Madeira
Amenity Area
Specifications

A development by:

Arendale Holdings

Architect:

Basham & Lucas Design Group, Inc.

Structural Engineers:

Lowe Structures, Inc.

Mechanical Engineers:

Gregory Engineering, Inc.

Electrical Engineers:

Shaffer Engineering Group, Inc.

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Project #13-38

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SECTION 01010 - SUMMARY OF WORK

1.1 GENERAL

A. The project consists of constructing an amenity building 3446 gsf, exterior plaza deck with fire pit, a swimming pool and pool deck area with shade structure and perimeter fencing, and other hardscape features. The construction consists of: wood frame covered with stucco, decorative foam or fiberglass covers over structural columns, concrete barrel tile roof over pre-engineered wood trusses with insulated vinyl windows, fiberglass doors, a complete plumbing & electrical system, concrete pool with pavers on pool deck and landscaping.

B. Contract Documents were prepared for the Project by; Basham & Lucas Design Group, Inc., Lowe Structures, Gregory Engineering, Shaffer Engineering Group, West and Company, LLC. Concrete pool and fire pit are designed documented by others and shown here for coordination only.

C. The Work indicated in the drawings will be constructed under a single primary contract.

D. Contractor Use of Premises: During construction the Contractor shall have full use of premises, including use of the site. The Contractor's use of premises is limited only by the Owner's right to perform work or employ other contractors on portions of the Project.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01010

SECTION 01027 - APPLICATIONS FOR PAYMENT

1.1 GENERAL

A. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, Submittal Schedule, and List of Subcontracts.

B. Schedule of Values: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Construction Schedule.
b. Application for Payment forms, including Continuation Sheets.
c. List of subcontractors.
d. List of products.
e. List of principal suppliers and fabricators.
f. Schedule of submittals.

2. Submit the Schedule of Values at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment or as required by the Construction Contract.

C. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Include the following Project identification:

a. Project name and location.
b. Name of Architect.
c. Project number.
d. Contractor's name and address.
e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value.
h. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate evaluation of Applications for Payment. Break subcontract amounts down into several line items. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
4. Provide a separate line item for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
5. Provide separate line items for initial cost of the materials, for each subsequent stage of completion, and for total installed value.
6. Show line items for indirect costs and margins on costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

    a. Temporary facilities and items that are not direct cost of work-in-place may be shown as separate line items or distributed as general overhead expense.

7. Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives change the Contract Sum.

D. Applications for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

E. Payment-Application Times: Payment dates are indicated in the Contract. The period covered by each application is the period indicated in the Contract.

F. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

G. Application Preparation: Complete every entry, including notarization and execution by a person authorized to sign on behalf of the Contractor. The Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

H. Transmittal: Submit 3 executed original copies of each Application for Payment to the Architect within 24 hours. Submit email copy of payments to Owner Representative. One copy shall be complete, including waivers of lien and similar attachments.

1. Transmit each copy with a transmittal listing attachments and recording appropriate information related to the application.

I. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of lien from every entity who may file a lien arising out of the Contract and related to the Work covered by the payment in form required by the Contract.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. Submit each Application for Payment with Contractor's waiver of lien for the period of construction covered by the application.

    a. Submit final Applications for Payment with final waivers from every entity involved with performance of the Work covered by the application who may file a lien.

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

J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment or as required by the Contract include the following:

1. List of subcontractors.
2. List of principal suppliers and fabricators.
3. Schedule of Values.
4. Contractor's Construction Schedule (preliminary if not final).
5. Submittal Schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. Copies of building permits.
8. Copies of licenses from governing authorities.
9. Certificates of insurance and insurance policies.
10. Performance and payment bonds.

K. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

1. Administrative actions and submittals that shall precede or coincide with this application include the following:

    a. Occupancy permits.
    b. Warranties and maintenance agreements.
    c. Test/adjust/balance records.
    d. Maintenance instructions.
    e. Meter readings.
    f. Changeover information related to Owner's occupancy.
    g. Final cleaning.
    h. Application for reduction of retainage and consent of surety.

L. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Transmittal of Project construction records to the Owner.

4. Certified property survey.
5. Proof that taxes, fees, and similar obligations were paid.
6. Removal of temporary facilities and services.
7. Change of door locks to Owner's access.
8. Provide Final Affidavit, Waiver and Release of Lien in form required by Contract.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01030 - ALTERNATES

1.1 GENERAL

A. An alternate is an amount proposed by bidders and stated on the Bid Form for certain work that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

B. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.

C. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01030

SECTION 01300 - SUBMITTALS

1.1 GENERAL

A. Submittal Procedures: Coordinate submittal preparation with construction, fabrication, other submittals, and activities that require sequential operations. Transmit in advance of construction operations to avoid delay.

1. Coordinate submittals for related operations to avoid delay because of the need to review submittals concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.
2. Processing: Allow 2 weeks for initial review. Allow more time if the Architect must delay processing to permit coordination. Allow 2 weeks for reprocessing.

    a. No extension of Contract Time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.

3. Submittal Preparation: Place a permanent label on each submittal for identification. Provide a 4- by 5-inch (100- by 125-mm) space on the label or beside title block to record review and approval markings and action taken. Include the following information on the label for processing and recording action taken.

    a. Project name.
    b. Date.
    c. Name and address of the Architect.
    d. Name and address of the Contractor.
    e. Name and address of the subcontractor.
    f. Name and address of the supplier.
    g. Name of the manufacturer.
    h. Number and title of appropriate Specification Section.
    i. Drawing number and detail references, as appropriate.

4. Submittal Transmittal: Package each submittal appropriately. Transmit with a transmittal form. The Architect will not accept submittals from sources other than the Contractor.
5. Transmittal Form: Use AIA Document G810. On the form, record requests for data and deviations from requirements. Include Contractor's certification that information complies with requirements.

B. Contractor's Construction Schedule: Prepare a horizontal bar-chart-type, contractor's construction schedule. Provide a separate time bar for each activity and a vertical line to identify the first working day of each week. Use the same breakdown of Work indicated in the "Schedule of Values." Indicate estimated completion in 10 percent increments. As Work progresses, mark each bar to indicate actual completion.

1. Submit within 30 days of the date established for "Commencement of the Work."

2. Prepare the schedule on stable transparency, or other reproducible media, of width to show data for the entire construction period.
3. Secure performance commitments from parties involved. Coordinate each element with other activities; include minor elements involved in the Work. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
4. Coordinate with the Schedule of Values, list of subcontracts, Submittal Schedule, payment requests, and other schedules.
5. Indicate completion in advance of Substantial Completion. Indicate Substantial Completion to allow time for the Architect's procedures necessary for certification of Substantial Completion.
6. Work Stages: Indicate important stages for each portion of the Work.
7. Area Separations: Provide a separate time bar to identify each construction area for each portion of the Work. Indicate where each element must be sequenced with other activities.

C. Submittal Schedule: After developing the Contractor's Construction Schedule, prepare a schedule of submittals. Submit within 10 days of submittal of the Construction Schedule.

1. Coordinate with list of subcontracts, Schedule of Values, list of products, and the Contractor's Construction Schedule.
2. Prepare the schedule in chronological order. Provide the following information:

    a. Date for first submittal.
    b. Related Section number.
    c. Submittal category (Shop Drawings, Product Data, or Samples).
    d. Name of the subcontractor.
    e. Description of the Work covered.
    f. Date for the Architect's final approval.

3. Schedule Distribution: Distribute copies of the Contractor's Construction Schedule and the Submittal Schedule to the Architect, Owner, subcontractors, and parties required to comply with submittal dates. Post copies in the field office.

    a. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their Work and are no longer involved in construction activities.
    b. Updating: Revise the schedule after each meeting or activity where revisions have been made. Issue the updated schedule concurrently with the report of each meeting.

D. Daily Construction Reports: Prepare a daily report recording events at the site. Submit duplicate copies to the Architect at weekly intervals. Include the following information:

1. List of subcontractors at the site.
2. High and low temperatures, general weather conditions.
3. Accidents and unusual events.
4. Stoppages, delays, shortages, and losses.

5. Meter readings and similar recordings.
6. Emergency procedures.
7. Orders and requests of governing authorities.
8. Services connected, disconnected.
9. Equipment or system tests and startups.
10. Substantial Completions authorized.

Shop Drawings: Submit newly prepared information drawn to scale. Indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information. Include the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates and full-size Drawings, submit one correctable, reproducible print and one blue- or black-line print on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 36 by 48 inches (890 by 1220 mm). The Architect will return the reproducible print.

    a. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

F. Product Data: Collect Product Data into a single submittal for each element of construction. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, mark copies to indicate applicable information.

1. Include the following information:

    a. Manufacturer's printed recommendations.
    b. Compliance with trade association standards.
    c. Compliance with recognized testing agency standards.
    d. Application of testing agency labels and seals.
    e. Notation of dimensions verified by field measurement.
    f. Notation of coordination requirements.

2. Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.
3. Submittals: Submit 2 copies; submit 4 copies where required for maintenance manuals. The Architect will retain one and return the other marked with action taken.

    a. Unless noncompliance with Contract Documents is observed, the submittal serves as the final submittal.

4. Distribution: Furnish copies to installers, subcontractors, suppliers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until a copy of Product Data is in the Installer's possession.

a. Do not use unmarked Product Data for construction.

G. Samples: Submit full-size Samples cured and finished as specified and identical with the material proposed. Mount Samples to facilitate review of qualities.

1. Include the following:

a. Specification Section number and reference.
b. Generic description of the Sample.
c. Sample source.
d. Product name or name of the manufacturer.
e. Compliance with recognized standards.
f. Availability and delivery time.

2. Submit Samples for review of size, kind, color, pattern, and texture, for a check of these characteristics, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed. Where variations are inherent in the material, submit at least 3 units that show limits of the variations.

a. Refer to other Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar characteristics.
b. Refer to other Sections for Samples to be incorporated in the Work. Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
c. Samples not incorporated into the Work, or designated as the Owner's property, are the Contractor's property and shall be removed from the site.

3. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from standard choices. The Architect will review and return submittals indicating selection and other action.
4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit 3 sets. One set will be returned marked with the action taken. Maintain sets of Samples, at the Project Site, for quality comparison.

a. Unless noncompliance with Contract Documents is observed, the submittal may serve as the final submittal.
b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

5. Distribution of Samples: Distribute additional sets to subcontractors, manufacturers, and others as required for performance of the Work. Show distribution on transmittal forms.

H. Quality Assurance Submittals: Submit quality-control submittals, including design data, certifications, manufacturer's instructions, and manufacturer's field reports required under other Sections of the Specifications.

1. Certifications: Where certification that a product or installation complies with specified requirements is required, submit a notarized certification from the manufacturer certifying compliance.

    a. Signature: Certification shall be signed by an officer authorized to sign documents on behalf of the company.

I. Architect's Action: Except for submittals for the record or information, where action and return are required, the Architect will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

1. Action Stamp: The Architect will stamp each submittal with an action stamp. The Architect will mark the stamp appropriately to indicate the action taken.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01300

SECTION 01400 - QUALITY CONTROL

1.1 GENERAL

A. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Architect.

B. Contractor Responsibilities: Unless they are the responsibility of another entity, Contractor shall provide inspections and tests specified elsewhere and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.

1. Where inspections and tests are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform these services. Costs for these services are included in the Contract Sum.
2. Where inspections and tests are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

C. Retesting: The Contractor is responsible for retesting where results of inspections and tests prove unsatisfactory and indicate noncompliance with requirements.

1. The cost of retesting is the Contractor's responsibility where tests performed indicated noncompliance with requirements.

D. Auxiliary Services: Cooperate with agencies performing inspections and tests. Provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include the following:

1. Providing access to the Work.
2. Furnishing incidental labor and facilities to assist inspections and tests.
3. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
4. Providing facilities for storage and curing of test samples.
5. Delivering samples to testing laboratories.
6. Providing preliminary design mix proposed for use for materials mixes that require control by the testing agency.
7. Providing security and protection of samples and test equipment.

E. Duties of the Testing Agency: The testing agency shall cooperate with the Architect and the Contractor in performing its duties. The agency shall provide qualified personnel to perform inspections and tests.

1. The agency shall notify the Architect and the Contractor of irregularities or deficiencies observed in the Work during performance of its services.
2. The agency shall not release, revoke, alter, or enlarge requirements or approve or accept any portion of the Work.
3. The agency shall not perform duties of the Contractor.

F. Coordination: Coordinate activities to accommodate services with a minimum of delay. Avoid removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling inspections, tests, taking samples, and similar activities.

G. Submittals: The testing agency shall submit a certified written report, in duplicate, of each inspection and test to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection or test through the Contractor.

1. Submit additional copies of each report to the governing authority, when the authority so directs.
2. Report Data: Reports of each inspection, test, or similar service include, but are not limited to, the following:

a. Date of issue.
b. Project title and number.
c. Name, address, and telephone number of testing agency.
d. Dates and locations of samples and tests or inspections.
e. Names of individuals making the inspection or test.
f. Designation of the Work and test method.
g. Identification of product and Specification Section.
h. Complete inspection or test data.
i. Test results and an interpretation of test results.
j. Ambient conditions at the time of sample taking and testing.
k. Comments or professional opinion on whether inspected or tested Work complies with requirements.
l. Name and signature of laboratory inspector.
m. Recommendations on retesting.

H. Qualifications for Service Agencies: Engage inspection and testing service agencies that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

1. Each agency shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

A. Repair and Protection: Upon completion of inspection, testing, and sample taking, repair damaged construction. Restore substrates and finishes. Comply with Project Specifications, Division 1, Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for inspection and testing.

END OF SECTION 01400

SECTION 01700 - CONTRACT CLOSEOUT

1.1 GENERAL

A. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16 of Project Specifications.

B. Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the Work claimed as substantially complete.

    a. Include supporting documentation for completion and an accounting of changes to the Contract Sum.

2. Advise the Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
4. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
5. Deliver tools, spare parts, extra stock, and similar items.
6. Changeover locks and transmit keys to the Owner.
7. Complete startup testing of systems and instruction of operation and maintenance personnel. Remove temporary facilities, mockups, construction tools, and similar elements.
8. Complete final cleanup requirements, including touchup painting.
9. Touch up and repair and restore marred, exposed finishes.

