PROJECT MANUAL
including Specifications
for the installation of

Re-Roofing Beach Pavilion
Goddard State Park
Warwick, Rhode Island

For The
State of Rhode Island
Department of Environmental Management
Division of Planning and Development

235 Promenade Street
Providence, Rhode Island

Date of Issue:
February 2019

COVER PAGE
00001-1

SECTION 00002
PROJECT DIRECTORY

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SECTION 00005
TABLE OF CONTENTS

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS:

00001 Cover Page
00002 Project Directory
00005 Table of Contents
00310 Bid Proposal Form
00500 Contract Agreement
00700 AIA Document A201, *General Conditions of the Contract for Construction*

DIVISION 1 - GENERAL REQUIREMENTS:

01010 Summary of the Work
01015 Contractor's use of the Premises
01050 Field Engineering
01152 Applications for Payment
01153 Change Order Procedure
01200 Project Meetings
01201 Preconstruction Conference
01340 Submittals and Substitutions
01370 Schedule of Values
01500 Temporary Facilities and Controls
01640 Product Handling
01700 Project Closeout
01710 Cleaning

DIVISION 2 – MINOR DEMOLITION:

02060 Building Demolition
02070 Selective Demolition

DIVISION 3 through 4

Not in Contract

DIVISION 5 - METALS:

Included in Division 7

DIVISION 6 - WOOD:

06010 Lumber
06100 Rough Carpentry
06200 Finish Carpentry

DIVISION 7 – ROOFING SYSTEM:

07312 Asphalt Shingles
07600 Flashing and Sheet Metal

DIVISION 8 through 16

Not in Contract

SECTION 01010
SUMMARY OF THE WORK

PART 1 - GENERAL:

1.1 PROJECT INTENT:

A. Existing roof shall be stripped and recovered with approved roofing materials secured to the building in accordance with the project specifications, manufacturer's instructions, and all applicable building codes.

B. Roof covering shall serve to protect the building from moisture penetration and be aesthetically pleasing.

C. The Work shall be started and completed in a timely manner using experienced installers.

1.2 WORK INCLUDED:

A. The "Project," of which the "Work" of this Contract is a part, is titled Re-Roofing Beach Pavilion at Goddard State Park, Warwick, RI.

B. The Contractor shall furnish all labor, services, materials, equipment, machinery, apparatus, appliances, tools and supplies necessary to perform all work required for the completion of each item of the Work and as herein specified, which shall include but not be limited to:
1. removal of existing roofing materials and de-nail to roof deck,
2. installation of all asphalt shingle roofs,
3. installation of ice and water shields and flashing,
4. re-nailing with stainless steel nails,
5. replacement of boards with cdx plywood of like thickness,
6. removal of all debris, including the old roofing, and <u>hazardous</u> <u>lead</u> coated flashing from the premises to an approved facility.
7. Install temporary roofing and flashing as necessary to maintain a watertight condition throughout the course of the Work.

C. The Contractor shall maintain the site in a clean and safe condition for the duration of the work and shall provide all necessary barriers to ensure safe conditions.
1. All pedestrian areas shall be well protected and maintained accessible at all times.
2. No pedestrian areas shall be closed at any time from Memorial Day through Labor Day to facilitate the work.
3. Contractor shall remove all existing shingles prior to installation of new roof.
4. Contractor shall furnish a container for the proper disposal of all demolition materials, shall clean up, at least daily, all refuse, rubbish, scrap and surplus material and debris and shall remove the debris container from site to be disposed of properly at Contractor's expense at an approved facility. The Contractor owns all waste.
5. The Contractor shall recycle metal and wood materials to the maximum extent practical. Contractor owns all recyclables.
6. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.

D. Structure included in the Work:
1. Approximate area of 9000 SF; combination roof with kicked eaves and multiple roof penetrations.

********** **END OF SECTION** **********

SECTION 01015
CONTRACTOR'S USE OF THE PREMISES

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: this section applies to situations in which the contractor or their representatives including, but not limited to, suppliers, subcontractors, employees, and field engineers, enter upon the Owner's property.

B. Related work: Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE:

A. Promptly upon award of the contract, notify all pertinent personnel regarding requirements of this section.

B. Require that all personnel who will enter upon the Owner's property certify their awareness of and familiarity with the requirements of this section.

1.3 SUBMITTALS:

A. Maintain an accurate record of the names and identification of all persons entering upon the Owner's property in connection with the Work of this Contract, including times of entering and times of leaving, and submit a copy of the record to the Owner daily.

1.4 TRANSPORTATION FACILITIES:

A. Truck, equipment and contractor's vehicle access:
   1. Provide adequate protection for curbs and sidewalks, and septic systems, and parking areas over which trucks and equipment pass to reach the job site.
   2. Do not permit contractor's vehicles to park in any area of the Owner's property except where the Owner has designated as the "Contractor's Parking Area".

**********END OF SECTION**********

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:
   1. Establishing and maintaining lines and levels;
   2. Structural design of shores, forms, and similar items provided by the Contractor as part of their means and methods of construction.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Additional requirements for field engineering also may be described in other Sections of these specifications.

1.2 QUALITY ASSURANCE:

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

1.3 SUBMITTALS:

A. Comply with pertinent provisions of Section 01340, Submittals and Substitutions.

B. Upon request of the Engineer, submit:
   1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
   2. Documentation verifying accuracy of field engineering work.
   3. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or non-conformance with requirements of the Contract Documents.

1.4 PROCEDURES:

A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
   1. Locate and protect control points before starting work on the site.
   2. Preserve permanent reference points during progress of the work.
   3. Do not change or relocate reference points or items of the Work without specific approval from the Engineer.
   4. Promptly advise the Engineer when a reference point is lost or destroyed or requires relocation because of other changes in the Work.
      a. Upon direction of the Engineer, require the field engineer to replace reference stakes or markers.
      b. Locate such replacements according to the original survey control.

