



**FLORIDA DEPARTMENT  
OF TRANSPORTATION**

**GENERAL REQUIREMENTS AND TECHNICAL  
SPECIFICATIONS**

For

**TAMPA MATERIAL LAB  
ROOF REPLACEMENT**

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## SECTION 01 11 00 – SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.01 PROJECT DESCRIPTION

- A. The General overall description of the Work of the Contract for the:

#### **TAMPA MATERIAL LAB ROOF REPLACEMENT**

can be summarized as follows:

1. Work of this Project in general, includes the complete removal of the existing roofing system and related appurtenances and the subsequent installation of a new metal roof system. The following ancillary items are included:
  - a. Stucco soffit, wood fascia, gutters and downspouts shall be completely removed and replaced with new. Soffit, fascia, gutters and downspouts shall be replaced using new prefinished metal materials designed for this purpose.

- B. Contract Documents:

1. Requirements of the Work are contained in the Contract Documents, and include cross-references herein to published information, which is not necessarily bound therewith.

- C. Intent:

1. The intent of the Contract is to provide for construction and completion in a workmanlike manner, in every detail, of the Work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the Work in a workmanlike manner in accordance with the Contract Documents.

#### 1.02 SAFETY AND PROTECTION

- A. **This facility will remain occupied during construction. Environment control, health and safety of the occupants including visitors are a primary concern in and around the construction site as well as the ability for the office to remain in operation.**

- B. **In as much as each Work area will be accessible to and used by the Department's personnel and visitors during the construction period, it is the Contractor's responsibility to maintain the Work area in a safe, hazard free condition at all times. This will include barricades, fencing, taping up sharp corners or any other precautions necessary to protect the Department's personnel and visitors. Should the Department and/or Architect find the area unsafe at any time, Department and/or Architect will notify the Contractor, and the Contractor shall take whatever steps necessary to remedy the unsafe condition. Should the Contractor not be immediately available for corrective action, the Department may remedy the problem and the Contractor shall reimburse the Department for the expense of such correction.**

- C. **Fixed structures, equipment, paving, landscaping (grass, shrubbery, palms, oak and pine trees) and vehicles (automobiles, trucks, etc.) shall be protected with drop cloths, shielding and other appropriate measures to assure maximum protection of all property and vehicles. All damages resulting from this Work shall be reimbursed to the Department at cost of replacement and/or repair. Refer to Item 1.04 - PRESERVATION AND RESTORATION OF PROPERTY herein for additional requirements.**
- D. **Fire exits located in the building or any adjacent facility shall not be obstructed in any way during construction. Exterior walkways and entrances/exits shall be protected as designated in Section 01 50 00 – TEMPORARY FACILITIES AND CONTROLS.**

### 1.03 SCHEDULING

- A. The Contractor shall be responsible for the planning and scheduling, and the coordination of all Work performed under the Contract Documents, and the entire project as a whole so that materials will arrive on schedule and Work will proceed without delay.
- B. Refer to Section 01 12 16 - PHASING, SEQUENCING, AND WORK RESTRICTIONS.

### 1.04 PRESERVATION AND RESTORATION OF PROPERTY

- A. General:
  - 1. Preserve from damage all property which is in the vicinity of or is in any way affected by the Work, where the removal or destruction of which is not specified in the plans. This applies to public and private property, public and private utilities, trees, shrubs, crops, signs, monuments, fences, pipe and underground structures, etc.
  - 2. Whenever the Contractor's activities damage or injure such property, immediately restore it to a condition similar or equal to that existing before such damage occurred, at no expense to the Department. Protect property during the entire construction period from damage caused by the construction operations or equipment. The Department will not require the Contractor to provide routine repairs or maintenance for structures. However, immediately repair, at no expense to the Department, all damage occasioned by the construction operations.
  - 3. In the event that the Contractor's construction operations result in damage to the existing building requiring repairs, the Contractor shall make such repairs with any equipment, materials, or labor at the Contractor's disposal prior to continuing Contract Work. Direct special attention to the protection of all geodetic monuments, horizontal or vertical, located within the limits of construction.

B. Failure to Restore Damaged Property:

1. In case of failure on the part of the Contractor to restore such property, building, facility or vehicle, or to make good such damage or injury, the Department may, upon 48 hours notice, proceed to repair, rebuild, or otherwise restore such property, building, facility or vehicle as may be deemed necessary, and the Department will deduct the cost thereof from any monies due or which may become due the Contractor under the Contract.
2. Nothing in this clause prevents the Contractor from receiving proper compensation for the removal, damage, or replacement of any public or private property, not shown on the plans, that is made necessary by alteration of the contract work. The Architect and/or Department will authorize such work, provided that the Contractor, or his employees or agents, have not, through their own fault, damaged such property.

C. Final Cleaning Up of Property:

1. Upon completion of the Work, and before the Department accepts the Work and makes Final Payment, remove from the right-of-way and adjacent property all falsework, equipment, surplus and discarded materials, rubbish and temporary structures; restore in an acceptable manner all property, both public and private, that has been damaged during the prosecution of the Work; and leave sidewalks unobstructed and the property in a neat and presentable condition throughout the entire length of the Work under Contract. Do not dispose of materials of any character, rubbish or equipment, on abutting property, with or without the consent of the property owners. The Department will allow the Contractor to temporarily store equipment, surplus materials, usable forms, etc., on a well-kept site owned or leased by the Contractor, adjacent to the Project. However, do not place or store discarded equipment, materials, or rubbish on such a site.
2. Shape and dress areas adjacent to the project property that were used as plant sites or staging areas, materials storage areas or equipment yards when they are no longer needed for such purposes. Restore these areas in accordance with Item 1.04, Paragraphs A. and B. above. Grass these areas when the Architect and/or Department directs.