C. Inspection Procedures: On receipt of a request for inspection, the Architect will proceed or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

D. Final Acceptance: Before requesting inspection for certification of final acceptance and final payment, complete the following:

1. Final payment request with releases and supporting documentation. Include insurance certificates where required.
2. Submit a statement, accounting for changes to the Contract Sum.
3. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.

4. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion.
5. Submit consent of surety to final payment.
6. Submit a final settlement statement.
7. Submit evidence of continuing insurance coverage complying with insurance requirements.
8. Submit Final Affidavit, Waiver and Release of Lien in form required by Contract.

E. Reinspection Procedure: The Architect will reinspect the Work upon receipt of notice that the Work has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or obligations that have not been fulfilled but are required.
2. If necessary, reinspection will be repeated.

F. Record Document Submittals: Do not use record documents for construction. Protect from loss in a secure location. Provide access to record documents for the Architect's reference.

G. Record Drawings: Maintain a set of prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark the drawing most capable of showing conditions fully and accurately. Give attention to concealed elements.

1. Mark sets with red pencil. Use other colors to distinguish between variations in separate categories of the Work.
2. Organize record drawing sheets into manageable sets. Bind with durable-paper cover sheets; print titles, dates, and other identification on the cover of each set.

H. Record Specifications: Maintain one copy of the Project Manual, including addenda. Mark to show variations in Work performed in comparison with the text of the Project Specifications and modifications. Give attention to substitutions and selection of options and information on concealed construction. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Project Specifications to the Architect for the Owner's records.

I. Maintenance Manuals: Organize operation and maintenance data into sets of manageable size. Bind in individual, heavy-duty, 2-inch (51-mm), 3-ring, binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
4. Wiring diagrams.
5. Shop Drawings and Product Data.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires maintenance to provide instruction in proper operation and maintenance. Include a detailed review of the following items:

1. Maintenance manuals.
2. Spare parts, tools, and materials.
3. Lubricants and fuels.
4. Identification systems.
5. Control sequences.
6. Hazards.
7. Warranties and bonds.
8. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following:

1. Startup and shutdown.
2. Emergency operations and safety procedures.
3. Noise and vibration adjustments.

C. Final Cleaning: Employ experienced cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Complete the following operations before requesting inspection for certification of Substantial Completion.

1. Remove labels that are not permanent labels.
2. Clean transparent materials, including mirrors and glass. Remove glazing compounds. Replace chipped or broken glass.
3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Leave concrete floors broom clean. Vacuum carpeted surfaces.
4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures and lamps.
5. Clean the site of rubbish, litter, and foreign substances. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

D. Pest Control: Engage a licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.

E. Removal of Protection: Remove temporary protection and facilities.

F. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not discharge volatile, harmful, and dangerous materials into drainage materials into drainage systems. Remove waste materials from site, and dispose of lawfully.

END OF SECTION 01700

SECTION 02222

BUILDING EARTHWORK

PART 1 – GENERAL

1.1 DESCRIPTION

A. Provide earthwork, including clearing and grubbing, excavation, fill, backfill and compaction for building areas and concrete walks and slabs, shown on the drawings and specified as required to complete work.

1.2 QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service: Contractor shall employ and pay an independent soil testing and inspection service to perform a soil survey for satisfactory soil materials, sampling and testing for quality control during earthwork operations.

C. Test for Proposed Soil Materials:

1. Test soil materials proposed for use in the work and promptly submit test result reports.

2. Provide one optimum moisture-maximum density curve for each type of soil encountered in subgrade and fills under building foundations and slab areas. Determine maximum densities in accordance with ASTM D 1557, and ASTM D 4253, as applicable.

3. For borrow materials, perform a mechanical analysis, AASHTO-T88 plasticity index, AASHTO T91; moisture-density curve, AASHTO-T180 or ASTM D 1557.

D. Project Geotechnical Report: Perform earthwork in accordance with the recommendations of the geotechnical report for the project.

1.3 SUBMITTALS

A. Test Reports: Submit two copies of the following reports to the Architect-Engineer:

1. Test report on borrow material.

2. Field density test reports.

3. Optimum moisture-maximum density curve for each type of soil encountered.

B. Submit Manufacturer's Literature for vibratory compaction equipment.

1.4 JOB CONDITIONS

A. Protection: Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations. Should any uncharted utilities be found, notify the utility company and Architect-Engineer immediately and await instructions before proceeding further with work in that location.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Fill and Backfill Materials: Clean, free-draining sand (max. 10% passing the 200 mesh sieve) free from organic materials.

B. Excavated material conforming to requirements for fill and backfill material may be used for fill and backfill.

C. Provide additional fill material from off-site when required to complete the work.

2.2 VIBRATORY COMPACTION EQUIPMENT

A. Vibratory Roller: The vibratory drum roller shall be as recommended in the geotechnical report for the project. Vibratory roller shall not be used within 30 feet of existing structures. Use mechanical hand tampers.

B. Mechanical Hand Tampers: Hand tampers shall be capable of meeting the compaction requirements specified herein.

PART 3 – EXECUTION

3.1 CLEARING AND GRUBBING BUILDING AREAS

A. Clear and grub the entire building area to at least 5 feet beyond perimeter of building footings and foundation, walks and slabs to remove stumps, roots, trees, vegetation, organic material and other obstructions to the work. Grub out all roots larger than ¼ inch in diameter, matted roots and other organic material to at least 24 inches below existing surface.

B. Strip topsoil from areas within the building and slab areas and stockpile on the site for future use in site grading.

3.2 EXCAVATION

A. Excavate to depths and dimensions required for footings, slabs and structures. Remove and dispose of all obstructions to the work that are encountered above and below grade during excavation operations. Removal and disposal includes the following:

1. Stumps, roots, trees and other organic materials.

2. Pavement, foundations, concrete, and other inorganic materials.

3. Abandoned utilities and utilities indicated to be removed.

4. Organic and other unsuitable soil materials.

B. Stability of Excavations:

1. Slope the sides of excavation to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

2. Shoring and Bracing: Provide shoring and bracing to comply with local codes and authorities having jurisdiction.

C. Dewatering:

1. Prevent surface water and subsurface or groundwater from flowing into excavations and flooding the project site and surrounding area.

2. Do not allow water to accumulate in excavations. Provide dewatering system components necessary to convey the water away from excavations.

D. Excavation for Structures:

1. Conform to the elevations and dimensions shown on the drawings, with a tolerance of plus or minus 0.10 ft., and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.

2. In excavating for footings and foundations, take care not to disturb bottom of the excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to the required lines and grades to leave a solid base to receive concrete.

3. Where bottom of footing occurs in fill material, the fill and compaction operations shall continue until a minimum grade of 12” above bottom of footing is obtained. Footings may then be placed by excavating in accordance with methods herein specified.

4. Foundations shall be constructed as soon as possible after the foundation excavation to minimize damage to the bearing surface. If the bearing surface is softened by surface water intrusion or exposure, the softened soils must be removed immediately prior to placement of concrete. The bearing surface may be protected from extended exposure or imminent rainfall by placing a 2" mat of lean concrete on the bearing surface. Increase the foundation depth accordingly.

E. Cold Weather Protection: Protect excavation bottoms against freezing when the atmospheric temperature is less than 35 degrees F.

3.3 COMPACTION REQUIREMENTS

A. General: Compact and fill and backfill to the same density as adjacent in-place material.

B. Compaction Under Slabs and Structures:

1. All building areas shall be compacted and densified using a vibratory drum roller as specified herein. Vibratory compaction shall extend at least 5 feet beyond perimeter of building footings and foundations, slabs and walks. A minimum of twelve complete coverages, six in each direction, shall be made with the roller. Any soft yielding areas shall be excavated and replaced with acceptable fill material. Fill shall be placed in lifts not exceeding 12 inches in loose thickness (6 inches for mechanical hand tampers). Continue compaction until requirements specified herein are attained.

C. Percentage of Maximum Density Requirements: Compact soils to not less than the following percentages of the Modified Proctor maximum dry density, ASTM D 1557.

1. Existing Subgrades Under Structures: Compact subgrade 24 inches below existing grade to 98 percent maximum density at optimum moisture.

2. Fill and Backfill Under Footings and Foundations: Compact each layer of fill or backfill to 98 percent maximum density at optimum moisture.

3. Walks and Slabs: Compact top 12 inches of subgrade and each layer of fill or backfill to 95 percent maximum density at optimum moisture.

D. Moisture Control:

1. Where the subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface or subgrade, or layer of soil material, to prevent free water appearing on the surface during subsequent to compaction operations.

2. Remove and replace, dewater, or scarify and air dry soil material that is too wet to permit compaction to specified density.

E. Backfilling Under Slabs and Structures:

1. Continue backfilling and compaction over entire building area to final elevation. Backfilling shall be in equal layers compatible with equipment used.

3.4 FIELD TESTING

A. Number of tests:
   1. Make one optimum moisture-maximum density curve test in accordance with ASTM D 1557 for each class of material.
   2. Make in-place density tests in accordance with ASTM D 1556, ASTM D 2937, or ASTM D 4253, as applicable, as fill and backfill work progresses. Test locations shall be as follows:
      a. approximately every 185 cubic yards of fill and backfill, or 5,000-sq. ft. of building area, shall be tested;
      b. at a minimum of 25% of isolated spread footings;
      c. at 50 linear feet of continuous wall footings.

B. Work on Tested Area: Placing permanent construction over fill that has not been tested and approved may require the Contractor to remove permanent work, recompact the fill and replace the work.

C. Test Reports:

   1. Two copies of test reports shall be transmitted directly from the laboratory to the Architect-Engineer as directed.

   2. Test reports shall be identified by the project title, A.E. File number, project location, and location and depth of each on-site test submitted.

PART 4 END

SECTION 02361 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Soil treatment.

1.2 DEFINITIONS

A. EPA: Environmental Protection Agency.

B. PCO: Pest control operator.

1.3 SUBMITTALS

A. Product Data: Treatments and application instructions, including EPA-Registered Label.

B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following as applicable:

1. Date and time of application.
2. Moisture content of soil before application.
3. Brand name and manufacturer of termiticide.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes, and rates of application used.
6. Areas of application.
7. Water source for application.

E. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Applicator Qualifications: A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of successful in-service performance.

B. Regulatory Requirements: Formulate and apply termiticides, and label with a Federal registration number, to comply with EPA regulations and authorities having jurisdiction.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.

1.6 COORDINATION

A. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs, before construction.

1.7 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty: Written warranty, signed by applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. A warranty for subterranean termites, of five (5) years from the data of Substantial Completion.
2. Provide a “no dollar limit” warranty for the total cost to repair termite damage to structure and contents per occurrence.
3. Retreatment of the area(s) of reinfestation at no additional cost.

4. Annual re-inspection and treatment, as necessary, of the property treated.

    a. In the event of damage during the guarantee period, the Contractor shall make repairs to structurally damaged surfaces to a dollar value based on the size of the building. An independent testing laboratory shall certify that the treatment meets the requirements of the Specifications.

5. Provisions to allow the Owner, at his option, to renew the guarantee at the end of the annual (each year) warranty period.

1.8 MAINTENANCE SERVICE

A. Continuing Service: Provide a proposal for continuing service, including monitoring, inspection, and retreatment for occurrences of termite activity, from applicator to Owner, in the form of a standard yearly (or other period) continuing service agreement, starting on the date of Substantial Completion. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in a soluble or emulsible, concentrated formulation that dilutes with water or foaming agent, and formulated to prevent termite infestation. Use only soil treatment solutions that are not harmful to plants. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to the product's EPA-Registered Label.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of the soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.

C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.

1. Slabs-on-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Masonry: Treat voids.
4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 02361

SECTION 02780 - UNIT PAVERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Pavers.

1.2 SUBMITTALS

A. Product Data: For the following:

1. Pavers.

B. Samples for Verification:

1. Full-size units of each type of unit paver indicated.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain unit pavers from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Mockup will be used to determine bedding sand layer, joint sizes, lines, laying patterns, colors, and texture.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Preinstallation Conference: Conduct conference at Project site.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

PART 2 - PRODUCTS

2.1 PAVERS

A. Manufacturer: As indicated on the Drawings.

1. Pavers: Match Architect's samples.

2.2 AGGREGATE SETTING-BED MATERIALS

A. Bedding Sand: Sound, sharp, washed, natural sand or crushed rock complying with gradation requirements in ASTM C 33 with 100 percent passing 3/8 inch sieve and no more than 10 percent passing No. 100 sieve.

B. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33 for fine aggregate.

C. Stone Screenings for Leveling Course: Sound stone screenings complying with ASTM D 448 for Size No. 10.

D. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.

1. Provide sand of color needed to produce required joint color.

E. Do not use limestone screenings, stone dust, or sand for the bedding sand material that do not conform to the grading requirements of ASTM C 33.

F. Do not use mason sand or sand conforming to ASTM C 144 for the bedding sand.

2.3 ACCESSORIES

A. Cork Joint Filler: Preformed strips complying with ASTM D 1752, Type II.

B. Geotextile Fabric: Woven geotextile fabric, manufactured for separation applications; made from polyolefins or polyesters, with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2, AASHTO M 288.
2. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
3. Permittivity: 0.02 per second, minimum; ASTM D 4491.

C. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

2.4 MORTAR MATERIALS

A. Thin-Set Mortar for Bond Coat: Flexible mortar complying with ANSI A118.4.

1. Product and Manufacturer – Basis of Design: Granirapid System; MAPEI Headquarters of the Americas.

a. Color: To be selected by the Architect from manufacturer's standard.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Where pavers are to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or flashed against vertical surfaces.

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

3.2 PREPARATION

A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.

B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.

C. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive base course for unit pavers.

3.3 INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

D. Joint Pattern: As indicated on Drawings.

E. Tolerances: Do not exceed 1/32-inch unit-to-unit offset from flush (lippage) nor 1/8 inch in 10 feet from level, or indicated slope, for finished surface of paving.

F. Edge Pavers: Set edge pavers using mortar.

3.4 AGGREGATE SETTING-BED APPLICATIONS

A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 698 laboratory density.

B. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

C. Place drainage geotextile over compacted base course, overlapping ends and edges at least 12 inches.

D. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.