********** END OF SECTION **********

SECTION 01152
APPLICATION FOR PAYMENT

PART 1 - GENERAL:

1.1 SCHEDULE OF VALUES:

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

B. Correlate line items in the Schedule of Values with other schedules and forms, including:
   1. Application for Payment form.

C. Submit the Schedule of Values to the Architect/Engineer at the earliest date, but no later than seven (7) days before the date scheduled for submittal of the initial Application for Payment.

D. The Schedule of Values is subject to approval of the Engineer and DEM.

1.2 FORM AND CONTENT:

A. Use the Project Manual Table of Contents as a guide to establish the format.
   1. Identification: Include the following:
      a. Project name and location;
      b. Name of the Engineer;
      c. Project Number;
      d. Contractor's name and address;
      e. Date of submittal.

B. Arrange the Schedule in tabular form with columns to indicate the following for each item:
   1. Generic name;
   2. Related Specification Section;
   3. Change Orders (No.) that have affected value;
   4. Dollar value.

C. Break Contract Sum down in enough detail to facilitate evaluation of Applications for Payment. Break subcontract amounts down into several line items. Round amounts off to the nearest dollar; the total shall equal the Contract Sum.

D. For each item where an Application for Payment includes products purchased or fabricated and stored, but not installed, provide separate line items for initial cost, each subsequent stage of completion, and installed value.

E. Each item in the Schedule of Values and Application for Payment shall be complete including total cost and share of overhead and profit.
   1. Temporary facilities and items are not direct cost of Work-in-place may be shown as separate line items or distributed as general overhead expense.

F. Update and resubmit the schedule when Change Orders or Construction Change Directives change the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT:

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

B. Payment Application Times: Payment dates are indicated in the Agreement. The period covered by each application is the period indicated.

C. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for the application.

D. Application Preparation: Complete every entry, including notarization and execution by person authorized to sign on behalf of the Owner. Incomplete applications will be returned without action.
   1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.
   2. Include amounts of approved Change Orders and Construction Change Directives issued prior to the last day of the period covered by the application.
   3. The Contractor is to review Payment items and draft Payment Request with Owner's on-site observer and the Engineer's field representative before forwarding to the Engineer.

E. Transmittal: Submit 6 executed copies of each application to the Engineer within twenty-four (24) hours; one copy shall be complete, including waivers of lien and similar attachments.

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

F. Waivers of Lien: With each application, submit waivers of lien from each entity who may file a lien arising out of the Contract, and related to the Work covered by the payment.
   1. Submit partial waivers on each item for amount requested, prior to deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. Waiver Delays: Submit each application with Contractor's waiver of lien for the period covered by the application.
   4. Submit final Application for Payment with final waivers from every entity involved with performance of Work covered by the application who could be entitled to a lien.
   5. Waiver Forms: Submit lien releases on forms provided by Owner.

7. With each application, submit a copy of certified payroll records for the period covered by the Application for Payment.

1.4 INITIAL APPLICATION FOR PAYMENT:

A. Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include:
   1. List of subcontractors;
   2. List of suppliers and fabricators;
   3. Schedule of Values;
   4. Contractor's Construction Schedule (preliminary if not final);
   5. List of Contractor's staff assignments;
   6. Copies of building permits;
   7. Copies of licenses from governing authorities;
   8. Certificates of insurance and insurance policies;
   9. Performance and payment bonds (if required).

1.5 APPLICATION FOR PAYMENT AT SUBSTANTIAL COMPLETION:

A. Following issuance of the Certificate of Substantial Completion, submit an Application for Payment. Administrative actions and submittals that precede or coincide with this application include:
   1. Occupancy permits;

2. Warranties and maintenance agreements;
3. Test/adjust/balance records;
4. Maintenance instructions;
5. Change-over information related to Owner's occupancy;
6. Final cleaning;
7. Application for reduction of retainage, and consent of surety.

1.6 FINAL PAYMENT APPLICATION:

A. Administrative actions and submittals which must precede or coincide with submittal of the final payment application include:
1. Completion of Project closeout requirements;
2. Completion of items specified for completion after Substantial Completion;
3. Transmittal of required Project construction records to the Owner;
4. Proof that taxes, fees and similar obligations have been paid.

********** **END OF SECTION** **********

SECTION 01153
CHANGE ORDER PROCEDURE

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Make such changes in the Work, in the Contract Sum, in the Contract Time of Completion, or any combination thereof, as are described in written Change Order signed by the Owner and the Engineer, and issued after execution of the Contract, in accordance with the provisions of this Section.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Changes in the Work are described further in Article 7 of the General Conditions.

1.2 QUALITY ASSURANCE:

A. Include within the Contractor's quality assurance program such measures as are needed to assure familiarity of the Contractor's staff and employees with these procedures for processing Change Order data.

1.3 SUBMITTALS:

A. Make submittals directly to the Engineer at the address shown on the Project Directory in the Project Manual.

B. Submit the number of copies called for under the various items listed in this Section.

1.4 PRODUCT HANDLING:

A. Maintain a "Register of Bulletins and Change Orders" at the job site, accurately reflecting current status of all pertinent data.

B. Make the Register available to the Engineer for review at his request.

1.5 PROCESSING CHANGES INITIATED BY THE OWNER:

A. Should the Owner contemplate making a change in the Work or a change in the Contract Time of Completion, the Architect/Engineer will issue a "Bulletin" to the Contractor.
   1. Bulletins will be dated and will be numbered in sequence.
   2. The Bulletin will describe the contemplated change, and will carry one of the following instructions to the Contractor:
      a. Make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion;
      b. Make the described change in the Work, credit or cost for which will be determined in accordance with Paragraph 7.3.3 of the General Conditions;
      c. Promptly advise the Engineer as to credit or cost proposed for the described change. This is not an authorization to proceed with the change.

