
IFB NO. Y16-715-CC

**INVITATION FOR BIDS
FOR
REGIONAL COMPUTING CENTER ROOF REPLACEMENT**

**PART H
TECHNICAL SPECIFICATIONS**

VOLUME II

**ADMINISTRATIVE PROVISIONS
SECTION 01005**

PART I GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work of this Contract comprises the replacement of existing roof systems, with related renovation and repair work at the **Orange County Regional Computer Center, 4300 John Young Parkway, Orlando, FL 32839**

1.02 CONTRACT METHOD

- A. Construct the work under a single lump sum contract (or as otherwise defined in bid documents).

1.03 COORDINATION

- A. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to and placing in service, such equipment. Differences shall be brought to the Owner's attention during bid process or remain the responsibility of the Contractor.
- C. Coordinate space requirements and installation of items, such as, but not limited to, electrical work which are indicated diagrammatically or otherwise on drawings. Follow routing shown for pipes, ducts and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.
- D. In finished areas (except as otherwise shown), conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Execute cutting and patching to integrate elements of work, uncover ill timed, defective and nonconforming work, provide openings for penetrations of existing surfaces and provide samples as specified in individual sections for testing. Seal penetrations of existing surfaces and provide samples as specified in individual sections for testing. Seal penetrations through floors, walls and ceilings, and fire safe where necessary as part of the lump sum price.

1.05 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

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- B. The date of the standard is that in effect when a specified date is specified.
- C. Obtain copies of referenced standards listed in individual specification sections.
Maintain copy at job site during progress of the specific work.

END OF SECTION 01005

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Project Description and Location
- B. Contractor Use of Premises
- C. Distribution of Related Documents
- D. Protection of Existing Building, Finishes, Furnishings and Equipment.
- E. Owner Occupancy and Access.
- F. Schedule
- G. Project Rain Day Form
- H. Interior Inspection Form
- I. Exterior Inspection Form
- J. Asbestos Free Material

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section

1.3 PROJECT DESCRIPTION AND LOCATION

- A. The Work of this Contract consists of roof replacement with associated repairs at the **Orange County Regional Computer Center, Orlando, FL**. The work will be constructed under a single lump sum contract.
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to work on this contract. The Owner intends to award a single prime base bid contract, titled "General Construction Contract," for Work to be performed for this Project. The Contractor shall comply with the requirements of the General Conditions and the Supplementary Conditions in accomplishing his Work on this Project.
- C. Base Bid General Construction Contract: Includes all general trades, roofing, flashing, and related mechanical and electrical items specified in the Project Specifications and Work shown on the Drawings
 - 1. The Contractor's Duties include:
 - a. Provide and pay for all labor, materials, equipment, and installation costs of items described within these documents. Provide and pay for all costs

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- associated for all necessary tools, construction equipment, and protection of Existing Work.
 - b. The Contractor shall be responsible for the demolition and proper disposal of existing items and materials relative to this Contract
 - c. Comply with all listed and applicable Codes, Standards and Specifications.
- D. The Contractor shall be responsible for the Work as specified herein and as indicated on the Drawings. Although the majority of the Drawings are "to scale," the Contractor is directed to field verify all dimensions and assumptions used for determining material quantities and requirements. No additional monies will be allowed to the Contractor for use of "scaling instruments" to determine material quantities, lack of adequate field investigation, or for other reasons.
- E. The scope of work for this contract and the related construction is perceived to include the following:

DESCRIPTION OF WORK – ROOF REPLACEMENT OF ORANGE COUNTY REGIONAL COMPUTER CENTER:

1. Existing Gutters and Downspouts to remain in place.
2. Remove existing lightning protection air terminals at penetrations and store for reinstallation. Abandon existing lightning protection system below structural deck.
3. Remove existing roof mounted antennas, the associated cables and support masts. Relocate and reinstall antennas to new support masts along wall with new bracket as indicated by the drawings. Coordinate with owner.
4. Remove existing metal panel roof down to existing underlayment and/or insulation, include all associated edge and gable metal, valley flashing and vent stack boots. (Remove existing underlayment if not adhered to rigid insulation).
5. Raise perimeter edge condition with new blocking as indicated and dry-in per details (Increase in R-value is required).
6. Mechanically fasten new 2" non-tapered polyisocyanurate rigid insulation over existing underlayment down to structural metal deck.
7. Install new gypsum coverboard and a self-adhering modified bitumen underlayment over the entire roof deck area.
8. Re-secure existing gutters in place replace missing fasteners. Clean and repair damage in components. Replace missing brackets and stormwater transition flashings as required.
9. Install new mill finished aluminum drip edge and radius gable flashing, area divider curb, valley metal flashing and other anchorage metals. "Strip-in" with a self-adhering modified bitumen flashing membrane per details.
10. Install another layer of a self-adhering modified bitumen underlayment over the entire roof deck area prior to installing new aluminum mechanically fastened mechanically seamed metal roof panels over the roof deck surface and underlayment as specified in this manual and defined by the roofing manufacturer's engineering for this project.
11. Install area divider coping cap, vent stack "boot" flashing and new lightning protection downlead curb penetrations per project details.
12. Install new lightning protection conduit to existing downleads at corners and fasten to

standing seams with cable clamps in accordance with specifications, details and UL requirements. Re-use existing air terminals on new clamps. Upon completion, system shall be inspected by a UL representative and a 'letter of findings' provided as certification that the system has been installed in accordance with applicable codes and regulations.

1.4 CONTRACTOR USE OF SITE AND PREMISES

- A. General: During the construction period, the Contractor shall coordinate with the Owner's schedule for construction operations, including use of the site. The Contractor's use of the premises is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of the project.
- B. General: Limited use of the premises to construction activities in areas indicated within the limit of the premises. The Contractor may use any portion of the site for storage or work areas or any legal purpose
 - 1. Confine operations to areas within Contract limits indicated on the Drawings. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 - 2. Keep driveways and entrances serving the premises clear and available to the Owner and the Owners' employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site
 - 3. Burial of Waste Materials: Do not dispose of organic and hazardous material on site, either by burial or by burning.
- C. Access to Site: Limited to agreed-upon staging areas and access routes.
- D. Emergency Building Exits During Construction: Maintain at all times.
- E. Time Restrictions for Performing Interior Work: To be coordinated with Owner as required.
- F. Utility Outages and Shutdown: Allowed only upon coordination with and notification of the Owner.
- G. Be responsible for items of work and material stored on premise.

1.5 DISTRIBUTION OF RELATED DOCUMENTS

- A. The Contractor is solely responsible for the distribution of ALL related documents/drawings to ALL appropriate vendors/subcontractors to ensure proper coordination of all aspects of the project and its related parts during bidding and construction.

1.6 PROTECTION OF EXISTING BUILDING, FINISHES, FURNISHINGS AND EQUIPMENT

- A. Comply with all requirements of Division 1 of these specifications in regards to protection and cleaning of the existing site, buildings, finishes, furnishings and equipment.

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- B. Prior to construction beginning at any interior location, the contractor shall coordinate with the owner sensitive areas that will require security clearance due to the nature of the buildings function.
- C. It is the contractor's responsibility to protect the existing construction and finishes from water intrusion during the course of this project.
- D. The contractor shall police and clean the interior and exterior areas of work of this project and discard all debris in the appropriate contractor provided waste receptacle / "dumpster" at the end of each work day. Comply with Division 1 of these specifications fully.

1.7 OWNER OCCUPANCY AND ACCESS

- A. The Owner will occupy the premises during the entire period of construction. Allow for the conduct of normal operations.
- B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.
- C. Schedule the Work to accommodate this requirement.
- D. Comply with established Owner Policies.
- E. Maintain "Good Housekeeping" on site as directed by Owner and Architect.
- F. Access for ongoing inspections to the premises and work underway by the Owner and Architect shall not be restricted.

1.8 SCHEDULE

- A. A progress schedule shall be made to include:
 - 1. A start date.
 - 2. A reasonable progression of work by Phase, Building, Task; i.e.
 - 3. A start and finish date for construction materials and components listed in Divisions 2 thru 16 as defined by Division 1 of these specifications.

1.9 PROJECT RAIN DAY FORM

- A. Maintain on a daily basis and submit with each Application for Payment, the Project Rain Day Form attached at the end of this section. Project Rain Day Form shall be signed by the Owner's Representative or Architect daily. See article 8.3 of the General Conditions for additional information regarding how delays due to weather are addressed.

1.10 INTERIOR INSPECTION FORM

- A. Prior to commencing work, the Contractor will schedule a meeting with the Owner's Representative or Architect, to inspect and document the condition of the building interior(s) in both written and digital video or photographic form. Log conditions of ceiling tiles, lights, walls and flooring materials using the Interior Inspection Form attached at the end of this

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section. Submit two copies of the digital files and the form signed by the Contractor and Owner's Representative to the Architect prior to the start of construction.

1.11 EXTERIOR INSPECTION FORM

- A. Prior to commencing work, the Contractor will schedule a meeting with the Owner's Representative or Architect, to inspect and document the condition of the building exterior conditions in both written and digital video or photographic form. Log conditions of exterior walls, building attachments, sidewalks, miscellaneous paving and landscaping using the Exterior Inspection Form attached at the end of this section. Submit two copies of the digital files and the form signed by the Contractor and Owner's Representative to the Architect prior to the start of construction.

PART 2 PRODUCTS

2.01 ASBESTOS FREE MATERIAL

- A. Contractor shall provide a written and notarized statement on company letterhead(s) to certify and warrant that ONLY ASBESTOS FREE MATERIALS AND PRODUCTS were provided during the execution of the project work. Such statement shall be submitted with the final payment request. Final payment shall not be made until such statement is submitted. Contractor agrees that if materials containing asbestos are subsequently discovered at any future time to have been included in the construction, the Contractor shall be liable for all costs related to the redesign or modification of the construction of the project so that materials containing asbestos are removed from the facility. If construction has begun or has been completed pursuant to a design that includes asbestos containing materials, the Contractor shall also be liable for all costs related to the abatement of such asbestos.

PART 3 PRODUCTS (Not Used)

END OF SECTION 01010

PROJECT RAIN DAY FORM

Month: _____

Project Name: _____

Project No: _____

Contractor: _____

Owner's Authorized Rep.: _____

DAY	MORNING COND./TIME	AFTERNOON COND./TIME	SUPERINTENDENT SIGNATURE	AUTH. OWNER'S REP. SIGNATURE
1				
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INTERIOR INSPECTION FORM

ROOM NO.	CEILING TILE CONDITION			LIGHT LENS STAINS	WALL CONDITION	CARPET CONDITION
	BROKEN	STAINED	CRACKED			

EXTERIOR INSPECTION FORM

ROOF AREA	SIDEWALK CONDITION			GRASS	SHRUBBERY CONDITIONS	MISC. CONDITIONS
	BROKEN	STAINED	CRACKED			

PAYMENT APPLICATION PROCEDURES
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PART I GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
- B. The Contractor's Construction Schedule and Submittal Schedule are included in Section 01300 – SUBMITTALS

1.03 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Submit the Schedule of Values to the Owner at the earliest feasible date, but in no case later than Preconstruction Meeting.
 - 2. Sub-Schedules: Where the Work is separated into phases that require separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.
 - 1. Identification: Include the following project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect
 - c. Project Number
 - d. Contractor's name and address
 - e. Date of submittal
 - 2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed.
 - a. Generic name
 - b. Related Specification Section
 - c. Change Orders (numbers) that have affected value
 - d. Dollar Value
 - e. Percentage of Contract Sum to the nearest one-hundredth

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percent, adjusted to total 100 percent

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items:
 - a. A value will be given for at least every major specification section (subsections can logically be grouped together).
 - b. A single material subcontractor (i.e. sod, window blinds) will not be required to be broken down into labor and material unless it is anticipated the materials will be stored and invoiced prior to installation.
 - c. All multiple item subcontracts or work items (i.e. concrete, roofing, painting, electrical items, etc.) will be shown broken down at least in labor and material (all taxes, burden and overhead and profit included).
 - d. Mobilization (move-on, bond, insurance, temporary office and sanitary service installation) shall not exceed 2.5 of contract price.
 - e. For multi-story work all items broken down per floor.
 - f. Concrete broken down at least into foundation slab on grade, columns, beams and suspended slabs.
 - g. Masonry divided into C.M.U. brick, stem walls, exterior walls, interior walls and elevator shaft.
 - h. Plumbing broken down at least into underslab rough-in, vents and stacks supply piping, equipment items (each listed separately), fixtures and trim.
 - k. Fire protection broken down at least into underground, rough-in and trim. All per building and labor and material.
 - l. Logical grouping of specification subsections is permitted.
4. Round amounts off the nearest whole dollar, the total shall equal the Contract Sum.
5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
6. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.
 - a. At the Contractors' option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.

PAYMENT APPLICATION PROCEDURES
SECTION 01027

7. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the contract sum.

1.04 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as reviewed by the Owner representative and paid for by the Owner.
 1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the Final Application for Payment involve additional requirements. See items "G" and "H" of this section.
- B. Payment Application Times: The period of construction work covered by each Application of Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use the County's most updated form as the form for Application for Payment. Form given at the Preconstruction Conference.
- D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
 1. Entries shall match data on the Schedule of Values and Contractors' Construction Schedule. Use updated schedules if revisions have been made.
 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit **five (5) original executed copies** of each Application for Payment to the Project Manager by means ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required.
 1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Project Manager.
- F. Payment will be processed once a month. Payment for item will be based on percentage completed as determined and approved by the County Project Manager or invoice for stored materials. Retainage (10%) will be held for all applications.
- G. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this

PAYMENT APPLICATION PROCEDURES
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application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work. Application shall also include all items listed in Part H. below.

- H. Final Payment Application: Administrative actions and submittals, which must precede or coincide with submittal of the final payment. Application for Payment includes the following:
1. Completion of Project Close-Out requirements
 2. Completion of items specified for completion after Substantial Completion (Punch List)
 3. Contractor's release of lien (on Owner's form)
 4. Subcontractor and material supplier release of lien (If Project is Not Bonded)
 5. Consent of Surety
 6. Power of attorney
 7. Asbestos-free letter

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01027

CONTRACT MODIFICATION PROCEDURES / CHANGE ORDERS
SECTION 01035

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Supplemental instructions authorizing minor changes in the work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Project Manager.

1.4 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Proposed changes in the work that will require adjustment to the Contract Sum or Contract Time will be issued by the Project Manager, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
 - 1. Proposal requests issued by the Project Manager are for information only. Do not consider them instruction either to stop work in progress, or to execute the proposed change.
 - 2. Unless otherwise indicated in the proposal request, within 7 days of receipt of the proposal request, submit to the Project Manager from the Owner's review, an estimate of cost necessary to execute the proposed change.
 - a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the work will have on the Contract Time.
 - d. Contractor and subcontractors will provide a complete detailed labor and material breakdown to justify change order request amount.
- B. Contractor-Initiated Change Order Proposal Requests: When latent or other unforeseen conditions in mutual accord with the Owner Representative's findings

CONTRACT MODIFICATION PROCEDURES / CHANGE ORDERS

SECTION 01035

require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Section 01631 Product Substitutions- if the proposed change in the work requires that substitution of one product or system for a product or system not specified.
5. Contractor and subcontractors will provide a complete detailed labor and material breakdown to justify change order request amounts.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Project Manager may issue a Construction Change Directive instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. The Construction Change Directive will contain a complete description of the change in the Work and designate the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.7 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Change Order Proposal Request, the Project Manager will issue a Change Order for signatures of the Owner and Contractor on County's Change Order form, as provided in the Conditions of the Contract.

CONTRACT MODIFICATION PROCEDURES / CHANGE ORDERS
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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01035

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION

SECTION 01040

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Coordination and project conditions.
 - 2. Coordination with Owner Requirements
 - 3. Preconstruction meeting.
 - 4. Site mobilization meeting.
 - 5. Progress meetings.
 - 6. Pre-installation meetings.
 - 7. General Installation provisions
 - 8. Cutting and patching.
 - 9. Special procedures.
 - 10. Cleaning and protection

- B. Related Documents
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

- C. Coordinate space requirements, supports, and installation of and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

- D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

- E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's occupancy.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
SECTION 01040

- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 COORDINATION WITH OWNER REQUIREMENTS

- A. The Owner will be occupying the building during the work. All existing exits and any existing fire protection/life safety systems shall be continuously maintained and operational unless other measures are taken which provide equivalent safety per the Florida Building Code requirements. The contractor is to submit a "Construction Safety Plan" depicting how they will keep exit ways protected and in a safe condition while the buildings are occupied. Stipulate how the fresh air and exhaust fans will be kept in continued use while the buildings are occupied.
- B. Working period: The normal work hours for the Owner(s) inspector(s) are defined as any 10-hour period between 7:00 a.m. and 7:00 p.m., Monday through Friday. Any work outside the 10-hour period shall be paid for by the Contractor and requested in writing 48 hours in advance. Weekends, County Holidays, all overtime, and weekend work shall be at the rate of \$150/hour and shall be deducted from payments due the Contractor on a monthly basis.
- C. Stipulate in the "Construction Safety Plan" how the contractor will keep the building(s) occupied during the roof replacement operations.
- D. Roof loading and overhead crane operations shall be scheduled as much as practicable during times the facilities are unoccupied.
- E. Contractor shall consult with local governing authorities having jurisdiction regarding noise abatement requirements and construction operations, if applicable.
- F. A copy of all required city, county and state licenses that are applicable to this project shall be supplied to the Owner's representative prior to the appropriate work commencing.
- G. The Contractor shall perform any trimming, pruning or relocation of trees or significant landscape materials as needed to fulfill the requirements of work on this project. Failure to adequately protect the existing landscaping material will require replacement of these materials at no additional cost to the Owner.
- H. The Contractor and contractor personnel shall observe the following rules of conduct prescribed by the owner in regard to work on this project. They include but are not limited to:
 - 1. Workmen are not to traverse any walkway between buildings or buildings that are not included in this contract as well as new work that has been completed.
 - 2. All contractor and subcontractor vehicles are to be parked in designated areas only. This will be determined during the pre-construction meeting.
 - 3. No smoking is permitted on the project site.
 - 4. Radios, tape or CD players ("boom boxes") are not to be utilized at the site.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
SECTION 01040

- 5. No firearms or other weapons are to be brought to the site
 - 6. Contractor shall coordinate project access, parking and egress of all personnel and tradesmen with the Owner and the Owner's administrative personnel.
- I. Lack of coordination as specified in this and other sections of the contract documents are in grounds for assessment of back charges and/or termination in order to remediate the situation

1.4 PRECONSTRUCTION MEETING

- A. Owner will schedule meeting after Notice of Award.
- B. Attendance Required: Owner, Architect/Engineer, Contractor and any subcontractors and suppliers the contractor may wish to include.
- C. At the Preconstruction meeting submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers
- D. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing parties in Contract, and Architect/Engineer.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout.
 - 7. Scheduling.
- E. Contractor shall record minutes and distribute copies within three days after meeting to participants, with two copies to Architect/Engineer, Owner, and those affected by decisions made.