PART 2 – PRODUCTS

“Not Used”

PART 3 – EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. The Work consists of the furnishing of all labor, materials, and equipment necessary to remove and replace existing roofing system and related appurtenances as shown on the Plans and summarized in these Specifications.

B. Method of Measurement:

1. The quantities for roof replacement work will be measured per lump sum and shall include full compensation for furnishing all labor, equipment, tools, and incidentals necessary to complete the Work.
2. Lump Sum shall also include procuring the building permit.
3. For the Lump Sum cost, assume a replacement of 10% plywood deck and include a unit price (F&I) for each additional 4 x 8 sheet that may required.

C. Basis of Payment:

1. Payment will be made under:  
Tampa Material Lab Roof Replacement - - per lump sum

END OF SECTION

## SECTION 01 12 16 - PHASING, SEQUENCING, AND WORK RESTRICTIONS

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

- A. Includes Phasing, Sequencing, and Work Restrictions required for proper execution of the Work as described herein and indicated on the Plans.

#### 1.02 MAINTENANCE OF OPERATIONS

- A. Critical utility systems including electrical, communications, security, water, sewer, and air conditioning shall remain functional at all times. Items that may be located on roof such as antennas shall be relocated by the Contractor to a temporary location determined by the Department and made operational then re-installed after completion of roof replacement work.

#### 1.03 DEFINITIONS

- A. The following definitions shall apply to Work of this Section:
  - 1. Final Inspection: Upon notification that all Contract Work scheduled for acceptance has been completed, the Department and/or Architect will make an inspection for acceptance. The inspection will be made within seven (7) days of notification by the Contractor. If the Department and/or Architect find that all Work has been satisfactorily completed, the Department and/or Architect will consider such inspection as the final inspection. If any of all of the Work is found to be unsatisfactory, the Department and/or Architect will detail the remedial work required to achieve acceptance. The Contractor shall immediately perform such remedial work. Subsequent inspections will be made on the remedial work until the Department and/or Architect accept all Work. Upon satisfactory completion of the Work, the Department and/or Architect will provide written notice of acceptance as described herein under Final Acceptance.
  - 2. Final Acceptance: When, upon completion of the final construction inspection of the entire Work, the Department and/or Architect determines that the Contractor has satisfactorily completed the Work, the Department will give the Contractor written notice of Final Acceptance.

#### 1.04 SUBMITTALS

- A. Work Sequencing Plan:
  - 1. Within ten (10) calendar days after the date of Notice of Award, submit a comprehensive “Work Sequencing Plan” as described herein under Part 1.06 to the Department and Architect for review and approval.

## 1.05 WORK PHASING

- A. Work shall be performed in a phased construction which shall include all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area, surveying of existing conditions and preparation of necessary schedules to meet the requirements for project completion according to the specific phases herein outlined and for the project Final Inspection and Final Acceptance, in accordance with Contract Documents.
- B. The Contractor shall achieve Final Acceptance of all Work on this Project within **Ninety (90)** Calendar Days from the date of written Notice to Proceed.
- C. Specific phases shall include:
  - 1. MOBILIZATION
    - a. Includes Project mobilization generally consisting of staging area set-up, shop drawing(s) submittal/review, schedule(s) submittal/review, barricade and safety plans submittal/review and material procurement, coordination of Work and other items necessary to prepare for on-site Work.
  - 2. CONSTRUCTION
    - a. Includes all re-roofing work indicated on Drawings and herein specified including, in general; removal of existing roofing insulation, flashings, fascia, soffits, gutters and downspouts, and all other roof-related products down to existing deck; and subsequent re-attachment/replacement of plywood deck and installation of new roofing membrane(s) and associated substrates, flashings, fascia, soffits, gutters and downspouts, and all other related appurtenances.
  - 3. FINAL INSPECTION (CLOSEOUT/PUNCH LISTS)
    - a. Includes closeout procedures including, but not limited to; inspections, punch-list item generation/resolutions, maintenance manual(s) distribution and warranty activations.
  - 4. FINAL ACCEPTANCE
    - a. Includes completion of the final construction inspection of the entire Work,

## 1.06 HOURS OF WORK

- A. Normal working hours shall be as permitted by the Code of Ordinances City of Tampa Florida, Section 5-301.2, and are otherwise between the times listed below:
  - 1. 7:00 am and 6:00 pm, Monday through Friday.



2. 8:00 am and 6:00 pm on Saturday.
3. 10:00 am and 6:00 pm on Sunday.

#### 1.07 WORK SEQUENCING

1. The Contractor shall develop a proposed Sequencing Plan for re-roofing the building including as a minimum, the following:
  - a. Order of removal and subsequent replacement, and path of travel for removing demolished materials.
  - b. Location of hauling vehicles in relation to path for removing demolished materials. Hauling vehicles can be moved as necessary to accommodate shortest path when working on specific areas. Refer to Drawings for temporary staging areas as related to areas where demolition and roof replacement is occurring. Use only one temporary staging area at a time and coordinate with Department as to use.
  - c. Location of temporary barricades and safety signage in relation with roof areas being reroofed.
2. Movable hauling vehicles such as trucks and/or trailers shall be used for removing demolished materials. Dumpsters shall not be utilized unless otherwise approved by the Department.
3. Coordinate location of hauling vehicles with Department as to space required including stand-off distances and haul routes. Department will determine locations and where/when it can be moved from designated temporary staging areas as necessary. Maintain hauling vehicles as to not exceed capacity. Keep area around hauling vehicle broom clean on a daily (minimum) basis or as necessary during loading.
4. Meet with the Department weekly (or as necessary) to coordinate the location of the temporary staging areas and hauling vehicles. Provide updates on what operations will be occurring during the upcoming week to allow the Department to notify their employees as to parking restrictions and means of entering the building.

