

TECHNICAL SPECIFICATIONS
FOR
MATANZAS PASS PRESERVE
BOARDWALK REPLACEMENT

OWNER:
LEE COUNTY, FLORIDA



199 BAY ROAD
FORT MYERS BEACH, FL 33931

WEC JOB No: 23095.001

by



MARCH 2025

THIS IS TO CERTIFY THAT THE ENCLOSED ENGINEERING SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE

Max Morgan, Professional Engineer,
State of Florida, License No. 94877

This item has been digitally signed and sealed by Max Morgan, P.E. on the date indicated here:

March 4, 2025

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Max Morgan, P.E.
FL Reg No. 94877

**LEE COUNTY
MATANZAS BOARDWALK REPAIRS
TECHNICAL SPECIFICATIONS**

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.01 Section Includes

- A. Summary of work, other contracts, work sequence, operation of existing facilities, use of premises, Owner furnished products, coordination, cutting and patching.

1.02 Summary of Work

- A. This project consists of the removal and replacement of four (4) boardwalks, a fishing pier, and a kayak launch.
- B. Furnish all materials, equipment, tools, and labor which are reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.
- C. All fees and permits for the permanent construction that are required by controlling agencies or authorities, including fees for the review of Contract Documents prior to construction, will be procured by the Owner. Other licenses or permits for construction facilities of a temporary nature that are necessary for the prosecution of the work shall be secured and paid for by the Contractor.
- D. Repair, replace, or otherwise settle with the Property Owner, if damage to property or existing facilities occurs, including damage to pavements, utilities, lawns, structures, etc.
- E. Construct the Project under a single unit price contract.

1.03 Work Sequence

- A. The Contractor's sequence of work may be of his choosing in order to complete the work in the allowed time frame while accommodating other contractors on site.

1.04 Operation of Existing Facilities

- A. The Owner shall be able to operate existing facilities 24 hours per day, 7 days per week.

1.05 Contractor Use of Premises

- A. Confine operations at the site to areas permitted by applicable laws, ordinances, permits, and by the Contract Documents. Do not unreasonably encumber the site with materials or equipment. Do not load structures with weight that will endanger the structure. The Contractor shall assume full responsibility for protection and safekeeping of products stored on the job site.
- B. Contractor shall perform work onsite during daylight hours only.

1.06 Coordination

- A. The Contractor shall be fully responsible for the coordination of his work and the work of his employees, subcontractors, and suppliers and to assure compliance with schedules.
- B. It is the Contractor's responsibility to coordinate with all the utilities regarding locates, testing, or relocations.

END OF SECTION

SECTION 01 22 13

UNIT PRICE MEASUREMENT

PART 1 GENERAL

1.01 Description

- A. Payment for all Work done in compliance with the Contract Documents, inclusive of furnishing all manpower, equipment, materials, and performance of all operations relative to construction of this project, will be made under Pay Items listed herein. Work for which there is not a Pay Item will be considered incidental to the Contract and no additional compensation will be allowed.
- B. The Contractor shall take no advantage of any apparent error or omission in the Drawings or Specifications, and the Lee Owner shall be permitted to make corrections and interpretations as may be deemed necessary, for fulfillment of the intent of the Contract Documents.
- C. The Lee Owner will make measurements and determinations, as necessary, to classify the work within pay items and determine the quantities for pay purposes.

PART 2 PAY ITEMS

TS-01 MOBILIZATION:

- A. GENERAL – The work specified in this Technical Specification consists of the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site. The costs of bonds and any required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this Section. The Contractor shall furnish all necessary equipment storage areas.
- B. METHOD OF MEASUREMENT – The lump sum quantity for the item of Mobilization shall be the lump sum amount. This includes all items, devices, materials, labor, operations, and all work as described herein, encompassing the complete and satisfactory execution of all mobilization activities as specified.

Bid item No. 1

Mobilization

Lump Sum (LS)

TS-02 EROSION CONTROL:

- A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install and maintain erosion control devices. Work includes installation of Silt Fence as shown on the BMP Plan of the Contract Plan and any other BMP methods determined necessary by the Contractor, Engineer or Owner, in order to prevent erosion to and

sedimentation of offsite areas, surface water, wetlands or existing or proposed stormwater systems

B. METHOD OF MEASUREMENT – The unit of measure for Erosion Control is Linear Feet.

Bid item No. 2	Erosion Control	Lump Sum (LS)
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TS-03 DEMOLITION:

A. GENERAL – Demolition will be required. Debris from demolition and items to be removed shall be removed from the Owner’s property and properly disposed of by the Contractor in a permitted sanitary landfill or C&D landfill, as is appropriate for the material being removed. Contractor shall provide documentation of disposal location for approval by Grant Funding agencies. The Contractor shall immediately remove and properly dispose of any debris that enters the water in or outside of the construction area during the demolition of the indicated structures. Site will be cleaned daily of debris. Remove and dispose of the existing fixed docks, all related attachments, any associated utilities, conduits, or debris. All piles, concrete, and other debris will be completely removed with no debris remaining above specified bottom elevation. The Contractor shall be responsible for all disposal fees and shall include said fees its bid. Payment for this item shall be considered incidental to the boardwalk construction and no direct compensation will be made therefore.

B. METHOD OF MEASUREMENT – The lump sum quantity for the item of DEMOLITION shall be the lump sum amount and shall include all items, devices, materials, labor, operations, and all work as described herein.

Bid item No. 4	Selective Demolition	Lump Sum (LS)
Bid item No. 13	Selective Demolition	Lump Sum (LS)
Bid item No. 25	Selective Demolition	Lump Sum (LS)
Bid item No. 36	Selective Demolition	Lump Sum (LS)
Bid item No. 45	Selective Demolition	Lump Sum (LS)
Bid item No. 54	Selective Demolition	Lump Sum (LS)
Bid item No. 63	Selective Demolition	Lump Sum (LS)

TS-04 SAFETY CURB:

A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install safety curb. Work includes the installation of high density polyethylene safety curb as shown on the Contract Plans.

B. METHOD OF MEASUREMENT – The unit of measure for Safety Curb is as follows:

Bid item No. 11	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 12	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)
Bid item No. 23	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 24	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)

Bid item No. 34	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 35	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)
Bid item No. 43	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 44	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)
Bid item No. 52	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 53	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)
Bid item No. 61	Furnish and Install HDPE Safety Curb	Linear Feet (LF)
Bid item No. 62	Furnish and Install Stainless Steel Fasteners for Safety Curb	Each (EA)

TS-05 TIMBER PILE:

- A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install timber pile at the locations shown in the Contract Plans.
- B. METHOD OF MEASUREMENT – The unit of measure for Timber Pile is Vertical Linear Feet.

Bid item No. 5	Furnish and Install Driven 10” Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 9	Furnish and Install 5/8” Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid item No. 14	Furnish and Install Driven 10” Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 15	Pile Cleaning and Wrap Installation	Vertical Linear Feet (VLF)
Bid Item No. 19	Furnish and Install 5/8” Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid item No. 26	Furnish and Install Driven 10” Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 27	Pile Cleaning and Wrap Installation	Vertical Linear Feet (VLF)
Bid Item No. 31	Furnish and Install 5/8” Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid item No. 37	Furnish and Install Driven 10” Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 41	Furnish and Install 5/8” Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid item No. 46	Furnish and Install Driven 10” Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 50	Furnish and Install 5/8” Stainless Steel Fasteners At Pile Caps	Each (EA)

Bid item No. 55	Furnish and Install Driven 10" Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 55	Furnish and Install 5/8" Stainless Steel Fasteners	Each (EA)
Bid item No. 64	Furnish and Install Driven 10" Timber Pile	Vertical Linear Feet (VLF)
Bid Item No. 65	Pile Cleaning and Wrap Installation	Vertical Linear Feet (VLF)
Bid Item No. 59	Furnish and Install 5/8" Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid Item No. 68	Furnish and Install 5/8" Stainless Steel Fasteners At Pile Caps	Each (EA)
Bid Item No. 71	Furnish and Install 5/8" Galvanized Pile Cap Fasteners	Each (EA)

TS-06 BENTS AND STRINGERS:

- A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install 3"x12" bents and stringers. Bents and stringers are to be treated in accordance with Contract Plans.
- B. METHOD OF MEASUREMENT – The unit of measure for Bents and Stringers is linear feet.

Bid item No. 6	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 7	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid Item No. 8	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid item No. 10	Furnish and Install Stainless Steel Clips	Each (EA)
Bid item No. 16	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 17	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 20	Furnish and Install Stainless Steel Clips	Each (EA)
Bid item No. 28	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 29	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 33	Furnish and Install Stainless Steel Clips	Each (EA)
Bid item No. 38	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 39	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 42	Furnish and Install Stainless Steel Clips	Each (EA)

Bid item No. 47	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 48	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 51	Furnish and Install Stainless Steel Clips	Each (EA)
Bid item No. 56	Furnish and Install 3"x12" Pressure Treated Bents Along Boardwalk	Linear Feet (LF)
Bid item No. 57	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 60	Furnish and Install Stainless Steel Clips	Each (EA)
Bid item No. 66	Furnish and Install 3"x12" Pressure Treated Bents at Terminal Platform	Linear Feet (LF)
Bid item No. 67	Furnish and Install 3"x12" Pressure Treated Stringers	Linear Feet (LF)
Bid item No. 69	Furnish and Install Stainless Steel Clips	Each (EA)

TS-07 COMPOSITE DECKING:

- A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install 2"x6" composite decking. The composite decking is to be treated in accordance with Contract Plans.
- B. METHOD OF MEASUREMENT – The unit of measure for composite decking is linear feet.

Bid Item No. 8	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 18	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 30	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 40	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 49	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 58	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)
Bid Item No. 70	Furnish and Install 2"x6" Composite Decking	Linear Feet (LF)

TS-08 GUARDRAIL:

- A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install guardrail. Work includes the installation of wood picket guardrail as shown on the Contract Plans.
- B. METHOD OF MEASUREMENT – The unit of measure for Guardrail is linear feet.

Bid item No. 21	Furnish and Install Pressure Treated Wood Guardrail	Linear Feet (LF)
Bid item No. 22	Furnish and Install Guardrail Stainless Steel Fasteners	Each (EA)
Bid item No. 73	Furnish and Install Guardrail	Linear Feet (LF)
Bid item No. 74	Furnish and Install Guardrail Stainless Steel Fasteners	Each (EA)

TS-09 KAYAK LAUNCH

A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install the kayak launch and approach. Work includes the installation of the kayak launch and approach as shown on the Contract Plans.

METHOD OF MEASUREMENT – The unit of measure for kayak launch is lump sum.

Bid Item No. 32	Furnish and Install Kayak Launch and Approach	Lump Sum (LS)
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TS-10 METAL COVERED ROOF

A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install metal covered roof. Work includes the installation of the metal covered roof as shown on the Contract Plans.

METHOD OF MEASUREMENT – The unit of measure for metal covered roof is lump sum.

Bid Item No. 72	Furnish and Install Metal Covered Roof	Lump Sum (LS)
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TS-11 ENTRANCE KIOSK

A. GENERAL – The work specified in this Technical Specification includes all necessary work, material and labor to install entrance kiosk. Work includes the installation of the metal covered roof as shown on the Contract Plans.

METHOD OF MEASUREMENT – The unit of measure for an Entrance Kiosk is Each.

Bid Item No. 3	Entrance Kiosk	Each (EA)
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END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 Section Includes

- A. Meetings
- B. Construction progress documentation
- C. Submittals
- D. Record documents

1.02 Preconstruction Meeting

- A. The Owner will schedule a preconstruction meeting prior to beginning the Work to review shop drawing procedures, submittal requirements, and construction administration requirements (project coordination and communication). The Owner shall bring to the preconstruction meeting the proposed construction schedule, which will be reviewed with the Owner during the meeting.

1.03 Progress Meetings

- A. The frequency of progress meetings shall be determined during the preconstruction meeting. At a minimum, progress meetings shall be held once every other week during construction.
- B. The Contractor and Owner shall attend the progress meetings.

1.04 Record Drawings

- A. As the Work progresses, the Contractor shall be responsible for recording information on the approved Contract Documents concurrently with construction progress. This field copy shall be maintained in the field office in clean and legible condition. It shall be available for inspection by the Owner or Engineer at any time and its completeness and accuracy will be used in evaluation of applications for payment.
- B. If requested, mark on the Specifications the manufacturer, trade name, catalog, and supplier of each product actually installed, and mark changes made by Change Order or Field Order.
- C. All Record Drawings shall be prepared by Contractor in AutoCAD format using base drawings provided by the Owner. As-built information shall be field verified, measured, certified, signed and sealed by the Contractor's licensed Surveyor who will be responsible for the accuracy of all dimensions and elevations.
- D. The as-built information shown on the Record Drawings is to include, but not be limited to, the following:

1. Horizontal locations and vertical elevations for all installed structures.
2. Horizontal and vertical data for any construction that deviates from the approved Engineering drawings.
3. Where the plans contain specific horizontal location data, such as station and offset, the as-built drawings are to reflect the actual horizontal location.
4. Where the plans contain specific vertical elevation data, the as-built drawings are to reflect the actual measured vertical elevation.
5. Deliver to Owner one set of Record Drawings signed and sealed by Contractor's surveyor plus one electronic copy (AutoCAD format) of the drawings. Also deliver the original red-line field copy to the Owner.

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

PART 1 GENERAL

1.01 Section Includes

- A. This Section specifies administrative and procedural requirements necessary for coordinating work operations including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.

1.02 Related Sections

- A. Section 01 31 19 – Project Meetings.
- B. Section 01 33 00 – Submittal
- C. Section 01 73 29 – Cutting and Patching.

PART 3 EXECUTION

3.01 COORDINATION

- A. It is the Contractor's responsibility to coordinate the Work to minimize conflicts and optimize efficiency.
- B. The placement of decking, lumber, other materials, and the locations, size and properties of the materials in the structure shall conform to the structural Drawings and Specifications. When the requirements of the Mechanical, Electrical or other sections of the Specifications or Drawings are in conflict with the structural requirements, the structural requirements shall take precedence. The Contractor must notify the structural engineer and obtain written approval prior to completing any structural penetrations if the structural integrity of an existing structure is compromised. Refer to section 01 73 29, Cutting and Patching.
- C. Contractor shall coordinate operations included in various sections of Contract Documents to assure efficient and orderly installation of each part of Work. Coordinate Work operations included under related sections of Contract Documents that depend on each other for proper installation, connection, and operation of Work, including but not limited to:
 - 1. Schedule construction operations in sequence required where installation of one part of work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 - 3. Provide provisions to accommodate items scheduled for later installation.
 - 4. Prepare and administer provisions for coordination drawings.

