypsum Co.; Securock.

2. Type and Thickness: Regular, 1/2 inch thick.

B. Exterior Cement Board: ASTM C 1325, Type A.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. C-Cure.
b. Custom Building Products
c. USG Corporation.

2. Thickness: 1/2 inch.

2.2 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.

B. Screws for Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

1. For steel framing less than 0.0329 inch thick, use screws that comply with ASTM C 1002.
2. For steel framing from 0.033 to 0.112 inch thick, use screws that comply with ASTM C 954.
3. For fastening exterior cement board use only screws complying with ASTM C 954 modified flat head. Bugle type not acceptable.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not proceed until all demolition and removal work has been completed.

B. Ensure any, and/ or all steel stud work installation has been completed.

C. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

D. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

E. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 GYPSUM SHEATHING INSTALLATION

A. Comply with GA-253 and with manufacturer's written instructions.
   1. Fasten gypsum sheathing to cold-formed metal framing with screws.
   2. Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements.
   3. Install boards with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.

C. Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.

   1. Space fasteners approximately 8 inches o.c. and set back a minimum of 3/8 inch from edges and ends of boards.

3.3 EXTERIOR CEMENT BOARD INSTALLATION

A. Exterior Cement Board: Install on metal framing to comply with cement-board manufacturer's written instructions and evaluation report acceptable to authorities having jurisdiction. Install board with steel drill screws spaced no more than 8 inches o.c. along framing with perimeter fasteners at least 3/8 inch but less than 5/8 inch from edges of boards.

END OF SECTION 061600

SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Modified bituminous sheet waterproofing.

B. Related Sections
1. "Section 030130 Concrete Patching" for patching existing concrete foundation.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.

1. Do not apply waterproofing in snow, rain, fog, or mist.

B. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard materials-only warranty in which manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations for Waterproofing System: Obtain waterproofing materials from single source from single manufacturer.

2.2 MODIFIED BITUMINOUS SHEET WATERPROOFING

A. Modified Bituminous Sheet: Minimum 60-milnominal thickness, self-adhering sheet consisting of 56 mils of rubberized asphalt laminated on one side to a 4-mil- thick, polyethylene-film reinforcement, and with release liner on adhesive side.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Carlisle Coatings & Waterproofing Inc.; CCW MiraDRI 860/861.
   b. Grace, W. R., & Co. - Conn.; Bituthene 3000/Low Temperature.
   c. Nervastral, Inc.; BITU-MEM.

2. Physical Properties:

   a. Tensile Strength, Membrane: 325 psi minimum; ASTM D 412, Die C, modified.
   b. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
   c. Low-Temperature Flexibility: Pass at minus 25 deg F; ASTM D 1970.
   d. Crack Cycling: Unaffected after 100 cycles of 1/8-inch movement; ASTM C 836.
   e. Puncture Resistance: 50 lbf minimum; ASTM E 154.
   f. Water Absorption: 0.1 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D 570.
   g. Water Vapor Permeance: 0.05 perms maximum; ASTM E 96/E 96M, Water Method.

2.3 AUXILIARY MATERIALS

A. General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

B. Primer: Liquid primer recommended for substrate by sheet-waterproofing material manufacturer.

C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet-waterproofing material manufacturer.

D. Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, of trowel grade or low viscosity.

E. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.

F. Sealant: Silicone as recommended by manufacturer.

G. Protection Course: See “Section 061600- Sheathing” for exterior cement board.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the waterproofing.

1. Verify that the existing concrete has been patched to provide an acceptable surface for the application of the new waterproofing.
2. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer.
3. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

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

3.2 SURFACE PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.

B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.

C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids.

E. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.

F. Bridge and cover expansion joints with overlapping sheet strips of widths according to manufacturer's written instructions.

1. Invert and loosely lay first sheet strip over center of joint. Firmly adhere second sheet strip to first and overlap to substrate.

G. Prepare, treat, and seal vertical surfaces at terminations and penetrations through waterproofing and at drains and protrusions according to ASTM D 6135.

3.3 MODIFIED BITUMINOUS SHEET-WATERPROOFING APPLICATION

A. Install modified bituminous sheets according to waterproofing manufacturer's written instructions and recommendations in ASTM D 6135.

B. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.

C. Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure watertight installation.

1. When ambient and substrate temperatures range between 25 and 40 deg F , install self-adhering, modified bituminous sheets produced for low-temperature application. Do not use low-temperature sheets if ambient or substrate temperature is higher than 60 deg F.

D. Apply continuous sheets over already-installed sheet strips, bridging substrate cracks, construction, and contraction joints.

E. Seal edges of sheet-waterproofing terminations with mastic.

F. Where applicable, install sheet-waterproofing and auxiliary materials to tie into adjacent waterproofing.

G. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheet waterproofing extending 6 inches beyond repaired areas in all directions.

H. Immediately install protection course with butted joints over waterproofing membrane.
1. Seal joint between the exterior cement board protection board and the EIFS.

3.4 PROTECTION, REPAIR, AND CLEANING

A. Protect waterproofing from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 071326

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:
   1. Glass-fiber blanket insulation.

1.3 QUALITY ASSURANCE

A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   1. CertainTeed Corporation.
   2. Johns Manville.
   3. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
   1. Thickness of Insulation: To match existing.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify that new steel studs framing has been installed and ready to receive insulation.

B. Clean substrates of substances that are harmful to insulation or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to rain at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

3.3 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions.

B. Glass-Fiber Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically.

3.4 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 072419 - EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section includes water-drainage exterior insulation and finish system (EIFS).

B. Related Sections:
   1. Section 061600 "Sheathing" for Glass-Mat Gypsum Wall Sheathing and Exterior Cement Board.
   2. Section 079200 "Joint Sealants" for sealing joints in EIFS with elastomeric joint sealants.

1.3 PERFORMANCE REQUIREMENTS

A. EIFS Performance: Comply with the following:

   1. Bond Integrity: Free from bond failure within EIFS components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
   2. Weathertightness: Resistant to water penetration from exterior into water-drainage EIFS and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of EIFS and assemblies behind it, including substrates, supporting wall construction, and interior finish, and including a means that allows water entering into an EIFS assembly to drain to the exterior.

B. Class PB EIFS: Provide EIFS having physical properties and structural performance that comply with the Basis of Design material as indicated in paragraph 2.1 A.

C. Reinforcing Mesh: Provide reinforcing mesh to meet the impact requirement of the Miami Dade County and Florida Building Code for impact resistant.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An installer who is certified in writing by EIFS manufacturer as qualified to install manufacturer's system using trained workers and having a minimum of 5 years experience.

B. Source Limitations: Obtain EIFS from single source from single EIFS manufacturer and from sources approved by EIFS manufacturer as compatible with system components.

C. Fire-Test-Response Characteristics: Provide EIFS and system components with the following fire-test-response characteristics as determined by testing identical EIFS and system components per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
   1. Intermediate-Scale Multistory Fire Test: Tested mockup, representative of completed multistory wall assembly of which EIFS is a part, complies with NFPA 285 for test method and required fire-test-response characteristics of exterior non-load-bearing wall panel assemblies containing foam-plastic insulation.
   2. Radiant Heat Exposure: No ignition of EIFS when tested according to NFPA 268.
   3. Surface-Burning Characteristics: Provide insulation board, adhesives, base coats, and finish coats with flame-spread index of 25 or less and smoke-developed index of 450 or less, per ASTM E 84.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original, unopened packages with manufacturers' labels intact and clearly identifying products.

B. Store materials inside and under cover; keep them dry and protected from weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic, and other causes.

   1. Stack insulation board flat and off the ground.
   2. Protect plastic insulation against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
   3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

1.6 PROJECT CONDITIONS

A. Weather Limitations: Maintain ambient temperatures above 40 deg F for a minimum of 24 hours before, during, and after adhesives or coatings are applied. Do not apply EIFS adhesives or coatings during rainfall. Proceed with installation only when existing and forecasted weather conditions and ambient outdoor air, humidity, and substrate temperatures permit EIFS to be applied, dried, and cured according to manufacturers' written instructions and warranty requirements.

1.7 COORDINATION

A. Coordinate installation of EIFS with related Work specified in other Sections to ensure that wall assemblies, including sheathing, weather-resistant sheathing paper, flashing, trim, joint sealants, windows, and doors, are protected against damage from the effects of weather, age, corrosion,

moisture, and other causes. Do not allow water to penetrate behind flashing and drainage plane that is behind water-drainage EIFS.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Dryvit Outsulation Plus MD System or an comparable approved equal.

2.2 MATERIALS

A. Compatibility: Provide water-resistive coating, adhesive, fasteners, board insulation, reinforcing meshes, base- and finish-coat systems, sealants, and accessories that are compatible with one another and with substrates and approved for use by EIFS manufacturer for Project.

B. Air and Water Resistive Barrier Components

1. Air and Water-Resistive Barrier at Joints: Flexible polymer based non cementious water –resistive coating and air barrier for sealing joints between and penetrations through sheathing; textured.
2. Sheathing Joint Tape: Open weave fiberglass mesh with pressure sensitive adhesive for sealing joints between and penetrations through sheathing.
3. Air and Water-Resistive Barrier: Liquid sprayed water resistive membrane/air barrier adhesive.

C. Flashing Material:
1. Liquid Applied: Flexible water based polymer applied over a grid tape recommended in writing by EIFS manufacturer.

D. Insulation Adhesive: EIFS manufacturer's standard formulation designed for indicated use; compatible with substrate; and complying with the following:

1. Job-mixed formulation of portland cement complying with ASTM C 150, Type I, and polymer-based adhesive specified for base coat.

E. Molded, Rigid Cellular Polystyrene Board Insulation: Comply with ASTM E2430 and ASTM C 578, Type I; EIFS manufacturer's requirements, and the following:

1. Aging: Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
2. Flame-Spread and Smoke-Developed Indexes: 25 and 450 or less, respectively, per ASTM E 84.
3. Thickness: 1 ½ inch.

F. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials. Provide reinforcing mesh to meet the requirement of the Miami Dade County and Florida Building Code for impact resistant.

1. Standard-Impact Reinforcing Mesh.
2. High-Impact Reinforcing Mesh.
3. Corner Reinforcing Mesh.

G. Base-Coat Materials: EIFS manufacturer's standard mixture complying with the following requirements:

1. Job-mixed formulation of portland cement complying with ASTM C 150, Type I, white or natural color; and manufacturer's standard polymer-emulsion adhesive designed for use with portland cement.

H. Primer: EIFS manufacturer's standard factory-mixed, elastomeric-polymer primer for preparing base-coat surface for application of finish coat.

I. Finish-Coat Materials: EIFS manufacturer's standard acrylic-based coating with enhanced mildew resistance complying with the following:

1. Factory-mixed formulation of polymer-emulsion binder, colorfast mineral pigments, sound fine stone particles, and fillers.
2. Colors: As selected from manufacturer's full range.

J. Drainage Track Strip: Manufacturer’s standard corrugated sheet plastic.

K. Water: Potable.

2.3 ELASTOMERIC SEALANTS

A. Elastomeric Sealant Products: See Section 079200 "Joint Sealants" for products corresponding to description indicated below:
1. Single-component, nonsag, neutral-curing silicone sealant.

B. Sealant Color: Selected from manufacturer's full range.

2.4 MIXING

A. General: Comply with EIFS manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as recommended by EIFS manufacturer. Mix materials in clean containers. Use materials within time period specified by EIFS manufacturer or discard.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive EIFS to ensure that all water damaged materials have been removed.

B. Verify that all waterproofing material and protection cementitious board have been installed.

C. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of EIFS.

D. Examine roof edges, wall framing, flashings, openings, substrates, and junctures at other construction for suitable conditions where EIFS will be installed.

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

1. Begin coating application only after surfaces are dry.
2. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Protect contiguous work from moisture deterioration and soiling caused by application of EIFS. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.

B. Protect EIFS, substrates, and wall construction behind them from inclement weather during installation. Prevent penetration of moisture behind drainage plane of EIFS and deterioration of substrates.

C. Prepare and clean substrates to comply with EIFS manufacturer's written instructions to obtain optimum bond between substrate and adhesive for insulation.

3.3 EIFS INSTALLATION, GENERAL

A. Comply with EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate indicated.

3.4 SUBSTRATE PROTECTION APPLICATION

A. Primer/Sealer: Apply over substrates to protect substrates from degradation and where required by EIFS manufacturer for improving adhesion of insulation to substrate.

B. Water-Resistive Coatings: Apply over substrates to protect substrates from degradation and to provide water-/weather-resistive barrier.

1. Tape and seal joints, exposed edges, terminations, and inside and outside corners of sheathing unless otherwise indicated by EIFS manufacturer's written instructions.

C. Flexible-Membrane Flashing: Install over weather-resistive barrier, applied and lapped to shed water; seal at openings, penetrations, terminations, and where indicated by EIFS manufacturer's written instructions to protect wall assembly from degradation. Prime substrates, if required, and install flashing to comply with EIFS manufacturer's written instructions and details.

3.5 INSULATION INSTALLATION

A. Board Insulation: Adhesively attach insulation to substrate in compliance with ASTM C 1397, EIFS manufacturer's written instructions, and the following:

1. Apply adhesive to insulation vertical notched-trowel configuration in a manner that results in coating the entire surface of sheathing with adhesive once insulation is adhered to sheathing unless EIFS manufacturer's written instructions specify using primer/sealer with ribbon-and-dab method. Apply adhesive to a thickness not less than 3/8 inch for field mixed, measured from surface of insulation before placement.
2. Press and slide insulation into place. Apply pressure over the entire surface of insulation to accomplish uniform contact, high initial grab, and overall level surface.
3. Allow adhered insulation to remain undisturbed for period recommended by EIFS manufacturer, but not less than 24 hours, before beginning rasping and sanding insulation, or applying base coat and reinforcing mesh.
4. Begin first course of insulation from a level base line and work upward.
5. Stagger vertical joints of insulation boards in successive courses to produce running bond pattern. Locate joints so no piece of insulation is less than 12 inches wide or 6 inches high. Offset joints not less than 6 inches from corners of window and door openings.

    a. Adhesive Attachment: Offset joints of insulation not less than 6 inches from horizontal and 4 inches from vertical joints in sheathing.
6. Interlock ends at internal and external corners.
7. Abut insulation tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between boards. If gaps greater than 1/16 inch occur, fill with insulation cut to fit gaps exactly; insert insulation without using adhesive or other material.
8. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes complying with details indicated.
9. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1/32 inch from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch
10. Form joints for sealant application by leaving gaps between adjoining insulation edges and between insulation edges and dissimilar adjoining surfaces. Make gaps wide enough to produce joint widths a minimum of ¾ inch after encapsulating joint substrates with base coat and reinforcing mesh.
11. Treat exposed edges of insulation as follows:

    a. Except for edges forming substrates of sealant joints, encapsulate with base coat, reinforcing mesh, and finish coat.

b. Encapsulate edges forming substrates of sealant joints within EIFS or between EIFS and other work with base coat and reinforcing mesh.

12. Coordinate installation of flashing and insulation to produce wall assembly that does not allow water to penetrate behind flashing and water-/weather-resistive barrier.

B. Expansion Joints: Install at locations indicated, where required by EIFS manufacturer, and as follows:
1. Where EIFS adjoin dissimilar substrates, materials, and construction, including other EIFS.

3.6 BASE-COAT INSTALLATION

A. Base Coat: Apply to exposed surfaces of insulation in minimum thickness recommended in writing by EIFS manufacturer.

B. Reinforcing Mesh: Embed type indicated below in wet base coat to produce wrinkle-free installation with mesh continuous at corners and overlapped not less than 2-1/2 inches. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material, so reinforcing-mesh color and pattern are not visible. Install number and type of reinforcing mesh to comply with the impact performance requirements in paragraph 1.3

1. Standard-impact reinforcing mesh.
2. High-impact reinforcing mesh.
3. Corner reinforcing mesh.

C. Additional Reinforcing Mesh: Apply strip reinforcing mesh around openings extending 4 inches beyond perimeter. Apply additional 9-by-12-inch strip reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 8-inch wide strip reinforcing mesh at both inside and outside corners unless base layer of mesh is lapped not less than 4 inches on each side of corners.
1. Embed strip reinforcing mesh in base coat before applying first layer of reinforcing mesh.

D. Double Base-Coat Application: Apply second base coat in same manner and thickness as first application except without reinforcing mesh. Do not apply until first base coat has cured.

3.7 FINISH-COAT INSTALLATION

A. Primer: Apply over dry base coat according to EIFS manufacturer's written instructions.

B. Finish Coat: Apply over dry primed base coat, maintaining a wet edge at all times for uniform appearance, in thickness required by EIFS manufacturer to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.

C. Sealer Coat: Apply over dry finish coat, in number of coats and thickness required by EIFS manufacturer.

3.8 INSTALLATION OF JOINT SEALANTS

A. Prepare joints and apply sealants, of type and at intersection of adjacent materials, to comply with applicable requirements in Section 079200 "Joint Sealants" and in ASTM C 1481.

1. Apply joint sealants after base coat has cured but before applying finish coat.
2. Clean surfaces to receive sealants to comply with indicated requirements and EIFS manufacturer's written instructions.
3. Apply primer recommended in writing by sealant manufacturer for surfaces to be sealed.
4. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.
5. Apply masking tape to protect areas adjacent to sealant joints. Remove tape immediately after tooling joints, without disturbing joint seal.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Inspections: Air-barrier materials, accessories, and installation are subject to inspection for compliance with requirements. Inspections may include the following:

1. Continuity of air-barrier system has been achieved throughout the building envelope with no gaps or holes.
2. Continuous structural support of air-barrier system has been provided.
3. Site conditions for application temperature and dryness of substrates have been maintained.
4. Maximum exposure time of materials to UV deterioration has not been exceeded.
5. Surfaces have been primed, if applicable.
6. Laps in strips and transition strips have complied with minimum requirements and have been shingled in the correct direction (or mastic has been applied on exposed edges), with no fishmouths.
7. Termination mastic has been applied on cut edges.
8. Strips and transition strips have been firmly adhered to substrate.
9. Compatible materials have been used.
10. Transitions at changes in direction and structural support at gaps have been provided.
11. Connections between assemblies (air-barrier and sealants) have complied with requirements for cleanliness, surface preparation and priming, structural support, integrity, and continuity of seal.
12. All penetrations have been sealed.

C. Tests: As determined by testing agency from among the following tests:
1. Quantitative Air-Leakage Testing: Air-barrier assemblies will be tested for air leakage according to ASTM E 783.
2. Adhesion Testing: Air-barrier assemblies will be tested for minimum air-barrier adhesion of 30 lbf/sq. in. according to ASTM D 4541 for each 600 sq. ft. of installed air barrier or part thereof.

D. Air barriers will be considered defective if they do not pass tests and inspections.

1. Apply additional air-barrier material, according to manufacturer's written instructions, where inspection results indicate insufficient thickness.
2. Remove and replace deficient air-barrier components for retesting as specified above.

E. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.

3.10 CLEANING AND PROTECTION

A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive EIFS coatings.

END OF SECTION 072419

SECTION 075000 – ROOF PATCHING

PART 1 - **GENERAL**

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. This Section includes the following:

1. Roof patching.
2. Protection of existing roofing system.

1.3 MATERIAL ONWERSHIP

A. Except for roofing not requiring repairs or patching, removed roofing materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

A. Existing Membrane Roofing System: Roofing membrane, surfacing, and components and accessories between deck and roofing membrane.

