PROJECT MANUAL AND SPECIFICATIONS FOR MYSTIC POINTE TOWER 500 CONDOMINIUM ASSOCIATION INC.

FACADE RESTORATION AND PAINT PROJECT

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PROJECT:	**Facade Restoration and Paint**
CLIENT:	**Mystic Pointe Tower 500 Condominium Association Inc.**
LOCATION:	**3530 Mystic Pointe Drive, Aventura, FL 33180**
PROJECT MANAGER:	**Sinisa Kolar, PE Rita Kao, RA Manuel Gonzalez, Project Manager**
PREPARED BY:	**The Falcon Group Consulting Engineers 15405 NW 7th Avenue Miami, FL 33169**
DATE:	**Client Review:** **March 27, 2025** **For Bidding:** **April 3, 2025** **Pre-Bid Meeting:** **April 10, 2025 at 10:00 am** **Last day for RFIs:** **April 18, 2025** **Bid Due Date:** **April 25, 2025**

NOTE: THESE DOCUMENTS SHALL NOT BE USED WITHOUT THE DIRECT KNOWLEDGE OF FALCON ENGINEERING AND SHALL NOT BE DUPLICATED OR USED FOR ANY PROJECT OTHER THAN THE ABOVE REFERENCED PROJECT.

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SECTION 001000 - GENERAL REQUIREMENTS

1.1 PROJECT INFORMATION

Project Identification:	Facade Restoration and Paint Project at Mystic Pointe Tower 500 Condominium Association Inc.
Project Location:	3530 Mystic Pointe Drive, Aventura, FL 33180
Owner:	Mystic Pointe Tower 500 Condominium Association Inc.
Owner's Management Agent:	Mr. Michael Alvira, Property Manager
Owner's Management Representative:	Castle Group
Engineer:	The Falcon Group
Engineer's Representative:	Sinisa Kolar, P.E., The Falcon Group
Project Description:	The project consists of but is not limited to concrete restoration and stucco repairs, application of sealants and painting, replacement of expansion joints and any other work described in these set of specifications and set of plans for the exterior envelope, inclusive of the rooftop structures and balconies.

1.2 BID SUBMITTAL

All bidders shall **hand deliver one (1) hard copy** of the Bid Proposal Form in a double sealed envelope to the address listed below. Building's Representative will receive bids until the bid time and date at the location given below. Building's Representative will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

Bid Date: **Refer to the Cover Page**

Bid Time: **4:00 PM E.S.T**

Location: **Mystic Pointe Tower 500 Condominium Association Inc.**
3530 Mystic Pointe Drive, Aventura, FL 33180

Building's Representative **will not** accept bid proposals submitted after the due date and time. After the Association opens and records the received bids, an email request will be sent to all bidders to submit an electronic copy of their **Bid Proposal and the populated Excel file provided** via email to Manuel Gonzalez at MGonzalez@thefalcongroup.us and Rita Kao at Rkao@thefalcongroup.us within 24 hours. **Electronic documents should not be sent to Falcon until requested.**

Bids shall be marked **"Bid for Mystic Pointe Tower 500 Condominium Association Inc. – Facade Restoration and Paint".** Bids will not be publicly opened.

The OWNER reserves the right to reject any and all bids, to waive any and all informalities not involving price, time or change in the work and to negotiate contract terms with the successful BIDDER, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional bids. The OWNER also reserves the right to reject the Bid if not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the OWNER. Additionally, the OWNER reserves the right to break up the individual components of each submitted Bid. In evaluating the bids, the OWNER will consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and such alternatives, unit prices and other data.

Each Bid Proposal Form shall be complete. All requested information shall be completed in full. All units for pricing shall be in accordance with the Bid Proposal Form. The Owner will reject any bids not submitted on the Bid Proposal Form or bids submitted which have incomplete information on the Bid Proposal Form.

The Specifications and all relevant attachments including addenda, drawings, instructions to bidders, and the Bidders submitted Bid Proposal Form shall become part of the Contract to be executed by the successful Bidder.

1.3 MANDATORY PRE-BID MEETING

Pre-bid Meeting: Pre-bid meeting for all bidders will be held at the site (Refer to Cover Page)

Prospective bidders are required to attend. Bids submitted by non-attending bidders will not be considered. No make-up time will be granted to any bidders not attending the meeting.

1.4 EXAMINATION OF CONTRACT DOCUMENTS AND SITE CONDITIONS

A. Before submitting a Bid, each Bidder must:
   a) Examine the Contract Documents thoroughly,
   b) Visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work
   c) Familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work.
   d) Study and carefully correlate Bidder's observations with the Contract Documents.

B. Bidders are required to field inspect the work site and note any and all pre-existing conditions, field verify all required dimensions and inspect the Project Manual for accuracy and design integrity. Upon bid submittal, the Bidders must also submit, in writing, a summary detailing all Project Manual discrepancies, omissions or errors, pre-existing work site conditions and provide an appropriate cost alternative to correct the summary.

C. Upon request, Owner will provide each Bidder access to the site to conduct such investigations and tests, as each Bidder deems necessary for submission of his Bid. No bidder may enter the property without coordinating with the Engineer of Record, Sinisa Kolar from The Falcon Group, and the Property Manager.

D. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 1.4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

1.5 INTERPRETATIONS & RFIS

A. All questions about the meaning or intent of the Contract Documents shall be submitted to the Engineer of Record in writing. Replies will be issued by Addenda emailed to all parties recorded by Engineer of Record as having received the Bidding Documents. Questions received less than forty-eight (48) hours prior to the date for submittal of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

1.6 DOCUMENTS

Printed Procurement and Contracting Documents: Obtain by contacting The Falcon Group

The Falcon Group
15405 NW 7th Avenue
Miami, FL 33169

Documents will be provided to approved bidders only via email in electronic form; only complete sets of documents will be issued. Should prospective bidders require Engineer to issue hard copies it will be at an additional cost as listed below:

Cost for hard copy: $100.00

Shipping: Additional shipping charges will apply

Online Procurement and Contracting Documents: Obtain access by contacting The Falcon Group. Online access will be provided to selected bidders only.

1.7 TAXES, FEES AND PERMITS

The Bidder shall, pay all applicable taxes and fees, except those taxes, which apply to the real property comprising the site of the project.

The Bidder shall be responsible for paying and obtaining any required Building Permits for the work. In addition, it shall be the Bidder's responsibility to arrange for inspection by and comply with the requirements of the local municipal authorities. The permit cost will be reimbursed by the Owner. The Owner will reimburse the Bidder only for the real cost for the permit (receipt issued by the Authority issuing the permit is required for reimbursement). The Owner will not reimburse the bidder for use of “permit runners”, “permit expeditors” and similar, unless it was a direct request by the Owner.

1.8 TIME OF COMPLETION / PENALTIES

Successful bidder shall begin the Work within ten (10) workdays of receiving Notice to Proceed and issuance of work permit and shall complete the Work within the agreed upon Contract Time.

The project shall be complete and ready to use by the Owner in the number of consecutive calendar days indicated by the Contractor on the Bid Form and as agreed by the Owner. **Provisions for liquidated damages will be provided as part of the Contract Agreement.**

1.9 BIDDER'S QUALIFICATIONS

Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work.

Each bidder must submit a list of references of at least five (5) similar jobs completed in the past three (3) years. Bids submitted without the proper references will not be considered.

Bidders must be certified, and approved applicators/installers of materials/products manufactured by Sika. Bidders must provide backup documentation for such. Bidders that are not approved installers will not be considered in the bidding.

1.10 INSURANCE REQUIREMENTS

A. Bidders shall provide and maintain insurance as specified herein for the duration of the project:

1. Comprehensive General Liability, including Contractual Liability, of at least One Million ($1,000,000) dollars for Bodily Injury and Property Damage per occurrence and at least Two Million ($2,000,000) dollars aggregate.

2. Umbrella Insurance of at least Five Million ($5,000,000) dollars.

3. Automobile Insurance of at least five hundred thousand/one million ($500,000/$1,000,000) dollars for Bodily Injury and two hundred fifty thousand ($250,000) dollars for Property Damage, or comparable Single Limit coverage.

4. Workmen's Compensation insurance in an amount no less than the full statutory minimum required by the laws of the State of Florida.

B. Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These Certificates and the insurance policies required by this Section shall contain a provision that coverage afforded under the policies will not be concealed or allowed to expire until at least 30 days' prior written notice has been given to the Owner. These certificates shall set forth evidence of all coverage required by this section. The form of certificate shall be AIA Document G705. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending limits of coverage. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment.

C. Insurance required shall include all major divisions of coverage and shall be on a comprehensive general basis including Premises and Operations (including X C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

D. "Contractor's proposal excludes Builders Risk coverage." Contractor shall provide evidence of property insurance in the form of its standard Installation Floater Policy, which provides coverage for materials and equipment installed, stored or in transit. The contractor shall not be responsible for payment of any deductibles under any other coverage provided by Company or Owner, specifically but not limited to a Builder's Risk Policy.

E. Information concerning the reduction of coverage shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

F. The insurance coverage shall waive the carrier's rights to subrogation as to the Owner and shall provide that the insurance coverage will not be decreased, changed, or canceled prior to the Owner receiving ninety (90) days written notice. Failure to maintain insurance coverage as specified herein shall be considered a breach of this contract.

G. The following entities must be listed as additionally insured:
Owner – Mystic Pointe Tower 500 Condominium Association Inc.
Engineer – The Falcon Group
Building Management - (See Section 1.1 Project Information)
Owner's Representative TBD

1.11 PERFORMANCE AND PAYMENT BOND

A. The contractor may be required to furnish a Performance and Payment Bond as part of the requirements for this project. The Bidder to whom a contingent award is made shall duly execute and deliver to the Owner a performance and Payment Bond in an amount that represents 100% of the Total in the Bid Form, if required by the Owner. The completed form shall be delivered to the Owner within ten (10) calendar days after the Owner awarded contract. If the Bidder fails to deliver the Payment and Performance Bond within this specified time, including granted extensions, the Owner shall declare the Bidder in default of the contractual terms and conditions, and the bidder shall surrender its Bid Bond. In such a case, the Contractor's Bid Bond will be forfeited. **Provisions for the payment and performance bond will be provided as part of the Contract Agreement.**

1.12 CHANGES IN THE WORK

B. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be submitted in writing to engineer/owner no later than ten (10) working days (unless otherwise established in the executed Agreement) from event taking place. All changes if approved must be authorized by written Change Order signed by the Owner, Contractor, and engineer, or by written Construction Change Directive signed by the Owner and engineer.

C. The cost or credit to the Owner from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive, by the Contractor's cost of labor, material, equipment, and **reasonable overhead and profit OF FIFTEEN PERCENT (15%) maximum.**

D. Total cumulative maximum mark-up on subcontractor's cost and overhead & profit **OF FIFTEEN PERCENT (15%) maximum** of all changes in the work both Change Orders and Construction Change Directives.

E. The Engineer/Owner representative will have authority to order minor changes in the Work not involving adjustment to the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be affected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

F. If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted. adjusted as agreed upon, in writing, by Owner, Engineer, and Contractor.

G. **Contractor is obligated to honor and address any and all additional quantities found during the duration of the project.**

1.13 SPECIAL REQUIREMENTS

A. The building will be fully functional and occupied for the duration of the project.

B. The Contractor, Subcontractors and their employees shall not be permitted inside any of the Owner's buildings, unless directed by and in compliance with all applicable regulations of the Building Authority having jurisdiction and shall be prohibited from using any of the Owner's facilities such as swimming pool, card room, etc., and shall be confined to those immediate areas necessary to accomplish their work as designated by the Owner.

C. The Contractor shall coordinate with the owner for any telephone service to the site for their own use. The Contractor shall not use the existing telephone and fax of the Owner.

D. The Contractor will provide access to each of the work repair areas as may be reasonably necessary.

E. The Contractor shall keep existing driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and guests. **Overhead protection for these areas as needed to keep them in operation while performing the work shall be included as part of the general condition's fees for the project.**

F. The project schedule shall conform to all the Owner's requirements for the use of the existing facility with minimum interruption to normal operations, following the guidelines for phasing indicated in the applicable Contract Documents, and general standards for safe and efficient construction.

G. The vertical transport of equipment and workers will be allowed solely through one assigned Elevator. The Contractor will be responsible that the following requirements are met:
    1. The workload of elevator may not be exceeded.
    2. Prevention of any damage to the Service Elevator. The Elevator needs to be padded and walls protected by the contractor.
    3. Maintaining hygiene of the Service Elevator.
    4. If need of frequent use of the elevators is required, the Owner must be notified at least 48 hours in advance.

1.14 SPECIFICATIONS SECTIONS

1.14.1 DEFINITIONS:

- **Specifications** pertains to this document and shall include the Instructions to Bidders, the Bid Proposal Form, the General Requirements, the Special Conditions, the Technical Specifications, and attached Drawings, the manufacturers' specifications, and all references.
- **Contract Agreement** shall include the Specifications, Qualification Statement, List of Subcontractors, and signed Agreement.
- **Property** shall refer to the land, roadways, buildings and all else, which comprise Mystic Pointe Tower 500 Condominium Association Inc.
- **Engineer (or EOR)** shall mean Falcon Engineering, or The Falcon Group, or any other person acting on behalf of the Falcon.
- **Owner** shall refer to Mystic Pointe Tower 500 Condominium Association Inc. or the entity that the Association may elect to be represented by.
- **Contractor** shall mean the Bidder, the General Contractor, his subcontractors, and any person acting on behalf of the Contractor or subcontractor.
- **Final Completion** shall mean the point of which all requirements, conditions, and all else contained within these Specifications have been achieved in full, and the Contractor has issued all warrantees, in writing.
- **Day** shall be defined as a calendar day.
- **Workday** shall be defined as a day between Monday and Friday, excluding weekends and holidays
- **Holidays** shall be defined as days that are considered non-working based of Federal Government Holiday Schedule, or otherwise defined by the Owner.

END OF SECTION 001000

SECTION 001110 - SUMMARY OF WORK

The following scope of work is pertaining to the **Facade Restoration and Paint Project at Mystic Pointe Tower 500 Condominium Association Inc.** inclusive of:

1. Painting the exterior envelope of the building, inclusive of the rooftop structures
2. Concrete repairs at the exterior façade of the building – stucco, concrete, and masonry, inclusive of rooftop structures.
3. Painting the balcony sliding glass doors and windows.
4. Painting of the windows and doors frames.
5. Replacement of waterproofing at residential balconies, as needed.
6. Replacement of sealants (stucco to metal) at the sliding glass doors and windows.
7. Replacement of sealants (metal to metal) at the sliding glass doors and windows, as needed.
8. Replacement of sealants (glass to metal) at the sliding glass doors and windows, as needed.
9. Replacement of expansion joint between the garage and building.
10. Remove and reinstall/replace existing hurricane shutters, as needed.
11. Replacement of scuppers at balcony, as needed.
12. Replacement of skylight and roof system at entrance porte cochere.

Exclusions:

1. Painting the interior of the Garage
2. Installation of tiles in individual units and in balconies
3. Tests or destructive investigation unless required as part of contractor procedures.
4. Interior of any spaces unless otherwise noted.
5. Roofing membrane repairs/replacement.

Project clarifications for the Contractor and the Association

Please be advised that (unless otherwise noted in this document):

1. Installation of tiles on individual units or balconies is NOT included in the scope of work.
2. If shutters are to be removed, they will have to be stored in a location mutually agreed between the parties - owner and the contractor.
3. If shutters are to be removed from the balconies with tiles, and the tiles are to be removed and not reinstalled, the shutters will have to be replaced with new shutters according to the new existing conditions (difference in height).
4. If shutters are to be removed, and no records are available of the manufacturer/installation requirements of such shutters, the reinstallation of shutters will not be under any warranty, nor will their performance be guaranteed. Please note that the Authority Having Jurisdiction (building department) may not allow re-installation of such shutters.
5. Stucco patches on the building exterior (walls, columns, beams, ceilings, slab edges…), may be noticeable and different from the surrounding stucco. This is a consequence of stucco application or isolated repairs of stucco. Complete blending-in of stucco repairs is not guaranteed.

The following work should be performed in accordance with these specifications, permitted set of plans, instructions provided by the Engineer of Record, applicable Florida Building Code, requirements by the Authority Having Jurisdiction, Manufacturer's specifications and any other applicable document not specifically listed here.

a. The Work shall consist of furnishing all materials, labor, disposal, tools, equipment and supplies, and all related work and costs associated and required to complete projects as described on the

plans and these specifications. The Contractor shall pay for all labor, material, equipment, disposal, tools, and anything necessary and used in or for the work performed by the Contractor in connection with this Contract. Failure to comply with this paragraph shall be deemed a breach of the Contract, for which Owner may terminate this Contract and exercise any other methods available to the Owner.

b. The contractor shall exercise utmost caution in working on the property and protecting both the property and its occupants. Any damages to (inclusive but not limited to) property, areas adjacent to work, systems in place but part of the scope, etc. caused by contractor's work, negligence or any other action shall be the sole responsibility of the contractor and shall be corrected at the sole expense to the contractor to its pre-damage condition to the satisfaction of the Owner and/or the Engineer.

c. The following is a detailed breakdown of work for Mystic Pointe Tower 500 Condominium Association Inc.

Mystic Pointe Tower 500 Condominium Association Inc.
FACADE RESTORATION AND PAINT PROJECT

GENERAL TERMS: Below conditions will define all information, requirements and inclusions for the work and costs.

SECTION G: GENERAL CONDITIONS

1. **Mobilization / Start-up (LS):** The contractor is entitled to invoice for this one-time fee to equip the project and start the work. This item is inclusive of staging, protection, preparatory work, and operations for mobilizing prior to beginning the scope of work. This process is inclusive, but not limited to:

   A. Project Staffing, equipment, supplies and incidentals to the project site. It shall also include installation by the Contractor of staging areas, temporary offices, sanitary facilities, waste disposal facilities, all utilities, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and State and local laws and regulations.
   B. Placement of the site protection at all areas likely to be affected by the work at the beginning of the project, including but not limited to, all roofs, walls, balconies, windows, sliding doors, fixed windows, railings, pedestrian walkways, common stairwells, hallways, planters, trees, landscaping/shrubs/lawns (within 20 feet from building around perimeter), gates, fences, pool, jacuzzi, pool deck, parking deck, light poles, pavers, tiles, flooring finishes, etc. All areas shall be restored to their pre-project condition by the Contractor upon completion of the work. **Portable planters and furniture to be relocated by Building Maintenance.**
   C. All necessary steps to protect workers, tenants, pedestrians, and others from injury, include erecting all necessary protective enclosures, barriers, and warning signs. Contractor's ladders, scaffolds, other equipment, and construction methods shall be in accordance with OSHA and local building code requirements. Contractor shall always install and maintain OSHA approved perimeter security and safety.
   D. Note that the building will be fully occupied during the restoration project and additional overhead protection may be needed to provide adequate means of egress from the emergency exits in the areas of work.
   E. Contractor to provide a Site Plan sketch depicting the overhead protection location around the building. Describe all equipment required for full protection of property and residents.
   F. Contractor to provide a Drop Schedule depicting location of all equipment required to perform the work. Describe the type of equipment to be used for the project.
   G. The contractor is required to furnish certified drawings, signed, and sealed by a third-party engineer, ensuring the suitability of suspended scaffolding and overhead protection systems. This certification should cover weight limitations and the appropriateness of anchoring to structural elements for the intended use. The contractor is also responsible for managing all logistical aspects related to the certification process. Additionally, any costs associated with the required destructive investigation of structural elements and the verification of site conditions are the contractor's responsibility.

2. **General Conditions (LS):** No additional general conditions will be allowed nor approved based on the increase in quantities or any delays caused by the contractor.

   A. Includes but is not limited to administrative costs associated with preparation of required submittals, mock-ups, product samples, inspection reports, project schedules, pre-construction survey, progress payment applications, and record documents.
   B. Includes costs associated with required field quality control testing and reports of same to be performed by the Contractor.

C. Includes general costs to administer the work in accordance with all referenced standards, the project specifications, OSHA requirements, and local, state, and federal regulations.
D. Includes all costs associated with supervision, quality control, safety plan requirements, preparation and maintenance of the project, and hurricane preparedness.
E. Includes all costs associated with required meetings and project coordination with the Authority, Engineer, and Owner.
F. Includes all costs associated with acquiring and maintaining all necessary tools, equipment, temporary offices, sanitary facilities, waste disposal facilities, rented machinery, supervision, and anything else required for the performance of the work.
G. Includes all costs associated with the certification and relocation of overhead protections and suspended scaffolding systems for the duration of the project. **As required and where applicable.**
H. Includes all Engineering inspections. The contractor shall account for a minimum of four (4) full inspections of each drop of vertical work. It is inclusive of use of the equipment, and manpower to operate equipment, along with miscellaneous items (spray paint, hammers, blue tape, etc.). **As required and where applicable.**
I. Includes all necessary steps to prevent dust and debris from entering windows and doors, air-conditioner louvers, roof, and terrace drains and HVAC equipment. The contractor shall adequately protect all areas being repaired from damage due to rain, or other weather conditions. While work is in progress, every effort shall be made to reduce the adverse effect of dust from demolition work, cutting of mortar joints or other construction operations. When using concrete saws or grinders, they must be fitted with vacuum devices to collect the resulting dust and must comply with all containment and protections required by OSHA. At least five working days' notice shall be given to Owner's representatives so that tenants can be notified to close windows, remove personal belongings, etc., before construction work starts in each affected area.
Note: General conditions will be paid as a percentage of completion throughout the duration of the project.

3. **Clean-up and Demobilization (LS):** The contractor is entitled to invoice for this one-time fee after the Close-Out process has been completed. This process is inclusive, but not limited to:

A. Complete clean-up of the jobsite and any areas affected by the work. The Contractor shall completely demobilize and remove from the project site all equipment, vehicles, materials, offices, protection, sanitary facilities, waste disposal facilities and waste etc.
B. Other items to complete will be Close of permit, Final Release of Liens from all vendors involved in the project, and warranties. Warranties to include Contractor's work, Sub-contractor's work, and manufacturers.
C. Demobilization will be completed once a final walkthrough is completed with the Engineer of Record, Building Management, and Association representation.

4. **Additional General Conditions** - **Allowances:** The contractor acknowledges that all work provided in the bid form is covered by the general conditions listed herein.

These additional general conditions will be used only for the unit price items and only for the amounts that collectively exceed the total monetary value of ALL Unit price base bid items with additional allowance (as specified under item 4a). ***Provision is applicable only for work in critical path and after original contract time/schedule has been exceeded, inclusive of weather delays. Provision is not applicable to changes in the work that do not impact on the total duration of the project.***

Any additional unit price work not specified under this contract that is added to the scope after the contract is executed will follow the same rules, and the provisions of section 5 shall apply.

The contractor acknowledges that the cost of additional lump sum work not covered by these specifications that may be added during the course of the project will be inclusive of any additional general conditions.

Please note that it is the Contractor's responsibility to verify the conditions of the area of work and bring any concerns, discrepancies or inconsistencies with specifications to the Engineer's attention prior to providing the bid. Any issues discovered after bids have been provided and contract awarded, that could have been discovered through reasonable verification, will be the responsibility of the contractor, and all actions necessary to bring the area of work to a satisfactory condition prior to execution will be at the sole cost of the contractor. It will be at the Association's discretion to allow additional time for this work.

SECTION A: BASE BID – LUMP SUM

For Lump Sum items, please provide cost per unit based on the units in the parenthesis for each item for bid comparison purposes. The Contractor acknowledges that all items in this section (Section A) are Lump Sum and **NOT subject** to increase or decrease based on the estimated vs actual quantities.

1. **Paint Exterior Elevations of Building (SF)** – The acceptable manufacturer is **Sherwin Williams.**

   A. This work includes surface preparation and painting of all previously painted concrete, masonry, and stucco surfaces of the building exterior envelope and any other elements specified by the Engineer and attached to the building. Work is to be performed in strict accordance with the manufacturer's attached specifications, recommendations, and these specifications. Areas to be painted include but are not limited to:

      a) Building's exterior walls, beams, columns, & shear walls
      b) All rooftop structures and parapet walls, inclusive of cooling tower concrete supports.
      c) Balcony ceilings, walls, slab edges, and knee walls.
      d) All previously painted metals: louvers, utility doors, vents, etc.

      Exclusions: Painting of windows and doors, roof equipment, the interior of the garage, balcony railings, except as noted in the above scope of work or otherwise requested.

      Notes: Application of paint over caulking, if applicable and allowed by manufacturer is included.

   B. This item shall include the routing and sealing of minor cracks (less than 1/8") and small openings (up to 1/4") with elastomeric patching compound in strict accordance with the paint manufacturer's specifications and as indicated by the engineer. As part of this item, the contractor is also required to have a manufacturer's representative inspect the work in progress to help ensure proper preparation and application of all products/materials. The paint manufacturer and the colors of the paint in all areas are to be approved by the condominium association. The contractor shall provide a rendering and not more than 5 paint samples, if the association desires one for their building.