- F. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required in notices, reports, attendance at meetings, and:
 - 1. Prepare similar memoranda for Owner and Separate Work Contract where coordination of their Work is required.
- G. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of schedules.
 - 2. Installation, relocation, and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project closeout activities.
- H. Conservation: Coordinate Work operations to assure operations are carried out with consideration given to conservation of energy, water, materials, and:
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into Work.

3.02 SUBMITTALS

- A. Coordination Drawings: Contractor shall prepare coordination drawings to coordinate the installation of products and materials fabricated, furnished and installed by separate entities, under different parts of the Contract. Contractor shall notify Owner and Engineer of all major conflicts in writing in a timely manner so that the design team can respond without construction delays. Coordination drawings shall address the following at a minimum:
 - 1. Limitations in available space for installation or service. Contractor shall overlay plans of each trade and verify space requirements and conflicts between trades. Minor changes and adjustments that do not affect design intent shall be made by Contractor and shall be highlighted for Engineer's review.
 - 2. Inconsistencies between drawings, specifications and codes (between trades and within each trade).
 - 3. Additional items required for existing facilities construction projects shall be designed and prepared from available as-built drawings that are verified through non-invasive and nondestructive, visual observation only. Contractor shall field verify actual existing conditions during and upon completion of demolition work and incorporate findings into preparation of coordination drawings. Minor changes and adjustments that do not affect design intent shall be made by Contractor and shall be highlighted for Owner and Engineer's reviews.
- B. Contractor shall provide and forward reproducible copies and AutoCAD drawing files in the order described here:
 - 1. Structural shop drawings shall indicate location and sizes of piles, beams and other structural members, as well as wall, roof and slab penetrations, and will be provided to mechanical,

electrical, low voltage and plumbing Subcontractors for coordination. Structural items shall be indicated using black lines.

2. Contractor will be responsible for the overall coordination review. As each coordination drawing is completed, Contractor will meet with Engineer and/or Owner to review and resolve conflicts on coordination drawings.
3. Coordination meetings will be held in Project field office of Contractor. Contractor is required to distribute Shop Drawings, cut sheets and submittals to Subcontractors where appropriate. Reviewed coordination drawings will be maintained in Project field office of Contractor. Meeting minutes shall be developed by Contractor and submitted to Owner within three (3) days.
4. All Contractors shall review and sign the final coordinated set of drawing(s) prior to construction of system(s) depicted in the drawing(s).

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.01 Section Includes

- A. This Section specifies administrative and procedural requirements for Project meetings, including but not limited to, the following:
 - 1. Preconstruction meeting.
 - 2. Pre-installation conferences.
 - 3. Progress meetings.
 - 4. Meetings as required by Owner.

1.02 Related Sections

- A. Section 01 31 13 – Project Coordination.
- B. Section 01 33 00 – Submittals

PART 3 EXECUTION

3.01 Preconstruction Meeting

- A. Owner will schedule a preconstruction meeting before starting the Work, at a time and date determined by Owner. Meeting shall be held at the Project site or another location as determined by Owner. Meeting will be held in order to review responsibilities, procedures, and other administrative requirements contained within the Contract Documents. Major trades may attend.
- B. Authorized representatives of Owner, Project Inspector, Engineer, Contractor and other parties shall attend the meeting. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
- C. Agenda items shall include significant items which could affect progress of the Work, including, but not limited to the following:
 - 1. Identification of Owner, key team members, and roles/responsibilities
 - 2. Preliminary Construction Schedule.
 - 3. Critical work sequencing and coordination of other work.
 - 4. Designation of responsible personnel and emergency contacts.
 - 5. Procedures for processing field decisions.
 - 6. Request for Proposal.
 - 7. Request for Information.
 - 8. Construction Change Directive, Immediate Change Directive, and Change Order.
 - 9. Procedures for processing Tenant Improvement Payment Applications.
 - 10. Labor Compliance and Wage Determinations.

11. Submittal and review of Shop Drawings, Product Data, material lists, and Samples.
12. Preparation of project record documents.
13. Use of the Project site and/or premises, staging plan, trucking routes, haul routes, etc.
14. Parking availability.
15. Work and storage areas.
16. Equipment deliveries and priorities.
17. Safety procedures.
18. Emergency response.
19. First Aid.
20. Security.
21. Housekeeping.
22. Working hours.
23. Insurance Services including OCIP.
24. Environmental Health and Safety / Import and Export Testing Requirements.
25. Substantial Occupancy, Administrative Closeout and Contract Completion requirements and procedures.
26. Community and Student Workforce Project Agreement (CSWPA) Compliance.

- C. Owner shall prepare and issue meeting minutes to attendees and interested parties no later than three (3) calendar days after the meeting date.

3.02 Pre-Installation Conferences

- A. Contractor shall coordinate and conduct pre-installation conferences at the Project site as required by related Sections of the Contract Documents.
- B. Contractor, manufacturers, and fabricators involved in or affected by the installation and its coordination or integration with other preceding and/or subsequent installations of Work shall attend the meeting. Contractor shall advise Owner, Project Inspector, and Engineer of scheduled meeting dates and provide an agenda 48 hours prior to meeting.

1. Contractor shall review the progress of construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related Construction Change Directives and Change Orders.
 - d. Purchases.
 - e. Deliveries.
 - f. Shop Drawings, Product Data, and quality-control samples.
 - g. Review of mockups.
 - h. Possible conflicts.
 - i. Compatibility problems.
 - j. Time schedules and work sequence.
 - k. Weather limitations.
 - l. Manufacturer's recommendations.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.

- p. Temporary facilities.
- q. Space and access limitations.
- r. Governing regulations.
- s. Safety.
- t. Inspecting and testing requirements.
- u. Required performance results.
- v. Recording requirements.
- w. Protection.

- 2. Contractor shall record significant discussions and directives received from each conference. Contractor shall, within three (3) calendar days after the meeting date, distribute the minutes of the meeting to all concerned parties, including but not limited to, Owner, Project Inspector, and Engineer.

3.03 Progress Meetings

- A. Progress meetings will be held at the Project site at regular intervals, weekly, as determined by the Owner.
- B. In addition to representatives of Contractor, Owner, and Engineer, each Subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of the Work shall, if requested by Owner, be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude all matters relating to the Work.
- C. Failure of Contractor to be so represented at any progress meeting which is held at a mutually agreed time or for which a written notice is given, shall not relieve Contractor from abiding by any and all Owner determinations or directives issued at such meeting.
- D. Owner will review and correct or approve minutes of the previous progress meeting and will review other significant items affecting progress. Topics for discussion as appropriate to the status of the Project include but are not limited to:
 - 1. Safety.
 - 2. Interface requirements.
 - 3. Construction Schedule.
 - 4. Sequence and coordination.
 - 5. Status of submittals / RFIs.
 - 6. Deliveries.
 - 7. Off-site fabrication.
 - 8. Access.
 - 9. Site utilization.
 - 10. Temporary Construction Facilities and Controls.
 - 11. Hours of work.
 - 12. Hazards and risks.
 - 13. Housekeeping.
 - 14. Quality of materials, fabrication, and execution.
 - 15. Unforeseen conditions.
 - 16. Testing and Inspection.
 - 17. Defective Work.

18. Construction Change Directive.
19. Request for Proposal.
20. Change Order Proposals and Change Orders.
21. Documentation of information for payment requests.
22. Other items as required or as brought forth.
23. Initial Notice of Start of Issue.
24. Final Notice of End of Issue.

D. No later than three (3) calendar days after each progress meeting, Owner will prepare and distribute minutes of the meeting to each present and absent party.

1. Schedule Updating: Contractor shall revise the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized, and issue the revised schedule at the next scheduled progress meeting.

3.04 Additional Meetings

A. Upon notice to the intended parties and without further obligation, Owner may require additional meetings to discuss Work and/or Project related activities.

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.01 Construction Schedules

- A. The Contractor shall submit two copies of Progress Schedules indicating the starting and completion dates of the various stages of the work. The proposed Progress Schedules shall be submitted to the Owner prior to the preconstruction meeting. The Contractor shall distribute copies of the Progress Schedules during the preconstruction meeting for discussion. The Progress Schedules shall be updated by the Contractor and submitted to the Owner, as a part of applications for progress payments, through completion of the Work. Failure to update the progress schedule may be the basis for rejection of applications for progress payments.
- B. The Contractor, if applicable, shall submit two copies of Schedules of Value of the work to the Owner. A preliminary Schedule of Values shall be submitted by the Contractor prior to the preconstruction meeting. A final Schedule of Values, presented in sufficient detail to serve as the basis for payments during construction, shall be submitted to the Owner for approval at least ten (10) days prior to submitting the first Application for payment.

1.02 Applications for Payment

- A. The Contractor shall submit Applications for payment to the Owner in accordance with the provisions of the General Conditions. Applications for Payment shall be made on forms provided by the Owner.

1.03 Shop Drawings, Product Data and Samples

- A. The Contractor shall submit shop drawings, product data and samples, as required by the individual Specification Sections, to the Owner.
- B. Shop drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to Contract Drawing Number and Detail and Contract Specification Section and Page Number.
- C. The product data shall be presented in a clear and thorough manner identified the same as the shop drawings. Included with the information shall be performance characteristics and capacities depicting dimensions and clearances required. The manufacturer's standard schematic drawings and diagrams shall be modified to delete information which is not applicable to the work. Manufacturer's standard information shall be supplemented to provide information specifically applicable to the work.
- D. Samples shall be of sufficient size and quantity to clearly illustrate functional characteristics of the product with integrally related parts and attachment devices depicting full range of color, texture and pattern.

- E. The Contractor shall make submittals in accordance with the approved schedule, and in such sequence as to cause no delay in the work or in the work of any Contractor. No damages will be awarded or extension of time granted due to the shop drawing and product data review process.
- F. The Contractor shall submit an entire package of shop drawings and product data information for major items of work so that the Owner or Engineer can review the package as a unit.
- G. The number of submittals required shall be six (6) copies of each shop drawing or product data information sheet. Submittals shall contain the following information:
 - 1. Field dimensions, clearly identified as such.
 - 2. Relation to adjacent or critical features of the work or materials.
 - 3. Applicable standards, such as ASTM or Federal Specification Numbers.
 - 4. Identification of deviations from Contract Documents.
 - 5. Identification of revisions on re-submittals.
 - 6. Contractor's stamp indicating as a minimum the Project Title, Date of Submission, Date of Previous Submission, and Contract Specification Section Reference which shall be initialed or signed, certifying the review and approval of submittal per General Conditions, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.
- H. The Engineer shall affix a stamp and initials or signature and indicate confirmation or requirements for re-submittal. The Owner shall return to the Contractor three (3) copies of the product data information for distribution or for resubmission.
- I. The Contractor shall make all corrections or changes in the submittals required by the Owner and resubmit. The Contractor shall indicate any changes which have been made other than those requested by the Owner.

1.04 Specification Section Requirements

- A. Miscellaneous schedules, field reports, test reports, affidavits, certificates, permits, agreements and other items identified in the Technical Specification Sections, or as requested by the Owner. As a minimum, these submittals should be identified with the Project File, Date of Submission, and Contract Specification Section Reference.

1.05 Manufacturer's Operation and Maintenance Data

- A. The Contractor shall furnish seven (7) copies of all operation and maintenance data required by the various Technical Sections. Prior to 50 percent completion of the Project, the Contractor shall have submitted one (1) acceptable copy to the Owner.
- B. The operation and maintenance data shall be bound in a suitable three-ring binder(s). A Table of Contents shall be provided in the front of each binder to list the various sections of the Manual.

- C. The information to be provided in each section for each piece of equipment and project component shall include but not be limited to: detailed equipment drawings; sections cut through all of the major equipment and sub-assemblies; installation and operational procedures; maintenance procedures; and parts lists complete enough to permit identification of parts by nomenclature, number and use.
- D. At the front of each section a maintenance schedule shall be provided for each piece of equipment in the section. The schedule shall display the daily, weekly, monthly, semi-annual, annual or fraction thereof, lubrication and preventative maintenance required in order to meet warranty conditions and the manufacturer's recommendations for optimum performance and life of the unit. A common schedule format is to be developed and used for all of the sections.

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 Description

A. Permits and Responsibilities

1. The Contractor shall, without additional expense to the Owner, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, State and municipal laws, Codes and regulations, in connection with the execution of the Work. The Contractor shall take proper safety and health precautions to protect the Work, the workers, the public and the property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the Work, except for any completed unit of construction thereof which may heretofore have been accepted.

END OF SECTION

SECTION 01 42 00

REFERENCE STANDARDS

PART 1 GENERAL

1.1 Related Documents

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

1.2 Definitions

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 Industry Standards

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

END OF SECTION

SECTION 01 42 13

ABBREVIATIONS

Wherever in these Specifications and Contract Documents the abbreviations, or pronouns in place of them are used, the intent and meaning shall be interpreted as specified herein.

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
AMCA	Air Moving and Conditioning Association
APA	American Plywood Association
APHA	American Public Health Association
API	American Petroleum Institute
APWA	American Public Works Association
ARC	Appalachian Regional Commission
AREA	American Railroad Engineering Association
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWPA	American Wood Protection Association
AWWA	American Water Works Association
CFR	Code of Federal Regulations
CRSI	Concrete Reinforcing Steel Institute
CTI	Cooling Tower Institute
DEMA	Diesel Engine Manufacturers Association
EDA	Economic Development Administration
EIA	Electronic Industries Association
EPA	Environmental Protection Agency
FmHA	Farmers Home Administration
FS	Federal Specifications
HEI	Heat Exchange Institute

IEEE	Institute of Electronic and Electrical Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
IPC	Institute of Printed Circuits
ISA	Instrument Society of America
MBMA	Metal Building Manufacturers Association
MSS	Manufacturers Standardization Society of the Valve and Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCPI	National Clay Pipe Institute
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NRMA	National Ready-Mix Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCF	Pounds per Cubic Foot
PCI	Prestressed Concrete Institute
SBC	Southern Building Code
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SS	Stainless Steel
TCA	Tile Council of America
TEMA	Tubular Exchangers Manufacturers Association
UBC	Uniform Building Code
UL	Underwriters Laboratories
USDC	United States Department of Commerce
WPCF	Water Pollution Control Federation

END OF SECTION

SECTION 01 43 00

QUALITY CONTROL

PART 1 GENERAL

1.01 Description of Requirements

A. Definitions

1. Specific quality control requirements for the work are indicated throughout the Contract Documents. In particular, quality control provisions for manufactured products are specified in individual work sections and in other related sections; and are not repeated in this section. The requirements of this section are primarily related to the performance of the work beyond the furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify the Owner's duties relating to Contract quality review and observation.