B. If the Contractor has been directed by the Engineer to make the described change in the Work at no change in the Contract Sum and no change in the Contract Time of Completion, but the Contractor wishes to make a claim for one or both of such changes, the Contractor shall proceed with the change

and shall notify the Architect/Engineer, as provided for under Paragraph 7.3.6 of the General Conditions.

C. If the Contractor has been directed by the Engineer to make the described change subject to later determination of cost or credit in accordance with Paragraph 7.3.3 of the General Conditions, the Contractor shall:
   1. Take measures as needed to make the change;
   2. Consult with the Engineer and reach an agreement on the most appropriate method for determining credit or cost for the change.

D. If the Contractor has been directed by the Engineer to promptly advise her/him as to credit or cost proposed for the described change, the Contractor shall:
   1. Analyze the described change and its impact on costs and time;
   2. Secure the required information and forward it to the Engineer for review;
   3. Meet with the Engineer as required to explain costs and, when appropriate, determine other acceptable ways to achieve the desired objective;
   4. Alert pertinent personnel and subcontractors as to the impending change and, to the maximum extent possible, avoid such work as would increase the Owner's cost for making the change, advising the Engineer in writing when such avoidance no longer is practicable.

1.6 PROCESSING CHANGES INITIATED BY THE CONTRACTOR:

A. Should the Contractor discover a discrepancy among the Contract Documents, a concealed condition or other cause for suggesting a change in the Work, a change in the Contract Sum, or a change in the Contract Time of Completion, they shall notify the Engineer as required by pertinent provisions of the Contract Documents.

B. Upon agreement by the Engineer that there is reasonable cause to consider the Contractor's proposed change, the Engineer will issue a Bulletin in accordance with the provisions described in Article 1.5 above.

1.7 PROCESSING BULLETINS:

A. Make written reply to the Engineer in response to each Bulletin.
   1. State proposed change in the Contract Sum, if any.
   2. State proposed change in the Contract Time of Completion, if any.
   3. Clearly describe other changes in the Work required by the proposed change, or desirable therewith, if any.
   4. Include full backup data such as subcontractor's letter of proposal or similar information.
   5. submit this response in single copy.

B. When cost or credit for the change has been agreed upon by the Owner and the Contractor, or the Owner has directed that cost or credit be determined in accordance with provisions of Paragraph 7.3.3 of the General Conditions, the Engineer will issue a **"Change Order"** to the Contractor.

1.8 PROCESSING CHANGE ORDERS:

A. Change Orders will be dated and will be numbered in sequence.

B. The Change Order will describe the change or changes, will refer to the Bulletin or Bulletins involved, and will be signed by the Owner and the Engineer.

C. Provide the Owner with six signed copies of the Change Order.

D. Should the Contractor disagree with the stipulated change in Contract Sum or change in Contract Time of Completion, or both:

1. The Contractor promptly shall return three (3) copies of the Change Order, unsigned by him/her, to the Engineer with a letter signed by the Contractor and stating the reason or reasons for the Contractor's disagreement.
2. The Contractor's disagreement with the Change Order shall not in any way relieve the Contractor of their responsibility to proceed with the change as ordered and to seek settlement of the dispute under pertinent provisions of the Contract Documents.

********** **END OF SECTION** **********

SECTION 01200
PROJECT MEETINGS

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: To enable orderly review during progress of the Work, and to provide for systemic discussion of problems, the Engineer will conduct project meetings throughout the construction period.

B. Related Work:

1. Documents affecting work of this section include, but not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of project meetings content.

1.2 QUALITY ASSURANCE:

A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the project meetings.

1.3 SUBMITTALS:

A. Agenda items: To the maximum extent practicable, advise the Engineer at least twenty-four (24) hours in advance of project meetings regarding items to be added to the agenda.

B. Minutes:

1. The Contractor will compile minutes of each project meeting and will furnish three copies to the Engineer and required copies to the Owner.
2. Recipients of copies may make and distribute such other copies as they wish.

PART 2 - PRODUCTS:

(No products are required in this Section)

PART 3 - EXECUTION:

3.1 PROJECT MEETINGS:

A. Attendance:

1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.

2. The Owner's Representative and the Engineer's Representative shall also be in attendance at these meetings.

3. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.

B. Minimum agenda:

1. Review, revise as necessary, and approve minutes of previous meetings.
2. Review progress of the Work since last meeting, including status of submittals for approval. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule.
3. Identify problems which impede planned progress.
4. Develop corrective measures and procedures to regain planned schedule.
5. Complete other current business.

C. Revisions to minutes:

1. Unless published minutes are challenged in writing prior to the next regularly scheduled project meeting, they will be accepted as properly stating the activities and decisions of the meeting.
2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.

********** **END OF SECTION** **********

SECTION 01201
PRECONSTRUCTION CONFERENCE

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: To help clarify construction contract administration procedures, the Engineer shall conduct a Preconstruction Conference prior to start of the Work. Provide attendance by the designated personnel

B. Related work:
   1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE:

A. For those persons designated by the Contractor, his subcontractors, and suppliers to; attend the Preconstruction Conference, provide required authority to commit the entities they represent of solutions agreed upon in the Conference.

1.3 SUBMITTALS:

A. To the maximum extent practicable, advise the Engineer at least 24 hours in advance of the conference as to items to be added to the agenda.

B. The Engineer shall compile minutes of the Conference and will furnish three copies of the minutes to the Contractor and required copies to the Owner. The Contractor shall make and distribute such other copies as the Contractor wishes.