B. Roof Patching: Removal of roofing system where there has been water infiltration and/or mold and components that have been water damaged and provide new system to match existing at locations where new EIFS has been provided.

C. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

D. Existing to Remain: Existing roofing system not part of the new EIFS construction.

1.5 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roof patching systems to withstand existing FM requirements, existing uplift pressures, thermally induced movement, reflectance and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.

B. Material Compatibility: Provide roof patching materials that are compatible with existing and one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer of patching systems shall have a minimum of 5 years.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning any roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Exterior Fire-Test Exposure: Where required, materials shall conform to ASTM E 108, for the Class roofing systems to match the existing. Materials shall be identified with appropriate markings of applicable testing agency.

D. Fire-Resistance Ratings: Where required, provide fire-resistance-rated roof assemblies to match the existing assemblies and tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.7 PROJECT CONDITIONS

A. FDOT will occupy portions of building immediately below roof patching area. Conduct operations so FDOT's operations will not be disrupted. Provide FDOT with not less than 24 hours' notice of activities that may affect operations.

1. Coordinate work activities daily with FDOT so protective dust or water leakage covers can be placed over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area if desired.

B. Protect building, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from roof patching operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. FDOT assumes no responsibility for condition of areas to be roof patched.

1. Conditions existing at time of inspection for bidding will be maintained by FDOT as far as practical.

E. Weather Limitations: Proceed with roof patching preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

F. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation will be performed under a separate contract..
2. FDOT will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

2.2 INFILL MATERIALS

A. Use patching and infill materials compatible with existing roofing system and performance requirements but not limited to the following:
1. Roofing membranes.
2. Recovery boards
3. Roof expansion joints
4. Insulation
5. Primers and adhesives
6. Flashing

B. Selection of materials and design of any temporary roofing will be the responsibility of Contractor.

2.3 AUXILIARY PATCING MATERIALS

A. General: Auxiliary patching materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

A. Inspect the existing roof and determine areas to be removed and patched based on the locations of the new EIFS.

B. Where expansion joints have been removed due to new construction, examine roof-joint openings, inside surfaces of parapets that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.

C. Protect existing membrane roofing system that is not to be patched.
   1. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
   2. Maintain temporary protection and leave in place until roof patching has been completed.

D. Where and when required, coordinate with FDOT to shut down air intake equipment in the vicinity of the Work. Cover air intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.

E. During roof patching operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

F. Maintain roof drains in functioning condition.

   1. If roof drains will be temporarily blocked or unserviceable due to roof patching, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

G. Where affected, verify that rooftop utilities and service piping have been shut off before commencing Work.

3.2 REMOVING EXISTING DAMAGED ROOFING SYSTEMS

A. Remove existing roofing membrane, flashing and other membrane roofing system and flashing material that are associated with the new EIFS down to the deck and/ or parapet.
   1. Neatly cut existing membrane, flashing and any water damaged or molded insulation down to the existing deck.
   2. Remove any mechanical fasteners and adhesives.

3.3 DECK PREPARATION

A. Inspect deck after removal of existing roofing system.

   1. Ensure that the existing deck is dry and suitable for new insulation and methods of attachment.
   2. Remove any rust on the existing steel decks that may affect the installation of the new roof patching system.
   3. Verify that the existing concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 or by pouring 1 pint of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if moisture condenses under the plastic sheet or if asphalt test sample foams or can be easily and cleanly stripped after cooling.
   4. Verify that existing substrate is dry before proceeding with installation of the roof patch. Spot check substrates with a non-destructive moisture and humidity meter.

3.4 ROOF PATCHING

A. Ensure that the existing deck and roofing material is dry and suitable for the new rigid insulation, roofing plys and other materials required to meet the performance of the existing roof.
   1. Broom clean existing substrate.
   2. Install insulation under area of roof patching to achieve required thickness and to maintain the existing roof slope. In areas where there is more than one layer of insulation, cut back the existing insulation to maintain a minimum overlap of 6 inches. Adhere or mechanically fasten insulation as required to match the existing performance of the existing roof system and deck.
   3. Install the roofing plys in a shingled manner and overlap the existing the minimum dimension recommended by the roofing material manufacturer.

3.5 BASE FLASHINGS

A. Where required, remove existing base flashing that has been damaged due to the installation of the new construction.

   1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.

C. Inspect parapet sheathing and framing for deterioration and damage.
   1. Remove existing parapet sheathing that has been water damaged or contains mold and replace with new treated plywood sheathing, thickness to match existing
   2. If parapet framing has deteriorated or contains mold, remove and replace new treated lumber thickness to match existing.
   3. Plywood parapet sheathing and any roof wood blocking is specified in Division 06 Section Miscellaneous Rough Carpentry."

D. Install new flashing material to match existing. Provide the necessary laps recommended by the manufacturer and install per manufacturers' written instructions.

3.6 ROOF EXPANSION JOINTS

A. General: Comply with manufacturer's written instructions for handling and installing roof expansion joints.

   1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
   2. Install roof expansion joints true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks and to align with existing.
   3. Provide for linear thermal expansion of roof expansion joint materials.
   4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.

5. Provide uniform, neat seams.
6. Install roof expansion joints to fit substrates and to result in watertight performance.
7. Torch cutting of roof expansion joints is not permitted.
8. Splice roof expansion joint with the existing to result in a watertight performance.

3.7 DISPOSAL

A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site will not be permitted.

B. Transport demolished materials off FDOT's property. Legally dispose of them.

END OF SECTION 075000

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Copings.

1.3 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. Wind Design Standard: Manufacture and install copings capable of resisting the following design pressures:

1. Design Pressure:
   a. As required by Miami Dade County and Florida Building Code requirements.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof specialties installation.

PART 2 - PRODUCTS

2.1 UNDERLAYMENT MATERIALS

A. Apply underlayment material compatible with the existing roofing and flashing systems.

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation and to match existing.

B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements and to match existing.

C. Elastomeric Sealant:
   1. Exterior Face of Coping: ASTM C 920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
   2. Interior Face (Roofing Side): Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant.

D. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.3 COPINGS

A. Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding 12 feet, anchorage to match existing; corner units, end cap units, and concealed splice plates with same finish as coping caps.

   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      a. Architectural Products Company.
      b. Hickman Company, W. P.
      c. MM Systems Corporation.

   2. Coping-Cap Material: To match existing.

      a. Finish: To match existing
      b. Color: To match existing

   3. Corners: Factory mitered continuously welded to existing and to make watertight.
   4. Coping-Cap Attachment Method: To match existing fabricated from coping-cap material.
   5. Face Leg Cleats: Concealed, continuous galvanized-steel sheet.
   6. Size: Vertical face on the exterior to lap bottom of wood block by a minimum of 4 inches and rear (facing the roof) shall match the existing.

2.4 GENERAL FINISH REQUIREMENTS

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

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Ensure all roof patching has been completed and areas are acceptable for the installation of the roof specialties.

B. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

C. Examine walls and parapets for suitable conditions for roof specialties.

D. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

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

3.2 UNDERLAYMENT INSTALLATION

A. Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.3 INSTALLATION, GENERAL

A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
2. Provide uniform, neat seams with minimum exposure of solder and sealant.
3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.

1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections.
2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

D. Fastener Sizes: Use fasteners of sizes that will penetrate recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F. In addition install sealant as follows:
1. Install a continuous bead of sealant under the vertical legs of the coping on both the exterior face and interior face.

3.4 COPING INSTALLATION

A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with anchor to match existing.

B. Anchor copings to meet performance requirements and to match with the existing coping anchorage.

C. Provide a corner transition between the existing coping and the new coping.

D. Seal all joints at the bottom of the coping between the coping and the face of wall and roofing material.

3.5 CLEANING AND PROTECTION

A. Clean off excess sealants.

B. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

C. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures. **END OF SECTION 077100.**

SECTION 078100 - APPLIED FIREPROOFING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section includes sprayed fire-resistive materials (SFRM).

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual certified, licensed, or otherwise qualified by fireproofing manufacturer as experienced and with sufficient trained staff to install manufacturer's products according to specified requirements.
   1. Certify that the new fireproofing is compatible with the existing and that it meets the properties specified in paragraph 2.2 B. below.

1.4 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on fireproofing.

   1. At the site, provide test specimens and assemblies representative of proposed materials and construction.
   2. Show how the new material will overlap the existing to provide the required fire rating.

B. Preconstruction Adhesion and Compatibility Testing: Test for compliance with requirements for specified performance and test methods.

   1. Bond Strength: Test for cohesive and adhesive strength according to ASTM E 736. Provide bond strength indicated in referenced fire-resistance design, but not less than minimum specified in Part 2.
   2. Density: Test for density according to ASTM E 605. Provide density indicated in referenced fire-resistance design, but not less than minimum specified in Part 2.
   3. Verify that manufacturer, through its own laboratory testing or field experience, attests that primers or coatings are compatible with fireproofing.
   4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.

5. For materials failing tests, obtain applied-fireproofing manufacturer's written instructions for corrective measures including the use of specially formulated bonding agents or primers.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not apply fireproofing when ambient or substrate temperature is 44 deg F or lower unless temporary protection and heat are provided to maintain temperature at or above this level for 24 hours before, during, and for 24 hours after product application.

B. Ventilation: Ventilate building spaces during and after application of fireproofing, providing complete air exchanges according to manufacturer's written instructions. Use natural means or, if they are inadequate, forced-air circulation until fireproofing dries thoroughly.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Assemblies: Provide fireproofing, including auxiliary materials, according to requirements of each fire-resistance design and manufacturer's written instructions.

B. Fire-Resistance Design: Apply new spray fire resistive material to comply with the existing hourly fire rating and according to ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency. New material shall be compatible with the existing material.