#### 1.08 STAGING AREAS

##### A. Main Staging Area:

1. The Main Staging Area located on Plans shall be used to house the Contractor's field offices. **Contractor shall notify the Department a minimum of two (2) weeks prior to setting up the staging area as to allow Department to move all the vehicles located therein and to notify their employees of this restricted area.**

B. Temporary Staging Areas:

1. Temporary staging areas located on Drawings shall be used to house the Contractor's demolition hauling vehicles, new materials, material hoists, and other items required for a short period of time while that designated portion of the roof is being worked on.
2. Only one temporary staging area shall be used at a time. Coordinate with Department and/or Architect for use of temporary staging areas with relation to Contractor's proposed phasing plan of roof replacement Work.

1.09 MATERIAL DELIVERIES

- A. Schedule material deliveries during non-working hours (Monday through Friday, after 6:00 pm and prior to 7:00 am and weekends) when the majority of employees have left the facility. Coordinate large deliveries with the Department.

1.10 REPORTS

A. Monthly Reports:

1. The Contractor shall provide monthly written reports to the Department and Architect on the progress of the entire Work.

B. Daily Logs:

1. The Contractor shall maintain a daily log containing a record of weather, subcontractors working on the site, number of workers, work accomplished, areas used for temporary staging, problems encountered and other similar relevant data as the Department may reasonably require. A copy of the log shall be delivered to the Department and Architect upon request for payment.

1.11 PRE-APPLICATION ROOFING CONFERENCE

- A. Approximately two (2) weeks prior to scheduled commencement of Roof Replacement Work, the Contractor shall arrange to meet at the Project Site with: Roofing Installer (Superintendent's presence is mandatory), Department, Architect, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work.
2. Contractor shall record discussions of conference and decisions and agreements or disagreements reached, and furnish copy of record to each party attending within seven (7) days of the meeting. Review foreseeable methods and procedures related to roofing work including, but not limited to, the following:
    - a. Tour representative areas of roofing substrates (deck); inspect and discuss condition of substrate, gutters and downspouts, roof edges, soffits, fascia, penetrations and other preparatory work.

- b. Review roofing system(s) requirements (Contract Documents containing Plans and Specifications).
- c. Review required submittals, both completed and yet to be completed.
- d. Review and finalize construction schedule related to Roof Replacement Work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
- e. Review required inspection, testing, certifying and material usage procedures.

#### 1.12 WORK RESTRICTIONS

- A. The Contractor shall establish a list of Department representative contacts for this Facility.
- B. Keep fire lanes, hydrants and fire department connections clear at all times.
- C. Provide and maintain directional signs around construction fences, barricades, and at blocked exits.
- D. Maintain pedestrian walkway protection from overhead falling objects, projectiles and construction material which may protrude through the fence.
- E. Maintain erosion control devices. Dust, mud and silt are not to runoff from the site during a rainstorm.
- F. Prevent exposure to excessive noise by locating equipment away from building and walkways, employing mufflers or other noise control techniques such as constructing enclosures.
- G. Ensure dust control techniques are used routinely.
- H. Locate welding/cutting equipment away from building.
- I. Turn off construction vehicles or equipment when not in use as to limit pollution. Keep portable generators away from building air intakes.
- J. Lay down areas shall occur in designated areas only to prevent slips, trips and falls and to keep fire lanes open.
- K. Maintain MSD sheets for all materials on site for rapid access in case of emergency.
- L. Repair vehicle and equipment leaks immediately to prevent fuel, coolant, and oil (hydraulics and gear box) spills.
- M. Maintain access and clearance for service vehicles, including trash and recycling collection vehicles.

- N. All temporary roadway or drive closures shall be coordinated with and approved by the Department prior to the closures. The Contractor shall make his request in writing at least seven (7) calendar days prior to the planned closure. The request shall include the location of the closure as well as the duration. The Contractor shall submit a Maintenance of Traffic Plan associated with this requested closure.
- O. The main staging areas, all temporary staging areas and access routes shall be returned to a condition equal to that prior to use as determined by the Department and/or Architect.

## PART 2 – PRODUCTS

“Not Used”

## PART 3 – EXECUTION

“Not Used”

END OF SECTION

## SECTION 01 32 33 – PHOTOGRAPHIC DOCUMENTATION

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

- A. This Section includes the requirements for digital photographing of Roof Replacement Work, related adjacent areas, roadways, surface parking adjoining construction site, and other related sites in accordance with a Photography Plan approved by Department and/or Architect to document existing conditions, conditions of concern and periodic records of construction for the following:
  - 1. Preconstruction photographs (one week prior to initiation of construction).
  - 2. Periodic construction photographs.
  - 3. Final Inspection construction photographs.
- B. Contractor shall have photographs taken each month to be included with Monthly Reports as specified in Section 01 12 16 – PHASING, SEQUENCING, AND WORK RESTRICTIONS until Final Inspection. The actual number and location of views to be taken shall be as directed by Department and/or Architect.

#### 1.02 RELATED WORK

- A. PHASING, SEQUENCING, AND WORK RESTRICTIONS: Section 01 12 16.