1.4 PRECONSTRUCTION CONFERENCE:

A. The Conference shall be scheduled to be held within 15 working days after the Owner has issued the Notice to Proceed, but prior to actual start of the Work.

B. Attendance:
   1. Provide attendance by authorized representatives of the Contractor and major subcontractors.
   2. The Engineer shall advise other interested parities, including the Owner, and request their attendance

C. Minimum agenda: Data shall be distributed and discussed on:
   1. Organizational arrangement of the Contractor's forces and personnel, and those of subcontractors, materials suppliers, and the Engineer;
   2. Channels and procedures for communication;
   3. Construction schedule, including sequence of critical work;
   4. Contract Documents, including distribution of required copies of Drawings and revisions;
   5. Processing of Shop Drawings and other data submitted to the Engineer for review;
   6. Processing of field decisions and Change Orders;
   7. Rules and regulations governing performance of the Work; and
   8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.

**************END OF SECTION**************

SECTION 01340
SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related Work:
   1. Documents affecting work of this section include, but not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.

C. Work not included:
   1. Unrequited submittals will not be reviewed by the Engineer.
   2. The Contractor may require her/his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and her/his subcontractors and will not be reviewed by the Engineer.

1.2 QUALITY ASSURANCE:

A. Coordination of submittals:
   1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
   2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
   3. By affixing the Contractor's signature to each submittal, certify that her/his coordination has been performed.

B. Substitutions:
   1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when listed at time of bidding, on the form provided therefore in the bidding documents, and when substantiated by the Contractor's submittal of required data within thirty-five (35) calendar days after award of the Contract.
   2. The following products do not require further approval except for interface within the Work:
      a. Products specified be reference to standard specifications such as ASTM and similar standards.
      b. Products specified by manufacturer's name and catalog model number.
   3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Engineer.

C. "Or equal":
   1. Where the phrase "or equal," or "or equal as approved by the Engineer," occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Engineer.
   2. The decision of the Engineer shall be final.

1.3 SUBMITTALS:

A. Make submittals of Shop Drawings, Samples, substitution requests, and other items in accordance with the provisions of this Section.

PART 2 - PRODUCTS:

2.1 SHOP DRAWINGS:

A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.

B. Types of prints required:
   1. Submit Shop Drawings in the form of three (3) blackline prints of each sheet.
   2. Blueprints will not be acceptable.

C. Review comments of the Engineer will be shown on the Shop Drawing when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for her/his purposes.

2.2 MANUFACTURERS' LITERATURE:

A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.

B. Submit the number of copies which are required to be returned, plus one copy which will be retained by the Engineer.

2.3 SAMPLES:

A. provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.

B. Number of Samples required:
   1. Unless otherwise specified, submit Samples in the quantity which is required to be returned, plus one which will be retained by the Engineer.
   2. By prearrangement in specified cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Engineer.

PART 3 - EXECUTION:

3.1 IDENTIFICATION OF SUBMITTALS:

A. Consecutively number all submittals.
   1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
   2. On re submittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times. Make the submittal log available to the Engineer for her/his review upon request.

3.2 GROUPING OF SUBMITTALS:

A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
   1. Partial submittals may be rejected as not complying with the provisions of the Contract.
   2. The Contractor may be held liable for delays so occasioned.

3.3 TIMING OF SUBMITTALS:

A. Make submittals far enough in advance for scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re submittals, and for placing orders and securing delivery.

B. In scheduling, allow at least ten (10) working days for review by the Engineer following her/his receipt of the submittal.

3.4 ENGINEER'S REVIEW:

A. Review by the Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.

B Revisions:
   1. Make revisions required by the Engineer.
   2. If the Contractor considers any required revision to be a change, they shall so notify the Engineer. as provided for in Article 7 of the General Conditions.
   3. Make only those revisions directed or approved by the Engineer.

C. Reimbursement of Engineer's costs:
   1. In the event substitutions are proposed to the Engineer after the Contract has been awarded, the Engineer will record all time used by them and by their consultants in evaluation of each such proposed substitution.
   2. Whether or not the Engineer approves a proposed substitution, the Contractor promptly upon receipt of the Engineer's billing shall reimburse the Engineer at the rate of two and one-half times the direct cost to the Engineer and her/his consultants for all time spent by them in evaluating the proposed substitution.

********** **END OF SECTION** **********

SECTION 01370
SCHEDULE OF VALUES

1.1 DESCRIPTION:

A. Work included: Provide a detailed breakdown of the agreed contract sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.

B. Related work:
   1. Documents affecting work of the Section include, but are not necessarily limited to General Conditions, Supplementary Conditions, and Section in Division 1 of these Specifications.
   2. Schedule of values is required under Paragraph 9.2 of the General Conditions.
   3. Schedule of values is required to be compatible with the "continuation sheet" accompanying applications for payment, as described in Section 01152, Application for Payment.

1.2 QUALITY ASSURANCE:

A. Use required means to assure arithmetical accuracy of the sums described.

B. When so required by the Engineer, provide copies of the subcontracts or other data acceptable to the Engineer.

1.3 SUBMITTALS:

A. Prior to first application for payment, submit a proposed schedule of values to the Engineer.
   1. Meet with the Engineer and determine additional data, if any, required to be submitted.
   2. Secure the Engineer's approval of the schedule of values prior to submitting first application for payment.

********** END OF SECTION **********

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL:

1.1 RELATED DOCUMENTS:

The General Conditions (Special Provisions) and applicable portions of Division 1 of the specifications are a part of this section, which shall consist of all labor, equipment and materials necessary to complete all quality control work indicated on the drawings and herein specified.

1.2 ACCESS:

A. Do not block public access to the beach pavilion during the prosecution of the work.

B. Provide all necessary scaffolding, platforms, ladders, ramps, chutes, temporary stairs, and all other access items. Maintain in a safe condition throughout the construction process.