   C. This work will be in strict accordance with these specifications and the manufacturer's specifications and recommendations. The paint application will include, at minimum, the following:

   a) Cleaning and pressure washing the areas to be painted. All roof cleanup and washing (that is part of this project) that may affect the exterior work needs to be completed prior to commencement of the painting portion of the work.
   b) Prior to commencing pressure washing/cleaning operations of the building, the contractor is responsible for installing a containment netting to prevent and minimize debris throughout the project.
   c) Application of primer to all areas to be painted. The number of coats of primer is contingent upon the condition of the substrate and shall be in strict accordance with manufacturer's specifications. In no event less than one coat will be applied. Under no circumstances will there be more than **72 hours** between pressure washing and application of primer without written approval from the manufacturer.
   d) Application of paint as necessary to achieve required mileage, sheen, or texture in accordance with manufacturer's recommendations. Under no circumstances will there be more than **72 hours** between primer application and paint application without written approval from the manufacturer.

2. **Caulking of Windows, Doors & Envelope Penetrations (LF)** – This includes removing all existing stucco/concrete-to metal secondary sealant ("beauty bead") at the perimeter of all envelope penetrations and replacement with new sealant **Sika Hyflex 150LM** (Hybrid sealant, can be painted over) or similar approved in writing by the engineer. Sealant to be replaced around the entire perimeter of the metal frame of the windows, sliding glass doors **(excluding the sealant on the bottom)**, utility doors, vents, louvers, and all building envelope penetrations not specified herein but are part of the

building exterior. Replacement to include removal and disposal of all existing sealant, proper surface preparation of all areas receiving sealant, and installation of new sealant/caulking in accordance with manufacturer's specifications and recommendations and or as indicated by Engineer No additional compensation will be approved to the contractor for the increase of material quantities for sealant/caulking work.

3. **Removal of Skylight System at Porte Cochere (LS) -** This work includes removal and disposal of existing Skylight system and accessory components at the Porte cochere.

4. **Installation of New Skylight System at Porte Cochere (LS)** – This work includes installation of new skylight system per NOA #24-0729.05 at the Porte cochere. Cost includes the specific calculations, preparation of signed and sealed shop drawings for Falcon's approval, procurement, and installation of new skylight per manufacturer's recommendations. Upon completion a 20-year labor and material No Dollar Limit (NDL) warranty will be issued for the new roofing system and all accessory components supplied by manufacturer and installed by the contractor.

5. **Demolition and Discard of Existing Roofing System at Porte Cochere (LS) -** This work includes removal and disposal of existing roofing materials and accessory components on the Porte cochere.

6. **Installation of New Roofing System at Porte Cochere (LS)** – This work includes installation of new Soprema roofing system per NOA #21-0511.05 (page 87) on the Porte cochere. Installation of flashing, counterflashing, sealing and protect stand-pipe penetrations and vents. The new roofing system will be **cold liquid-applied reinforced waterproofing membrane directly to concrete deck (NOA #21-0511.05 (page 87) – Alsan RS 260 LO Flash over Alsan RS 276 Primer.** Upon completion a 20-year No Dollar Limit (NDL) warranty will be issued for the new roofing system and all accessory components supplied by Soprema and installed by the contractor.

7. **Replacement of Vertical Expansion Joint (LF)** – This work includes removal and replacement, of the existing vertical expansion joint at the building elevation, as needed, preparation of substrate, and installation of new expansion joint system, in accordance with the manufacturer's recommendations and specifications to satisfactory complete work. It is the contractor's responsibility to protect all work areas against water intrusion during the repairs. This work shall at minimum include the following:

   A. Removal of existing expansion joint materials including but not limited to backer rod and or any other material needed to be removed for proper installation of new expansion joint. Removal shall be performed in a manner that minimizes damage to adjacent concrete. Disposal of the expansion joint materials and finishes removed is to also be included in this item.

   B. Nosing repairs - As needed or as directed by Engineer. Refer to the Allowances Section for additional information. If required, nosing repairs will be billed as part of the Allowances line item.

   C. The contractor shall clean the joint opening of all contaminants immediately prior to installation of the new expansion joint. Both sides must be smooth, clean, dry, sound, and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles.

   D. Install expansion joint system **Seismic Colorseal** at existing vertical expansion joint location of the building elevation as specified and in strict conformance with manufacturer's recommendations, specifications, and details. The contractor will be responsible for requesting inspections with the manufacturer's representative to ensure material is being installed adequately at no additional cost to the Owner. The cost of flood testing is included.

8. **Replacement of Horizontal Expansion Joint (LF) –** This work includes removal, disposal, and installation of the new horizontal expansion joint system up to 2/1/2" wide on the structural level and the CMU wall area, as needed, in accordance with the manufacturer's recommendations, details, and specifications to satisfactory complete work. Removal of existing expansion joint materials including but not limited to backer rod and or any other material needed to be removed for proper installation of new expansion joint. Removal shall be performed in a manner that minimizes damage to adjacent concrete. The cost for this item should also include the removal, disposal, and installation of a minimum of 8" of stucco above to the finish floor at the wall base of vertical surfaces, where applicable. Preparation of substrate, and installation of new expansion joint with **EMSEAL DSM per** manufacturer's recommendations. It is contractor's responsibility to protect all work areas against water intrusion during the repairs. The contractor shall clean the joint opening of all contaminants by sandblasting or grinding and epoxy adhesive shall be applied to the structural surface immediately prior to installation of new expansion joint as pre manufacturer specifications. Both sides must be smooth, clean, dry, sound, and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles. The contractor will be responsible for requesting inspections with the manufacturer's representative to ensure material is being installed adequately at no additional cost to the Owner.

SECTION B: BASE BID – ALLOWANCES (BUILDING FAÇADE AND ROOFTOP STRUCTURES)

1. **Stucco Cracks (LF)** – This work involves repairing all sound, non-hollow cracks in stucco more than 1/8" wide. Cracks shall be routed (V-grove) and sealed with appropriate sealant a minimum of 1/4" in depth along the entire length of the crack. The filled crack should also be overcoated using an approved elastomeric patching compound, crowned in the center approximately 1/16" and feathered approximately 3" on either side of the crack in such a manner to match the surrounding surfaces as closely as possible. Painting to be included as part of the painting line item.

2. **Stucco Delamination - standard stucco thickness (up to 3/4" thick) (SF)** – This work includes removal of stucco, within the boundaries of engineer's marking (markings to remain visible for Engineer's inspection), preparation of substrate, and application of new stucco following ASTM standards and manufacturer's recommendations. All areas where concrete meets masonry will receive mesh or a control joint/transition joint with appropriate sealant (inclusive of bond breaker tape, primer etc.) to bridge the cracks as required by the Engineer and at the locations determine by the Engineer at no additional cost. All plastic accessories to be included in this work. Stucco patching to be performed in such a manner to match surrounding areas. Painting to match surrounding areas to be included as part of this work. Cost of painting to be billed under the painting line item. It is the contractor's responsibility to provide all material at no additional cost for stucco work to match the transition between new and old stucco. PVC (Plastic) Lath meeting ASTM C 1764 and C 1786 is required for stucco thickness greater than 5/8". Lathing shall be connected to the surface with stainless steel fasteners as per manufacturers recommendations. Fasteners shall engage lath and have minimum 50 pound pull out value. Attach lath along grout joints for un-grouted masonry. Spacing should be approximately 1 fastener per square foot. Lathing shall be erected so that the finished plaster surfaces are true to line (allowable tolerance of 1⁄4" in 10 ft), level, plumb, square, or curved as required to receive the specified plaster thickness. Laps shall occur at horizontal and vertical joints. The side laps of lath shall be secured to surface. Lath shall be lapped 1/2" at the sides, 1 inch at ends. Lathing shall be self-furring or furred out from solid bases and comply with ASTM C 1063, Table 3.

3. **Excessive Stucco Delamination - stucco thickness in excess of 3/4" (SF)** – This work includes removal of stucco within the boundaries of engineer's marking (markings to remain visible for Engineer's inspection), preparation of substrate, and application of new stucco following ASTM standards and manufacturer's recommendations for stucco thickness greater than standard. Installation of Gel Patch material (or similar) and/or plastic lath is included. All areas where concrete meets masonry will receive mesh or a control joint/transition joint with appropriate sealant (inclusive of bond breaker tape, primer etc.) to bridge the crack as required by the Engineer and at the locations determine by the Engineer at no additional cost. All plastic accessories to be included in this work. Stucco patching to be performed in such a manner to match surrounding areas. Painting to match surrounding areas to be included as part of this work. Cost of painting to be billed under the painting line item. It is the contractor's responsibility to provide all material at no additional cost for stucco work to match the transition between new and old stucco. PVC (Plastic) Lath meeting ASTM C 1764 and C 1786 is required for stucco thickness greater than 5/8". Lathing shall be connected to the surface with stainless steel fasteners as per manufacturers recommendations. Fasteners shall engage lath and have minimum 50 pound pull out value. Attach lath along grout joints for un-grouted masonry. Spacing should be approximately 1 fastener per square foot. Lathing shall be erected so that the finished plaster surfaces are true to line (allowable tolerance of 1⁄4" in 10 ft), level, plumb, square, or curved as required to receive the specified plaster thickness. Laps shall occur at horizontal and vertical joints. The side laps of lath shall be secured to surface. Lath shall be lapped ½" at the sides, 1 inch at ends. Lathing shall be self-furring or furred out from solid bases and comply with ASTM C1063, Table 3.

   a) Thickness from 3/4" to 1-1/2"
   b) Thickness from 1-1/2" to 2-1/2"
   c) Thickness from 2-1/2" to 3-1/2"

d) Thickness from 3-1/2" to 4-1/2"

4. **Structural Concrete Cracks (LF)** – This includes pressurized injection of structural concrete cracks as directed by the engineer, and in accordance with industry standard and manufacturer's recommendations. All injection ports will be patched, and areas finished to match the surroundings.
5. **Concrete Column Repair (CF)** – This includes removal of stucco, if present, and concrete, within the boundaries of engineer's markings (markings to remain visible for Engineer's inspection), until sound concrete is reached, but in no case more than 6" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, concrete placement, and stucco patching, as applicable, to match surrounding surfaces and as directed by the engineer. Shoring, if necessary, for these repairs, is not included in the cost. Painting to be included as part of the painting line item.
6. **Concrete Beam Repair (CF)** – This includes removal of stucco, if present, and concrete, within the boundaries of engineer's markings (markings to remain visible for Engineer's inspection), until sound concrete is reached, but in no case more than 6" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, concrete placement, and stucco patching, as applicable, to match surrounding surfaces and as directed by the engineer. Shoring, if necessary, for these repairs, is not included in the cost. Painting to be included as part of the painting line item.
7. **Embedded Metal Repair for Rust Spot (EA)** – This includes superficial removal of stucco/concrete, as required, and removal of superficially embedded metal elements (wire, nail, anchor, etc.), and patching and stuccoing, if applicable, the area to match surrounding. Painting to be included as part of the painting line item.
8. **Rebar Tip Repair for Rust Spots (EA)** – This includes exposing the rebar tip, removal or cutting of the rebar tip to at least 1" deep below concrete surface, apply rust inhibiting coating to new rust-free end of the rebar, and patching and stuccoing the area, as applicable. Painting to be included as part of the painting line item.
9. **Wall Repairs (CMU) (SF)** – Work consists of repairing all compromised CMU blocks in selected areas determined by the Engineer. The removal of CMU and stucco, if present, must be within the boundaries of Engineer markings (markings to remain visible for Engineer's inspection). CMU replacement to be inclusive of cell grouting and reinforcement. CMU blocks replacement and stucco patching, as applicable, to match existing finishes. Painting to be included as part of the painting line item.
10. **Window Header/Sill Repairs (LF)** – Work consists of repairing all spalled, cracked, delaminated concrete and stucco as determined by the engineer. The removal of stucco and concrete must be within the boundaries of engineer's markings (markings to remain visible for Engineer's inspection), until sound concrete is reached, but in no case more than 4" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, plastic corner bead (if necessary), new concrete and stucco patching to match existing surrounding areas. Caulking and painting to be included as part of the caulking and painting line items.
11. **Concrete Overhead Repairs (SF)** – This includes removal of concrete within engineer's markings (markings to remain visible for Engineer's inspection), until sound concrete is reached, but in no case more than 4" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, concrete patching and stuccoing as directed by the engineer. Painting to be included as part of the painting line item.
12. **Concrete Through Slab Small Repairs (Full Depth up to 12 SF) (SF)** – This includes removal of concrete within engineer's markings (markings to remain visible for Engineer's inspection) through the entire depth of the concrete slab **(assume 8" thick slab for bidding purposes)**, rehabilitation and/or replacement of reinforcement, formwork and support post shores, application of appropriate

bonding/anticorrosive materials, concrete placement and stuccoing as directed by the engineer. Post shores shall be installed on a single floor below the repaired area and spaced at 2 feet on center on each direction. Area covered by the post shores shall be at least one (1) foot larger than area to be repaired. This work also includes removal of all flooring present, if any (waterproofing, etc.). Re-installation of flooring is not included in the cost of repairs. Ground penetrating radar (GPR) is not included in the cost and will be billed as a separate line item. Painting and waterproofing to be included as part of the painting and waterproofing line items.

13. **Concrete Through Slab Large Repairs (Full Depth greater than 12 SF) (SF)** – This includes removal of concrete within engineer's markings (markings to remain visible for Engineer's inspection) through the entire depth of the concrete slab **(assume 8" thick slab for bidding purposes)**, rehabilitation and/or replacement of reinforcement, formwork and support post shores, application of appropriate bonding/anticorrosive materials, and concrete placement as directed by the engineer. Post shores shall be installed on two (2) floors below the repaired area and spaced at 2 feet on center on each direction. Area covered by the post shores shall be at least one (1) foot larger than area to be repaired. This work also includes removal of all flooring present, if any (waterproofing, etc.). Re-installation of flooring is not included in the cost of repairs. Ground penetrating radar (GPR), if required, is not included in the cost, and will be billed as a separate line item. Painting and waterproofing to be included as part of the painting and waterproofing line items.
14. **Concrete Repairs from the Top (Partial Repairs) (SF)** – This includes removal of flooring, if any (waterproofing, topping etc.) and concrete within engineer's markings, until sound concrete is reached, but in no case more than 4" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, and concrete patching as directed by the engineer. Re-installation of flooring is not included in the cost of repairs. Waterproofing to be included as part of the waterproofing line item.
15. **Vertical Concrete Repairs (Partial Repairs) (SF)** – This includes removal of concrete within engineer's markings, until sound concrete is reached, but in no case more than 4" deep without engineer's approval, rehabilitation and/or replacement of reinforcement, formwork, application of appropriate bonding/anticorrosive materials, and concrete patching as directed by the engineer. Painting to be included as part of the painting line item.
16. **Concrete Slab Edge Repairs (LF)** – This includes removal of stucco and concrete within engineer's markings, through the entire depth of the concrete slab edge, rehabilitation of reinforcement and/or replacement of rebar, formwork, application of appropriate bonding/anticorrosive materials, concrete patching and stuccoing as directed by the engineer. Shoring, if necessary, for these repairs, is not included in the cost. The depth of repairs will not exceed 6" or the line of Post Tension (PT) Anchors (if present) whatever is less. Under no circumstances will chipping occur behind the line of PT anchors without Engineer's written approval. Painting to be included as part of the painting line item.
17. **Flash Patching (SF)** – This includes building up the slabs as needed for positive slope to drainage as directed by the engineer up to a 2" depth. The surface preparation and installation of the patching material is to be conducted in accordance with the manufacturer's recommendations and specifications (This work does not include removal of any finishes, waterproofing or installation of the same. Concrete repairs are not included. Flood testing is required to determine low spot areas prior to flash patching. Water test T&M is to be included as part of the cost for this item. For sloping use Sloping/Overlay/Horizontal Repair Mortar (1/4" to 2") **SikaQuick 1000**, or approved equals. Must be keyed in per ICRI guidelines.
18. **Removal and disposal of balcony floor finishes (SF)** – This includes, as needed determined by the engineer, removal, and disposal of existing floor finishes (inclusive of tile, mortar, thin set, artificial grass, waterproofing). Removal of flooring is required down to structural slab for inspection. Surface preparation and installation of new waterproofing system and installation of new tiles are excluded from the scope of this line item.
19. **Balcony Waterproofing (SF)** – Balconies shall be waterproofed, as determined by the engineer, with

Sikalastic 710/735/735 AL Traffic System in accordance with manufacturer's specifications, details, recommendations, these specifications and as directed by the engineer. The lumps sum cost for this item should also include the removal, disposal, and installation of a minimum of 8" of stucco at the wall base of vertical surfaces. The surface preparation of the structural slab (exclusive of concrete restoration) at the minimum shall include routing and sealing of all floor cracks, creating surface profile necessary for waterproofing installation, and installation of waterproofing membrane a minimum of 8" up the vertical walls. All this work shall be complete as part of the surface preparation required for the installation of the waterproofing system at no additional cost to the Owner. No additional compensation will be allowed nor approved for the stucco quantities related to the waterproofing as this is to be included in the lump sum cost. The cost of flood testing is included. The installation of new flooring is not acceptable for this waterproofing assembly.

Removal and disposal of balcony floor finishes - As needed or as directed by Engineer. Refer to Allowances Section for additional information on application.
Flash Patching – As needed or as directed by the Engineer. Refer to Allowances Section for additional information on application.

20. **Seal Around Railing Post Pockets (EA)** – This includes removal and disposal of the existing sealants around railings at the post pocket, cleaning, and preparing surface, and sealing with an approved material. Apply new sealant **Sikaflex 2C NS or approved equal** to completely cover/seal any openings, gaps, or voids between joining aluminum posts. Waterproofing to be included as part of the waterproofing line items.
21. **Railing Post Pockets Grout Repair (EA)** – This includes removal of flooring, if existing, and removal of existing post pocket grout, regardless of size and re-grouting with **Sikagrout 110 AN** or approved equal in a conical shape. Installation of perimeter sealant around embedded railing post is to be included. Surface preparation, isolation material, forming, mixing, extension with aggregates for deeper applications, application, and limitations are to be included as part of this item and always follow in strict accordance with the material manufacturer's specifications, recommendations, and product data sheet. Reinstallation of flooring is not included. Waterproofing to be included as part of the waterproofing line item.

22. **Concrete Nosing Repairs (depth of repair will not exceed 2") (LF)** – Work consists of performing concrete nosing repairs on the side of the expansion joint along its length at locations determined by the Engineer. Concrete nosing repairs will be billed per LF of one (1) side repair. The removal and replacement of spalled and cracked concrete along the nosing of the slab will not exceed 2". The contractor shall properly prepare the surface area to receive new expansion joint and new waterproofing system, if applicable, to an acceptable condition to the manufacturer and engineer. Surface preparation shall be performed in accordance with manufacturer's recommendations, specifications, and details.

23. **Caulking of Threshold of the Sliding Glass Door (LF)** – This includes removing all existing floor finishes to metal sealant at the threshold of sliding doors, where accessible without removal of floor finishes, and replacement with new sealant. The acceptable product is **Sika Hyflex 150LM**. Replacement to include removal and disposal of all existing sealant, proper surface preparation of all areas receiving sealant, and installation of all new sealant/caulking in accordance with manufacturer's specifications and recommendations and or as indicated by Engineer. No additional compensation will be approved to the contractor for the increase in material quantities for sealant/caulking work.

24. **Removal and Replacement of Balcony Scuppers (EA) –** This work includes as needed removal and disposal of the existing damaged scuppers or scuppers that are less than 4" diameter, located within balcony parapet wall area, as indicated by the engineer and installation of new PVC SCH-40 round scuppers 4" diameter to match the existing ones. The bottom of the new scupper will be installed at the level of the structural slab. The opening will be sealed around the scupper insert, both side,

patched. Paint to match the existing and to be included as part of the painting project.

25. **Removal of Accordion Shutters Corner Post at Windows (EA) –** This work includes, and indicated by Engineer, removal, storage and re-installation of accordion shutters corner post (side angle) that is attached to exterior wall adjacent to window frames as necessary to slide in and out accordion curtains for concrete/stucco repairs. This scope includes also removing all shutter's corner post anchors/connections and repairing of anchor holes at walls as per concrete restoration details. No additional compensation will be approved to the contractor for repairing of anchor/connections holes, re-installation of corner post and necessary accessories . Debonded/cracked stucco and/or concrete repairs to be billed as per unit prices.

26. **Removal of Accordion Shutters Corner Post at Balcony Sliding Doors (EA) –** This work includes, and indicated by Engineer, removal, storage and re-installation of accordion shutters corner post (side angle) that is attached to exterior wall adjacent to balcony door frames as necessary to slide in and out accordion curtains for concrete/stucco repairs. This scope includes also removing all shutter's corner post anchors/connections and repairing of anchor holes at walls as per concrete restoration details. No additional compensation will be approved to the contractor for repairing of anchor/connections holes, re-installation of corner post and necessary accessories. Debonded/cracked stucco and/or concrete repairs to be billed as per unit prices.

SECTION C: OPTIONAL WORK ADDITIONS – LUMP SUM (ALL OPTIONAL WORK IS INCLUSIVE OF GENERAL CONDITIONS)

1. **Paint Exterior Sliding Doors and Windows w/Sherwin Williams (LF)** – All existing exterior sliding doors and windows at all elevations and all floors of the building are to be painted as per **Sherwin-Williams'** attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of windows and doors that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a sliding door mockup painted for the association to review and approve prior to proceeding with painting operations. The acceptable paint application method is spray as per manufacturer's specifications.
2. **Paint Aluminum Railings w/Sherwin Williams (LF)** – This includes painting the existing railings at the elevations of the building as needed as per **Sherwin-Williams'** attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of glass railings that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a railing mockup painted for the association to review and approve prior to proceeding with painting operations. For the best application results, apply generously going from unpainted into painted areas. The acceptable paint application method is brush and roll as per manufacturer's specifications.
3. **Paint Building Storefront w/Sherwin Williams (LF)** – All existing exterior storefront at all elevations of the building are to be painted as per **Sherwin-Williams'** attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of storefront that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a storefront mockup painted for the association to review and approve prior to proceeding with painting operations. The acceptable paint application method is spray as per manufacturer's specifications.
4. **Removal and Storage of Accordion Shutters at Windows (LF) –** This includes, and indicated by Engineer, removal and storage of accordion shutters that are attached to exterior balcony wall above and below window frames. The scope includes removing all shutters' anchors/connections and repairing anchor holes at walls as per concrete restoration details (Refer to the Rust Spot Detail). No additional compensation will be approved to the contractor for repairing the anchor/connections holes. De-bonded/cracked stucco and /or concrete repairs to be billed as per unit prices.
5. **Removal and Storage of Accordion Shutters at Sliding Doors (LF) –** This includes, and indicated by Engineer, removal and storage of accordion shutters that are attached to exterior balcony wall above and below sliding door frames. The scope includes removing all shutters' anchors/connections and repairing anchor holes at walls as per concrete restoration details (Refer to the Rust Spot Detail). No additional compensation will be approved to the contractor for repairing the anchor/connections holes. De-bonded/cracked stucco and /or concrete repairs to be billed as per unit prices.
6. **Installation of Existing Shutters at Window (EA) –** This scope includes, as needed, the reinstallation of existing hurricane shutters **only if a valid Notice of Acceptance (NOA) and permit number are provided, and the Engineer of Record grants explicit approval for reinstallation**. The scope also includes the removal of all existing shutter anchors/connections and the proper repair

of anchor holes in walls and floors in accordance with the concrete restoration details (refer to the Rust Spot Detail). No additional compensation will be granted for the repair of anchor/connection holes. The contractor shall replace all anchors as directed by the Engineer. If an existing anchor breaks during removal, the contractor shall saw-cut the surrounding surface to extract the embedded metal to ensure adequate concrete cover and drill a new opening 1 to 2 inches away from the abandoned anchor. New shutter installations, including anchors, shall be reinstated at their original locations. All existing holes in walls and slabs shall be filled with Sika AnchorFix 3001 or Sika AnchorFix 2. New anchors shall be of similar make and material to those currently installed. Any debonded or cracked stucco and/or concrete repairs shall be billed according to the unit prices specified in Section B.

7. **Installation of Existing Shutters at Sliding Doors (EA) –** This scope includes, as needed, the reinstallation of existing hurricane shutters **only if a valid Notice of Acceptance (NOA) and permit number are provided, and the Engineer of Record grants explicit approval for reinstallation**. The scope also includes the removal of all existing shutter anchors/connections and the proper repair of anchor holes in walls and floors in accordance with the concrete restoration details (refer to the Rust Spot Detail). No additional compensation will be granted for the repair of anchor/connection holes. The contractor shall replace all anchors as directed by the Engineer. If an existing anchor breaks during removal, the contractor shall saw-cut the surrounding surface to extract the embedded metal to ensure adequate concrete cover and drill a new opening 1 to 2 inches away from the abandoned anchor. New shutter installations, including anchors, shall be reinstated at their original locations. All existing holes in walls and slabs shall be filled with Sika AnchorFix 3001 or Sika AnchorFix 2. New anchors shall be of similar make and material to those currently installed. Any debonded or cracked stucco and/or concrete repairs shall be billed according to the unit prices specified in Section B.