1.5 SITE MOBILIZATION MEETING

- A. Owner will schedule meeting at Project site prior to Contractor occupancy.
- B. Attendance Required: Owner, Architect/Engineer, Special Consultants, Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements and occupancy.
 - 3. Construction facilities and controls provided by Owner.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
SECTION 01040

4. Temporary utilities provided by Owner.
5. Security and housekeeping procedures.
6. Schedules.
7. Application for payment procedures.
8. Procedures for testing.
9. Procedures for maintaining record documents.

D. Contractor shall record minutes and distribute copies within three days after meeting to participants, with two copies to Architect/Engineer, Owner, and those affected by decisions made.

1.6 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-weekly intervals.
- B. Contractor shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Architect/Engineer, as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. Contractor shall record minutes and distribute copies within three days after meeting to participants, with two copies to Architect/Engineer, Owner, and those affected by decisions made.

1.7 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
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- C. Notify Architect/Engineer four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within three days after meeting to participants, with two copies to Architect/Engineer, Owner, and those affected by decisions made.

PART 2 PRODUCTS – (Not Used)

PART 3 EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to Project Manager for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect/Project Manager for final decision.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
SECTION 01040

3.2 CUTTING AND PATCHING

- A. Employ skilled and experienced personnel to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of electrical Work.
- D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to full thickness of penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to Architect/Engineer for decision or remedy.

3.3 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products for patching and extending work.
- B. Employ skilled and experienced personnel to perform alteration work.

ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION

SECTION 01040

- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition.
- I. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- J. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.
- K. Where change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition; to Architect/Engineer for review. Request instructions from Architect/Engineer.
- L. Trim existing doors to clear new floor finish. Refinish trim to original or specified condition.
- M. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- N. Finish surfaces as specified in individual product sections.

3.4 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as directed by the Project Manager and as frequently as necessary to ensure its integrity and safety through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

**ADMINISTRATIVE REQUIREMENTS & PROJECT COORDINATION
SECTION 01040**

- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where the applicable, such exposures include, but are not limited to, the following:
1. Excessive static or dynamic loading.
 2. Excessively high or low temperatures
 3. Excessively high or low humidity
 4. Air contamination or pollution
 5. Water
 6. Solvents
 7. Chemicals
 8. Soiling, staining and corrosion
 9. Rodent and insect infestation
 10. Combustion
 11. Destructive testing
 12. Misalignment
 13. Excessive weathering
 14. Unprotected storage
 15. Improper shipping or handling
 16. Theft
 17. Vandalism

END OF SECTION 01040

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - 1. Requirements of this Section apply to electrical installations. Refer to Division-15 and Division-16 Sections for other requirements and limitations applicable to cutting and patching electrical installations.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching are required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - 3. List products to be used and firms or entities that will perform Work.
 - 4. Indicate dates when cutting and patching is to be performed.
 - 5. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - 6. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
 - 7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

1.4 QUALITY ASSURANCE

CUTTING AND PATCHING SECTION 01045

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load carrying capacity or load-deflection ratio.
1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements.
 - a. Foundation construction
 - b. Bearing and retaining walls
 - c. Structural concrete
 - d. Structural steel
 - e. Lintels
 - f. Timber and primary wood framing
 - g. Structural decking
 - h. Miscellaneous structural metals
 - i. Stair systems
 - j. Exterior curtain wall construction
 - k. Equipment supports
 - l. Piping, ductwork, vessels and equipment
 - m. Structural systems of special construction in Division 13.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety. Refer to Divisions 15 and 16 regarding Fire Rated Penetrations.
1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems.
 - a. Shoring, bracing and sheeting
 - b. Primary operational systems and equipment
 - c. Air or smoke barriers
 - d. Water, moisture, or vapor barriers
 - e. Membranes and flashings
 - f. Fire protection systems
 - g. Noise and vibration control elements and systems
 - h. Control systems
 - i. Communication systems
 - j. Conveying systems
 - k. Electrical wiring systems
 - l. Special construction specified by Division-13 Sections
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory

manner.

1. If possible retain the original installer or fabricator to cut and patch the following categories of exposed work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:
 - a. Processed concrete finishes
 - b. Preformed metal panels
 - c. Window wall system
 - d. Stucco and ornamental plaster
 - e. Acoustical ceilings
 - f. Carpeting
 - g. Wall covering
 - l. Roofing systems

PART 2 PRODUCTS

2.1 MATERIALS

- A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect unless otherwise indicated by Architect/Owner. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 EXECUTION

3.1 INSPECTION

- A. Before cutting examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
 1. Before proceeding, meet at the site with all parties involved in cutting and patching, including electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

- C. Avoid interference with use of adjoining areas and interruption of free passage to adjoining areas.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
 - 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Cut through concrete and masonry using a cutting machine such as carborundum saw or diamond core drill.
 - 4. Comply with requirements of applicable Sections of Division-2 where cutting and patching required excavating and backfilling.
 - 5. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 - 2. 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.
 - 3. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to

CUTTING AND PATCHING

SECTION 01045

provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials if necessary to achieve uniform color and appearance.

- a. Where patching occurs in smooth painted surfaces, extend final coat over entire unbroken surfaces containing the patch, after the patched area has received primer and second coat.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged materials to their original condition.

END OF SECTION 01045

REFERENCE STANDARDS AND DEFINITIONS

SECTION 01095

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term *indicated* refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as shown, noted, scheduled and specified are used, it is to help the reader locate the reference; no limitation on location is intended.
- C. Directed: Terms such as directed, requested, authorized, selected, accepted, required, and permitted mean directed by the Project Manager, requested by the Architect/Project Manager and similar phrases.
- D. Approved: This term approved means accepted, where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulations: The term Regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term furnish is used to mean supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. Install: The term install is used to describe operations at project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. Provide: The term provide means to furnish and install, complete and ready for the intended use.
- I. Installer: An Installer is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier for performance of a particular construction activity, including installation, erection, application,

REFERENCE STANDARDS AND DEFINITIONS

SECTION 01095

and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term experienced, when used with the term Installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
 2. Trades: Use of titles such as carpentry is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.
- J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- K. Testing Laboratories: A testing laboratory is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.03 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16 Division format and MASTER FORMAT numbering system.
- B. Specification Content: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
1. Abbreviated Language: Language used in Specifications and other Contract Documents is the abbreviated type. Words and meaning shall be interpreted as appropriate. Words that are implied, but not stated shall be interpolated as the sense required. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.
 2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
 - a. The words, shall be shall be included by inference wherever a

REFERENCE STANDARDS AND DEFINITIONS

SECTION 01095

colon (:) is used within a sentence or phrase.

1.04 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where 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 extend reference. Such standards are made part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standard in effect as of the date of the Contract Documents.
- C. Conflicting Requirements: Where compliance with two or more standards are specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer these requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
 - 1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect/Owner for a decision before proceeding.
- D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed for performance of a required construction activity. The Contractor shall obtain copies directly from the publication source or any other authorized source.
- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. See Trade Reference List at the end of this Section, also refer to the Encyclopedia of Associations, published by Gale Research Co., available in most libraries.

1.05 GOVERNING REGULATIONS/AUTHORITIES

REFERENCE STANDARDS AND DEFINITIONS

SECTION 01095

- A. The Architect has contacted authorities having jurisdiction where necessary to obtain information necessary the preparation of Contract Documents. Contact authorities having jurisdiction directly for information and decisions having a bearing on the work.

1.06 SUBMITTALS

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

1.07 TRADE REFERENCES

- A. Acronyms for abbreviations used in the Specifications or other Contract Documents mean the recognized name of the trade association, standards generating organization, authority that have jurisdiction or other entity applicable to the context of the text provision.

AA	Aluminum Association
AAMA	American Architectural Manufacturer's Association
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
ASC	Adhesive and Sealant Council
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing of Materials
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
FM	Factory Mutual Engineering and Research
ICBO	International Conference of Building Officials
NEC	National Electric Code
NFPA	National Fire Protection Association

REFERENCE STANDARDS AND DEFINITIONS
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NHLA	National Hardwood Lumber Association
NRCA	National Roofing Contractors Association
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association
SPRI	Single Ply Roofing Institute
SSPC	Steel Structures Painting Council
UL	Underwriters Laboratories

1.08 FEDERAL GOVERNMENT AGENCIES

- A. Names and titles of federal government standard or Specification producing agencies are frequently abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard or Specification producing agencies of the federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up-to-date as of the date of the Contract Documents.

EPA Environmental Protection Agency
401 M. St., SW
Washington, DC 20460 (202) 382-2090

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
Government Printing Office
Washington, DC 20402 (202) 523-7001

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION 01095

SUBMITTAL PROCEDURES SECTION 01300

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - 1. Contractor's Construction Schedule
 - 2. Submittal Schedule
 - 3. Daily Construction Reports
 - 4. Shop Drawings
 - 5. Product Data
 - 6. Samples
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits
 - 2. Applications for Payment
 - 3. Performance and Payment Bonds
 - 4. Insurance Certificates
 - 5. List of Subcontractors with start and finish dates (update as necessary)
 - 6. Schedule of Values
 - 7. Construction Schedule
- C. The Schedule of Values submittal format is included in Section 01027 - Applications for Payment.
- D. Inspection and test report requirements are included in Section 01400 - Quality Control Services.

1.03 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements

SUBMITTAL PROCEDURES SECTION 01300

of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

- a. The Project Manager reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
- a. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Project Manager will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name
 - b. Date
 - c. Name and address of Architect
 - d. Name and address of Contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Number and title of appropriate Specification Section
 - i. Drawing number and detail references, as appropriate.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Project Manager using transmittal form as provided by the Project Manager. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal record relevant information and requests for data. On

SUBMITTAL PROCEDURES
SECTION 01300

the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitation. Include Contractor's certification that information complies with Contract Document requirements.

2. Transmittal Form: As provided by the Project Manager
- D. Contractor shall be responsible for cost of re-review of rejected submittals, shop drawing, etc. Costs for re-review shall be reimbursed to the County by deducting the cost from the Contractors monthly progress payments. Costs to be determined by applying the consultants standard billing rates, plus 10% handling by the County.
- E. Substitution request to specified products will be made within 30 days of Notice to Proceed. After the 30 day period, no requests for substitutions from the Contractor will be considered.
1. Substitution submitted within the first 30 days will have product data from specified and requested substitute submitted together and demonstrate better quality, cost savings if of equal quality, or show benefit to the County for accepting the substitute.
- F. Once submittals are approved or approved as noted, they will be scanned and converted to PDF documents with OCR (optical character recognition) and given to the owner.

1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. See General Conditions: Article 18

1.05 SUBMITTAL LOG

- A. After development and acceptance of the Contractor's construction schedule, prepare a complete log of submittals.
1. Coordinate submittals log with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
 2. Prepare the log in chronological order; include all submittals required. Provide the following information:
 - a. Scheduled date for the first submittal
 - b. Related Section number
 - c. Submittal category
 - d. Name of subcontractor
 - e. Description of the part of the work covered
 - f. Scheduled date for resubmittal
 - g. Scheduled date the Architect's final release or approval.

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3. All submittals must be received within the first 25% of contract time.
- B. Distribution: Following response to initial submittal, print and distribute copies to the Project Manager, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Log Updating: Revise the log after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.06 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Project Manager at weekly intervals:
1. List of subcontractors at the site
 2. Approximate count of personnel at the site
 3. High and low temperatures, general weather conditions
 4. Accidents and unusual events
 5. Meetings and significant decisions
 6. Stoppages, delays, shortages, losses
 7. Meter readings and similar recordings
 8. Emergency procedures
 9. Orders and requests of governing authorities
 10. Change Orders received, implemented
 11. Services connected, disconnected
 12. Equipment or system tests and start-ups
 13. Partial completions, occupancies
 14. Substantial Completions authorized

1.07 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered a Shop Drawings and will be rejected.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams,

SUBMITTAL PROCEDURES SECTION 01300

schedules, patterns, templates and similar drawings. Include the following information:

1. All required dimensions
 2. Identification of products and materials included
 3. Compliance with specified standards
 4. Notation of coordination requirements
 5. Notation of dimensions established by field measurement
 6. Sheet Size: Except for templates, patterns and similar full-size Drawings on sheets at least 8 1/2" x 11" but no larger than 24" x 36".
 7. Initial Submittal: Submit one correctable translucent reproducible print and one blue-or black-line print for the Project Manager's review; the reproducible print will be returned.
 8. Initial Submittal: Submit 2 blue-or black-line prints for the Architect's review; one will be returned.
 9. Final Submittal: Submit 5 blue-or black-line prints; submit 7 prints where required for maintenance manuals. 3 prints will be retained; the remainder will be returned.
 10. Final Submittal: Submit 4 copies of the approved shop drawings to the owner.
 - a. All prints shall be marked-up and maintained as a Record Documents.
 11. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connections with construction.
- C. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.
1. Preparation of coordination Drawings is specified in section Project Coordination and may include components previously shown in detail on Shop Drawings or Product Data.
 2. Submit coordination Drawings for integration of different construction elements. Show sequence and relationships of separate components to avoid any conflict including conflicts in use of space.
 3. Contractor is not entitled to additional payments due to lack of compliance with this Section.

1.08 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawing".

SUBMITTAL PROCEDURES SECTION 01300

1. Mark each copy to show applicable choices and options. When printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations
 - b. Compliance with recognized trade association standards
 - c. Compliance with recognized testing agency standards
 - d. Application of testing agency labels and seals
 - e. Notation of dimensions verified by field measurement
 - f. Notation of coordination requirements
 - g. Manufacturers local representative and phone number.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
4. Submittals: **Submit six (6) copies** of each required submittal. The Project Manager will return two (2) sets to the Contractor marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the Installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.09 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of materials, color range sets, and swatches showing color, texture and pattern.
 1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's/Owner's Sample. Include the following:
 - a. Generic description of the Sample
 - b. Sample source
 - c. Product name or name of manufacturer

SUBMITTAL PROCEDURES
SECTION 01300

- d. Compliance with recognized standards
 - e. Availability and delivery time
 - 2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 - 3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
 - a. Preliminary submittals will be reviewed and returned with the Architect's/Owner's mark indicating selection and other action.
 - 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
 - 5. Maintain sets of Samples, as returned, at the project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
 - 1. Field Samples specified in individual sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the work will be judged.
 - a. Comply with submittal requirements. Process transmittal forms to provide a record of activity.

SUBMITTAL PROCEDURES
SECTION 01300

1.10 ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect/Project Manager will review each submittal, mark to indicate action taken, and return promptly.
1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect/Project Manager will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, similarly as follows, to indicate the action taken:
1. Final Unrestricted Release: Where submittals are marked "**No Exceptions Taken**" - **APP**, that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
2. Final-But-Restricted Release: When submittals are marked "**Make Corrections As Noted**" - **A/C**, that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked "**Revise and Resubmit**" - **R/R**, do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations and resubmit without delay. Repeat if necessary to obtain a different action mark.
- a. Do not permit submittals marked "**Revise and Resubmit**" to be used at the Project site, or elsewhere where work is in progress.
4. Rejected: When submittal is marked "**Rejected**" - **REJ** it does not comply with requirements of the Contract Documents. Submittal must be discarded and entirely new submittal shall be forwarded to the Project Manager without delay.

PART 2 PRODUCTS (Not Applicable)

PART 3 Execution (Not Applicable)

END OF SECTION 01300

A/R/C Associates, Incorporated

601 North Fern Creek Avenue
 Suite 100
 Orlando, Florida 32803
 (407) 896-7875 FAX (407) 898-6043

SUBMITTAL RECORD (checklist / log)

Action Code	APP - Approved	A/C - Approved with Comments
	R/R - Revise and Re-submit	REJ - Not Approved

The Submittal Checklist/Log represents the minimum submittal requirements for this project. The Contractor may submit any additional information beyond what is requested for review. If there is an item on the Checklist that does not apply to the project do not submit it.