1.02 Quality Assurance

A. General Workmanship Standards:

1. Except as more definitively specified in other sections, comply with the recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI standards where applicable. It is a requirement that each category of tradesman or installer performing the work be prequalified, to the extent of being familiar with the applicable and recognized quality standards for his category of work and being capable of workmanship complying with those standards.

1.03 Submittals

- A. Refer to Section 01 33 00 for the general submittal requirements applicable to inspection and test reports, project photographs, damage surveys, quality control samples, maintenance agreements, guaranties, warranties, and similar documentation of quality compliances as required.
- B. Copies and Distribution: Where inspection and test reports and certifications are required by governing authorities, provide additional copies as required, and, where required, send copies directly from inspection or testing agency to governing authority.

1.04 Product Delivery-Storage-Handling

- A. Materials, supplies, and equipment delivered to the site shall be inspected for damage, unloaded, and stored with a minimum of handling. Delivered items shall not be stored directly on the ground. Handle, store and protect materials and products, including fabricated components, by methods and means recommended by the manufacturer which will prevent damage, deterioration and losses (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize

unnecessary long-term storage at the project site prior to installation. Periodically exercise equipment stored in accordance with the manufacturer's recommendations.

- B. The Owner may refuse to accept, or sample for testing, materials, supplies, or equipment that have been improperly or unsuitably stored.
- C. Materials, supplies or equipment found defective or unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage site and replaced with new materials, supplies or equipment by the Contractor at no additional cost to the Owner.
- D. If, instead of requiring removal and replacement of defective items, the Owner (and, prior to approval of final payment) prefers to accept the defective item(s), they may do so. In such case, if acceptance occurs prior to approval of final payment, a change order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract price; or if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by the Contractor to the Owner.

1.05 Responsibility for Inspections and Tests

A. Contractors Responsibility:

1. It will be the Contractor's responsibility to employ and pay for the services of certified independent testing laboratories. In addition, the Contractor shall pay for all retests required due to failure to meet specifications.
 - a. The certified independent testing laboratories qualifications, test procedures, forms and quality control program shall be submitted to the Owner for review and approval.
 - b. No failure of test agencies, whether engaged by the Owner or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for the fulfillment of the requirements of the Contract Documents. It is recognized that the required inspection and testing program is intended to assist the Contractor, Owner and governing authorities in the nominal determination of probable compliances with requirements for certain crucial elements of work. The program is not intended to limit the Contractor in his regular quality control program, as needed for general assurance of compliances.
2. Coordination with Owner 's Agencies:
3. Afford access and reasonable time in the construction sequence for Owner's inspections and tests to be performed. Cooperate with agencies and provide incidental labor and services needed for the removal and delivery of test samples, and for inspections and taking measurements. Provide patching and restoration services where test samples have been removed.

B. Test Agency Responsibilities:

1. Test agencies, regardless of whether engaged by the Owner or Contractor, are not authorized to change or negate the requirements of the Contract Documents. Each agency shall coordinate its assigned work with the construction schedule as maintained by the Contractor, and shall perform its work promptly so as not to delay the work avoidably. Observations (by agencies) having a bearing on the work shall be reported to the Owner, in the most expeditious way possible, and shall be recorded in writing by the agency. Agency personnel shall not interfere with or assume the duties of the Contractor.

PART 2 PRODUCTS

2.01 Equipment and Materials

- A. All equipment and materials furnished under these specifications shall be new and unused.

PART 3 EXECUTION

3.01 Installation

A. Pre-Installation Conferences:

1. Well in advance of the installation of every major unit of work which requires coordination with other work, meet at the project site with installers and representatives of manufacturers and fabricators who are involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will follow. Advise Owner of scheduled meeting dates. At each meeting, review the progress of other work and preparations for the particular work under consideration including, but not limited to, the requirements of the Contract Documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. Record the significant discussions of each conference, and the agreements and disagreements, along with the final plan of action. Distribute record of meeting promptly to everyone concerned, including the Owner.
2. The Contractor shall not proceed with the work if the associated pre-installation conference cannot be concluded successfully. Instigate actions to resolve impediments to the performance of the work, and reconvene the conference at the earliest date feasible.

B. Installer's Inspection of Conditions:

1. The Contractor shall require the Installer of each major unit of work to inspect the substrate to receive the work, and the conditions under which the work will be performed, and to report (in writing to the Contractor) unsatisfactory conditions. The Contractor shall not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.02 Installation Quality Control

A. Manufacturer's Instructions:

1. Where installations include manufactured products, the Contractor shall comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.

- B. The Contractor shall inspect each item of materials or equipment immediately prior to

installation, and reject damaged and defective items.

1. The Contractor shall provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansion and structure movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual effect choices to Engineer for final decision.
 2. The Contractor shall recheck measurements and dimensions of the work, as an integral step of starting each installation.
 3. The Contractor shall install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure the best possible results for each unit of work, in coordination with the entire work. Isolate each unit of work from incompatible work, as required to prevent deterioration.
 4. The Contractor shall coordinate enclosure (closing-in) of work with required inspections and tests, so as to avoid the necessity of uncovering work for that purpose.
- C. Adjust, clean, lubricate, restore marred finishes, and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of the construction period.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 Scope

- A. Contractor shall provide temporary services and facilities for use by all Prime Contractors and the Engineer except as otherwise herein specified for all his personnel. Do not remove temporary facilities until authorized use of permanent facilities.

1.2 Use Charges

- A. Usage charges for temporary services or facilities shall be paid by the General Contractor.

1.3 Regulations and Limitations

- A. Comply with requirements of local laws and regulations governing construction and local industry standards, in the installation and maintenance of temporary services and facilities.
- B. The Contractor shall be limited to work within the property limits of the site and shall be responsible for and take necessary precautions to avoid damage to all adjacent property.

1.4 Temporary Utility Installation

- A. Engage the local utility company to install temporary services. As early as possible change to use of permanent service, to enable removal of the temporary utility and eliminate possible interference with completion of the work.
- B. Water Service: Provide temporary potable water supply at the site for construction purposes. Use of Owner's hydrants is prohibited for this purpose.
- C. Electrical Power Service: Provide weather-tight, grounded temporary electrical service-entrance and distribution system, with ground-fault circuit interrupters and ground-fault interrupter features of proper types, sizes, electrical ratings and characteristics to fulfill project requirements. Comply with applicable requirements of NEMA, NECA and UL standards and governing regulations. Install temporary lighting of adequate illumination levels to perform the work specified. Temporary electric service for construction purposes shall be for use by all prime contractors.

1.5 STAGING AREAS

- A. Space available on site for trailers, materials storage, and staging is limited. Contractors shall obtain approval of the site Manager for areas which may be used that will not interfere with site operations. Wetland and rapid infiltration bed (RIB) areas may not be disturbed.
- B. If additional space is required, the Contractors are responsible for leasing or otherwise securing the necessary space, off site.

1.6 Temporary Roads and Pavement

- C. Provide temporary graveled roads and graveled parking facilities during the course of the work. Locate in the same locations as permanent facilities and in compliance with applicable requirements from the permitting agency and authority having jurisdiction (AHJ).
- D. Coordinate temporary drives with grading and compaction of the subgrade, installation and stabilization of subbase and installation of base and finish courses of permanent paving.
- E. Construct and maintain temporary roads to support loading and to withstand exposure to traffic. Provide a graded and well compacted, well drained subgrade, and a gravel paving course of a well graded subbase material not less than 3-inch-thick, roller compacted to a level, smooth surface.
- F. Delay installation of the final course of permanent paving in areas exposed to temporary use, until immediately before substantial completion.
- G. Completely remove temporary roadways in areas not to receive permanent paving, prior to seeding.

1.7 SANITARY FACILITIES

- A. Sanitary facilities include temporary toilets for construction personnel of all prime contractors.
 - 1. Supply toilet tissue, paper towels, paper cups and similar disposable materials as appropriate for each facility. Provide appropriate covered waste containers for used material.
 - 2. Toilets: Install single occupant self-contained toilet units of the chemical, aerated recirculation or combustion type, properly vented and fully enclosed with glass fiber reinforced polyester shell. Use of pit-type privies will not be permitted.
 - 3. Provide separate toilet facilities for male and female construction personnel at ground level. Use of park facilities is prohibited.
- B. Drinking Water: Provide tap-dispenser bottled-water type drinking water units for personnel of all prime contractors and subcontractors.

1.8 Security and Protection Facilities Installation

- A. Maintain site in a safe, lawful and publicly acceptable manner. Each prime contractor shall be responsible for security of their own office and storage facilities.

1.9 Barricades, Warning Signs and Lights

- A. Comply with recognized standards and code requirements for erection of substantial, barricades where needed to prevent accidents. Paint with appropriate colors, graphics and warning signs to inform personnel at the site and the public, of the hazard being protected against. Provide lighting where needed, including flashing red lights were appropriate.

1.10 MAINTENANCE

- A. Operate and maintain temporary services and facilities in good operating condition and in a safe and efficient manner until removal is authorized. Do not overload services or facilities. Protect

from damage by freezing temperatures and similar elements. Do not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist on the site.

1.11 Termination and Removal

- A. Remove each temporary service and facility promptly when need has ended, or when replaced by use of a permanent facility, but no later than substantial completion. Complete, or, if necessary, restore permanent work delayed because of interference with the temporary service or facility. Repair damaged work, clean exposed surfaces and replace work that cannot be repaired.
- B. At substantial completion, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.

END OF SECTION

SECTION 01 57 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 Land For Contractor's Use

- A. Site Access and Parking – The Contractor shall maintain driveways a minimum of 15 feet wide between and around combustible materials in storage and mobilization areas.
- B. The Contractor shall maintain traffic areas free as possible of excavated materials, construction equipment, products and debris.
- C. The Contractor shall not utilize existing parking facilities for construction personnel or for Contractor's vehicles or equipment, unless written permission from Owner of parking facility is obtained.
- D. Private or Public Roads, Sidewalks and Parking Areas – The Contractor shall at all times provide emergency access to property in the vicinity of the construction for police and fire equipment, ambulances or other emergency vehicles to protect life, health and property.
- E. The Contractor is responsible for constructing project in a sequence which will allow the general public to utilize sections of park not actively being worked in.

1.02 Traffic Maintenance and Control

- A. Road Closing – No Street, road or section thereof shall be closed to through traffic unless otherwise provided for on the Plans, Specifications, or authorized by the agency with jurisdiction over the roads. Prior to the closing a street, road, or section thereof, the Contractor shall provide the Engineer with a copy of a detour Plan approved by the agency having jurisdiction over the roads.
- B. In the event roads or streets are to be closed, the Contractor shall notify the local fire department, police department, local road authority, ambulance and emergency services, and public school system daily as to what streets will be partly blocked or closed, the length of time the streets will be blocked or closed and when the streets will be reopened to traffic.
- C. Maintaining Traffic – The Contractor shall provide a Maintenance of Traffic for all area where construction will impede the normal flow of traffic in compliance with the Current FDOT Design Standards 600 Series.
- D. Existing Signs – No stop sign, traffic control or warning device shall be taken down until the agency having jurisdiction over the roads has been notified and arrangements for the immediate reinstallation have been made. The Contractor shall provide temporary signs, traffic control devices, warning devices, or watchmen continuously from the time the item is removed until it is reinstalled. All signs removed shall be replaced with signs meeting requirements of the agency having jurisdiction over the roads.

1.03 Temporary Utility Services

- A. Electricity and Lighting – The Contractor shall be responsible for and pay all costs for the installation and removal of circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction-type power cords and shall pay all costs of electrical power used.
- B. Electrical wiring and distribution shall conform to the National Electrical Code and all applicable national, state and local codes.
- C. Sanitary Provisions – The Contractor shall be responsible for installation, maintenance and removal of temporary sanitary facilities for use of construction personnel. All rules and regulations of the State and local health officials shall be observed, with precautions taken to avoid creating unsanitary conditions.

END OF SECTION

SECTION 01 61 00

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 Description

- A. Proposed Manufacturers List: Within 15 calendar days of the date of the Notice to Proceed, submit to the Engineer a list of names of proposed manufacturers, materialmen, suppliers and subcontractors, obtain approval of this list by Owner prior to submission any working drawings. Upon request submit evidence to Engineer that each proposed manufacturer has manufactured a similar product to the one specified and that it has previously been used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.
- B. Furnish and install Material and Equipment which meets the following:
1. Conforms to applicable specifications and standards.
 2. Complies with size, make, type, and quality specified on Plans or as specifically approved, in writing, by Engineer.
 3. Will fit into the space provided with sufficient room for operation and maintenance access and for properly connecting piping, ducts and services, as applicable. Make the clear spaces that will be available for operation and maintenance access and connections equal to or greater than those shown and meeting all the manufacturers' requirements. Make all provisions for installing equipment furnished at no increase in Contract Price.
 4. Manufactured and fabricated in accordance with the following:
 - a. Design, fabricate, and assemble in accordance with best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Provide two or more items of same kind identical, by same manufacturer.
 - d. Provide materials and equipment suitable for service conditions.
 - e. Adhere to equipment capabilities, sizes, and dimensions shown or specified unless variations are specifically approved, in writing, in accordance with the Contract Documents.
 - f. Adapt equipment to best economy in power consumption and maintenance. Proportion parts and components for stresses that may occur during continuous or intermittent operation, and for any additional stresses that may occur during fabrication or installation.
 - g. Working parts are readily accessible for inspection and repair, easily duplicated and replaced.
 5. Use material or equipment only for the purpose for which it is designed or specified.

1.3 Substitutions

- A. Substitutions:
1. Contractor's requests for changes in equipment and materials from those required by the Contract Documents are considered requests for substitutions and are subject to

Contractor's representations and review provisions of the Contract Documents when one of following conditions are satisfied:

- a. Where request is directly related to an "or equal" clause or other language of same effect in Specifications.