#### 1.03 PHOTOGRAPHY PLAN

- A. Submit Photography Plan to document the Roof Replacement Work Site. Photography Plan will state the uses, locations and times for documenting the Project Work. Submit a key plan of Project Site and adjacent areas with notations of vantage points marked for location and direction of photographs. Label photographs with same information as corresponding photographic key plan.
  - 1. Indicate baseline quantity of photographs that will be required to fulfill Photography Plan. Digital Photographs: Submit image files to Department and Architect with each Monthly Report.
  - 2. Format: Unaltered original files, with same aspect ratio as the sensor, un-cropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Provide licensed computer software as required to manipulate and handle images.

4. Identification: Provide the following information with each image description in file metadata tag: Label the photograph indicating:
  - a. Name of Project: Tampa Material Testing Lab Roof Replacement.
  - b. Stationing Location.
  - c. Date photo taken.
  - d. Description/Key Plan Identifier.
  - e. Name of Contractor.
  - f. Name of Photographer.
  - g. Description of Vantage Point, indicating location, direction (by compass point) and elevation of construction.
  - h. Other information as appropriate.

## PART 2 - PRODUCTS

### 2.01 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

### 2.02 KEY PLAN

- A. Identify photographs using the approved Key Plan and schedule, including but not limited to the following:
  1. Orientations of View.
  2. Time of Exposure.
  3. Subject of view, significant objects and important details of images.
  4. Any significant reasons for taking images.
  5. Identifying numbers for reference purposes on recoding disks and printouts corresponding to schedule in Plan.

## PART 3 - EXECUTION

### 3.01 CONSTRUCTION PHOTOGRAPHS

- A. The actual number and location of views to be taken each month shall be as directed by Department and/or Architect and may be influenced by particular events, safety concerns, differing site condition or interference.
- B. Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
  - 1. Date and Time: Include date and time in file name for each image.
  - 2. Field Office Images: Maintain one set of images accessible in the field office at Project Site, available at all times for reference. Identify images in the same manner as those submitted to Department.
- D. Preconstruction Photographs: Before commencement of starting Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Department.
  - 1. Take a minimum of 20 photographs to show existing conditions adjacent to property before starting the Work.
  - 2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
- E. Periodic Construction Photographs: Take a minimum of 20 photographs monthly, coinciding with the cutoff date associated with each Monthly Report. Select vantage points to show status of construction and progress since last photographs were taken.

END OF SECTION

## SECTION 01 73 29 – CUTTING AND PATCHING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Perform all cutting, fitting and patching existing construction affected by and required to complete this Work to include, but not be limited to:
  - 1. Make its several parts fit together properly.
  - 2. Uncover portions of the work to provide for installation of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace work not conforming to requirements of Contract Documents.
  - 5. Provide penetrations of non-structural surfaces for installation of connections and electrical conduit, as applicable.

#### 1.02 RELATED WORK

- A. SELECTIVE DEMOLITION: Section 02 41 16.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Comply with specifications and standards for each specific product(s) involved.

### PART 3 - EXECUTION

#### 3.01 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of Work.
- C. Report unsatisfactory or questionable conditions to the Department and/or Architect. Do not proceed with work until the Department and/or Architect has provided further instructions.



### 3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value to integrity of affected portion of the Work.
- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work.

### 3.03 PERFORMANCE

- A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.
- B. Fit and adjust products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- C. Restore work which has been cut or removed; install new products to provide completed work in accordance with the requirements of the Contract Documents.
- D. Replace surfaces airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- E. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

END OF SECTION

## SECTION 02 41 16 – SELECTIVE DEMOLITION

### 1.01 DESCRIPTION

- A. Work includes all labor, materials, equipment, and supervision necessary to complete all selective demolition work including salvage, removal and disposal services required for Roof Replacement Work indicated on Drawings.
- B. Requirements of Section 01 12 16 – PHASING, SEQUENCING, AND WORK RESTRICTIONS apply to work of this Section.

### 1.02 RELATED WORK

- A. PHASING, SEQUENCING, AND WORK RESTRICTIONS: Section 01 12 16.
- B. CUTTING AND PATCHING: Section 01 73 29.
- C. PREFORMED METAL ROOF PANELS: Section 07 41 13.
- D. FLASHING AND SHEET METAL: Section 07 60 00.

### 1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- C. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

### 1.04 QUALITY ASSURANCE

- A. Qualifications of Demolition Contractor:
  - 1. Demolition shall be performed only by a qualified Contractor with at least five (5) years documented experience in operations of a similar nature.
- B. Requirements of Regulatory Agencies:
  - 1. Comply with governing local and state safety codes pertaining to demolition work, and the following:
    - a. ANSI A10.6 Safety Requirements for Demolition Operations.
    - b. NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations.

2. Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

#### 1.05 SUBMITTALS

##### A. Schedule:

1. Submit schedule for any temporary disconnection of electrical, telephone, security, mechanical and/or plumbing service for Department's approval. Such disconnections shall be restricted to outside of normal operating and/or business hours.

#### 1.06 JOB CONDITIONS

##### A. Condition of Areas:

1. The Department assumes no responsibility for actual condition of areas to be demolished.

##### B. Protection of Existing Construction:

1. Existing construction adjacent to demolition operations, and those portions designated to remain shall be given maximum protection while demolition work is in process. Damage to these portions shall be repaired or replaced at no additional cost to the Department.