1.3 HOISTING FACILITIES:

A. Provide hoisting facilities as required for the vertical movement of all materials.

B. Comply with OSHA and other governing codes for all hoists, conveyors, and elevators and maintain the facilities in compliance with the law.

1.4 GUARDRAILS, DECK AND OTHER OPENINGS:

A. Provide guardrails, barricades, handrails, and covers for decks, and other openings.

1.5 TRASH:

A. Provide sufficient trash receptacles.

B. Collect and deposit debris in such collection facilities.

C. Remove all debris from the job site on a regular basis. Do not allow trash and debris to accumulate or remain on site for longer than 48 hours.

1.6 WEATHER PROTECTION AND TEMPORARY HEAT/VENTILATION:

A. During construction, provide weather protection.

1.7 OTHER TEMPORARY FACILITIES AND CONTROLS:

A. Protection of Work-In-Place:
1. Thoroughly protect all completed work and all stored materials.
2. Provide boards, cloths, planks, waterproof paper, canvas or other approved protection and use as necessary to prevent any damage.
3. Replace or rectify work or materials damaged by workers, by the elements or by any other cause, to the satisfaction of the Engineer and at no additional expense to the Owner.
4. Do not allow workers, including those of any subcontractor or supplier to mark finish surfaces with marking pens or other such devices which are not readily erasable.

B. Special Openings:

1. Early in the work, confer with all parties providing apparatus of various kinds. Should any be of a size and character than cannot properly be taken into the indicated position through openings shown, make necessary arrangements for the installation of such items in a manner satisfactory to those providing them and to the Owner. Make good any damage that may be caused thereby.

1.8 REMOVAL OF TEMPORARY FACILITIES:

A. Remove all items indicated above and other construction of a temporary nature from the site as soon as the progress of the work will permit.

B. Recondition the portions of the site so occupied and restore to conditions acceptable to the Engineer.

********** END OF SECTION **********

SECTION 01640
PRODUCT HANDLING

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Sections in Division 1 of these Specifications.
   2. Additional procedures also may be prescribed in other Sections of these Specifications.

1.2 QUALITY ASSURANCE:

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 MANUFACTURERS' RECOMMENDATIONS:

A. Except as otherwise approved by the Engineer, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

1.4 PACKAGING:

A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
   1. Maintain packaged materials with seals unbroken and labels intact until time of use.
   2. Promptly remove damaged material and unsuitable items for the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.

B. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to manufacturer, grade quality, and other pertinent information.

1.5 PROTECTION:

A. Protect finished surfaces, including jambs and soffits of openings used as passageways, through which equipment and materials are handled.

B. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.

C. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.6 REPAIRS AND REPLACEMENTS:

A. In the event of damage, promptly make replacements and repairs to the approval of the Engineer and at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the Contract Time of Completion.

********** END OF SECTION **********

SECTION 01700
PROJECT CLOSEOUT

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Provide an orderly and efficient transfer of the completed Work to the Owner.
B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. "Substantial Completion" is defined in Paragraph 9.8.1 of the General Conditions.

1.2 QUALITY ASSURANCE:

A. Prior to requesting inspection by the Engineer, use adequate means to assure that the Work is completed in accordance with the specified requirements and is ready for the requested inspection.

1.3 PROCEDURES:

A. Substantial Completion:
   1. Prepare and submit the list required by the first sentence for Paragraph 9.8.2 of the General Conditions.
   2. Within a reasonable time after receipt of the list, the Engineer will inspect or determine status of completion.
   3. Should the Engineer determine that the Work is not substantially complete:
      a. The Engineer promptly will so notify the Contractor, in writing, giving the reasons therefore.
      b. Remedy the deficiencies and notify the Engineer when ready for reinspection.
      c. The Engineer will reinspect the Work.
   4. When the Engineer concurs that the Work is substantially complete: a. The Engineer will prepare a "Certificate of Substantial Completion" on AIA form G704, accompanied by the Contractor's list of items to be completed or corrected, as verified by the Engineer.
      b. The Engineer will submit the Certificate to the Owner and to the Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

B. Final Completion:
   1. Prepare and submit the notice required by the first sentence of Paragraph 9.10.1 of the General Conditions.
   2. Verify that the Work is complete including, but not necessarily limited to, the items mentioned in Paragraph 9.10.2 of the General Conditions.
   3. Certify that:
      a. Contract Documents have been reviewed;
      b. Work has been inspected for compliance with the Contract Documents;
      c. Work has been completed in accordance with the Contract Documents;
      d. Equipment and systems have been tested as required, and are operational;
      e. Work is completed and ready for final inspection.
   4. The Engineer will make an inspection to verify status of completion.
   5. Should the Engineer determine that the Work is incomplete or defective:
      a. The Engineer promptly will so notify the Contractor, in writing, listing the incomplete or defective work.
      b. Remedy the deficiencies promptly and notify the Engineer when ready for reinspection.
   6. When the Engineer determines that the Work is acceptable under the Contract Documents, she/he will request the Contractor to make closeout submittals.

C. Closeout submittals include, but are not necessarily limited to:
   1. Operation and maintenance data for items so listed in pertinent other Sections of these Specifications, and for other items when so directed by the Engineer;
   2. Warranties and bonds;
   3. Keys and keying schedule;
   4. Spare parts and materials extra stock.
   5. Evidence of compliance with requirements of governmental agencies having jurisdiction including, but not necessarily limited to:
      a. Certificates of Inspection;
      b. Certificates of Occupancy;
   6. Certificates of Insurance for products and completed operations;
   7. Evidence of payment and release of liens;
   8. List of subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.