SECTION D: OPTIONAL WORK ADDITIONS – ALLOWANCES (ALL OPTIONAL WORK IS INCLUSIVE OF GENERAL CONDITIONS)

1. **Replacement of metal-to-glazing sealant at sliding doors and windows (LF)** – This includes removing the existing metal-to-glazing gaskets or sealant of exterior sliding doors and windows and replace with new sealant (wet seal) **Sikasil WS – 295** (Silicone sealant, cannot be painted over), as directed by the Engineer. Replacement to include removal and disposal of all existing gasket or sealant, proper surface preparation of all areas receiving sealant, and installation of all new sealant in accordance with manufacturer's specifications and recommendations and or as indicated by Engineer.
2. **Replacement of metal-to-metal sealant at sliding doors and windows (LF)** – Removal and replacement of existing metal-to-metal sealant of exterior sliding doors and windows and replace with new sealant **Sikasil WS – 295** (Silicone sealant, cannot be painted over) as directed by the Engineer. Replacement to include removal and disposal of all existing sealant, proper surface preparation of all areas receiving sealant, and installation of all new sealant in accordance with manufacturer's specifications and recommendations and or as indicated by Engineer.
3. **Removal and Reinstallation of Accordion Shutters (EA) –** This includes, and indicated by Engineer, removal, re-installation of accordion shutters. The scope includes removing shutters' anchors/connections and repairing of anchor holes as per concrete restoration details. No additional compensation will be approved to the contractor for repairing of anchor/connections holes. Debonded/cracked stucco and /or concrete repairs to be billed as per unit prices. Note that If shutters are to be removed, and no records are available of the manufacturer/installation requirements of such shutters, the reinstallation of shutters will not be under any warranty, nor will their performance be guaranteed. Please note that the Authority Having Jurisdiction (building department) may not allow re-installation of such shutters
4. **Balcony Tile Installation (Labor Only) (SF) -** This work includes installation of new tiles similar to the existing, in accordance with the tiles manufacturer's specifications. Contractor shall provide tile options to the association for their selection and purchase at the Association direct cost. The work shall be in strict accordance with Tile Council of North America (TCNA) regulations, and all applicable codes, standards, and tiles manufacturer for exterior tiles. Tiles to match the existing one, shall be slip-resistant and suitable for exterior use. Work includes installation of tiles to be with exterior grade high polymer and efflorescence free mortar/thin-set system free of calcium sulphate and application of epoxy grout exterior grade. Contractor to present options of tile (similar to existing) to the Board for written approval. Grout to be selected and approval in writing by the association prior to purchase. If installation of the tiles completed by the Contractor does not meet these requirements, then the contractor will have to correct such conditions at their own cost to satisfy requirements. For bidding purposes use tiles 12' x12'

SECTION E: OPTIONAL WORK SUBSTITUTIONS – LUMP SUM (ALL OPTIONAL WORK IS INCLUSIVE OF GENERAL CONDITIONS)

1. **Paint Exterior Elevations of Building (SF)** – The acceptable manufacturer is Benjamin Moore**.**

   A. This work includes surface preparation and painting of all previously painted concrete, masonry, and stucco surfaces of the building exterior envelope and any other elements specified by the Engineer and attached to the building. Work is to be performed in strict accordance with the manufacturer's attached specifications, recommendations, and these specifications. Areas to be painted include but are not limited to:

   a) Building's exterior walls, beams, columns, & shear walls
   b) All rooftop structures and parapet walls, inclusive of cooling tower concrete supports.
   c) Balcony ceilings, walls, slab edges, and knee walls.
   d) All previously painted metals: louvers, utility doors, vents, etc.

   Exclusions: Painting of windows and doors, roof equipment, the interior of the garage, balcony railings, except as noted in the above scope of work or otherwise requested.

   Notes: Application of paint over caulking, if applicable and allowed by manufacturer is included.

   B. This item shall include the routing and sealing of minor cracks (less than 1/8") and small openings (up to 1/4") with elastomeric patching compound in strict accordance with the paint manufacturer's specifications and as indicated by the engineer. As part of this item, the contractor is also required to have a manufacturer's representative inspect the work in progress to help ensure proper preparation and application of all products/materials. The paint manufacturer and the colors of the paint in all areas are to be approved by the condominium association. The contractor shall provide a rendering and not more than 5 paint samples, if the association desires one for their building.

   C. This work will be in strict accordance with these specifications and the manufacturer's specifications and recommendations. The paint application will include, at minimum, the following:

   e) Cleaning and pressure washing the areas to be painted. All roof cleanup and washing (that is part of this project) that may affect the exterior work needs to be completed prior to commencement of the painting portion of the work.
   f) Prior to commencing pressure washing/cleaning operations of the building, the contractor is responsible for installing a containment netting to prevent and minimize debris throughout the project.
   g) Application of primer to all areas to be painted. The number of coats of primer is contingent upon the condition of the substrate and shall be in strict accordance with manufacturer's specifications. In no event less than one coat will be applied. Under no circumstances will there be more than **72 hours** between pressure washing and application of primer without written approval from the manufacturer.
   h) Application of paint as necessary to achieve required mileage, sheen, or texture in accordance with manufacturer's recommendations. Under no circumstances will there be more than **72 hours** between primer application and paint application without written approval from the manufacturer.

2. **Paint Exterior Sliding Doors and Windows w/Benjamin Moore (LF)** – All existing exterior sliding doors and windows at all elevations and all floors of the building are to be painted as per Benjamin Moore's attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of windows and doors that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a sliding door mockup painted for the association to

review and approve prior to proceeding with painting operations. The acceptable paint application method is spray as per manufacturer's specifications.

3. **Paint Aluminum Railings w/Benjamin Moore (LF)** – This includes painting the existing railings at the elevations of the building as needed as per **Benjamin Moore's** attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of glass railings that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a railing mockup painted for the association to review and approve prior to proceeding with painting operations. For the best application results, apply generously going from unpainted into painted areas. The acceptable paint application method is brush and roll as per manufacturer's specifications.
4. **Paint Building Storefront w/Benjamin Moore (LF)** – All existing exterior storefront at all elevations of the building are to be painted as per **Benjamin Moore's** attached specifications and recommendations. Refer to manufacturer's attached specifications for proper surface preparation. The color(s) of the paint are to be approved in writing by the condominium association. As part of this item, the contractor is required to protect adjacent areas from the over spraying. Any painting of storefront that have silicone sealant shall be inclusive of the removal of the of the sealant, painting of the frame, and installation of new silicone sealant in a color that matches the color of the paint and is previously approved in writing by the condominium association. The contractor shall also provide a storefront mockup painted for the association to review and approve prior to proceeding with painting operations. The acceptable paint application method is spray as per manufacturer's specifications.

SECTION M: MISCELLANEOUS SERVICES

1. **Allowance for Shoring (A)**: The allowance cost shall not exceed 20,000 dollars. This item includes allowances for all materials, and resources to 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. Strengthen or add new support when required during progress of selective demolition. Contractor shall provide signed and sealed shoring drawings from delegated engineer for approval and submit them to the Authority Having Jurisdiction.

SECTION P: PERMITS AND PAYMENT AND PERFORMANCE BONDS

1. **Permits (A)** – Contractor shall be responsible, at their own expense, to obtain all required permits to comply with all local ordinances, state and federal laws, rules, and regulations applicable and required by the authorities having jurisdiction. No overhead profit or permit expeditor fees will be paid for the cost associated with obtaining the permits for the project. *The Association will reimburse the Contractor for the cost of the permit alone.* Contractor needs to provide backup information for the fees incurred (receipts, bills, etc.)
2. **Payment and Performance Bond (%)** – Please refer to 1.11 Performance and Payment Bond under Section 001000 General Conditions.

PHOTOS FOR BIDDER'S REFERENCE

Photo 1. Building's exterior walls to be painted

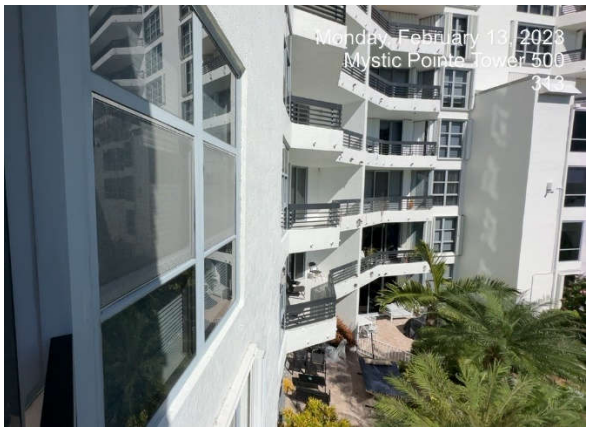

Photo 2. Building's exterior walls to be painted

Photo 3. Roof structures and parapet wall to be painted

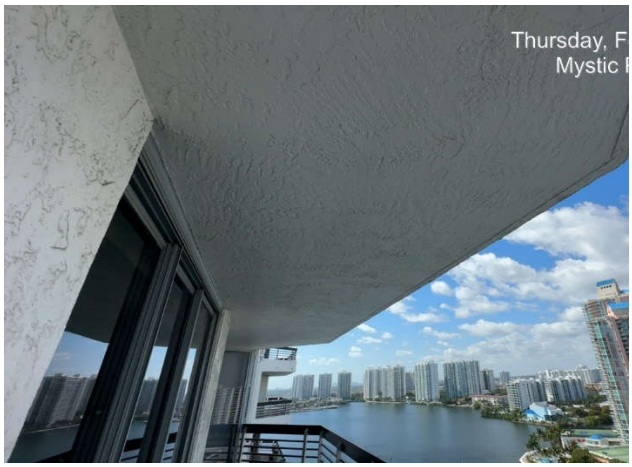

Photo 4. Balcony ceilings to be painted

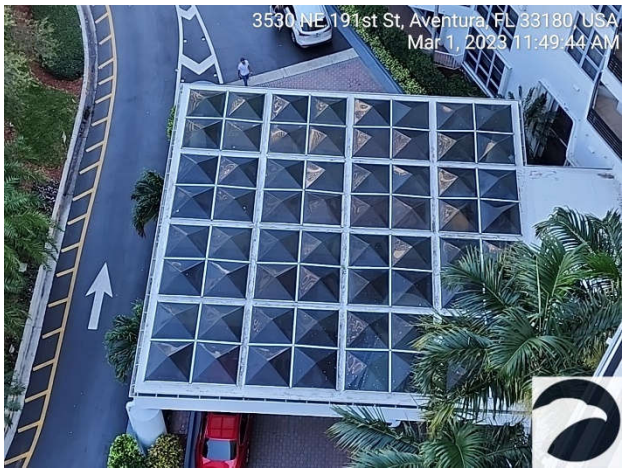

Photo 5. Skylight at Porte cochere to be replaced

Photo 6. Existing roofing system at Porte cochere to be replaced

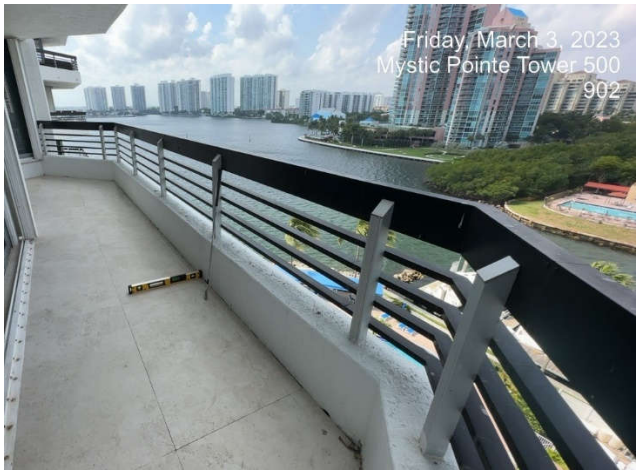

Photo 7. Balcony Railings to be painted.

Photo 8. Scuppers to be replaced.

Photo 9. Shutters to be removed and reinstalled.

Photo 10. Windows to be painted.

Photo 11. Vertical expansion joint to be replaced.

Photo 12. Horizontal expansion joint to be replaced.

GENERAL NOTES:

The Contractor must be a qualified and approved applicator for all materials listed in these specifications or drawings.

1. The contractor will need to submit a schedule for approval prior to beginning restoration work on the property. A revised schedule shall be submitted with every payment application. If a revised schedule has not been provided, the Engineer has the right to deny payment application until such schedule is provided. The schedule will be provided in a format acceptable to the Engineer (Gantt chart or similar approved).
2. All unit price work (concrete restoration items) or any other specified for the project are INCLUSIVE of general conditions, staging, mobilization, demobilization, overhead, profit, labor, material, and any other fees/costs necessary for completing the work. **No additional mobilization/demobilization will be allowed based on the increase in quantities.**
3. In providing change orders for additions to the work for which unit prices are already part of the contract, Contractor shall honor those prices and will only be allowed for adjustment in quantity. The contractor acknowledges and agrees to continue working under these terms for any additional quantities (whether they were based on the allowances or lump sum portion of the contract) that are in excess of the quantities provided in the contract documents.
4. **All fields in the bid MUST be populated for the bid to be considered. All quantities and unit prices must be provided regardless of whether the item is labeled as Lump Sum (LS). The unit prices provided shall serve as the base for additions or deductions from the contract. The contractor agrees and acknowledges that in the event of additional work for which unit prices have been established those unit prices shall be used to calculate the cost of the additional work. All unit prices shall be inclusive of general conditions. No additional general conditions shall be allowed for any additional work. Contract will not be substantially completed until all the additional quantities/work is completed.**
5. **All items specified as Lump Sum (LS) shall be inclusive of all work, labor, materials, equipment, and all other necessary items for the completion of the work on the areas specified for that work. Any quantities provided by the Contractor on those items shall be for informational purposes only and shall not be used for revisions of the Lump Sum price in the event of discrepancies between the actual quantities and what was provided as estimated quantities in the bid.**
6. The existing substrate was not verified, and the Engineer does not guarantee its condition. The contractor is responsible for verifying the condition of the substrate prior to application of any material and bringing any discrepancies to the attention of the Engineer. Should the contractor apply the material on substrate that is not appropriate for the installation without notifying Engineer in writing and obtaining Engineer's approval, it shall be solely contractor's responsibility and the Contractor will remedy the issue to Engineer's satisfaction at Contractor's cost.
7. The Contractor shall be responsible for any damage that occurs as a direct or indirect result of the construction process. The Contractor shall be responsible for taking all preventive steps necessary to avoid damage to the building, components of the building, surrounding grounds, utilities, vegetation, and any and all property of the occupants. If the Contractor believes that any of the methods of construction, materials, or equipment may cause direct or indirect damage to the building, components of the buildings, surrounding grounds, utilities, vegetation, and any and all property of the occupants, the Contractor shall bring such items to the attention of the Owner, in writing, at the time of bid submittal. If such items were not brought to the attention of the Owner, it will become Contractor's responsibility to repair all damaged items to the satisfaction of the Owner, at no cost to the Owner.

8. The contractor shall be responsible for installing temporary protections along all interior surfaces of corridors and stairwells accessed in order to complete this work. Protections shall protect existing finishes, as well as prevent the migration of dust and weather to other buildings. Access into the residential building shall be limited to the public corridors, stairs, and service elevation for purposes of mobilizing, maintaining, and removing equipment and protections. All work and transport of material and permit shall be from the building exterior.
9. The removal of areas for repairs must be made in such a manner to minimize potential damage to the adjacent undisturbed areas. Every attempt must be made to ensure that all cutting, and chipping be completed within marked areas with area boundaries remaining visible for engineer's inspection. Chipping beyond marked areas without Engineer's permission will be grounds for denying additional quantities and the additional work performed will be completed to the Engineer's satisfaction at Contractor's cost.
10. Contractor shall obtain and submit photographic documentation of existing conditions prior to the start of work to Engineer and Owner (pre-construction survey).
11. The contractor is responsible for requesting all inspections from the manufacturers. The paint, waterproofing and any other manufacturer whose material product is being used on the project shall have its representative conduct inspections of all phases of the work to assure that surface preparation procedures are followed and to ensure that all warranties will be issued. The manufacturers and or contractor shall notify the Association or Owner's representative (EOR) regarding any concerns noted during their inspections. The contractor shall provide all inspection reports from the manufacturers to the EOR.
12. The contractor shall correct any defects or improper conditions noted during inspections by the coating manufacturers (painting, waterproofing etc.), at their own cost in the manner prescribed by the inspecting authority.
13. Inspections: All work outlined in these Specifications and related documents may be inspected by the Owner, its representatives and/or the Engineer at any time. If the Owner does or does not elect to inspect, this confers no rights on the part of the contractor and does not relieve the contractor from his responsibilities. The Contractor shall perform all work in accordance with these Specifications, and to the satisfaction of the Owner, the Owner's representative, and Engineer including any work not included in these Specifications but required by the local and government authorities. The Contractor shall schedule all inspections required by local and government authorities and in accordance with required permits and that required to obtain Certificates of Occupancy or Certificates of Completion issued by the local authorities. The Contractor shall notify the Owner of all such inspections and provide ample notification so that the Owner may be present for all inspections. The Contractor shall keep on the site a log with all inspections and will be responsible for ensuring that the Engineer or Inspector have access to it on the day of inspection. The contractor is responsible for requesting inspection with the engineer of record. All engineer inspections shall require a minimum 48-hour notification to the engineer. Contractor to account for a full day of inspection from engineer of newly installed equipment.
14. If an inspection is requested and no work needs to be inspected, work has not been substantially complete for inspection, access is not provided, etc. then the contractor will be responsible for paying fines, fees, and costs, resulting from the necessity of reinspection, including fees incurred by the Owner's representative for reinspection, and consequential damages.
15. The contractor shall be responsible for obtaining all ROW (Right of Way) / MOT (Maintenance of Traffic) permits and shall provide adequate overhead protection to comply with OSHA and any governing agencies to allow for all ground level areas to be uninhibited by the construction.
16. Contractor shall submit daily field reports indicating work performed, location(s) of work performed, number of workers at site, date, weather and conditions at site, any field conditions discovered requiring alteration of specified work scope, damages or accidents at site, and any quality control

measures performed. Daily reports shall be submitted not less than once per week to Engineer, Owner's Representative (if applicable), and Owner.

17. The contractor must provide an on-site, English-speaking supervisor at all times who is thoroughly trained in all aspects of the work.
18. The contractor, once having started the work, shall continuously and expeditiously proceed with its vigorous prosecution until completion of the work.
19. In the event that a tropical storm or hurricane warning is issued for the area in which the project is located, Contractor shall remove all equipment and materials from site within one day of issuance. If any items cannot be removed, then they shall be secured by the Contractor to avoid damage to the property. Storm preparation shall be at no additional cost to the Association.
20. A copy of all required permits, licenses, certificates, and approval shall be delivered to the engineer and a copy shall be posted in a prominent location at the work site prior to commencement of the work.
21. The contractor is responsible for submitting an emergency plan to the Engineer of Record prior to beginning any work operations.

MATERIALS

1. Substitution of materials shall only be made by written Change Order authorized by the Owner and the Owner's designated representative (Engineer of Record).
2. See structural repair specification for approved materials.
3. All materials will be new, unexpired, original, in original packaging, free of defects, stored properly in accordance with the manufacturer's requirements. The Engineer has the right to request purchase orders to review the condition of the material. The Engineer has the right to request material to be removed from the site and replaced if the material does not meet project requirements.
4. Material that is not part of this project or was not part of this project shall not be stored on the site. Any issues arising from Contractor using unapproved material will be corrected at Engineer's request to the Engineer's satisfaction at Contractor's cost.

EXECUTION

1. All materials shall be installed in accordance with manufacturer written specifications and acceptable industry standards, and these specifications.
2. All work shall be performed with experienced labor and first quality workmanship.
3. All work shall conform to 2023 Florida Building Code, Industry Standards, Manufacturer's Specifications, these specifications, state, and federal guidelines as applicable.

WARRANTY

Contractor warrants, unconditionally and without proration, that upon completion all Work will be fit for the purposes intended and shall be free from defects and deficiencies with respect to material(s), labor and workmanship for the following requested time periods:

	Labor & Material	
	Contractor	Manufacturer
Concrete/Stucco repair/restoration	5	5
Paint of concrete/stucco finishes with **Sherwin Williams**	5	10
Balcony Waterproofing with Sika 710, 715, 735AL	5	5
Sealants	5	5
Expansion Joints Emseal DSM and Seismic Colorseal	5	5

Contractor shall warranty all materials and labor against workmanship defect for the minimum period specified. The manufacturer shall warranty all materials and labor against product defect for the minimum period specified.

The warranty times from contractor and manufacturer are concurrent and cannot be added.

SECTION 00 40 00 –BID PROPOSAL FORM

MYSTIC POINTE TOWER 500 CONDOMINIUM ASSOCIATION INC.

FACADE RESTORATION AND PAINT PROJECT

LEGAL NAME OF BIDDER:

ADDRESS:

TELEPHONE NUMBER:

DATE OF BID PREPARATION:

Having completely examined the Specifications, all attached and referenced documents, and the existing site conditions and quantities, the undersigned hereby agrees to provide all the labor and materials and all else necessary for the proper construction and completion of the work in accordance with the Specifications.

In submitting this Bid, the undersigned agrees and certifies:

To hold the Bid open for a period of ninety (90) days after the due date.

To enter into and execute a Contract, if awarded on a basis of this Bid, and to furnish all guarantees as required in the Contract Documents.

To accomplish all work in accordance with the Contract Documents.

To commence all Work within ten (10) workdays of receipt of Notice to Proceed.

To have all work completed in accordance with the Contract Documents within the time period allotted.

MYSTIC POINTE TOWER 500 CONDOMINIUM ASSOCIATION INC.

FACADE RESTORATION AND PAINT PROJECT

All requested pricing shall include the general description of the items listed below and shall also include the specific materials and methods as outlined within these specifications and as indicated on the construction drawings. Quantities provided are approximate. It is the Contractor's responsibility to verify all quantities, dimensions, and locations in the field prior to submitting the proposal. There shall be no compensation for additional base bid quantities.

The work area for lump sum pricing and unit cost allowances includes all bid items shown in the specifications. The provided allowances are variable estimates of the units throughout all buildings. The actual number of units the contractor will be paid for will be marked out in the field by the engineer prior to executing the work.

The Owner reserves the right to reduce or increase the Scope of Work of the project throughout the course of work using the Base Bids and Unit Prices provided by the Bidder to reduce or increase the Total Contract Sum.