END OF SECTION

SECTION 01 71 13

MOBILIZATION

PART 1 GENERAL

1.01 Mobilization

A. Mobilization shall include the obtaining of all permits; moving onto the site of all equipment; temporary buildings and other construction facilities; essential personnel; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:

1. Moving on to the site of all Contractor's equipment required for first month operation
2. Installing temporary construction power, wiring, and lighting facilities, as needed.
3. Developing construction water supply, if required for construction.
4. Providing all on-site communication facilities, including cellular phone for the Superintendent.
5. Providing on-site sanitary facilities.
6. Arranging for and erection of Contractor's work, site access, and storage.
7. Obtaining all required permits.
8. Having all OSHA required notices and establishment of safety programs.
9. Submitting initial submittals.
10. Demobilization at the completion of construction

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 GENERAL

1.1 Related Documents

The Contract Documents, including but not limited to, the Drawings and Individual Specification Sections, apply to this Section.

1.2 Summary

- A. This Section includes procedural requirements for cutting and patching.
- B. Responsibility: Each Contractor is responsible for the cutting and patching to permit installation or performance of Work of their contract.
- C. Related Sections include the following:
 - 1. Individual Specification Sections.

1.2 Definitions

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of Work of the contract.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of Work of the contract.

1.3 Submittals

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: At each occurrence, describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and

those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Design Professional's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 Quality Assurance

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
- C. Fire Rated Elements: Do not cut and patch fire rated elements (i.e. floors, walls, roofs, shafts, etc.) in a manner that results in reducing their capacity to perform as intended or that results in decreased fire rating.
- D. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, which results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- F. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including other trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 Warranty

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

PART 2 PRODUCTS

2.1 Materials

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials, unless specified otherwise in other Sections or Plans.
- C. Fire Rated Elements: Provide firestopping products/systems specified in system design listings by approved testing agencies that conform to the construction type, penetrating item, annular space requirements and fire rating involved in each separate assembly. Refer to applicable Individual Specification Sections.

PART 3 EXECUTION

3.1 Examination

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 Preparation

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting or patching to minimize interruption to occupied areas.

3.3 Performance

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
 6. Fire Rated Elements: Install firestopping systems to comply with applicable Individual Specification Sections and firestopping manufacturer's written installation instructions and published drawings for products and applications.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 01 74 00

CLEANING

PART 1 GENERAL

1.1 Scope

- A. This section covers general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

1.2 Hazard Control

- A. The Contractor shall store volatile wastes in covered metal containers and remove from premises daily.
- B. The Contractor shall prevent accumulation of wastes which create hazardous conditions.
- C. Burning or burying rubbish and waste materials on the site shall not be allowed.
- D. Disposal of volatile wastes into sanitary or storm sewers shall not be allowed.

1.3 Disposal of Surplus Materials

- A. Unless otherwise shown on the Drawings, specified or directed, the Contractor shall dispose of all surplus materials and equipment from demolition, legally off the site, and shall provide his own suitable, off-site spoil area, or on a site designated by the Owner.
- B. The Owner shall have the opportunity to inspect any equipment or materials removed prior to disposal by the Contractor. If said equipment and/or materials are determined to be salvageable by the Owner, the Contractor shall transport said equipment and material to a building or area designated by the Owner.

1.4 FINAL CLEANING

- A. The Contractor shall schedule cleaning operations so that dust and other contaminants resulting from the cleaning process will not fall on wet, newly painted surfaces.
- B. The Contractor shall employ experienced workmen or professional cleaners for final cleaning.
- C. The Contractor shall broom clean paved surfaces; rake clean other surfaces of grounds.
- D. Upon completion of the work, Contractor shall remove from the site all plant, material, tools and equipment belonging to him, and leave the site with an appearance acceptable to the Engineer

- E. Restoration of Landscape Damage – Any landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Engineer will decide what method of restoration shall be used.

- F. Post-Construction Cleanup or Obliteration – Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction.

END OF SECTION

SECTION 01 77 00
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 Section Includes

Substantial completion requirements, clean-up, final completion requirements, closeout submittals.

1.02 Clean-Up Operations

- A. The entire project site shall be thoroughly cleaned at the completion of the work.
- B. Clean all installed structures, plus all adjacent areas affected by construction, as directed by the Owner or jurisdictional agency. Equipment to clean these surfaces shall be subject to approval by the Owner.

1.03 Substantial Completion Requirements

- A. Complete the following before requesting the inspection for certification of substantial completion.
 - 1. Submit as-built drawings.
 - 2. Deliver tools, spare parts, extra stocks of material and similar physical items to the Owner.
 - 3. Complete required cleaning and testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities and services from the project site, along with construction tools and facilities, mock-ups, and similar elements.
 - 4. Complete final cleaning up requirements, including touch-up painting of marred surfaces.
 - 5. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Work is not substantially complete until regulatory agency letters of clearance for placing systems into service are received by the Owner.

1.04 Closeout Submittals

- A. Upon completion of the project, or portions thereof, the Contractor shall transfer to the Owner all applicable items accumulated throughout construction. These include but are not limited to the following items:
 - 1. Service manuals, installation instructions, special tools, and specialties.
 - 2. Spare parts ordered as part of this Contract.
 - 3. Submittal of the Material and Workmanship Bond.
 - 4. Submittal of manufacturers' guarantees, bonds, and letters of coverage extending beyond the time limitations of the Contractor's guarantee.

5. Delivery of any salvaged or borrowed materials or equipment to the Owner
6. Record documents of completed facilities.
7. All keys to all doors, gates, and equipment.
8. Checklist indicating satisfactory completion of all unfinished items from the final inspection.
9. Waivers of lien from Contractor plus all Subcontractors and Suppliers.
10. Consent of Surety.

END OF SECTION

SECTION 02 21 13

SITE SURVEYS

[SEE SECTION 01 30 00 – ADMINISTRATIVE REQUIREMENTS]

END OF SECTION

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 Summary

A. This Section includes demolition and removal of the following:

1. Structures
2. Protecting existing trees, shrubs, groundcovers, plants, and grass to remain.
3. Protecting existing utilities, concrete paving, curb and gutters, and site lights to remain.
4. Clearing and grubbing.
5. Removing above-ground site improvements.
6. Temporary erosion and sedimentation control measures.

1.2 Definitions

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or recycled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or recycled.

1.3 Materials Ownership

- A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 Quality Assurance

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.
- C. Predemolition Conference: Schedule conference with Owner.

1.5 Project Conditions

- A. Structures to be demolished will be vacated and their use discontinued before start of Work.
- B. Owner assumes no responsibility for buildings and structures to be demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 2. Before building demolition, Owner will remove the following items:
 - a. Owner to verify if any items need to be removed before construction commences.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. Hazardous materials will be removed by Owner before start of the Work.
 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- F. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- G. Utility Locator Service: Notify utility locator service to identify utilities for area where Project is located before site clearing.
- H. Do not commence site-clearing operations until temporary erosion and sedimentation control measures are in place.

1.6 Coordination

- A. Arrange demolition schedule so as not to interfere with on-site operations.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 Examination

- A. Survey existing conditions and correlate with requirements indicated to determine extent of building and site demolition required.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Inventory and record the condition of items to be removed and salvaged.

- D. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to Engineer

3.2 Preparation

- A. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
- B. Removed and Salvaged Items: See Section 02 42 00
- C. Protect and maintain benchmarks and survey control points from disturbance during construction.
- D. Locate and clearly flag trees and vegetation to remain or to be relocated.
- E. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.3 Temporary Erosion and Sedimentation Control

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.4 Tree Protection

- A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

3.5 Protection

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations.

- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during demolition and reinstalled in their original locations after demolition operations are complete.
- C. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Division 1 Section "Temporary Facilities and Controls."
 - 1. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 2. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent structures to remain.

3.6 Demolition, General

- A. General: Demolish indicated existing, structures, and site improvements completely. Use methods required to complete the Work within limitations of governing regulations.

3.7 Site Restoration

- A. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.8 Disposal

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

3.9 Repairs

- A. General: Promptly repair damage to adjacent construction caused by structure demolition operations.

3.10 Recycling Demolished Materials

- A. General: Separate recyclable demolished materials from other demolished materials to the maximum extent possible. Separate recyclable materials by type.
 - 1. Provide containers or other storage method approved by Engineer for controlling recyclable materials until they are removed from Project site.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.

5. Transport recyclable materials off Owner's property and legally dispose of them.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling building demolition materials shall accrue to Owner.

3.11 Disposal of Demolished Materials

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

1. Do not allow demolished materials to accumulate on-site.

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

B. Burning: Do not burn demolished materials.

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

3.12 Cleaning

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

END OF SECTION

SECTION 02 42 00

REMOVAL AND SALVAGE OF CONSTRUCTION MATERIALS

PART 1 GENERAL

1.1 Summary

A. This section includes the removal and salvaging of the following:

1. Lumber
2. Timber piles
3. Wood railings
4. Wire mesh
5. Aluminum roofing

A. See Section 02 41 00 for demolishing site structures.

1.2 Materials Ownership

A. Except for materials indicated to remain Owner's property, removed materials shall become Contractor's property and shall be removed from Project site.

1.3 Salvageable Items

A. Carefully remove items indicated to be salvaged and store indicated by Owner

PART 3 EXECUTION

3.1 Examination

A. Review Project Record Documents of existing construction indicated to be salvaged by Owner. If upon discovery, existing conditions are not the same as indicated on the Record Documents, then the Owner will determine if it is worth salvaging.

B. Inventory and record the condition of items to be salvaged.

C. Removed and Salvaged Items: Comply with the Following:

1. Clean salvaged items of dirt and demolition debris
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner. Protect items from damage during transport and storage.

3.2 Recycling Demolished Materials: See Section 02 41 00

END OF SECTION

02 42 00

SECTION 05 52 13

ALUMINUM HANDRAILS AND GUARDRAILS

PART 1 GENERAL

1.01 Scope

- A The work covered by this section includes furnishing all labor, equipment, and materials required to furnish and install aluminum handrails and guardrails for walkways, slopes and openings, including all fittings, anchors, sleeves, and accessories, as shown on the Drawings or specified herein.
- B Unless specifically designated otherwise on the Drawings, all handrails shall be aluminum pipe handrail.
- C Handrails shall be furnished and installed where shown on the Drawings and at the edge of all walking or working surfaces where the distance from the surface to the adjacent floor, ground, or slab exceeds 4 feet.
- D Handrails located on surfaces below which persons or moving equipment can pass shall be furnished with a 4-inch aluminum toeboard, unless a toeboard is furnished with the grating support angles.

1.02 Design Criteria

- A Railings shall be designed and constructed in strict compliance with the requirements of OSHA, NFPA 101, Florida Building Code, and all local and applicable building codes.
- B Aluminum handrail shall be designed for a minimum safe working load of 50 pounds per linear foot applied horizontally to the top rail or a concentrated load of 200 pounds applied in any direction at any point on the railing, whichever is greater. All handrail sections and components shall withstand the design loads with a minimum factor of safety of 1.5 based on the ultimate strength of the alloy used.
- C The Contractor shall submit to the Engineer written evidence that the aluminum handrail and accessories are in conformance with the material and mechanical requirements specified herein. Certified copies of independent laboratory test results or mill test results from the aluminum handrail supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate ASTM testing standards by experienced, competent personnel. In case of doubt as to the accuracy or adequacy of mill tests, the Engineer may require that the Contractor furnish test reports from an independent testing laboratory on certified samples of handrail stock.

1.03 Shop Drawings And Engineering Data

- A Submit complete shop drawings and engineering data in accordance with the requirements of the section entitled "Submittals" of these Specifications.

1.04 Operation And Maintenance Data

- A Submit in accordance with the requirements of the section entitled "Operation and Maintenance Data" supplier's recommendations and procedures for maintaining and repairing handrail; including methods, cleaning materials, refinishing materials, and precautions as to the use of materials which may be detrimental to handrail finish.

1.05 Guarantee

- A Provide a guarantee against defective products and workmanship in accordance with the requirements of the section entitled "Guarantees and Warranties" of these Specifications.

1.06 Storage And Protection

- A Provide storage and protection for aluminum handrail in accordance with the requirements of the section entitled "General Equipment Stipulations" of these Specifications.
- B Keep handling to a minimum and maintain protective covering on handrail until work is complete.

PART 2 PRODUCTS

1.07 Aluminum Handrail

- A Aluminum handrail for vertical and horizontal members shall be seamless, 1-1/2 inch (ips), Schedule 40, 6063-T832 or 6063-T6 aluminum alloy pipe. Aluminum fittings shall be of wrought material of the same composition as rails and posts or cast aluminum of Aluminum Alloy No. 214. Aluminum fittings shall have a minimum thickness of 1/4-inch. All screw connectors and bolts shall be of 304 stainless steel or 2024-T4 aluminum alloy.
- B Aluminum handrails and exposed fittings shall have a clear anodized finish (204 R-1). Minimum coating thickness shall be 0.4 mils.
- C Aluminum pipe railings shall be of all welded construction or they may be assembled with flush type fittings and concealed or non-projecting pins and fasteners.
- D Welded joints shall be made by inert-gas welding (MIG) using aluminum welding rods of aluminum alloy X5356. All welded joints shall be cleaned of flux and weld spatter and the weld bead shall be ground smooth, rubbed, and polished to provide a flush and neat uniform appearance.
- E Slip joints to facilitate removal of pipe railing shall be provided at all intersections, changes in direction, or at intervals not to exceed 25 feet in straight runs of railing. The slip joint shall be designed and constructed to provide strength equivalent to a straight section of pipe.
- F All handrail installations shall provide for draining of entrapped water from the railing system by minimum 15/64-inch-diameter weep holes or other approved means.

- G 304 Stainless steel eye bolts shall be furnished and installed on stanchions where guard chains will be attached.
- H Guard chains shall be provided across all pipe railing openings where shown, specified, or required. Chain links shall be 1/4-inch galvanized steel of welded construction, 12 links to the foot. One end shall be connected to a 1/4-inch type 304 stainless steel eye bolt in the stanchion and the other end shall be connected by means of a heavy, bronze, swivel eye, snap hook to a similar eye bolt in the opposite stanchion.