E. Treat leveling course with herbicide to inhibit growth of grass and weeds.

F. Set pavers in patterns shown with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines.

G. Spread dry sand and fill joints immediately after vibrating pavers into bedding sand. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling and to protect pavers from damage. Remove excess sand at time of Final Completion.

H. Broom clean surface after removal of excess joint sand.

I. Do not allow traffic on installed pavers until sand has been vibrated into joints.

J. Repeat joint-filling process 30 days later.

3.5 REPAIRING, POINTING, AND CLEANING

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

3.6 FIELD QUALITY CONTROL

A. The final surface tolerance from grade elevations shall not deviate more than ± 1/8 in. under a 10 ft straightedge.

B. Check final surface elevations for conformance to drawings.

3.7 PROTECTION

A. Protect work from damage due to subsequent construction activities until time of Final Completion and acceptance of the work.

END OF SECTION 02780

SECTION 02826 – METAL FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Perimeter fence and gates.

1.2 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements resulting from the maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): Local conditions

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.3 SUBMITTALS

A. Product Data: For the following:

1. Fence and gates.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Samples for Verification: For exposed finishes.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

PART 2 - PRODUCTS

2.1 ALUMINUM

A. Aluminum, General: Provide alloys and tempers with not less than the strength and durability properties of alloy and temper designated in paragraphs below for each aluminum form required.

B. Extrusions: ASTM B 221, Alloy 6063-T5.

C. Tubing: ASTM B 429, Alloy 6063-T6.

D. Plate and Sheet: ASTM B 209, Alloy 6061-T6.

E. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

F. Castings: ASTM B 26, Alloy A356.0-T6.

2.2 FENCE

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

1. Ameristar Fence Products.
2. Elite Fence Products, Inc.
3. Superior Aluminum Products, Inc.

B. Rails: Extruded-aluminum channels.

C. Pickets: Extruded-aluminum tubes.

D. Anchors: Type 316 stainless-steel; provide chemical anchors with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

E. Fabrication: Assemble fences into sections by welding pickets to rails. Fabricate fences as indicated for design, dimensions, member spacing, details, finish, and anchorage.

1. Finish: Manufacturer’s baked enamel or powder coated paint system.

a. Color: To be selected by the Architect from manufacturer’s full line.

2.3 GATES

A. Gate Material: ASTM B221 aluminum (designation 6063-T-6) with a yield strength of 25,000 PSI, a tensile strength of 30,000 PSI and a standard mill finish. Top rail shall be manufactured from ASTM B221 aluminum (designation 6063-T-6) with a yield strength of 25,000 PSI, a tensile strength of 30,000 PSI and a standard mill finish.

B. Gate Opening Width and Height: As indicated.

C. Frame: Frame shall be filled with pickets to match fencing.

D. Picket Size, Configuration, and Spacing: Match adjacent fence.

E. Hardware: As indicated on the Drawings.

F. Fabrication: Fabricate gates as indicated for design, dimensions, member spacing, details, finish, and anchorage.

1. Assemble gates in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
2. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately , unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
3. Form work true to line and level with accurate angles and surfaces.
4. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

5. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

    a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    b. Obtain fusion without undercut or overlap.
    c. Remove flux immediately.

6. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
7. Close exposed ends of hollow framing members with prefabricated end fittings.

8. Finish: Manufacturer’s baked enamel or powder coated paint system.

    a. Color: To be selected by the Architect from manufacturer’s full line.

PART 3 - EXECUTION

3.1 FENCE INSTALLATION

A. General: Install fences and gates indicated.

B. Post Setting: Set posts as indicated at indicated spacing.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

3.2 GATE INSTALLATION

A. Install gates and hardware according to manufacturer's written instructions, level, plumb, and secure for full opening without interference.

1. Attach hardware using tamper-resistant or concealed means.
2. Adjust hardware for smooth operation and lubricate where necessary.

3.3 CLEANING

A. Clean surfaces by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.

B. Touchup Painting: Comply with manufacturer's instructions and recommendations for cleaning and touchup painting.

3.4 PROTECTION

A. Protect finishes from damage during construction period with temporary protective coverings approved by the manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in field to shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 02826

SECTION 03310

CONCRETE WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. The General Requirements, Division 1 are hereby made a part of this section as if fully repeated herein.

B. Provide all concrete work shown and specified including form work, reinforcing steel, placing and curing.

C. All concrete for the project shall conform to requirements of ACI 301, except as modified by the Contract Documents.

1.2 CODES AND STANDARDS

A. Concrete work shall conform to the following by American Concrete Institute (ACI) unless modified herein or on the drawings.

1. ACI 301: Specifications for Structural Concrete for Buildings.

2. ACI 302: Guide for Concrete Floor and Slab Construction.

3. ACI 304: Guide for Measuring, Mixing, Transporting, and Placing Concrete.

4. ACI 308: Standard Practice for Curing Concrete.

5. ACI 309: Guide for Consolidation of Concrete.

6. SP-66: ACI Detailing Manual

7. ACI 318: Buildings Code Requirements for Structural Concrete.

8. ACI 347: Guide to Formwork for Concrete

9. ACI 117: Standard tolerances for Concrete Construction and Materials.

10. CRSI: Manual of Standard Practice

1.3 QUALITY CONTROL

A. Concrete Testing Service: The Contractor shall / Owner will / employ and pay an independent testing laboratory to perform concrete testing. Laboratory shall meet the

requirements of ASTM C 1077 "Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for use in Construction and criteria for Laboratory Evaluation."

1.4 SUBMITTALS

A. Shop Drawings: Submit for fabrication and placement of concrete reinforcement. Comply with SP-66 and CRSI “Manual of Standard Practice” showing bar schedules and arrangement of reinforcement.

B. Mix Design Tests Reports: Submit testing facility reports for each proposed mix at least 10 days prior to start or work.

C. Concrete Tests Reports: Submit laboratory test report for each concrete test specified herein. Test results shall be reported in writing to the Architect-Engineer and Contractor on the same day that the tests are made. Reports of compressive strength tests shall contain the project title and A.E. File number, date of concrete placement, name of Contractor, name of concrete supplier and truck number, name of concrete testing service, location of concrete batch in the structure, design compressive strength and type of break for both 7-day tests and 28-day tests.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete Materials:

1. Portland Cement: ASTM C 150, Type I/II

2. Water: Clean and potable complying with ASTM C94

3. Air-Entraining Admixture: ASTM C 260

4. Water Reducing Admixture: ASTM C 494, Type A

5. Retarding Admixture: ASTM C 494, Type B

6. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

7. High-Range, Water-Reducing Admixture: ASTM C 494,Type F

8. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G

9. Plastizing and Retarding Admixture: ASTM C 1017, Type II

10. Chloride Ions: Do not use calcium chloride in concrete unless otherwise authorized in writing by the Architect-Engineer. Do not use admixtures containing chloride ions in excess of amount found in municipal potable water.

B. Aggregates:

1. Regular Weight Concrete: ASTM C 33.

2. Lightweight Concrete: ASTM C 330.

3. Grout: ASTM C 404.

C. Concrete Reinforcing:

1. Reinforcing Bars: ASTM A 615, Grade 60, deformed

2. Plain-Steel Wire: ASTM A 82, as drawn

3. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

4. Deformed-Steel Welded Wire Fabric: ASTM A 497, flat sheet

D. Anchor Bolts: Conform to ASTM F1554 Grade 36 unless otherwise indicated on drawings. Nuts shall conform to ASTM A563, hex nuts.

E. Vapor Retarder: Multi-ply reinforced polyethylene sheet, ASTM E 1745, Class A.

F. Curing Materials:

1. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

2. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. When dry.

3. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

4. Water: Potable.

5. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

6. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

G. Preformed Joint Material: ASTM D 1752 Type I, II or III or ASTM D 1751. Provide Sealtight by W. R. Meadows or approved equal.

H. Non-Shrink Non-metallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. Grout shall have

a minimum 28-day compressive strength of 5,000 psi.

I. Form Materials:

1. Forms for Exposed Finish Concrete:
   a. Unless otherwise shown or specified, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

   b. Use overlaid plywood complying with U.S. Product Standard PS-1 "B-B High Density Overlaid Concrete Form", Class I.

2. Forms for unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

3. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces to be cured with water or curing compound.

2.2 CONCRETE MIXES

A. Comply with ACI 301 requirements for concrete mixes.

B. All concrete shall have a 28 day compressive strength as shown on the drawings. All concrete mixes shall be proportioned by the field experience method or the laboratory trial method in accordance with ACI 318.

1. All concrete except slab on grade
   a. The maximum water/cement ratio shall be 0.55
   b. All concrete, unless otherwise indicated, shall be air-entrained with an air content of 5% with a tolerance of ±1-1/2%.
   c. Slump: Grout for filling masonry cells and cavities shall have a slump of 9-1/2 inches ±1-1/2 inch. Concrete shall have a slump of 4-1/2 inches ±1-1/2 inch.

2. Slab on Grade.
   a. The maximum water/cement ratio shall be 0.50.
   b. Do not allow air content of floor slabs to receive troweled finishes to exceed 3%.
   c. Slump shall be a maximum of 5 inches.

2.3 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and furnish batch ticket information.

1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.

2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.

3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Vapor Retarder: Install, protect, and repair vapor-retarder sheets according to ASTM E 1643; place sheets in position with longest dimension parallel with direction of pour.

1. Lap joints 6 inches (150 mm) and seal with manufacturer’s recommended adhesive or joint tape.

2. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Formwork: Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position. Chamfer exposed edges and corners of formed concrete 3/4 inch unless otherwise indicated. Conform to ACI 347. Design of formwork is the responsibility of the Contractor.

C. Reinforcement: Locate and support with metal chairs, runners, bolsters spacers and hangers, in compliance with CRSI “Manual of Standard Practice.” For support of reinforcing steel in slabs or beams exposed to view underneath, furnish plastic accessories or accessories having plastic-coated feet.

D. Install welded wire fabric in as long lengths as practicable, lapping at least one mesh, + 6 inches.

E. Joints: Provide construction, isolation and control joints as indicated or required. Locate construction joints so as to not impair the strength and appearance of the structure, at

locations indicated or approved by the Architect/Engineer.

F. Concrete Placement: Conform to ACI 304. Place concrete in a continuous operation with planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.

G. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of forms. Conform to ACI 309.

H. Tolerances: Comply with ACI 117, “Specifications for Tolerances for Concrete Construction and Materials.”

I. Cold Weather Placing:

1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified. When air temperature has fallen to or is expected to fall below 40 degrees F., uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 50 degrees F., and not more than 80 degrees F. at point of placement.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

J. Hot Weather Placing: When hot weather conditions exist that would seriously impair the quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

1. Wet forms thoroughly before placing concrete.

2. Do not use retarding admixtures unless otherwise accepted in mix designs.

K. Shoring shall remain in place until concrete has obtained 2/3 of the design strength, as determined by laboratory tests.

3.2 FINISH FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ½ inch.
1. Apply to concrete surfaces not exposed to public view.

B. Smooth-formed Finish: As-cast concrete texture imparted by form-facing material,

arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.

1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed finished as-cast concrete where indicated:

1. Smooth-rubbed finish.

2. Gout-cleaned finish.

3. Cork-floated finish.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.3 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1 for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes.

1. Apply scratch finish to surfaces indicated and to surfaces to receive concrete floor topping or mortar setting beds for ceramic or quarry tile, Portland cement terrazzo, and other bonded cementitious floor finishes.
2. Tolerance: ½ inch in 10 feet when tested with a 10 foot straightedge.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, equipment slabs, non-traffic exterior slabs, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

2. Tolerance: 5/16 inch in 10 feet when tested with a 10 foot straightedge.

D. Troweled Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor

coverings.

1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.

2. Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10-foot long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed ¼ inch.

E. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristlebroom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

G. Slip-Resistive Aggregate Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft. of dampened slip-resistive aggregate over surface in one or two applications. Tamp aggregate flush with surface, but do not force below surface.

2. After broadcasting and tamping, apply float finish.

3. After curing, lightly work surface with a steel wire brush or an abrasive stone, and water to expose slip-resistive aggregate.

3.4 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water
   b. Continuous water-fog spray
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subject to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.5 CONCRETE TESTING

A. Compressive strength Tests: Conform to ASTM C31 and ASTM C39. One set of four cylinders for each 100 c.u. yds., or fraction thereof, of each strength concrete placed in any one day. Test one specimen at seven days; test two specimens at 28 days and hold one in reserve.

B. Slump Tests: Conform to ASTM C143. Perform one test for each load point of discharge and one for each set of compressive strength test specimens.

END OF SECTION

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wood blocking and nailers.

1.2 SUBMITTALS

A. Product Data: For the following.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

1.3 DEFINITIONS

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. SPIB - Southern Pine Inspection Bureau.
2. WWPA - Western Wood Products Association.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
2. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

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

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

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

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.

2.3 MISCELLANEOUS LUMBER

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

1. Blocking and nailers.

B. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.
2. Spruce-pine-fir (south) or Spruce-pine-fir, Construction or 2 Common Standard or 3 Common grade; NELMA, NLGA, WCLIB, or WWPA.

2.4 FASTENERS

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

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153or Type 304 stainless steel.

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

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

D. Wood Screws: ASME B18.6.1.

2.5 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

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

B. Framing Standard: Comply with American Forest & Paper Association (F&PA) WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as required for a complete installation.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

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

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

3.3 PROTECTION

A. Protect rough carpentry from damage.

END OF SECTION 06100

SECTION 06201 - EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. T&G deck.
2. Exterior wood trim and fascia.
3. Harditrim.
4. Hardisoffit.
5. Column wrap.
6. Miscellaneous materials.

1.2 SUBMITTALS

A. Product Data: For products and materials indicated.

1.3 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and the following grading rules:

1. SPIB: The Southern Pine Inspection Bureau, "Standard Grading Rules for Southern Pine Lumber."

B. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

2.2 T&G DECK

A. Species and Grade: Pine; No. 1

B. Configuration: Tongue and V-groove.

C. Finish: Stained; match Architect's sample.

2.3 EXTERIOR WOOD TRIM

A. Species and Grade: Match Architect's sample.

B. Finish: Stained; match Architect's sample.

2.4 HARDITRIM

A. Product and Manufacturer:

1. HardiTrim Boards; James Hardie.

a. Texture: Smooth.
b. Finish: Manufacturer's standard primed finish.