##### C. Salvage:

1. If indicated or otherwise required by Department, salvageable items shall include existing items which shall be removed and turned over to the Department for future use. Salvageable items shall remain the property of the Department and be carefully removed from the structure as work progresses. Items to be salvaged shall be determined by Department and/or Architect.
2. Items which are to be turned over to the Department for future use shall be transported to an area designated by the Department.
3. All salvageable items indicated on Drawings to be removed, which are not specifically scheduled for relocation or future use, shall become the property of the Contractor and shall be removed from the job site and premises.

##### D. Protection:

1. Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent structures, other facilities, and persons.
2. Erect temporary barriers and passageways as required.

E. Utility Services:

1. Existing utilities indicated to remain and to be kept in service, shall be maintained and protected against damage during demolition operations.
2. DO NOT interrupt existing utilities serving occupied or "in-use" facilities, except when authorized in writing by the Department. Provide temporary services during interruptions to existing facilities, as acceptable to the Department.

PART 2 - PRODUCTS

"Not Used"

PART 3 - EXECUTION

3.01 PREPARATION

A. Posting of Danger Signs:

1. Danger signs shall be conspicuously posted around demolition areas.

B. Access to Demolition Area:

1. With the exception of passageways and ladders for the use of workmen, access to demolition areas shall be entirely closed off at all times.

C. Temporary Bracing:

1. Provide and maintain bracing to preserve stability and prevent unexpected movement or collapse of roofing materials being demolished.

3.02 PROTECTION

- A. Protect existing work that is to remain in place by temporary covers, bracing, and supports. Repair items damaged during performance of the work or replace with new. DO NOT overload structural elements. Provide new supports or reinforcement for existing construction weakened by demolition or removal work.

3.03 DEMOLITION

- A. Remove debris from elevated portions by chute, hoist, or other device that will convey debris to vehicle or trailer level in a controlled descent.
- B. NO materials shall be dropped (by gravity) to any point.

3.04 DUST CONTROL

- A. Use temporary enclosures, and other suitable methods to limit dust and dirt rising and scattered in air to lowest practical level.

- B. Take appropriate action to check the spread of dust and to avoid the creation of a nuisance in the surrounding area. DO NOT use water.
- C. Comply with governing regulations pertaining to environmental protection.

### 3.05 DISPOSAL

- A. Except for all items to be salvaged, all parts of the structures and appurtenances and all materials recovered during their demolition shall become the property of the Contractor; shall be removed from the Project by the Contractor; and disposed of off-site in a legal manner.

### 3.06 CLEAN-UP

- A. Clean adjacent construction and improvements of dust, dirt, and debris caused by demolition operations, to a degree acceptable to the Architect and the Owner. Return adjacent areas to condition existing prior to start of demolition work.
- B. Keep building areas including exterior clean and free of debris at all times.

END OF SECTION

## SECTION 06 10 10 – ROUGH CARPENTRY

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Types of work in this Section include, but are not limited to, rough carpentry for roof replacement as follows:
  - 1. Wood furring, grounds, nailers, and blocking.
  - 2. Plywood sheathing.

#### 1.02 RELATED WORK

- A. PHASING, SEQUENCING, AND WORK RESTRICTIONS: Section 01 12 16.
- B. SELECTIVE DEMOLITION: Section 02 41 16.
- C. SELF-ADHERING SHEET UNDERLAYMENT: Section 07 13 20.
- D. PREFORMED METAL ROOF PANELS: Section 07 41 13.
- E. FLASHING AND SHEET METAL: Section 07 60 00.

#### 1.03 QUALITY ASSURANCE

- A. Reference Standards: Comply with provisions of the following, unless otherwise indicated or specified:
  - 1. American Forest & Paper Association (AFPA):
    - a. Manual for Wood Frame Construction.
  - 2. American Lumber Standards Committee (ALSC):
    - a. Board of Review.
  - 3. APA - The Engineered Wood Association (APA):
    - a. APA Standard Grading Rules.
    - b. Form No. E30K - APA Design/Construction Guide: Residential & Commercial.
  - 4. American Society for Testing and Materials (ASTM):
    - a. Reference Standards.

5. American Wood Preservers' Association (AWPA):
    - a. Reference Standards.
  6. Federal Specifications (FS):
    - a. Reference Standards.
  7. U.S. Department of Commerce (DOC), National Institute of Standards and Technology:
    - a. Referenced Product Standards (PS).
  8. Southern Pine Inspection Bureau (SPIB):
    - a. SPIB Standard Grading Rules.
  9. West Coast Lumber Inspection Bureau (WCLIB):
    - a. WCLIB Standard Grading Rules.
  10. Western Wood Products Association (WWPA):
    - a. WWPA Standard Grading Rules.
    - b. Recommended Nailing Schedule.
- B. Code Compliance: Attachment of existing (to remain) and new plywood roofing panels and furring strips shall comply with the requirements of the Florida Building Code, current edition in force, including Test Protocols for High Velocity Hurricane Zones.

#### 1.04 SUBMITTALS

- A. Product Data for Treated Lumber: Submit treatment plant's data showing the lumber type, certification by the treating plant stating chemicals and process used, net amount of treatment retained, and conformance with applicable standards. Include a statement that moisture content of treated materials was reduced to a maximum of 19 percent prior to shipment to the Site.

#### 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Maintain materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.
- B. For lumber and plywood pressure treated with waterborne chemicals, provide space between each course to provide air circulation.