D. Final adjustment of accounts:
   1. Submit a final statement of accounting to the Engineer, showing all adjustments to the Contract Sum.
   2. If so required, the Engineer will prepare a final Change Order showing adjustments to the Contract Sum which were not made previously by Change Orders.

1.4 INSTRUCTION:

A. Instruct the Owner's personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of the Work.

********** **END OF SECTION** **********

SECTION 01710
CLEANING

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. In addition to standards described in this Section, comply with requirements for cleaning as described in pertinent other Section of these Specifications.

1.2 QUALITY ASSURANCE:

A. Conduct daily inspection, and more often if necessary, to verify that requirements for cleanliness are being meet.

B. In addition to the standards described in this Section, comply with pertinent requirements agencies having jurisdiction.

PART 2 - PRODUCTS:

2.1 CLEANING MATERIALS AND EQUIPMENT:

A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY:

A. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 - EXECUTION:

3.1 PROGRESS CLEANING:

A. General:
   1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or damage, and providing required protection of materials.
   2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
   3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.

   4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

B. Site:

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site. Restack, tidy, or otherwise service arrangements to meet the requirements of subparagraph 3.1.A-1 above.
3. Maintain the site in a neat and orderly condition at all times.

C. Structures:

1. Weekly, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep interior spaces clean.
   a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by sue of reasonable effort and a hand-held broom.
3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.
4. Follow the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.
   a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect/Engineer, may be injurious to the finish floor material.

3.2 FINAL CLEANING:

A. "Clean," for the purposed of this Article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.

C. Site:

1. Unless otherwise specifically directed by the Architect/Engineer, broom clean paved areas on the site and public paved areas adjacent to the site.
2. Completely remove resultant debris.

D. Structures:

1. Exterior:
   a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.
   b. Remove all traces of splashed materials from adjacent surfaces.
   c. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.
   d. In the event of stubborn stains not removable with water, the Architect/Engineer may require light sandblasting or other cleaning at no additional cost to the Owner.
2. Interior:
   a. Visually inspect interior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.

b. Remove all traces of splashed materials from adjacent surfaces.

c. Remove paint droppings, spots, stains, and dirt from finished surfaces.

3. Glass: Clean inside and outside.

4. Polished surfaces: To surfaces requiring routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished.

E. Schedule final cleaning as approved by the Architect/Engineer to enable the Owner to accept a completely clean Work.

3.3 CLEANING DURING OWNER'S OCCUPANCY:

A. Should the Owner occupy the Work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning shall be as determined by the Architect/Engineer in accordance with the General Conditions of the Contract.

**************END OF SECTION**************

SECTION 02060
BUILDING DEMOLITION

All demolition shall be considered selective and covered by this contract under Section 02070, Selective Demolition.

**************END OF SECTION**************

SECTION 02070
SELECTIVE DEMOLITION

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Carefully demolish or remove from the site those items scheduled to be so demolished and removed. Reinstall removed items as shown on the plans.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE:

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

1.3 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01640, Product Handling.

PART 2 - PRODUCTS:

(NO PRODUCTS ARE REQUIRED IN THIS SECTION)

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 DEMOLITION:

A. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.
B. In company with the Engineer, visit the site and verify the extent and location of selective demolition required.

   1. Carefully identify limits of selective demolition.
   2. Mark interface surfaces as required to enable workmen also to identify items to be removed and items to be left in place intact.

C. Prepare and follow an organized plan for demolition and removal of items.

   1. Shut off, cap, and otherwise protect existing public utility lines in accordance with the requirements of the public agency or utility having jurisdiction.
   2. Completely remove items scheduled to be so demolished and removed, leaving surfaces clean, solid, and ready to receive new materials specified elsewhere.

3. In all activities, comply with pertinent regulations of governmental agencies having jurisdiction.

D. Demolished material shall be considered to be property of the Contractor and shall be completely removed from the job site.

E. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

3.3 REPLACEMENTS:

A. In the event of demolition of items not so scheduled to be demolished, promptly replace such items to the approval of the Engineer and at no additional cost to the Owner.

**************END OF SECTION**************

SECTION 06010
LUMBER

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Provide wood, nails, bolts, screws, framing anchors and other rough hardware, and other items required for rough and finish carpentry as shown on the Drawings, as specified herein, and needed for a complete and proper installation.

B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Section 06100 Rough Carpentry; Section 07312 Asphalt Shingles.

1.2 QUALITY ASSURANCE:

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

B. Codes and standards:
1. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Engineer comply with:
   a. "Product Use Manual" of the Western Wood products Association for selection and use of products included in that manual;
   b. "Plywood Specification and Grade Guide" of the American Plywood Association;
   c. "Standard Specifications for Grades of California Redwood Lumber" of the Redwood Inspection Bureau for Redwood, when used.

1.3 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01640, Product Handling.

B. Protection:
1. Deliver the materials to the job site and store, in a safe area, out of the way of traffic, and shored up off the ground surface.
2. Identify framing lumber as to grades, and store each grade separately from other grades.
3. Protect metals with adequate waterproof outer wrapping.
4. Use extreme care in off-loading of lumber to prevent damage, splitting, and breaking of materials.

PART 2 - PRODUCTS:

2.1 GRADE STAMPS:

A. Identify framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau,

or such other grade stamp as is approved in advance by the Engineer.

B. Identify plywood as to species, grade, and glue type by the stamp of the American Plywood Association.

C. Identify other materials of this Section by the appropriate stamp of the agency approved in advance by the Engineer.

2.2 MATERIALS:

A. Provide materials in the quantities needed for the Work shown on the Drawings, and meeting or exceeding the following standards of quality:
   1. Plywood:
      a. Sheathing: CDX, exterior.
   2. Rough hardware:
      a. Steel items:
         (1) Comply with ASTM A7 or ASTM A36.
         (2) Use galvanized at exterior locations.
      b. Machine blots: Comply with ASTM A307.
      c. Lag bolts: Comply with Fed Spec FF-B-561.
      d. Nails:
         (1) Use common except as otherwise noted;
         (2) Comply with Fed Spec FF-N-1;
         (3) Use galvanized at exterior locations.