C. Asbestos: Provide products containing no detectable asbestos.

2.2 SPRAYED FIRE-RESISTIVE MATERIALS

A. SFRM: Manufacturer's standard, factory-mixed, lightweight, dry formulation, complying with existing fire-resistance design.

1. Products: Subject to compliance with requirements, the following manufactures products that comply to the Fire Resistance Design requirements and compatible with the existing materials, may be incorporated into the Work include, but are not limited to, the following:

   a. Carboline Company
   b. Grace, W. R. & Co. - Conn.; Grace Construction Products.
   c. Southwest Fireproofing Products Co.

B. The following properties shall match the properties of the existing material
1. Bond Strength: Minimum cohesive and adhesive strength based on field testing according to ASTM E 736.
2. Density: Tested in accordance to ASTM E 605.

3. Thickness: Measured according to requirements of fire-resistance design or ASTM E 605.
4. Combustion Characteristics: ASTM E 136.
5. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

    a. Flame-Spread Index: 10 or less.
    b. Smoke-Developed Index: 10 or less.

6. Compressive Strength: According to ASTM E 761.
7. Corrosion Resistance: No evidence of corrosion according to ASTM E 937.
8. Deflection: No cracking, spalling, or delamination according to ASTM E 759.
9. Air Erosion: Maximum weight loss in 24 hours according to ASTM E 859.

2.3 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

B. Bonding Agent: Product approved by fireproofing manufacturer and complying with requirements in UL's "Fire Resistance Directory" or in the listings of another qualified testing agency acceptable to authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine all of the existing spray on fireproofing. Remove any fireproofing that has loss adhesion, has diminished in thickness and/or has been damaged due to water infiltration.

B. Examine existing fireproofing to determine the properties before applying new fireproofing.

C. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrates and other conditions affecting performance of the Work and according to each fire-resistance design. Verify compliance with the following:

1. Substrates are free of dirt, oil, grease, rolling compounds, mill scale, loose scale, incompatible primers, paints, and encapsulants, or other foreign substances capable of impairing bond of fireproofing with substrates under conditions of normal use or fire exposure.
2. Objects penetrating fireproofing, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.
3. Substrates receiving fireproofing are not obstructed by ducts, piping, equipment, or other suspended construction that will interfere with fireproofing application.

D. Conduct tests according to fireproofing manufacturer's written recommendations to verify that substrates are free of substances capable of interfering with bond.

E. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Cover other work subject to damage from fallout or overspray of fireproofing materials during application.

B. Clean substrates of substances that could impair bond of fireproofing including all rust due to and flaking due to water infiltration.

3.3 APPLICATION

A. Construct fireproofing assemblies that are compatible with existing, tested, and substantiated by test reports; for thickness, primers, sealers, topcoats, finishing, and other materials and procedures affecting fireproofing work.

B. Comply with fireproofing manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to mix, convey, and apply fireproofing; as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.

C. Coordinate application of fireproofing with other construction to minimize need to cut or remove fireproofing.

1. Do not begin applying fireproofing until clips, hangers, supports, sleeves, and other items penetrating fireproofing are in place.
2. Defer installing construction items that would interfere with applying fireproofing until application of fireproofing is completed.

D. Install auxiliary materials as required and according to fire-resistance design and fireproofing manufacturer's written recommendations for conditions of exposure and intended use if required to match existing. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.

E. Spray apply fireproofing to maximum extent possible. Following the spraying operation in each area, complete the coverage by trowel application or other placement method recommended in writing by fireproofing manufacturer.

F. Extend fireproofing in full thickness over entire area of each substrate to be protected. Lap existing fireproofing as necessary to ensure proper coverage for rating required.

G. Install body of fireproofing in a single course unless otherwise recommended in writing by fireproofing manufacturer.

H. Cure fireproofing according to fireproofing manufacturer's written recommendations.

I. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:

1. Test and inspect as required by the IBC, 1704.10.

B. Perform the tests and inspections of completed Work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.

C. Fireproofing will be considered defective if it does not pass tests and inspections.

1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

D. Prepare test and inspection reports.

3.5 CLEANING, PROTECTING, AND REPAIRING

A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.

B. Protect fireproofing, according to advice of manufacturer and Installer, from damage resulting from construction operations or other causes, so fireproofing will be without damage or deterioration at time of Substantial Completion.

C. As installation of other construction proceeds, inspect fireproofing and repair damaged areas and fireproofing removed due to work of other trades.

D. Repair fireproofing damaged by other work before concealing it with other construction.

E. Repair fireproofing by reapplying it using same method as original installation or using manufacturer's recommended trowel-applied product.

END OF SECTION 078100

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

1.3 PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints as directed.
2. Conduct field tests for each application indicated below:

    a. Each kind of sealant and joint substrate indicated.

    b. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

        1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
4. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

1.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications required.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Dow Corning Corporation; 791.
   b. GE Advanced Materials - Silicones; SilPruf SCS2000.
   c. Pecora Corporation; 895

2.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   a. BASF Building Systems; Sonolac.
   b. Pecora Corporation; AC-20+.
   c. Tremco Incorporated; Tremflex 834.

2.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

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

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Precast Concrete.
    b. Plaster covered cum and poured in place concrete
    c. Exterior insulation and finish systems.
3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

   a. Perform 5 tests for the first 500 feet of joint length for each kind of sealant and joint substrate.
   b. Perform 1 test for each 500 feet of joint length thereafter or 1 test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

   a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Inspect tested joints and report on the following:

   a. Whether sealants filled joint cavities and are free of voids.
   b. Whether sealant dimensions and configurations comply with specified requirements.
   c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

    a. Construction joints between adjacent material and new EIFS.
    b. Perimeter joints between materials listed above and frames of storefronts and louvers.

2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 50.
3. Joint-Sealant Color: To match EIFS color.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:
    a. Interior surfaces at joints where existing materials have been removed and new have been provided.
2. Joint Sealant: Latex.
3. Joint-Sealant Color: To match adjacent material.

END OF SECTION 079200

SECTION 084110 - ALUMINUM-FRAMED STOREFRONTS

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:
   1. Storefront framing for ribbon walls in new EIFS.

B. Related Sections
   1. "Section 088000 Glazing" for glass requirements.

1.3 PERFORMANCE REQUIREMENTS

A. General: Storefront system to meet all requirements of the Miami Dade County and Florida Building Code for air, water, structural and impact resistant requirements.
   1. Manufacturer: Manufacturer's are to have tested proof, preformed by an independent testing laboratory, that the storefront system has passed all of the requirements for Miami Dade County indicated above and Notice of Acceptance for Large Missile Impact.

B. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

   1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
   2. Dimensional tolerances of building frame and other adjacent construction.
   3. Failure includes the following:

      a. Deflection exceeding specified limits.
      b. Thermal stresses transferring to building structure.
      c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
      d. Loosening or weakening of fasteners, attachments, and other components.
      e. Sealant failure.

C. Structural Loads:

1. Wind Loads: Conforming to the requirements of Miami Dade County and the Florida Building Code.

D. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane shall not exceed L/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.

E. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.

F. Windborne-Debris-Impact-Resistance Performance: Provide aluminum-framed systems that pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996 or AAMA 506.

1. Large-Missile Impact: For aluminum-framed systems located within 30 feet of grade.
2. Small-Missile Impact: For aluminum-framed systems located more than 30 feet above grade.

G. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.05 cfm/sq. ft.of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft.

H. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 15 lbf/sq. ft.

I. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): As required for location temperature range.
2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project and having a minimum of 5 years experience.

B. Testing Agency Qualifications: Qualified according to ASTM E 699 for testing indicated.

C. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.

D. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures including, but not limited to, excessive deflection.
    b. Noise or vibration caused by thermal movements.
    c. Deterioration of metals**,** metal finishes, and other materials beyond normal weathering.
    d. Water leakage through fixed glazing and framing areas.

2. Warranty Period: Manufacturers standard one year warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Delta Doors DHA-500 Impact Storefronts System or comparable product by the following:
1. SMI Systems

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209.
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer, complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Nonthermal.
2. Glazing System: Manufacturers standard.
3. Glazing Plane: Manufacturers standard.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads**,** finished to match framing system.

D. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

E. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

2.4 GLAZING SYSTEMS

A. Glazing: As specified in Section 088000 "Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

2.5 ACCESSORY MATERIALS

A. Sill Flashing: Extruded aluminum to match storefront.

B. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Section 079200 "Joint Sealants."

C. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil thickness per coat.

2.6 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing: Manufacturers standard.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.7 ALUMINUM FINISHES

A. Color and Gloss: To match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

E. Install glazing as specified in Section 088000 "Glazing."

F. Install perimeter joint sealants as specified in Section 079200 "Joint Sealants" to produce weathertight installation.

3.3 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet 1/4 inch over total length.
2. Alignment:

    a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
    b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing and inspecting of representative areas to determine compliance of installed systems with specified requirements shall take place as follows and in successive stages as indicated on Drawings. Do not proceed with installation of the next area until test results for previously completed areas show compliance with requirements.
1. Air Infiltration: Areas shall be tested for air leakage of 1.5 times the rate specified for laboratory testing under Part 1 "Performance Requirements" Article, but not more than 0.09 cfm/sq. ft. of fixed wall area when tested according to ASTM E 783 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft.
2. Water Spray Test: Before installation of interior finishes has begun, a minimum area of 50 feet by 1 story of aluminum-framed systems designated by Owner shall be tested according to AAMA 501.2 and shall not evidence water penetration.

C. Repair or remove work where test results and inspections indicate that it does not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 ADJUSTING, CLEANING, AND PROTECTION

A. Clean exposed surfaces immediately after installing storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

1. Keep protective films and coverings in place until final cleaning.

B. Protect storefront surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact storefront surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 084110

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
   1. Storefront framing.