Part 3 EXECUTION

1.08 Installation

- A Aluminum railings shall be erected plumb, straight, and true at the locations and elevations shown on the Drawings. Prefabricated aluminum handrail shall be assembled and installed in strict compliance with the manufacturer's instructions.
- B Horizontal members of aluminum railings shall be fastened into concrete or masonry walls with flush type flange fitting anchors with a minimum diameter of 3-1/2 inches. Anchor screws shall be flat-head 304 stainless steel screws with a minimum length of 3 inches.
- C Following installation, aluminum handrail shall be cleaned using soap and clean water. Acid solutions, steel wool, or harsh abrasives shall not be used. If stains remain after cleaning, remove finish and restore in accordance with the manufacturer's recommendations.
- D All defective, damaged, or otherwise improperly installed handrails shall be removed and replaced with material that satisfies the requirements of this section.

END OF SECTION

SECTION 06 05 23

WOOD, PLASTIC, AND COMPOSITE FASTENINGS

PART 1 GENERAL

1.01 Summary

- A. This section includes the work required to furnish and install fasteners for the following:
 - 1. Timber Piles
 - 2. Pile Caps
 - 3. Bents
 - 4. Stringers
 - 5. Safety Curbs
 - 6. Composite Decking
 - 7. Guardrails
- B. See Division 7 for fasteners for metal structures.

PART 2 PRODUCTS

2.01 Materials

- A. Unless specified otherwise, all bolts, washers, nails, ties, and nuts shall be 304 stainless steel or approved equivalence.
- B. Washers shall be provided by Contractor as needed by the plans.
- C. Passivation: All stainless-steel fasteners shall be passivated using CitriSurf embalming.

PART 3 EXECUTION

3.01 Bolts

- A. Use bolts of the sizes shown in the Plans with square heads and nuts and screw threads that make close fits in the nuts.
- B. Upon completion of installation, check all for tightness.
- C. The cutting of all bolts shall be avoided. Should stainless steel bolts require cutting, the bolt shall be cleaned and cut using new and unused ceramic or stainless steel (inox) grinding wheel. Any blue discoloration present shall be removed with a similar new and unused ceramic or stainless steel file or polishing disk. Apply CitriSurf 2310 passivation gel per manufacturer direction. Provide covering such as plastic sheeting or wrap for 25 minutes while the passivation gel activates.
- D. The use of carriage bolts shall be used where indicated on the plans.

END OF SECTION

SECTION 06 05 73

WOOD TREATMENT

PART 1 GENERAL

1.01 Summary

A. This section includes

1. Wood Treatment

B. Related Sections:

1. 06 10 00 – Rough Carpentry
2. 06 11 00 – Wood Framing
3. 06 15 00 – Wood Decking
4. 06 43 16 – Wood Railings
5. 06 73 00 – Composite Decking
6. 31 62 19 – Timber Piles

1.02 Codes and Standards

- A. American Wood Protection Association (AWPA)
- B. American Wood Council (AWC)
- C. 2024 National Design Specification (NDS) for Wood Construction

1.03 Quality Control

- A. All wood shall be protected, or pressure treated in accordance with AWPA requirements.

PART 2 PRODUCTS

2.01 Materials

A. Bents and Stringers

1. All new bents and stringers must adhere to the American Wood Council's use category UC4B and be treated with 0.60 pounds per cubic foot (pcf) of Chromated Copper Arsenate (CCA) (Unless noted otherwise).

B. Guards and Decking

1. Any guards and decking, excluding high-density polyethylene (HDPE) decking, must be treated with 0.60 PCF Alkaline Copper Quaternary (ACQ), or 0.31 PCF Copper Azole (CA), or 0.23 PCF CA-C or Micronized Copper Azole (MCA). Any guards and decking, where decking is not HDPE, shall be treated with 0.60 PCF ACQ or 0.31 PCF CA or 0.23 PCF Wolman © E (μ CA-C) or MCA.

C. AWPA Category and Specific Wood Treatments

1. Timber piles exposed to marine waters shall undergo UC5C dual treatment.
2. Timber piles that are upland, or exposed to freshwater shall undergo UC5C with 2.50 PCF retention of CCA, as indicated on the plans.

END OF SECTION

SECTION 06 06 10
SCHEDULES FOR ROUGH CARPENTRY

[SEE CONTRACT DOCUMENTS]

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.1 Summary

A. Section Includes:

1. Preservative treatment.
2. Fasteners

1.2 Definitions

A. The following definitions apply to this section as they pertain to rough carpentry items.

1. Rough Carpentry: Carpentry work not specified in other Sections and not used as exposed work.

1.3 Description

A. Adhesives, and related items, including accessories furnished and installed as specified herein.

1.4 Submittals

A. Product Data: Submit for carpentry in accordance with Section 013300, Submittals.

1. Submit for sheathing and miscellaneous products specified.

B. Certification:

1. Submit letter certifying that lumber is kiln-dried to 15 - 19 percent moisture content, well-seasoned, grade marked, trademarked and free from warp.
2. Submit letter from treatment plant certifying that chemicals and process used and net amount of salts retained are in conformance with specified standards

1.5 Quality Assurance

A. Lumber Standard:

1. Comply with U.S. Dept. of Commerce Product Standard PS 20, including moisture content and actual sizes related to indicated nominal sizes.
2. Comply with lumber producer's inspection agency grading rules certified as conforming to American Softwood Lumber Standard PS 20-20 and local code standard.

- B. Provide Forest Stewardship Council (FSC) Certified Wood Products: Subject to compliance with specified requirements, acceptable manufacturers and products are listed at: www.fscus.org/certified-companies

1.6 Delivery, Storage, and Handling

- A. Inspect wood materials for conformance to specified grades, species, and treatment at time of delivery to Project site.
 - 1. Reject and return unsatisfactory wood materials.
- B. Provide facilities for handling and storage of materials to prevent damage to edges, ends and surfaces.
- C. Keep carpentry materials dry.
 - 1. Store lumber and plywood in stacks with provision for air circulation within stacks.
 - 2. Protect bottom of stacks against contact with damp surfaces. Protect exposed materials against weather.
 - 3. Stack materials minimum 12 inches off ground, or if on concrete slab-on-grade, minimum 1-1/2 inches, fully protected from weather.
 - 4. Provide for air circulation within and around stacks and under temporary coverings.
- D. Place spacers between each bundle of pressure treated materials treated with waterborne chemicals to provide air circulation.

1.7 Coordination

- A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit, show location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.
 - 1. Coordinate work directly with other subcontractors as necessary to insure proper fitting, joining or to clearances of other work. Obtain templates as required to insure proper fitting.

PART 2 PRODUCTS

2.1 Lumber

- A. (WD BLKG-1) Miscellaneous Lumber: Lumber for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members.
 - 1. Moisture content of 19 percent maximum for lumber items not specified to have wood preservative treatment.
 - 2. Grade: No. 3 or standard grade.

2.2 Preservation Treatment: See Section 06 05 73

2.3 Fasteners: See Section 06 05 23

PART 3 EXECUTION

3.01 Factory Wood Treatment

- A. Shop pressure treat and deliver to site ready for installation, wood materials requiring UL fire rating or pressure impregnated preservatives.
- B. Provide UL approved identification on fire resistant treated materials.
 - 1. Deliver fire retardant treated materials cut to required sizes so as to eliminate necessity of field cutting.
- C. Ensure exposed materials requiring stain or paint finish do not exceed 15 percent moisture content before applying wood preservative treatment.

3.02 Site Treatment of Wood Materials

- A. Apply preservative treatment in accordance with manufacturer's printed instructions.
- B. Brush apply 2 coats of preservative treatment on wood in contact with cementitious materials and roofing and related metal flashings. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.
- D. Ensure exposed materials requiring stain or paint finish do not exceed 15 percent moisture content before applying wood preservative treatment.

END OF SECTION

SECTION 06 11 00

WOOD FRAMING

PART 1 GENERAL

1.1 Summary

A. Section Includes:

1. Roof framing.
2. Roof and wall sheathing.

B. Related Sections:

1. Division 06 4600 Wood Trim.

1.2 References

- A. Engineered Wood Association (APA) PRP-108 - Performance Standards and Qualification Policy for Structural-Use Panels.
- B. Northeastern Lumber Manufacturers Association (NELMA) - Standard Grading Rules for Northeastern Lumber.
- C. Southern Pine Inspection Bureau (SPIB) - Standard Grading Rules for Southern Pine Lumber.
- D. Western Wood Products Association (WWPA) G-5 - Western Lumber Grading Rules.

1.3 Quality Assurance

- A. Lumber Grading Agency: Certified to NIST PS 20.
- B. Identify lumber and sheet products by official grade mark.

1.4 Delivery, Storage and Handling

- A. Store materials minimum 6 inches above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation.
- B. Do not store seasoned or treated materials in damp location.
- C. Protect edges and corners of sheet materials from damage.

PART 2 PRODUCTS

2.1 MATERIALS

A. Dimension Lumber:

1. Grading rules: NELMA, SPIB or WWPA.
2. Grade #1, Limit used of Grade #2
3. Surfacing: Surfaced four sides (S4S).
4. Maximum moisture content: 19 percent.
5. Finger jointed, manufactured using low-emitting, urea formaldehyde-free binders.
6. Certified to FSC STD-04-004.

PART 3 EXECUTION

3.1 Installation

- A. Set members level, plumb, and rigid.
- B. Make provisions for erection loads, and for temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Place beams, joists, and rafters with crown edge up.
- D. Construct load bearing framing members full length without splices.
- E. Provide blocking, nailers, grounds, furring, and other similar items required to receive and support work.
- F. Provide adequate blocking for all wall-mounted units in accordance with plans.

END OF SECTION

SECTION 06 15 00

WOOD DECKING

PART 1 GENERAL

1.1 Summary

A. Provide labor, materials and equipment necessary to complete the work of this Section, including the following:

1. Wood decking, lumber, stringers, beams, and timbers for the following applications:
 - a. Decks.
 - b. Boardwalks

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections.

1. Section 06 10 00 – ROUGH CARPENTRY for other rough carpentry work.
2. Section 06 43 16 – WOOD RAILINGS
3. Section 31 62 19 – TIMBER PILES for timber pile work.

C. Reference Standards: Comply with applicable requirements of the following:

1. Allowable Design Values By Grade
2. ASTM D143 – Standard Test Methods for Small Clear Specimens of Timber.
3. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
4. American Wood Council
5. American Wood Protection Association
6. 2024 National Design Specification for Wood Construction

1.2 Submittals

A. Submittals: Submit under provisions of Division 01.

B. Product Literature: Contractor shall provide submittal for all engineered lumber products.

C. Verification Samples: For each type of decking, lumber and timbers.

D. Certificates of Compliance Technical: Submit documentation of the following.

1. Certificate of Compliance “Inspection”: A vendor certificate confirming product compliance with grade and quality requirements.
2. Certificate of Compliance “Technical”: A vendor certificate confirming product compliance with minimum specified Physical, Mechanical and Technical performance requirements as defined by the specification.
3. Certificate of Compliance Allowable Design Values.
4. Certificate of Compliance “International Building Code” with allowable design values and span tables signed by a licensed engineer.

5. MSDS (Material Safety Data Sheet) – Submit a Material Safety and Data Sheet for the wood products supplied on the project.
6. Grading Rules – Written Grading Rules and Definitions”.
7. Best Practices: ‘Best Practice Guide’ or other relevant installation guides.

1.3 Quality Assurance

- A. Manufacturer/Vendor Qualifications: Products covered under this Section shall be supplied by a single manufacturer/vendor unless otherwise specified with a minimum of fifteen years proven production or supply experience.
- B. Pre-installation Conference: Conduct conference by phone or on site to comply with requirements in Division 01.

1.4 Delivery, Storage, and Handling

- A. Protect materials during shipment, storage and construction against damage. If material is air dried, stickers of a minimum of 10mm shall be placed between each layer of boards when packed. If material is kiln dried, material shall be dense packed and wrapped.
- B. All units shall be individually strapped to wood pallets or blocking of a minimum thickness to allow the egress of lift forks using high strength strapping with a minimum of 4 straps per crate.
- C. Store a minimum of 6 inches off the ground in a dry location and cover with polyethylene to protect from contact with materials which would cause staining or discoloration.

PART 2 PRODUCTS

2.1 Materials

A. Lumber

1. Dimensional lumber shall be southern pine with the minimum nominal design values per American Wood Council’s National Design Specifications.

2.2 Wood Treatment: SEE SECTION 06 05 73 – WOOD TREATMENT

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to starting work inspect the substrate to ensure that it has been properly prepared to accept materials specified in this Section. Commencement of work shall imply acceptance of surfaces and or conditions.
 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 Installation

- A. Install in accordance with manufacturer's instructions and approved submittals including the following:
 - 1. Manufacturers Best Practices.
 - 2. Install materials plumb, true to line, cut and fitted.
 - 3. Scribe and cope as required for accurate fit to adjacent construction.
 - 4. Use fasteners as indicated in Plans
 - a. See Section 06 05 23 – Wood, Plastic, and Composite Fastenings
 - 5. Fasten tight to supports.

3.3 Cleaning and Protection

- A. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.
- B. Clean using materials recommended by the manufacturer to remove stains, dirt and debris prior to final acceptance.

END OF SECTION

SECTION 06 43 16

WOOD RAILINGS

PART 1 GENERAL

1.01 Summary

A. Section Includes

1. Wood Railing
2. Cap Railing
3. Wire Mesh

PART 2 PRODUCTS

2.01 Materials

A. Railing caps

1. Wood railings caps shall be lpe wood with the minimum nominal design values per American Wood Council's National Design Specifications.

B. Railings

1. All railings shall be southern yellow pine with the minimum design values per American Wood Council's National Design Specifications.

C. Wire Mesh

1. Wire mesh shall be 2"x2" 12 gauge, 36" width, green PVC coated galvanized welded wire.

PART 3 EXECUTION

3.01 Installation

A. Install in accordance with manufacturer's instructions and approved submittals including the following:

1. Manufacturers Best Practices.
2. Install materials plumb, true to line, cut and fitted.
3. Scribe and cope as required for accurate fit to adjacent construction.
4. Use fasteners as indicated in Plans
 - a. See Section 06 05 23 – Wood, Plastic, and Composite Fastenings
5. Fasten tight to supports.

3.02 Cleaning and Protection

- A. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.
- B. Clean using materials recommended by the manufacturer to remove stains, dirt and debris prior to final acceptance.

END OF SECTION

SECTION 06 73 00
COMPOSITE DECKING

PART 1 GENERAL

1.01 Summary

A. Section includes:

1. Composite decking

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections.