SCOPE OF WORK		Unit of Measure	Estimated Quantity	Unit Price	Amount
No.	**SECTION G - GENERAL CONDITIONS**				
1	Mobilization / Start-up	N/A	LS	N/A	
2	General Conditions	N/A	LS	N/A	
3	Clean-up and Demobilization	N/A	LS	N/A	
4	Additional General Conditions:				
	a. If the total value of the allowance (Section B) work contracted and agreed upon is exceeded by:	%	N/A		N/A
	b. The contactor is entitled to additional general conditions in the amount of:	%	N/A		N/A
				Total Section G	**$ -**

No.	SECTION A - BASE BID - Lump Sum				
1	Paint Exterior Elevations of Building w/Sherwin Williams	SF	LS		
2	Caulking of Windows, Doors & Envelope Penetrations	LF	LS		
3	Removal of Skylight System at Porte Cochere	1	LS		
4	Installation of New Skylight System at Porte Cochere	1	LS		
5	Demolition and Discard of Existing Roofing System at Porte Cochere	SF	LS		
6	Installation of New Roofing System at Porte Cochere	SF	LS		
7	Replacement of Vertical Expansion Joint	LF	LS		

8	Replacement of Horizontal Expansion Joint	LF	LS		
			Total Section A		**$ -**

No.	SECTION B - BASE BID - Allowances				
1	Stucco Cracks	LF	600		$ -
2	Stucco Delamination - standard stucco thickness (up to 3/4" thick)	SF	9,000		$ -
3	Excessive Stucco Delamination - stucco thickness in excess of 3/4"				
	a) Thickness from 3/4" to 1-1/2"	SF	1,000		$ -
	b) Thickness from 1-1/2" to 2-1/2"	SF	500		$ -
	c) Thickness from 2-1/2" to 3-1/2"	SF	200		$ -
	d) Thickness from 3-1/2" to 4-1/2"	SF	100		$ -
4	Structural Concrete Cracks	LF	250		$ -
5	Concrete Column Repair	CF	150		$ -
6	Concrete Beam Repair	CF	150		$ -
7	Embedded Metal Repair for Rust Spot	EA	500		$ -
8	Rebar Tip Repair for Rust Spots	EA	200		$ -
9	Wall Repairs (CMU)	SF	80		$ -
10	Window Header/Sill Repairs	LF	350		$ -
11	Concrete Overhead Repairs	SF	400		$ -
12	Concrete Through Slab Small Repairs (Full Depth up to 12 SF)	CF	100		$ -
13	Concrete Through Slab Large Repairs (Full Depth greater than 12 SF)	CF	100		$ -
14	Concrete Repairs from the Top (Partial Repairs)	SF	1,000		$ -
15	Vertical Concrete Repairs (Partial Repairs)	SF	1,000		$ -
16	Concrete Slab Edge Repairs	LF	1,000		$ -
17	Flash Patching	SF	1,500		$ -
18	Removal and Disposal of Balcony Floor Finishes	SF	2,000		$ -
19	Balconies Waterproofing	SF	9,000		$ -
20	Seal Around Railing Post Pockets	EA	400		$ -
21	Railing Post Pockets Grout Repair	EA	400		$ -
22	Concrete Nosing Repairs	LF	200		$ -

23	Caulking of Threshold of the Sliding Glass Door	LF	500		$ -
24	Removal and Replacement of Balcony Scuppers	EA	500		$ -
				Total Section B	**$ -**

				Total Base Bid (Section G+A+B)	**$ -**
No.	**SECTION M - Miscellaneous Services**				
1	Shoring Allowance	LS	A	N/A	$ 20,000.00
				Total of Section M	**$ 20,000.00**

				Total Base Bid (Section G+A+B+M)	**$ -**
No.	**SECTION P - Payment and Performance Bond**				
1	Permits (estimated - to be determined by the Building Department) (G+A+B)	%	A	4%	$ -
2	Payment and Performance Bond (G+A+B+M)	%	N/A		$ -
				Total of Section P	**$ -**

TOTAL BID (T)	
Total Base Project (Section G+A+B+M+P)	**$ -**
Total Time to Complete Base Bid (G+A+B) (Calendar Days)	
Estimated Number of Swing Stages to be Installed	
Estimated Number of Manpower	

No.	**SECTION C - OPTIONAL WORK ADDITIONS - LUMP SUM (All optional work is inclusive of general conditions)**				
1	Paint Exterior Sliding Doors and Windows w/Sherwin Williams	LF	LS		
2	Paint Aluminum Railings w/Sherwin Williams	LF	LS		
3	Paint Building Storefront w/Sherwin Williams	LF	LS		
4	Removal and Disposal of Accordion Shutters	LF	LS		
5	Installation of Existing Shutters at Window and Doors	LF	LS		
6	Partial Removal and Reinstallation of Existing Shutters	LF	LS		
				Additional time to include C-1 on the scope (Calendar Days)	
				Additional time to include C-2 on the scope (Calendar Days)	

Additional time to include C-3 on the scope (Calendar Days)	

No.	SECTION D - OPTIONAL WORK ADDITIONS - ALLOWANCES (All optional work is inclusive of general conditions)				
1	Replacement of metal-to-glazing sealant at sliding doors and windows	LF	1		$ -
2	Replacement of metal-to-metal sealant at sliding doors and windows	LF	1		$ -
3	Removal and Re-Installation of Accordion Shutters	EA	1		$ -

Additional time to include C-1 on the scope (Calendar Days)	
Additional time to include C-2 on the scope (Calendar Days)	
Additional time to include C-3 on the scope (Calendar Days)	

No.	SECTION E - OPTIONAL WORK SUBSTITUTIONS – LUMP SUM (All optional work is inclusive of general conditions)				
1	Paint Exterior Elevations of Building w/Benjamin Moore	SF	LS		
2	Paint Exterior Sliding Doors and Windows w/Benjamin Moore	LF	LS		
3	Paint Aluminum Railings w/Benjamin Moore	LF	LS		
4	Paint Building Storefront w/Benjamin Moore	LF	LS		

Additional time to include C-1 on the scope (Calendar Days)	
Additional time to include C-2 on the scope (Calendar Days)	
Additional time to include C-3 on the scope (Calendar Days)	
Additional time to include C-4 on the scope (Calendar Days)	

HOURLY LABOR RATES		
Electrician	per hour	
Carpenter	per hour	
Plumber	per hour	
Project Manager	per hour	
Superintendent	per hour	
Skilled Labor	per hour	
Laborer	per hour	
Labor for demobilization and remobilization during hurricanes	per hour	

General Notes:

Provided hourly rates are to be **all-inclusive** of taxes, gen. conditions, overhead & profit, and all other fees applicable. Provided hourly rates will be fixed for the duration of the project and are applicable to all Time and Material changes in the scope of work including but not limited to demobilization and remobilization for extreme weather events and other Acts of God.

The cost or credit to the Owner from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit of **FIFTEN PERCENT (15%) maximum.**
The Total Cost of the project does not include any Optional Work item nor substitution. Once the Final Scope is defined, a Final Total will be determined.

HOURLY LABOR RATES

For the purpose of reviewing and approving change orders for additional work, if and where required, the Bidder shall submit the hourly rates for the specified trades.

The number of additional days for optional work is the maximum allowed. The contractor acknowledges that the final number of days may be reduced based on potential concurrent work.
LEGEND:

N/A	– NOT APPLICABLE
EA	– EACH
LS	– LUMP SUM
LF	– LINEAR FOOT
SF	– SQUARE FOOT
CF	– CUBIC FOOT
%	– PERCENTAGE
A	– LUMP SUM ALLOWANCE – TO BE BILLED AT ACTUAL COST

1. **The Bidders (or subcontractors) must be approved applicators for materials manufacturer by Sika, Soprema, Sherwin Williams and Benjamin Moore. Bidders (or subcontractors) that are not approved installers will not be considered in the bidding.**

2. A preliminary schedule must be submitted with the bid.

3. The BIDDER, in submitting a BID, warrants that he/she has investigated and is acquainted with the conditions to be encountered for performing the work including the character, quality of work to be performed and materials to be furnished.

4. Before submitting a BID, each BIDDER must visit the site to familiarize him/herself with local conditions that may in any manner affect cost, progress, or performance of the work, and familiarize him/herself with Federal, State and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the work.

5. Upon request the OWNER will provide each BIDDER with access to the site to conduct such investigations and tests as each BIDDER deem necessary for submission for his/her BID.

6. Each BIDDER, by submitting the BID, acknowledges that it is familiar with the rigging requirements, structural stability of the roof and roof structures, parapet walls, existing tie-off elements, power allowances, etc. Each BIDDER should request all necessary information and access to the site to determine rigging conditions and requirements. No change orders will be allowed based on rigging changes that were discoverable during the BIDDING process.

   The bidder assumes responsibility for contract quantities for lump sum pricing including field measurements and verifications of existing dimensions. Quantities and /or dimensions provided by the OWNER are estimates and for reference only. Contract quantities for unit price contract items will be based on actual quantities approved by OWNER or Owner representative.

7. BIDDER shall provide evidence of sufficient previous experience of work of a similar nature to assure the OWNER of his capability to perform the work. BIDDER shall submit information of at least five (5) different projects, performed in the last three (3) years, including the following information: Project's description, location, duration, total cost, and OWNER's contact information.

8. The OWNER reserves the right to reject any and all bids, to waive any and all informalities not involving price, time or change in the work and to negotiate contract terms with the successful BIDDER, and the

right to disregard all nonconforming, non-responsive, unbalanced or conditional bids. The OWNER also reserves the right to reject the Bid if not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the OWNER. Additionally, the OWNER reserves the right to break up the individual components of each submitted Bid. In evaluating the bids, the OWNER will consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and such alternatives, unit prices and other data.

COMMENTS/CLARIFICATIONS:

Please add here all comments/clarifications regarding the project. Any other paper will not be accepted.

REDUCTIONS AND LIMITATION OF SCOPE:

Please add here all the reductions and limitations of scope of work. Any other paper will not be accepted.

Line Item:		Limitations:

GENERAL CONTRACTUAL COMMENTS:

Please add here all the reductions and limitations of scope of work. Any other paper will not be accepted.

ATTACHED TO THIS BID FORM ARE THE FOLLOWING DOCUMENTS:

BIDDERS QUALIFICATION STATEMENT
STATEMENT OF STOCKHOLDERS
LIST OF SUBCONTRACTORS

The Contractor, in this Agreement, accepts full responsibility for the Bid Amount, including all estimates of quantities for materials; estimates for refuse removal, costs for materials, labor, and all else necessary for the successful completion of the project.

SIGNATURES:

_____
Legal name of Contracting Firm, Partnership, or Corporation

_____ _____
Signed Date

_____
Name and Title

SECTION 00 45 00 - REPRESENTATIONS AND QUALFICATIONS

Required as a qualification statement in advance of award of contract:

EXPERIENCE, EQUIPMENT AND FINANCIAL QUALIFICATIONS

The Undersigned certifies the truth and correctness of all statements and of all answers to questions made hereinafter.

SUBMITTED TO: The Falcon Group

Attn: Sinisa Kolar, P.E.

15405 NW 7th Avenue

Miami, FL 33169

SUBMITTED BY:

Corporation ☐Partnership ☐Individual ☐Joint Venture ☐Other

How many years has your organization been in business under your present company name?

List all projects of similar nature and size that you have completed in the last five (5) years:
Please list.

Job/Location, Type of work, Date of completion, Contract Amount, contact w/ phone #
(Use additional sheets as needed)

Have you ever failed to complete or been declared in DEFAULT by an owner for any work awarded to you? If so, note when, where, why, and Contact w/ phone #:

Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a construction contract? If so, state the circumstances:

List the states and categories in which your organization is legally qualified to do business:

List Trade References w/ phone # (minimum of 3):

List Bank References w/ phone # (minimum of 3):

Name of Bonding Company and name and address of agent:

SIGNATURES:

_____
Legal name of Contracting Firm, Partnership, or Corporation

_____ _____
Signed Date

_____
Name and Title

LIST OF SUBCONTRACTORS

Notwithstanding any language to the contrary contained within this bid package and all attached thereto, the contracting unit hereby requires full compliance, and lists the following subcontractors to perform the various types of work described:

No	Name of Subcontractor	Description of Work	Subcontractor Address and Phone Number
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

SECTION 00 50 00 - CONTRACTING FORMS AND SUPPLEMENTS

1.1 TIME OF COMPLETION / PENALTIES

The successful bidder shall begin the Work within ten (10) workdays of receiving Notice to Proceed and issuance of work permit and shall complete the Work within the agreed upon Contract Time. The Owner requires liquidating damages for not completing the project within the specified time frame. The provisions for liquidating damages will be established by the Agreement.

1.2 WORK HOURS

Working hours shall be Monday to Friday from 8:00 am to 5:00 pm unless otherwise established by the Agreement. Contractor to verify any work hours restrictions imposed by the association, building management or authorities having jurisdiction and make appropriate considerations when establishing project duration.

1.3 INSPECTIONS

All work outlined in these Specifications and related work may be inspected by the Owner, its representatives, or the Engineer at any time. If the Owner does or does not elect to inspect, this confers no rights on the part of the contractor and does not relieve the contractor from his responsibilities. The Contractor shall perform all work in accordance with these Specifications, and to the satisfaction of the Owner, the Owner's representative, and Engineer including any work not included in these Specifications but required by the local and government authorities.

The Contractor shall schedule all inspections required by local and government authorities and in accordance with required permits and that required to obtain Certificates of Occupancy or Certificates of Completion issued by the local authorities. The Contractor shall notify the Owner of all such inspections and provide ample notification so that the Owner may be present for all inspections.

The Contractor shall keep on the site a log with all inspections and will be responsible for ensuring that the Engineer or Inspector has access to it on the day of inspection.

The Contractor shall be responsible for fines, fees, and costs resulting from the necessity of reinspection, including fees incurred by the Owner's representative for reinspection, and consequential damages resulting from substandard work.

1.4 EMERGENCY REPAIRS

Within twelve (12) hours of being notified of crisis, health, or safety circumstances the Contractor shall take suitable steps to remedy the crisis. What comprises a crisis, health or safety situation will be determined on a case-by-case basis. If the Contractor fails to take appropriate action, the Owner, at its option, may effectuate the repair, and charge the Contractor for the reasonable cost of the work performed.

1.7 SEQUENCING AND PHASING

To accommodate the Owner's occupancy of portions of the site and existing building during the period of construction, the work shall be performed in phases. The contractor shall acquaint himself/herself in detail with the Owner requirements for maintaining facilities in use for normal operations with minimum interruption throughout construction period and shall plan schedule his operations to provide such.

The contractor shall submit a complete proposed sequence schedule for the entire work, showing all dates, activities, inspection events for trades, and other related data, such as coordinated submittal schedules.

The sequence schedule shall conform to all the Owner's requirements for the use of the existing facility with minimum interruption to normal operations, following the guidelines for phasing indicated in the drawings, and all applicable contract documents, requirements of government agencies, and general standards for safe and efficient construction.

1.8 STAGING AREA

The contractor will be permitted to use a portion of the site for staging as necessary in the performance of the work which is acceptable to the owner. The area shall not interfere with the operation of the Owner.

1.9 TRASH REMOVAL

All trash, debris, rubbish, and other waste material resulting from the contractor's performance of the work shall be removed from the site at the contractor's expense. Disposal of any materials for this project shall be at approved land fill/disposal sites as authorized by the local authorities.

The contractor shall maintain the site in an orderly manner and prevent interference with the tenants. Trash shall be removed at regular intervals during the performance of the work and when trash receptacles (dumpsters) are full.

At the completion of the work the contractor shall clean all areas of the building and pool deck affected as a result of the contractor's operations.

1.10 SCHEDULE AND REPAIR

The contractor shall develop a construction plan for the performance of the work described by the contract documents. The plan shall be submitted to the engineer for review and acceptance.

The plan shall include, but is not limited to, the sequence of construction, repair procedures, and demolition plan.

The sequencing of the work shall be scheduled to minimize or hindrance with operations of the Owner.

The owner will provide access to each of the work repair areas as may be reasonably necessary.

Keep existing driveways and entrances serving premises clear and available to the Owner and the Owner's employees.

END OF SECTION 005000

SECTION 01 10 00 - SUMMARY OF WORK

PART 1 GENERAL

1.01 RELATED SECTIONS

A. Division 010000 – General Requirements
B. Division 075600 – Cold Liquid Applied PMA Roofing
C. Division 076200 – Sheet Metal Flashing and Trim

1.02 DESCRIPTION

A. The Work includes the provision of all labor, material, equipment, management, coordination, supervision, and administration to complete the Work as outlined.

1.03 WORK COVERED

A. ROOFING:
   1. POLYMETHYL METHACRYLATE (PMA) MEMBRANE ROOFING:
      a. Preparation of existing, concrete roof deck, and all flashing substrates.
      b. Liquid-applied, reinforced membrane.
      c. Liquid-applied, reinforced flashings.

END OF SECTION 011000

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer an advantage to Contractor or Owner.

1.4 SUBMITTALS

Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

Substitution Request Form: Use CSI Form 13.1A facsimile of form provided in the Project Manual.

Documentation: Show compliance with requirements for substitutions and the following, as applicable:

- Statement indicating why specified product or fabrication, or installation cannot be provided, if applicable.
- Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
- Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- Product Data, including drawings and descriptions of products and fabrication and installation procedures.
- Samples, where applicable or requested.
- Certificates and qualification data, where applicable or requested.
- List of similar installations for completed projects with project names and addresses and names and addresses of engineers and owners.

- Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
- Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- Cost information, including a proposal of change, if any, in the Contract Sum.
- Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. The Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.

Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

Coordination: Modify or adjust affected work as necessary to integrate the work of the approved substitutions.

EXECUTION (Not Used)
END OF SECTION 012500

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

The Engineer will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 PROPOSAL REQUESTS

Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

Proposal Requests issued by Engineer are not instructions either to stop work in progress or to execute the proposed change.

• Within 20 days, when not otherwise specified after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

- Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
- Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- Include costs of labor and supervision directly attributable to the change.
- Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- Quotation Form: Use forms acceptable to Engineer.

Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Engineer.

- Include a statement outlining reasons for the change and the effect of the change on the Work.
- Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
- Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

- Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- Include costs of labor and supervision directly attributable to the change.
- Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
- Proposal Request Form: Use CSI Form 13.6A "Change Order Request (Proposal)" with cost worksheet form provided by Owner.

1.5 CHANGE ORDER PROCEDURES

On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

Related Sections:

- Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
- Division 01 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3. DEFINITIONS

Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4. SCHEDULE OF VALUES

Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:

- Application for Payment forms with continuation sheets.
- Submittal schedule.
- Items required to be indicated as separate activities in Contractor's construction schedule.

Submit the schedule of values to Engineer at earliest possible date but no later than seven (7) days before the date scheduled for submittal of initial Applications for Payment.

Format and Content: Use the Bid Proposal Form as a guide to establish line items for the schedule of values.

Identification: Include the following Project identification on the schedule of values:

- Project name and location.
- Name of Engineer.
- Engineer's project number.
- Contractor's name and address.
- Date of submittal.
- Arrange schedule of values consistent with format of AIA Document G703.
- Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation.
- of Applications for Payment and progress reports.
- Schedule of values shall sum to equal the Contract Sum.

- Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
- Differentiate between items stored on-site and items stored off-site.

Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5. APPLICATIONS FOR PAYMENT

Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.

All payment applications must be submitted with the appropriate supporting documents (backup) for the quantities being billed during each period. Failure to provide the required supporting documentation will be considered an incomplete payment application package. Incomplete packages will not be eligible for review and will not initiate the review process.

Initial Application for Payment, Application for Payment and final Application for Payment involve additional requirements, see below this Section.

Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

Application Preparation: Complete every entry on the form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.

Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.

Include amounts of Change Orders and Construction Change Directives issued before the last day of construction period covered by application.

Indicate separate amounts for work being carried out under Owner-requested project acceleration.

Stored Materials: No payment shall be made for material stored on site prior to installation.

Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from contractor, sub-subcontractors, and suppliers for construction period covered by the previous application.

Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

The owner reserves the right to designate which entities involved in the Work must submit waivers.

Submit final Application for Payment with final waivers from every entity involved with performance of the Work covered by the application that is lawfully entitled to a lien.

Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

- List of subcontractors.
- Schedule of values.
- Contractor's construction schedule (preliminary if not final).
- Schedule of unit prices.
- Submittal schedule (preliminary if not final).
- Copies of building permits.
- Certificates of insurance and insurance policies.
- Performance and payment bonds (if applicable).

Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

- Evidence of completion of Project closeout requirements.
- Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
- Warranties are provided.
- Updated final statement, accounting for final changes to the Contract Sum.
- AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
- AIA Document G706A, "Contractor's Affidavit of Release of Liens."
- AIA Document G707, "Consent of Surety to Final Payment."
- Evidence that claims have been settled.
- Final liquidated damages settlement statement.

PRODUCTS (Not Used)

EXECUTION (Not Used)

END OF SECTION 012900

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

- General project coordination procedures.
- Administrative and supervisory personnel.
- Requests for Information (RFIs).
- Project meetings.

Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

1.3. DEFINITIONS

RFI: Request from Owner, Engineer, or Contractor seeking information from each other during construction.

1.4. COORDINATION

Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

- Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
- Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
- Make adequate provisions to accommodate items scheduled for later installation.

Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

- Preparation of Contractor's construction schedule.
- Preparation of the schedule of values.
- Installation and removal of temporary facilities and controls.
- Delivery and processing of submittals.
- Progress meetings.
- Pre-installation conferences.
- Project closeout activities.
- Project closeout activities.

Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.5. KEY PERSONNEL

Key Personnel Names: At least 10 days prior to starting construction operations, submit a list of key personnel assignments to this Work, including Site Superintendent. Project Manager and Executive.

List addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

- Submit three (3) copies of Key Personnel List to Engineer and Owner. Keep list current at all times.
- The Contractor shall maintain an on-site Site Superintendent for the duration of the project whose role is to supervise that all work is being completed in accordance with the requirements of these Specifications, making decisions on behalf of the Contractor, and to coordinate the Contractor's work to minimize the interference with the residents of the project. The Site Superintendent shall be on-site all hours that the Contractor, his subcontractors, and any person acting on behalf of the Contractor or subcontractor is performing work related to or as specified herein. The Site Superintendent shall have the authority to make decisions on behalf of the Contractor. The Site Superintendent should be able to verbally communicate with all personnel involved with the completion of the work specified herein, the Owner and the Project Manager. English shall be the primary language of communication between the Site Superintendent, the Engineer, the Owner, and the Project Manager.
- The Contractor shall provide telephone numbers, pager numbers and cellular phone numbers of the Site Superintendent where he/she can be reached twenty-four (24) hours a day, seven (7) days a week, for the duration of the project. If the Site Superintendent will not be reachable via the sources listed above at any time during the duration of the project, the Contractor shall provide alternate numbers or shall have other designated personnel that will be learned in the status, methods, and all aspects of the project, and will be reachable at all times.

Field Personnel: Provide a list of all field personnel designated to the project. Such a list will be kept on site and updated regularly. The Contractor will make every attempt to maintain same personnel for the duration of the project. Frequent changes in personnel will not be allowed.

All Contractor's field personnel will have uniforms (shirts or sweatshirts) depicting the company name and logo.

Contractor acknowledges that the Property is occupied, and the contractor's personnel will act accordingly. The following is not allowed on the property:

1. Smoking
2. Alcohol consumption
3. Urinating or defecating outside of designated facilities.
4. Loud conversations and yelling (except in the event of emergency)
5. Loud music
6. Eating outside of designated areas

7. Socializing and fraternizing with the residents, their guests, and/or employees on the Property, during working hours.
8. Arguing and physical conflicts (within the team or with the outside party)
9. Use of amenities and common areas (unless necessary for performance of work and approved by Owner)
10. Littering
11. Loitering outside of work areas for nonwork related matters

The Owner reserves the right to request any member of the Contractor's team be removed from the project, at Owner's Discretion, for violation of any of the provisions (but not limited to) listed above.

1.6. REQUESTS FOR INFORMATION (RFIs)

General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.

Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

- Project name.
- Project number.
- Date.
- Name of Contractor.
- Name of Engineer.
- RFI number, numbered sequentially.
- RFI subject.
- Specification Section number and title and related paragraphs, as appropriate.
- Drawing number and detail references, as appropriate.
- Field dimensions and conditions, as appropriate.
- Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
- Contractor's signature.
- Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

RFI Forms: AIA Document G716

Engineer's Action: Engineer will review each RFI, determine action required, and respond.

Allow (7) seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.

The following RFIs will be returned without action:

- Requests for approval of submittals.
- Requests for approval of substitutions.

- Requests for adjustments in the Contract Time or the Contract Sum.
- Requests for interpretation of Engineer's actions on submittals.
- Incomplete RFIs or inaccurately prepared RFIs.

Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.

Engineer's action on RFIs that may result in a change to the Contract Time, or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

- If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.

On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven days if Contractor disagrees with response.

RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly or with each Application for Payment, Use CSI Log Form 13.2B.

- Project name.
- Name and address of Contractor.
- Name and address of Engineer.
- RFI number including RFIs that were dropped and not submitted.
- RFI description.
- Date the RFI was submitted.
- Date Engineer's response was received.
- Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7. PROJECT MEETINGS

General: Engineer will schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

Attendees: Engineer will inform participants and others involved, and individuals whose presence is required, of the date and time of each meeting.

Agenda: Engineer will prepare the meeting agenda. Distribute the agenda to all invited attendees.

Minutes: Engineer will record significant discussions and agreements achieved. Engineer to distribute the meeting minutes to everyone concerned, including Owner and Contractor within five business days of the meeting.

Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no less than 15 days prior to the start of this Work.

Conduct the conference to review responsibilities and personnel assignments.

Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned

parties shall attend the conference. Participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

Agenda: Discuss items of significance that could affect progress, including the following:

- Tentative construction schedule.
- Phasing.
- Critical work sequencing and long-lead items.
- Overhead Protection Site Plan Sketch
- Drop Schedule depicting areas of work.
- Designation of key personnel and their duties.
- Lines of communications.
- Procedures for processing field decisions and Change Orders.
- Procedures for RFIs.
- Procedures for testing and inspecting.
- Procedures for processing Applications for Payment.
- Distribution of the Contract Documents.
- Submittal procedures.
- Preparation of record documents.
- Use of the premises and existing building.
- Work restrictions.
- Working hours.
- Owner's occupancy requirements.
- Responsibility for temporary facilities and controls.
- Procedures for moisture and mold control.
- Procedures for disruptions and shutdowns.
- Construction waste management and recycling.
- Parking availability.
- Office, work, and storage areas.
- Equipment deliveries and priorities.
- First aid.
- Security.
- Progress cleaning.

Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

Project Closeout Conference: Engineer will schedule a Project closeout conference, at a time convenient to Owner and Contractor but no later than 15 days prior to the scheduled date of Substantial Completion.

Conduct the conference to review requirements and responsibilities related to Project closeout.

Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting.

Participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.

Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

Preparation of record documents.

Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

- Submittal of written warranties.
- Requirements for preparing operations and maintenance data.
- Preparation of Engineer's punch list.
- Procedures for processing Applications for Payment for final payment.
- Submittal procedures.
- Responsibility for removing temporary facilities and controls.

Minutes: Entity conducting meeting will record and distribute meeting minutes.

Progress Meetings: Engineer will conduct progress meetings at biweekly intervals unless otherwise agreed by all parties.

Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.

Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- Review schedule for next period.
- Review present and future needs of each entity present, including the following:
- Interface requirements.
- Sequence of operations.
- Status of submittals.
- Deliveries.
- Off-site fabrication.
- Access.
- Site utilization.
- Temporary facilities and controls.
- Progress cleaning.
- Quality and work standards.
- Status of correction of deficient items.
- Field observations.
- Status of RFIs.
- Status of proposal requests.
- Pending changes.
- Status of Change Orders.
- Pending claims and disputes.
- Documentation of information for payment requests.

Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with each Payment Application.

1.8. COMMUNICATION

General: The communication pertaining to the Project will be limited to the following parties:

1. The Owner, represented by active Board Members or another appointed representative,
2. The management company, represented by Property Manager or another appointed representative,
3. The Contractor, represented by Site Superintendent, Project Manager or Company Executive,
4. The Engineer, represented by Project Manager, EOR or Company Executive

The list of personnel authorized to discuss the project and make decisions will be determined at the Preconstruction Conference.

The information provided by non-authorized personnel to any party will be considered null and void.

The Owner may request such personnel to be removed from the project if it is determined that the information provided could potentially hinder successful completion of the project.

Communication with the individual unit owners shall be EXCLUSIVELY conducted through the Owner or Management Company. No communication to the individual unit owners will be allowed to the Contractor. The contractor shall refer any such communication to the appropriate party.

All verbal communication shall be considered unreliable and shall not constitute an approval, confirmation, agreement, or similar, for decision making purposes. Written communication shall always supersede verbal communication.

END OF SECTION 013100

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

Related Sections:

- Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
- Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3. DEFINITIONS

Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.

1.4. SUBMITTAL ADMINISTRATIVE REQUIREMENTS

Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

All payment applications must be submitted with the appropriate supporting documents (backup) for the quantities being billed during each period. Failure to provide the required supporting documentation will be considered an incomplete payment application package. Incomplete packages will not be eligible for review and will not initiate the review process.

Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

Re-submittal Review: Allow 15 days for review of each re-submittal.

Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.

Indicate name of firm or entity that prepared each submittal on label or title block.

Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.

Include the following information for processing and recording action taken:

- Project name.
- Date.
- Name of Engineer.
- Name of Construction Manager.
- Name of Contractor.
- Name of subcontractor.
- Name of supplier.
- Name of manufacturer.
- Submittal number or other unique identifier, including revision identifier.

Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

- Number and title of appropriate Specification Section.
- Drawing number and detail references, as appropriate.
- Location(s) where product is to be installed, as appropriate.
- Other necessary identification.

Options: Identify options requiring selection by the Engineer.

Deviations: Identify deviations from the Contract Documents on submittals.

Additional Paper Copies: Initial submittal may serve as final submittal.

Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

- Note date and content of previous submittal.
- Note date and content of revision in label or title block and clearly indicate extent of revision.
- Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

Use for Construction: Use only final submittals that are marked with approval notation from Engineer's action stamp.

PART 2 - PRODUCTS

2.1. SUBMITTAL PROCEDURES

General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

Action Submittals: Submit three paper copies of each submittal, unless otherwise indicated. Engineer will return two copies.

Informational Submittals: Submit two paper copies of each submittal, unless otherwise indicated. Engineer will not return copies.

Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

Certificates and Certifications Submittals: Provide a statement that includes the signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

Provide a notarized statement on original paper copy certificates and certifications where indicated.

Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

Mark each copy of each submittal to show which products and options are applicable.

Include the following information, as applicable:

- Manufacturer's catalog cuts.
- Manufacturer's product specifications.
- Standard color charts.
- Statement of compliance with specified referenced standards.
- Testing by recognized testing agency.
- Application of testing agency labels and seals.
- Notation of coordination requirements.
- Availability and delivery time information.
- Submit Product Data before or concurrent with Samples.

Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

- Identification of products.
- Compliance with specified standards.
- Notation of dimensions established by field measurement.
- Relationship and attachment to adjoining construction clearly indicated.
- Seal and signature of professional engineer if specified.

Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.

Submit Shop Drawings in the following format:

Three opaque copies of each submittal. Engineer will retain one copy; remainder will be returned.

Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

Identification: Attach label on unexposed side of Samples that includes the following:

Generic description of Sample.

- Product name and name of manufacturer.
- Sample source.
- Number and title of applicable Specification Section.

Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine the final acceptance of construction associated with each set.

Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.

Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured, and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

Number of Samples: Submit three sets of Samples. Engineer will retain two. Sample sets: remainder will be returned. Contractor shall retain one returned Sample set as a Project record sample at the work site.

Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

Contractor's Construction Schedule: Submit three paper copies of construction schedule. Schedule shall report all work items, commencement and completion times and all milestones. Schedule shall be formatted in a Gant Chart showing overlap of work items. Construction schedule shall include approximate start and completion times of individual work areas, scaffold drops, elevations, etc. Construction Schedule shall be coordinated with Contract Time approved in Contract Agreement.

Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:

Name, address, and telephone number of entities performing subcontract or supplying products.

Number and title of related Specification Section(s) covered by subcontract.

Drawing number and detail references, as appropriate, covered by subcontract.

Submit subcontract list in the following format:

Number of Copies: Three paper copies of subcontractor list, unless otherwise indicated. Engineer will return two copies.

Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable.

2.2. DELEGATED-DESIGN SERVICES

Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to the Engineer.

Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1. ENGINEER'S ACTION

Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. The Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

Informational Submittals: Engineer will review each submittal and will not return it or will return it if it does not comply with requirements. The Engineer will forward each submittal to appropriate party.

Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative and procedural requirements for quality assurance and quality control.
Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner or authorities having jurisdiction are not limited by provisions of this Section.

1.3. DEFINITIONS

Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
Laboratory Mockups: Full-size, physical assemblies constructed at testing facility to verify performance characteristics.
Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on the project site, consisting of multiple products, assemblies, and subassemblies.
Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
The use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4. CONFLICTING REQUIREMENTS

Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5. ACTION SUBMITTALS

Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
Indicate manufacturer and model number of individual components.
Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6. INFORMATIONAL SUBMITTALS

Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
Contractor's Quality-Control Manager Qualifications: For supervisory personnel.
Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.7. CONTRACTOR'S QUALITY-CONTROL PLAN

Quality-Control Plan, General: Submit quality-control plan not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for the Project.
Project quality-control manager may also serve as Project superintendent.
Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
Testing and Inspection: Include in quality-control plan a comprehensive schedule of Work requiring testing or inspection, including the following:

Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
Owner-performed tests and inspections indicated in the Contract Documents.
Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8. REPORTS AND DOCUMENTS

Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

- Name, address, and telephone number of technical representatives making report.
- Statement on condition of substrates and their acceptability for installation of product.
- Statement that products at Project site comply with requirements.
- Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
- Results of operational and other tests and a statement of whether observed performance complies with requirements.
- Statement whether conditions, products, and installation will affect warranty.
- Other required items indicated in individual Specification Sections.

Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9. QUALITY ASSURANCE

General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy the qualification requirements indicated and shall be engaged in the activities indicated.

Requirements of authorities having jurisdiction shall supersede requirements for specialists.

Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.

Notify Engineer seven days in advance of dates and times when mockups will be constructed.

Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction of the Project.

Demonstrate the proposed range of aesthetic effects and workmanship.

Obtain Engineer's approval of mockups before starting work, fabrication, or construction.

Allow seven days for initial review and each re-review of each mockup.

Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual specification sections, along with supporting materials.

1.10. QUALITY CONTROL

Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

Where services are indicated as the Contractor’s responsibility, engage a qualified testing agency to perform these quality-control services.

Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

Testing and inspecting requested by the Contractor and not required by the Contract Documents are Contractor's responsibility.

Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including

service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

Testing Agency Responsibilities:

Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

Determine the location from which test samples will be taken and in which in-situ tests are conducted.

Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

Does not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

Do not perform any duties of Contractor.

Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11. SPECIAL TESTS AND INSPECTIONS

Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, list of special inspections is provided on Drawings, when applicable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1. TEST AND INSPECTION LOG

Prepare a record of tests and inspections. Include the following:

- Date test or inspection was conducted.
- Description of the Work tested or inspected.
- Date test or inspection results were transmitted to Engineer.
- Identification of testing agency or special inspector conducting test or inspection.

Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.2. REPAIR AND PROTECTION

General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

Protect construction exposed by or for quality-control service activities.

Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3. USE CHARGES

General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner, Engineer, residents, testing agencies, and authorities having jurisdiction.

Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Contractor to provide connections and extensions of services as required for construction operations.

Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Contractor to provide connections and extensions of services as required for construction operations.

1.4. INFORMATIONAL SUBMITTALS

Dust-Control: Submit coordination drawing and narrative that indicates the dust-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

Locations of dust-control partitions at each phase of the work.

Other dust-control measures.

1.5. QUALITY ASSURANCE

Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service connections. Install service to comply with NFPA 70.

Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1. INSTALLATION, GENERAL

Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

3.2. TEMPORARY UTILITY INSTALLATION

Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

Sanitary Facilities:

Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

Lighting: Provide temporary lighting to provide adequate illumination for construction operations, observations, inspections, and traffic conditions. Provide temporary lighting beneath overhead protections on sidewalks and as required to maintain owner’s manual operations.

3.3. SUPPORT FACILITIES INSTALLATION

General: Comply with the following:

Maintain support facilities until Engineer Schedules Substantial Completion inspection. Remove before Substantial Completion.

Parking: Owner shall provide parking areas for construction personnel.

Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

Identification Signs: Provide Project identification signs as indicated on Drawings.

Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

Provide temporary, directional signs for construction personnel and visitors.

Maintain and touchup signs so they are legible at all times.

Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

Devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

Existing Elevator Use: Use of Owner's existing elevators will be limited, provided elevators are cleaned and maintained in a condition acceptable to Owner.

Do not load elevators beyond their rated weight capacity.

Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work.

Use of elevators for equipment and tools shall only permitted during mobilization and demobilization. Contractor shall schedule use of elevator for transport of equipment and tools with the Owner a minimum of 5 days prior to use.

Use of elevators for transport of materials and debris shall be strictly prohibited.

Use of elevators for transport of labor shall be permitted and must comply with all items in this section.

Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4. SECURITY AND PROTECTION FACILITIES INSTALLATION

Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion. Contractor to hire certified arborist to cut back tree and shrub canopies as required to prevent damage from work.

Pest Control: Seal all openings made during this work to prevent the passage of pests.

Barricades, Warning Signs, and Lights: Erect structurally adequate barricades, including warning signs and lighting to prohibit access to work area and direct pedestrians and vehicles to acceptable, alternate routes.

Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.

Construct covered walkways using scaffold or shoring framing.

Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.

Paint and maintain appearance of walkway for duration of the Work.

3.5. MOISTURE AND MOLD CONTROL

Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
Protect porous materials and exposed wall cavities from water damage.
Protect stored and installed material from flowing or standing water.
Keep porous and organic materials from coming into prolonged contact with concrete.
Remove standing water from decks.

3.6. TERMINATION, AND REMOVAL

Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 015000

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products and special warranties.

Related Sections:

Division 01 Section "Substitution Procedures" for requests for substitutions.

1.3. DEFINITIONS

Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.4. PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

Delivery and Handling:

Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

Storage:

Store products to allow for inspection and measurement of quantity or counting of units.

Store materials in a manner that will not endanger Project structure.

Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

Protect stored products from damage.

Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.5. PRODUCT WARRANTIES

Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

Refer to Divisions 02 through 09. Sections for specific content requirements and particular requirements for submitting special warranties.

Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1. PRODUCT SELECTION PROCEDURES

General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

Product Selection Procedures:

Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

Manufacturers:

Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered

Visual Selection Specification: Where Specifications include the phrase "as selected by Engineer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Engineer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

EXECUTION (Not Used)

END OF SECTION 016000

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

- Construction layout.
- Field engineering and surveying.
- Installation of the Work.
- Progress cleaning.
- Protection of installed construction.
- Correction of the Work.

1.3. DEFINITIONS

Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4. QUALITY ASSURANCE

Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

Construction Elements: Do not cut and patch construction elements or components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.

Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

1.5. WARRANTY

Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1. EXAMINATION

Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

- Description of the Work.
- List of detrimental conditions, including substrates.
- List of unacceptable installation tolerances.
- Recommended corrections.

Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2. PREPARATION

Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Engineer according to requirements in Division 01 Section "Project Management and Coordination."

3.3. CONSTRUCTION LAYOUT

Building Lines and Levels: Locate and lay out control lines and levels for components receiving work under these specifications. Components installed as part of this work shall be installed in-line with existing construction and built plumb and level.

3.4. INSTALLATION

General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

Make vertical work plumb and make horizontal work level.

Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.

Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

Allow for building movement, including thermal expansion and contraction.

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

Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5. PROGRESS CLEANING

General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

Utilize containers intended for holding waste materials of type to be stored.

Coordinate progress cleaning for joint-use areas where more than one installer has worked.

Site: Maintain Project site free of waste materials and debris.

Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

Remove liquid spills promptly.

Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended.

If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."

During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6. PROTECTION OF INSTALLED CONSTRUCTION

Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

Comply with manufacturer's written instructions for temperature and relative humidity.

3.7. CORRECTION OF THE WORK

Repair or remove and replace defective construction. Restore damaged substrates and finishes.

Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative and procedural requirements for the following:

Disposing of nonhazardous demolition and construction waste.

Related Sections:

- Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.

1.3. DEFINITIONS

Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1. DISPOSAL OF WASTE

General: Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

Burning: Do not burn waste materials.

Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

- Substantial Completion procedures.
- Final completion procedures.
- Warranties.
- Final cleaning.

Related Sections:

- Division 01 Section "Execution" for progress cleaning of Project site.
- Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- Divisions 02 through 09 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3. SUBSTANTIAL COMPLETION

Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.

Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases as applicable.

Prepare and submit Project Record Documents.

Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

Complete final cleaning requirements, including touchup painting.

Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection

or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

Results of completed inspection will form the basis of requirements for final completion.

1.4. FINAL COMPLETION

Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

Submit a final Application for Payment according to Division 01 Section "Payment Procedures."

Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5. LIST OF INCOMPLETE ITEMS (PUNCH LIST)

Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.

Organize items applying to each space by major element.

Include the following information at the top of each page:

- Project name.
- Date.
- Name of Engineer.
- Name of Contractor.
- Page number.

Submit list of incomplete items in the following format:

Three paper copies of product schedule or list, unless otherwise indicated. Engineer will return two copies.

1.6. WARRANTIES

Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

PART 2 - PRODUCTS

2.1. MATERIALS

Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1. FINAL CLEANING

General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

- Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
- Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- Remove tools, construction equipment, machinery, and surplus material from Project site.
- Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

END OF SECTION 017700

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section includes administrative and procedural requirements for project record documents, including the following:

- Record Drawings.

Related Sections:

- Division 01 Section "Closeout Procedures" for general closeout procedures.
- Divisions 02 through 09 Sections for specific requirements for project record documents of the Work in those Sections.

1.3. CLOSEOUT SUBMITTALS

Record Drawings: Comply with the following:

- Number of Copies: Submit one set(s) of marked-up record prints.
- Number of Copies: Submit copies of record Drawings as follows:

Final Submittal: Submit two paper copy sets marked-up record prints. Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

PART 2 - PRODUCTS

2.1. RECORD DRAWINGS

Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings.

Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
- Accurately record information in an acceptable drawing technique.
- Record data as soon as possible after obtaining it.
- Record and check the markup before enclosing concealed installations.

Content: Types of items requiring marking include, but are not limited to, the following:

- Dimensional changes to Drawings.
- Revisions to details shown on Drawings.
- Locations of concealed internal utilities (discovered during work)

- Changes made by Change Order or Construction Change Directive.
- Changes made following Engineer's written orders.
- Details not on the original Contract Drawings.
- Field records for variable and concealed conditions.
- Record information on the Work that is shown only schematically.

Mark the Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.

Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

Mark important additional information that was either shown schematically or omitted from original Drawings.

Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

PART 3 - EXECUTION

3.1. RECORDING AND MAINTENANCE

Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and modifications to project record documents as they occur; do not wait until the end of Project.

Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.

END OF SECTION 017839

SECTION 02 41 19 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

Section Includes:

Demolition and removal of selected cementitious surface coating, deteriorated concrete and stucco surface coating.

Related Requirements:

Division 01 Section "Execution" for cutting and patching procedures.

1.3. DEFINITIONS

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

Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

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.

1.4. MATERIALS OWNERSHIP

Unless otherwise indicated, demolition waste becomes property of Contractor.

Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5. PREINSTALLATION MEETINGS

Pre-demolition Conference: Conduct conference at Project site.

Inspect and discuss condition of construction to be selectively demolished.

Review structural load limitations of existing structure.

Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

Review areas where existing construction is to remain and requires protection.

1.6. INFORMATIONAL SUBMITTALS

Qualification Data: For refrigerant recovery technician.

Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

Schedule of Selective Demolition Activities: Indicate the following:

Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building managers and other residents' on-site operations are uninterrupted without prior notification and approval.

Interruption of utility services. Indicate how long utility services will be interrupted.

Coordination for shutoff, capping, and continuation of utility services.

Use of elevator and stairs.

Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

Pre-demolition Photographs or Video: Submit before Work begins.

Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.7. CLOSEOUT SUBMITTALS

Inventory: Submit a list of items that have been removed and salvaged.

Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8. FIELD CONDITIONS

Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

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

Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.

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

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

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

1.9. WARRANTY

Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding. No warranties currently in effect on the items scheduled for removal by this contract.

PART 2 - PRODUCTS

2.1. PERFORMANCE REQUIREMENTS

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

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

PART 3 - EXECUTION

3.1. EXAMINATION

Verify that utilities have been disconnected and capped before starting selective demolition operations.

Review bid documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in bid documents.

Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

Where concern regarding whether removing any element scheduled for work might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations promptly submit a written report to Engineer.

Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs and measured drawings.

Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2. UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.3. PREPARATION

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.

Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."

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

Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

Cover and protect furniture, furnishings, and equipment that have not been removed.

Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities and Controls."

Temporary Shoring: 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.

Strengthen or add new supports when required during progress of selective demolition.

3.4. SELECTIVE DEMOLITION, GENERAL

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

- 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.
- Neatly cut openings and holes plumb, square, and true to dimensions required. 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 chipping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
- Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
- Cutting torches are prohibited.
- Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
- Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- Dispose of demolished items and materials promptly.

Removed and Reinstalled Items:

- Clean and repair items to functional condition adequate for intended reuse.
- Pack or crate items after cleaning and repairing. Identify contents of containers.
- Protect items from damage during transport and storage.
- Reinstall items in locations indicated.
- Comply with installation requirements for new materials and equipment.
- Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

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

3.5. DISPOSAL OF DEMOLISHED MATERIALS

General: Except for items or materials indicated to be reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

- Do not allow demolished materials to accumulate on-site.
- Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

Burning: Do not burn demolished materials.

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

3.6. CLEANING

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.

Areas open for use by the Owner and their guests during non-work hours shall be broom swept and cleaned of debris associated with this work at the end of each workday

END OF SECTION 024119

PART 1 – GENERAL

SUMMARY

Furnish all labor, materials, tools, and equipment required to perform the structural concrete repairs. The Work of this specification section shall include all items as described in the bid form.

Work covered under this Section shall conform to the following sections of ACI 301, except as modified by these Contract Documents:

Section 1-General Requirements;
Section 2-Formwork and Formwork Accessories;
Section 3-Reinforcement and Reinforcement Supports;
Section 4-Concrete Mixtures;
Section 5-Handling, Placing, and Constructing.

DEFINITIONS

A. Design Professional: Engineer or Architect issuing Contract Documents or administering the Work under the Contract Documents, or both.

REFERENCED STANDARDS AND REPORTS

B. ACI Standards and Reports

301-10 Specifications for Structural Concrete
305.1-14 Specification for Hot Weather Concreting
306R-10 Guide to Cold Weather Concreting

C. ASTM Standards and Reports

A615/A615M-14	Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement
A775/A775M-07b-14	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
A820/A820M-11	Standard Specification for Steel Fibers for Fiber-Reinforced Concrete
A884/A884M-14	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
A1064/A1064M-14	Standard Specification for Carbon Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
C31/C31M-12	Standard Practice for Making and Curing Concrete Test Specimens in the Field
C33/C33M-13	Standard Specification for Concrete Aggregates
C39/C39M-14a	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
C94/C94M-14b	Standard Specification for Ready-Mixed Concrete
C109/C109M-13	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in [50-mm] Cube Specimens)
C138/C138M-14	Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
C143/C143M-05	Standard Test Method for Slump of Hydraulic-Cement Concrete

C144-11	Standard Specification for Aggregate for Masonry Mortar
C150/C150M-12	Standard Specification for Portland Cement
C157/C157M-08	Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete
C171-07	Standard Specification for Sheet Materials for Curing Concrete
C173/C173M-14	Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
C231/C231M-14	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
C260/C260M-10a	Standard Specification for Air Entraining Admixtures for Concrete
C309-11	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
C387/C387M-11b	Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar
C494/C494M-13	Standard Specification for Chemical Admixtures for Concrete
C457/C457M-11	Standard Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete
C595/C595M-14	Standard Specification for Blended Hydraulic Cements
C618-12a	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
C881/C881M-14	Standard Specification Epoxy-Resin-Base Bonding Systems for Concrete
C928/C928M-13	Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
C989/C989M-14	Standard Specification for Slag Cement for Use in Concrete and Mortars
C1064/C1064M-12	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
C1116/C1116M-10a	Standard Specification for Fiber-Reinforced Concrete
C1157/C1157M-11	Standard Performance Specification for Hydraulic-Cement
C1202/C1202M-12	Standard Test Method for Electrical Indication of Concretes Ability to Resist Chloride Ion Penetration
C1240-14	Standard Specification for Silica Fume Used in Cementitious Mixtures
C1315-11	Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete
C1543-10a	Standard Test method for Determining the Penetration of Chloride Ion into Concrete by Ponding
C1582/C1582M-11	Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete
C1583/C1583M-13	Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)
C1600/C1600M-11	Standard Specification for Rapid Hardening Hydraulic-Cement
C1602/C1602M-12	Standard Specification for Mixing Water Used in the Production of Hydraulic-Cement Concrete
D4580/D4580M-12	Standard Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding

AWS Standards and Reports

D 1.4/D 1.4M	Structural Welding Code-Reinforcing Steel

CAN/CSA Standards and Reports

A 3000-13	Cementitious Materials Compendium

SSPC Standards and Reports

SP6/NACE No. 3	Commercial Blast Cleaning

Cited ICRI Technical Guidelines in this Specification.

120.1-2009	Guidelines and Recommendations for Safety in the Concrete Repair Industry
210.3R-2013	Guide for Using In-Situ Tensile Pulloff Tests to Evaluate Bond of Concrete Surface Materials
310.1R-2008	Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
320.2R-2009	Guide for Selecting and Specifying Materials for Repair of Concrete Surfaces
320.3R-2012	Guideline for Inorganic Repair Material Data Sheet Protocol

Standards-Producing Organizations: Names, abbreviations, and addresses of organizations issuing documents referenced in this Specification.

American Association of State Highway and Transportation Officials (AASHTO)
444 North Capitol Street NW, Suite 249
Washington, DC 20001
www.transportation.org

American Concrete Institute (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331
www.concrete.org

American Welding Society (AWS)
8669 Doral Boulevard, Suite 130
Doral, FL 33166
www.aws.org

ASTM International (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428
www.astm.org

Canadian Standards Association (CSA)
178 Rexdale Blvd.
Toronto, ON
Canada M9W 1R3
www.csagroup.org

International Concrete Repair Institute (ICRI)
St. Paul, MN 55114
www.icri.org

The Society for Protective Coatings (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222
www.sspc.org

UNIT PRICES

A. Submit unit prices as required on the Bid Form. Unit prices shall include costs for all activities related to the execution of the repair as described in 1.4 C.

All quantities and costs associated with the cleaning and adjustment of existing reinforcement are incidental and shall be included in the unit price for the Work. Replacement and new reinforcement and accessories shall be provided as part of the unit price for the repair Work unless separate unit prices are requested on the bid form. Unit prices provided for replacement of reinforcement shall apply only to bars in need of replacement due to section loss caused by corrosion or bars added at the discretion of the Design Professional. Replacement of bars for other reasons shall not be billed to the Owner.

Unit prices apply to authorized Work performed within the quantities defined by the Division 01 General Requirements.

SUBMITTALS

A. Products:

- Submit in accordance with the Division 1 General Requirements. Include product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material indicated.
- Subparagraphs 1.5A.2 and 1.5A.3 list requirements that may be covered in the General Requirements and, therefore, need to be coordinated with those requirements.
- Select materials from the product or products noted in these specifications, or the submittal is permitted to be rejected at the discretion of the Design Professional or Owner. Provide documentation that alternate materials submitted are equivalent or superior to those provided in these specifications. Material submittals can be accompanied by requests for credits or additional charges when appropriate.
- All submittals shall be made 2 weeks prior to the start of Work. Do not proceed with the Work prior to submittal acceptance. Submittals requested during the project for unforeseen Work shall be provided 2 weeks prior to the use of the material to allow adequate time for engineering evaluation and acceptance. If a substitution request is accompanied by a cost savings offer to the Owner, the cost savings shall be returned to the Owner in the form of a credit change order.

B. Shop Drawings:

Shoring and Bracing: Ensure the adequacy of the structure and temporary supports to withstand the anticipated loads during construction, and the effect of demolition on the capacity of the structure. Submit design calculations, sealed by an Engineer licensed to practice in the jurisdiction where the Work is performed, for shoring and bracing at all repair types. Submit shoring and bracing drawings, or documentation from the Shoring Engineer that none is required prior to the start of demolition on the structure.