1.3 PERFORMANCE REQUIREMENTS

A. General: Glazing system to meet all requirements of the Miami Dade County for impact resistant requirements.
   1. Manufacturer: Manufacturer's are to have tested proof, preformed by an independent testing laboratory that the glazing system has passed all of the requirements for Miami Dade County indicated above and Notice of Acceptance for Large Missile Impact.

B. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

1.4 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

   1. Testing will not be required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.
   2. Use ASTM C 1087 to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
   3. Test no fewer than four Samples of each type of material, including joint substrates, shims, sealant backings, secondary seals, and miscellaneous materials.
   4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.

5. For materials failing tests, submit sealant manufacturer's written instructions for corrective measures including the use of specially formulated primers.

1.5 QUALITY ASSURANCE

A. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

B. Source Limitations for Glass: Obtain all glass from single source from single manufacturer for each glass type.

C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

D. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."

E. Safety Glazing Labeling: Safety glazing labeling shall be permanently marked with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or below 40 deg F.

1.8 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from

normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: Ten years from date of Substantial Completion.

B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

A. Strength: Annealed float glass, Kind HS heat-treated float glass needed to comply with "Performance Requirements" Article.

B. Thermal and Optical Performance Properties: Provide glass with performance properties, as determined to match existing, as indicated in manufacturer's published test data, based on procedures indicated below:

1. For laminated-glass lites, properties are based on products of construction indicated.
2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.2 GLASS PRODUCTS

A. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed.
2. For coated vision glass, comply with requirements for Condition C (other coated glass).

B. Reflective-Coated Vision Glass: ASTM C 1376, coated by pyrolytic process, and complying with other requirements specified.
1. Coating Color: To match existing.
2. Visible Light Transmittance: Minimum percent to match existing.
3. Outdoor Visible Reflectance: Maximum percent to match existing.

2.3 LAMINATED GLASS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cardinal Glass
2. PPG Industries, Inc.
3. Viracon.

B. Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, with "Windborne-Debris-Impact Resistance" Paragraph in "Glass Products, General" Article, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with manufacturer standard interlayer to meet the performance requirements for Windborne Debris-Impact Resistance.

2.4 GLAZING MATERIAL

A. Provide glazing material to meet the manufacturers performance criteria indicated in Paragraph 1.2 above. Materials used are to meet the following requirements:

1. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:
   a. Neoprene complying with ASTM C 864.
   b. EPDM complying with ASTM C 864.
   c. Silicone complying with ASTM C 1115.
   d. Thermoplastic polyolefin rubber complying with ASTM C 1115.

2. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, silicone, or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.

3. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

4. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT.

5. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.

6. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800.

2.5 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.6 LAMINATED-GLASS TYPES

A. Glass Type: Laminated glass with two plies of heat-strengthened float glass.

1. Thickness of Each Glass Ply: 1/4 inch.
2. Interlayer Thickness: 0.075.
3. Reflective Coating: To match existing.
4. Provide safety glazing labeling.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

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

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that will leave visible marks in the completed work.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches.

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

D. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION 088000

SECTION 089119 - FIXED LOUVERS

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Fixed, extruded-aluminum louvers.

1.3 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.4 FIELD CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain louvers from single source from a single manufacturer to be of same type, design, or factory-applied color finish.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional engineer, licensed in the State of Florida, using structural performance requirements and design criteria indicated.

B. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors.
   1. Wind Loads: In accordance with the requirements of Miami Dade County and Florida Building Code.

C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

   1. Temperature Change (Range): 120 deg F, ambient; 180 deg F , material surfaces.

E. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

2.3 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. Horizontal, Storm Resistant Impact Hurricane Louver:

   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Airolite Company, LLC (The).
      b. Construction Specialties, Inc.
      c. Ruskin Company; Tomkins PLC.

   2. Louver Depth and Blade Thickness: To meet structural and impact resistance requirements.

   3. Louver Performance Ratings:

      a. Free Area: To be determined by contractor and design professionals.
      b. Air Performance: To be determined by contractor and professionals.
      c. Wind-Driven Rain Performance: Not less than 95 percent effectiveness when subjected to a rainfall rate of 8 inches per hour and a wind speed of 50 mph.

   4. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

   5. Head, Sill and Jambs: One piece extruded aluminum with a minimum thickness of 0.125 inches

B. Sill Flashing: Extruded aluminum to match storefront.

2.4 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Insect screening.

B. Louver Screen Frames: Fabricate with mitered corners.

1. Metal: Same type and form of metal as indicated for louver to which screens are attached.
2. Finish: Same finish as louver frames to which louver screens are attached.

2.5 BLANK-OFF PANELS

A. Insulated, Blank-Off Panels: Laminated panels consisting of an insulating core surfaced on back and front with metal sheets and attached to back of louver.

1. Thickness: 1 inch.
2. Metal Facing Sheets: Aluminum sheet, not less than 0.032-inch nominal thickness.
3. Insulating Core: Extruded-polystyrene foam.
4. Edge Treatment: Trim perimeter edges of blank-off panels with louver manufacturer's standard extruded-aluminum-channel frames, not less than 0.080-inch nominal thickness, with corners mitered and with same finish as panels.
5. Seal perimeter joints between panel faces and louver frames with gaskets or sealant.
6. Panel Finish: Same finish applied to louvers.

2.6 MATERIALS

A. Aluminum Extrusions: ASTM B 221, Alloy 6063-T5, T-52, or T6.

B. Fasteners: Use types and sizes to suit unit installation conditions.
1. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.

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

2.7 FABRICATION

A. Factory assemble louvers to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Maintain equal louver blade spacing to produce uniform appearance.

C. Fabricate frames, including integral sills, to fit in openings, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Join frame members to each other and to fixed louver blades with fillet welds **,** threaded fasteners, or both, as standard with louver manufacturer unless size of louver assembly makes bolted connections between frame members necessary.

2.8 ALUMINUM FINISHES

A. To match existing

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.3 INSTALLATION

A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.

E. Protect unpainted galvanized and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

F. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

3.4 ADJUSTING AND CLEANING

A. Clean exposed louver surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

C. Restore louvers damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

END OF SECTION 089119

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.3 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. CertainTeed Corp.
   2. Georgia-Pacific Gypsum LLC.
   3. USG Corporation.

B. Gypsum Wallboard: ASTM C 1396/C 1396M.

   1. Thickness: To match existing.
   2. Long Edges: Tapered and featured rounded or beveled for prefilling.

C. Gypsum Board, Type X: ASTM C 1396/C 1396M.

   1. Thickness: 5/8 inch
   2. Long Edges: Tapered and featured rounded or beveled for prefilling.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

   1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
   2. Shapes: As required to complete installing new to existing

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

   1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

   1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

C. Sealants : See Section 079200 “Joint Sealants”.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

C. Locate edge and end joints over supports. Do not place tapered edges against cut edges or ends. Rasp ends of existing cut joint to allow for proper taping and compound. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

D. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Single-Layer Application:

1. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
2. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints.

D. Gypsum Board Finish Levels: Finish panels levels to match existing and according to ASTM C 840:

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095123 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Acoustical tiles for ceilings and suspension system.

B. Related Requirements:
1. Section 024119 "Selective Demolition" for removing existing acoustical tile ceilings.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical tiles, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical tiles carefully to avoid chipping edges or damaging units in any way.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Provide material meeting the requirements if the existing complying with ASTM E 1264.
2. Smoke-Developed Index: To match existing.

B. Fire-Resistance Ratings: If required to match existing, comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ACOUSTICAL TILES, GENERAL

A. Source Limitations:

1. Acoustical Ceiling Tile: Obtain each type from single source from single manufacturer.
2. Suspension System: Obtain each type from single source from single manufacturer.

B. Source Limitations: Obtain each type of acoustical ceiling tile and supporting suspension system from single source from single manufacturer.

C. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectance.

D. Acoustical Tile Colors and Patterns: Match appearance characteristics indicated for each product type.

2.3 ACOUSTICAL TILES

A. Manufacturers: Provide material from a ceiling manufacturer that will provide the following

B. Classification: Provide tiles complying with ASTM E 1264 for type, form, and pattern as follows:

1. Type and Form: To match existing
2. Pattern: To match existing.

C. Thickness, Color, Edge Configuration and Size: To match existing.

D. LR, NRC, CAC, and AC: To match existing

2.4 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension-System Standard: Where possible use existing hangers and supports. If not, provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes that comply with applicable requirements in ASTM C 635/C 635M.

B. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung,".

1. Anchors in Existing Precast Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.

    a. Determine the existing thickness of the existing precast concrete structure to ensure the fasteners do not penetrate the slab.
    b. Type: Postinstalled expansion anchors.
    c. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 for Class SC 1 service condition.

2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E 1190, conducted by a qualified testing and inspecting agency.

C. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than diameter wire to match exisitng.

2.5 METAL SUSPENSION SYSTEM, EDGE MOLDINGS AND TRIM

A. Manufacturers: Provide material from a ceiling suspension system manufacturer that will provide the following to match existing:
1. Direct-Hung, Double-Web Suspension System: Main and cross runners roll formed from and capped with cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, G30 coating designation.
2. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile manufacturer's standard moldings for edges and penetrations; formed from sheet metal of same material, finish, color, and profile to match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that all moisture damaged ceiling tiles and suspension systems have been removed.

B. Examine substrates, areas, and conditions that may affect the installation of the new or salvaged for reuse ceiling tiles and suspension system, and other conditions affecting performance of the Work.

C. Examine all new and salvaged for reuse acoustical tiles and suspension systems before installation. Reject materials that are wet, moisture damaged, or mold damaged.