## 1.06 PROJECT CONDITIONS

- A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, plates, blocking, grounds and similar supports to allow attachment of other work.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Lumber Standards, General:
  - 1. Manufacture lumber to comply with DOC PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by ALSC Board of Review.
  - 2. Factory mark each piece of lumber with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade species, moisture content at time of surfacing, and mill.
  - 3. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by DOC PS 20, for moisture content specified for each use.
  - 4. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.
- B. Furring, Blocking, Nailers and Similar Members:
  - 1. Furring, blocking, nailers and similar members shall be standard grade light framing size lumber of any species or board size lumber as required. No. 2 Common or Standard grade boards per WCLIB or WWPA rules, or No. 2 boards per SPIB rules.
- C. Plywood Panels:
  - 1. Comply with DOC PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood panels and, for products not manufactured under PS 1 provisions, with APA Form No. E30K.
  - 2. Factory mark each construction panel with APA trademark evidencing compliance with grade requirements.
  - 3. Where construction panels are used for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements indicated for grade designation, span rating, exposure durability classification, and thickness:



- a. Roof Underlayment Panels: Provide plywood panels with grade designation, CDX or better, with exterior glue, in minimum 5/8-inch thickness or oriented-strand-board (OSB) of equal strength and thickness, unless otherwise indicated.

D. Fasteners and Anchorages:

- 1. Provide size, type, material, and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers, and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.
- 2. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating pursuant to ASTM A 153.

E. Decay and Termite Resistant Wood Treatment (where indicated and/or required):

- 1. All lumber specified for decay and termite resistant treatment shall be pressure treated according to AWPA Standard P-5 and FS TT-W-550. Preservatives containing arsenic are NOT acceptable.
- 2. Products: Provide one of the following treatments:
  - a. "Natural Select" copper azole preservative; Arch Wood Protection, Inc.
  - b. "Preserve" ACQ; Chemical Specialties, Inc.
  - c. "NatureWood"; Osiose, Inc.

2.02 WOOD TREATMENT

- A. Decay and Termite Resistant Wood Treatment: Chemicals shall be applied in a closed cylinder by vacuum-pressure process in strict accordance with manufacturer's instructions and with the approved standards and recommended treating practices as listed in AWPA Standards C2 and C9 or the appropriate AWPA standard covering the commodity treated and as listed in FS TT-W-571.

- 1. After treatment and before shipment, lumber 2" nominal or less shall be dried to a 15-19 percent moisture content.

- B. Provide decay (termite) treatment of the following lumber:

<u>Location</u>	<u>Treatment (General)</u>
Wood members where indicated or exposed to moisture	Decay (Termite)

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Examine the areas and conditions under which rough carpentry work is to be installed. Do not proceed with rough carpentry work until unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

#### A. General:

1. Material with defects, which might impair the quality of the work, and units which are too small to fabricate with a minimum of joints or the optimum joint arrangement, shall be discarded.
2. All rough carpentry work shall be set accurately to required levels and lines, with members plumb and true, and accurately cut and fitted.
3. All rough carpentry work shall be securely attached to substrates by anchoring and fastening as shown, and as required for structural adequacy.
4. Fasteners shall be of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Tight connections shall be made. Fasteners shall be installed without splitting of wood; predrill as required.
5. Use washers where required for fasteners to avoid movement of material through loading and/or vibration.
6. Seal cut ends where exposed to moisture or where moisture could migrate via gravity, capillary action, expansion or pressure gradients.

#### B. Wood Furring, Blocking, Nailers, and Similar Members:

1. Wood grounds, nailers, and blocking shall be installed where indicated on the Drawings, and wherever required for screeding or attachment of other work. Shapes shall be formed as shown and cut as required for true line and level of work to be attached.
2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork prior to concrete placement.

#### C. Plywood Panels:

1. Comply with applicable recommendations contained in APA Form No. E 30K for types of plywood panels and applications indicated.

2. Fastening Methods: Fasten existing (to remain) and new panels as follows, in strict accordance with the Florida Building Code:
  - a. Roofing Underlayment Panels: Nail and/or screw to supports, as applicable.

END OF SECTION

## SECTION 07 13 20 - SELF-ADHERING SHEET UNDERLAYMENT

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. This Section includes self-adhering sheet underlayment for preformed seam metal roof panels as indicated on the Drawings.

#### 1.02 RELATED WORK

- A. PREFORMED METAL ROOF PANELS: Section 07 41 13.

#### 1.03 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For the following products, of sizes indicated, to verify color selected.
  - 1. Self-Adhering Underlayment: 12 inches square.

#### 1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain self-adhering sheet underlayment through one source from a single underlayment manufacturer.
- B. Fire-Test-Response Classification: Provide underlayment with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, or UL 790, for application and roof slopes indicated.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
  - 1. Handle, store, and place materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

## 1.06 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit underlayment work to be performed according to manufacturer's written instructions and warranty requirements.
  - 1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

## PART 2 - PRODUCTS

### 2.01 UNDERLAYMENT MATERIALS

- A. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40 mil thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied. Provide primer for adjoining concrete or masonry surfaces to receive underlayment.
  - 1. Basis of Design: "Grace Ice and Water Shield"; W.R. Grace & Co., or approved equal.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of Work.
  - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 UNDERLAYMENT INSTALLATION

- A. Install self-adhering sheet underlayment in accordance with manufacturer's written instructions. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.

END OF SECTION 07 13 20

## SECTION 07 41 13 – PREFORMED METAL ROOF PANELS

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. Furnish and install preformed metal roof panels and related attachments/accessories as indicated on Drawings and specified herein.

#### 1.02 RELATED WORK

- A. ROUGH CARPENTRY: Section 06 10 00.
- B. SELF-ADHERING SHEET UNDERLAYMENT: Section 07 13 20.
- C. FLASHING AND SHEET METAL: Section 07 60 00.
- D. SEALANTS AND CAULKING: Section 07 92 00.