Formwork: Ensure the adequacy of the formwork to withstand the anticipated pressures exerted by the wet concrete. Submit design calculations, sealed by an Engineer licensed to practice in the jurisdiction where the Work is performed, for the formwork when required by the Design Professional. Submit formwork drawings.

Reinforcement: Submit data and shop drawings in accordance with the requirements of ACI 301.

Form and Pump: Pumps and fittings used for the placement of concrete in sealed forms shall be submitted. The proposed spacing of fittings and the means for assuring proper vibration and complete filling of the repair cavity shall be demonstrated.

C. Repair Materials

Ready Mixed/Site Batch Concrete: Submit all proposed concrete mixture designs for use on the project. Mixture design submittals shall include trial-batch test results or historical test data for the specific mixture proposed. All components of ready mixed and site batched concrete shall be listed.

Packaged Materials: Packaged material submittals shall include all relevant manufacturers' literature, including technical data. Submit data on materials and limitations where aggregate extension is planned.

Include MSDS for all materials submitted.

D. Qualifications

Submit documentation demonstrating conformance with the qualification requirements for the concrete repair Contractor and the foreman for the concrete repair Contractor as described in the Quality Assurance section.

Equipment and Procedures for Concrete Removal: Submit a list of concrete removal equipment to be used on the project, and the locations and circumstances under which each piece of equipment will be used. Include special provisions that will be used to avoid post-tensioning tendons and related hardware, embedded conduit, or other embedded items not specified for removal. Include a description of procedures that will be used to dispose of wastewater from water jetting, blasting, and hydrodemolition (if applicable).

Equipment and Procedures for Surface Preparation: Submit a description of the equipment and procedures that will be used to achieve the required bond of the repair material.

Records Retention: Retain all design and as-built records for a period of 7 years. These documents shall include, as a minimum, the original contract drawings and specifications, material submittals including MSDS, shop drawings, patch logs, test and inspection reports, progress photographs, and warranties.

PREINSTALLATION CONFERENCE

A. Prior to the start of work, the following personnel shall attend a preinstallation conference:

- Contractor's Project Manager;
- Contractor's Superintendent;
- Concrete Repair Subcontractor;
- Inspectors;

QUALITY ASSURANCE

A. Qualifications:

1. **Concrete Repair Contractor**: Submit documentation demonstrating experience with previous projects of similar size and complexity. The documentation shall include references from Owners, Contractors, and Engineers on the previous projects.
2. **Foreman for the Concrete Repair Contractor**: Submit a résumé for the foreman demonstrating experience with previous projects of similar size and complexity. The documentation shall include references from Owners, Contractors, and Engineers on the previous projects.

Mockups: Provide mockups for concrete removal, surface preparation, and concrete repair material placement to demonstrate the quality and appearance of the repair Work. Mockups shall be constructed using the same personnel, equipment, and materials that will be used for the final work. Locate the mockups in areas designated by the Design Professional. Notify the Design Professional in writing at least 48 hours in advance of the mockup placement to allow for inspection and acceptance of the Work.

1. Accepted mockups are permitted to become part of the completed Work if undisturbed at the time of Substantial Completion.
2. The manufacturer's representative shall review the mockup when requested by the Design Professional.

Notify the Design Professional for scheduling purposes at least *24 hours* in advance of when repair locations are ready for repair material placement and allow adequate time for inspection. Schedule all inspection Work with the Design Professional. Any Work covered up without inspection is subject to rejection by the Design Professional.

Provide and maintain a facility or location for the safe storage and proper curing of freshly cast test specimens. The temporary storage area and access for the Design Professional or testing agency to perform concrete testing during placement shall comply with the requirements of ASTM C31/C31M.

DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the project site in the manufacturer's original and unopened containers, label intact with type and name of products and manufacturers.

   Comply with the manufacturer's written instructions for conditions for temperature requirements as well as other conditions for storage.

   Do not use materials that have exceeded their stated expiration date.

   Store all materials off the ground, under cover, and in a dry location. Protect from rain, water, freezing, excessive heat, foreign matter, and other damaging conditions until ready for use. If materials have frozen, obtain manufacturer's written approval prior to use. Do not stir liquids or mix materials until they are completely thawed. Do not force-thaw materials. Do not use damaged containers or broken bags.

   Comply with the material manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

PROJECT CONDITIONS

A. Environmental Limitations and Requirements:

Execute demolition in a manner to limit unnecessary dust and noise. Enclose each phase of the Work with a minimum of a plastic or cloth barrier to maximize confinement of dust and debris inside the Work area. Enclosures shall be securely constructed and inspected by the Contractor each working day to ensure there are no holes or tears. Take other steps as required to keep dust and debris confined to the Work, such as providing air filtration equipment, the use of wet cutting equipment, and the use of wet abrasive cleaning equipment. Vent exhaust fumes from enclosed Work areas. If the exhaust fume level cannot be kept at an acceptable level, use other equipment or relocate the equipment so that the exhaust can be properly vented away from occupied areas. Dispose of water from operations in a safe and lawful manner.

Existing Electrical, Plumbing, and Mechanical Services:

Protect all electrical conduits, boxes, wiring, and fixtures from damage. Safe removal of lighting fixtures and existing surface mounted electrical lines, when required, shall be the responsibility of the Contractor. All electrical lines shall be reattached to the structure after completion of the repairs.

Take reasonable precautions to avoid damaging embedded electrical conduits. Reasonable precautions shall include, but are not limited to, reviewing existing documentation and connected services in combination with nondestructive testing to determine the layout of the conduit. Demolition equipment shall be selected to minimize damage to conduit. Damage to embedded conduits as a result of Contractor negligence shall be repaired by the Contractor at no cost to the Owner.

SAFETY

A. All Work shall be performed in accordance with the applicable provincial, local, state, and federal requirements for safety and the recommendations of ICRI 120.1.

B. Maintain a copy of MSDS at the jobsite for all materials.

PART 2 – PRODUCTS

EQUIPMENT

A. Select appropriate means and methods of concrete removal, cleaning of reinforcement, and preparation of the concrete substrate as defined in these specifications. Obtain acceptance from the Design Professional as to the type of equipment to be used. The following equipment or approved equivalent are permitted to be used.

Chipping hammers with a total weight not to exceed:

a. 15 lb (6.8 kg) with sharp pointed tools for the removal of concrete from partial-depth repairs, beneath reinforcing bars and around repair edges.

Dry abrasive blast cleaning equipment capable of removing rust from the exposed steel reinforcement and cleaning the surface of the exposed concrete substrate. Cleaning shall include the removal of damaged paste and aggregate.

Pressure-washing equipment capable of delivering at least 3000 psi (20.7 MPa) nozzle pressure for cleaning loose material from repair areas.

Water-blasting equipment capable of delivering pressures of 5000 psi (34.5 MPa) to 10,000 psi (69 MPa) for concrete surface preparation.

Compressed air equipment capable of delivering compressed air free of oil for cleaning loose material from repair areas.

Adjustable depth concrete saw for saw cutting the edges of repair areas.

Select appropriate means and methods of placing concrete. Obtain acceptance from the Design Professional as to the type of equipment to be used.

PRODUCTS AND MANUFACTURERS

Products and corresponding manufacturers cited in the sections that follow shall be the basis for pricing the Work. The Contractor must bid the specified products. The Contractor may request a substitution subject to review and acceptance by the Design Professional.

A. ANTICORROSION AGENTS

PART 2 - Epoxy-Modified, Cementitious Anticorrosion Agent: Manufactured product that consists of water-insensitive epoxy adhesive, Portland cement, and water-based solution of corrosion-inhibiting chemicals that forms a protective film on steel reinforcement.

PART 3 - Products: Subject to compliance with requirements

A. SCRUB COAT

Patching mortar shall be used without coarse aggregate “neat” as a bonding agent for patching mortar. Scrub coat shall be applied in accordance with patching mortar manufacturer guidelines.

B. PATCHING MORTAR

Polymer-Modified, Cementitious Patching Mortar: Packaged, dry mix for repair of concrete and that contains a non-redispersible latex additive as either a dry powder or a separate liquid that is added during mixing and integral corrosion inhibitor

Compressive Strength: Minimum of 5000 psi at 28 days when tested according to ASTM C 109/C 109
Manufacturers:

1. **Sika Corp.**
2. **Sto Corp.**

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

C. REPAIRING DAMAGED REINFORCED STRUCTURAL MEMBERS:

1. Reinforcing primer: Rebar primer and anti-corrosion agent

    a. Sika Armatec 110 Epocem (Open time up to 16hrs)
    b. Sika Armatec 1C (open time up to 2 hrs)
    c. Sto Bonding Anti-Corrosion Agent CR 246 (open time up to 24 hrs)
    d. Sika Armatec-110 Epoxy

NOTE: Open times vary based on ambient temperatures and other variables. Follow manufacturer's recommendations.

2. Concrete primer for bonding new concrete to old concrete: Epoxy adhesive, or manufacturer approved product based on repair mortar being used.

    a. Sika Armatec 110 EpoCem (open time up to 16 hrs)
    b. Sika Armatec 1C (open time up to 2 hrs)
    c. Sto Bonding Anti-Corrosion Agent CR 246 (open time up to 24 hrs)
    d. Sika Armatec-110 Epoxy

    NOTE: Open times vary based on ambient temperatures and other variables. Follow manufacturer's recommendations.

3. Vertical, Overhead & Horizontal Partial-Depth Repair Products: Polymer-modified, cementitious, high-performance, hand-applied repair mortars

    a. SikaRepair 123 PLUS with Corrosion Inhibitor (1/8" to 1-1/2" per lift)
    b. SikaQuick VOH - For Overhead (1/8" to 2" per lift), For Vertical (1/8" to 3" per lift)
    c. Sto CR702-CI Overhead Mortar with Corrosion Inhibitor (1/4" to 2" per lift)
    d. SikaEmaco N 425 or SikaEmaco 425 Gel Patch (both are 1/4" to 2" per lift)

    NOTE:. Follow manufacturer's recommandations.

4. Horizontal Full-Depth Repair Products: Micro-silica or polymer modified, cementitious, high-performance, form and pour repair mortars

    a. SikaCrete 211 SCC Plus Full- Depth with Corrosion Inhibitor (1" to 8")
    b. Sto CR311 CIX Full-Depth Mortar with Corrosion Inhibitor (1-1/2" minimum)
    c. SikaEmaco 440 CI (1.5" to Full Depth) and SikaEmaco S 466 (1" to Full Depth)

    NOTE: Follow manufacturer's recommandations.

5. Horizontal Surfaces: Polymer-modified, cementitious, high-performance, hand-applied repair mortars

    a. SikaCrete 211 SCC Plus Full- Depth with Corrosion Inhibitor (1" to 8")
    b. SikaEmaco 440 CI (1.5" to Full Depth) and SikaEmaco S 466 (1" to Full Depth)

    NOTE: Follow manufacturer's recommandations.

6. **Filling Small Cracks by Pouring or Pressure Injection:** Low Viscosity Epoxy Adhesive in pure form, poured or as an injection resin.

a. Sika Sikadur 35, Hi-Mod LV LPL or Sikadur Crack Fix
b. Sto Stopoxy Binder CR633
c. MasterInject 1380

NOTE: Follow manufacturer's recommendations.

7. **Cap Seal and Port Setting Epoxy:** Epoxy Cap Seal and Port Setting Material. High Viscosity Epoxy.

a. Sika Sikadur 33 or Sikadur Anchorfix
b. Sto Stopoxy Quick-Set Gel CR634MIXES
c. Sikadur-31 Hi Mod LPL

NOTE: Follow manufacturer's recommendations.

8 Other Sika Materials

a. SikaQuick EZ Patch (Sloping Mortar)
b. SikaQuick 428FS (Rail Post Pocket Grout)
c. Sika Anchorfix 500 (Crack Repair Mortar for CMU)
d. SikaQuick Smooth Finish (Vertical Leveling Mortar)
e. Sikadur Crack Weld Kit (Structural Crack Repair)
f. Sika Carbodur (Slab Strengthening)
g. Sikatop 122 Plus (Shallow, Partial Depth Repairs)
h. Sikaflex 2cNS EZ Mix (Crack and Cold Joint Repairs)

9 Other Sika Materials

a. Sikalastic 350 (Sloping Mortar)
b. SikaEmaco 440 CI (1.5" to Full Depth) and SikaEmaco S 466 (1" to Full Depth) (Rail Post Pocket Grout)
c. Sikadur-32 Hi-Mod (Crack Repair Mortar for CMU)
d. SikaEmaco 425 Gel Patch (Vertical Leveling Mortar)
e. Sikadur-32 Hi-Mod (Structural Crack Repair)
f. Sikadur Carbon Fiber Line (Slab Strengthening)
g. SikaEmaco 1061 (Shallow, Partial Depth Repairs)
h. Sikaflex NP 2 (Crack and Cold Joint Repairs)

NOTE: Follow manufacturer's recommendations.

STEEL REINFORCEMENT AND ACCESSORIES

A. Steel Reinforcing Bars and Accessories for replacement of corroded reinforcement: Reinforcing bars shall be ASTM A615, Grade 60, deformed.

Chairs shall have plastic feet or shall be plastic coated.
Fabrication: Comply with reference standards and general notes on the repair drawings.

a. Do not field-bend bars. All bars shall be shop fabricated.
b. All bends and hooks shall conform to bend standards noted in the CRSI *Manual of Standard Practice* unless otherwise noted on repair plans. Cold bend all reinforcement.

Plain-Steel Welded Wire Reinforcement shall conform to ASTM A1064/A1064M.

CURING MATERIALS

A. Curing Materials For Packaged Repair Material:

Moisture Retention Cover Cure with polyethylene film or plastic covered fabric, including burlap. Sheets shall comply with ASTM C171.

Wet Cure with Absorbent Cover meeting AASHTO M 182, Class 2, such as Burlap.

MISCELLANEOUS MATERIALS

B. Formwork Materials: Form-facing materials shall be plywood or other material conforming to the requirements of ACI 301.
Form release agent compatible with subsequent applied finishes shall be used.
Doweling Bonding Material: Material for bonding reinforcement to the existing concrete:
Hit Hy 200 Adhesive as manufactured by Hilti.
Corrosion-inhibiting Coating: Corrosion-inhibiting coating for embedded steel elements.
Sika Armatec Epocem as manufactured by Sika Corporation.

PART 3 – EXECUTION

EXAMINATION

A. Notify the Design Professional at least *24 hours* in advance of times when areas of deteriorated concrete will be located.

Locate areas of delamination using hammer sounding and/or chain-drag sounding in accordance with ASTM D4580, mark boundaries, and arrange for the Design Professional to inspect and approve the layout geometry. Layout geometry shall be performed in accordance with ICRI. 310.1R.

PROTECTION

A. Precautions: Protect pedestrians; motor vehicles; mechanical, electrical, and plumbing equipment; surrounding construction; project site; landscaping; and surrounding buildings from damage or injury resulting from concrete rehabilitation Work.

- Neutralize and collect alkaline and acid wastes for proper disposal off-site in accordance with Local, State, and Federal regulations.
- Dispose of runoff from wet operations in accordance with all local ordinances and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- Comply with local noise ordinances during demolition operations.
- Protect all new repair Work from vibration, dust, and any deleterious environmental effects during the Work. Provide adequate cure time for concrete repairs to allow for compressive and bond strength gain prior to performing demolition adjacent to the repairs.

FORMWORK AND SHORING

A. General:

- Construct forms to sizes, shapes, lines, and dimensions to match existing adjacent surfaces and textures.
- Provide for openings, offsets, moldings, chamfers, anchorages, inserts, and other required features.
- Construct forms to accommodate installation of products by other trades.
- Provide for easy removal of form without damage to the concrete and adjacent surfaces.
- Apply an appropriate form release coating over surfaces of formwork prior to erecting in-place before each concrete placement. Form release agents shall not be applied to or come in contact with the concrete substrate or reinforcement at any time.
- Provide ports through slabs where required to install repair materials at soffits and beams and to vent air during concrete placement.
- Provide ports through the sides of forms where required to install repair materials. Remove and patch ports immediately after removal of forms.

Shoring: Provide shoring and bracing in accordance with the shoring and bracing drawings prior to performing work.

PREPARATION AND BONDING

A. Partial-depth Concrete Removal: Removal of deteriorated concrete, surface preparation, and provisions for reinforcement in areas to be repaired shall be conducted in accordance with ICRI 310.2R. The surface of the repair area shall be roughened to a minimum surface profile of CSP 7, as described in ICRI 310.2.R. In addition, the following criteria shall be met within the repair locations:

- Repair configurations should be kept as simple as possible and shall preferably have square corners.
- The aspect ratio of the repair area for slabs shall be as square as possible, not exceeding 1.25:1 to 1.5:1. Odd shapes shall be avoided. If they cannot be avoided, re-entrant corners shall be mitered or reinforced to limit cracking at these locations.
- Remove concrete using power equipment such as impact breakers or as required for hydrodemolition.
- Remove all loose and deteriorated concrete from the slabs by breaking up and dislodging loose and/or heavily cracked concrete. Extend the repair to beyond the corrosion on the reinforcing bars. Where half or more of the perimeter of reinforcing bar is exposed, bond between the reinforcing bar and surrounding concrete is broken, or the reinforcing bar is corroded, remove concrete from the entire perimeter of the bar to provide at least 0.75 in. clearance between exposed reinforcing steel and surrounding concrete or 0.25 in. larger than the coarse aggregate in the repair material, whichever is greater. Reinforcing bars in both directions shall have the required clearance.
- Remove all loose and deteriorated concrete from the walls by breaking up and dislodging loose and/or heavily cracked concrete. Extend repairs to beyond the corrosion on the reinforcing bars. Where half or more of the perimeter of the reinforcing bar is exposed, bond between the reinforcing bar and surrounding concrete is broken, or the reinforcing bar is corroded, remove concrete from the entire perimeter of the bar to provide at least 0.75 in. clearance between exposed reinforcing steel and surrounding concrete or 0.25 in. larger than the coarse aggregate in the repair material, whichever is greater. Reinforcing bars in both directions shall have the required clearance.
- Remove all loose and deteriorated concrete from the columns by breaking up and dislodging loose and/or heavily cracked concrete Extend the repairs to beyond the corrosion on the

reinforcing bars. Remove additional concrete at the perimeter of the vertical steel as required to provide a minimum clearance of 0.75 in behind the vertical steel.

- Remove all loose and deteriorated concrete from the beams by breaking up and dislodging loose and/or heavily cracked concrete Extend the repairs to beyond the corrosion on the reinforcing bars. Remove additional concrete at the perimeter of the horizontal steel as required to provide a minimum clearance of 0.75 in. behind the horizontal steel.
- Test areas where concrete has been removed by tapping with a mason's hammer and remove additional concrete until unsound concrete is completely removed.

Full-Depth Concrete Removal: Procedures described previously in the paragraphs for partial-depth removal shall be followed except that the depth of removal shall extend through the entire thickness of the concrete section. Saw cuts and chipped edges shall be provided at the perimeter of the repair. In the case of slabs, the saw cuts and chipped edges shall be provided at both the top and at the underside. Special care must be taken to provide shoring around the perimeter of the full-depth removal area in accordance with the approved shoring plan. Precautions regarding falling debris must be taken to prevent damage to structures or other property below the removal area.

Concrete Cavity Surface Preparation:

- Saw-cut the perimeter of areas indicated for removal and beyond the corrosion on the reinforcement to a depth of approximately 0.5 in. All edges shall be straight. Care must be taken to avoid cutting reinforcing bars, including the adjustment of the 0.5 in. saw cut in areas with less than 0.5 in concrete cover. Make cuts perpendicular to concrete surfaces, or slightly undercut, and no deeper than the existing cover over reinforcement. Provide chipped vertical edges for the full depth of the repair. Roughen saw-cut edges.
- Remove bruised concrete substrate weakened by microcracking by abrasive blasting or high-pressure water blasting with or without abrasive.

Reinforcing Bar Preparation: Remove concrete fragments, corrosion product, mill scale, and other contaminants from reinforcing bars by commercial blast cleaning in accordance with SSPC-SP 6 until a bare metal finish has been achieved on the reinforcing bars.

Where section loss of reinforcing bars is more than 25% of the cross-sectional area, splice replacement bars to existing bars as directed by the Design Professional. Remove additional concrete as necessary to provide at least a 0.75 in. (19.1 mm) clearance beyond existing and replacement or supplemental bars.

Splice replacement bars to existing bars according to ACI 301 by lapping, welding, or using noncorrosive mechanical couplings. Welding, when approved by the Design Professional, shall be in accordance with AWS D1.4/D1.4M.

At areas around the repair perimeters where the development length cannot be achieved within the repair, drill into sound concrete as shown on the drawings or directed by the Design Professional to provide the required bar development and splice length or remove additional concrete to allow for the splice.

Reinforcement shall be bonded to the existing concrete with the dowel bonding material in accordance with the approved manufacturer's recommendations.

Replace existing reinforcing bars were shown or directed by the Design Professional.

Provide support chairs, slab spacers, and holding bars properly spaced and with sufficient strength to carry loads of reinforcement and deposited concrete without collapsing or allowing bars to sag. All accessories used at exposed concrete must have plastic tips capable of resisting concrete stains.

Place reinforcing bars accurately and tie firmly in place. Replace or supplement reinforcing bars in accordance with the size and spacing noted on the repair drawings.

Provide the minimum concrete cover as specified on the repair drawings. In areas where the minimum concrete cover for outer mat reinforcement cannot be achieved without mounding of the repair concrete, the outer mat reinforcing bars are permitted to be bent, if practical, to achieve the required cover.

Alternately, the Contractor is permitted, with the Design Professional's acceptance, to extend the limits of concrete removal to expose the entire bar to allow for lowering of the bars.

All new and existing reinforcement shall be coated with the corrosion-resistant coating.

Protect prepared surfaces from the elements until ready to place repair materials.

Cleaning:

- Remove bond-inhibiting materials (dirt, concrete slurry, loosely bonded aggregates, etc.) by abrasive blasting or low-pressure water blasting with or without abrasive. When water blasting, provide 3000 psi (20.7 MPa) or greater water pressure. Keep nozzle not less than 6 in. (152.4 mm) and no more than 12 in. (304.8 mm) away from the surface to be cleaned.
- Confine, collect, and dispose of broken concrete, sandblast grit, dust, debris, removed reinforcement, and other waste material resulting from removal operations and surface preparation in a safe and legal manner.
- Check concrete surfaces after cleaning to ensure they are free of loose aggregate, microcracking, and additional delamination.
- Thoroughly clean removal areas of loose concrete, dust, and debris using high-pressure, oil-free air.

Bonding:

- Saturated Surface-Dry Substrate: Predampen concrete substrate surfaces to saturated surface-dry condition immediately prior to placement.
- Mortar Scrub Coat: Install a mortar scrub coat onto saturated surface-dry substrate just prior to placing the repair material. Agitate thick slurry periodically to avoid settling of components in the container.
- Mortar Scrub Coat with Latex Admixture: Install a mortar scrub coat onto saturated surface-dry substrate just prior to placing the repair material. The mortar scrub coat shall be one-part Portland cement complying with ASTM C150/C150M, Type I (CSA A3000, GU), and one part fine aggregate complying with ASTM C144, except 100 percent passing a No. 16 (1.2 mm) sieve, mixed with mixing liquid to form a thick slurry. Mixing liquid shall consist of the specified latex admixture diluted with clean potable water at manufacturer's recommended dilution ratio. Agitate thick slurry periodically to avoid settling of components in the container.
- Proprietary Bonding Agent: Just prior to the installation of the bonding agent, thoroughly clean the repair area with oil-free compressed air. Install the bonding agent in accordance with the manufacturer's recommendations. The bonding agent shall be installed immediately

prior to the placement of the repair material.

- The bond strength shall be a minimum of _5000 psi.

CONCRETE MIXING, CONVEYING, AND PLACEMENT

A. Mixing, conveying, and placement shall conform to the requirements of ACI 301, except as modified within these specifications.

- Use placement methods suitable for each particular field situation.
- Place repair materials within open time of any mortar scrub coat or bonding agent.
- Mix and place packaged repair materials in accordance with the manufacturer's written instructions.

Ready Mixed concrete shall be batched, mixed, and delivered in accordance with the requirements of ASTM C94/C94M.

Fully consolidate the concrete as required to encapsulate the reinforcement, fill all voids, and avoid honeycombing.

FINISHING AND CURING

A. Finishing: Finish concrete to match adjacent existing concrete surfaces.

B. Curing: Cure repairs for a minimum of 72 hours unless otherwise specified. Ready mixed concrete shall be cured for a minimum of 7 days. Packaged repair materials shall be cured no less than the time recommended by the manufacturer. Polymer-modified repair materials shall be wet-cured 24 to 48 hours.

- Wet cure all repair locations following placement and finishing.
- Apply curing compound to the repair areas in accordance with the manufacturer's written instructions and at the minimum rates and number of applications specified by ACI 301.
- Remove curing compound prior to installation of coatings or finishes in accordance with the manufacturer's specified procedures.
- Apply curing/sealing compound to the repair areas in accordance with the manufacturer's written instructions and at the minimum rates and number of applications specified by ACI 301.