D. Coordination the extent of acoustical tile ceilings with the demolition o f the ceiling.

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

3.2 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures. Where possible use the inserts where moisture damaged hangers have been removed only if not rusted.
5. Do not support ceilings directly from permanent metal forms or floor deck.
6. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
7. Do not attach hangers to steel deck tabs.
8. Space hangers not more than the spacing supporting the existing ceiling.

C. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. Fasten to wall to match the existing

3.3 CLEANING

A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095123.

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Resilient base.

1.3 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class II, not less than 0.22 W/sq. cm.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.5 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 RESILIENT BASE

A. Manufacturers: Provide material from a Resilient Base manufacturer that will provide the following standards based on materials required to match existing:
   1. Resilient Base Standard: ASTM F 1861.
   2. Material Requirement: To match existing
   3. Style: Cove or straight to match existing.
   4. Minimum Thickness and Height: .To match existing
   5. Colors and Patterns: To match existing.

2.2 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that any moisture or water damage base and gwb has been removed.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

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

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Do not install resilient products until they are same temperature as the space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

D. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Remove any loose base that is not damaged. Clean substrate as recommended by the manufacturer and reinstall base.

C. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

D. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

E. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

F. Do not stretch resilient base during installation.

G. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends.
2. Inside Corners: Use straight pieces of maximum lengths possible.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

B. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Cover resilient products until Substantial Completion.

END OF SECTION 096513

SECTION 096519 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Resilient tile flooring to match existing

B. Related Requirements:

1. Section 024119 "Selective Demolition" for removing existing floor coverings.
2. Section 096513 "Resilient Base and Accessories" for resilient base, and other accessories installed with resilient floor coverings.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation indicated.

B. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class II, not less than 0.22 W/sq. cm.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F .Store floor tiles on flat surfaces.

1.5 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 RESILIENT TILE FLOORING

A. Manufacturers: Provide material from a Resilient Base manufacturer that will provide the following standards based on materials required to match existing:
1. Solid Vinyl Floor Tile: ASTM F 1700.
2. Rubber Floor Tile: ASTM F 1344
3. Vinyl Composition Tile: ASTM F 1066

B. Class: To match existing.

C. Type: To match existing..

D. Thickness: To match existing.

E. Size: .To match existing.

F. Colors and Patterns: To match existing.

2.2 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.

C. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that any moisture or water damage resilient tiles and adhesives have been removed.

B. Examine substrates for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

C. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

D. Coordination the extent of resilient tile flooring with the demolition of the resilient tile flooring .

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

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
4. Moisture Testing: Follow manufacturer recommendations for testing the existing concrete for moisture, humidity and mold .
5. Proceed with installation only after substrates pass testing.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until they are same temperature as space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay tiles to follow existing patterns.

C. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

D. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

E. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before applying liquid floor polish. In rooms where tiles have been replace apply floor polish to entire floor.

1. Number of coat(s) as recommended by the manufacturer.

E. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 096816 - SHEET CARPETING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section Includes:

1. Sheet carpet to match existing.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for removing existing floor coverings.
2. Section 096513 "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An experienced Installer who is certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class II, not less than 0.22 W/sq. cm.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Comply with CRI 104.

1.6 FIELD CONDITIONS

A. Comply with CRI 104 for temperature, humidity, and ventilation limitations.

B. Environmental Limitations: Do not deliver or install carpet until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at occupancy levels during the remainder of the construction period.

C. Do not install carpet over concrete slabs until slabs have cured, are sufficiently dry to bond with adhesive, and have pH range recommended by carpet manufacturer.

PART 2 - PRODUCTS

2.1 CARPET

A. Manufacturers: Provide material from a Sheet Carpeting manufacturer that will provide the following standards based on materials required to match existing:

B. Color: To match existing.

C. Pattern: To match existing.

D. Fiber Content: To match existing.

E. Pile Characteristic: To match existing.

F. Yarn Twist: To match existing.

G. Yarn Count: To match existing.

H. Density: To match existing..

I. Pile Thickness: To match existing.

J. Stitches: To match existing.

K. Gage: To match existing.

L. Face Weight: To match existing..

M. Total Weight: To match existing.

N. Primary Backing: Manufacturer's standard material. Ensure the pile height matches the existing.

O. Performance Characteristics: As follows:

1. Appearance Retention Rating: Moderate traffic, 2.5 minimum per ASTM D 7330.

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, nonstaining type to suit products and subfloor conditions, that complies with flammability requirements for installed carpet and is recommended or provided by carpet manufacturer.

C. Seam Adhesive: Hot-melt adhesive tape or similar product recommended by carpet manufacturer for sealing and taping seams and butting cut edges at backing to form secure seams and to prevent pile loss at seams.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance. Examine carpet for type, color, pattern to match existing and potential defects.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

1. Slab substrates are dry and free of curing compounds, sealers, hardeners, old adhesives and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet manufacturer.
2. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

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

3.2 PREPARATION

A. General: Comply with CRI 104, Section 7.3, "Site Conditions; Floor Preparation," and with carpet manufacturer's written installation instructions for preparing substrates.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch, unless more stringent requirements are required by manufacturer's written instructions.

C. Remove coatings other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet manufacturer.

D. Broom and vacuum clean substrates to be covered immediately before installing carpet.

3.3 INSTALLATION

A. Comply with CRI 104 and carpet manufacturer's written installation instructions for the following:

1. Verify the type of the existing installation and use same installation method.

B. Comply with carpet manufacturer's written recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile.

C. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.

D. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

E. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.

F. Install patterns, if required, to match the existing.

3.4 CLEANING AND PROTECTING

A. Perform the following operations immediately after installing carpet:

1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
2. Remove yarns that protrude from carpet surface.
3. Vacuum carpet in the entire room using commercial machine with face-beater element.

B. Protect installed carpet to comply with CRI 104, Section 16, "Protecting Indoor Installations."

C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods recommended in writing by carpet manufacturer.

END OF SECTION 096816

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 PROJECT REQUIREMENTS

A. The Contractor, along with design professionals, shall be responsible for visiting the site and verifying all the existing conditions and quantities in the field, at the locations where the new work is to be preformed.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:
   1. Gypsum board.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.4 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Benjamin Moore & Co.
   2. ICI Paints.
   3. Sherwin-Williams Company (The).

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with the existing paint systems.

B. Colors: To match the existing color.

2.3 PRIMERS/SEALERS

A. Primer Sealer, Latex, Interior

2.4 WATER-BASED PAINTS

A. Latex, Interior, Flat,

1. .Gloss to match existing

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Gypsum Board: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

B. Paint areas where new gypsum wall board has been installed. Where new gypsum wall board has been installed the entire wall shall be painted with 2 topcoats.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Gypsum Board Substrates:

1. Latex System:

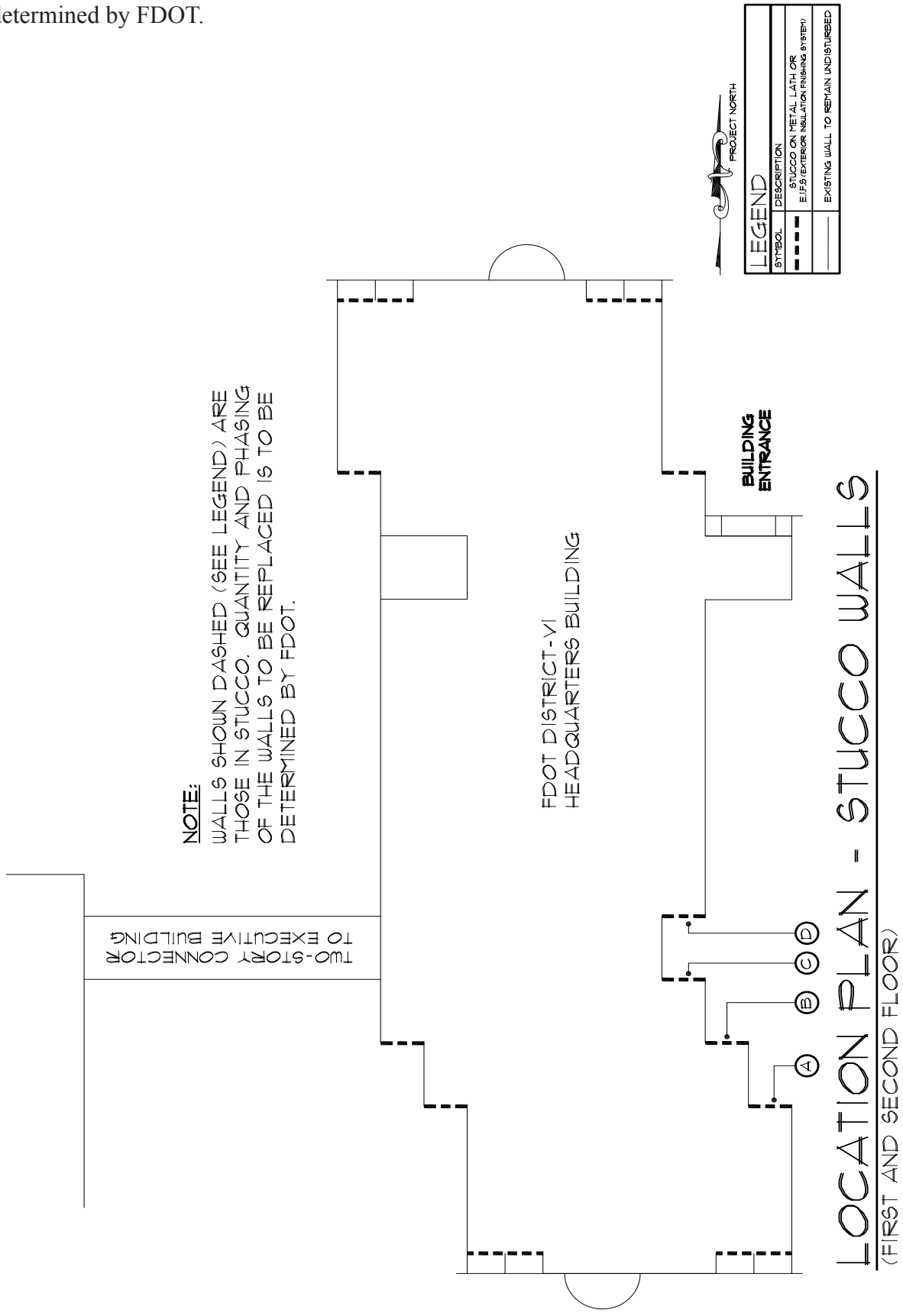
a. Prime Coat: 1 coat primer sealer, latex, interior.
b. Topcoat: 2 coats latex, interior.