1. Section 06 15 00 – WOOD DECKING
2. Section 06 10 00 – ROUGH CARPENTRY for wood

1.02 Reference Standards:

A. Comply with applicable requirements of the following:

1. ASTM D2395 – Standard Test Methods for Specific Gravity of Wood and Wood-Based Materials
2. ASTM D7032 – Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stairs Treads, Guards, and Handrails.
3. ASTM G154 – Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials.

1.03 Submittals

A. Submittals: Submit under provisions of Division 01

B. Product Literature: Contractor shall provide submittal for all engineered composite products.

C. Verifications Samples for each type of decking

D. Certificates of Compliance “Inspection”.

1. Certificate of Compliance “Inspection”. A vendor certificate confirming product compliance with grade and quality requirements.
2. Certificate of Compliance “Technical”. A vendor certificate confirming product compliance with minimum specified Physical, Mechanical and Technical performance requirements as defined by the specimen.
3. Certificate of Compliance Allowable Design Values.
4. Certificate of Compliance “International Building Code” with allowable design values and span tables signed by a licensed engineer.
5. MSDS (Materials Safety Data Sheet) – Submit a Material Safety and Data Sheet for the composite products supplied on the project.

6. Best Practices: 'Best Practice Guide' or other relevant installation guides.

1.04 Quality Assurance

- A. Manufacturer/Vendor Qualifications: Products covered under this Section shall be supplied by a single manufacturer/vendor unless otherwise specified with a minimum of fifteen years proven production or supply experience.
- B. Pre-installation Conference: Conduct conference by phone or on site to comply with requirements in Division 01.

1.05 Delivery, Storage, and Handling

- A. Deliver, store and handle composite decking in accordance with manufacturer's instructions.
- B. Protect materials during shipment, storage and construction against damage.

PART 2 PRODUCTS

2.01 Fasteners

- A. Fasten composite decking to stringer per manufacturer's specifications.
- B. Use 304 stainless steel fasteners as per the Plans.

PART 3 EXECUTION

3.01 Examination

- A. Verify that conditions of work previously installed under other sections or contracts are acceptable for installation of composite decking in accordance with manufacturer's instructions and approved submittals.
 - 1. Notify Engineer of unacceptable conditions upon discovery.
 - 2. Do not proceed with preparation and installation until unacceptable conditions have been corrected.

3.02 Preparation

- A. Prepare substrate to receive composite decking in accordance with manufacturer's instructions, and approved submittals.

3.03 Installation

- A. Install composite decking in accordance with manufacturer's instructions, and approved submittals.
- B. Contractor shall not cut plastic decking over, or near, any preserved lands or wetlands to ensure that these lands do not become polluted by any residue.

3.04 Cleaning

- A. Clean-up packaging, waste material, and construction debris daily during installation; legally dispose of in accordance with authorities having jurisdiction.
- B. Upon completion, remove surplus materials, remaining debris, tools and equipment.

3.05 Protection

- A. Protect installed products from damage during the subsequent construction until Final Inspection and acceptance by Owner.
- B. Repair damage to adjacent materials caused by installation of composite decking.

END OF SECTION

SECTION 06 73 13

COMPOSITE STRUCTURAL DECKING

PART 1 GENERAL

1.01 Summary

- A. This specification covers the requirements for the design, material, fabrication, installation, and performance of composite structural decking systems. The decking is intended for use in residential, commercial, and industrial applications, supporting specified loads while providing a durable, weather-resistant surface.

1.02 References

- A. ASTM D7032: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems.
- B. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ICC-ES AC174: Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems.
- D. ANSI/ASCE 7: Minimum Design Loads for Buildings and Other Structures.

1.03 Submittals

- A. Product Data: Submit manufacturer's specifications, technical data sheets, and installation instructions.
- B. Shop Drawings: Provide detailed layout drawings showing dimensions, spans, attachment methods, and connections.
- C. Samples: Submit a 12-inch sample of each decking color and profile for approval.
Test Reports: Submit independent test results verifying compliance with ASTM standards.

1.04 Quality Assurance

- A. Manufacturer Qualifications: Minimum of five years of experience in producing composite decking.
- B. Installer Qualifications: Minimum of two years of experience installing similar decking systems.
- C. Mock-Up: Construct a representative section of decking for approval prior to full installation.

1.05 Delivery, Storage, and Handling

- A. Deliver decking materials in original, unopened packaging with manufacturer labels.

B. Store materials flat on a dry surface, protected from moisture and direct sunlight.

C. Handle materials carefully to avoid damage.

PART II PRODUCTS

2.01 Materials

A. Composite Decking Boards:

1. Composition: Blend of wood fibers and polyethylene or polypropylene.
2. Surface: Slip-resistant textured or brushed finish.
3. Edge Profiles: Square edge or grooved for hidden fasteners.

B. Accessories:

1. Fasteners: Stainless steel or coated screws and clips approved by the decking manufacturer.
2. Trim and Fascia Boards: Matching composite material for finishing edges.
3. Adhesives: As recommended by the manufacturer for specific applications.

2.02 Performance Requirements

A. Load Capacity: Minimum live load of 100 psf (pounds per square foot).

B. Span Ratings: Maximum spans per manufacturer's guidelines and as specified by project requirements.

C. Thermal Expansion: Material expansion/contraction tolerances per manufacturer's testing.

D. Weather Resistance: UV stabilization and resistance to moisture, rot, and insect infestation.

E. Fire Rating: Class C or higher in accordance with ASTM E84.

2.03 Colors and Finishes

A. Colors: Selected from manufacturer's standard range.

B. Finishes: Smooth, brushed, or embossed, as specified.

PART III Execution

3.01 Examination

A. Verify that the substrate is level, clean, and free of debris.

B. Confirm that structural supports meet load requirements and are properly spaced.

3.02 Installation

- A. Follow manufacturer's instructions for installation, fastening, and spacing.
- B. Ensure proper ventilation beneath decking to prevent moisture buildup.
- C. Use approved fasteners and accessories to ensure secure attachment.
- D. Cut boards with appropriate tools for composite materials to prevent chipping.

3.03 Tolerances

- A. Allowable deviation from level: ± 0.125 inches over 10 feet.
- B. Spacing between boards: As per manufacturer recommendations, typically 1/8 to 3/16 inches.

3.04 Cleaning and Protection

- A. Remove all debris and protective films after installation.
- B. Clean surfaces with manufacturer-approved cleaning agents.
- C. Protect decking from construction traffic and damage until project completion

END OF SECTION

SECTION 07 41 13

METAL ROOF PANELS

PART 1 GENERAL

1.1 Section Includes

- A. Roll-formed metal roof panels and related flashing/trim, sealant, and other accessories to provide complete roofing systems.

1.2 Related Sections

- A. Section 076200: Sheet Metal Flashing and Trimming

1.3 References

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic design only.

- B. American Society of Civil Engineers (ASCE)

- 1. ASCE 7 Minimum Design Loads for Buildings and Other Structures.

- C. ASTM International (ASTM)

- 1. ASTM A792/A792M Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
 - 2. ASTM A924/A924M Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
 - 3. ASTM D2247 Testing Water Resistance of Coatings in 100% Relative Humidity
 - 4. ASTM D2794 Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
 - 5. ASTM D610 Evaluating Degree of Rusting on Painted Steel Surfaces
 - 6. ASTM D968 Abrasion Resistance of Organic Coatings by Falling Abrasive

1.4 Preinstallation Meetings

- A. After approval of submittals and before performing roofing system installation work, hold a pre-roofing conference to review the following:

- 1. Drawings, specifications, and submittals related to the roof work.
 - 2. Submit, as a minimum; sample profiles of roofing panels, with factory-applied color finish samples, flashing and accessories, typical fasteners and pressure sensitive tape, sample gaskets and sealant/insulating compounds. Also include manufacturer's installation manual.
 - 3. Roof system installation;
 - 4. Procedure for the roof manufacturer's technical representative's onsite inspection and acceptance of the roofing substrate, the name of the manufacturer's technical representatives, the frequency of the onsite visits, distribution of copies of the inspection reports from the manufacturer's technical representative;

5. Contractor's plan for coordination of the work of the various trades involved in providing the roofing system and other components secured to the roofing; and
6. Quality control plan for the roof system installation;
7. Safety requirements.

1.5 Submittals

A. Shop Drawings

1. Roofing Panels
2. Flashing and Accessories

B. Product Data: Submit manufacturer's catalog data for the following items:

1. Roof Panels
2. Factory-Applied Color Finish
3. Accessories
4. Fasteners
5. Underlayment
6. Gaskets and Sealing/Insulating Compounds

C. Samples

1. Roof Panels
2. Factory-applied Color Finish, Samples

D. Manufacturer's Instructions

1. Installation Manual

E. Closeout Submittals

1. Warranties

1.6 Quality Assurance

- A. Qualification of Manufacturer: Submit documentation verifying metal roof panel manufacturer has been in the business of manufacturing metal roof panels for a period of not less than 25 years.
- B. Manufacturer's Quality Assurance Program: Submit documentation verifying metal roof panel manufacturer manages an internal quality assurance program designed to produce and deliver product in full and on time, in 95% of deliveries over a 12-month average.
- C. Manufacturer's Technical Representative: The manufacturer's technical representative must be thoroughly familiar with the products to be installed, installation requirements and practices, and with any special considerations in the geographical area of the project. The representative must perform field inspections and attend meetings as specified herein.

- D. **Manufacturer's Commitment to Safety:** The manufacturer shall have an OSHA Total Recordable Injury Rate of 2.95 or less over a rolling 13-month average.
- E. **Single Source:** Roofing panels, fasteners, clips, closures, and other accessories must be standard products supplied by the manufacturer, and the most recent design of the manufacturer to operate as a complete system for the intended use.
- F. **Qualification of Installer:** Metal roof system installer must be licensed in the state or municipality where the project will take place, and shall be factory trained by the manufacturer. Installer shall have a minimum of three years' experience installing the specified roof system. Supply the names, locations and client contact information of 5 projects of similar size and scope constructed by applicator using the manufacturer's roofing products submitted for this project within the previous three years.
- G. All trim shall be manufactured in a facility owned and operated by the manufacturer of the roofing system.

1.7 Delivery, Storage, and Handling

- A. Deliver, store, and handle panel materials, bulk roofing products, accessories, and other manufactured items in a manner to prevent damage and deformation, as recommended by the manufacturer, and as specified.
- B. **Delivery:** Package and deliver materials to the site in undamaged condition. Provide adequate packaging to protect materials during shipment. Do not uncrate materials until ready for use, except for inspection. Immediately upon arrival of materials at jobsite, inspect materials for damage, deformation, dampness, and staining. Remove affected materials from the site and immediately replace. Remove moisture from wet materials not otherwise affected, restack and protect from further moisture exposure.
- C. **Handling:** Handle materials in a manner to avoid damage. Select and operate material handling equipment so as not to damage materials or applied roofing.
- D. **Storage:** Stack materials stored on site on platforms or pallets, and cover with tarpaulins or other weathertight covering which prevents trapping of water or condensation under the covering. Store roof panels so that water which may have accumulated during transit or storage will drain off. Do not store panels in contact with materials that might cause staining. Secure coverings and stored items to protect from wind displacement.
- E. Manufacturer must have a manufacturing facility within 400 miles of job location.
- F. All roofing materials shall be delivered on trucks owned and operated by the manufacturer of the roof system.

1.8 Conformance and Compatibility

- A. The entire metal roofing and flashing system must be in accordance with specified and indicated requirements, including wind requirements. Work not specifically addressed and any deviation from specified requirements must be in general accordance with recommendations of the MBMA RSDM, NRCA, the metal panel manufacturer's published

recommendations and details, and compatible with surrounding components and construction. Submit any deviation from specified or indicated requirements to the project manager for approval prior to installation.

PART 2 PRODUCTS

2.1 Manufacturer

A. Basis of Design Manufacturer: Gulf Coast Supply and Manufacturing, LLC; Newberry, FL. Tel: 888-393-0335 | Email: info@gulfcoastsupply.com | Web: www.gulfcoastsupply.com

1. 032 aluminum 5V Crimp with 7/16" tall seam. 24" coverage.

2.2 Performance Requirements

A. Material:

1. Steel panels and accessory components must conform to the following standard(s): ASTM A792 and ASTM A924
2. Aluminum panels and accessory components must conform to the following standard(s): ASTM B209.

B. Wind Uplift

1. Provide metal roof panel system tested according to UL 580. Uplift force due to wind action governs the design for panels. Roof system and attachments must resist the wind loads as determined by ASCE 7, in pounds per square foot.

C. Impact Resistance

1. Provide UL Class 4 metal roof panel system tested according to UL 2218.

D. Fire Testing

1. Provide a Class A metal roof panel system tested according to UL 790.

2.3 Metal Roof Panel Accessories

Accessories must be compatible with the metal roof panels. Sheet metal flashing, trim, metal closure strips, caps, and similar metal accessories must be not less than the minimum thicknesses specified for roof panels. Provide exposed metal accessories to match the panels furnished [except as otherwise indicated]. Molded foam rib, ridge and other closure strips must be closed-cell or solid-cell synthetic rubber or neoprene pre-molded to match configuration of the panels and not absorb or retain water. Pre-manufactured accessories must be manufacturer's standard for intended purpose, compatible with the metal roof system and approved for use by the metal roof panel manufacturer. Support all rooftop equipment/penetrations with curbs designed to structurally support the intended use. Construct curbs to match roof slope.

A. Fasteners:

1. Exposed Fasteners: Fasteners for roof panels must be corrosion resistant 304 stainless steel, compatible with the sheet panel or flashing material and of the type and size recommended by the manufacturer to meet the performance requirements and design loads. Fasteners for accessories must be the manufacturer's standard. Provide an integral metal washer, matching the color of attached material with compressible sealing EPDM gasket.
2. Screws: Provide corrosion resistant screws, stainless steel of the type and size recommended by the manufacturer to meet the performance requirements.
3. Rivets: Provide blind rivets, corrosion resistant 304 stainless steel, and color matched. Seat rivets in polyether sealant where watertight connections are required.

B. Sealants: Basis of Design Titebond WeatherMaster Metal Roof Sealant

1. Sealants shall be a polyether containing a minimum solid content of 99 percent of the total volume.
2. Shall be tested in accordance with ASTM C920 Type S, Grade NS, Class 50, Use NT, T, G, A and O.
3. Sealant shall have an additive within it that allows it to stick to PVDF coated metal without applying a primer.
4. Field Applied Sealants: Color to match panel color.
5. Tape Sealants: Provide pressure sensitive, 100 percent solid tape sealant with a release paper backing; permanently elastic, non-sagging, non-toxic and non-staining as approved by the roof panel manufacturer.