Formwork Removal: Removal of formwork and shoring shall not occur until both of the following criteria have been met:

Repair material has cured for a minimum of 72 hours unless otherwise permitted by the Design Professional.

Repair material has attained a minimum compressive strength of 4000 psi (27.6 MPa) (or 75% of the specified compressive strength of the substrate concrete) as determined by testing of field-cured cylinder samples. Loading of the slab with design live loads shall not occur until the concrete has attained a minimum compressive strength of 5000 psi (34.5 MPa) (or 100% of the specified compressive strength of the substrate concrete) based on field-cured cylinder samples.

Grind the perimeter of all formed surfaces at the interface with the existing concrete to remove all loose material and provide a smooth transition from new to existing concrete.

Additional finishing shall be performed as required to match the existing concrete surface.

FIELD QUALITY CONTROL

A. Testing Agency: The Owner will engage the Design Professional or a Testing Agency under the direction of the Design Professional to inspect, sample, and test materials.

B. Steel Reinforcement: Provide 24-hour minimum notification to the Design Professional to arrange for inspection of forms, reinforcement, reinforcement placement, and embedded items prior to any concrete placement.

C. Concrete Placement: Provide 24-hour minimum notification to the Design Professional to arrange for inspection of concrete placement, finishing, and curing. Inspection, testing, and reports shall be in accordance with the requirements of ACI 301.

D. Substrate Testing:

- Perform testing and the evaluation of the results in accordance with ASTM C1583 and ICRI 210.3R.
- Prior to making repairs, conduct one set of a minimum of three pull-off tests to determine the condition of the substrate at the level of the proposed repairs in each repair type and for each surface preparation procedure. One set of a minimum of three pull-off tests shall also be conducted on a similar nearby undamaged existing surface for comparison to the strength at the prepared substrate.
- Perform one set of three in-situ tensile pull-off tests on prepared substrates for each 1000 ft^2 (93 m^2) of partial-depth repair performed.

E. Bond Testing:

- Perform testing and the evaluation of the results in accordance with ASTM C1583 and ICRI 210.3R.
- Prior to making repairs, conduct one set of a minimum of three pull-off tests to verify the bond between the repair material and the existing concrete for each repair material and each surface preparation procedure in order to establish baseline acceptance criteria. Perform one set of three in-situ tensile pull-off tests on completed repairs to evaluate the bond for each 1000 ft^2 (93 m^2) of partial-depth repair.

F. Permeability Testing:

- Determine the chloride permeability of the repair materials in accordance with ASTM C1543 and ASTM C1202/C1202M.

END OF SECTION 030130

SECTION 07 18 00 – TRAFFIC COATINGS

Part 1 - General

1.01 Summary

A. This specification describes the application of a seamless waterproofing membrane resistant to specified traffic wear exposures. The specified products shall meet or exceed requirements of ASTM C957, High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001/9002 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditionsappear to be imminent. Minimum application temperature 40ºF (5ºC) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified coating.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheet, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturers

A. Sikalastic 710/715 Traffic System, as manufactured by Sika Corporation, 201 Polito Ave., Lyndhurst, NJ 07071, is considered to conform to the requirements of this specification.

B. Any materials required for repair prior to installation shall be manufactured by the same supplier of theproposed traffic coating system.

2.02 Materials

A. Sikalastic 710/715 Traffic System is a complete system of compatible materials comprised of the following:

1. Sikafloor FTP water-based epoxy primer or other primer recommended by manufacturer
2. Sikalastic 710 Base one-component aromatic polyurethane base coat
3. Sikalastic 715 Top one-component aromatic polyurethane top coat
4. Sikalastic 700 ACL accelerator (optional)
5. Sikalastic 735 AL, 736 AL Lo-VOC and 748 PA optional aliphatic top coats

B. Total dry film thickness exclusive of aggregate shall be 33 mils for pedestrian traffic, 43 mils forheavy pedestrian and light vehicular traffic, and 55 mils for heavy vehicular traffic. See data sheet System Guide for coverage rates and application methods.

C. Aggregate shall be clean, rounded, oven dried quartz sand with a minimum gradation of 16-30 mesh for vehicular traffic and 20-40 mesh for pedestrian traffic, and a minimum hardness of 6.5 per the Moh's scale. Aggregate shall be supplied in pre-packaged bags and free of metallic or other impurities.

2.03 Performance Criteria

A. Properties of standard Sikalastic base and top coats:

	710 Base	715 Top
Viscosity	6500 +/- 3000 cps	1500 +/- 500 cps
Total Volume Solids (ASTM D2697)	71%	72%
VOC Content (ASTM D2369-81)	240 g/l	243 g/l
Tensile Strength (ASTM D412)	800 +/- 100 psi	3200 +/- 300 psi

Elongation at Break (ASTM D412)	500 +/- 50%	500 +/- 50%
Tear Resistance (Die C, ASTM D624)	250 +/- 25 pli	350 +/- 50 pli
Hardness (ASTM D2240)	55 +/- 5 Shore A	85 +/- 5 Shore A

B. Properties of optional Sikalastic aliphatic top coats:

	735 AL	736 AL Lo-VOC	748 PA
Viscosity	2500 +/- 700 cps	3500 +/- 700 cps	200 +/- 50 cps
Total Volume Solids (ASTM D2697)	74%	83%	78%
VOC Content (ASTM D2369-81)	225 g/l	99 g/l	100 g/l
Tensile Strength (ASTM D412)	4200 +/- 300 psi	4000 +/- 300 psi	2500 +/- 200 psi
Elongation at Break (ASTM D412)	230 +/- 50%	250 +/- 50%	100 +/- 25%
Tear Resistance (Die C, ASTM D624)	400 +/- 50 pli	400 +/- 50 pli	300 +/- 50 pli
Hardness (ASTM D2240)	90 +/- 5 Shore A	90 +/- 5 Shore A	50 +/- 5 Shore D

Note: Tests were performed with material and curing conditions at 75F and 50% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. The substrate must be clean, dry, sound and free of surface contaminants. Remove all traces of dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, i.e. – milling, scarifying, shotblasting, etc., as approved by the engineer. Blow surface free of dust using compressed air line equipped with an oil trapSurface Preparation Surface must be clean, dry and sound with an open texture. Remove dust, laitance, grease, curing. All projections, rough spots, etc. should be dressed off to achieve a level surface prior to the application.

B. Concrete should be cleaned and prepared to achieve a laitance and contaminant free, open textured surface by blast cleaning or equivalent mechanical means (CSP 3-4 per ICRI guidelines).

C. Plywood should be clean and smooth, APA and exterior grade, not less than 1/2” thick, and spaced and supported according to APA guidelines. Seams should be sealed with Sikflex 2c or 1a and detailedand may need imbedded fabric reinforcement.

D. Metal should be thoroughly cleaned by grinding or blast cleaning.

3.02 Priming

A. Concrete and plywood – Apply Sikafloor FTP primer at 300 sf/gal. with a flat squeegee or roller and work well into the substrate to insure adequate penetration and sealing and puddles are avoided. Refer to data sheet for more detailed information, or consult Sika for other primer options.

B. Premix both components. Sikafloor FTP, Part “H” is dark olive green in color and may appear black inthe container. Sikafloor FTP, Part “R” is light amber in color. Add the 1 gallon of Sikafloor FTP, Part “R” to the 1.25 gallons of Part “H” in the short filled Part “H” pail. Mix thoroughly with a mechanical mixer (Jiffy) for 3 minutes. This mixture will appear as a light olive green color. Slowly add 1.25 gallons of potable water to the mixture under agitation. Mix for an additional 2 minutes until the mixture is fully dispersed. Fully dispersed material will appear as light green in color. Allow primer to cure a minimum of 3-4 hours at 70°F and 50% RH or until tack free before applying base coat.

C. Metal – Consult Sika regarding primer.

3.03 Detailing

A. Non-structural cracks up to 1/16 inch – Apply a detail coat of Sikalastic 710 Base at 32 mils wet, 4” wide, centered over the crack. Allow to become tack free before overcoating.

B. Cracks and joints over 1/16 inch up to 1 inch – Route and seal with Sikaflex 2c or 1a sealant and allow to cure. Apply a detail coat of Sikalastic 710 Base at 32 mils wet, 4” wide, centered over crack. Allow to become tack free before overcoating.

C. Joints over 1 inch – Should be treated as expansion joints and brought up through the SikalasticTraffic System and sealed with Sikaflex 2c or 1a sealant.

3.04 Base Coat

A. Thoroughly mix Sikalastic 710 Base using a mechanical mixer (Jiffy) at slow speeds until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into themixture. Apply at the recommended coverage rate (see System Guide) using a notched squeegee or trowel and backroll using a phenolic resin core roller. Extend base coat over entire area including previously detailed cracks and control joints. Allow coating to cure a minimum of 16 hours at 70°Fand 50% RH or until tack free before top coating.

3.05 Top Coats

A. Thoroughly mix Sikalastic 715 Top or optional using a mechanical mixer (Jiffy) at slow speeds until a homogenous mixture and color is obtained. Use care not to allow the entrapment of air into themixture. Apply at the recommended coverage rate (see System Guide) using a flat or notched squeegeeand backroll using a phenolic resin core roller. Apply aggregate evenly distributed at the appropriate rate immediately into wet coating and backroll if required (see System Guide). Allow coating to cure a minimum of 16 hours at 70°F and 50% RH or until tack free between coats, and a minimum of 72hours before opening to vehicular traffic.

B. Refer to mixing and application instructions in separate data sheet for optional Sikalastic 735 AL, 736 AL Lo-VOC and 748 PA aliphatic top coat substitutions.

3.06 Accelerator

A. Sikalastic 700 ACL may be added to Sikalastic 710 Base, 715 Top or optional single component aliphatic top coats in order to accelerate cure time, particularly in cold weather conditions. Maximum amount that may be added is 1:20 ratio (1 quart to 5 gallons). Apply only to material that will be applied within 2-3 hours.

3.07 Mock-up

A. A job site mock-up should always be completed to confirm acceptability of workmanship, material coverage rates and aesthetics.

3.08 Cleaning

A. Uncured materials can be removed from tools or other surfaces with an approved solvent. Cured materials can only be removed by mechanical means.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers ontoadjacent areas.

SECTION 07 56 00 - COLD LIQUID APPLIED POLY METHACRYLATE (PMA) MEMBRANE ROOFING

PART 1 GENERAL

1.01 SUMMARY

A. The new roofing and waterproofing system shall consist of a cold liquid applied reinforced waterproofing membrane, flashings and finish layers as specified.
B. Work shall include, but is not limited to, the following:
   1. Preparation of existing roof deck, and all flashing substrates.
   2. Liquid applied, reinforced flashings.
   3. Liquid applied, reinforced waterproofing membrane'
   4. All related materials and labor required to complete specified waterproofing necessary to receive specified manufacturer's warranty.

1.02 RELATED SECTIONS

A. Division 011000 - Summary of Work
B. Division 076200 - Sheet Metal Flashing and Trim

1.03 DEFINITIONS

A. ASTM D 1079- Standard Terminology Relating to Roofing and Waterproofing.
B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 REFERENCES

A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
B. AMERICAN STANDARD OF TESTING METHODS (ASTM):
   1. ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
   2. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)::
   1. ANSI/SPRI/FM 4435/ES-1 - Wind Design Standard for Edge System Used with Low Slope Roofing System.
   2. ANSI/SPRI FX-1 - Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
   3. ANSI/SPRI IA-1 - Standard Field Test Procedure for Determining the Mechanical Uplift Resistance of Insulation Adhesives over Various Substrates.
   4. ANSI/FM 4474 - American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.
D. FACTORY MUTUAL (FM):
   1. FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.
   2. FM 4470 - Approval Standard - Class I Roof Covers.
E. FLORIDA BUILDING CODE (FBC):
   1. 2023 Florida Building Code (FBC).
F. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA).
   1. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
   2. UL 1256 – Fire Test of Roof Deck Constructions.

1.05 ACTION SUBMITTALS

A. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.
B. Safety Data Sheets: Submit manufacturer's Safety Data Sheets (SDS) for each component.
C. Sample warranty from the manufacturer and contractor.
D. Provide roof plan and representative detail drawings.

1.06 INFORMATIONAL SUBMITTALS

A. Submit a letter from the roofing manufacturer indicating the contractor is an authorized applicator.

1.07 CLOSEOUT SUBMITTALS

A. Warranty: Provide manufacturers and contractor's warranties upon project completion.

1.08 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:
   1. Manufacturer shall have 20 years of manufacturing experience.
   2. Manufacturer shall have trained technical service representatives employed by the manufacturer, independent of sales.
   3. Manufacturer shall provide site visit reports in a timely manner.
B. CONTRACTOR QUALIFICATIONS:
   1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
   2. Applicators shall have completed projects of similar scope using same or similar materials specified.
   3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roofing from beginning through satisfactory project completion.
   4. Applicators shall be skilled in the application methods for all materials.
   5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
   6. Contractor shall maintain a copy of all submittal documents, on-site, available always for reference.
C. SUBSTRATE EVALUATION:
   1. Contractor shall evaluate substrate moisture content and adhesion of waterproofing materials to substrate throughout the work and record with daily inspection reports or other form of reporting acceptable to the owner or his designated representative and waterproofing manufacturer.
      a. Moisture content: Evaluate substrate moisture content to determine acceptability for application of the specified liquid applied waterproofing materials. Moisture testing shall be performed by means suitable to the project application, or by testing substrate relative humidity (RH) in accordance with ASTM F 2170 when needed, required, or if substrate moisture content is in question.
      b. Adhesion: Evaluate soundness and surface preparation of concrete and/or masonry substrates. Prepare representative areas using specified methods complete with applied primer. Test for minimum acceptable tensile bond strength values as required in accordance with ASTM D 4541. Evaluate all areas where concrete appears to differ in appearance or consistency, if multiple

areas are involved in the scope of work, evaluate each area with a minimum of (3) tests for every 5,000 ft2 or as required by project conditions.

1.09 DELIVERY, STORAGE AND HANDLING

A. Refer to each product data sheet or other published literature for specific requirements.
B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.
C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.
D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in (100 mm) or more above ground level. Carefully cover storage with “breathable” tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.
F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.10 SITE CONDITIONS

A. SAFETY:
1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
2. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid applied or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
3. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
4. The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

B. ENVIRONMENTAL CONDITIONS:
1. Monitor substrate and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.

2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.
3. Contractor shall implement odor control measures where required during the application of waterproofing materials and adjust methods as necessary to accommodate varying project conditions.

1.11 PERFORMANCE REQUIREMENTS

A. WIND UPLIFT RESISTANCE:
1. Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580 or UL 1897.

B. FIRE CLASSIFICATION:
1. Performance testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470 to meet the 1/4:12 roof slope requirement.
a. Meets requirements of UL Class A or FM Class A.
2. Performance testing shall be in accordance with UL 1256, FM 4450, or FM 4470 to meet the specified requirements for interior flame spread and fuel contribution.
a. Meets requirements of UL 1256, or FM Class 1.

C. ROOF SLOPE:
1. Finished roof slope for liquid applied membrane surfaces shall be 1/8 inch per foot (1 percent) minimum for roof drainage or as allowed by applicable building and jurisdictional codes for roof assembly.

D. IMPACT RESISTANCE:
1. Performance testing for impact resistance shall be in accordance with FM 4450 or FM 4470 to meet the specified impact resistance requirements.

1.12 WARRANTY

A. Manufacturer's No Dollar Limit (NDL) Waterproofing Warranty: The manufacturer shall provide the owner with the manufacturer’s warranty providing labor and materials for 20 years from the date the warranty is issued.

B. Manufacturer’s Surfacing & Finish Warranty: Provide waterproofing manufacturers standard warranty for repair of aesthetic surfacing or finish layer due to failure in materials or workmanship for a period of 1, 3 or 5 years from the date of completion depending on the surfacing option selected.

C. The contractor shall guarantee the workmanship and shall provide the owner with the contractor’s warranty covering workmanship for a period of 2 years from completion date.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. SINGLE SOURCE MANUFACTURER: All liquid applied PMMA/PMA membrane and accessories shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.
1. Comply with the manufacturer’s requirements as necessary to provide the specified warranty.

B. PRODUCT QUALITY ASSURANCE PROGRAM: Manufacturer shall be an ISO 9001 registered company. A 'Quality Compliance Certificate (QCC) for reporting/confirming the tested values of the membrane materials will be supplied upon request.

C. ACCEPTABLE MANUFACTURER:

1. SOPREMA, located at: 310 Quadral Drive, Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us

2.02 LIQUID APPLIED WATERPROOFING SYSTEM

A. FIELD MEMBRANE:

1. POLYMETHACRYLATE MEMBRANE (PMA):

a. SOPREMA ALSAN RS 260 LO FIELD: Low odor, rapid curing, polymethacrylate (PMA) liquid resin with an embedded polyester reinforcement fabric used for monolithic waterproofing field membranes.

i VOC content: <5 g/L
ii Color: White
iii Elongation at 73.4°F (23°C): 55%
iv Peak load at 73.4°F lbf/in: 65
v Tear resistance lbf: 60
vi Shore A hardness, durometer: 84
vii Water absorption at 212°F (100°C): 0.5%
viii Water vapor permeance (perms): 0.2
ix Low temperature flexibility °F (°C): -33 (-36.1)
x Dimensional stability: 0.1%

B. FLASHING MEMBRANE:

1. POLYMETHACRYLATE FLASHING MEMBRANE (PMA):

a. SOPREMA ALSAN RS 260 LO FLASH: Low odor, rapid curing, polymethacrylate (PMA) liquid resin with an embedded polyester reinforcement fabric used for monolithic waterproofing flashing membranes.

i VOC content: <5 g/L
ii Elongation at 73.4°F (23°C): 55%
iii Peak load at 73.4°F lbf/in: 55
iv Tear resistance lbf: 75
v Shore A hardness, durometer: 73
vi Water absorption at 212°F (100°C): 0.7%
vii Water vapor permeance (perms): 0.2
viii Low temperature flexibility °F (°C): -33 (-36.1)
ix Dimensional stability: 0.1%
x Color: Flashing color and finish to match Field

b. SOPREMA ALSAN RS DETAILER: Micro-fiber enhanced, rapid curing, polymethyl methacrylate (PMMA) paste resin used for flashing difficult penetrations where a resin/fleece/resin application is not practical.

i VOC content: <10 g/L
ii Color: Pebble Grey

2.03 ACCESSORIES

A. PRIMERS:

1. SOPREMA ALSAN RS 276 PRIMER: Rapid curing, polymethyl methacrylate (PMMA) liquid resin used to promote adhesion of PMMA/PMA membranes over wood, concrete and approved waterproofing board substrates.

a. VOC content: <5 g/L

b. Color: Clear

B. CATALYST:
1. SOPREMA ALSAN RS CATALYST POWDER: Reactive agent used to cure PMMA/PMA liquid resins.

C. REINFORCING FABRIC:
1. SOPREMA ALSAN RS FLEECE: Woven polyester reinforcement used in PMMA/PMA liquid applied membrane and flashing applications.
a. Thickness: 25 mils (0.65 mm)
b. Weights: 110 g/m2
c. Width(s): Size as required.
d. Length: 164 ft (50 m)

D. SUBSTRATE PATCHING & REPAIR:
1. POLYMETHACRYLATE MORTAR (PMA):
a. SOPREMA ALSAN RS 263 LO MORTAR: Rapid curing, polymethacrylate (PMA) liquid resin used for patching, repairs and leveling. Consists of ALSAN TRAFIK RS 733 PART B filler powder and ALSAN RS 240 LO liquid resin
i SOPREMA ALSAN RS 240 LO: Low odor, rapid curing, polymethacrylate (PMA) liquid resin.
a) VOC content: <1 g/L
b) Color: Pebble Grey
ii SOPREMA ALSAN TRAFIK RS 733 PART B: Filler powder.
2. ALSAN TRAFIK RS 733 Part B: Filler powder.

E. CLEANER:
1. SOPREMA ALSAN RS CLEANER: Clear, blended solvent used to clean and prepare plastic and metal surfaces and used to clean existing ALSAN RS surfaces prior to the application of PMMA/PMA liquid applied membrane and flashings.
a. VOC content: <5 g/L
b. Color: Clear

PART 3 EXECUTION

3.01 EXAMINATION

A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions are satisfactory to begin and remain satisfactory throughout the project.
B. The contractor shall examine all waterproofing substrates including, but not limited to decks, walls, curbs, equipment, fixtures, and wood blocking.
C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing and waterproofing materials.

3.02 PREPARATION

A. Before commencing work each day the contractor shall prepare all substrates to ensure conditions are satisfactory to proceed with the installation of specified materials.
B. Preparation of substrates includes, but is not limited to, the following:
1. General:
a. All substrates must be clean, dry, and free from gross irregularities, loose, unsound, or foreign material such as dirt, ice, snow, water,

grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of primer and/or resin materials to the substrate. Most surfaces will require mechanical abrasion in the form of scarifying, shot blasting or grinding to achieve a suitable substrate.

b. Inspect all substrates and correct defects before application of waterproofing materials. Fill all surface voids 1/16 in (1.5 mm) or greater wide and/or deep with appropriate fill material.

2. Concrete Substrates:
   a. Concrete shall comply with requirements of ACI 301 and ACI 308.
   b. Concrete compressive strength: 3,500 psi for all primers or 2,500 psi minimum when use of a moisture mitigation primer is required.
   c. Relative humidity: Maximum 75 percent per ASTM F2170 unless otherwise approved.
   d. Surface: Scarify, shot blast or grind to ICRI Concrete Surface Profile CSP 3 to CSP 5; CSP 3 being the preferred profile.
   e. Adhesion: Adhesion of specified primer and structural substrate shall be minimum 220 psi for traffic bearing waterproofing applications or 116 psi for roofing or non-traffic bearing waterproofing applications per ASTM D4541.
   f. Areas of spalls, voids, bug holes and other deterioration on vertical or horizontal surfaces shall be repaired as required or recommended.
3. Masonry Substrates:
   a. Walls shall be structurally sound built of hard kiln dried brick, reinforced concrete block, or waterproof concrete block construction.
   b. Liquid applied membrane must not be applied over soft or scaling brick or block, faulty mortar joints, or walls with broken, damaged, or leaking coping. Areas of spalls, voids, bug holes and other deterioration on vertical surfaces shall be repaired as required or recommended.
   c. Walls of ordinary hollow tile, or other materials which in themselves are not waterproofed, should not be accepted as suitable to receive liquid applied membrane unless properly waterproofed to prevent moisture infiltration from above or behind the new liquid applied membrane.
   d. Relative humidity: Maximum 75 percent per ASTM F2170 unless otherwise approved.
   e. Surface: Scarify, shot blast or grind to ICRI Concrete Surface Profile CSP 2 to CSP 4.
   f. Adhesion: Adhesion of specified primer and structural shall be minimum 220 psi for traffic bearing waterproofing applications or 116 psi for roofing or non-traffic bearing waterproofing applications per ASTM D4541.
4. Metal Substrates:
   a. Clean and prepare metal to near-white metal in accordance with SSPC – SP3 (power tool clean) to a point maximum 1/8 in (3 mm) beyond the termination of liquid applied membrane materials and wipe with solvent cleaner to remove oils, debris, or contaminants.
   b. Stainless Steel Series 300 and 400: Abrade to provide rough, open surface and wipe with solvent cleaner to remove oils, debris, or contaminants.
   c. Galvanized & Zinc-Rich Metals: Galvanized and/or zinc rich metals are coated with either a layer of oil to prevent white rust or is passivated which must be completely removed prior to applying primer or liquid applied waterproofing. This can be confirmed by applying a coat of copper sulfate solution to the prepared and cleaned galvanized/zinc

metal. A properly prepared surface will turn black indicating the passivator has been removed. If the surface does not turn black, additional abrasive cleaning will be required.

d. Adhesion: Examine metal substrates by conducting adhesion testing. Prime with specified metal primer where required to achieve adequate adhesion.