2.3 OTHER MATERIALS:

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to approval by the Engineer.

PART 3 - EXECUTION:

3.1 DELIVERIES:

A. Stockpile materials sufficiently in advance of need to assure their availability in a timely manner for this Work.

B. Make as many trips to the job site as are needed to deliver materials of this Section in a timely manner to ensure orderly progress of the Work.

3.2 COMPLIANCE:

A. Do not permit materials not complying with the provisions of this Section to be brought onto or to be stored at the job site.

B. Promptly remove non-complying materials from the job site and replace with materials meeting the requirements of this Section.

**************END OF SECTION**************

SECTION 06100
ROUGH CARPENTRY

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Install wood framing as indicated on the Drawings, as specified herein, and needed for a complete and proper installation.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Section 07312: Asphalt Shingles

1.2 QUALITY ASSURANCE:

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

1.3 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01640, Product Handling.

PART 2 - PRODUCTS:

(No products are required in this Section)

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 WORKMANSHIP:

A. Produce joints which are tight, true, and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.

B. Selection of lumber pieces:
   1. Carefully select the members.
   2. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing and will allow making of proper connections.
   3. Cut out and discard defects which render a piece unable to serve its intended function.
   4. Lumber may be rejected by the Engineer, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

3.3 INSTALLATION OF PLYWOOD SHEATHING:

A. Placement:
   1. Place plywood with face grain perpendicular to supports and continuously over at least two supports, except where otherwise shown on the Drawings.
   2. Center joints accurately over supports, unless otherwise shown on the Drawings.

B. Protect plywood from moisture by use of waterproof coverings until the plywood to turn has been covered with the next succeeding component or finish.

3.4 FASTENING:

A. Nailing:
   1. Use only common nails or spikes of the dimension shown on the Nailing Schedule, except where otherwise specifically noted on the Drawings.
   2. For conditions not covered in the Nailing Schedule provide penetration into the piece receiving the point of not less than ½ the length of the nail or spike, provided, however, that 16d nails may be used to connect two pieces of 2" (nominal) thickness.
   3. Nail without splitting wood.
   4. Prebore as required.
   5. Remove split members and replace with members complying with the specified requirements.

B. Bolting:
   1. Drill holes 1/16" larger in diameter than the bolts being used.
   2. Drill straight and true from one side only.
   3. Do not bear bolts threads on wood, but use washers under head and nut where both bear on wood, and use washers under all nuts.

C. Screws:
   1. For lag screw and wood screws, prebore holes same diameter as root of threads, enlarging holes to shank diameter for length of shank.
   2. Screw, do not drive, lag screws and wood screws.

3.5 NAILING SCHEDULE:

A. Unless otherwise directed by the Engineer, comply with Table 25-H of the Uniform Building Code, 1979 edition.

**************END OF SECTION**************

SECTION 06200
FINISH CARPENTRY

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Provide wood, nails, bolts, screws, and other items as needed, and perform finish carpentry as shown on the Drawings, as specified herein, and needed for a complete and proper installation.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, and Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE:

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

1.3 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01640, Product Handling.

PART 2 - PRODUCTS:

2.1 GRADE STAMPS:

A. Identify lumber by the grade stamp of the West Coast Lumber Inspection Bureau, or such other grade stamp as is approved in advance by the Engineer.

B. Identify plywood as to species, grade, and glue type by the stamp of the American Plywood Association.

2.2 MATERIALS:

A. Provide materials in the quantities needed for the Work shown on the Drawings, and meeting or exceeding the following standards:
   1. Molding, casing, finish board, and finishes at the exterior shall be Clear Heart Redwood, Architectural Grade, without fingerjointing or other defects.
   2. Exterior trim at the Structure shall match the existing and fully blend into the existing.
   3. All moldings, casings, boards, fillers, and other necessary items to complete the Work shall be provided by the Contractor.

2.3 OTHER MATERIALS:

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to approval by the Engineer.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 WORKMANSHIP:

A. Produce joints which are tight, true, and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.

B. Jointing:
   1. Make joints to conceal shrinkage; miter exterior joints; cope interior joints; miter or scarf end-to-end joints.
   2. Install trim in pieces as long as possible, jointing only where solid support is obtained.

C. Fastening:
   1. Install items straight, true, level, plumb, and firmly anchored in place.
   2. Where blocking or backing is required, coordinate as necessary with other trades to ensure placement of required backing and blocking in a timely manner.
   3. Nail trim with finish nails of proper dimension to hold the member firmly in place without splitting the wood.
   4. Nail exterior trim with galvanized nails, making joints to exclude water and setting in waterproof glue or sealant.
   5. On exposed work, set nails for putty.
   6. Screw, do not drive, wood screws; except that screws may be started by driving and then screwed home.

3.3 INSTALLATION OF OTHER ITEMS:

A. Install items in strict accordance with the Drawings and recommended methods of the manufacturer as approved by the Engineer, anchoring firmly into position at the prescribed locations, straight, plumb, and level.

3.4 FINISHING:

A. Sandpaper finished wood surfaces thoroughly as required to produce a uniformly smooth surface, always sanding in the direction of the grain; except do not sand wood which is designed to be left rough.

B. No coarse-grained sandpaper mark, hammer mark, or other imperfection will be accepted.

3.5 CLEANING UP:

A. Keep the premises in a neat, safe, and orderly condition at all times during execution of this portion of the Work, free from accumulation of sawdust, cut-ends, and debris.