PROJECT:	OC Regional Computer Center	ARCHITECT'S PROJECT NO:	14073.01
CONTRACTOR:		Notice to proceed issued:	Substantial Completion Date:

Spec. Section	Submittal No.	Title/Description	Date Rec'vd	No. of Copies Rec'vd	ACTION	Date Returned	Comments
00600		Bonds and Certificates					
	001	Bonds:					
	-1	Bid Bond					
	-2	Performance Bond					
	-3	Labor and Materials Payment Bond					
	-4	Certificate of Liability Insurance					
01010		Summary of Work					
	001	Reports:					
	-1	Rain Day Report (Required for Project Closeout)					
	-2	Interior Inspection Report (Photo/Video Record Supplement)					
	-3	Exterior Inspection Report (Photo/Video Record Supplement)					
01300		Submittals					
	001	Schedules:					
	-1	Construction Progress Schedule					
	-2	Schedule of Values					
01631		Substitutions					
	001	Product Substitution					
	-1	Product Substitution Request Form/Product Information Form					
01700		Project Closeout					
	001	Substantial Completion					
	-1	Request for Substantial Inspection					
	-2	Certificate of Substantial Completion - AIA Document G704					
	-3	Contractor's Certification of Project Completion					
	002	Final Submittals					
	-1	Record Documents					
		Drawings (As-builts)					
		Specifications					
		Addenda					
		Change Orders and Other Modifications					
		Submittals (Shop Drawings, Product Data and Samples)					
		Manufactures instruction for Assembly, Installation and Adjusting					
	-2	Operation and Maintenance Documents					
	-3	Warranties					
	-4	Spare Parts and Maintenance Materials					
	003	Final Application for Payment					
	-1	Application for Payment - AIA G702 and G703					

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PROJECT:	OC Regional Computer Center	ARCHITECT'S PROJECT NO:	14073.01
CONTRACTOR:		Notice to proceed issued:	Substantial Completion Date:

Spec. Section	Submittal No.	Title/Description	Date Rec'vd	No. of Copies Rec'vd	ACTION	Date Returned	Comments
	-2	Contractor's Affidavit of Payment of Debts and Claims - AIA Document G706					
	-3	Consent of Surety to Final Payment - AIA Document G707					
	-4	Contractor's Affidavit of Release of Liens - AIA Document B706A					
06100		Rough Carpentry					
	001	Product Data:					
	-1	Wood Preservative Materials, Application Instructions					
	-2	Fasteners/Anchors					
07 41 00		Metal Roof Panels (Standing Seam)					
	001	Product Data:					
	-1	Metal Panel Product Information, Installation Instructions, Warranties					
	-2	Underlayment					
	-3	Insulations					
	-4	Mechanical Fasteners					
	002	Shop Drawings:					
	-1	Erection Drawings and Details					
	-2	Engineers's Calculations / Fastener Requirements					
	003	Qualifications					
	-1	Installer Experience / Manufacturer's Approval					
07900		Joint Sealers					
	001	Product Data:					
	-1	Joint Sealer Information, Color Charts, Installation Instructions, warranty, etc.					
	002	Accessories-					
	-1	Primer, Joint Cleaner, Backer Rod, etc.					
09100		Painting					
	001	Product Data:					
	-1	Information on All Finishing Products, Application Instructions, Surface Preparation, etc.					
	-2	Manufacturer's Color Chart for Each Product Required					
	002	Samples:					
	-1	Field Samples as May be Directed by the Architect					
	003	Qualifications					
	-1	Applicator's Experience					
09240		Portland Cement Plaster- Stucco					
	001	Product Data:					
	-1	Plaster Materials: Portland Cement Plaster, Portland Cement, Hydrated Lime, Reinforcing Fibers, Bonding Agent.					
	-2	Accessories: Metal Lath, Trim, Fasteners					

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SUBMITTAL RECORD (checklist / log)

Action Code	APP - Approved	A/C - Approved with Comments
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The Submittal Checklist/Log represents the minimum submittal requirements for this project. The Contractor may submit any additional information beyond what is requested for review. If there is an item on the Checklist that does not apply to the project do not submit it.

PROJECT:	OC Regional Computer Center	ARCHITECT'S PROJECT NO:	14073.01
CONTRACTOR:		Notice to proceed issued:	Substantial Completion Date:

Spec. Section	Submittal No.	Title/Description	Date Rec'vd	No. of Copies Rec'vd	ACTION	Date Returned	Comments
16670		Lightning Protection					
	001	Product Data:					
	-1	Product Information: Dimensions and Materials of each Component. Indicate UL 96 listing					
	002	Shop Drawings:					
	-1	Air Terminal and Cable Layout; Grounding Electrodes, Typical Bonding Connections to Structure and Equipment. Terminal, Electrode, Conductor Sizes and Connection and Termination Details.					
	003	Quality Control					
	-1	Certificates of Compliance: UL, Lightning Protection Institute and Jurisdictional Authority.					

SUBMITTAL COVER FORM



A/R/C
Associates
Incorporated

SUBMITTAL NO.	A/R/C PROJECT NO: 14073.01
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PROJECT: **Orange County Regional
Computer Center**

OWNER'S PROJECT NO:

ITEM:	DATE:
-------	-------

SPEC. SECTION: _____

PARAGRAPH NO: _____

PRIME
CONTRACTOR: _____

CHECKED AND APPROVED FOR SUBMISSION	
BY: _____	DATE: _____

SUB-
CONTRACTOR: _____

MANUFACTURER: _____

(RESERVE THE SPACE BELOW FOR COMMENTS OR DATE & SHOP DRAWING REVIEW STAMPS)

COMMENTS / REVIEW STAMPS	SUBMITTAL REVIEW BY A/R/C ASSOCIATES, INCORPORATED
	<p>Date: _____ By: _____</p> <p>Approved APP () Approved as Corrected A/C ()</p> <p>If checked above, fabrication MAY be undertaken. Approval does not authorize changes in contract Sum unless stated in separate letter or Change Order.</p> <p>If checked below, fabrication MAY NOT be undertaken. Resubmit corrected copies for final approval. Correction shall be limited to items marked.</p> <p>Revise and resubmit R/R () Not Approved REJ ()</p> <p>_____</p> <p>Reviewing is only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The contractor is responsible for dimensions to be confirmed and correlated at the site; for information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; and for coordination of the Work of all trades.</p>

If Substitution, submittal shall include information required by the General Conditions and Section 01 60 00. Attach sufficient pages to this form to fully respond to the requirements of Article 1.6.

THIS PAGE SHALL BE ATTACHED TO EACH COPY OF EACH SUBMITTAL

QUALITY CONTROL SERVICES
SECTION 01400

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division -1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and test, cover production of standard products as well as customized fabrication and installation procedures.
 - 2. Inspection, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitates compliance with Contract Document requirements.
 - 3. Requirements for the Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.03 GENERAL QUALITY CONTROL

- A. The Contractor shall be responsible for maintaining and ensuring quality control over subcontractors, suppliers, manufacturers, materials, equipment, products, services, site conditions and workmanship to product work of specified quality. The completed work shall be of high quality throughout.

1.04 WORKMANSHIP

- A. Comply with well-known standards recognized by each trade except when more restrictive tolerances or specified requirements indicate more rigid standards or

more precise workmanship.

- B. Perform work by persons qualified to produce workmanship of specified quality. Said qualifications shall be determined by well-known standards recognized by the trade for each respective portion of contract work.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1.05 MANUFACTURER'S INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect before proceeding.

1.06 MANUFACTURER'S CERTIFICATES

- A. When required by individual Specifications Section, submit manufacturer's certificate and supporting documentation, in duplicate, that products meet or exceed specified requirements.
- B. **ASBESTOS FREE MATERIALS** - Manufacturer and/or supplier shall provide a written and notarized statement on manufacturer's company letterhead to certify and warrant that product(s) utilized on project are asbestos free.

1.07 MOCKUPS

- A. When required by individual Specifications Section, erect complete, full scale mockup of assembly at Project Site.

1.08 MANUFACTURER'S FIELD SERVICES

- A. When specified in respective Specification Sections, require supplier and/or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, test, adjust and balance of equipment as applicable and to make appropriate recommendations.
- B. Representative shall submit written report to Owner listing observations, recommendations, and certifying full conformance and compliance with manufacturers standards or requirements.

1.09 TESTING LABORATORY SERVICES

- B. Services will be performed in accordance with requirements of governing authorities and with specified standards.
- C. Reports will be submitted to the County, Contractor and Architect giving

**QUALITY CONTROL SERVICES
SECTION 01400**

observations and results of tests, indicating compliance or noncompliance with specified standards and with Contract Documents.

- D. Contractor shall cooperate with testing laboratory personnel; furnish tools, samples of materials, design, mix equipment, storage and assistance as requested.
 - 1. The contractor shall be responsible for notifying the testing laboratory at least 24 hours prior to expected time for operations requiring testing services. Longer length of notice to testing laboratory shall be provided by Contractor when required by the testing laboratory to ensure the timely scheduling and performance of all tests required.
 - 2. The Contractor is responsible for obtaining and paying tests including but not limited to test and balance, potable water bacteriological tests and test required in Divisions 7 through 16.
- E. The costs of any tests which fail will be paid for by the Contractor. The amount to be reimbursed to the County by the Contractor will be the amount invoiced to the County by the testing laboratory in accordance with the testing services fees set forth in its contract with the County.

1.11 RESPONSIBILITIES

- A. The Owner shall provide inspections, tests and similar quality control services, specified in individual Specification Sections and these services include those specified to be performed by an independent agency and not by the Contractor.
- B. The Contractor shall cover all costs of tests or inspections to evaluate means and methods of installation performed as a substitution and not as originally specified.
 - 1. Re-testing: The Contractor is responsible for re-testing where results of required inspections, test or similar services prove unsatisfactory and do not indicate compliance with Contract Documents requirements, regardless of whether the original test was the Contractor's responsibility.
 - a. Cost of re-testing construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
 - 2. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to:
 - a. Providing access to the work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
 - b. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking

QUALITY CONTROL SERVICES
SECTION 01400

- c. Providing facilities for storage and curing the test samples.
 - d. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 - e. Security and protection of samples and test equipment at the Project site.
- C. Duties of the Testing Agency: The independent testing agency engages to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections shall cooperate with Architect and Contractor in performance of its duties, and shall provide qualified personnel to perform required inspections and tests.
 - 1. The agency shall notify the Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
 - 3. The agency shall not perform any duties of the Contractor.
- D. Coordination: The Contractor and each agency engaged to perform inspection, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, the Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
 - 1. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.12 SUBMITTALS

- A. Qualification for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, which are pre-qualified as complying with Recommended Requirements for Independent Laboratory qualification by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
 - 1. Each independent inspection and testing agency engages on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 REPAIR AND PROTECTION

QUALITY CONTROL SERVICES
SECTION 01400

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Contract Document requirements for Cutting and Patching.
- B. Protect construction exposed by or for quality control service activities, and protect and repaired construction.
- C. Repair and protection in the Contractor's responsibility regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01400

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. Temporary utilities required include but are not limited to:
 - 1. Water service and distribution
 - 2. Temporary electric power and light
 - 3. Telephone service
 - 4. Sanitary facilities
- C. Temporary construction and support facilities required include but are not limited to:
 - 1. Temporary heat and ventilation as required to facilitate construction process and personnel.
 - 2. Field office and storage sheds.
 - 3. Sanitary facilities, including drinking water.
 - 4. Temporary enclosures.
 - 5. Hoists and temporary elevator use.
 - 6. Temporary project identification signs and bulletin boards
 - 7. Waste disposal services.
 - 8. Rodent and pest control
 - 9. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities required include but are not limited to:
 - 1. Temporary fire protections
 - 2. Barricades, warning signs, lights
 - 3. Sidewalk bridge or enclosure fence for the site.
 - 4. Environmental protection
 - 5. Fencing:
 - a. Contractor shall be responsible for providing a temporary 6' high chain link construction fence around the entire perimeter of the construction site. Fence shall be removed upon completion of the job. Limits of construction fence indicate on the site plan drawings.
 - 6. Barriers:

- a. Contractor shall be responsible for providing security measures as required to prevent public entry to construction areas and adjacent properties from damage from construction operations.
 - b. Contractor shall be responsible for providing a protective barrier around trees and plants designated to remain as indicated in plans. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials and puddling or continuous running water.
7. Enclosures:
- a. Provide temporary weather-tight closures of openings in exterior surfaces to provide acceptable working conditions and protection for materials, in allow for temporary heating, and to prevent entry of unauthorized persons. Provide temporary doors with self-closing hardware and locks.
8. Protection of Installed Work:
- a. Provide temporary protection for installed products. Control work and traffic in immediate area to avoid damage.
 - b. Provide protective coverings at walls, projections, jambs, sills and soffits of openings. Provide barriers or coverings to protect roof and finished floors and stairs from work and traffic, movement of heavy objects and storage.
 - c. Prohibit work, traffic and storage on waterproofed and roofed surfaces, and on lawn and landscaped areas that is not a part of the work for those surfaces and areas.
9. Security and Maintenance:
- a. Vehicular and pedestrian gates, when indicated or required, shall be securely locked at all times when no work is in progress and when not required for construction activities.
 - b. During all work hours, gates which must be open shall be continuously monitored by the contractor to prevent unauthorized personnel or vehicles from entering the construction site.
 - c. Fencing shall be as specified in 1.02 D above and shall prevent pedestrian travel through the site for any reason.
 - d. Temporary fencing shall be removed only for construction reasons. If temporary fencing removal is required for non-construction reasons, fencing shall be immediately replaced and secured as soon as the activity for which its removal was required is completed, or if the activity cannot be completely by the end of the work day, temporary security measures shall be taken by the Contractor to ensure that there is no breach of security even during off-work periods.
 - e. "No Trespassing" and similar signs shall be posted at gates and along fencing adjacent to public areas to inform non-construction personnel of the reason for the fence and potential hazards of entering the construction

site. Said signs shall be of a size and spacing to be legible from any point along the entire perimeter of the construction site.

1.03 SUBMITTALS

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.04 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements
 - 2. Health and safety regulations
 - 3. Utility company regulations
 - 4. Police, Fire Department and Rescue Squad rules
 - 5. Environmental Protection regulations
- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA "Electrical Design Library Temporary Electrical Facilities".
 - 1. Refer to Guidelines for Bid Conditions for Temporary Job Utilities and Services, prepared jointly by AGC and ASC, for industry recommendations.
 - 2. Electrical Services: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use for the permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, nor permit them to interfere with progress. Do not allow hazardous, dangerous, unsanitary conditions, nor public nuisances to develop or persist on the site.
- C. Water Control: Grade site to drain. Maintain excavations free of water. Provide and operate pumping equipment if necessary. Provide silt barriers required by the Florida Department of Transportation, St. Johns and any other authority having jurisdiction over the Project.

TEMPORARY FACILITIES
SECTION 01500

- D. Cleaning During Construction: Control accumulation of waste materials and rubbish so as to maintain a neat, clean and orderly and safe project; periodically dispose of off-site as needed.
 - 1. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.
- E. Project Identification: Provide a sign as outlined in SECTION 01580 PROJECT SIGN. Locate to provide an unobstructed view from adjoining roadway. Remove project sign upon final completion acceptance.
- F. Field Office and Sheds: Office: Weather-tight with lighting, electrical outlets, heating, cooling, and ventilating equipment, and equipped with furniture.
 - 1. Storage Sheds for Tools, Materials, and Equipment: Weather-tight with adequate space for organized storage and access, and lighting for inspection of stored materials. Contractor provide 10 x 8 minimum size office with plan table, telephone, heat, a/c for projects exceeding 10,000 sq. ft. building area.
- G. Protection of Adjacent Properties: Locate on site construction operations that will generate noise and/or dust as far as practical from occupied structures on adjacent properties so as to minimize disturbances to the occupants of these structures or properties.
 - 1. Prevent dust or other contaminants caused by construction operations for this Project from being carried to adjacent properties by installation of protective barriers and/or suspension of construction operations during high winds.
 - 2. Dispose of all construction debris which may be carried to adjacent properties by winds. Remove debris daily and/or more often as required to prevent contamination of adjacent properties.
- H. Removal: Remove temporary materials, equipment and construction facilities prior to Substantial Completion inspection.
 - 1. Remove temporary utility services prior to Final Completion Inspection.
 - 2. Clean and repair damage caused by installation or use of temporary facilities. Remove underground installations; grade and complete all work on site as indicated.
- I. Conversion to Public Utilities: General Contractor is to coordinate and arrange with the appropriate utility service providing agencies and make arrangements for the installation and connection to final utilities prior to Final Completion inspection.
 - 1. General Contractor shall provide any and all coordination, scheduling and layouts as may be required by the service utilities.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Provide new materials; of acceptable to the Project Manager, undamaged previously used materials in serviceable condition maybe used. Provide materials suitable for the use intended.

- B. Lumber and Plywood: Comply with requirements in Division 6 Section – Rough Carpentry.
 - 1. For job-built temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
 - 2. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1 of sizes and thickness indicated.
 - 3. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.
 - 4. For safety barriers, sidewalk bridges and similar uses, provide minimum 5/8" thick exterior plywood.

- C. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosure provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

- D. Water: Provide portable water approved by local health authorities.

- E. Open-Mesh Fencing: Provide 11-gage, galvanized 2-inch, chain link fabric fencing 6-feet high with galvanized barbed wire top strand and galvanized steel pipe post, 1 inch I.D. for line posts and 2 inch I.D. for corner posts.

2.02 EQUIPMENT

- A. General: Provide new equipment: if acceptable to the Project Manager, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. Long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shut-off nozzles at hose discharge.

- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset bottom and pilot light, for connection of power tools and equipment.

- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords

where exposed to abrasion and traffic. Provide water proof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockage entrances, operable windows and serviceable finished. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
- I. First Aid Supplies: Comply with governing OSHA and any other regulations.
- J. Fire Extinguishers: Provide hand-carried, portable UL-rated, class A fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable UL-rated, class ABC dry chemical extinguishers, or a combination of extinguishers of NEPA recommended classes for the exposures.
 - 1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the project adequately and result in minimum interference with performance of the work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with

the utility company recommendations.

1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site, where the Owner s easements cannot be used for that purpose.
 4. Use Charges: Cost of use charges for temporary facilities are not chargeable to the Owner or Architect, and will not be acceptable as a basis of claims for a Change Order.
- B. Water Service: Install water service and distribution piping of sized and pressures adequate for construction until permanent water service is in use.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
- D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.
1. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.
- E. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge or effluent, provide containers to remove and dispose of effluent off the site in a lawful manner.
1. Filter out excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways before discharge.
- F. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by run-off of storm water from heavy rains.

3.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
1. Maintain temporary construction and support facilities until Substantial

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Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

- B. Provide incombustible construction for offices, shops and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Temporary Heat: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
- D. Heating Facilities: Except where use of the permanent system is authorized, provide electric vented self-contained LP gas or fuel oil heaters with individual thermostatic control.
 - 1. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.
- E. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds maybe open shelters or fully enclosed spaces with the building or elsewhere on the site.
- G. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project s
 - 1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- H. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide one toilet for each 15 workers on site and have serviced weekly as a minimum.
- I. Wash Facilities: Install wash facilities supplied with portable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
 - 1. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.
- J. Drinking Water Fixtures: Provide drinking water fountains including paper supply.

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- K. Drinking Water Fixtures: Provide drinking water fountains including paper supply.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 degree F (7 to 13 degree C).
- L. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations and construction free of water.
- M. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 square feet in area, use UL-labeled fire-retardant treated material for framing and main sheathing.
- N. Temporary Lifts and Hoist: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting material are considered tools and equipment and not temporary facilities.
- O. Project Identification and Temporary Signs: Prepare project identification and other signs of the size indicated install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.
1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
 2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- P. Temporary Exterior Lighting: Maintain exterior yard and sign lights so that signs are visible when work is being performed.
- Q. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material

and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to raise above 80 degree F (27 degree). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of materials in a lawful manner.

- R. Rodent and Pest Control: Before foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches and other pests. Employ this service to perform extermination and control procedures at regular intervals so the project will be relatively free of pests and their residues at Substantial Completion. Perform control operations in a lawful manner using environmentally safe materials.

3.04 SECURITY AND PROTECTIONS FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Project Manager.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 Standard for Portable Fire Extinguishers, and NFPA 141 Standard for Safeguarding Construction, Alternations and Demolition Operations.
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access in fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 - 4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting including flashing red or amber lights.
- E. Enclosure Fence: When excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs and other animals from easily entering the site, except by the

entrance gates.

1. Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth.
- F. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of materials to minimize the opportunity for theft and vandalism.
- G. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possible that air, waterways and sub-soil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which product harmful poise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24 hour day basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than substantial completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.

**TEMPORARY FACILITIES
SECTION 01500**

2. Remove temporary paving that is not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that does not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances which might impair growth of plant materials or lawns. Repair or replace street pavings, curbs and sidewalks at the temporary entrances, as required by the governing authority.
3. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use as noted by the Owner's representative.

END OF SECTION 01500

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section 01300 -Submittals.
- C. Standards: Refer to Section 01095 - Reference Standards and Definitions for applicability of industry standards to products specified.
- D. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section 01300 - Product Substitutions.

1.03 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents such as “specialties”, “systems”, “structure”, “finishes”, “accessories”, and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.
 - 1. “Products” are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term “product” includes the term “material”, “equipment”, “system” and terms of similar intent.
 - a. “Named Products” are items identified by manufacturer’s product name, including make or model designation, indicated in the manufacturer’s published product literature that is current as of the date of the Contract Documents.
 - b. “Foreign Products”, as distinguished from “domestic products”, are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens nor living within the United States and its possessions.
 - 2. “Materials” are products that are substantially shaped, cut, worked, mixed,

finished, refined or otherwise fabricated, processed, or installed to form a part of the work.

3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.04 SUBMITTALS

- A. Product List Schedule: Prepare a schedule showing products specified in a tabular form acceptable to the Project Manager. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
 1. Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.
 - a. Related Specification Section Number
 - b. Generic name used in Contract Documents
 - c. Proprietary name, model number and similar designations.
 - d. Manufacturer's name and address
 - e. Supplier's name and address
 - f. Installer's name and address
 - g. Projected delivery date, or time span of delivery period.
 2. Initial Submittal: Within 30 days after date of commencement of the work, submit 3 copies of an initial product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 - a. At the Contractor's option, the initial submittal may be limited to product selections and designations that must be established early in the Contract period.
 3. Complete Scheduled: Within 45 days after date of commencement of the Work, submit 3 copies of the completed product list schedule. Provide a written explanation for omissions of data, and for known variations from Contract requirements.
 4. Architect's Action: The Architect will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers on products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include the following:
 - a. A list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.05 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on accessible surface that is not conspicuous.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.
 - a. Name of product and manufacturer
 - b. Model and serial number
 - c. Capacity
 - d. Speed
 - e. Ratings
 - f. Additional pertinent information

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deteriorating and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 - 3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 - 4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate in prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 PRODUCTS

2.01 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
 1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situation on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous project experience. Procedures governing product selection include the following:
 1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by the term "or equal" or "or approved equal" comply with the Contract Document provisions concerning 'substitutions to obtain approval for use of an unnamed product.
 2. Non-Proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of those products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Descriptive Specification Requirements: Where Specifications describe products or assemblies, listing exact characteristics required, with or without use of a brand or trade names, provide a product or assembly that provides the characteristics and otherwise complies with Contract

- requirements.
4. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated.
 - a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
 5. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
 6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning 'substitutions' for selection of a matching product in another product category, or for noncompliance with specified requirements.
 7. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, pattern, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.
 8. Asbestos free materials: No products containing asbestos shall be used for any part of the work for this project. Provide verification.

PART 3 EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each project securely in place, accurately located and aligned with other work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling request for substitutions made during bidding and after award of the Contract.
- B. The Contractor's Installation Schedule and the Schedule of Submittals are included under Section 01300 - Submittals.
- C. Standards: Refer to Section 01095 – Reference Standards and Definitions for applicability of industry standards to products specified.

1.03 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of installation required by Contract Documents proposed by the Contractor during bidding and after award of the Contract are considered requests for "substitutions". The following are not considered substitutions:
 - 1. Only substitutions requested by Bidders during the bidding period, and accepted prior to bid opening and award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in Section for substitutions.
 - 2. Revisions to Contract Documents requested by the Owner or Architect.
 - 3. Specified options of products and installation methods included in Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.04 SUBMITTALS

- A. Substitution Request Submittal: After the bid is awarded, a request for substitution will be considered if received within thirty (30) days after commencement of the Work, as long as this time allowance will not impact the construction schedule.
 - 1. Submit **three (3) copies** of each request for substitution for consideration.

- Submit requests in the form and in accordance with procedures required for Change Order proposals.
2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitution, and the following information, as appropriate:
 - a. Product Data, including Drawings, and descriptions of products, fabrication and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution's effect on the Contractor's construction schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. Certification by the Contractor that the Substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
 3. Architect's Action: Within two weeks of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request if needed. Within two (2) weeks of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the project specified by name. Decision on the use of a product substitution or its rejection by the Architect is considered final. Acceptance will be in the form of a Change Order.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

- A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise request will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of Contract Documents.
 3. The request is timely, fully documented and properly submitted.
 4. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.
 5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 6. A substantial advantage is offered to the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar consideration.
 7. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 8. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
 9. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
- B. The Contractor's submittal and Project Manager's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.
- C. Substitution request constitutes a representation that the Contractor:
1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 2. Will provide the same warranty for substitution as for specified product.

SUBSTITUTIONS
SECTION 01631

3. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
4. Waives claims for additional costs which may subsequently become apparent. All costs associated with the substitution will be paid by the Contractor regardless of approvals given, and regardless of subsequent difficulties experienced as a result of substitutions.

END OF SECTION 01631

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for project close-out, including but not limited to:
 - 1. Inspection procedures
 - 2. Project record document submittal. (substantial completion requirements)
 - 3. Operating and Maintenance Manual Submittal (substantial completion requirements).
 - 4. Submittal of warranties (substantial completion requirement).
 - 5. Final cleaning
- B. Close-out requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.
- C. Final Payment to be made when the County has received all required close-out documents.

1.03 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following: List exceptions in the request.
 - 1. In the Application for Payment that coincided with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the work and access to services and utilities; include occupancy permits, operating certificates and similar releases.

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

5. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Project Manager will either proceed with inspection or advise the Contractor of unfilled requirements. The Project Manager will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. Results of the completed inspection will form the basis of requirements for final acceptance.
 2. Should the project fail to meet the standards required for Substantial Completion as defined in the documents, the Contractor will pay the expense of a second inspection by the Architect/Consultants and the Owner. Cost will be deducted from the Contractor's retainage.

1.04 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following list exceptions in the request:
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and complete operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Architect or Owner's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Project Manager.
 4. Submit final meter readings for utilities, a measured record of stored fuel and similar data as of the date of Substantial Completion, or when the Owner took possession of the responsibility for corresponding elements of the Work.
 5. Submit consent of surety to final payment.
 6. Submit a final liquidated damages settlement statement
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Architect will reinspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.
1. Upon completion of reinspection, the Architect will prepare a certification

PROJECT CLOSEOUT REQUIREMENTS

SECTION 01700

of final acceptance, or advise the contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

1.05 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation; where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Provide for project photographs if deemed necessary by Owner's representative.
1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets, and print, suitable titles, dates and other identification on the cover of each set.
 5. Provide **three (3)** additional sets of black line drawing sets of As-Built Drawings. (color copies)
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Project Data.
1. Upon completion of the Work, submit **two (2)** copies of Record Specifications to the Architect for the Owner's records.
- D. Record Project Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variation in actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

observation. Note related Change Orders and mark-up of record drawings and Specifications.

1. Upon completion of mark-up, submit **one (1) complete set** of Record Product Data in the three ring binder (indexed) to the Architect for the Owner's records.

E. Record Sample Submitted: Immediately prior to the date or dates of substantial completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.

F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of substantial completion, complete miscellaneous record and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Project Manager for the Owner's records.

G. Maintenance Manuals: Organize operating and maintenance data into **five (5) suitable sets** of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions
2. Spare parts list
3. Copies of warranties
4. Wiring diagrams
5. Recommended turn-around cycles
6. Inspection procedures
7. Shop Drawings and Product Data
8. Fixture lamping schedule

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 CLOSE-OUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that required regular maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. All items shall be provided or completed prior to Certificate of Substantial Completion being issued by the Owner. Include a detailed review of the following items:

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

1. Maintenance manuals
2. Record documents
3. Spare parts and materials
4. Tools
5. Lubricants
6. Fuels
7. Identification systems
8. Control sequences
9. Hazards
10. Cleaning
11. Warranties and bonds
12. Maintenance agreements and similar continuing commitments

B. As part of instruction for operating equipment, demonstrate the following procedures, prior to the Owner issuing Certificate of Substantial Completion:

1. Start-up
2. Shutdown
3. Emergency operations
4. Noise and vibration adjustments
5. Safety procedures
6. Economy and efficiency adjustments

3.02 PROJECT CLOSE-OUT MANUALS AT SUBSTANTIAL COMPLETION

- A. Submit Project Close-out Manuals prior to issuance of final application for payment. Provide **three (3) copies**.
- B. Bind in commercial quality 8 ½" x 11" three ring binder, indexed with hardback, cleanable, plastic covers.
- C. Label cover of each binder with typed title PROJECT CLOSE-OUT MANUAL, with title of project; name, address, and telephone number of Contractor and name of responsible Principal.
- D. Provide table of contents: Neatly typed, in the following sequence:
1. Final Certificate of Occupancy
 2. Warranty Service Subcontractors Identification List
 3. Final Lien Waivers and Releases
 4. Warranties and Guarantees
 5. Systems Operations and Maintenance Instruction
 6. Manufacturer's Certificates and Certifications
 7. Maintenance Service Contracts
 8. Spare Parts Inventory List
 9. Special Systems Operating Permits or Approvals

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

10. Asbestos free materials notarized statement.
- E. Provide all documents required by each specification section listed in the Project Manual. List the individual documents by section in sequence indicated in the Table of Contents of the Project Manual.
- F. Identify each document listed in the Table of Contents with the number and title of the specification section in which specified, and the name of the product or work item.
- G. Separate each section with index to sheets that are keyed to the Table of Contents listing.
- H. Warranty Service Subcontractors List shall identify subcontractor supplier, and manufacturer for each warranty with name, address and emergency telephone number.
- I. Electronic Close-out DVD: At the completion of the project, submit one copy of a DVD with entire project close out information below in PDF format. All letter, legal and brochure size sheets shall be portrait and the As-built drawings will be landscape. All fonts will be Arial. All items will be in PDF with OCR (Optical Character Recognition). This will enable a search engine to identify words on the scanned documents.
1. Contacts: Set up a separate PDF for the contacts. No bookmarks are needed for this section.
 2. As-Builts: All as-built drawings will be landscape.
 3. Submittals: All technical submittal items (approved and approved as noted) will be provided and sorted by the 16 standard divisions. Bookmarks will be needed for the appropriate divisions.
 4. Operations and Maintenance Manual: Specify the division name only in the bookmarks (1-16). Please note that all items will be in PDF with OCR (Optical Character Recognition). This will enable a search engine to identify works on the scanned documents.
 5. Permitting: This should include the Certificate of Occupancy and any other document that the Project Manager may include pertaining to the permitting for the project.

3.03 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions and included in Section - Temporary Facilities.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

PROJECT CLOSEOUT REQUIREMENTS
SECTION 01700

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finished to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface. Remove waste and surplus materials from the site in an appropriate manner.

- C. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects and other pests.

- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.

- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 01700

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contractor Documents, including manufacturer's standard warranties on products and special warranties.
 - 1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
 - 2. General close-out requirements are included in Section 01700 - Project Close-Out Requirements.
 - 3. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections of Division 2 through 16.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.03 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents.

- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligation, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligation, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

- E. The Owner reserves the right to refuse to accept work for the Project where a special warranty, certification, or similar commitment is required on such work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.04 WARRANTY PERIOD

- A. The Contractor shall participate with the County and the Architect's representative, at the beginning of the tenth month of the warranty period, in conducting an on-site review and evaluation of all items of equipment, materials and workmanship covered by the warranties and guarantees. Contractor shall act promptly and without cost to the County to correct all defects, problems, or deficiencies determined as such by the Architect/Owner during on the site review.

- B. All warranties and guarantees shall commence on the date of Substantial Completion except for items which are determined by the County to be incomplete or a non-comply status at the time of Substantial Completion. The coverage commencement date for warranties and guarantees of such work shall be the date of the County's acceptance of that work.

- C. Warranty period shall be manufacturer's standard for product specified except where specific warranty periods are specified in individual sections. But in no case less than one year.

1.05 SUBMITTALS

- A. Submit written warranties to the Owner prior to the date certified for Substantial Completion. If the Architect's Certificate of substantial

Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the work, submit written warranties upon request of the Project Manager.

1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Project Manager within fifteen days of completion of that designated portion of the work.
- B. Special Warranties: When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepared a written document that contains appropriate terms and identification, ready for executing by the required parties. Submit a draft to the Architect for approval prior to final execution.
1. Refer to individual Sections of Division 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.
- C. Form of Submittal: At Final Completion compile **two (2) copies** of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- D. Submittal Binders: Bind **three (3) sets** of warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 1/2" by 11" paper.
1. Provide heavy paper dividers with Celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.
 3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required

PROJECT WARRANTIES AND BONDS
SECTION 01740

warranty, as necessary, for inclusion in each required manual.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01740

EXISTING CONDITION ASSESMENT (INFORMATION TO BIDDERS)
SECTION 02010

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Roof Evaluation of the Orange County Regional Computer Center
- B. Related Sections:
 - 1. Section 01010 – Summary of Work

1.02 EXISTING PROJECT / SITE CONDITIONS

- C. Field Investigation: A field investigation was conducted by A/R/C Associates, Incorporated on December 3, 2014, at which time the exposed conditions of the proposed roof replacement areas were observed and the under-roof conditions were determined to the best extent observable without destructive methods. Limited existing construction record drawings and specifications were available for A/R/C to verify. The details of the project indicated that existing conditions are based of typical construction practice. A/R/C offers no assurance that all varying conditions have been discovered, or that any Owner-furnished information is completely accurate. It shall be the responsibility of each bidder to make additional inspections as they may judge to be a necessity.
- D. Structural Evaluation: Base Consultants – On May 20, 2015 conducted a hurricane assessment of roof associated elements, and any upgrading of the building elements to meet the current wind loading requirements of the 2010 Florida Building Code (FBC) with 2012 supplement. The report is dated July 13, 2015. A review of the as-built drawings and site visit performing non-destructive, visual inspections of the structural elements of the building and a preliminary structural evaluation of the existing elements was conducted to base the provided report on.
- E. Verification of Dimensions: The approximate dimensions shown for each roof area are the result of reconstruction of the building design from field measurements taken by A/R/C Associates. This information is given to assist prospective Bidders in establishing the approximate scope of the project. As a prerequisite for bidding the project, however, all dimensions shall be field verified by each Bidder so that the dimensions and areas utilized in bidding the project will be confirmed or corrected by the Bidder.
- F. Additional Information Available: Attached to this section are the results of two (2) roof cuts performed at the time of the site investigation.
- G. Condition of Structure:
 - 1. The Owner assumes no responsibility for actual condition of the structure.