END OF SECTION 099123

Schematic Bldg. Layout showing Stucco Walls Locations & Field Pictures as of 9/1/13 - 6

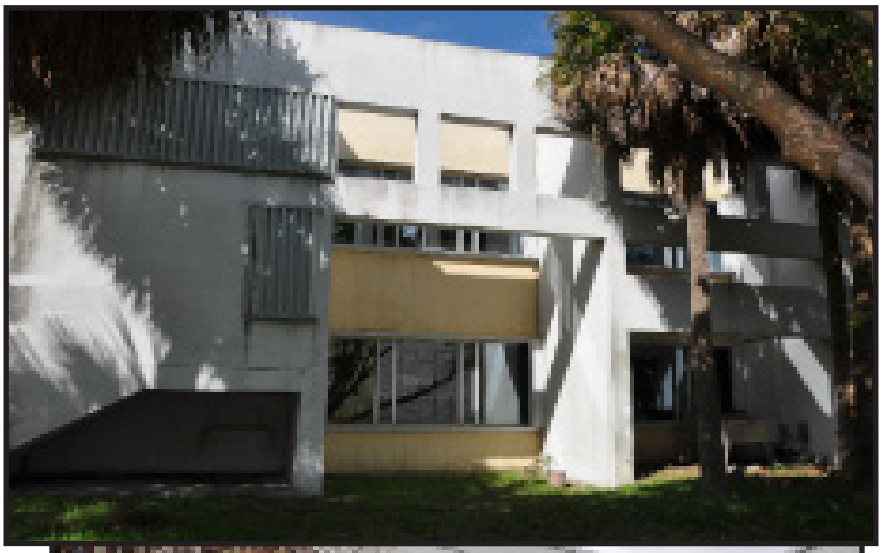
6. SCHEMATIC BUILDING LAYOUT SHOWING STUCCO WALL LOCATIONS & FIELD PICTURES AS OF SEPTEMBER 1, 2013

Note: Location Plan of Stucco Walls. Quantity and Phasing of the walls to be replaced is to be determined by FDOT.

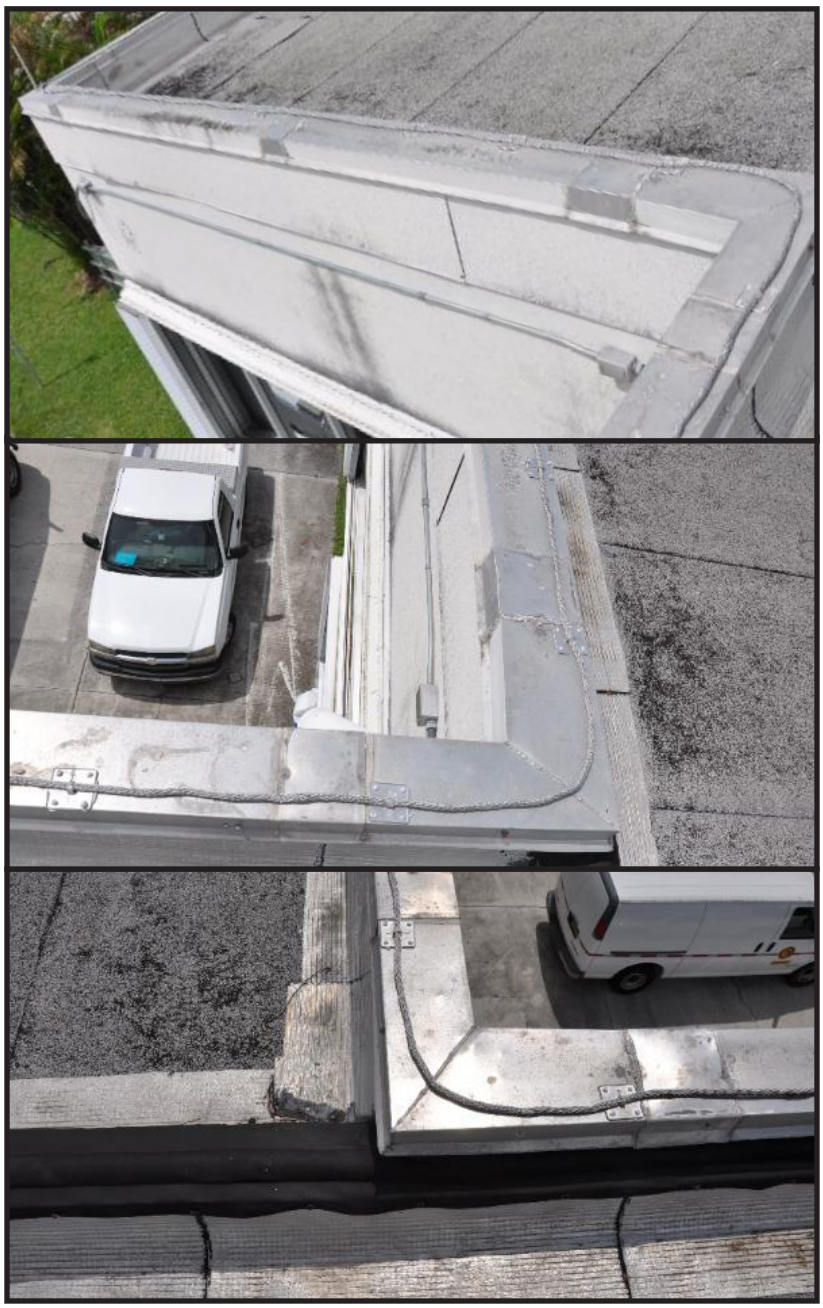


6. SCHEMATIC BUILDING LAYOUT SHOWING STUCCO WALL LOCATIONS & FIELD PICTURES AS OF SEPTEMBER 1, 2013

The following pictures are not identified to a particular location but are meant to show the general conditions of the existing walls to be replaced. **The contractors pursuing this project shall be responsible for visiting the site in order to familiarize themselves with the site and scope of work needed to provide new construction as indicated herein and in addition, estimate the quantities needed for the project.**