2.5 HARDISOFFIT

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

1. HardiSoffit; James Hardie.

a. Panel Type: As indicated on the Drawings.
b. Texture: Smooth.
c. Finish: Manufacturer's standard primed finish.

2.6 COLUMN WRAP

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

1. Column Wrap; Fypon LLC

a. Column Style: As indicated.
b. Cap and Base Style: As indicated.
c. Texture: Smooth.

2.7 MISCELLANEOUS MATERIALS

A. Soffit Vent:

1. Material and Finish: Extruded aluminum; primed.
2. Free Area: Minimum 9 square inches per linear foot.

B. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.

1. Nails: Aluminum, hot-dipped galvanized or stainless steel.
2. Nails: Aluminum, hot-dipped galvanized or stainless steel.

C. Flashing: Comply with requirements in Section 07620 "Sheet Metal Flashing and Trim" for flashing materials installed in exterior finish carpentry.

D. Sealants: Refer to Section 07920 "Joint Sealants".

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

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

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 09911 "Exterior Painting."

3.3 INSTALLATION, GENERAL

A. Comply with manufacturer’s instructions and recommendations for materials indicated.

B. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

C. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
3. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Install flat-grain lumber with bark side exposed to weather.

B. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long except where necessary.

1. Use scarf joints for end-to-end joints.
2. Stagger end joints in adjacent and related members.

C. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.

D. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.5 ADJUSTING

A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean exterior finish carpentry on exposed and semiexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

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

END OF SECTION 06201

SECTION 06202 – INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wood trim.
2. Wood moulding.
3. Solid surface sills.

1.2 SUBMITTALS

A. Product Data: For products and materials indicated.

1.3 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and the following grading rules:

1. SPIB: The Southern Pine Inspection Bureau, "Standard Grading Rules for Southern Pine Lumber."

B. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

2.2 WOOD TRIM

A. Wood Trim: As indicated on the Drawings.

B. Finish: As indicated on the Drawings.

2.3 WOOD MOULDING

A. Wood Species and Grade: Pine; paint grade.

B. Profiles: As indicated.

C. Finish: Painted.

2.4 SOLID SURFACE SILLS

A. Solid Surface Material:

1. Products and Manufacturers: Match Architect's samples.

B. Configuration: As indicated.

2.5 MISCELLANEOUS MATERIALS

A. Fasteners for Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.

1. Nails: Aluminum, hot-dipped galvanized or stainless steel.
2. Nails: Aluminum, hot-dipped galvanized or stainless steel.

B. Flashing: Comply with requirements in Section 07620 "Sheet Metal Flashing and Trim" for flashing materials installed in finish carpentry.

C. Sealants: Refer to Section 07920 "Joint Sealants".

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

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

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 09910 "Painting."

3.3 INSTALLATION, GENERAL

A. Comply with manufacturer's instructions and recommendations for materials indicated.

B. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
3. Coordinate finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long except where necessary.

1. Use scarf joints for end-to-end joints.
2. Stagger end joints in adjacent and related members.

B. Fit joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.

C. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3.5 ADJUSTING

A. Replace finish carpentry that is damaged or does not comply with requirements. Finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean finish carpentry on exposed and semiexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

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

END OF SECTION 06202

SECTION 06615 - COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Solid-surface-material countertops.

B. Product Data: For materials indicated.

C. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

D. Samples: For solid-surface material.

PART 2 - PRODUCTS

2.1 COUNTERTOPS

A. Solid Surface Material:

1. Products and Manufacturers: Match Architect’s samples.

B. Configuration: As indicated.

C. Countertops: 1/2-inch- thick, solid surface material with front edge built up with same material.

D. Backsplashes: 3/4-inch- thick, solid surface material.

E. Fabrication: Fabricate tops in one piece. Comply with solid-surface-material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

1. Fabricate with loose backsplashes for field assembly.

2.2 COUNTERTOP MATERIALS

A. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

B. Adhesives: Adhesives shall not contain urea formaldehyde.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

1. Install backsplashes and end splashes to comply with manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

END OF SECTION 06615

SECTION 07210 - BUILDING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Insulation.

1.2 SUBMITTALS

A. Product Data: Each type of insulation product specified.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.

C. Research/ Evaluation Reports.

1.3 QUALITY ASSURANCE

A. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products complying with requirements indicated without delaying the Work.

B. Installers Qualifications: Installer shall be a firm having a minimum of five consecutive years of documented experience with the installation of foam plastic masonry wall insulation.

C. Fire Performance Characteristics: Insulation materials shall be identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated, by a testing agency acceptable to authorities having jurisdiction.

1. Surface Burning Characteristics: ASTM E-84
2. Combustion Characteristics: ASTM E-136

D. Preinstallation Conference: Conduct conference at Project site.

1.4 DELIVERY, STORAGE, AND HANDLING

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

1. Batt Insulation:

a. CertainTeed Corporation.
b. Knauf Fiber Glass GmbH.
c. Owens-Corning Fiberglas Corporation.
d. Schuller International Group, Inc.

2. Sound Attenuation Blanket Insulation:

a. CertainTeed Corporation.
b. Knauf Fiber Glass GmbH.
c. Owens-Corning Fiberglas Corporation.
d. Schuller International Group, Inc.

2.2 INSULATION

A. Batt Insulation: Glass-fiber blanket, unfaced; ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

1. R-Value: As indicated on the Drawings.

B. Sound Attenuation Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing) with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics, produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Installed Thickness: As indicated.

2.3 ACCESSORIES

A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation, of thickness indicated, securely in position with self-locking washer in place.

PART 3 - EXECUTION

3.1 PREPARATION

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

3.2 INSTALLATION OF INSULATION - GENERAL

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

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

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

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.3 PROTECTION

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

END OF SECTION 07210

SECTION 07243 - PRE-SHAPED ARCHITECTURAL FORMS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes, but is not limited to, the following:

1. Architectural molding.
2. Brackets.
3. Trim.
4. Stucco trim.
5. Faux shutters.

1.2 SUBMITTALS

A. Product Data: Submit product data for materials and units specified.

B. Shop Drawings: Include sizes and profiles; include dimensions of each different pre-shaped architectural form. Show fabrication and installation of units including plans, elevations, details configurations, and attachments adjacent construction.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain pre-formed units from one source and by a single manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver units in original, unopened packages with manufacturer's labels intact and clearly identifying products.

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

PART 2 - PRODUCTS

2.1 PRE-SHAPED ARCHITECTURAL FORMS

A. Manufacture – Basis of Design: Unless otherwise indicated on the Drawings - Spectis Moulders Inc., Pembina, North Dakota.

1. Shapes and Profiles: As indicated.

2.2 ACCESSORIES

A. Adhesives: Types recommended by the forms manufacturer for installation to substrates indicated.

B. Mechanical Fasteners: Screw type fasteners; stainless steel; of type as recommended by the manufacture for installations indicated.

2.3 FABRICATION

A. General: Form pre-shaped architectural forms to indicated shapes and sizes, with true curves, lines, and angles. Provide components in sizes and profiles indicated.

B. Cupola Columns: Manufacture column assemblies with closed tops and bottoms. Factory cut columns, capitals and bases to profiles indicated. Provide accessible mechanical anchor points.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

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

B. Mechanically and adhesive attach units to substrate by method complying with system manufacturer's written requirements.

END OF SECTION 07243

SECTION 07275 - WEATHER RESISTIVE BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Weather resistant barrier comprised of the following:

a. Felt (building paper).
b. Air barrier (building wrap).
c. Flashing (flexible flashing).
d. Self-adhesive membrane.

1.2 SUBMITTALS

A. Product Data: For each type of product.

1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Felt (Building Paper): ASTM D 226, Type 1 (No. 15 asphalt-saturated organic felt), unperforated.

B. Air Barrier (Building Wrap): ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include the following:

a. Dow Chemical Company (The); Styrofoam Weathermate Plus Brand Housewrap.
b. DuPont (E. I. du Pont de Nemours and Company); Tyvek CommercialWrap.
c. Raven Industries Inc.; Fortress Pro Weather Protective Barrier.

C. Building-Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

2.2 MISCELLANEOUS MATERIALS

A. Flexible Flashing: Composite, self-adhesive, flashing product recommended by the weather barrier manufacture for applications indicated.

1. Primer: Product recommended by manufacturer of flexible flashing for substrate.

B. Self-Adhering Membrane:

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

a. Perm-A-Barrier Wall Flashing.

1) Thickness: 40 mils, nominal.

C. Nails and Staples: ASTM F 1667.

PART 3 - EXECUTION

3.1 WEATHER BARRIER INSTALLATION

A. General: Install weather barriers in accordance with manufacturer’s instructions and recommendations.

1. Cover exposed exterior surface of sheathing with weather-resistive barrier materials securely fastened to framing immediately after sheathing is installed.

B. Building Paper: Apply horizontally with minimum 2-inch overlap and minimum 6-inch end lap; fasten to sheathing with roofing nails.

C. Building Wrap: Comply with manufacturer's written instructions.

1. Seal seams, edges, fasteners, and penetrations with tape.
2. Extend into jambs of openings and seal corners with tape.

D. Flexible Flashing: Apply flexible flashing in accordance with manufacturer's written instructions.

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 4 inches except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over weather barrier at bottom and sides of openings.
4. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

E. Self-Adhering Membrane: Install in accordance with manufacturer's written instructions and recommendations for applications indicated.

END OF SECTION 07275

SECTION 07322 - CONCRETE ROOF TILES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Concrete roof tiles.
2. Tile accessories.
3. Underlayment.

1.2 CODE COMPLIANCE

A. Concrete roof tile system shall meet the requirements of the Florida Building Code.

1.3 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079, glossaries in RTI/WSRCA's "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions," and NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

A. General: Install a watertight, roofing and flashing system with compatible components that will not permit the passage of liquid water, including wind-blown water to design wind speed, and will withstand wind loads, thermally induced movement, and exposure to weather without failure.

B. Design Wind Speed: As indicated on the Structural drawings.

1.5 SUBMITTALS

A. Certification: Submit current certification indicating compliance with the Florida Building Code.

B. Product Data: For products indicated.

C. Samples for Initial Selection: For each type of concrete tile and concrete tile accessory indicated.

1. Include similar Samples of trim involving color selection.

D. Samples for Verification: For the following products, of sizes indicated, to verify color selected.

1. Concrete Tile: Full size.
2. Concrete Tile Accessories: Full size.
3. Fastenings: Wire-tie system components, 12 inches long.

E. Material Test Reports: For each type of tile.

F. Research/Evaluation Reports: For concrete tiles, fasteners, and fastener systems.

G. Product Test Reports: Based on evaluation of tests performed by manufacturer and witnessed by a qualified independent testing agency, indicate compliance of components of roofing system with requirements based on comprehensive testing of current product compositions.

1. Indicate compliance of roofing materials delivered to Project with requirements. Include quantity and statistical and descriptive data for each product. Submit certificate with each load before it is used.

H. Research/Evaluation Reports: Evidence of roofing system's compliance with building code in effect for Project from a model code organization acceptable to authorities having jurisdiction.

I. Maintenance Data: For concrete tile roofing to include in maintenance manuals.

J. Warranties: Warranties specified in this Section.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain concrete tiles and concrete tile accessories through one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Provide concrete tiles and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class A; UL 790 or ASTM E 108 for application and roof slopes indicated.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Preinstallation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.

1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be performed according to manufacturer's written instructions and warranty requirements.

1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.9 WARRANTY

A. Concrete Roof Tile Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace tile that fails in materials within specified warranty period, at no additional cost to the Owner. Material failures include manufacturing defects that result in leaks.

1. Material Warranty Period: 50 years from date of Substantial Completion.

B. Roofing Installer's Warranty: Roofing Installer's warranty, signed by roofing Installer, covering Work of this Section, in which roofing Installer agrees to repair or replace components of concrete tile roofing that fail in materials or workmanship within the following warranty period, at no additional cost to the Owner:

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

PART 2 - PRODUCTS

2.1 CONCRETE ROOF TILE

A. Product and Manufacturer: As indicated on the Drawings.

1. Color: Match Architect’s sample.

2.2 ACCESSORIES

A. Eave Closure: Manufacturer's standard coil-coated aluminum eave closure formed to shape of tile.

B. Attachment Materials: Types as required to comply with the Code.

C. Elastomeric Sealant: ASTM C 920, silicone-based joint sealant; of Type M or S, Grade NS, Class 25, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O.

D. Roofing Nails: ASTM F 1667, diameter shank, sharp-pointed, conventional roofing nails with barbed shanks; minimum 3/8-inch- diameter head; and of sufficient length to penetrate 3/4 inch into substrate indicated.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

2.3 WATERPROOF UNDERLAYMENT

A. Product and Manufacturer: As indicated on the Drawings.

2.4 ACCESSORIES

A. Eave Closure: Manufacturer's standard aluminum, mill finish eave closure formed to shape of concrete roof tiles.

2.5 SHEET METAL FLASHING AND TRIM

A. Sheet Metal Flashing and Trim: Comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."

1. Sheet Metal: Coil-coated aluminum.
2. Drip Edges: Fabricate in lengths not exceeding 10 feet, with 2-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.

C. High-Performance Organic Finish: Two-coat, thermocured system containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2604.

1. Color: Custom to match Architect's sample.

2.6 FASTENERS

A. Nails: Hot-dip galvanized-steel, unless otherwise indicated.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

2.7 METAL FLASHING AND TRIM

A. General: Comply with requirements in Section 07620 "Sheet Metal Flashing and Trim."

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for design, dimensions, metal, and other characteristics of the item.

C. Vent-Pipe Flashings: ASTM B 749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least 4 inches from pipe onto roof.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

A. Waterproof Underlayment: Install wrinkle free; comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install lapped in direction that sheds water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches, staggered 24 inches between succeeding courses. Roll laps with roller. Cover underlayment within seven days.

3.2 METAL FLASHING INSTALLATION

A. General: Install metal flashings and other sheet metal to comply with requirements in Section 07620 "Sheet Metal Flashing and Trim".