#### 1.03 PERFORMANCE REQUIREMENTS

- A. General: Provide metal roof panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.
- B. Air Infiltration: Air leakage through assembly of not more than 0.06 cfm/sq. ft. of roof area when tested according to ASTM E 1680 at the following test-pressure difference:
  - 1. Test-Pressure Difference: Positive and negative 1.57 lbf/sq. ft.
  - 2. Positive Preload Test-Pressure Difference: Greater than or equal to 15.0 lbf/sq. ft. and the greater of 75 percent of building live load or 50 percent of building design positive wind-pressure difference.
  - 3. Negative Preload Test-Pressure Difference: 50 percent of design wind-uplift-pressure difference
- C. Water Penetration: No water penetration when tested according to ASTM E 1646 at the following test-pressure difference:
  - 1. Test-Pressure Difference; 20 percent of positive design wind pressure, but not less than 6.24 lbf/sq. ft. and not more than 120.0 lbf/sq. ft.
  - 2. Positive Preload Test-Pressure Difference: Greater than or equal to 15.0 lbf/sq. ft. and the greater of 75 percent of building live load or 50 percent of building design positive wind-pressure difference.
  - 3. Negative Preload Test-Pressure Difference: 50 percent of design wind-uplift-pressure difference.

F. Thermal Movements: Provide metal roof panel assemblies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

#### 1.04 CODE/STANDARD COMPLIANCE

A. Product Compliance: The roofing system shall have a State of Florida Product Control Notice of Acceptance (NOA) and meet all requirements of the Florida Product Approval System as required by Florida Statute 553.842 and Florida Administrative Code 9B-72.

B. UL Class A Roof System requirements and FMG Class I Roof System for designated wind load per FMG Loss Prevention Data Sheet 1-28, "Wind Loads to Roof Systems and Roof Deck Securement."

C. Provide roof covering materials bearing UL Classification Marking on bundle, package and/or container indicating that materials have been produced under UL's Classification and Follow-up Service.

D. Comply with the following testing procedures:

1. Florida Building Code Test Protocol TAS 105-Test Procedure for Field Withdrawal Resistance Testing.
2. Florida Building Code Test Protocol TAS 114-Test Procedures for Roof System as the High Velocity Hurricane Zone Jurisdiction.
  - a. Appendix A- Test Procedure for Above Deck Combustibility ASTM E 108.
  - b. Appendix C-Test Procedure for Simulated Uplift Pressure Resistance of Roof System Assemblies.

#### 1.05 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

1. Installer's responsibilities include fabricating and installing metal roof panel assemblies and providing professional engineering services needed to assume engineering responsibility.
2. Engineering Responsibility: Preparation of data for metal roof panels and accessories, including shop drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.

- C. Source Limitations: Obtain each type of metal roof panels through one source from a single manufacturer.
- D. Pre-Installation Conference: Conduct conference at Project site. Review methods and procedures related to metal roof panel assemblies.
  - 1. Meet with Department, Engineer, testing and inspecting agency representative, metal roof panel Installer, metal roof panel manufacturer's representative, deck Installer, and installers whose work interfaces with or affects metal roof panels including installers of roof accessories.

#### 1.06 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal roof panel and accessory.
- B. Shop Drawings: Show fabrication and installation layouts of metal roof panels; details of edge conditions, joints, panel profiles, corners, anchorages, trim, flashings, closures, and accessories; and special details. Distinguish between factory- and field-assembled work.
  - 1. Accessories: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:
    - a. Fascia, flashing and trim.
  - 2. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified Professional Engineer currently registered in the State of Texas responsible for their preparation.
- C. Samples for Verification: For each type of exposed finish required, prepared on samples of size indicated below:
  - 1. Metal Roof Panels: 12 inches long by actual panel width. Include fasteners, clips, closures, and other metal roof panel accessories.
  - 2. Fascia, Trim and Closures: 12 inches long. Include fasteners and other exposed accessories.
  - 3. Accessories: 12 inch long samples for each type of accessory.
- D. Qualification Data: For Installer, professional engineer, and testing agency.
- E. Field quality control inspection reports.
- F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for the following:
  - 1. Metal Roof Panels: Include reports for air infiltration, water penetration, and structural performance.



- G. Maintenance Data: For metal roof panels to include in maintenance manuals.
- H. Warranties: Special warranties specified in this Section.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, metal roof panels, and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation or handling.
- B. Unload, store, and erect metal roof panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Protect strippable protective covering on metal roof panels from exposure to sunlight and high humidity, except to extent necessary for period of metal roof panel installation.

#### 1.08 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal roof panels to be performed according to manufacturers' written instruction and warranty requirements.
- B. Field Measurements: Verify locations of roof framing and roof opening dimensions by field measurements before metal roof panel fabrication and indicate measurements on shop drawings.

#### 1.09 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal roof panel assemblies that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures, including rupturing, cracking, or puncturing.
    - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
  - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
  - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.01 PANEL MATERIALS

- A. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755.
  1. Aluminum-Zinc Alloy-Coated Steel Sheet: Galvalume® ASTM A 792, AZ-50 coating designation, Grade 40; structural quality.
  2. Profile/Type/Surface/Color: Roof panels to be 1-1/4" x 36" 22 gauge R-Panel in "Sandstone" color as approved by the Department and Engineer.
  3. Exposed Finishes: Apply the following coating, as specified or indicated on Drawings:
    - a. High-Performance Organic Finish: AA-C12C42R1x. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      - (1) Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
  4. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
- B. Provide full panels from ridge to eave with no horizontal joints.