C. Sheet Metal Flashing and Trim: All flashing shall be manufactured by the roof system manufacturer. Obtain and verify field measurements for accurate fit prior to shop fabrication. Fabricate flashing and trim without excessive oil canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

D. Underlayment: Provide self-adhering modified underlayment material in compliance with ASTM D1970/D1970M, suitable for use as underlayment for metal roofing, 60 mils thick. Use membrane resistant to cyclical elevated temperatures for extended period of time in high heat service conditions. Provide membrane with integral non-tacking top surface of polyethylene film or other surface material to serve as separator between bituminous material and metal products to be applied above.

E. Gaskets: Gaskets and sealing/insulating compounds must be nonabsorptive and suitable for insulating contact points of incompatible materials. Sealing/insulating compounds must be non-running after drying.

F. Finish Repair Materials: Repair paint for color finish enameled roofing must be compatible paint of the same formula and color as the specified finish furnished by the manufacturer. Only use repair and touch-up paint supplied by the roof panel manufacturer and is compatible with the specified system.

2.4 Fabrication

A. Fabricate and finish metal roof panels and accessories on a factory stationary roll former to the greatest extent possible, per manufacturer's standard procedures and processes, and as necessary to fulfill indicated performance requirements. Comply with indicated profiles, dimensional and structural requirements.

2.5 Finishes

- A. Finish quality and application processes must conform to the related standards specified within this section. Noticeable variations within the same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize any contrasting variations.
- B. All panels are to receive a factory applied polyvinylidene fluoride/Kynar (PVDF) finish consisting of a baked topcoat with a manufacturer's recommended prime coat conforming to the following:
 - 1. Manufacturer: Akzo Nobel
 - 2. Color: The exterior finish chosen from the manufacturer's standard color chart.
 - 3. Physical Properties: Coating must conform to the industry and manufacturer's standard performance criteria as listed by the following certified test reports:
 - a. Finish shall contain 70% PVDF
 - b. Abrasion: ASTM D968
 - c. Adhesion: ASTM D3359
 - d. Chemical Pollution: ASTM D1308
 - e. Flame Spread: ASTM E84
 - f. Flexibility: ASTM D522
 - g. Formability: ASTM D522
 - h. Specular Gloss: ASTM D523
 - i. Humidity: ASTM D2247
 - j. Pencil Hardness: ASTM D3363
 - k. Reverse Impact: ASTM D2794
 - l. Salt Spray: ASTM B117
 - m. Weatherometer: ASTM G152, ASTM G153 and ASTM D822 or ASTM D3361, ASTM D4587, and ASTM G23

PART 3 EXECUTION

3.1 Examination

- A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of the work. Ensure surfaces are suitable, dry and free of defects and projections which might affect the installation.
- B. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural support members for panels and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer, UL, ASTM, and ASCE 7.
- C. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking; and that installation is within flatness tolerances required by metal roof panel manufacturer, or total variation less than $\pm 1/2$ " from line of true slope in 10'.
- D. Examine rough-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of panels prior to installation.

- E. Submit a written report to the project manager listing conditions detrimental to the performance of the work. Proceed with installation only after defects have been corrected or the impacts identified have been accepted in writing.

3.2 Metal Panel Installation

- A. Installation must meet specified requirements and be in accordance with the manufacturer's installation instructions and approved shop drawings. Do not install damaged materials. Dissimilar materials which are not compatible when contacting each other must be insulated by means of gaskets or sealing/insulating compounds. Keep all exposed surfaces and edges clean and free from sealant, metal cuttings, hazardous burrs, and other foreign material. Remove stained, discolored, or damaged materials from the site.

- B. Preparation:

- 1. Clean all substrate substances which may be harmful to roof panels including removing projections capable of interfering with roof panel attachment.
 - 2. Install sub-purlins, eave angles, furring, decking, and other miscellaneous roof panel support members and anchorage according to manufacturer's written instructions, the project design, and applicable codes.

- C. Underlayment:

- 1. Install Polystick MTS underlayment according Polyglass USA's written recommendations, the roof panel manufacturer's written recommendations and recommendation in NRCA "The NRCA Roofing and Waterproofing Manual".
 - 2. Show the extent and location of the appropriate underlayment on the drawings. The underlayment must ensure that any water penetrating below the roof panels will drain outside of the building envelope.
 - 3. Install self-adhering sheet underlayment; wrinkle free on roof deck. Comply with temperature installation restrictions of manufacturer where applicable. Install at locations indicated on project drawings, lapped in a direction to shed water. Lap sides not less than 4 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Cover underlayment within 30 days.

- D. Metal Panel Installation

- 1. Provide metal roof panels of full length from eave to ridge or eave to wall as indicated, unless otherwise indicated or restricted by shipping limitations. Anchor metal roof panels or other components of the Work securely in place, with provisions for thermal and structural movement in accordance with NRCA 0420. Use approved fasteners and clips as required by section 2.3.
 - 2. Metal Protection: Where dissimilar metals contact each other or possibly corrosive substrates, protect against galvanic action by applying rubberized asphalt underlayment to each contact surface.
 - 3. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and required for weatherproof performance of metal roof panel system. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal roof panel manufacturer.
 - 4. Handling and Erection

- a. Erect roofing system in accordance with the approved erection drawings, printed instructions and safety precautions of the manufacturer.
 - b. Do not subject panels to overloading, abuse, or undue impact. Do not apply bent, chipped, or defective panels. Damaged panels must be replaced and removed from the site at the contractor's expense. Erect panels true, plumb, and in exact alignment with the horizontal and vertical edges of the building, securely anchored, and with indicated rake, eave, and curb overhang. Allow for thermal movement of the roofing, movement of the building structure, and provide permanent freedom from noise due to wind pressure.
 - c. Do not permit storage, walking, wheeling or trucking directly on applied roofing materials. Provide temporary walkways, runways, and platforms of smooth clean boards or planks as necessary to avoid damage to the installed roofing materials, and to distribute weight to conform to the indicated live load limits of the roof construction.
 - d. Roof panels must be laid with corrugations in the direction of the roof slope. End laps of exterior roofing must not be less than 12 inches; side laps of standard exterior corrugated panels must not be less than 2-1/2 corrugations (or one rib for Gulf Rib or GulfPBR panels)
 - e. Field cutting of metal roof panels by torch or abrasive blades is not permitted. Field cut only as recommended by manufacturer's written instructions.
5. Closure Strips
- a. Install closure strips at open ends of metal ridge rolls; open ends of corrugated or ribbed pattern roofs, and at intersection of wall and roof, unless open ends are concealed with formed eave flashing; rake of metal roof unless open end has a formed flashing member; and in other required areas.
 - b. Install closure strips at intersection of the wall with metal roofing; top and bottom of metal siding; heads of wall openings; and in other required locations.
6. Workmanship
- a. Make lines, arises, and angles sharp and true. Free exposed surfaces from any visible wave, warp, buckle and tool marks. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.
 - b. Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections which might affect the application. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of SMACNA. Provide sheet metal flashing in the angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and as necessary to make the work watertight.

3.3 Accessory Installation

- A. Fastener Installation: Anchor metal roof panels and other components of the Work securely in place, using approved fasteners according to manufacturer's written instructions.
- B. Flashing, Trim, and Closure Installation
 - 1. Comply with performance requirements, manufacturer's written installation instructions, and SMACNA. Provide concealed fasteners where possible. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently water tight and weather resistant. Work is to be accomplished to form weather tight construction without waves, warps, buckles, fastening stresses or distortion, and to allow for expansion and contraction. Cutting, fitting, drilling, and other operations in connection with sheet metal required to accomplish the work must conform to the manufacturers written instructions.

2. Install exposed metal flashing at building corners, rakes, eaves, junctions between metal siding and roofing, valleys and changes off slope or direction in metal roofing, building expansion joints and gutters.
3. Exposed metal flashing must be the same material, color, and finish as the specified metal roofing panels. Lap ends of flashing minimum of 4" and seal with approved joint sealant. Box out ends of flashing where required and provide rivets at corners and as required to create a stable and weathertight system.
4. Fasten flashing at not more than 12 inches on center for roofs, except where flashing is held in place by the same screws used to secure panels. Exposed flashing and flashing subject to rain penetration must be bedded in specified joint sealant. Flashing which is contact with dissimilar metals must be isolated by means of the specified asphalt mastic material to prevent electrolytic deterioration.

3.4 Field Quality Control

A. Acceptance Provisions

1. Erection Tolerances: Erect metal roofing straight and true with plumb vertical lines correctly lapped and secured in accordance with the manufacturer's written instructions. Variation in coverage ("stretching" or "compressing" the panel width) not to exceed $\pm 1/16$ " per panel and accumulated variation not to exceed $\pm 1:500$ (2.4" in 100'). Total combined deviation from true due to fanning/dogleg shall not exceed panel length divided by 500 ($\pm L/500$).

B. Leakage Tests

1. Finished application of metal roofing is to be subject to inspection and test for leakage by the Project Manager or designated representative, and Architect/Engineer.
2. Inspection and testing is to be made promptly after erection to permit correction of defects and removal/replacement of defective materials.

C. Repairs to Finish

1. Scratches, abrasions, and minor surface defects of finish may be repaired with the specified repair materials and as recommended by the metal roof panel manufacturer. Repaired metal surfaces that are not acceptable to the project requirements are to be immediately removed and replaced with new material.

3.5 Cleaning and Protection

- A. Clean exposed sheet metal work at completion of installation. Remove metal shavings, filings, nails, bolts, and wires from roofs. Remove grease and oil films, excess sealants, handling marks, contamination from steel wool, fittings and drilling debris and scrub the work clean. Exposed metal surfaces must be free of dents, creases, waves, scratch marks, solder or weld marks, and damage to the finish coating. Touch up scratches in panel finish with manufacturer supplied touch-up paint system to match panel finish.
- B. Collect all scrap/waste materials and place in containers. Promptly dispose of demolished and scrap materials.

END OF SECTION

07 41 13

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

[SEE SECTION 07 41 13 – METAL ROOF PANELS]

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.01 Description of Work

- A. Installation of all Best Management Practices as shown in the project plans must be in place and inspected by the Owner or Owner's representative prior to initiating site clearing activities.
- B. Tree clearing should not be required. Wetland impacts must be kept minimal. The extent of site clearing shall be limited to clearing those trees and brush necessary to provide access to the construction site. All trees, which will not interfere with construction, shall be protected from damage. Cost to protect trees, shrubs and etc. is incidental to the project cost. No trees shall be removed without consent of Owner. Site clearing work includes, but is not limited to, the following:
 - 1. Protection of Existing Trees
 - 2. Removal of trees and other vegetation.
 - 3. Muck.
 - 4. Asphalt and other pavement surfaces
 - 5. Onsite Structures
 - 6. Other types of obstructions (direct or indirect) with the construction of the project. This does not limit to only conflicts shown on the plans.

1.02 Job Conditions:

- A. The Contractor shall provide protection of existing improvements:
 - 1. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - 2. Protect improvements on adjoining properties and on the Owner's property.
 - 3. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

1.03 Protection of Existing Trees and Vegetation:

- A. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip lines, excess foot or vehicular traffic, or parking of vehicles within drip line.
- B. Provide temporary guards to protect trees and vegetation to be left standing as shown in the Contract Plans.

- C. Water trees and other vegetation to remain within the limits of the Contract work as required maintaining their health during the course of construction operations.
- D. Provide protection for roots over ½-inch diameter cut during construction operations. Coat the cut faces with emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

PART 3 SITE CLEARING

3.01 General

- A. The Contractor shall remove vegetation, improvements, or obstructions interfering with installation of new construction. Removal of any trees must be granted in writing by the Owner in advance.
- B. The Contractor shall carefully, and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.
- C. Refer to the Best Management Practices Plan in the Plan Set for more detailed instructions.

3.02 Removal of Improvements

- A. The Contractor shall remove above-grade and below-grade improvements necessary to permit construction, and other work as indicated.

3.03 Disposal of Waste Materials

- A. Burning on Owner's Property: Burning is not permitted on the Owner's property
- B. Removal from Owner's Property: The Contractor shall remove waste materials and unsuitable and excess topsoil from the Owner's property and dispose of legally.
- C. All items removed from the project site are the property of the Owner. If the Owner chooses not to exercise their right of ownership for any or all items, the Contractor will be responsible for removing the item(s) from the project site and disposing of it in accordance with all applicable local, State and federal regulations at the expense of the Contractor.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

PART 1 GENERAL

1.0 Scope

- A. This Section includes excavation for structures, removal and disposal of excavated materials, backfilling, backfill materials and compaction.

1.1 Basis of Measurement and Payment

- A. Work under this section shall be considered as incidental to construction and no additional payment shall be made for the work or materials specified herein.

1.2 Submittals

- A. The Contractor shall provide the Engineer with 2 certified copies of the test results of the compaction of the backfill as specified herein. The testing for compaction and the certification of the test results shall be performed by a testing laboratory approved by the Engineer.

PART 3 EXECUTION

3.1 Excavation

- A. Excavation shall include the excavating and disposing of all materials encountered, regardless of nature, the supporting and protecting of all structures and/or utilities encountered above and below the ground surface, and the removal of water from the construction site. Excavation shall also include the removal of existing structures, as shown on the Plans or as directed by the Engineer.
- B. The Contractor shall keep the limits of his excavation operations within a reasonable close conformity with the location and grade of each structure.
- C. The excavated materials shall be temporarily stored in a manner that will not cause damage to trees, shrubs, fences, improvements, utilities, private property or traffic. The excavated materials shall not be placed at such locations that will endanger the banks of the excavation by imposing loads thereon.
- D. Excavated material, determined by the Engineer as suitable for backfill may be used. All excess materials shall be disposed by the Contractor, at his expense.
- E. All unsound material underlying proposed structures shall be removed and replaced with material approved by the Engineer, or in layers not exceeding 6 inches in depth. Each layer shall be compacted to 98 percent density per AASHTO T-180 unless indicated otherwise on the Plans, or within these specifications.