1. Install metal flashings according to concrete roof tile manufacturer's written instructions and recommendations in NRCA's "NRCA Roofing Manual: Steep-Slope Roof Systems."

B. Pipe Flashings: Form flashing around pipe penetrations and tile roofing. Fasten and seal to tile roofing.

3.3 CONCRETE ROOF TILE INSTALLATION

A. General: Install concrete roof tiles according to manufacturer's written instructions and with recommendations in TRI/WSRCA's "Concrete and Clay Roof Tile Design Criteria Installation Manual for Moderate Climate Regions" and NRCA's "NRCA Roofing Manual: Steep-Slope Roof Systems" unless more stringent requirements are indicated.

1. Maintain uniform exposure and coursing of concrete roof tiles throughout roof.
2. Extend tiles 2 inches over eave fascia.

3. Nail Fastening: Drive nails to clear the concrete roof tile so the tile hangs from the nail and is not drawn up.

    a. Install wire through nail holes of cut tiles that cannot be nailed directly to roof deck, and fasten to nails driven into deck.

4. Wire-Tie Fastening: Install wire-tie systems and fasten concrete roof tiles according to manufacturer's written instructions.
5. Storm Clips: Install to capture edges of longitudinal sides of concrete roof tiles and securely fasten to roof deck.
6. Tile Locks: Install to support and lock overlying tile butts to underlying tiles.
7. Cut and fit concrete roof tiles neatly around roof vents, pipes, ventilators, and other projections through roof. Fill voids with mortar.
8. Install concrete roof tiles with color blend approved by Architect.

END OF SECTION 07322

SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Sheet metal flashing and trim.
2. Formed roof-drainage sheet metal fabrications.

1.2 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Wind Loads:

1. Design Wind Speed: As indicated on the Drawings.

C. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressures indicated.

D. Fabricate and install roof edge flashing capable of resisting the forces according to recommendations in FMG Loss Prevention Data Sheet 1-49.

1.3 SUBMITTALS

A. Product Data: For flashing.

1. Include material descriptions and finishes.

1.4 WARRANTY

A. Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:

1. Factory-Painted Aluminum Sheet: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.
2. Extruded Aluminum: ASTM B 221, alloy 6063-T52, with a minimum thickness of 0.080 inch for primary legs of extrusions, unless otherwise indicated.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

B. Elastomeric Sealant: Silicone sealant as specified in Division 07 Section "Joint Sealants."

C. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

D. Underlayment: Self-adhering, high-temperature sheet; minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

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

a. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
c. Henry Company; Blueskin PE200 HT.

E. Self-Adhering Flashing:

1. Product and Manufacturer – Basis of Design: Perm-A-Barrier Wall Flashing” Grace Construction Products, a unit of W. R. Grace & Co.-Conn.

2.3 MISCELLANEOUS MATERIALS

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

1. Where fasteners are used in or come in contact with pressure treated wood, fasteners shall be Type 316 stainless steel.
2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.

B. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.4 SHEET METAL FABRICATIONS

A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.

B. Exposed Trim: Fabricate from the following material:

1. Aluminum: 0.050 inch thick.

C. Counterflashing: Fabricate from the following material:

1. Aluminum: 0.040 inch thick.

2.5 ROOF-DRAINAGE SHEET METAL FABRICATIONS

A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, and gutter accessories from same metal as gutters.

1. Gutters with Girth up to 20 Inches: Fabricate from the following materials:

a. Aluminum: 0.040 inch thick.
b. Profile: As indicated.

B. Downspouts: Fabricate downspouts to profiles and dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.

1. Fabricate from the following materials:

a. Aluminum: 0.032 inch thick.
b. Profile: As indicated.

2.6 ALUMINUM FINISHES

A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.

B. High-Performance Organic Finish: Two-coat, thermocured system containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2604.

1. Color: Custom to match Architect’s sample.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual."

B. Underlayment: Install self-adhering sheet underlayment in accordance with manufacturer’s instructions and recommendations.

3.2 ROOF-DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.

B. Hanging Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.

1. Anchor gutter with gutter brackets spaced not more than 24 inches apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
2. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.

C. Downspouts: Join sections with telescoping joints.

1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
2. Provide elbows at base of downspout to direct water away from building, unless otherwise indicated.
3. Provide boots of size required to transition to drainage system.

END OF SECTION 07620

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Sealants for interior and exterior applications.

1.2 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Sealant Schedule: Provide Sealant Schedule indicating sealant types for each condition of use; format Schedule to include entry for color selections by the Architect.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.5 PROJECT CONDITIONS

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

1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.

2. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 degrees F.
3. When joint substrates are wet.

B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide the following products indicated for each type in the sealant.

1. One-Part Silicone Sealant: One-part neutral cure silicone sealant; elongation of 800%, joint movement capability of plus-or-minus 25% and Shore A durometer hardness of 45.

a. Application: Interior air sealing between a sheet or liquid applied weather resistant barrier and fenestration element; edge lap seal for weather resistant barriers; sealing penetrations in weather resistant barriers.
b. Joint Location: Surfaces common in sheet or peel and stick weather resistant barriers.

c. Product and Manufacturer:

1) Pecora Corp. 898.
2) Tremco; Tremsil 600 White

2. Single Component Nonsag Urethane Sealant:

a. Products and Manufacturers: Provide one of the following.

1) Sonneborn, Division of ChemRex Inc.; NP 1.
2) Tremco, Inc.; "Vulkem 116.

b. Type and Grade S (Single Component) and NS (nonsag).
c. Class 25.
d. Uses realted to exposure: T (traffic) and NT (nontraffic).

3. Single Component Pourable Urethane Sealant:

a. Products and Manufacturers: Provide one of the following.

1) Sonneborn, Division of ChemRex Inc.; SL 1.
2) Tremco, Inc.; Vulkem 300 SSL;

b. Type and Grade S (Single Component) and P (pourable).
c. Class 25.
d. Uses realted to exposure: T (traffic) and NT (nontraffic).

4. One-Part Latex Sealant: For interior use for horizontal and vertical joints around door frames, and joints between dissimilar materials.

a. Products and Manufacturers: Provide one of the following.

1) "AC-20"; Pecora Corp.
2) "Tremco Acrylic Latex 834"; Tremco, Inc.

b. Warranty: Manufacturer's standard warranty.

5. Acoustic/ Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

a. Product and Manufacturer: Provide the following.

1) Pecora Corporation; AC-20 FTR.
2) USG Corporation; SHEETROCK Acoustical Sealant.

2.2 MATERIALS, GENERAL

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

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

2.3 JOINT-SEALANT BACKING/ BACKER ROD

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

B. Backer Rod (Joint Fillers, Compressible Filler):

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

a. Product and Manufacturer - Basis of Design: Sof Rod; Nomaco, Inc., Zebulon, NC.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.4 MISCELLANEOUS MATERIALS

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

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

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

3.2 PREPARATION

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

B. Joint Priming: Prime joint substrates, unless otherwise recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience.

1. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

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

3.3 INSTALLATION OF JOINT SEALANTS

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

1. Install sealants by proven techniques and at the same time backings are installed.

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

B. Backing Materials: Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

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

C. Bond-Breaker Tape: Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.

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

1. Remove excess sealants from surfaces adjacent to joint.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

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

3.5 PROTECTION

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

END OF SECTION 07920

SECTION 08212 - STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wood doors.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and other pertinent data.

C. Samples: Representing typical range of color and grain for each species of veneer and solid lumber required. Finish Sample with same materials proposed for factory-finished doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Flush Wood Doors:

a. GRAHAM Manufacturing Corp.
b. Masonite International Corporation
c. Mohawk Flush Doors, Inc.

2.2 INTERIOR STILE AND RAIL WOOD DOORS

A. Interior Stile and Rail Wood Doors: Interior doors complying with WDMA I.S.6, "Industry Standard for Wood Stile and Rail Doors," and with other requirements specified.

1. Finish and Grade: Transparent and Premium or Select.
2. Wood Species and Cut: Match Architect’s sample.
3. Stile and Rail Construction: Manufacturer’s standard.
4. Panel Construction: Manufacturer’s standard for profiles indicated.
5. Door Construction for Stained-Transparent Finish: Manufacturer’s standard.

2.3 FABRICATION

A. General: Fabricate stile and rail wood doors in sizes indicated for field fitting.

1. Fit doors to suit frame-opening sizes indicated, provide uniform clearances and bevels required for installation.
2. Factory machine doors for hardware that is not surface applied.

2.4 FINISHING

A. Finish wood doors at factory; comply with the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards," or WDMA I.S.6A, "Industry Standard for Architectural Stile and Rail Doors".

1. Finish faces and all four edges of doors, including mortises and cutouts.

B. Stained-Transparent Finish:

1. Grade: Custom.
2. Finish: AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" System 5, conversion varnish.
3. Staining and Sheen: Match Architect's sample.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install wood doors to comply with manufacturer's written instructions.

1. Install wood doors level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
2. Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.
3. Countersink fasteners, fill surface flush, and sand smooth.

B. Hardware: For installation, see Division 8 Section "Door Hardware."

3.2 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08212

SECTION 08223 - FIBERGLASS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Fiberglass doors.

1.2 SUBMITTALS

A. Product Approval: Provide Product Approval in accordance with the Florida Building Code.

B. Product Data: For each type of door indicated.

C. Shop Drawings: Indicate location, size, and hand of each door; construction details for stiles, rails, panels, and moldings (sticking); mortises, holes, and cutouts; and other pertinent data.

D. Samples for Verification: Provide the following.

1. Provide a factory finished sample showing the final finish selected applied to actual door face material, approximately 8 by 10 inches, showing color and grain appearance.

1.3 WARRANTY

A. Warranty – Exterior Doors: Manufacturer's standard form, signed by manufacturer, Installer, and Contractor, in which manufacturer agrees to repair or replace doors that are defective in materials, finish, or workmanship within specified warranty period.

1. Warranty shall be in effect during the following period of time from date of Substantial Completion:

a. Exterior Doors: Five years.

2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 FIBERGLASS DOORS AND FRAMES

A. Products and Manufacturers: As indicated on the Drawings.

B. Description:

1. Door Panel Configuration: As indicated.
2. Face Surface Grain: To be selected by the Architect from manufacturer's full line.

3. Finish: Factory finished, stained.

a. Stain Color: To be selected by the Architect from manufacturer's full line.

C. Hardware:

1. Hinges: Manufacturer's standard; color to be selected by the Architect from manufacturer's full line.
2. Sill/ Threshold: Adjustable sill; finish to be selected by the Architect from manufacturer's full line. Provide with 300 Series stainless steel hardware.
3. Lockset: Refer to Section 08710 Door Hardware.
4. Weatherstripping: Manufacturer's standard.

2.2 FABRICATION

A. Hardware Preparation: Factory machine doors for hardware that is not surface applied.

B. Glazed Openings: Glaze doors at factory with glass of type and thickness indicated. Install glass using manufacturer's standard elastomeric glazing sealant complying with ASTM C 920. Secure glass in place with removable wood stops.

2.3 FACTORY FINISHING

A. General: Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

B. Finishing: Finish doors at factory.

1. Finish faces, all six edges, edges of cutouts, and mortises.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install doors and frames to comply with referenced quality standard and manufacturer's written instructions.

B. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

C. Operation: Rehang or replace doors that do not swing or operate freely.

D. Factory-Finished Doors:

1. Restore finish before installation if fitting or machining is required at Project site.
2. Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing as approved by the Architect.

END OF SECTION 08223

SECTION 08311 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Access doors.

1.2 SUBMITTALS

A. Product Data: For each type of access door assembly specified, including details of construction relative to materials, individual components, profiles, and finishes.

1. Include complete schedule, including types, general locations, sizes, wall and ceiling construction details, latching or locking provisions, and other data pertinent to installation.

B. Shop Drawings: Showing fabrication and installation of customized access doors and frames, including details of each frame type, elevations of door design types, anchorage, and accessory items.

1.3 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain access doors for entire Project from one source and by a single manufacturer.

B. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units, which may vary slightly from sizes indicated.

1.4 COORDINATION

A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed equipment, and indicate on schedule specified under "Submittals" Article.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Karp Associates, Inc.
2. Milcor Inc.
3. Nystrom, Inc.

2.2 ACCESS DOORS

A. Concealed Frame Access Doors for Gypsum Board Ceilings: Provide with gypsum board insert.

1. Model and Manufacturer – Basis of Design: Model CTWB; JL Industries, Inc.

2.3 FABRICATION

A. General: Manufacture each access door assembly as an integral unit ready for installation.

B. Locking Devices: Furnish number required to hold door in flush, smooth plane when closed.

1. Provide cylinder locks, furnish 2 keys per lock and key all locks alike and key to match building system.

PART 3 - EXECUTION

3.1 PREPARATION

A. Advise Installers of other work about specific requirements relating to access door installation, including sizes of openings to receive access door and frame, as well as locations of supports, inserts, and anchoring devices. Furnish inserts and anchoring devices for access doors that must be built into other construction. Coordinate delivery with other work to avoid delay.

3.2 INSTALLATION

A. General: Comply with manufacturer's instructions for installing access doors.

1. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finished surfaces.
2. Paint exposed surface of access doors and frames to match adjacent surface finish.

B. Remove and replace panels or frames that are warped, bowed, or otherwise damaged.

END OF SECTION 08311

SECTION 08561 - VINYL WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Vinyl windows.

1.2 SUBMITTALS

A. Product Approval: Provide Product Approval in accordance with the Florida Building Code.

B. Product Data: For windows indicated.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for vinyl windows.

C. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

1.3 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace vinyl windows that fail in materials or workmanship within specified warranty period.

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

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period: Manufacturer’s standard.

PART 2 - PRODUCTS

2.1 VINYL WINDOWS

A. Model and Manufacturer - Basis of Design: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Model 8500; Eagle View Windows, Callahan, FL

a. Florida Product Approval Number: FL16627

b. Glass: As indicated on the Drawings.

2.2 VINYL WINDOWS

A. Operating Types: Provide the operating types indicated on Drawings:

1. Finish: Integral color to be selected by the Architect from manufacturer’s full line.

B. Hardware, General: Provide manufacturer's standard hardware complying with AAMA 907, corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

C. Weather Stripping: Provide full-perimeter weather stripping for operable sash.

D. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

2.3 ACCESSORIES

A. Muntins (Dividers/Grids): Manufacturer’s standard.

1. Profile: As selected by Architect from manufacturer's full range.
2. Color: Match window framing.
3. Location: As indicated on the Drawings.