6. SCHEMATIC BUILDING LAYOUT SHOWING STUCCO WALL LOCATIONS & FIELD PICTURES AS OF SEPTEMBER 1, 2013



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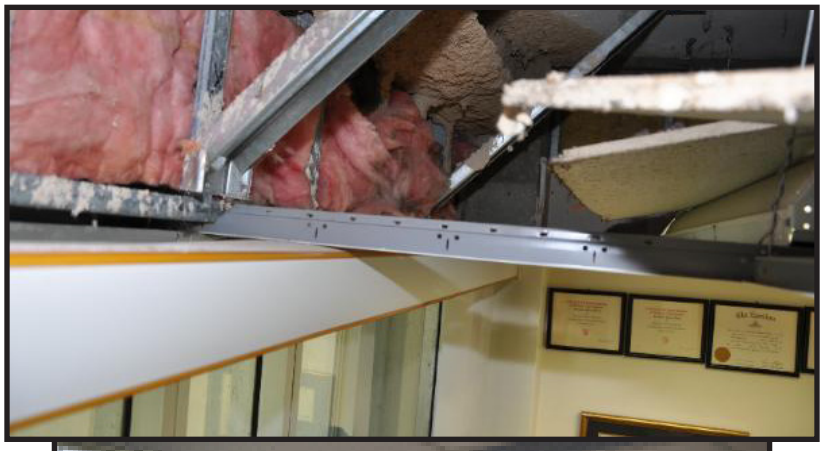
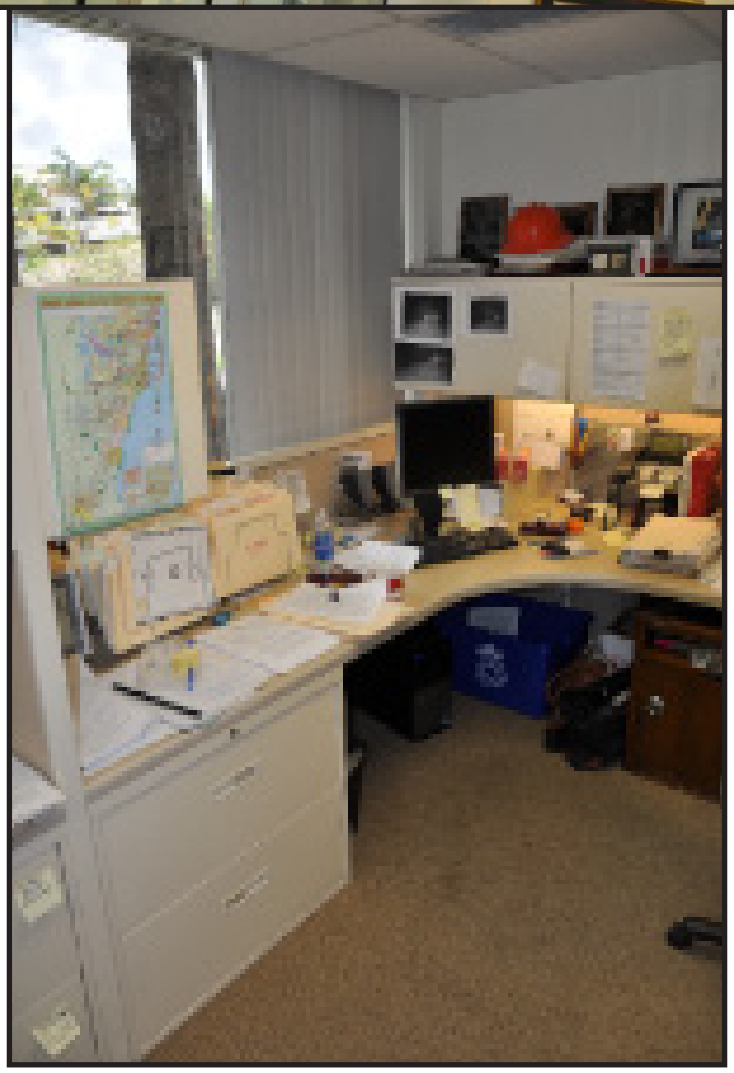
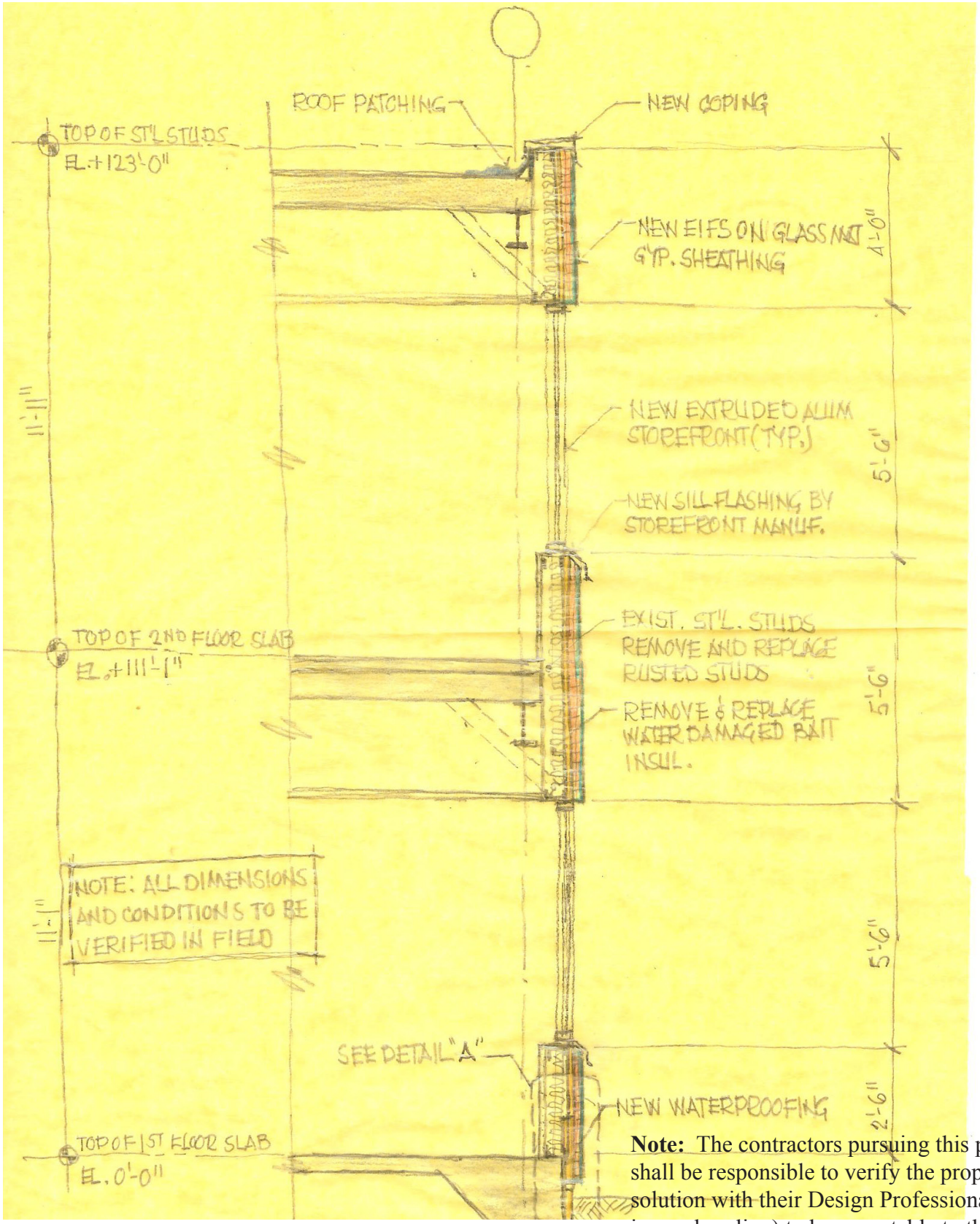
6. SCHEMATIC BUILDING LAYOUT SHOWING STUCCO WALL LOCATIONS & FIELD PICTURES AS OF SEPTEMBER 1, 2013





Schematic Wall Section & Detail - 7

7. SCHEMATIC WALL SECTION & DETAIL

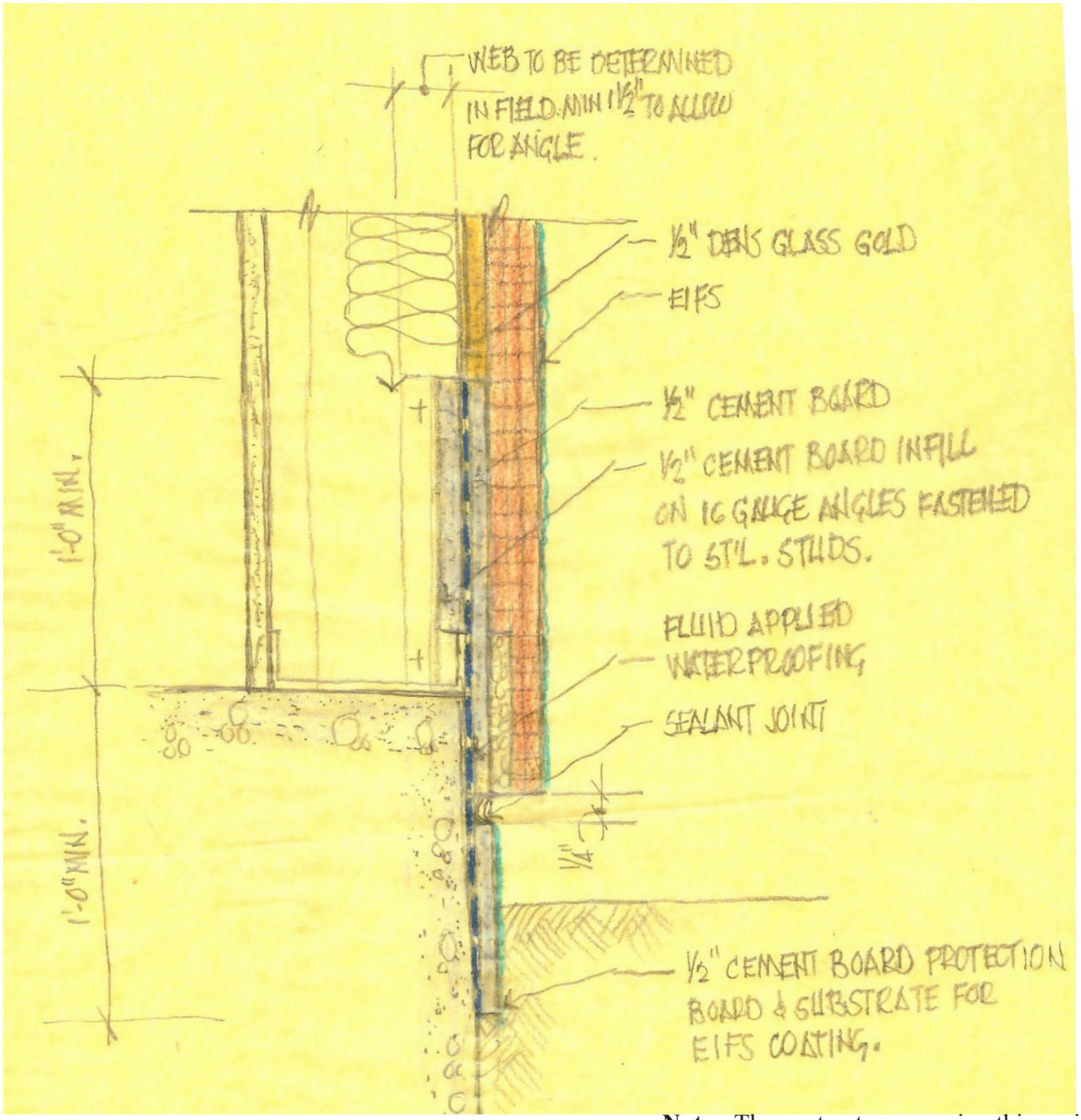


SCHEMATIC WALL SECTION

(Not to Scale)

Note: The contractors pursuing this project shall be responsible to verify the proposed solution with their Design Professional (signing and sealing) to be acceptable to them, as the submission of a bid will imply such verification and approval has taken place. No cost variation will be entertained (change order) after bid submission, if the design professional were to not find this solution acceptable.

7. SCHEMATIC WALL SECTION & DETAIL



Note: The contractors pursuing this project shall be responsible to verify the proposed solution with their Design Professional (signing and sealing) to be acceptable to them, as the submission of a bid will imply such verification and approval has taken place. No cost variation will entertained (change order) after bid submission, if the design professional were to not find this solution acceptable.

DETAIL "A"

(Not to Scale)

State of Florida
Department of Transportation

EXHIBIT "A", SCOPE OF WORK
District SIX- ADAM LEIGH CANN BUILDING ENVELOPE WATER PROOFING PROJECT