B. Sweeping:
   1. At the end of each working day, and more often if necessary, thoroughly sweep surfaces where refuse from this portion of the Work has settled.
   2. Remove the refuge to the area of the job site set aside for its storage.
   3. Upon completion of this portion of the Work, thoroughly broom clean all surfaces.

**************END OF SECTION**************

SECTION 07312
ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY:

A. Provide asphalt shingles and associated roofing materials for roofing applications.

1.2 SUBMITTALS:

A. Submit for approval samples, product data, warranty, extra stock.

1.3 QUALITY ASSURANCE:

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for at least three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Pre-installation conference with manufacturer's representative.

1.4 WARRANTY:

A. Shingle Warranty: Manufacturer's 25-year warranty.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Asphalt Shingles:
   1. Manufacturers: CertainTeed or approved equal.
   2. Type: 3 tab, fiberglass strip shingles, CertainTeed XT25. Color to be selected by owner.
   3. Accessories: Hip and ridge shingles; underlayment felt, ASTMI 4869, Type I; rubberized asphalt perimeter underlayment; aluminum flashing and drip edge.

B. Underlayment:
   1. Asphalt-impregnated fiberglass-reinforced organic felt design for use on roof decks as a water-resistant layer beneath roofing shingles.
   2. Eaves, valley, and gable end protection: ASTM D 1970 sheet barrier of self-adhering rubberized asphalt membrane shingle underlayment having internal reinforcement; provide material with warranty equal in duration to that of shingles being applied.

C. Fasteners:
   1. Stainless steel, aluminum, or hot-dip galvanized roofing nails, as recommended by the manufacturer and in compliance with Rhode Island Building Code. Staples are not acceptable.

D. Flashing:

   1. Aluminum Sheet Flashing
   2. Bituminous Paint: Acid and alkali resistant type; black color.
   3. Tinner's Paint: Color to coordinate with single color.

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Install water protection sheet at valleys, ridges, and eaves.

C. Restore damaged components. Clean and protect work from damage.

**************END OF SECTION**************

SECTION 07600
FLASHING AND SHEET METAL

PART 1 - GENERAL:

1.1 DESCRIPTION:

A. Work included: Provide flashing and sheet metal not specifically described in other Sections of these Specifications but required to prevent penetration of water through the exterior shell of the building.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE:

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

B. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in current edition of "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

C. Standard commercial items may be used for flashing, trim, reglets, and similar provided such items meet or exceed the quality standards specified.

1.3 SUBMITTALS:

A. Comply with pertinent provisions of Section 01340, Submittals.

B. Product data: Within 45 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section;
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
   3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades;
   4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.4 PRODUCT HANDLING:

A. Comply with pertinent provisions of Section 01640, Product Handling.

PART 2 - PRODUCTS:

2.1 MATERIALS AND GAGES:

A. Where sheet metal is required, and no materials or gage is indicated on the Drawings, provide the highest quality and gage commensurate with the referenced standards.

2.2 TITANIUM ZINC FLASHING:

A. Provide electrolytic high-grade zinc (DIN 1706) with 99.995% Zn degree purity and allowing additives of 1% Copper and 1% Titanium as that manufactured by Rheinzink or approved equal.

B. Provide sheet metal of a standard brand.

2.3 NAILS, RIVETS, AND FASTENERS:

A. Use only compatible nails, screws, and/or washers.

B. Do not mix metals,

2.4 FLUX:

A. Where flux is required, Z-04-S is recommended.

2.5 SOLDER:

A. Where solder is required, use 40% tin and 60% lead.

2.6 SEALANT:

A. 100% pure silicone rubber with neutral cure, non-acid base. Color: dark grey of translucent.

2.7 OTHER MATERIALS:

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION:

3.1 SURFACE CONDITIONS:

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 WORKMANSHIP:

A. General:
   1. Form sheet metal accurately and to the dimensions and shapes required, finishing molded and broken surfaces with true, sharp, and straight lines and angles and, where intercepting other members, coping to an accurate fit and soldering securely.
   2. Unless otherwise specifically permitted by the Engineer, turn exposed edges

back ½".

B. Form, fabricate, and install sheet metal so as to adequately provide for expansion and contraction in the finished Work.

C. Weatherproofing:
1. Finish watertight and weathertight where so required.
2. Make lock seam work flat and true to line, sweating full of solder.
3. Make lock seams and lap seams, when soldered, at least ½" wide.
4. Where lap seams are not soldered, lap according to pitch, but in no case less than 3".
5. Make flat and lap seams in the direction of flow.

D. Joints:
1. Join parts with rivets or sheet metal screws where necessary for strength and stiffness.
2. Provide suitable watertight expansion joints for runs of more than 40'-0", except where closer spacing is indicated on the Drawings or required for proper installation.

E. Nailing:
1. Whenever possible, secure metal by means of clips or cleats, without nailing through the exterior metal.
2. In general, space nails, rivets, and screws not more than 8" apart and, where exposed to the weather, use lead washers.
3. For nailing into wood, use barbed roofing nails 1-1/4" long by 11 gage.
4. For nailing into concrete, use drilled plugholes and plugs.

3.3 EMBEDMENT:

A. Embed metal in connection with roofs in a solid bed of sealant, using materials and methods approved in advance by the Engineer.

3.4 SOLDERING:

A. General:
1. Thoroughly clean and tin the joint materials prior to soldering.
2. Perform soldering slowly, heat the seams thoroughly and completely fill them with solder.
3. Make exposed soldering on finished surfaces neat, full flowing, and smooth.

B. After soldering, thoroughly wash acid flux with a sods solution.

3.5 TESTS:

A. Upon request of the Engineer, demonstrate by hose or standing water that the flashing and sheet metal are completely watertight.

**************END OF SECTION**************