3.2 Sheeting, Shoring and Bracing

- A. The Contractor shall furnish, place and maintain at all times such sheeting, shoring and bracing of the excavated area as may be required for safety of the workmen and for protection of the new Work or adjacent structures, including pavement, curbs, sidewalks, pipelines and conduits next to, or crossing the excavated area, and for the protection and safety of pedestrian and vehicular traffic.
- B. Sheeting, shoring and bracing shall conform to current federal or state regulations for safety.
- C. The furnishing, placing, maintaining and removing of sheeting, shoring and bracing materials shall be at the Contractor's expense.
- D. The Contractor shall not remove the sheeting, shoring or bracing until the structure has obtained sufficient strength to support the external loads. The sheeting, shoring and bracing material shall not come in contact with the structure, but shall be installed so that no concentrated loads or horizontal thrusts are transmitted to the structure.

3.3 Backfill

- A. Backfill material shall be placed only after the new Work and backfill material have been inspected by the Engineer.
- B. Backfill shall not be placed against any portion of the new Work until the required curing, surface finishing and waterproofing of such portions have been completed. Backfill, which will place an unequalized horizontal loading on the new Work shall not be placed until the concrete has attained at least 70 percent of its design strength. To equalize horizontal loadings, the required backfill around the new Work shall be placed on opposite sides at the same time.
- C. Granular material shall be used for backfilling the new Work unless otherwise indicated on the Plans or within these specifications.
- D. All spaces excavated and not occupied by the new Work or by the specified backfill material, shall be backfilled with suitable material from the excavation.
- E. Large stones, boulders, broken rocks, concrete, and masonry shall not be used in the backfill.
- F. The backfill shall be carried up to the surface of the adjacent ground or to the elevation of the proposed earth grade, and its top surface shall be neatly graded. Fills around all new Work shall be trimmed to the lines shown on the Plans or as directed by the Engineer.

3.4 Compacting Backfill

- A. All backfill behind and around the new Work shall be placed in layers, not more than 9 inches in depth, and shall be compacted to not less than 98 percent density per AASHTO T-180.
- B. Areas where the density does not affect the construction, as determined by the Engineer, shall be compacted to not less than 90 percent density per AASHTO T-180.

3.5 Cleanup

- A. Immediately following the placing and compacting of the backfill, the excess material shall be removed and disposed of by the Contractor, at his expense.
- B. The construction area shall be graded and left in a neat, workmanlike condition.

3.6 Testing

- A. During the course of the Work, the Engineer may require testing for compaction or density on each lift of the backfill below structures at a minimum of 3 per structure. A representative of the Engineer shall perform the taking of samples and the testing required. The cost for testing and sampling shall be at the expense of the Owner. Costs associated with any re-testing required will be at the expense of the Contractor.

3.7 Defective Work

- A. Any portion of the backfill which is deficient in the specified density shall be corrected by the methods meeting the approval of the Engineer. Any extra testing or sampling required because of apparent deficiencies shall be at the Contractor's expense

END OF SECTION

SECTION 31 25 00

EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.01 Section Includes

Designing, providing, maintaining, removing temporary erosion and sedimentation controls.

1.02 Related Sections

- A. Section 31 23 00 – Excavation and Fill

1.03 References

- A. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction and Roadway and Traffic Design Standards, latest editions:
 - 1. Section No. 104 – Prevention, Control, and Abatement of Erosion and Water Pollution

1.04 Owner's Instructions / Sequencing

- A. Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, trenching, borrow and embankment operations. Owner also has authority to direct Contractor to provide immediate permanent or temporary erosion and sediment control measures.
- B. Contractor shall respond to erosion and sediment control maintenance requirements or implement additional measures to control erosion ordered by Owner or governing authorities within 48 hours or sooner if required at no additional cost to the Owner.
- C. Contractor will be required to incorporate permanent erosion control features into project at earliest practical time to minimize need for temporary controls.

PART 2 PRODUCTS

2.01 Erosion Control

- A. Seeding and Mulching
- B. Sodding
- C. Hydro-seeding

2.02 Sedimentation Control

- A. Silt Fence

B. Hay Bales

PART 3 EXECUTION

3.01 Erosion Control

- A. Maintain temporary erosion control systems as directed by Owner or governing authorities to control erosion and siltation during life of contract.
- B. Permanently grass cut slopes as excavation proceeds to extent considered desirable and practical.
- C. Grass all disturbed areas within 7 days of initial disturbance. Temporary grassing can be seed and mulch at all other locations unless otherwise indicated in the drawings or specifications.
- D. Dirt roads are to be stabilized and compacted within 7 days of the completion of trenching and grading activities.

3.02 Sedimentation Control

- A. Install prior to construction.
- B. Inspect every two weeks during construction.
- C. Remove any sediment build-up.
- D. Repair and reinstall any damaged or missing sediment control measures. Install additional measures if inspection reveals additional sedimentation control is necessary.

END OF SECTION

SECTION 31 62 19

TIMBER PILES

PART 1 GENERAL

1.01 Scope

- A. The work specified in this Section consists of the replacement and installation of timber piles in accordance with these specifications and in conformity with the lines, grades, dimensions, and notes shown on the plans.

PART 2 PRODUCTS

2.01 Material

A. Timber

1. Timber piles shall be southern pine with the minimum nominal design values per American Wood Council's National Design Specifications.
2. Timber piles shall be 10 inches in diameter, measured at 5 feet from the butt-end or as indicated on the plans.

2.02 Wood Treatment: SEE SECTION 06 05 73 – WOOD TREATMENT

PART 3 EXECUTION

3.01 Installation

- A. All timber piles shall have UV resistant high-density polyethylene pile wrap (black) 36" wide and 0.06" thick with 6" minimum overlap as indicated on the plans. Top of the wrap shall be at the bottom of the lowest horizontal member. The bottom of the wrap shall be 2 feet minimum below mud line. Wrap shall be fastened with 2" SS (304 Marine Grade) ring shank roofing nails at 2 inch on-center vertical seam.
- B. When pre-drilling piles, permanent and test piles may be predrilled up to 10 feet or 20% of the embedment length. For the 10" piles called for on this project, the predrilled hole shall not exceed the pile diameter. If obstructions or rock is encountered, the predrilled hole shall not exceed a diameter of 12" through the obstruction. Clean sand shall be backfilled where obstructions must be drilled through. (FDOT 455-5.1.1)
- C. Piles shall have embedment to practical refusal as defined in as 20 blows per inch or less than one inch penetration, with the hammer operating at the highest setting determined by the engineer and less than ¼ inches rebound per blow then pile shall be cut to required height.
- D. All bolts, fasteners, brackets, and straps shall be 304 stainless steel unless noted otherwise. Bolt end shall extend pass the galvanized nut by a minimum of three (3) threads.

3.02 Testing

- A. Field testing shall be at the contractor's expense. In addition, all retesting shall be done at the contractor's expense.
- B. Test piles shall be completed within the area of the structure's foundation.
- C. The test pile shall match the indicated type and shall be installed using suitable methods associated with the piling type.
- D. Test piles shall incorporate appropriate monitoring devices to measure parameters such as load, displacement, and soil pressures during pile driving or loading tests.
- E. Load tests, including static load, dynamic load, and pile integrity tests, are required to evaluate pile capacity and performance.
- F. Prepare a comprehensive report documenting test pile installation, instrumentation setup, load test procedures, and results. Present findings to the engineer of record for review and approval before installing additional pilings.

END OF SECTION

SECTION 35 51 13

FLOATING PIERS

PART 1 GENERAL

The work covered under this section shall consist of manufacturing and/or supplying of the prefabricated fixed piers, floating docks, gangways, pile guides, fendering, utility routing/anchorage system and other marine hardware and accessories as may be shown or enumerated on the plans. All materials shall be as manufactured by Gator Dock & Marine, LLC, Sanford, Florida, (407) 323-0190 or engineer approved equal.

The deck and frame structural components of the floating docks and gangways shall be designed with minimum safety factors on working stress which conform to those set forth in the latest issue of the Aluminum Association "SPECIFICATIONS FOR ALUMINUM STRUCTURES" for buildings and similar type structures.

Technical

The following requirements are a minimum and must be met by each dock fabricator in accordance with the requirements of the section entitled GENERAL.

Materials

Frame

1.1.1. Aluminum extrusions for dock, pier, and gangway structures shall be aluminum alloy 6061-T6 "E" channels extruded in accordance with the requirements of applicable sections of Federal Specifications QQ-A-200. Miscellaneous aluminum may be 6063-T5 or 5052-H32.

1.2.1.1. Not Used.

1.2.1.2. Not Used.

1.2.1.3. Polystyrene floats shall consist of seamless rotationally molded polyethylene casings with an integrated mounting flange minimum 1" thick. Polyethylene shell shall have a nominal wall thickness shall be 0.15". Casings shall contain ultraviolet light inhibitors. Individual flotation modules shall conform to the following requirements: ASTM D1238, D1505, D1693, D746, D648, D638, D790, C303, & C272.

Accessories

Decking

1.3.1.1. Decking shall be TanDeck by Tangent Technologies, LLC or approved equivalent. Color shall be selected by Owner.

1.3.1.2. Not Used.

1.3.1.3. Not Used.

1.3.1.4. Not Used.

1.3.2. Not Used.

1.3.3. All hardware shall be stainless steel type 304.

Fenders

1.3.4.1. Side fenders shall be synthetic lumber 2" x 10". Color to match decking.

1.3.4.2. When specified by the owner, vinyl bumpers shall be of non-marring marine grade extruded vinyl with minimum 3" vertical face. Standard white vinyl bumper shall be UV stabilized and non-yellowing.

Rollers

1.3.5. Rollers for either pile guides or gangways shall be UHMW polyethylene with black ultra-violet light inhibitor added.

Handrails

1.3.6. Handrails on gangways and piers when specified shall be 6061-T6 aluminum alloy, minimum 1" NPS. When required, additional grab rails, toe curbs, and fishing rails shall be in accordance with applicable sections of the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.

Design

Frame

2.1. For fixed piers, gangways, and the structural frame design of floating docks, the aluminum frame and decking shall be designed to withstand the full calculated dead load of all framing & accessories combined with a live load of 50 pounds per square foot. Allowable deflection shall be $L/180$ where "L" in inches is the free span between supports for fixed piers & gangways, or the free span between cross members for floating docks.

Flotation

2.2. All floating docks shall be designed for a minimum freeboard of 8 inches under full dead plus live load, and 10 inches under a dead load plus concentrated load of 400 pounds applied at any location on the dock walking surface. Additional flotation shall be added to support the gangway dead loads without creating undue distortion in the dock.

2.2.1. Not Used.

2.2.2. Poly floats shall be designed for a minimum of 20psf live load providing a minimum of 16" unloaded freeboard.

Submittals

The following items shall be required with the contractor's shop drawing submittals:

1. Dimensional layout of piers, docks, gangways and piles or anchorage systems to be furnished under this contract.
2. Engineering calculations showing compliance with the design criteria specified herein. All calculations will be stamped with the seal of a qualified licensed, professional engineer. Computations shall include as a minimum the following.
 - Compliance with combined live and dead load requirements considering both bending and deflection.
 - Compliance with freeboard requirements under normal load conditions.
3. Typical sections or details of the following:
 - Floating docks, including flotation.
 - Finger dock or pier, including connection to main walkway.
 - Gangways, including connections to fixed pier, handrails and handicap ramps.
 - Anchorage system.
 - Decking material and connection details.
 - Bull rail.
 - Aluminum grab bars.

Accessories

2.3.1. Not Used.

2.3.2. Handrails shall be a minimum of 42 inches in height above the finished walking surface and shall withstand a uniform horizontal load of 20 pounds per linear foot applied at the top of the rail.

2.3.3. Hinged or bolted floating dock module connectors shall be able to withstand a load of 3000 pounds applied to the full connector.

2.3.4. Anchoring devices for floating docks shall allow free movement of the dock, while minimizing damage due to normal dock movement caused by tides, boat wakes, water fluctuation and seasonal winds. Anchoring devices shall be of sufficient number to restrain a uniform lateral force of 150 pounds per linear foot applied along the entire length of the dock.

2.3.5. Not Used.

Fabrication

Frame

3.1.1. All aluminum structural members shall be welded in accordance with the American Welding Society Structural Welding Code D1.2.

3.1.2. Individual dock and pier sections shall be sequentially numbered, matched, and pre-drilled in the shop prior to shipment.

Flotation

3.2. Flotation: All flotation shall be fully installed in the shop. Selected floats may be removed to facilitate shipping.

3.2.1. Not Used.

3.2.2. Not Used.

3.2.3. Poly floats shall be through-bolted with a minimum of four bolts per float. Screws or lag-screws shall be prohibited.

Accessories

3.3.1. TanDeck decking shall be spaced with not more than 3/8 inch air space between the slats. Asymmetric/interlocking decking slats shall be prohibited to prevent water pooling on dock surface. The legs of each decking slat shall be welded to the side members and to any longitudinal with a minimum of 1-1/4 inches of weld per leg. The decking slats shall be placed transversely on the gangway, pier or dock.

3.3.2. Not Used.

3.3.3. Not Used.

3.3.4. Not Used.

3.3.5. Where wood fendering is used the minimum size member shall be 2 x 8, secured at minimum spacing of 4' on center with 3/8" type 304 stainless steel bolts countersunk below the wearing surface of the exposed side.

3.3.6. Handrails shall be installed in locations shown in the plans. Handrails shall be secured in place with two 3/8" type 304 stainless steel bolts through the extruded handrail pockets welded to the side rail if a detachable type handrail system is used. Handrails will be welded to the side rails if a truss type system is requested. The type of handrail system shall be the option of the engineer.

3.3.7. Hinge mount extrusions shall be welded to the frame of the dock with a continuous fillet weld unless otherwise shown on the plans. Non-hinged dock module connectors shall be shown on the plans.

3.3.8. Anchoring devices, including pile guides, shall be bolted or welded to the piers and docks in locations and according to the details shown in the plans. Framing shall be braced at pile guides.

Installation

4.1. Docks and piers shall be anchored with pile guides or other anchoring devices bolted to the aluminum frame. Floating docks must move freely during the entire cycle of water level extremes with the normal expected wind condition. Utility lines must not be installed on top of the deck or in a location subject to damage during normal use and must be installed to function properly during normal expected water level and weather extremes.

4.2. Gangways shall be securely fastened to the wall or fixed structure as shown on plans. Utilities running on the gangway shall be installed so as not to interfere with the access area of the gangway or to be damaged during normal operation.

4.3. Not Used.

4.4. Any potentially corrosive installation of dissimilar metals shall be properly insulated to minimize or eliminate corrosion in a marine environment.

END OF SECTION