EXISTING CONDITION ASSESMENT (INFORMATION TO BIDDERS)
SECTION 02010

2. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. However, variations may occur by Owner's operations.
3. Prior to bidding: Inspect and verify existing conditions of Project, including elements subject to damage or to movement during construction activity.
 - a. Conflicts and problems shall be reported to the Procurement Division for resolution prior to bidding.
 - b. Failure to report these conflicts places the responsibility on the Prime Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
4. During construction: Inspect conditions affecting installation of products, or performance of work.
 - a. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further clarification and/or instructions.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Description of Areas to be Demolished.
 - 2. Demolition Contractor Qualifications
 - 3. Regulatory Requirements
 - 4. Scheduling
 - 5. Project Conditions
 - 6. Preparation
 - 7. Demolition Requirements

- B. Related Sections:
 - 1. Section 01010 – Summary of Work

1.02 DESCRIPTION OF AREAS TO BE DEMOLISHED

- A. Roof Area A
 - 1. Remove existing metal panel roof system and underlayment to expose coverboard and insulation in place.
 - 2. Remove all existing metal drip, gable and valley flashings. Existing gutters and downspouts to remain in place.
 - 3. Remove existing air terminals and store for reinstallation. Abandon existing lightning protection system below deck.

1.03 QUALIFICATIONS

- A. Demolition Contractor: Contractor having minimum of five (5) years documented experience in performing the work of this section.

1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition of roofing, safety of adjacent structures, dust control and disposal. Conform to applicable regulatory procedures when hazardous or contaminated materials are present

- B. Notify affected utility companies before starting work and comply with their requirements.

- C. Do not close or obstruct roadways, sidewalks, and hydrants without permits.

1.05 SCHEDULING

- A. Schedule work under the provisions of Division 1.

- B. Coordinate and schedule demolition work with HVAC roof top ~~mechanical and~~ electrical work with roof replacement work. Minimize roof deck exposure during this process.
- C. Describe and discuss demolition removal procedures and schedule with Owner and project architect.

1.06 PROJECT CONDITIONS

- A. Existing Conditions:
 - 1. Report conflicts or problems to the Purchasing and Contracts Division for resolution prior to Bidding. Failure to report these conflicts and problems places the responsibility on the Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide, erect, and maintain temporary barriers and security devices.
- B. Protect existing landscaping materials, appurtenances, structures and adjacent roofs which are not to be demolished.

3.02 DEMOLITION REQUIREMENTS

- C. Conduct demolition to minimize interference with adjacent structures and occupants.
- D. Any materials damaged by the demolition process that are out of the scope of work, as specified by the contract documents, must be replaced at no additional cost to the owner.
- E. Cease operations immediately if adjacent structures appear to be in danger. Notify Architect. Do not resume operations until directed.
- F. Conduct operations with minimum interference to public or private accesses. Maintain egress and access at all times.
- G. Remove demolished materials from site.
- H. Do not burn or bury materials on site. Leave site in clean condition.
- I. Upon completion, remove all temporary work.

**SELECTIVE DEMOLITION
SECTION 02070**

- J. Coordinate and schedule HVAC roof top mechanical and electrical work with roof replacement work. Minimize roof deck exposure during this process.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Nailers and blocking,
 - 2. Preservative treatment of wood where indicated.

- B. Related Sections:
 - 1. Section 07413 – Metal Roof Panels
 - 2. Section 07620 – Sheet Metal Flashing and Trim

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A208.1 - Mat-Formed Wood Particleboard.

- B. American Wood-Preservers' Association:
 - 1. AWPA Standard U1, UC 1-4 - All Timber Products - Preservative Treatment by Pressure Process.
 - 2. AWPA Standard U1, UCF A and B - Structural Lumber - Fire-Retardant Treatment by Pressure Processes.

- C. ASTM International:
 - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

- D. National Fire Protection Association:
 - 1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

- E. Southern Pine Inspection Bureau:
 - 1. SPIB - Standard Grading Rules for Southern Pine Lumber.

- F. Underwriters Laboratories Inc.:
 - 1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

- G. U. S Department of Commerce National Institute of Standards and Technology:
 - 1. DOC PS 1 - Construction and Industrial Plywood.
 - 2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
 - 3. DOC PS 20 - American Softwood Lumber Standard.

1.3 SUBMITTALS

- A. Division 1 - Submittal Procedures

MISCELLANEOUS ROUGH CARPENTRY SECTION 06100

- B. Product Data: Submit technical data on
 - 1. Wood /Plywood
 - 2. Fasteners and Anchors
 - 3. Wood preservative and fire retardant treatment materials and application instructions.
 - 4. MSDS of treatment materials.
- C. Samples:
 - 1. Fastener types : Two (2) of each type
 - 2. Material Samples, if requested by the Architect.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. Lumber Grading Agency: Certified by DOC PS 20.
 - 2. Lumber: DOC PS 20.
- B. Surface Burning Characteristics:
 - 1. Fire Retardant Treated Materials: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- C. Apply label from agency approved by authority having jurisdiction to identify each preservative treated and fire retardant treated material.
- D. Perform Work in accordance with current Florida Building Code requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber Grading Rules: SPIB.
- B. Miscellaneous Framing/Blocking: Stress Group D 1x and 2x No. 2 Grade Southern Yellow Pine species, 19 percent maximum moisture content, pressure preservative treated where indicated.

2.2 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. All fasteners: Stainless steel for high humidity and treated wood locations, hot dipped galvanized steel elsewhere.
 - 2. Nails: ASTM F1667; ring-shanked, except as otherwise directed.
 - 3. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment) for wood (exterior, above ground): AWP U1, use category 3 (UC3) using water borne preservative with 0.25 pounds per cubic foot of wood product.
- B. Wood preservatives shall not contain arsenic or arsenate.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Division 1 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify substrate conditions are ready to receive blocking, curbing and framing.

3.2 PREPARATION

- A. Coordinate placement of blocking, curbing and framing items.

3.3 INSTALLATION

- A. General:
 - 1. Discard material with defects which might impair quality of work and units which are too small to fabricate work with minimum joints or optimum joint arrangement.
 - 2. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
 - 3. Securely attach carpentry work to substrate by anchoring and fastening as shown or as required by recognized standards. Countersink fastener heads on exposed carpentry work.
 - 4. Use fasteners and anchorages as indicated. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required. Holes drilled oversized or wallered out, shall be re-drilled.
 - 5. Place horizontal members, crown side up.
 - 6. Construct curb members of solid wood sections.
 - 7. Do not install wood nailers or sheathing more than one day in advance from installation of roofing. Install dry-in felt over any wood nailers and sheathing.
- B. Nailers, Blocking and Curb Extensions:
 - 1. Coordinate curb extensions and installation of wood nailers with roof construction work.
 - 2. Provide blocking and edging wherever shown and where required for screeding or attachment of other work.
 - 3. Set members level and plumb, in correct position.

MISCELLANEOUS ROUGH CARPENTRY
SECTION 06100

4. Construct curb members of single pieces.
5. Curb roof openings [except where prefabricated curbs are provided]. Form corners by alternating lapping side members.
6. Attach to substrates as required to support applied loading. Countersink bolts and nuts with washers flush with surfaces, unless otherwise shown.
7. Where new members are doubled, ends shall be lapped and thoroughly spiked to each other and to bearing members.
8. Where new members bear on concrete, securely fasten to same by bolts or lag screws on centers as called for on drawings, staggered. Provide heads of all bolts or lag screws with large-head washers.
9. Round edges and corners of wood plates where flashing occurs.

3.4 SCHEDULES

- A. Roof top equipment curb nailers and extensions: See project manual details and plans for sizes and locations.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preformed, mill finished standing seam metal roof & wall panel systems.
 - 2. Self-adhesive, modified bitumen underlayment.
 - 3. Flashings, trim, anchorage, and accessories.

- B. Related Sections
 - 1. Section 02070 – Selective Demolition
 - 2. Section 06100 – Rough Carpentry
 - 3. Section 07410 – Standing Seam Metal Roofing & Siding.

1.2 DESCRIPTION OF WORK

- A. Remove and store existing electrical lightning protection air terminals for reinstallation.

- B. All Areas where indicated: Remove metal roof panel system, drip & gable edge and vent stack flashing down to the existing underlayment over insulation to remain.

- C. Remove and replace any damaged or deteriorated blocking, nailers or insulation.

1.3 QUALIFICATIONS

Materials Removal Firm: Company specializing in performing the work of this Section with minimum 5 years documented experience.

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.

- B. Product Data: Provide product description and specification information of roof materials and accessories as may be specified elsewhere.

- C. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.5 PRE-INSTALLATION CONFERENCE

- A. Attend conference specified in Division 1.

1.6 PROJECT CONDITIONS

- A. Existing Conditions
 - 1. The roof applicator shall verify existing conditions, such as soundness of perimeter conditions, varying deck and other visible conditions prior to bidding.

**PREPARATION FOR RE-ROOFING
SECTION 07015**

2. Report conflicts and problems to the Purchasing and Contracts Division for resolution prior to bidding. Failure to report these conflicts and problems places the responsibility on the Prime Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
3. Replace or restore to original condition any materials or work damaged during construction.
4. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to those areas.
5. Failure to install the work in strict accordance with provisions of this Section is subject to total rejection of work specified herein.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous protection prior to and during installation of new roofing system.

1.8 SCHEDULING AND COORDINATION

- A. Schedule and coordinate work under the provisions of Division 1.
- B. Schedule work to coincide with commencement of installation of new roofing system.
- C. Coordinate the work with other affected mechanical and electrical work associated with roof penetrations.
- D. Remove only existing roofing materials that can be replaced with new materials the same day or as the weather will permit.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Temporary Protection: Sheet polyethylene; provide weights to retain sheeting in position.
- B. Protection Board (as may be required): ASTM C208, Roof Insulating Board type, cellulose fiber board, with the following characteristics:
 1. Board Size 48x96 inches.
 2. Board Thickness 1/2 inch
 3. Board Edges square

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions under provisions of Division 1.
- B. Verify that existing roof surface is clear and ready for work of this section.

3.2 PREPARATION

- A. Sweep roof surface clean of loose matter. Remove loose refuse and dispose off site.

3.3 MATERIAL REMOVAL

- A. Remove metal drip edge and gable edge flashing
- B. Cut existing lightning protection system below deck and abandon.
- C. Remove vent stack penetrations.
- D. Remove damaged insulation and fasteners and blocking.
- E. Repair existing wood, underlayment and rigid board system.

3.4 TEMPORARY PROTECTION

- A. Protect finished Work under provisions of Division 1.
- B. Provide temporary protective sheeting over uncovered deck surfaces.
- C. Turn sheeting up and over parapets and curbing. Retain sheeting in position with temporary fasteners.
- D. Provide for surface drainage from sheeting to existing drainage facilities.
- E. Do not permit traffic over unprotected or repaired deck surfaces.

3.5 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1.
- B. Inspection will identify the exact limits of material removal.
- C. Testing will identify the exact condition of existing materials and their reuse, repair or removal.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preformed metal roof panel system.
 - 2. Two-ply self-adhesive modified bitumen underlayment system.
 - 3. Flashings, trim, anchorage, and accessories.

- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 01010 – Summary of Work
 - 3. Section 06100 – Miscellaneous Rough Carpentry
 - 4. Section 07620 – Sheet Metal Flashing and Trim
 - 5. Section 07900 – Joint Protection.

1.2 REFERENCES

- A. American Society of Civil Engineers (ASCE)
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA - 620 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.
 - 2. AAMA - 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates.
 - 3. AAMA - 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.

- C. ASTM International (ASTM):
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - 3. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 4. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 - 5. ASTM D226 - Standard Specification for Asphalt Saturated Organic Felt Used in Roofing and Waterproofing.
 - 6. ASTM D412 - Standard Test Method for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
 - 7. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

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8. ASTM D6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
9. ASTM E283 - Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
10. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Doors, and Curtain Walls by Uniform Static Air Pressure Differential.
11. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
12. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.3 SYSTEM DESCRIPTION

- A. Metal roof and wall panel systems:
 1. Standing seam metal roof panels – Install new standing seam metal panel system over new insulation and coverboard over existing insulation system. Raise perimeter edge & gable blocking.
 2. Two (2) layers of self-adhering modified bitumen underlayment over new coverboard.
- B. Design Requirements; design roof system to withstand:
 1. Live and dead loads in accordance with current Florida Building Code.
 2. Minimum wind pressures based on a design wind speed of 140 mph ultimate / 108 mph nominal (actual) as defined and calculated in accordance with current editions of ASCE 7 and the Florida Building Code with maximum allowable deflection of L/180, tested in accordance with ASTM E1592.
 3. Movement caused by an ambient temperature range of 120 degrees F and a surface temperature range of 180 degrees F.
- C. Performance Requirements:
 1. Air leakage: Maximum 0.03 CFM per square foot of roof/wall area, measured at reference differential pressure across assembly of 6.24 PSF, tested to ASTM E283.
 2. Water leakage: None. Tested to ASTM E331 with test pressure of 6.24 PSF.

1.4 SUBMITTALS

- A. Submittals for Review:
 1. Submit under provisions of Division 1.
 2. Shop Drawings: Show scaled layouts of panel configuration. Indicate only those conditions which differ from or are not included in the project documents.
 3. Product Data:
 - a. Show system components (panels, trim, and accessories).
 - b. Provide data on metal type, finishes, characteristics and general recommendations from metal panel manufacturer.
 4. Manufacturer's written installation instructions: Indicate special handling criteria, installation sequence, and cleaning procedures and certifications.
 5. Engineer's Calculations:

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- a. Provide calculations which have been prepared, signed and sealed by a Florida Registered Structural Engineer based on the performance and test data obtained from the manufacturer's ASTM E 1692 testing program.
 - b. Submit two copies of the ASTM E 1592 test results with the structural calculations for review by the Owner and the Architect.
6. Samples:
- a. After color selection submit two (2) sets of two (2) interlocking roof panel samples, approximately 24" to 36" wide by 30" long, in selected color on representative backing.
 - b. Fasteners: Submit two (2) samples of each fastener type.

- B. Closeout Submittals
 - 1. Warranties: Panel system and Finish

1.5 MOCK-UP

- A. Provide mock up of the panel system under provisions of Division 1.
- B. Construct metal roofing mock up, three (3) feet long (or two panel widths), minimum width which includes metal panels mounted to substrate illustrating typical methods and materials for the standing seam support, deck anchorage, hemmed lower edge and cleat, metal 'Z' closure piece, and sealant application installation
- C. Mock may not remain as part of the Work.

1.6 QUALITY ASSURANCE

- A. Materials Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with five (5) years current documented experience.
- B. Manufacturer's Field Inspection and Services
 - 1. Manufacturer of roofing products shall provide qualified personnel to observe field conditions of surfaces and installation, quality of workmanship, as applicable, and to make appropriate recommendations.
 - 2. Representative shall visit the project throughout the progress of the work as necessary to ensure the quality of workmanship. Site visits shall be schedule as follows:
 - a. Pre-construction meeting
 - b. Major construction segments
 - c. Perform Manufacturer's final inspection prior to Architect's Substantial Completion Inspection.
 - d. Attend called meetings.
 - 3. Representative shall submit written reports within three (3) days to Architect listing observations, recommendations and other related comments
- C. Coordinated Installation: Except as otherwise indicated, perform roofing and flashing work as a single integrated unit of work, without division of responsibility between separate installers (a Single Installer responsibility is required)

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- D. Installer Qualifications: Work of this Section shall be performed by a single installer and shall be a firm specializing in metal roofing system work for at least five (5) years documented experience and approved by the system manufacturer.
 - 1. Applicator shall have completed a minimum of three (3) projects of a similar nature and size within the last five (5) years.
 - 2. A minimum of 35% of the work must be performed by full-time employees of the applicator with a minimum of six (6) months continuous documented work experience with that company.
 - 3. The Owner reserves the right to request submission of appropriate documentation of the above defined qualifications within twenty-four (24) hours after the bid. Failure to submit documentation upon request, or to meet the above defined experience qualifications, may be grounds for disqualification of the bid.
- E. If requested by the Owner, submit a copy of a list of projects, (with project name, location, date, size, roof system, cost and references). The list shall contain contacts and phone numbers.
- F. The installation shall be performed by a roofing contractor who has been trained by the manufacturer and certified in writing as an installer approved by the manufacturer of the metal roofing. Certificate holder must be employed by roofing contractor and be present at the jobsite for the duration of the project.
- G. Maintain full-time supervisor/foreman, not a workman/foreman, on job site during times that roofing work is in progress. Supervisor must have minimum of three (3) years experience in roofing work of same or similar products manufacturer as bid.
- H. Test proposed fastener to verify that pull out strength per fastener is adequate in relation to the project engineering requirements. A documented pull test report from the fastener manufacturer is to be provided indicating a minimum number of pull tests per roof area and per square feet as required by the roofing material manufacturer

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver to site, store, protect and handle products under provisions of Division 1.
- B. Store and protect panels from moisture due either from precipitation or condensation, damage by construction traffic, temperature extremes, mud, dust sand, oil, grease or dirt.
- C. Protect panels from contact with any materials that could cause staining or discoloration of finish.
- D. Stack preformed and prefinished material in such a manner as to prevent twisting, bending, warping, surface damage, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage

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1.8 ENVIRONMENTAL CONDITIONS

- A. Do not install underlayment at ambient or surface temperatures less than 40 degrees F or on wet or frozen substrate.