5. Rigid Plastics (PVC & ABS):
   a. Rigid plastics should be lightly abraded and wiped with solvent cleaner. Extend preparation maximum 1/8 in (3 mm) beyond the specified termination of the liquid applied membrane flashing materials.
6. Wood Substrates:
   a. Provide sanded ¾ in (19 mm) minimum thickness APA A-C, Group 1, Exterior or Exposure 1, 48 in (1220 mm) x 96 in (2440 mm) tongue & groove sheathing panels. Install all panels with “A” side up, edges supported by blocking or structural framing, fastened using only non-corrosive screw fasteners with heads installed flush with sheathing applied at 6 in (150 mm) minimum o.c. along panel edges and 12 in (300 mm) o.c. over intermediate supports and/or additional fastening as required by jurisdictional codes. All new plywood substrates shall be structural panels performance-rated pursuant to National Institute of Standards and Technology (NIST) voluntary product standard PS-1-95; identified with American Plywood Association (APA) grade designations.
   b. Hygroscopic building materials such as wood plank, timber or plywood will normally have higher moisture content (in the range of 8% to 12%) as they adsorb or desorb moisture to reach equilibrium moisture content with the surrounding air. Cold liquid applied primer and reinforced membrane should not be applied to damp or wet sheathing materials but may be applied to materials with higher moisture contents as indicated above, provided the exposed surface is clean and dry. Ultimately, determinations of moisture content and the resulting bond strength should be performed periodically to determine acceptability. If poor adhesion or blistering occurs, substrate will require additional drying time before proceeding.
   c. After priming plywood panels, fill joint gaps, holes, and cracks with proprietary PMMA paste or PMMA mortar. All joints must be covered with minimum 1 in (25 mm) wide bond breaker tape followed with minimum 6 in (150 mm) wide strips of cold liquid applied reinforced waterproofing membrane centered over joint. Cover knot holes or cracks with strips of cold liquid applied reinforced waterproofing membrane.
7. Acceptable Rigid Insulation & Roof Cover Boards:
   a. After panels, fill joint gaps, holes, and cracks with proprietary PMMA paste or PMMA mortar. All joints must be covered with minimum 6 in (150 mm) wide strips of cold liquid applied reinforced waterproofing membrane centered over joint.
8. Tie-In to Emulsion Coated or Smooth APP Modified Bitumen Membrane:
   a. The top surface of existing emulsion coated, or smooth APP modified bitumen membrane shall be broadcast to excess with #1 (0.7 - 1.2 mm) kiln-dried quartz silica. Liquefy the top surface of the in-place membrane using a torch and broadcast silica aggregate into the liquid asphalt to excess. After the asphalt has cooled, remove all loose granules, dust, dirt, or debris from the surface of the membrane by broom, blower, or power vacuuming.

9. Single ply and Other Flashing Surfaces:
    a. Remove all contaminants and prepare substrate as needed to receive liquid applied waterproofing.
    b. Adhesion: Examine substrates by conducting adhesion testing. Prime with specified primer where required to achieve adequate adhesion.

C. Where conditions are found to be unsatisfactory, work shall not begin until conditions are adjusted appropriately. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 PRIMER APPLICATION (GENERAL)

A. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
B. Examine all substrates and conduct adhesion peel tests as necessary to ensure satisfactory adhesion is achieved.

3.04 PMMA PRIMER APPLICATION SOPREMA ALSAN RS 276

A. Mix primer resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.
B. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified waterproofing materials.
C. Apply primer using brush or roller at the rate published on the product data sheet. Do not allow primer to pond or collect in low areas.
D. Project conditions vary throughout the day. Monitor changing conditions, and the curing time of primers.
E. Allow primer to fully cure before membrane application.

3.05 INSTALLATION & STAGING

A. In a normal cold liquid applied membrane application the substrate is prepared and primed, flashings are installed, followed by the application of the waterproofing membrane and finish. When applying broadcast aggregate, the aggregate should not be left subject to the elements, and therefore must be top coated with finish the same day of application whenever possible.
B. If work is interrupted for more than 12 hours use manufacturer's proprietary cleaner to clean and reactivate applied primer, resin mortar, flashing membrane or field membrane transition areas. Cleaner should be allowed a minimum of 20 minutes evaporation time after application and covered within 60 minutes of application or as recommended by the manufacturer.

3.06 FLASHING MEMBRANE APPLICATION SOPREMA ALSAN RS 260 LO FLASH

A. General:
    1. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
    2. Provide a minimum vertical height of 8 in (200 mm) for all flashing terminations wherever possible. Flashing height shall be at least as high as the potential water level that could be reached because of a deluging rain and/or poor slope.
    3. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.

4. All flashing shall be terminated as required by the manufacturer. Cap flashings or counter flashings may be constructed of metal, stone, tile or other materials properly installed in accordance with industry-accepted practice.
5. Install all flashing membranes before installing field membranes.
6. The primed substrate shall be dry and free of any dust, loose particles, or contaminants.
7. Precut reinforcing fleece to conform to terminations, transitions and penetrations being flashed. Ensure a minimum 2 in (50 mm) overlap of fleece at side laps and extend flashing 4 in (100 mm) minimum horizontally onto deck unless otherwise specified. Ensure the completed liquid applied flashing membrane is fully reinforced.
8. Wherever possible factory pre-cut fleece pipe penetration and universal corners shall be used.
9. Mix waterproofing resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of waterproofing resin that can be used within the application time.
10. Apply the base coat of catalyzed waterproofing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
11. Immediately apply the reinforcing fleece into the wet base coat of resin making sure the smooth side is up. Using a brush or roller, work the reinforcing fabric into the wet resin while applying the second coat of catalyzed waterproofing resin to completely encapsulate the fleece. Avoid any folds and wrinkles.
12. At membrane tie-ins, clean cured membrane with specified cleaner before application of adjacent membrane.

B. Penetrations & Flashings:
1. Pipes, Conduits, Posts, Supports and Unusual Shaped Penetrations:
   a. Pipes, conduits, and other items to be flashed must be separated with ½ in (13 mm) minimum clearance or as recommended by manufacturer to adequate waterproof each individual penetration.
   b. All penetrations must be flashed individually. Two or more items ganged together in a flashing will NOT be permitted.
   c. Flash penetrations using cold liquid applied reinforced membrane or proprietary fibrated flashing resin as recommended. Flashing shall be applied using factory pre-cut fleece wherever possible consisting of a reinforced deck skirt/target flashing applied over a reinforced vertical wrap finger flashing.
2. Drains:
   a. Flash drains using cold liquid applied membrane. Flashing shall consist of a membrane target extending minimum 12 in (300 mm) horizontally onto the substrate applied over a finger flashing extended into the prepared drain bowl a minimum of 3 in (75 mm).
   b. At no time should the cold liquid applied membrane be installed to restrict or reduce the drain inlet in size.
   c. For new drains, contractor shall include cost of all plumbing work, piping, and connection to existing storm sewer system.
3. Hot Pipes:
   a. Protect cold liquid applied membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 150□F (65.5□C). In all such cases flash to an intermediate "cool" sleeve.

b. Fabricate "cool" sleeve in the form of a metal cone using non-ferrous metal in accordance with manufacturer details.
c. Flash sleeve using cold liquid applied reinforced membrane like a standard pipe flashing. Flashing shall consist of a reinforced target applied over a reinforced vertical wrap finger flashing.

4. Flexible Penetrations:
   a. Provide a weather-tight gooseneck set in manufacturers resin paste and secured to the deck.
   b. Flash gooseneck penetrations using cold liquid applied reinforced as recommended. Flashing shall consist of a reinforced target and reinforced vertical wrap finger flashing.
5. Walls, Curbs and Bases:
   a. Flash all walls, curbs and bases using cold liquid applied reinforced membrane. Wherever possible extend flashing up and over tops of walls, curbs, and bases so the membrane terminates on the opposite face of the vertical element.
6. Expansion Joints:
   a. Flash all expansion joints with minimum two layers of manufacturer's cold liquid applied reinforced membrane applied over an expansion joint compressible filler, expansion tube, backer rod and/or bond breaker tape as recommended by manufacturer.
7. Non-standard Flashing Details:
   a. When required, consult manufacturer for recommendations on flashing non-standard conditions, penetrations, or protrusions.
8. Thru-Wall Flashings, Mud-set Masonry, & Poured-In-Place Concrete (Bonding/Protection Layer):
   a. For all areas to receive new direct applied cement, concrete, or mortar setting bed, apply a supplementary wearing coat of membrane manufacturer's cold liquid applied resin.
      i Using a lambswool roller, apply an even layer of cold liquid applied resin at the minimum consumption of 30 lb/100 ft2 (1.5 kg/m2) or as recommended by the membrane manufacturer and broadcast #1 (0.7 - 1.2mm) kiln-dried quartz aggregate into the wet resin to excess for full coverage.
      ii Allow resin bonding layer to cure as recommended by the membrane manufacturer prior to continuing application or applying loads. Remove excess un-adhered aggregate from surface by broom, vacuum, or oil-free blower prior to apply overburden.
      iii When required, consult manufacturer for recommendations on flashing non-standard conditions, penetrations, or protrusions.

3.07 FIELD MEMBRANE APPLICATION SOPREMA ALSAN RS 260 LO FIELD

A. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
B. Install all flashing membranes before installing field membranes.
C. The primed substrate shall be dry and free of any dust, loose particles, or contaminants.
D. Precut reinforcing fleece to conform to terminations, transitions and penetrations being flashed. Ensure a minimum 2 in (50 mm) overlap of fleece at side and 4 in (100 mm) at end-laps. Ensure the completed liquid applied membrane is fully reinforced.
E. Mix waterproofing resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of product that can be used within the application time.

F. Apply the base coat of catalyzed waterproofing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
G. Immediately apply the reinforcing fleece into the wet base coat of waterproofing resin making sure the smooth side is up. Using a brush or roller, work the reinforcing fabric into the wet resin while applying the second coat of catalyzed waterproofing resin to completely encapsulate the fleece. Avoid any folds and wrinkles.
H. At membrane tie-ins, clean cured membrane with specified cleaner before application of adjacent membrane.

3.08 WATERPROOFING CONTINUITY TESTING & QC EVALUATION

A. Prior to applying surfacing or finish, contractor shall conduct a complete evaluation of the installed liquid applied waterproofing membrane and flashings which shall include visual inspection as well as an acceptable method for (low voltage, high voltage, or water-flood) continuity testing when required.
B. Immediately following evaluation and continuity testing, repair all deficiencies identified in liquid applied waterproofing membrane and flashings.
C. Upon satisfactory completion of all required repairs, proceed with application of finish layers.

3.09 ROOF WALKWAYS & PROTECTION

A. Where walkways are required for normal rooftop traffic and as a protective layer to service all rooftop equipment, provide waterproofing manufacturers textured wearing coat with integrally mixed aggregate to create a highly slip-resistant wearing surface.
    1. Standard Duty Surfacing Layer: (SOPREMA ALSAN TRAFIK RS 789 LT)
        a. Mix and apply an even topcoat of pigmented textured finish resin using a flat or V-notched trowel at minimum recommended consumption. Use an appropriate roller to remove excess resin or puddling. Roll textured finish resin in one direction, then roll in the cross direction to obtain a uniform finish.
    2. Heavy Duty Surfacing Layer: (SOPREMA ALSAN RS TEXTURED COATING [SOPREMA ALSAN TRAFIK RS 790 HT)
        a. Mix and apply cold liquid applied textured coating traffic surfacing layer in strict accordance with written instructions of manufacturer. Using a flat trowel, apply an even layer textured coating resin at minimum consumption recommended. When required, use an appropriate roller to remove excess resin, pudding, or even out to a uniform finish.
    3. Walkway Surfacing Application:
        a. Mask out walkway sections to be no longer than 10 ft (3 m), with a 6 in (150 mm) minimum gap between each section to allow for drainage.
        b. Immediately remove masking before surfacing resin cures.

3.10 CLEAN UP

A. Uncured resin is considered a hazardous material. Unused resin must be catalyzed and cured prior to disposal.
B. Clean up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

3.11 PROTECTION

A. Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period. Protect all areas where waterproofing membrane has been installed.

END OF SECTION 075600

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SUMMARY

A. Work shall include, but is not limited to, the following:
   1. Preparation of existing substrates.
   2. Sheet metal flashings and sheet metal roof edge system.
   3. All related materials and labor required to complete specified roofing necessary to receive specified manufacturer's warranty.

1.02 RELATED SECTIONS

A. Division 011000 – Summary of Work
B. Division 075600 – Cold Liquid Applied PMA Roofing

1.03 DEFINITIONS

A. ASTM D 1079-Definitions of Term Relating to Roofing, Waterproofing and Waterproofing.
B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 REFERENCES

A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
B. AMERICAN STANDARD OF TESTING METHODS (ASTM):
   1. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
   2. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.
   3. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)::
   1. ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.
   2. ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
D. FLORIDA BUILDING CODE (FBC):
   1. 2023 Florida Building Code (FBC).
E. NATIONAL ROOFING CONTRACTORS' ASSOCIATION (NRCA) Roofing and Waterproofing Manual.
F. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION INC. (SMACNA) Architectural Sheet Metal Manual.

1.05 ACTION SUBMITTALS

A. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.
B. Safety Data Sheets: Submit manufacturer's Safety Data Sheets (SDS) for each component.
C. Sample/Specimen Warranty from the manufacturer and contractor.

D. Shop Drawings: Provide roof plan and applicable roof system detail drawings.

1.06 INFORMATIONAL SUBMITTALS

A. Contractor Certification: Submit written certification from roofing system manufacturer certifying that the applicator is authorized by the manufacturer to install the specified materials and system.

1.07 CLOSEOUT SUBMITTALS

A. Warranty: Provide manufacturers and contractor's warranties upon substantial completion of the roofing system.

1.08 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:
   1. Manufacture shall have 20 years of experience manufacturing roofing materials.
   2. Trained Technical Field Representatives, employed by the manufacturer, independent of sales.
   3. Provide reports in a timely manner of all site visit reports.
   4. Provide specified warranty upon satisfactory project completion.

B. CONTRACTOR QUALIFICATIONS:
   1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
   2. Applicators shall have completed projects of similar scope using same materials as specified herein.
   3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roof system through satisfactory project completion.
   4. Applicators shall be skilled in the application methods for all materials.
   5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
   6. Contractor shall maintain a copy of all submittal documents, on-site, available always for reference.

1.09 DELIVERY, STORAGE AND HANDLING

A. Refer to each product data sheet or other published literature for specific requirements.
B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.
C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location.
D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with "breathable" tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
E. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.10 SITE CONDITIONS

A. SAFETY:
1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
2. The contractor shall refer to product Material Safety Data Sheets (MDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

B. ENVIRONMENTAL CONDITIONS:
1. Monitor substrate temperature and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.
2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.

1.11 PERFORMANCE REQUIREMENTS

A. ROOF EDGE SYSTEM:
1. Performance testing shall be in accordance with ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edges Systems Used with Low Slope Roofing Systems.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. PRODUCT QUALITY ASSURANCE PROGRAM: Manufacturer shall be an ISO 9001 registered company. A ‘Quality Compliance Certificate (QCC) for reporting/confirming the tested values of the SBS-Modified Bitumen Membrane Materials will be supplied upon request.

B. ACCEPTABLE MANUFACTURER:
1. SOPREMA, located at: 310 Quadral Dr.; Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.

C. Contractor shall furnish all sheet metal flashings, counter flashings, roof edge system, and all other related sheet metal flashings, fasteners, and sealants necessary to flash and counter flash the specified roofing system at all roof terminations, transitions, and penetrations.

D. Sheet metal flashing materials and fasteners shall be compatible with adjacent materials, to accommodate all project related exposures.

E. Pre-Finished (Mill Finished) Sheet Metal Flashing Material: Aluminum, Galvanized Steel, Stainless Steel, Copper.

2.02 SHEET METAL FLASHING

A. SHEET METAL, ROOF EDGE SYSTEM:
1. Roof edge system shall include all components and associated fasteners necessary to comply with specified performance requirements. Contractor shall provide all other related fasteners and sealants necessary for the roof edge system.

2. SOPREMA Modified Drip Edge: Engineered two-piece drip edge system with a formed cleat and metal fascia.
   a. Material: Stainless Steel
   b. Gauge/Thickness: 24G
   c. Finish: Mill-Finished Aluminum.
   d. Tested per ANSI/SPRI ES-1 to meet or exceed design pressures at roof edge.
   e. FM Approved.

B. SHEET METAL, COUNTERFLASHING SYSTEM:
1. SOPREMA 2PC Counterflashing: Engineered counterflashing system with formed receiver and counterflashing.
   a. Receiver: Reglet, Surface-Mount, Adaptable Reglet, Adaptable Surface, Thru-Wall
   b. Material: Stainless Steel
   c. Gauge/Thickness: 24G
   d. Finish: Mill-Finished Aluminum.

C. FASTENERS:
1. #9 Stainless Steel Screw w/ Neoprene Washer
   a. Length as required.
2. #12 Galvanized Self-Drilling Screw:
   a. Length as required.
3. Stainless Steel Ring Shank Nails:
   a. Length as required.
4. 3/16” Tapcon Screws:
   a. Length as required.
5. Flat Head Screw w/ Extruded Washer:
   a. Length as required.

D. PRIMERS:
1. SOPREMA ELASTOCOL 500 Primer: Asphalt cut-back primer. Primer for the preparation of substrates for hot asphalt, heat-welded and COLPLY and COLPLY MODIFIED ADHESIVE, solvent-based, cold adhesive-applied and cement applications.
   a. Meets or exceeds ASTM D41
   b. VOC content: 350 g/L or less.

E. GENERAL PURPOSE ROOFING CEMENT AND MASTIC:
1. SOPREMA SOPRAMASTIC: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 5-gallon pails. General purpose roofing cement for low-slope roofing used for sealing sheet metal flashings to SBS membranes.
   a. VOC Content: 190 g/L or less.
   b. Meets or exceeds ASTM D4586, Type I, Class II.
2. SOPREMA SOPRAMASTIC: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 10.4 oz caulk tubes. General purpose roofing cement for low-slope roofing used for sealing sheet metal flashings to SBS membranes.
   a. VOC Content: 190 g/L or less.
   b. Meets or exceeds ASTM D4586, Type I, Class II.

F. GENERAL PURPOSE SEALANT:
1. SOPREMA SOPRAMASTIC SP1: General purpose, paintable, gun-grade, elastomeric, polyether moisture curing sealant for sealing SBS and PVC membrane terminations, Kynar 500 PVDF, horizontal and vertical construction joints.
   a. VOC Content: 20 g/L or less.
   b. Meets or exceeds ASTM C920, Type S, Grade NS, Class 50.
   c. Standard color

2. Butyl Sealant: Butyl rubber and polyisobutylene water resistant sealant for concealed sheet metal joints.
3. Butyl Sealant Tape: Butyl rubber and polyisobutylene water resistant sealant tape for concealed sheet metal joints.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions remain satisfactory throughout the project.
B. The contractor shall examine all roofing substrates including, but not limited to insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.
C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing materials.
D. During the application of specified materials, the applicator shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified roofing system.

3.02 PREPARATION

A. Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securement of substrates, eliminating all incompatible materials, and cleaning.
B. Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 SBS MASTIC AND GENERAL-PURPOSE ROOFING CEMENT APPLICATION

A. Apply SOPREMA SOPRAMASTIC general purpose SBS mastic and roofing cement to seal drain leads, metal flanges and where specified and required in detail drawings.
B. Apply general purpose SBS mastic and elastic roofing cement using caulk gun, or notched trowel at 2.0 – 2.5 gallons per square on each surface. Application rates vary based on substrate porosity and roughness. Tool-in as necessary to seal SBS membrane terminations.

3.04 SHEET METAL FLASHING APPLICATION

A. Refer to manufacturer's sheet metal flashing and roof edge system detail drawings and follow product data sheets and published general requirements for installation instructions.
B. General Requirements:
   1. Follow the most recent edition of the SMACNA Architectural Sheet Metal Manual for fabrication and installation requirements.
   2. Follow the most recent edition of the NRCA Roofing and Waterproofing Manual for fabrication and installation requirements for specified roofing and flashing.
C. Isolate all metal components from ACQ treated wood or other incompatibles material using specified membrane flashing materials.
D. Appliances such as lightning rods, signs, or antennae shall be separate from the roof edge system.

3.05 GENERAL PURPOSE SEALANT

A. Refer to published installation instructions. Ensure sheet metal and adjacent substrates are clean and free of oils, dust, and other incompatible materials.
B. Apply SOPREMA SOPRAMASTIC SP1 general purpose, paintable, gun-grade, elastomeric, polyether moisture curing sealant to seal SBS and PVC membrane terminations, exposed fasteners, Kynar 500 PVDF, and other compatible sheet metal horizontal and vertical joints, laps, and transitions.

3.06 CLEAN-UP

A. Clean-up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

END OF SECTION 076200

SECTION 09 92 20 - STUCCO

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. The Work under this Section shall include but not be limited to furnishing all labor, equipment, and materials and performing all operations to:

1. Apply new stucco at areas designated for stucco repair.
2. Apply new stucco finishes at areas of concrete restoration to match existing adjacent surfaces, as required.
3. Three coat stucco work is anticipated on vertical surfaces on building repair.
4. Veneer coat of stucco is anticipated at balcony ceilings.

B. Quantity of work will be known at completion of work.

1.2 SUBMITTALS

A. The specifications, product data, and MSDS from the manufacturer of the products to be used.

1.3 QUALITY ASSURANCE

A. Contractor to provide a reference list of five (5) successfully completed similar projects in South Florida.

1.4 EXISTING CONDITIONS

A. Contractor to PROTECT existing finishes from damage during progress of work.

1.5 REFERENCES

A. Florida Building Code, 2020
B. ASTM C 926 – Standard Specification for Application of Portland Cement-Based Plaster.
C. PCA – Portland Cement Plaster/Stucco Manual.
D. ACI – Guide to Portland Cement – Based Plaster.

1.6 MOCK-UP

A. A mock-up of complete stucco system including surface preparation shall be installed. Mock-up to be approved by Owner's Representative prior to performing additional work.
B. Locate where directed by Owner’s Representative.
C. The mock-up installation will be permanent and will be a standard to judge remaining installations.
D. Contractor to coordinate with Manufacturer’s Representative and the Engineer to ensure their attendance during the mock-up installation.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. AMERIMIX
B. AMICO
C. LANCO

2.2 MATERIAL

A. Stucco mix, Mastermix Premium Stucco
B. Reinforcing mesh, Zinc-coated self-furring expanded metal lath or galvanized Clinton cloth
C. Bond agent, meets ASTM C-631 and C-932

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work. Beginning of installation means acceptance of substrate.

3.2 PREPARATION

A. Roughen smooth surfaces, or provide other mechanical interlock, in accordance with ASTM C926. A dash bond coat will not be an accepted substitute for mechanical surface preparation.
B. Remove all dirt, curing compounds, dust, loose particles, laitance, and other contamination of foreign mater that may impede the bond of new stucco finishes.
C. Mechanically remove re-emulsifying bonding agents from substrate, if present prior to application of stucco.
D. Install continuous zinc-coated metal lath or galvanized Clinton cloth at all horizontal and vertical dissimilar materials junctures, such as CMU to concrete, and any areas that have a stucco thickness greater than 1”.

1. Alternative metal reinforcement to be galvanized welded wire cloth.

2. Install reinforcing mesh with non-corrosive fasteners approved by the Engineer.

A. Saturate surfaces that receive plaster. Surfaces shall be saturated surface dry. Bond agent required.
B. Apply the stucco with sufficient pressure to ensure intimate contact with the substrate. Build and texture stucco to match existing finishes of approximately 1/4-inch to 3/8-inch to achieve balcony ceiling plaster with drip edge.

3.3 THREE AND FOUR COAT WORK

A. Saturate surfaces to receive plaster. Surfaces shall be saturated surface dry. Bond agent may be required.

B. Scratch Coat: Apply the stucco with sufficient pressure to ensure intimate contact with the substrate and complete coverage to an approximate thickness of 1/4-inch to 3/8-inch. Rake scratch coat to provide tooth for Brown Coat.

C. Brown Coat: Moist cure the first coat for a minimum of 48 hours and dampen the scratched coat with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat to an approximate thickness of 1/8-inch to 1/4-inch as needed to build the stucco to the desired thickness.

D. Finish coat: Dampen the brown coat and apply finish coat to match existing textures and thicknesses.

E. Anticipate some areas will exceed standard thickness as specified by ASTM C 926. Maximum stucco build thickness shall be 1-inch. Areas of repair greater than 1-inch in thickness shall be reinforced with metal lath.

F. Allow sufficient cure prior to application of paint system components.

3.4 MIXING

A. Keep mix ratio consistent from batch to batch and mix each batch separately. Mix only as much material as can be readily used. Use only the amount of water necessary for a workable mix. Use of excess water is detrimental to material performance.

3.5 STUCCO VENEER, AS REQUIRED

3.6 RECORDING

A. The Contractor to record locations of repaired delaminated stucco onto appropriate sketches of relative scale for the carious drops/stacks or building elevations where work is performed. Records are at a minimum to include dimensions and/or square footage of the repaired areas. Records to be 8 1/2-inch x 11-inch.

3.7 CLEAN UP

A. The Contractor shall remove excess materials and debris from job site. Leave work and storage areas in as clean condition as when Contractor first arrived at job site.

END OF SECTION 099220

EXHIBITS

EXHIBIT 1.1 – SIKALASTIC – 710/715/735 AL SYSTEM

EXHIBIT 1.2 – SHERWIN WILLIAMS – EXTERIOR REPAINT SPECIFICATIONS

EXHIBIT 1.3 – EMSEAL DSM INTALL DATA SHEET

EXHIBIT 1.4 - EMSEAL DSM PRODUCT DATA SHEET

EXHIBIT 1.5 - EMSEAL SEISMIC COLORSEAL PRODUCT DATA SHEET

EXHIBIT 1.6 – SIKAFLEX-2C NS EZ MIX

EXHIBIT 1.7 – SIKAGROUT-110 AN

EXHIBIT 1.8 – NOTICE OF ACCEPTANCE 21-0511.05 - SOPREMA

EXHIBIT 1.9 – NOTICE OF ACCEPTANCE

EXHIBIT 1.10 – BENJAMIN MOORE – SPECIFICATIONS & PRODUCT DATA