2.4 INSECT SCREENS

A. General: Fabricate insect screens to fully integrate with window frame. Provide screen for each operable exterior sash.

1. Type and Location: Full, outside for double-hung; half, outside for single-hung sashes.

B. Frames: Manufacturer's standard.

1. Finish: Match window framing.

C. Glass-Fiber Mesh Fabric: 20-by-20 or 20-by-30 mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656.

1. Mesh Color: Manufacturer's standard.

2.5 FABRICATION

A. Fabricate vinyl windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Glaze vinyl windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Grids: Provide grids for simulated divided lights; configuration as indicated.

E. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

F. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

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

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

3.3 FIELD QUALITY CONTROL

A. Testing: Comply with window manufacturer’s instructions and recommendations.

B. Remove and replace noncomplying windows and retest.

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

D. Prepare test and inspection reports.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

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

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

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

END OF SECTION 08561

SECTION 08710 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Door hardware.

1.2 SUBMITTALS

A. Product Data: Include manufacturer's technical product data for each item of door hardware, installation details, material descriptions, maintenance of operating parts, dimensions of individual components and profiles, and finishes.

B. Door Hardware Schedule:

1. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the Building Code.

PART 2 - PRODUCTS

2.1 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door schedule.

B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Bored Locks: Minimum 1/2-inch latchbolt throw.

C. Lock Trim: To be selected by the Architect.

D. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

E. Bored Locks: BHMA A156.2.

2.2 ELECTRIC STRIKES

A. Electric Strikes: BHMA A156.31; with faceplate to suit lock and frame.

1. Material: Stainless steel.

2.3 HINGES

A. Hinges: BHMA A156.1.

B. Hinge Options:

1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed.

2.4 CYLINDERS AND LOCKS

A. Strikes: Manufacture's standard wrought box strike for each latch or lock bolt, with curved lip extension, finished to match hardware set, unless otherwise indicated.

2.5 AUXILIARY LOCKS

A. Bored Auxiliary Locks: BHMA A156.5: with strike that suits frame.

1. Deadlocks: Deadbolt operated by key outside and turn inside.

2.6 KEYING

A. General: Coordinate with Owner's representative for requirements.

B. Keys: Provide nickel-silver keys only.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: "DO NOT DUPLICATE"

2. Quantity: In addition to one extra blank key for each lock, provide the following:

a. Cylinder Change Keys: Three.
b. Master Keys: Five.
c. Grand Master Keys: Five.

2.7 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.

B. Dustproof Strikes: Grade 1, polished wrought brass, with 3/4-inch-diameter, spring-tension plunger.

2.8 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

B. Surface Closer with Cover: Modern Type with mechanism enclosed in cover.

1. Mounting: As required for openings indicated.
2. Type: Regular arm.
3. Cover Material: Aluminum or molded plastic.

2.9 WEATHERSTRIPPING

A. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Doors and Frames: Comply with manufacturer’s requirements.

B. Surface-Applied Door Hardware: Comply with manufacturer’s requirements.

3.2 INSTALLATION

A. Install each door hardware item to comply with manufacturer's written instructions.

B. Mounting Heights: Mount door hardware units at heights in accordance with manufacturer’s instructions and recommendations.

END OF SECTION 08710

SECTION 09220 - PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Metal lath and accessories.
2. Portland cement plaster.
3. Stucco finishes.

1.2 PERFORMANCE REQUIREMENTS

A. Performance Requirements: Framing for exterior soffit areas shall use framing that is engineered by a professional engineer registered in the state of Florida, for both positive and negative uplift loading.

1.3 SUBMITTALS

A. Product Data: Submit product data for each product specified.

B. Material Certificates: Submit certificate signed by manufacturer for each kind of plaster aggregate certifying that materials comply with requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland Cement: ASTM C1550-92, Type 1, natural color.

B. Masonry Cement: ASTM C90-93, Type S, natural white color.

C. Lime: ASTM C206-84 (1992), Type S, special finishing hydrating lime.

D. Aggregate: ASTM C987, natural sand.

E. Water: Clean, potable, without deposits harmful to stucco.

F. Pre-Stripping: #15 felt.

2.2 METAL SUPPORTS FOR SUSPENDED AND FURRED CEILINGS

A. General: Size metal ceiling supports to comply with ASTM C 1063, unless otherwise indicated.

B. Cast-in-Place and Post-installed Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials, with holes or loops for attaching hanger wires; and with capability to sustain, without failure, a load equal to 5 times that imposed by ceiling construction, as determined by testing according to ASTM E 488 conducted by a qualified independent testing agency.

1. Chemical anchor.

C. Wire: ASTM A 641, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

D. Rod Hangers: Mild steel, zinc coated.

E. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

F. Channels: Cold-rolled steel, minimum 0.0598-inch- thick base (uncoated) metal and 7/16-inch-wide flanges, and as follows:

G. Carrying Channels: 2-inch- deep-by-19/32-inch- wide flanges, 590 lb/1000 feet.

H. Furring Channels: 3/4 inch deep, 300 lb/1000 feet.

I. Finish: ASTM A 653, G60 hot-dip galvanized coating for framing where indicated.

J. Steel Studs for Furring Channels: ASTM C 645, with flange edges of studs bent back 90 degrees and doubled over to form 3/16-inch- wide minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:

1. Thickness: As indicated.
2. Depth: As indicated.

K. Protective Coating: ASTM A 653, G40 galvanized coating.

2.3 LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653, G60, hot-dip galvanized zinc coating.

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

a. Alabama Metal Industries Corporation; a Gibraltar Industries Company.
b. Clark Western Building Systems, inc.
c. Marino/Ware; Division of Ware Industries, Inc.
d. Cemco.

2. Diamond-Mesh Lath: Self-furring.

a. Weight: 3.4 lb/sq. yd.

3. Diamond-Mesh Lath: Comply with the following requirements:

    a. Configuration: Self-furring.

B. Paper Backing: FS UU-B-790, Type I Grade D, Style 2, water-vapor permeable, uncreped, unreinforced, asphalt saturated; 60-minute water resistance.

1. Provide paper backing for lath at all locations.

2.4 ACCESSORIES

A. Vinyl Accessories: Fabricated from high-impact PVC.

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

    a. Plastic Components, Inc.
    b. Vinyl Corp.

2. Cornerbeads: With perforated flanges.

    a. Small nose cornerbead; use unless otherwise indicated.

3. Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length required to suit applications indicated.

    a. Square-edge style; use unless otherwise indicated.

4. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.

5. Expansion Joints: Two-piece type, formed to produce slip-joint and square-edged reveal; with perforated concealed flanges.

    a. Joint Width: As indicated.

B. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

2.5 MISCELLANEOUS MATERIALS

A. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in portland cement plaster.

B. Bonding Compound: ASTM C 932.

C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.

2.6 PLASTER MIXES AND COMPOSITIONS

A. General: Comply with ASTM C 926 for base, scratch, and finish-coat mixes as applicable to plaster bases, materials, and other requirements indicated.

B. Base-Coat Mixes and Compositions: Proportion materials for respective base coats in parts by volume per sum of cementitious materials for each method of application and plaster base indicated. Adjust mix proportions to attain workability.

C. Scratch Coat Mix: Proportion by volume in accordance with ASTM C926, for substrates indicated.

D. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

1. Portland Cement Mixes:

a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

E. Job-Mixed Finish Coats: Proportion materials for finish coats in accordance with ASTM C926.

F. Mixing: Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF LATH AND FURRING, GENERAL

A. Standards: Comply with ML/SFA 920, "Guide Specifications for Metal Lathing and Furring," and with requirements of ASTM C 1063.

3.2 INSTALLATION OF CEILING SUSPENSION SYSTEMS

A. Preparation and Coordination: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure inserts and other structural anchorage provisions have been installed to receive ceiling hangers in a manner that will develop their full strength and at spacing required to support ceiling.

1. Furnish concrete inserts, and other anchorage devices indicated, to other trades for installations well in advance of time needed for coordination with other work.

B. Hanger Installation: Attach hangers to structure above ceiling to comply with ML/SFA 920, "Guide Specifications for Metal Lathing and Furring," and with referenced standards.

1. Do not attach hangers to metal deck tabs.

C. Install ceiling suspension system components of sizes and spacings indicated, but not in smaller sizes or greater spacing than those required by referenced lathing and furring installation standards.

D. Provide vertical struts required for wind uplift resistance at exterior soffit areas.

3.3 INSTALLATION OF PLASTERING ACCESSORIES

A. General: Comply with referenced lathing and furring installation standards for provision and location of plaster accessories of type indicated. Miter or cope accessories at corners; install with tight joints and in alignment. Attach accessories securely to plaster bases to hold accessories in place and in alignment during plastering.

1. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Control Joints: Install at locations indicated or, if not indicated, at locations complying with the following criteria and approved by Architect:

1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:

a. Vertical Surfaces: 144 square feet.
b. Horizontal and other Non-vertical Surfaces: 100 square feet.

2. At distances between control joints of not greater than 18 feet on center.
3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
4. Where control joints occur in surface of construction directly behind plaster.
5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

3.4 PLASTER APPLICATION

A. Bonding Compound: Apply on unit masonry and concrete plaster bases.

B. Plaster Application Standard: Apply plaster materials, composition, and mixes to comply with ASTM C 926.

C. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:

1. Two Coats: Over the following plaster base:

a. Concrete masonry units – direct applied.

2. Three Coats: Over the following plaster base:

a. Wire lath.

D. Finish Coats: Apply finish coats to comply with PCA Portland Cement Plaster (Stucco) Manual, and the following requirements:

1. Texture: Match Architect's sample.

E. Cut, patch, replace, repair, and point up plaster as necessary to accommodate other work. Repair cracks and indented surfaces. Point-up finish plaster surfaces around items that are built into or penetrate plaster surfaces. Repair or replace work to eliminate blisters, buckles, check cracking, dry outs, efflorescence, excessive pinholes, and similar defects. Repair or replace work as necessary to comply with required visual effects.

F. Remove temporary covering and other provisions made to minimize spattering of plaster on other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair surfaces stained, marred or otherwise damaged during plastering work. When plastering work is completed, remove unused materials, containers, equipment, and plaster debris.

1. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

G. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

END OF SECTION 09220

SECTION 09250 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Gypsum board.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.4 PROJECT CONDITIONS

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

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

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Georgia-Pacific (GP) Gypsum Products
2. Lafarge North America Inc.
3. National Gypsum Company.
4. USG Corporation.

2.2 GYPSUM BOARD

A. General: Complying with ASTM C 36, ASTM C 1178, ASTM C 1396, or ASTM D 3274, as applicable to type of gypsum board indicated and whichever is more stringent.

B. Moisture Resistant Gypsum Wall and Ceiling Panels: ASTM C 1396; with moisture- and mold-resistant core and paper surfaces.

1. Thickness: 5/8-inch unless otherwise indicated.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 TRIM ACCESSORIES

A. Trim: ASTM C 1047.

1. Material: Paper-faced galvanized steel sheet.
2. Shapes: As indicated.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475.

B. Joint Tape:

1. Gypsum Wallboard: Paper.

C. Joint Compound: For each coat use formulation recommended by the panel manufacturer for applications indicated and that is compatible with other compounds applied on previous or for successive coats.

2.5 AUXILIARY MATERIALS

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

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

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening tile backer units, use screws of type and size recommended by panel manufacturer.
3. For fastening cement backer board, use screws of type and size recommended by panel manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

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

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

3.2 APPLYING AND FINISHING PANELS

A. General: Comply with ASTM C 840.

B. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

C. Form control and expansion joints with space between edges of adjoining gypsum panels.

D. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Fit gypsum panels around ducts, pipes, and conduits.
2. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

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

3.3 APPLYING GYPSUM BOARD

A. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.

2. On partitions/walls, apply gypsum panels vertically (parallel to framing) or horizontally (perpendicular to framing) and minimize end joints.

a. Stagger abutting end joints not less than one framing member in alternate courses of panels.

3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 APPLYING TILE BACKER BOARD

A. Comply with manufacturer's written installation instructions and install at locations indicated to receive tile. Install with 1/4-inch gap where panels abut other construction or penetrations.

B. Areas Not Subject to Wetting: Install moisture and mold-resistant type gypsum wallboard panels to produce a flat surface except at showers, tubs, and other locations indicated to receive

C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING GYPSUM BOARD TRIM ACCESSORIES

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

B. Control Joints: Install control joints according to ASTM C 840 in specific locations identified, where approved by Architect, as indicated on the Drawings, and as follows:

1. Ceilings: Unless otherwise indicated install control joints as follows:

a. Install control joints in areas exceeding 2500 sq. ft.
b. Space control joints not more than 50 feet on center.
c. Install control joints where ceiling framing or furring changes direction.

2. Partitions and Furring: Unless otherwise indicated install control joints as follows:

a. Install control joints in partitions and wall furring runs exceeding 30 feet.

3.6 Space control joints not more than 30 feet on center.

3.7 FINISHING GYPSUM BOARD

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

1. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

B. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 4.

3.8 PROTECTION

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

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

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

END OF SECTION 09250

SECTION 09310 - CERAMIC TILE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Tile.

1.2 SUBMITTALS

A. Product Data: For products indicated.

B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Verification:

1. Full-size units of each tile type and for each color and finish required.
2. Stone thresholds in 6-inch lengths.

D. Material Test Reports: For each tile-setting and -grouting product.

E. Submit documentation from a recognized testing laboratory that the concrete slabs meet the requirements of the manufacturer for moisture and alkalinity prior to installing the resilient flooring.

1.3 QUALITY ASSURANCE

A. Source Limitations for Tile: Obtain all tile from one source or producer.

1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

C. Preinstallation Conference: Conduct conference at Project site.

1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store liquid latexes in unopened containers and protected from freezing.

D. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.6 EXTRA MATERIALS

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Tile:

1. Products and Manufacturers: Refer to the Finish Legend.

2.2 SETTING MATERIALS

A. Floor Tile:

1. Cement Bond Coat:

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

1) Granirapid; MAPEI Corporation

B. Wall Tile:

1. Cement Mortar:

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

1) Granirapid; MAPEI Corporation

2.3 GROUT MATERIALS

A. Tile Grout:

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

a. Ultracolor PLUS; MAPEI Corporation

2. Colors: Refer to the Finish Legend.

2.4 ELASTOMERIC SEALANTS

A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements in Division 7 Section "Joint Sealants."

B. Colors: To be selected by the Architect from manufacturer’s full line.

2.5 WATERPROOFING AND CRACK-ISOLATION MEMBRANE

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

1. Mapelastic HPG; MAPEI Corporation

a. Mesh: MAPEI Fiberglass Mesh.

2.6 MISCELLANEOUS MATERIALS

A. Flooring Transition Strip: Refer to the Finish Legend.

B. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

2.7 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.

2. Verify that concrete substrates for tile floors installed with adhesives, bonded mortar bed, or thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.

a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.

3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

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

3.2 PREPARATION

A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

C. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.

D. Preparing the Surface:

1. All substrate preparation shall be in accordance with the Tile Council of North America's Handbook latest edition for ceramic tile installations.

3.3 INSPECTION

A. Installer shall examine all areas and conditions under which work is to be installed and shall notify General Contractor, in writing, of any conditions detrimental to proper and timely completion of his work. Do not proceed with this work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

B. Prior to commencing with the installation verify that the concrete floors to receive the floor tile meet the requirements for vapor emission and alkalinity required.

1. Installer shall not commence with the installation until the moisture vapor transmission and the alkalinity of the floor slab have been verified to be within the tolerances allowed by the tile setting materials manufacturer.

a. Testing to confirm compliance shall be performed by an independent and recognized testing laboratory that has at least five years of satisfactory experience in performing tests of this type.

C. Commencement of the work will be construed as Installer's acceptance of surfaces and conditions.

3.4 WATERPROOFING AND CRACK-ISOLATION MEMBRANE INSTALLATION

A. Install materials to comply with manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.

B. Do not install tile or setting materials until membrane has cured and been tested to determine that it is fully cured and watertight.

3.5 EXPANSION AND CONTRACTION JOINT INSTALLATION

A. General: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Provide tile expansion/contraction joints at a maximum of 20 to 25 feet on center in the floor and at intersection of floor tile with wall tile in accordance with requirements of Tile Council of North America, latest edition, for the "Movement Joint Design Essentials" EJ171.
2. Joints shall be clean and dry.

3. Movement Joints:

   a. Provide 1/4" wide pre-manufactured movement joints at tile expansion and contraction joints.
   b. Movement joints shall have perforated stainless steel flanges for embedment in the tile adhesive.
   c. The depth of the profile is to suit the depth of the tiles and cannot be greater than the total depth of the tile and the adhesive.

3.6 TILE INSTALLATION METHODS

A. General: Comply with TCA's "Handbook for Ceramic Tile Installation" latest edition for TCA installation methods indicated. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods indicated and apply to types of setting and grouting materials used.

   1. Comply with the installation specifications for grout in accordance with manufacturer’s instructions and recommendations and ANSI A108.10.

B. Floor Tile:

   1. Tile Installation Method: TCA F122 Modified - Cement Mortar and Grout with Waterproofing/Crack Isolation Membrane

C. Wall Tile:

   1. Tile Installation Method: TCA W245 - Cement Mortar and Grout

D. Joint Widths: As approved by the Architect.

E. Install tile in patterns shown on the Drawings and the approved Shop Drawings. Perimeter tile is to be at least a half tile in width. Chipped, cracked and split tiles are not acceptable.

F. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

G. Extend tile work into recesses and under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.

H. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures and other penetrations so that plates, collars, or covers overlap tile.

I. Setting Tile (Floor):

1. Align joints at right angles to each other and straight with walls to conform to patterns selected. Verify exact locations of tile expansion joints and accessories before installing floor tile.

   a. Maintain consistent joint widths throughout the field of the floor tile.
   b. Thin-set embedment: Press and beat units into cement grout for proper embedment.
   c. Medium-bed embedment: Set the tile in the mortar with the edge of the trowel parallel to the comb lines. Push the tile back and forth in the mortal perpendicular to the comb lines.
   d. Finished floor shall be level without any misplaced or misaligned tile.

2. Install pre-manufactured edge protection and transition profiles secured to the substrate prior to laying tile.

   a. Follow Manufacturers fastening recommendations.
   b. Edge protection and transitions shall have perforated flanges for embedment in the tile adhesive.
   c. The depth of the profile is to suit the depth of the tile and is not be greater than the total depth of the cut natural stone and the adhesive.

J. All other tile, vertical or horizontal panels, walls, bases and the like: Use one of the appropriate specified setting methods for various conditions.

K. Grouting:

1. Verify joints are free of dirt, debris or tile spacers. Follow manufacturer's recommendations for minimum cure time prior to grouting. Pack joints full and free of voids/pits with rubber grouting float. Remove excess grout from face of tile with edge of rubber float. Hardened grout should be removed within 24 hours with a detergent wash.

3.7 PROTECTION

A. Permit no traffic on floors for 72 hours after setting.

B. Notify General Contractor, in writing, of methods of protecting granite until date of Substantial Completion and occupancy by Owner.

3.8 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove grout residue from tile as soon as possible.

2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.

B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION 09310

SECTION 09910 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Painting.

1.2 SUBMITTALS

A. Product Data: Submit product data for each paint system specified.

B. Samples: Submit samples for initial color selection in the form of manufacturer's color charts.

1. After color selection, the Architect will furnish color chips for surfaces to be coated.

C. Samples for Verification Purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

1. Provide stepped samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.
2. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 degrees F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Comply with manufacturer's instructions and recommendations regarding the storage and handling of paint materials.

PART 2 - PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS

A. General: Naming of manufacturers and model numbers is to indicate type and quality of items required and is not intended to limit competition. Paints produced by other listed manufacturers, that meet or exceed the properties of the specified products may be proposed for use on this project.

B. Manufacturers Specified:

1. Paint: Sherwin-Williams
2. Stain: Cabot

C. Other Acceptable Manufacturers:

1. Benjamin Moore & Co.
2. PPG Architectural Finishes, Inc.
3. Cabot

D. Colors: As indicated on the Finish Materials Schedule; where not indicated colors are to be selected by the Architect from manufacturer's full line.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: To be selected by the Architect from manufacturer's full line, unless otherwise indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. General: Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Surfaces receiving paint must be thoroughly dry before paint is applied.

1. Inspect all exterior surfaces indicated to be painted, including steel doors and frames, exterior structural steel, and all other surfaces. Comply with coating system manufacturer's instructions and recommendations for surface preparation, application of primers and top coats, and protection of painted finishes. Do not proceed with the work until all unsatisfactory conditions have been resolved to the satisfaction of the paint system applicator and Architect.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Undercoats shall have slightly different tints than final coats and shall be inspected by the Architect prior to application of the next coat.

B. Minimum Coating Thickness: Unless otherwise indicated, apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

C. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.

3.4 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to the Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINT SCHEDULE

A. Gypsum Drywall - Walls:

1. Paint System, Application, and Finish: Latex; two coats over primer.

a. First Coat: Interior Latex Low Odor Primer
b. Finish Coats: Promar 200 Zero VOC Interior Latex
c. Sheen Level: To be selected by the Architect.

B. Gypsum Drywall – Ceilings

1. Paint System, Application, and Finish: Latex; two coats over primer.

a. First Coat: Interior Latex Low Odor Primer
b. Finish Coats: Promar 200 Zero VOC Interior Latex
c. Sheen Level: To be selected by the Architect.

C. Wood - Stained: Oil wood stain.

1. Finish: Match Architect's samples.

D. Wood - Painted:

1. Paint System, Application and Finish: Latex; two finish coats over primer.

a. Primer: Premium Wall & Wood Primer
b. Finish: SuperPaint Interior Latex
c. Sheen Level: To be selected by the Architect.

E. Concrete Floors (Sealer):

1. Type and Application: Acrylic, clear; two coats over prepared substrate.

a. Finish Coats: Groundworks 3214, Water-Based Clear Acrylic Concrete Sealer; Glidden Professional

3.6 EXTERIOR PAINT SCHEDULE

A. Fiber Cement – Siding, Soffit, and Trim:

1. Paint System, Application and Finish: Latex; two finish coats over primer.

a. Primer: Loxon Conditioner or Loxon Concrete & Masonry Primer
b. Finish: SuperPaint Exterior Latex
c. Sheen Level: To be selected by the Architect.

B. Portland Cement Plaster/ Stucco:

1. Paint System, Application and Finish: Latex; two finish coats over primer.

a. Primer: Loxon Conditioner or Loxon Concrete & Masonry Primer
b. Finish: SuperPaint Exterior Latex
c. Sheen Level: To be selected by the Architect.

C. Pre-Shaped Architectural Forms:

1. Paint System, Application and Finish: Latex; two finish coats over primer.

a. Primer: Loxon Conditioner or Loxon Concrete & Masonry Primer
b. Finish: SuperPaint Exterior Latex
c. Sheen Level: To be selected by the Architect.

D. Wood - Painted:

1. Paint System, Application and Finish: Latex; two finish coats over primer.

a. Primer: Exterior Oil-Based Wood Primer
b. Finish: SuperPaint Exterior Latex
c. Sheen Level: To be selected by the Architect.

E. Wood - Stained:

1. Paint System, Application and Finish: Two coats.

a. Finish: Semi-Transparent Deck & Siding Stain; Cabot

END OF SECTION 09910

SECTION 10165 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Solid plastic toilet partitions.

1.2 SUBMITTALS

A. Product Data: For products indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.

1. Show locations of cutouts for compartment-mounted toilet accessories.
2. Show locations of reinforcements for compartment-mounted grab bars.
3. Show locations of centerlines of toilet fixtures.

C. Samples for Initial Selection: For each type of unit indicated. Include Samples of hardware and accessories involving material and color selection.

D. Samples for Verification: For the following products, in manufacturer's standard sizes unless otherwise indicated:

1. Each type of material, color, and finish required for units, prepared on 6-inch- square Samples of same thickness and material indicated for Work.
2. Each type of hardware and accessory.

E. Product Certificates: For each type of toilet compartment, from manufacturer.

F. Maintenance Data: For toilet compartments to include in maintenance manuals.

1.3 QUALITY ASSURANCE

A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 75 or less.
2. Smoke-Developed Index: 450 or less.

1.4 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 SOLID PLASTIC TOILET PARTITIONS

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

1. Ampco, Inc.
2. Bradley Corporation; Mills Partitions.
3. Scranton Products.

B. Toilet-Enclosure Style: As indicated.

C. Urinal-Screen Style: Wall hung.

D. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.

1. Integral Hinges: Configure doors and pilasters to receive integral hinges.
2. Heat-Sink Strip: Manufacturer's standard continuous, extruded-aluminum or stainless-steel strip fastened to exposed bottom edges of solid-polymer components to prevent burning.
3. Color and Pattern: To be selected by Architect from manufacturer's full range.

E. Pilaster Sleeves (Caps): Manufacturer's standard design; stainless steel.

F. Brackets:

1. Full-Height (Continuous) Type: Extruded aluminum; clean anodized finish.

2.2 MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M.

B. Aluminum Extrusions: ASTM B 221.

C. Steel Sheet: Commercial steel sheet for exposed applications; mill phosphatized and selected for smoothness.

1. Electrolytically Zinc Coated: ASTM A 879.
2. Hot-Dip Galvanized: ASTM A 653, either hot-dip galvanized or galvannealed.

D. Stainless-Steel Sheet: ASTM A 666, Type 304, stretcher-leveled standard of flatness.

E. Stainless-Steel Castings: ASTM A 743

2.3 ACCESSORIES

A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.

1. Material: Manufacturer's standard.
2. Hinges: Manufacturer's standard integral hinge for solid-polymer doors.
3. Latch and Keeper: Manufacturer's standard latch unit designed for emergency access. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
4. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
5. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
6. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.

B. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel.

2.4 FABRICATION

A. General: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts.

B. Door Size and Swings: Unless otherwise indicated, provide 24-inch- wide, in-swinging doors for standard toilet compartments and 36-inch- wide, out-swinging doors with a minimum 32-inch- wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.

1. Maximum Clearances:

a. Pilasters and Panels: 1/2 inch.
b. Panels and Walls: 1 inch.

3.2 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 10165

SECTION 10520 - FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Portable fire extinguishers.
2. Fire extinguisher cabinets.

1.2 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire-protection specialties.

1. Fire Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
2. Show location of knockouts for hose valves.

B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to other work.

C. Product Schedule: For fire protection cabinets. Coordinate final fire protection cabinet schedule with fire extinguisher schedule to ensure proper fit and function. Use same designations indicated on Drawings.

D. Maintenance Data: For fire protection cabinets.

1.3 QUALITY ASSURANCE

A. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

B. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to fire protection cabinets including, but not limited to, the following:

a. Schedules and coordination requirements.

1.4 COORDINATION

A. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Coordinate sizes and locations of fire protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 PORTABLE FIRE EXTINGUISHERS

A. General: Provide fire extinguishers of type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.

1. Valves: Manufacturer's standard.
2. Handles and Levers: Manufacturer's standard.
3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

B. Multipurpose Dry-Chemical Type: UL-rated 4-A:60-B:C, 10-lb nominal capacity, in enameled-steel container.

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

1. Amerex Corporation
2. Badger Fire Protection

2.2 FIRE EXTINGUISHER CABINETS

A. Product and Manufacturer – Basis of Design: Model Architectural Series Full Glass with Frame; Larsen's Manufacturing Company.

B. Other Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. J.L. Industries, Inc.
2. Potter-Roemer; Div. of Smith Industries, Inc.

C. Fire Extinguisher Cabinets:

1. Cabinet Construction: Provide manufacturer's standard box (tub), with door and hardware to suit cabinet type and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames.
2. Door and Cabinet Material: Painted steel.

3. Door Glazing: Full glass with perimeter frame.

    a. Tempered Safety Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, as follows:

        1) Class 1 (clear).

4. Cabinet Type: Suitable for the following:

    a. One standard 10-pound rated fire extinguisher.

5. Cabinet Mounting Types:

    a. Recessed: Cabinet box recessed in walls.