1.9 PROJECT CONDITIONS

- A. The roofing applicator and sheet metal installer shall verify existing conditions, such as soundness of perimeter conditions, and varying deck and wall thickness for length of anchoring services required and other visible conditions prior to Bidding. Information used in the design was obtained from original design drawings, existing records and site inspection
- B. Conflicts and problems shall be reported to the Architect prior to Bidding, for resolution. Failure to report these conflicts and problems places the responsibility on the Prime Contractor to complete the work in accordance with the Documents at no additional cost to the Owner
- C. Replace or restore to original condition any materials or work damaged during construction.
- D. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to those areas
- E. Failure to install the work in strict accordance with provisions of this Section, is subject to total rejection of work specified herein.

1.10 WARRANTIES

- A. Manufacturer's Warranty: Furnish a **twenty (20) year** materials and total roof (weather tight) system performance warranty inclusive of roofing materials from deck to finish membrane. The warranty terms and conditions are to comply with the "Manufacturer's Notice of Intent to Issue Roof/Siding Warranty" attached at the end of this Section and includes in part:
 - 1. A twenty (20) year warranty providing coverage against chipping, cracking, fading, or delamination of panel finish.
 - 2. A twenty (20) year warranty providing coverage against rupture, perforation, or structural failure of aluminum-zinc alloy coated panels.
- B. Applicator's Warranty: Furnish a **three (3) year** applicator warranty in accordance with the provisions attached Applicator's Warranty form attached at the end of this Section.

PART 2 PRODUCTS

2.1 STANDARD METAL PANEL ROOF AND WALL MANUFACTURERS

- A. Acceptable manufacturers & products for standing seam metal panel roofs (2/A-2/G) and flush metal panel walls are as follows:
 - 1. ATAS International, Inc. 2" Field-Lok www.atas.com

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2.	Berridge Manufacturing Co.	Zee-Lock	www.berridge.com
3.	Centria Architectural Systems.	SDP200	www.centria.com
4.	Englert, Inc.	S2500 Series	www.englertinc.com
5.	Firestone / Una-Clad	UC-6 Panel	www.firestonebpco.com
6.	Fabral	Stand 'n Seam	www.fabral.com
7.	Imetco	2" Twin-Lok	www.imetco.com
8.	Merchant & Evans, Inc.	Zip-Rib Panel	www.ziprib.com
9.	Petersen Aluminum Corp.	Tite-Loc Plus	www.pac-clad.com
10.	Bemo	Standing seam	www.bemo.com

B. Architect approved equivalent system. Substitutions: Under provisions of Division 1.

C. Metal Roof Panels:

1. Materials: Fabricate panels from Aluminum; 0.040 inch minimum, roll formed, smooth (non-embossed), aluminum sheet, 3105H274 aluminum per AA standards, actual gauge to be determined based on data obtained from ASTM E-1592 testing
2. Panel Profile: Two (2) inch high (maximum) standing seams spaced (16-18) inches on center with interlocking edges intended to be mechanically seamed in the field. Intermediate stiffening ribs within the field of the panel are permitted, but not required. Panels shall be designed to provide full seam side laps when installed. Factory applied sealant shall be provided in female portion of seam.
3. Trim: Profiles as indicated or as required, fabricated from same material and finish as panels, unless specifically noted otherwise.
4. Panel Length: Roll-form panels and trims to required profiles in longest practical lengths. Roof panel are to be continuous from eave to ridge, intermediate end laps are not permitted.

2.2 MATERIALS

A. Aluminum Sheet:

1. ASTM B209, alloy 3015-H14 or equivalent.
2. Recycled Content: Minimum 75 percent recycled aluminum, with minimum 40 percent classified as post consumer.

B. Underlayment: Self Adhered: (Minimum thickness 40 mils) Polyester or otherwise reinforced to prevent tearing, SBS modified asphalt waterproofing and underlayment membrane sheet, single-sided, self-adhesive, with a strippable treated release paper. Surface to be non-skid surface of mineral granules, fabric scrim and/or sanded. Acceptable Products are limited to:

1. Atlas Roofing Products Weather Master TU Ultra
2. Protecto Wrap Co. Rain Proof – 60
3. Tamko TW Metal and Tile Underlayment.
4. Soprema Sopralene Stick.
5. Architect approved equivalent product, must be approved prior to use.

2.3 INSULATION

- A. Polyisocyanurate Insulation: Closed cell glass fiber reinforced type (non-tapered), conforming to the following:
1. Board Density: 2.0 lb/cu ft.
 2. Board Size: 4x4 feet.
 3. Board Thickness:
(Proposed) Non-tapered boards, cumulative thickness at 2 inches thick.
(Existing Repair) Non-tapered boards, cumulative thickness at 2.75 inches thick.
 4. Compressive Strength: 25 psi per ASTM D 1621
 5. Facing: Factory applied skin of glass fiber facing on both faces.
 6. Board Edges: Square.
 7. Water Absorption: In accordance with ASTM C209, 1 percent by volume maximum.
 8. Foam Core Flame Spread: 25 Max. - ASTM E-84 (Tunnel Test).
 9. ULI Fire Rating: Conform to the current ULI, Class A, Roof/Ceiling fire rated assemblies (see current ULI "Fire Resistance Directory").

2.4 GYPSUM ROOF BOARD

- A. Gypsum Roof Board (Glass fiber reinforced/faced gypsum): as approved for use within a 20 year warranted roof system by the roofing manufacturer, with the following characteristics:
1. Board Type: manufacturer standard product for use over polyisocyanurate insulation and over metal decks.
 2. Manufacturer and Product: Georgia-Pacific Corporation, Gypsum Division, Dens-Deck Prime Roof Board or approved equal.
 3. Board Size: 4 feet x 4 feet (for adhered application) x (1/4" or 1/2") thick.
 4. Compressive Strength: Minimum 900 psi.
 5. Water Absorption: In accordance with ASTM C 1177-91
 6. Board Edges: Square.
 7. UL Fire Rating: Conform to the current UL, Class A, Roof/Ceiling fire rated assemblies (see current UL "Fire Resistance Directory").
 8. Same product can be used to replace existing mineral board sheathing.
- B. Contractor's Option: Gypsum Roof Board (Glass fiber reinforced with no face layer) : as approved for use within a 20 year warranted roof system by the roofing manufacturer, with the following characteristics:
1. Board Type: manufacturer standard product for use over polyisocyanurate insulation and over metal decks.
 2. Manufacturer and Product: United States Gypsum Company, Securock Roof Board or approved equal.
 3. Board Size: 4 feet x 4 feet (for adhered application) x 1/4" thick.
 4. Compressive Strength: Minimum 1,250 psi
 5. Water Absorption: 10 In accordance with ASTM C 473
 6. Board Edges: Square.
 7. UL Fire Rating: Conform to the current UL, Class A, Roof/Ceiling fire rated assemblies (see current UL "Fire Resistance Directory").

8. Same product can be used to replace existing mineral board sheathing.

2.5 ACCESSORIES AND FASTENERS

- A. Standing Seam Roof Panel Mounting Clips: Manufacturer's required non-corrosive mounting clip with 6" x 6" x 18 gauge galvanized steel bearing plate minimum or as required by the manufacturer due to existing deck and insulation conditions. Size, shape, thickness and capacity as required to meet design loads indicated. No field modifications of, or anchorage thru the mounting clip will be permitted which will limit the ability of the roof system to accommodate thermal movement.
- B. Flexible Panel End Closure Strips: Closed cell, expanded cellular rubber, self-extinguishing, cut or pre-molded to match corrugation configuration of roofing and/or siding panels. Provide where indicated and necessary to ensure weathertight construction.
- C. Prefabricated Pipe Flashing "Boot": Compression molded EPDM rubber tapered pipe flashing unit with 1" wide flexible aluminum base. Material to be ozone and ultraviolet resistant
1. Approved Manufacturer and Product: Portals Plus, Inc. Bensenville, IL - Deck-Mate.
 2. Architect approved equivalent product, must be approved prior to use.
- D. Joint Sealers: Specified in Section 07900.
- E. Miscellaneous Accessories: Except as indicated as work of another specification section, provide components required for a complete roofing/siding system, including trim, coping, fascias, sills, corner units, ridge closures, clips, seam covers, battens, flashing, gutters, louvers, sealants, gaskets, fillers, closure strips and similar items. Match materials/finishes of preformed painted panels. The same warranty that applies to panel finishes shall apply to sheet metal accessories.

2.6 FABRICATION

- A. General: Provide roofing and siding sheets roll formed to profile indicated and specified. Provide flashing, closures, fillers, metal expansion joints, ridge covers, roof panel mounting clips, gable and eave trim, gutters and other sheet metal accessories factory formed and finished. Material and finish shall be as specified.
1. Allowances for thermal expansion: Pre-engineered metal roof system shall be designed, fabricated, and installed to allow relative movement between roof panels and purlins, gables and ridges due to thermal expansion and contraction without causing damage to the system or permanent deformation to any of the system components. Roof panel end laps shall allow panels to expand and contract without damage to end lap seams.
- B. Roof Panels:
1. Materials: Fabricate panels from Aluminum; 0.040 inch minimum, roll formed, smooth (non-embossed), aluminum sheet, 3105H274 aluminum per AA

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- standards, actual gauge to be determined based on data obtained from ASTM E-1592 testing
2. Panel Profile: 2 inch "nominal" high standing seams spaced 16-18 inches on center with intermediate stiffening ribs at 4-6 inches on center, interlocking edges. Panels shall be designed to provide full seam side laps when installed. Factory applied sealant shall be provided in female portion of seam.
 3. Trim: Profiles as indicated or as required, fabricated from same material as panels.
 4. Panel Length: Roll form panels and trims to required profiles in longest practical lengths. Roof panel are to be continuous from eave to ridge, intermediate end laps are not permitted

2.7 FINISHES

- A. Panels and Trim: Panels shall be factory painted with a full strength fluoropolymer finish. Paint shall contain 70-75% KYNAR 500 resin and applied, (0.80 mil thickness), over manufacturer's primer, (0.20 mil thickness), with a total system thickness of 1.00 mil per ASTM D 1400. Gloss to be 20-30% per ASTM d 523 at 60 degrees. Architect will select color from manufacturer's color chart including metallic colors. Back side shall be factory painted with polymer paint.
- B. The physical characteristics of the exterior coating shall be measured by the following laboratory weather simulating tests to obtain test results justifying a manufacturer's **twenty (20) year** warranty:
 1. Humidity Resistance at 95°F and 100% R.H. in accordance with ASTM D 2247: 1000 hours.
 2. Salt Spray Resistance at 5% Salt Fog per ASTM B 117: 1000 hours.
 3. Reverse Impact Resistance in accordance with ASTM D 2794: No cracking or loss of adhesion.
 4. Resistance to Accelerated Weathering - in an Atlas Model XX-R Dew Cycle Weather-O-Meter in accordance with ASTM D 822: 5000 hours.
 5. Abrasion Resistance to falling sand in accordance with ASTM D 968: 65 liters minimum.
 6. Chemical/Acid/Pollution Resistance:
 - a. Chemical spot tests in accordance with ASTM D 1308 procedure 5a, for Hydrochloric Acid, Sulfuric Acid and Sodium Hydroxide: No effect.
 - b. Chemical spot tests in accordance with ASTM D 1308 procedure 5b, for Muriatic Acid and Tincture of Iodine: No effect.
 - c. Resistance to sulfur dioxide in accordance with "KESTERNICH" cyclic test, (DIN 50018 and ASTM G 87): 15 cycles minimum.
 7. Gloss finish shall be maintained evenly over entire surface in accordance with ASTM D 523.
 8. Accessory finishes: The same warranty that applies to panel finishes shall apply to sheet metal accessories.

PART 3 EXECUTION

3.1 GENERAL

- A. Pre-engineered metal roofing system shall be installed in strict conformance with manufacturer's instructions. Roof panels shall be installed to allow for relative movement between roof panels and ridge, gables, fascias and other components of the roof system
- B. If a section of roof requires reworking and/or patching, the entire area or section of roofing shall be replaced. This shall mean from vertical surface to vertical surface, or roof perimeter to roof perimeter in all directions.
- C. Watertightness Imperative:
 - 1. The work specified herein will not preclude the use of procedures that will maintain the buildings watertight. Therefore, the Contractor, while conforming to these Contract Documents, must utilize necessary procedures to keep water out of the buildings while construction is in progress.
 - 2. At end of each day's roofing installation and prior to the onset of all inclement weather, new section of roofing shall be temporarily sealed with cut offs to the unfinished substrates. Seal projections through the roof and to the surrounding intersections so that no moisture may enter roofing or into structure before work resumes. Remove cut offs before work resumes.
- D. In areas where there is a chance of debris falling into the occupied space, work will be performed after hours, on weekends or on holidays.
- E. Environmental Impact: Ensure that fresh air intakes in the area of new roofing construction are properly sealed or filtered. Coordinate user requirements for temporary equipment shutdown as needed. Also, take care to prevent lightweight concrete or asphalt from entering through voids in the deck.
- F. Interior Work: Coordinate installation of associated ceiling repairs with user schedules and peak-use times.
- G. Off Hour Work: The following roof construction activities must be coordinated and scheduled to occur while those spaces immediately below the required work are not occupied.
 - 1. Asbestos abatement.
 - 2. Roof tear-off.
 - 3. Removal or installation of heavy roof top equipment.
 - 4. Structural and/or deck repairs.
 - 5. Loading or unloading of materials.
 - 6. Installation of up-lift anchors into Tectum decks.
 - 7. Any covered walkway roofing work.
 - 8. Any interior (below structural roof deck) work.

3.2 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secured.
- C. Verify deck is clean and smooth, free of depressions, waves, or projections and properly sloped.
- D. Verify deck surfaces are dry. If applicable, verify flutes of metal deck are clean and dry.
- E. Verify roof openings, pipes, conduit, sleeves, ducts, and vents through roof are solidly set and are in place

3.3 INSTALLATION REQUIREMENTS

- A. Insurance/Code Compliance: Install system for (and test where required to show) compliance with governing regulations and with the following requirements:
 - 1. Underwriters Laboratories "Fire Classified" and "Class A", the Florida Building Code and ASCE 7 for up-lift resistance.

3.4 INSULATION AND ROOF BOARD APPLICATION

- A. All Roof Areas
 - 1. Mechanically fasten non-tapered rigid insulation to metal deck in accordance with the prescribed attachment requirements as determined by ASCE 7 wind uplift criteria
 - 2. Adhere gypsum roof coverboard to tapered rigid insulation. Trim perimeter blocking as necessary.

3.5 INSTALLATION OF UNDERLAYMENT

- A. First membrane to be applied upon tear-off. Second layer to be applied before panel installation.
- B. Starting at low edge, apply underlayment horizontally on roof. Weatherlap each sheet 4 inches over preceding sheet. Lap ends 6 inches minimum.
- C. Press to full bond with substrate without voids, wrinkles, bridging, or fishmouths. Seal ends and edges.
- D. Lap underlayment minimum 12 inches over hips and ridges from both sides. Apply 36 inch wide strip centered lengthwise over ridge.
- E. Extend minimum 4 inches up abutting vertical surfaces.

3.6 INSTALLATION OF METAL PANELS

- A. Install in accordance with manufacturer's instructions and approved Shop Drawings.

- B. Install aligned, level, and plumb.
- C. Fasten panels using concealed panel clips as defined by the manufacture's engineering. Exposed fasteners are not permitted.
- D. Install panels in continuous lengths from eave to eave without end joints. Fixed point to be established at center of roof with a non-maleable anchor clip – no exposed fasteners.
- E. Install trim to maintain visual continuity of system. Mechanically seam panels with automated seaming machine.
- F. Install joint sealers and gaskets to prevent water penetration.
- G. Flash penetrations through roofing with metal trim to match panels:
 - 1. Lap flashings over roof panels 12 inches minimum on all sides and seal with double bead of joint sealer.
 - 2. Install metal draw band and joint sealer at top of pipe penetrations.
 - 3. Install water diverter (cricket) at uphill side of square and rectangular penetrations.
- H. Installation Tolerances:
 - 1. Variation from location: Plus or minus 1/4 inch.
 - 2. Variation from plane: 1/4 inch in 10 feet.

3.7 DAMAGED MATERIAL

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

3.8 ADJUSTING AND TOUCH-UP PAINTING

- A. Apply manufacturer's supplied touch-up paint, at the discretion of the Architect, to any scratches or scrapes or other deficiencies in the painted metal finish
- B. All raw edges of the metal roof panels or flashing which may be left exposed due to either factory or field cutting and may be subject to corrosion are to receive manufacturer's supplied touch-up paint.

3.9 CLEANING AND PROTECTION

- A. Cleaning: Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.
- B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashing and sheet metal work during construction, to ensure that work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

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END OF SECTION

MANUFACTURER'S NOTICE OF INTENT TO ISSUE ROOF WARRANTY

Whereas _____

herein called the "Roofing System Manufacturer" hereby gives notice to:

Owner: _____

Address: _____

of its Notice of Intent to issue its Roof Warranty, to the Owner for the Project,

Project: _____

Address: _____

incorporating the Manufacturer's _____

_____ Metal Panel Roofing system or product is installed in accordance with the Contract Documents.

A. Manufacturers' Notice of Intent to Issue Roof Warranty in conformance with the Contract Documents shall be executed by the manufacturer as part of the Product Data submittals prior to the start of construction. The contractor shall submit a single form, only from a specified manufacturer, and shall include items 1 and 2 as follows:

1. A detailed description of the components of the manufacturer's system proposed and a list of any other component and accessories, proposed for use in the system that is provided by other manufacturers or suppliers.
 - a) A statement that the Manufacturer's Representative has thoroughly reviewed the job conditions and project manual, (plans, specifications & details). Having reviewed the above items and project requirements in detail, the Representative will provide a written response to the Design Professional ten days prior to the bid date, if conflicts between the Manufacturer's requirements occur with the above listed documents.

2. A sample of the Manufacturer's Roof Warranty shall be **submitted with this form and the product data prior to construction.** The manufacturer shall delete all exceptions relative to system failure from high wind uplift pressures due to gale force winds and windstorms below a nominal wind speed of 108 mph and below the following "Unfactored / (Nominal) Wind Uplift Pressures as calculated per the Florida Building Code and ASCE 7:
 - a) Interior of Roof (Zone 1): -44 psf
 - b) Perimeter of Roof (Zone 2): -50 psf
 - c) Corners of Roof (Zone 3): -50 psf

3. **Twenty (20)** year total roof system warranty inclusive of roofing materials, all included products and accessories, including all metal flashings, from roof deck to finish membrane, whether supplied by the membrane manufacturer or by others. Provide a "No Dollar Limit", single source responsibility, non-deductible roofing warranty inclusive of all material and labor in full compliance with all the requirements of the project specifications.

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- a) If the manufacturer fails and/or refuses to issue the required roof warranty, the Contractor with Surety shall warrant to make repairs, replacement or take corrective action on the same terms as required of the manufacturer, (had the warranty been issued by the manufacturer), so that the intended warranty is delivered to the Owner.
 - b) The manufacturer shall modify the roof warranty to include total labor coverage for the warranty period and to Cover damage to roof materials and insulation down to the roof deck resulting from water penetration.
 - c) The manufacturer shall modify the roof warranty to state that the Owner has the right to make emergency repairs without voiding the warranty if the manufacturer or applicator do not respond within 24 hours to notification by the Owner of a defect or leak.
 - d) The manufacturer shall modify the roof warranty to state that annual inspections with written reports by the Owner, and resulting maintenance, are sufficient to fulfill the periodic inspection requirements of the manufacturer's warranty.
4. The manufacturer's Representative shall conduct a Post-Construction field inspection no earlier than **eleven (11) months**, and no later than **twelve (12) months** after the Date of Substantial Completion. Submit a written report within seven (7) days of this visit to the Owner's Maintenance Dept. listing observations, conditions and any recommended repairs or remedial action.
 5. The manufacturer will, during the **second (2nd)**, and **fifth (5th)**, year of this warranty, inspect the roof system and provide a written Executive Summary of the Roof Condition to the Owner.

Further, the manufacturer acknowledges that the applicator:

Roof Applicator's Name: _____

Address: _____

has been approved to install this roof system since _____, _____ and meets the criteria for an approved applicator listed in the Project Manual.

By signing the above, the Authorized Representative of said Manufacturer certifies and represents the Roofing System Manufacturer with the authority to contract and make the above representations to the Owner.

By: _____ Date: _____
Signature of Authorized Representative

Name: _____ Title: _____

Witness: _____

Date: _____

APPLICATOR WARRANTY FOR ROOFING

Whereas _____

of (Address) _____

herein called the "Roofing Contractor", has performed roofing, flashing and sheet metal and associated ("work") on following project:

Owner: _____

Address: _____

Name and Type of Building: _____

Address: _____

Area of Work: _____

Date of Acceptance: _____

Warranty Period: **Three (3) Years** Date of Expiration: _____

AND WHEREAS Roofing Contractor has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period.

NOW THEREFORE Roofing Contractor hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work, and as are necessary to maintain said work in watertight condition.

This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to roofing work and other parts of the building, and to building contents, caused by: a) lightning, windstorm; b) fire; c) failure of roofing system substrate or structure (including cracking, settlement, excessive deflection, deterioration, and decomposition). When work has been damaged by any of the foregoing causes, Warranty shall be null and void until such damage has been repaired and until cost or repairs has been paid by the Owner or by another responsible party as so designated.
2. The Roofing Contractor is responsible for damage to work covered by this Warranty, and is not liable for consequential damages to building or building contents, resulting from leaks or faults or defects of work.
3. The Owner shall promptly notify Roofing Contractor of observed, known or suspected leaks, defect or deterioration. The Contractor shall guarantee to respond to all notifications within twenty four (24) hours and to make all such repairs as deemed necessary to correct said leaks or defects to a satisfactory condition to the Owner. Repairs shall be made by workman in the current employment of the Contractor. Subcontracting of repair work is not permitted.
4. This Warranty is recognized to be the only warranty of Roofing Contractor on said work, and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to him in cases of roofing failures. Specifically, this Warranty shall not operate to relieve Roofing Contractor of responsibility for performance of original work in accordance with requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

IN WITNESS THEREOF, this instrument has been duly executed this

_____ day of _____, 20_ _____

Roofing Contractor Firm (SEAL)

Signature of Authorized Person Printed Name and Title

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Area Divider coping caps and transition flashings
- B. Drip edge and gable edge flashings

1.2 RELATED SECTIONS

- A. Section 06100 - Miscellaneous Rough Carpentry
- B. Section 07413 – Metal Roofing – Siding Panels
- C. Section 07900 – Joint Sealers

1.3 REFERENCES

- A. AISI American Iron and Steel Institute - Stainless Steel - Uses in Architecture.
- B. ASTM A-167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- C. ASTM A-525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
- D. ASTM B-209 - Aluminum and Alloy Sheet and Plate.
- E. ASTM B-32 - Solder Metal.
- F. ASTM B-486 - Paste Solder.
- G. ASTM D-226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- H. ASTM D-4586 - Asphalt Roof Cement, Asbestos-Free.
- I. FS O-F-506 - Flux, Soldering, Paste and Liquid.
- J. NRCA National Roofing Contractors Association - Roofing Manual.
- K. SMACNA - Architectural Sheet Metal Manual, latest edition.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings - Submit Shop Drawing for any condition not shown on the Plans or Details.
- C. Samples - Submit two samples, 12x12 inch in size illustrating typical standing seam,

external corner, internal corner, junction to vertical dissimilar surface, material and finish.

- D. Submit two samples 12x12 inch in size metal samples.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA and standard details and requirements.
- B. Failure to install the work in strict accordance with provisions of this Section is subject to total rejection of work specified herein.
- C. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

- A. Fabricator and Installer - Company specializing in sheet metal flashing work with three (3) years documented experience.

1.7 PRE-INSTALLATION CONFERENCE

- A. Convene 1 week prior to commencing work of this section, under provisions of Division 1.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Stack preformed material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials which may cause discoloration or staining.

1.9 COORDINATION

- A. Coordinate work under provisions of this Section.

PART 2 PRODUCTS

2.1 SHEET MATERIALS

- A. Stainless Steel: ASTM A-167, Type 304, soft temper, 22 or 24 ga. Thick unless otherwise specified; smooth 2B finish.
- B. Zinc-Coated Steel: Commercial quality with 0.20% copper, ASTM A 525 except ASTM A 527 for lock-forming, G90 hot-dip galvanized, 16 gage for cleat/blocking and cants.
- C. Aluminum ASTM B 209, alloy 3003, temper H14, AA-C22A41 mill finish or prefinished as

**SHEET METAL FLASHING AND TRIM
SECTION 07620**

noted by details; thickness as noted by details and schedule within this section.

- D. If any of above is noted to be prefinished, exposed surfaces shall be factory painted with a full strength fluoropolymer finish. Paint shall contain 75% KYNAR 500 resin and applied, (0.80 mil thickness), over manufacturer's primer, (0.20 mil thickness), with a total system thickness of 1.00 mil per ASTM D 1400. Gloss to be 20-30% per ASTM d 523 at 60 degrees.

2.2 ACCESSORIES

- A. Sheet Metal Fasteners:
1. Fasteners: Stainless steel
 2. Exposed fasteners are prohibited, and may only be used where specifically permitted by the project details or the Architect.
 3. Fasteners being on weather side of metal are to be a minimum #10 size "Scots" type screw with metal-backed neoprene washer integral with the head of the screw, or 3/16" diameter minimum steel rivet.
 4. Use stainless steel fasteners for exterior application and cadmium plated fasteners for interior applications. Use painted fasteners where fastening into painted panel or trim.
 5. Locate and space fastenings for true vertical and horizontal alignment. Use proper type fastening tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
- B. Fasteners: Stainless steel: Fastener size and penetrations into various substrates should be as follows:
1. Wood: $\frac{1}{4}$ inch screw x 2 inch penetration or
 $1\frac{1}{2}$ inch annular ring stainless steel roofing nail.
 2. Concrete: $\frac{1}{4}$ inch "zamac" nail-in x $1\frac{1}{2}$ inch penetration.
 3. Concrete Block: $\frac{1}{4}$ inch "zamac" nail-in x $1\frac{1}{2}$ inch penetration.
- C. Fastener Schedule: Anchorage for below assumed to be into wood blocking, see details for other specifics.
1. Continuous Cleats: $1\frac{1}{2}$ inch annular ring stainless steel roofing nails at 6 inches on center maximum.
 2. See Fastener Schedule sheets included as part of the project documents.
 3. For all conditions not covered, refer to fastener specifications above or consult with Architect.
- D. Dry-in Membrane: Forty (40) mils minimum thickness, polyester reinforced, SBS modified asphalt waterproofing and underlayment membrane sheet.
1. Interwrap Titanium PSU 30
 2. Protecto-Wrap Rainproof 40
 3. Soprema Sopralene Stick
 4. Tamko TW Metal and Tile underlayment
 5. Architect approved (prior to bidding) equivalent product.

**SHEET METAL FLASHING AND TRIM
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- E. Primer: Asphaltic based primer for flanges set in adhesive.
- F. Protective Backing Paint (bituminous coating): FS-TT-C 494; Cold applied asphalt mastic, SSPC paint 12 compounded for 15 mil dry film thickness per coat.
- G. Sealant: Sealant specified in Section 07 90 00.
- H. Plastic Cement: ASTM D 4586, Type I.
- I. Flashing Tape (concealed application): Double sided, gray extruded or preformed, 99% solids, cross linked polyisobutylene compound, non-sag, non-toxic, non-staining, permanently elastic self adhesive tape. One eighth (1/8) inch minimum thickness, 3/4" minimum width unless otherwise noted on the drawings.
 - 1. Pecora Corporation Extru-Seal Glazing Tape
 - 2. Tremco Construction Products 440 II Tape
 - 3. Equivalent products as approved by the Owner or Architect.
- J. Splash Pads: Precast concrete type, of size and profiles indicated; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment.
- K. Solder: ASTM B 32; type suitable for application and material being soldered.
- L. Sheet Metal Adhesive for aluminum and pre-finished metal: SciGrip SG300 Series adhesive, 2 component system as manufactured by SCIGRIP Americas, 600 Ellis Road, Durham, NC 27703. Contact: (887) 477-4583, (www.scigrip.com) or Architect approved equal.

2.3 FABRICATION

- A. Form sections shape indicated on Drawings, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet metal, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. At all metal roofing termination and transition assemblies / flashing which are to be fabricated using pre-finished metal per the project details; utilize the specified sheet metal adhesive in lieu of soldering or welding, unless noted otherwise by the details
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate corners from one piece with minimum 18 inch long legs; solder for rigidity, seal with sealant.

**SHEET METAL FLASHING AND TRIM
SECTION 07620**

- H. Prein edges of stainless steel sheet. Solder shop formed metal joints. After soldering, remove flux. Wipe and wash solder joints clean. Weather seal joints. (Heliarc shop formed aluminum joints).
- I. Perform soldering work slowly, with properly heated irons to thoroughly heat seam material and sweat solder through full width of seam that shall show not less than 1 inch of evenly flowed solder.
 - 1. Start soldering immediately after application of flux.
 - 2. Solder flat locked seams.
- J. Fabricate vertical faces with bottom edge formed outward 1 inch and hemmed to form drip.
- K. Welded fabricatons at valley flashings.
- L. Fabricate flashings to allow toe to extend 1-1/2" minimum beyond wood nailers. Return and brake edges.
- M. Fabricate accessories in profile and size to suit gutters and downspouts.
 - 1. Anchorage Devices: In accordance with SMACNA requirements.
 - 2. Gutter Supports: Brackets. Straps.
 - 3. Downspout Supports: Brackets.
- N. Seal metal joints.

2.4 FINISH

- A. All stainless steel flashing surfaces are to remain unfinished unless specifically noted otherwise by the project details, in which case, prepare surfaces in accordance with the finish manufacturer's published recommendations.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 5 mil when dissimilar metals are in contact.
- C. Kynar coat valley flashing after welding to match roofing

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify roof openings, curbs, sleeves, through roof are solidly set, and nailing strips located.
- B. Verify roofing termination and base flashing are in place, sealed, and secure.

SHEET METAL FLASHING AND TRIM
SECTION 07620

- C. Do not proceed with work of this section until conditions detrimental to the proper and timely completion of the work have been corrected in an acceptable manner.

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.

3.2 INSTALLATION

- A. Secure flashing in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Construct new curb and install new valley flashings
- C. Fit flashing tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Solder/weld metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.
- E. Apply modified bitumen cement compound between metal flashing and bituminous underlayment and/or flashing membrane. At other locations utilize self-adhesive butyl flashing tape as specified above.
- F. All straight joints in coping cap and fascia metal shall be formed with a minimum of cutting, and assembled in a manner to allow overlap of materials and the underlying cleat for sealant contact.
- G. Re-secure existing loose gutters and downspouts in place using specified fasteners. Inspect that existing downspouts are secured to underground drainage system where existing.
- H. Seal metal joints watertight.

3.3 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Division 1.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

3.4 SCHEDULE

Location	Metal Type	Thickness	Finish
A. Drip/Gable Edge	Aluminum	0.040"	mill

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B.	Continuous Cleats (Edge Mtl.)	Aluminum	0.050"	mill
C.	Area Divider Coping Cap	Aluminum	0.040"	mill
D.	Retainer Cleat (Coping)	Aluminum	0.032"	mill
E.	"U-shaped" Curb	Galv. steel	18 ga	mill
F.	Retainer Cleat (Mtl. Panel)	Aluminum	0.050"	mill
G.	Valley Flashing	Aluminum	0.040"	mill
H.	Retainer Cleat (Valley)	Aluminum	0.050"	mill
I.	Splice Joint Cover	Aluminum	0.040"	mill
J.	Lt. Prot. Pitch pan	Aluminum	0.032"	mill
K.	Miscellaneous metal flashing ; aluminum ; 0.040", mill, finish as required by Architect, typical unless noted otherwise.			

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes sealants and joint backing, and accessories.
- B. Related Sections:
 - 1. Section 07413 – Standing Seam Metal Roofing and Wall Panels.
 - 2. Section 07620 – Sheet Metal Flashing and Trim.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C 834 - Standard Specification for Latex Sealants.
 - 2. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
 - 3. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
 - 4. ASTM D 1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
 - 5. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
 - 6. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Samples: Submit two samples, 1/4 x 6 inches in size illustrating sealant colors for selection.
- D. Manufacturer's Installation Instructions: Submit special procedures, surface preparation and perimeter conditions requiring special attention.
- E. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.4 QUALITY ASSURANCE

- A. Perform work in strict accordance with sealant manufacturer's requirements for preparation of surfaces and material installations instructions.
- B. Maintain one copy of each document covering installation requirements on site.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience, and approved by manufacturer.

1.6 MOCKUP

- A. Section 01400 - Quality Control: Requirements for mockup.
- B. Construct mockup of sealant joints in conjunction with window, wall and roof mockups specified in other sections.
- C. Construct mockup with specified sealant types and with other components noted.
 - 1. Determine preparation and priming requirements based on manufacturers recommendations; take action necessary for correction of failure of sealant tests on mock-up.
 - 2. Verify sealants, primers, and other components do not stain adjacent materials.
- D. Locate where directed by Architect/Engineer.
- E. Incorporate accepted mockup as part of Work.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 01600 – Common Products Requirements.
- B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.
- C. Existing Conditions:
 - 1. Verify existing conditions, such as soundness of perimeter conditions, and varying deck and wall thickness for length of anchoring services required and other visible conditions prior to Bidding.
 - 2. Report conflicts and problems to the Architect for resolution prior to Bidding. Failure to report these conflicts and problems places the responsibility on the Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
 - 3. Replace or restore to original condition any materials or work damaged during construction.
 - 4. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to those areas.

5. Failure to install the work in strict accordance with provisions of this section, is subject to total rejection of work specified herein.

1.8 COORDINATION

- A. Section 01300 – Project Management and Coordination.
- B. Coordinate Work with sections referencing this section.

1.9 WARRANTY

- A. Provide a five (5) year warranty under provisions of Section 01700 – Closeout Procedures.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:

1. Dow Corning Corp.
2. GE Silicones.
3. Pecora Corp.
4. Sika Corp.
5. Tremco.
6. Sonneborn.
7. ChemLink.
8. Substitutions: Section 01600 - Product Requirements.

B. Products Description:

1. Silicone Sealant (Type S): ASTM C 920, Grade NS, Class 25. Use single component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, non sagging type; color as selected or match adjacent finish materials. Acceptable Manufacturers:
 - a. Dow Corning Product: 795.
 - b. GE Product: Silpruf.
 - c. Pecora Corporation Product: 860 / 863 / 864.
 - d. Tremco Product: Spectrem II.
 - e. Architect approved equal.
2. Polyurethane Sealant (Type S): ASTM C 920, Grade NS, Class 25. Use single component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, non sagging type; color as selected or match adjacent finish materials. Acceptable Manufacturers:
 - a. Sika Product: 1A.
 - b. Sonneborn Product: NP-1.