        1) Trim: Flat edge trim.
        2) Door and Cabinet Material: Painted steel.

6. Door Hardware: Provide exposed door pull and manufacturer's standard latch. Provide continuous-type hinge permitting door to open 180 degrees.

2.3 ACCESSORIES

A. Mounting Brackets for Wall Mounted Fire Extinguishers: Manufacturer's standard type to suit fire extinguisher indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for hose valves and cabinets to verify actual locations of piping connections before cabinet installation.

B. Examine walls and partitions for suitable framing depth and blocking where semi-recessed cabinets will be installed.

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

3.2 PREPARATION

A. Prepare recesses for fire protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

A. General: Comply with manufacturer's written instructions for installing fire-protection specialties.

B. Location and Mounting Heights: Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

C. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.

3.4 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.

E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 10520

SECTION 10535 – SHADE STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Shade structures.

1.2 SUBMITTALS

A. Product Data: Submit product data, specifications, component performance data and installation instructions.

1. Include styles, material descriptions, construction details, fabrication details, dimensions of individual components and profiles, hardware, fittings, mounting accessories, features, and finishes for structures.

B. Shop Drawings: Submit detailed drawings, layout, framing locations (identify drain columns, all mechanical joint locations with complete details, connections, jointing and accessories. Include details of concrete footings and frame anchorage.

1. Include plans, elevations, sections, mounting heights, and attachment details.
2. Detail fabrication and assembly of awning material, including seam layout, spacing, and orientation of awning fabric.

C. Calculations: Provide signed and sealed structural calculations for the proposed structure, produced by a professional structural engineer registered in the state of Florida.

D. Samples: Provide the following samples for initial selection.

1. Awning Fabric: 12-inch- square section of fabric from dye lot to be used for the Work, with specified treatments applied. Mark face of fabric.
2. Framing: 12 inches long.

E. Maintenance Data: For awning material.

F. Delegated-Design Submittal: For awnings.

1.3 QUALITY ASSURANCE

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

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

B. Professional Engineer Qualifications: A professional engineer who is registered in the state of Florida and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of aluminum structures that are similar to those indicated for this Project in material, design, and extent.

C. Installer Qualifications:

1. An authorized representative of the manufacturer, with a minimum of five years experience, for installation of units required for this project

D. Manufacturer Qualifications:

1. A firm experienced in manufacturing products similar to those indicated for this project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Shop Assembly: Preassemble units in shop to greatest extent possible and disassemble as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of the system that have failed within a two year period after final payment has been received by the contractor or at the issuance of a certificate of completion.

B. Installer's Warranty: Installer agrees to repair or replace components of a specified system that fails in workmanship for a period of two years after final payment has been received by the installing contractor.

C. Fabric Warranty Period: Minimum 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, registered in the state of Florida, to design structures.

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

1. Temperature Change: Local ambient.

2.2 MATERIALS

A. Aluminum:

1. Aluminum Plate and Sheet: ASTM B 209.
2. Aluminum Extrusions: ASTM B 221.
3. Extruded Structural Pipe and Round Tubing: ASTM B 429, standard weight (Schedule 40) unless another weight is required by structural loads.

B. Anchors, Fasteners, Fittings, Hardware, and Installation Accessories: Complying with performance requirements indicated and suitable for exposure conditions, supporting structure, anchoring substrates, and installation methods indicated; Type 316 stainless steel; weather-resistant, tamperproof, vandal- and theft-resistant, compatible, nonstaining materials. Provide as required for assembly, mounting, and secure attachment. Number as needed to comply with performance requirements and to maintain uniform appearance; evenly spaced. Where exposed to view, provide finish and color as selected by Architect from manufacturer's full range.

C. Awning Fabric Material: First quality awning fabric as standard with the manufacturer for applications indicated.

1. Product and Manufacturer: Sunbrella Awning Fabric; Glen Raven, Inc.

a. Fabric: 100% Sunbrella acrylic.
b. Color and Pattern: Match Architect’s sample.

2. Fire-Test-Response Characteristics: Provide awning fabrics with the fire-test-response characteristics indicated, as determined by testing identical products according to test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

a. Flame-Resistance Ratings: Passes NFPA 701.

D. Installation Accessories: Fasteners, connectors, brackets, etc. recommended by the manufacturer and required for a complete installation.

2.3 FABRICATION

A. General: Comply with indicated profiles, dimensioned requirements and structural requirements.

B. Framing: Shop welded one piece units. When size of framing members does not permit shipment as a welded unit, concealed mechanical joints may be used.

1. Use sections true to details with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture, free from defects impairing strength and durability.
2. All welding shall be in accordance with manufacturer’s requirements.

C. Fabrics: Reinforce wear points and hardware attachment points.

2.4 ALUMINUM FINISH

A. Aluminum Finish: Powder-coat finish complying with finish manufacturer's written instructions for surface preparation including pretreatment, application, baking, and minimum dry film thickness.

1. Color: Match Architect’s samples.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install structures at locations and in position indicated, free of rack, and in proper relation to adjacent construction. Use mounting methods of types described and in compliance with Shop Drawings and fabricator's written instructions.

1. Concrete Footings: Refer to Division 03, Concrete.

B. Fabric Attachment: Attach fabric to frames as recommended by fabricator.

C. Corrosion Protection: Protect concealed surfaces of aluminum that come in contact with concrete, masonry, wood, or dissimilar metals.

3.2 CLEANING AND PROTECTION

A. Damaged Components: Replace components of the work which have been damaged or have deteriorated beyond successful minor repair.

B. Cleaning: Remove protective coverings at time in project construction sequence which will afford greatest protection of work. Clean finished surfaces as recommended by manufacturer. Maintain in a clean condition during construction.

C. Protection: Provide protection as required to ensure that work of this section will be without damage or deterioration at time of substantial completion.

END OF SECTION 10535

SECTION 10671 – WIRE SHELVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Closet shelving.

1.2 SUBMITTALS

A. Product Data: For closet storage system and components specified. Include details of construction and connections relative to materials, dimensions of individual components, accessories, and finishes.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain shelving components through one source from a single manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. General: Comply with manufacturer's instructions and recommendations for delivery, storage, and handling and protection of shelving system components.

PART 2 - PRODUCTS

2.1 CLOSET SHELVING

A. Manufacturer – Basis of Design: Closetmaid Vinyl-Coated, Steel-Rod, Ventilated Shelving and Storage Systems; ClosetMaid Corporation, Ocala, FL

1. Shelving: Shelf & Rod.
2. Shelf Depth: As indicated.
3. Cross Deck Spacing: 1-inch, nominal.
4. Coating: Proprietary polyvinyl chloride formula resin (PVC).

5. Mounting Hardware: Provide Fixed Mount Hardware System hardware components for shelving installation to substrates indicated. Provide support brackets where required for spans indicated.

   a. Provide wall clips, support brackets, sidewall brackets, down clips, multi-purpose wire clips, corner supports, steel poles, joiner plates, shelf supports, pole clips, and anchors as required for a complete installation.
   b. Provide wire shelf end caps at all cut ends.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of shelving.

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

3.2 INSTALLATION

A. General: Comply with closet storage shelving manufacturer's written installation instructions.

B. Install shelving level, plumb, square, and true.

C. Anchor system to substrate construction by method recommended by the manufacturer.

END OF SECTION 10671

SECTION 10735 – ARMOR SCREEN SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Armor screen system for exterior doors requiring missile impact protection.

1.2 DESIGN/PERFORMANCE REQUIREMENTS

A. Design of the System shall be performed to standards verifiable by a professional engineer registered in the State of Florida, and experienced in this application.

B. Configure screen system to maintain the integrity and contiguity of structure envelope as required by the applicable regulations. At door openings, configure screen system to allow egress from the building.

1.3 SUBMITTALS

A. Product Data: Technical data, specifications, test data, and installation instructions.

B. Shop drawings: For fabrication and erection of screen system units and fasteners. Include plan view layout, elevations, wind load calculation sheet(s) and details specific to each project condition and screen. Include location by name and/or screen number corresponding to the plan layout, diagram showing the style of screen(s), types of anchors / fasteners, minimum required PSF and anchor spacing.

C. Samples: 12 inch by 24 inch sample of screen material complete with hemmed perimeter edges, top attachment loops and bottom attachment strap with buckle. Include typical identification tag.

D. Product/Code Certification: Provide documentation demonstrating conformance to the following standards: Miami-Dade NOA, ASTM E1886, ASTM E1996 Level E, ASTM E330, SSTD 12-99, Florida Building Code, and that the hurricane protection products, including screen and anchoring devices be provided and installed as a system or assembly in this project meet or exceed requirements

E. Inspection Report: Provide certification indicating satisfactorily passing of any inspections required by applicable regulations.

1.4 QUALITY ASSURANCE

A. Products provided under this section shall meet or exceed requirements of Miami-Dade NOA quality certification program and National Accreditation Management Institute (NAMI) quality assurance program as instituted pursuant to Florida Building Code.

B. Field Measurements: Verify size and location of each opening to be protected prior to fabrication and confirm suitable substrate(s).

C. Manufacturer: Demonstrate a successful history of similar installations in scope and system design.

D. Installer Qualifications: Engage an experienced installer, trained by the manufacturer, to perform work on this section who has specialized in installing the system provided and who is approved, authorized, or licensed by the system manufacturer to install manufacturer's product.

E. Inspections: Provide on-site inspections by primary material manufacturer's representative during and after installation of hurricane protection system.

1.5 WARRANTY

A. Manufacturer's Warranty: Submit a written warranty signed by the manufacturer agreeing to promptly repair or replace units damaged due to defects in materials or manufacture.

1. Warranty Period: 10 year pro-rated warranty beginning at Substantial Completion.

PART 2 - PRODUCTS

2.1 ARMOR SCREEN SYSTEM

A. Manufacturer - Basis of Design: Armor Screen Corporation, 2001-H North Congress Avenue, Riviera Beach Florida

B. Product Description: System shall be transparent, resistant to wind, rain, and large and small missiles, compact, easily stored. The system shall be installed as a removable product.

1. The system shall be approved by Miami-Dade NOA. Maximum allowable distance between unanchored edges shall be unlimited.

2.2 FABRICATION

A. Factory fabricates screen barrier panels complete and ready for installation without field adjustment.

B. The barrier shall be manufactured from lightweight, extremely tough geosynthetic textile, tested to ASTM D4355, D4533, D4751, D5261, D3884, and D3786. The weave shall be tight enough for surface tension of water to create a barrier resistant to driving rain, and open enough to be transparent.

C. Identify each separate screen with an identification tag indicating installed location and provide corresponding deployment diagram. The ID tag shall meet the requirements of the local code.

D. Provide custom storage bags for screen storage.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examine substrates for conditions that would prevent quality installation of system

B. Do not proceed until defects are corrected.

C. Coordinate drawings, diagrams, templates, instructions and directions for installation of anchorages. Coordinate delivery to project site.

3.2 INSTALLATION

A. Comply with manufacturer's instructions and recommendations for installation.

B. Provide anchors, inserts and accessories required for a complete installation. With the exception of earth anchors, all anchors and screen components shall be minimum 300 Series Stainless Steel. Provide closed container for hardware for easy transport. Provide extra hardware as determined by Owner.

C. Install each screen unit in its prescribed location to verify proper installation of anchors then immediately remove and store in location within building as designated by Owner.

3.3 FIELD QUALITY CONTROL

A. When directed, install all screen units at the same time, for verification and review by the Architect, Engineer, Owner, Manufacturer and Building Inspector.

1. Provide a detailed deployment manual, including a replacement hardware list.
2. Immediately following meeting/deployment, remove screen units and store in location within building as designated by Owner.

END OF SECTION 10735

SECTION 10801 – TOILET ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Toilet accessories.

1.2 SUBMITTALS

A. Product Data: For products indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated.
2. Identify products using designations indicated.

C. Maintenance Data: For toilet accessories to include in maintenance manuals.

1.3 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

PART 2 - PRODUCTS

2.1 TOILET ACCESSORIES

A. Products and Manufacturers: Refer to the Toilet Accessories Schedule on the Drawings.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.

B. Steel Sheet: ASTM A 1008, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.

C. Galvanized-Steel Sheet: ASTM A 653, with G60 hot-dip zinc coating.

D. Galvanized-Steel Mounting Devices: ASTM A 153, hot-dip galvanized after fabrication.

E. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 10801

SECTION 11041 - FINIALS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Finials.

1.2 PERFORMANCE REQUIREMENTS

A. General: Manufacture and install manufactured finials to resist thermally induced movement and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Water Infiltration: Provide manufactured finials that do not allow water infiltration to building interior.

1.3 SUBMITTALS

A. Product Data: For products indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show layouts of finial units, including plans and elevations. Identify factory- vs. field-assembled work. Include the following:

1. Shop drawings.
2. Include details for fastening, joining, supporting, and anchoring including fasteners, clips, cleats, and attachments to adjoining work.

C. Samples for Initial Selection: For factory-applied color finishes.

D. Warranty: Warranty specified in this Section.

1.4 COORDINATION

A. Coordinate installation of finials with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

1.5 WARRANTY

A. Manufacturer’s Warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace manufactured finials that show evidence of deterioration of components and factory-applied finishes within specified warranty period.

1. Warranty Period: Minimum one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 FINIALS

A. Product and Manufacturer – Basis of Design: As indicated on the Drawings.

2.2 MISCELLANEOUS MATERIALS

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

B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.

1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.

C. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.3 FINISHES

A. General: Manufacturer’s standard shop applied finish; color to be selected by the Architect from manufacturer’s full line.

2.4 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work.

1. Verify that substrate is sound, dry, smooth, clean, and securely anchored.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

2.5 INSTALLATION

A. General: Install manufactured finials according to manufacturer's written instructions. Anchor units securely in place and capable of resisting forces specified in performance requirements. Use fasteners, separators, sealants, and other miscellaneous items as required to complete the installation.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

C. Install finials level, plumb, true to line and elevation, and without tool marks.

D. Fasteners: Use fasteners of type and size recommended by manufacturer.

2.6 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Remove temporary protective coverings and strippable films. On completion of installation, clean finished surfaces. Maintain in a clean condition during construction.

C. Replace manufactured units that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures to the satisfaction of the Architect.

END OF SECTION 11041