- c. Architect approved equal.
- 3. Ethicone Sealant (Type S): ASTM C 920, Grade NS, Class 25. Use single component, moisture curing, solvent free, non-staining, non-non bleeding, capable of continuous water immersion, non sagging type; color as selected or match adjacent finish materials. Acceptable Manufacturers:
 - a. ChemLink Product: M-1.
 - b. Architect approved equal.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Backer Rod of extruded polyolefin foam made of non-absorbing outer skin and a highly resilient interior network of open and closed cells which will not out-gas when ruptured. Oversize backer rod 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01300 - Project Management & Coordination.
- B. Verify substrate surfaces and joint openings are ready to receive work.
- C. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C 1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C 1193 and manufacturer's instructions.

- B. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - 1. Width/depth ratio of 2 :1.
 - 2. Neck dimension no greater than 1/2 of joint width.
 - 3. Surface bond area on each side not less than 75 percent of joint width.
- C. Install bond breaker where joint backing is not used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tool joints concave. channel shaped as detailed.

3.4 CLEANING

- A. Section 01700 - Execution and Closeout Requirements: Final cleaning.
- B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Execution and Closeout Requirements: Protecting installed construction.
- B. Protect sealants until cured.

3.6 SCHEDULE (JOINT TYPES)

- | | | | |
|----|-------------------------|----------------|-------------------------------|
| A. | Metal to Metal | Type: Silicone | Color to match metal |
| B. | Metal to CMU/Stucco | Type: Urethane | Color to match metal |
| C. | CMU / Stucco joints | Type: Urethane | Color to match Paint selected |
| D. | Any joint to be painted | Type: Urethane | Color to match Paint |

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. SECTION INCLUDES

1. Surface preparation and field application of paints for use for touching up existing or repaired painted finishes of surfaces damaged during these roofing activities.

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry.
- B. Section 07620 - Sheet Metal Flashing and Trim.

1.3 REFERENCES

- A. ASTM D-16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.
- C. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

1.4 DEFINITIONS

- A. Conform to ASTM D-16 for interpretation of terms used in this Section.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Submit manufacturer's color chart illustrating range of colors available for each surface finishing product scheduled.
- D. Samples: Submit three samples, 6x18 inch in size illustrating selected colors for each color selected.
- E. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years experience.
- B. Applicator: Company specializing in performing the work of this section with minimum 3 years documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to code for flame and smoke rating requirements for finishes.

1.8 FIELD SAMPLES

- A. Provide field sample of paint under provisions of Section 01300.
- B. Provide field sample illustrating special coating color, texture, and finish.
- C. Locate where directed.
- D. Accepted sample may remain as part of the Work.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver to site, store, protect and handle products under provisions of Division 01.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- D. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.10 PROJECT CONDITIONS

- A. Existing Conditions:
 - 1. The Bidder shall verify existing conditions prior to Bidding.
 - 2. Conflicts and problems shall be reported to the Architect for resolution prior to Bidding. Failure to report these conflicts and problems places the responsibility on the Prime Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
 - 3. Replace or restore to original condition any materials or work damaged during construction.
 - 4. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to

those areas.

5. Failure to install the work in strict accordance with provisions of this Section is subject to total rejection of work specified herein.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

- 1.10 WARRANTY: Provide 6 year manufacturer's product warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers – Paint:
 1. Benjamin Moore.
 2. Devoe and Reynold.
 3. PPG Industries.
 4. Porter Paint.
 5. Pratt & Lambert.
 6. Sherwin-Williams.
- B. Manufacturers - Primer: Manufacturer's specified prime for use with metals, stucco, and other building materials.
- C. Substitutions: Under provisions of Section Division 01.

2.2 MATERIALS

- A. Coatings: Ready mixed, lead free, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- C. Corrosion Neutralizer: Skybrite Company – Ospho, or approved equivalent product.

2.3 FINISHES

- A. Refer to schedule at end of section for surface finish schedule.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Division 01.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop applied primer for compatibility with subsequent cover materials.

3.2 PREPARATION

- A. Correct defects and clean surfaces which affect work of this section.
- B. Seal with shellac and seal marks which may bleed through surface finishes.
- C. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- D. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints are cleaned. Prime and paint after repairs.
- E. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.
- F. Existing Corroded Steel or Iron Surfaces: Use power wire brushing, power abrading, power impact or other power rotary tools to remove all loose scale, all loose or non-adherent rust, and all loose paint. Do not burnish the surface, operate power tools in a manner that prevents the formation of burrs, sharp ridges and sharp cuts (SSPC-SP-3).
- G. Treated all corroded surfaces with a rust neutralizing compound, such as "Ospho" as manufactured by the Skybrite Company, as directed by the manufacturer.
- H. After hand/power tool cleaning and prior to painting, remove dirt, dust or similar

contaminants from the surface. Acceptable methods included brushing, blow off with clean, dry air or vacuum cleaning.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- F. Allow applied coat to dry before next coat is applied.

3.4 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Section 01400.

3.5 CLEANING

- A. Clean work under provisions of Section 01700.
- B. Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.6 PAINT SCHEDULES

- A. Stucco:
 - 1. One coat of masonry primer.
 - 2. Two coats of acrylic masonry paint. Color to match existing stucco walls.
- B. Metal Fabrications (where indicated by the project details):
 - 1. One coat of metal primer.
 - 2. Two coats of acrylic metal paint (color to match existing stucco).

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Air terminals and interconnecting conductors.
 - 2. Standing seam bases
 - 3. Grounding and bonding for lightning protection.

- B. Related Sections:
 - 1. Section 07413 – Metal Roofing – Siding Panels
 - 2. Section 07620 – Sheet Metal Flashing and Trim

1.2 REFERENCES

- A. Lightning Protection Institute
 - 1. LPI-175 - Lightning Protection Installation Standard.
 - 2. LPI-176 - Lightning Protection System Material and Components Standard.
 - 3. LPI-177 - Inspection Guide for LPI Certified Systems.

- B. National Fire Protection Association
 - 1. NFPA 780 – Standard for the Installation of Lightning Protection Systems.

- C. Underwriters Laboratories
 - 1. UL 96 - Lightning Protection Components
 - 2. UL 96A - Installation Requirements for Lightning Protection Systems.

1.3 SYSTEM DESCRIPTION (SCOPE)

- A. The existing roof top lightning protection system (conductors, air terminals, fasteners, clips, etc) located inside of the structure within the scope of this project is to be abandoned and new system installed. Existing undamaged and non-deteriorated air terminals may be re-used in the new system being installed. All other accessories required for proper installation and functioning of a completed system shall be new. The system is fastened from the exterior of the building and will connect to the existing downleads at the corners of the building thru new curbs.

- B. The new roof top system shall be compatible with existing building system and comply with NFPA and UL requirements and LPI standards.

- C. Work shall be accomplished by a certified lightning protection contractor as required by article 1.8 of this Section.

- D. Upon completion of the lightning protection installation after the roofing and flashing replacement, obtain the services of Underwriters Laboratories, Inc. to provide final inspection and 'Letter of Findings' stating that the lightning protection system has been installed in accordance with UL 96A.

- E. Preparation of the new roof membrane surface to receive the lightning protection system shall be the responsibility of the roofing contractor.
- F. Installation of the new roof top lightning protection system and connection to the existing down lead system shall not affect the roof system warranty in any way.
- G. It will be the responsibility of the roofing contractor to coordinate and schedule the lightning protection work under this section.

1.4 SUBMITTALS

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate layout of air terminals, grounding electrodes, and bonding connections to structure and other metal objects on roof top. Include terminal, electrode, and conductor sizes, and connection and termination details.
- C. Product Data: Provide dimensions and materials of each component, and include indication of listing in accordance with UL 96.
- D. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.5 PROJECT CLOSEOUT SUBMITTALS

- A. Section 01700 - Contract Closeout.
- B. Record actual locations of air terminals, grounding electrodes, bonding connections, and routing of system conductors in project record documents.
- C. Submit 'Letter of Findings' or UL Master Label from Underwriters' Laboratories indicating approval of the lightning protection system.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NFPA 780.
- B. Perform Work in accordance with UL 96A.
- C. Perform Work in accordance with LPI-175 and provide LPI Certification.
- D. The contractor shall furnish a UL Master Label or Letter of Findings upon completion of the installation.
- E. Work shall be performed under the supervision of an LPI Certified Master Installer, and an LPI System Certification shall be delivered upon completion of the installation.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in lightning protection equipment with minimum three years documented experience.
- B. Installer: Authorized installer of manufacturer with minimum three years documented experience. The installing contractor company shall be listed with the Lightning Protection Institute, and Underwriters' Laboratories, Inc. The installation contractor shall have personnel on staff Certified by the LPI as a Master Installer or Master Installer – Designer of lightning protection systems. LPI qualified staff shall provide supervision of the installation to ensure conformance to the Standards.

1.8 PROJECT CONDITIONS

- A. Existing Conditions:
 - 1. Verify existing conditions, such as soundness of perimeter conditions, and varying deck and wall thickness for length of anchoring surfaces required and other visible conditions prior to bidding.
 - 2. Report conflicts or problems to the Architect for resolution prior to Bidding. Failure to report these conflicts and problems places the responsibility on the Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
 - 3. Replace or restore to original condition any materials or work damaged during construction.

1.9 REGULATORY REQUIREMENTS

- A. Product Listing: UL 96 and LPI-176.

1.10 PRE-INSTALLATION CONFERENCE

- A. Section 01040 – Administrative Requirements (Coordination and Meetings): Pre-Construction meeting.
- B. Convene one week prior to commencing work of this section.

1.11 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.12 COORDINATION

- A. Section 01040 - Administrative Requirements (Coordination and Meetings). Coordinate work with roofing installations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All materials used in the installation shall be new and shall comply in weight, size and composition as required by UL 96A and NFPA 780 and shall be labeled or listed by Underwriters Laboratories Inc. for use in lightning protection systems. The system furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of lightning protection equipment. The manufacturer shall be listed by UL as a recognized manufacturer of lightning protection components.

- B. Manufacturers:
 - 1. East Coast Lightning Equipment, Inc.
 - 2. ERICO International Corporation (lightning protection equipment)
 - 3. Harger Lightning Protection, Inc.
 - 4. Heary Brothers Lightning Protection, Inc.
 - 5. Robbins Lightning, Inc.
 - 6. Thompson Lightning Protection, Inc.
 - 7. Section 01600 – Product Requirements: Product options and substitutions. Substitutions permitted per Division 1.

2.2 COMPONENTS

- A. Class I materials shall be used on structures that do not exceed 75 feet in height and Class II materials shall be used on structures that are 75 feet or higher above average grade.

- B. Copper materials shall not be mounted on aluminum surfaces including Galvalume, galvanized steel and zinc; this includes these materials that have been painted.

- C. Aluminum materials shall not come into contact with earth or where rapid deterioration is possible. Aluminum materials shall not come into contact with copper surfaces.

- D. Air Terminals: Air terminals shall be 1/2" by 12" for Class 1 installations and 5/8" by 12" for Class 2 installations solid aluminum (matching existing) and shall extend at least 10 inches above the object to be protected. All air terminal bases shall be cast bronze. The air terminals shall be spaced so as not to exceed 20' apart around the outside perimeter of the roof or the ridge and not over 50' apart through the center of flat roof areas. The air terminals in the center roof area shall be 5/8" by 24" solid aluminum. All "field" air terminal bases shall be of the "non-penetrating" adhesive type. Perimeter coping air terminal bases shall be mechanically attached as indicated by project details.

- E. Grounding Rods: Solid Copper

- F. Ground Plate: Copper

- G. Conductors: Aluminum (match existing).
- H. Cable Straps: One or two hole straps as appropriate. Attachment to metal roofing and associated flashing is permitted only as indicated by project details. Avoid any penetration of the metal roofing and flashing in the field of the system.
- I. Cable Connections and Splices: Bolted pressure clamp type shall be used. Crimp type connections shall not be used. All connectors to be compatible with copper conductor cables.
- J. Anchor Plates and Holders for Conductor Cable: Non-penetrating copper with adhesive bases for flashing and roof- top installations. May be (1) bolted pressure clamp type or (2) crimp type similar to details shown.
- K. Adhesive/Sealant:
 - 1. Ethicone sealant per section 07900, which is compatible with the roof membrane being installed may not be used as adhesive.
 - 2. Epoxy adhesive as specified below is to be used by membrane manufacturer.
- L. Epoxy adhesive is to be used to adhere any base plates to metal surfaces, approved product is as follows: SciGrip SG300 Series adhesive, 2 component system as manufactured by SCIGRIP Americas, 600 Ellis Road, Durham, NC 27703. Contact: (887) 477-4583, (www.scigrip.com) or Architect approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with NFPA 780, UL 96A, and LPI-175.
- B. Connect conductors using mechanical connectors and/or an exothermic welding process. Protect adjacent construction elements and finishes from damage.
- C. Bond exterior metal bodies on building to lightning protection system and provide intermediate level interconnection loops 60 feet (18 m) on center.
- D. During installation, no penetration is permitted of the metal roofing system and/or flashing components by mechanical fasteners unless specifically detailed within the project documents; epoxy adhesive attachment of the base and anchor plates is required otherwise.
- E. Where any part of the protection system is exposed to mechanical injury, it shall be protected by a nonconductive material. If metal pipe or tubing is used for protecting conductors, the conductor shall be electrically connected to the pipe or tubing at both ends. Conceal down conductors in PVC (Schedule 40) conduit.

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- F. Where necessary, connect copper equipment to aluminum surfaces using UL recognized bimetal transition fittings. Lead coating is not acceptable as a bimetal transition fitting.
- G. **Roof Conductors:** A perimeter cable shall be installed around the entire main roof areas, and all penthouses. Each perimeter cable shall be connected to at least (2) down leads, providing a two-way path to ground for each air terminal. All center roof air terminals shall be interconnected with conductors to the outside perimeter cable. Conductors on the flat roof areas may be run exposed. Ground connections shall be made around the perimeter of each roof and to the main down conductor at a maximum distance of 100'-0" on center.
- H. **Down Conductors:** Existing shall be used where properly tested and approved for UL labeling. New down conductors, if required, shall be concealed and installed in 1" PVC (Schedule 40) conduit. Each perimeter roof cable shall be connected to at least two down leads. The average distance between down leads shall not exceed 100' from upper roof to lower roof, or from roof to ground terminals. Irregularly shaped structures may require extra down conductors to provide a two-way path to ground from each air terminal.
- I. **Interconnection of Metals:** All metal bodies within 6' of the conductor shall be bonded to the system with proper fittings and conductor. Connections between dissimilar metals shall be made with UL recognized bimetallic connections.
 - 1. Bonding of all metallic objects and systems at roof levels and elsewhere on the structure shall be complete. Primary bonds for metal bodies of conductance shall be bonded with appropriate fittings and full-size conductor; and shall consist of, but not limited to the following: Roof exhaust fans, HVAC units with related piping ductwork, exhaust vents and any other roof piping systems, cooling towers, and rail systems, window washing tracks, antenna mast for TV, radio or microwave, flag poles, roof handrails and/or decorative screens, roof ladders, skylights, metal plumbing stacks, etc. Exterior architectural metal fascia and/or curtain walls or mullions, which extend the full height of the structure shall also be bonded, if not inherently bonded thru the building frame.
 - 2. Metal bodies of inductance located within 6' of a conductor or object with secondary bonds, shall be bonded with secondary cable and fittings. Typical of these are: roof flashings, parapet coping caps, gravel guards, isolated metal building panels or siding, roof drains, down spouts, roof insulation vents and any other sizeable miscellaneous metals, etc.
- J. **Concealed Conductors:** All concealed conductors shall be installed in 1" PVC (Schedule 40) Conduit.
- K. **Fasteners:** Conductor fasteners shall be UL recognized adhesive type of non-corrosive metal, have ample strength to support conductors and shall be spaced not to exceed 3'-0" centers.
- L. **Roof Penetration:** Utilize existing thru-roof conductor down leads, but install new thru-structure assemblies as detailed within the project documents, the lightning protection

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installer shall furnish the "approved" thru-structure assemblies for installation by the roofing contractor. All work related to the installation and sealing of the thru-structure assemblies shall be furnished by the roofing contractor.

- M. Grounding: The system shall be connected to the existing grounding terminals located at the base of the structure. Where ground terminations do not exist, the contractor is to provide. Ground connections shall be made around the perimeter of the structure and in no case shall average over 100'-0" apart. Ground terminals shall be 5/8" in diameter and shall be driven to a minimum depth of 32'-0". One ground shall have connection to the water system where the water supply enters the building. In case of rock ledge or other conditions making it impossible to comply with the above, trenching or a copper ground plate will be permitted; providing it will meet UL requirements.
- N. Common Grounding: Provide necessary common grounds between the lightning protection system and the electric and telephone service entrance cables, TV and radio antenna grounds.
- O. Coordination of Lightning Protection Work and Re-roofing Work: Provide removal of existing rooftop system and installation of new rooftop system as required to perform roof replacement work. Provide temporary connections required to maintain existing lightning protection affected by new construction. Permanently bond together any existing systems to new system.

3.2 FIELD QUALITY CONTROL

- A. Section 01400 - Quality Requirements: Field inspection, testing, and adjusting.
- B. Upon completion of equipment installation, obtain the services of Underwriters Laboratories, Inc. to provide an inspection and a new "Master Label" for the lightning protection system in accordance with UL 96A. If obtaining a "Master Label" would require modification of building components and/or systems outside of the scope of work of this project, then a "Letter of Findings" is to be provided.
- C. Perform inspection and testing in accordance with LPI-177.

3.3 PROJECT COMPLETION AND CLOSEOUT

- A. Provide to Owner three (3) copies of the As-built Drawings.
- B. Attach Master Label to the building as directed by the Owner, or provide a UL "Letter of Findings" at the completion of the system installation.

END OF SECTION