### 2.02 UNDERLAYMENT MATERIALS

- A. Refer to Section 06 10 10 – ROUGH CARPENTRY and Section 07 13 20 – SELF-ADHERING SHEET UNDERLAYMENT for substrate and underlayment materials.
- B. Slip Sheet (if required): Building paper, minimum 5 lb/100 sq. ft., rosin sized.

## 2.03 MISCELLANEOUS MATERIALS

- A. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide exposed fasteners with heads matching color of metal roof panels by means of plastic caps or factory-applied coating.
  - 1. Fasteners for Roof Panels: Self-drilling or self-tapping 410 stainless or zinc-alloy steel hex washer head, with EPDM or PVC washer under heads of fasteners bearing on weather side of metal roof panels.
  - 2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
  - 3. Blind Fasteners: High-strength stainless steel rivets.
- B. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

## 2.04 ACCESSORIES

- A. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including trim, fascias, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels, unless otherwise indicated.
  - 1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.
  - 2. Clips: Minimum 0.0625 inch thick, stainless steel panel clips designed to withstand negative-load requirements.
  - 3. Cleats: Mechanically seamed cleats formed from minimum 0.0250 inch thick, stainless steel.
  - 4. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
  - 5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1 inch thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- B. Flashing and Trim: Formed from 0.0179 inch thick, aluminum-zinc alloy-coated steel sheet pre-painted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fascias, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.

## 2.06 FABRICATION

- A. General: Fabricate and finish metal roof panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile for full length of panel.
- C. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
  - 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
  - 2. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
  - 3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
  - 4. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended by metal roof panel manufacturer.
    - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal roof panel manufacturer for application but not less than thickness of metal being secured.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of work.
- B. Examine roughing-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of metal roof panels before metal roof panel installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment (if required): Install felt underlayment and building-paper slip on roof sheathing under metal roof panels, unless otherwise recommended by metal roof panel manufacturer. Use adhesive for temporary anchorage, where possible, to minimize use of mechanical fasteners under metal roof panels. Apply from eave to ridge, in shingle fashion to shed water, with lapped joints of not less than 2 inches.

### 3.03 METAL ROOF PANEL INSTALLATION, GENERAL

- A. General: Provide metal roof panels of full length from eave to ridge with no horizontal joints. Anchor metal roof panels and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 1. Field cutting of metal roof panels by torch is not permitted.
  - 2. Rigidly fasten eave end of metal roof panels and allow ridge end free movement due to thermal expansion and contraction. Pre-drill panels.
  - 3. Provide metal closures at peaks, rake edges, and each side of ridge and hip caps.
  - 4. Flash and seal metal roof panels with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-tapping screws.
  - 5. Locate and space fastenings in uniform vertical and horizontal alignment to provide equal temperature movement.
  - 6. Install ridge and hip caps as metal roof panel work proceeds.
  - 7. Lap metal flashing over metal roof panels to allow moisture to run over and off the material.
- B. Fasteners:
  - 1. Roof Panels: Use stainless steel fasteners for surfaces exposed to the exterior and galvanized steel for surfaces exposed to the interior. Touch up exterior fasteners with panel color.
- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.
  - 1. Coat back side of steel roof panels with bituminous coating where roof panels will contact wood, ferrous metal, or cementitious construction.
- D. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal roof panel assemblies. Provide types of gaskets, fillers, sealants indicated or, if not otherwise indicated, types recommended by metal roof panel manufacturer.

1. Seal side joints as recommended by metal roof panel manufacturer.
2. Prepare joints and apply sealants to comply with requirements of Section 07 92 00 – JOINT SEALANT.

### 3.04 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
  1. Install components required for a complete metal roof panel assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- B. Fascia, Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
  1. Install exposed fascia, flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal fascia, flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
  2. Expansion Provisions: Provide for thermal expansion of exposed fascia, flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- C. Touch up cut edges with manufacturer's matching color.

### 3.05 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal roof panel units within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8 inch offset of adjoining faces and of alignment of matching profiles.

### 3.06 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect completed metal roof panel installation, including accessories. Report results in writing.
- B. Remove and replace applications of metal roof panels where inspections indicate that they do not comply with specified requirements.

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

### 3.08 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal roof panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 41 13

## SECTION 07 60 00 – FLASHING AND SHEET METAL

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Extent of this work includes the furnishing and installation of all prefinished sheet metal soffits, fascia, gutters, downspouts and all miscellaneous sheet metal work required for roofing and related work, complete as indicated on Drawings and by provision of this Section.
- C. Existing roofing including stucco soffits, wood fascia, metal gutters, downspouts and miscellaneous sheet metal items are to be removed as specified in Section 02 41 16 – SELECTIVE DEMOLITION and Section 07 41 13 – PREFORMED METAL ROOF PANELS.

#### 1.02 RELATED WORK

- A. PHASING, SEQUENCING, AND WORK RESTRICTIONS: Section 01 12 16.
- B. SELECTIVE DEMOLITION: Section 02 41 16.
- C. ROUGH CARPENTRY: Section 06 10 10.
- D. PREFORMED METAL ROOF PANELS: Section 07 41 13.
- E. SEALANTS AND CAULKING: Section 07 92 00.

#### 1.03 PERFORMANCE REQUIREMENTS

- A. General: Provide installed sheet metal work that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. UL Class A Roof System requirements and FMG Class I Roof System for wind load indicated per FMG Loss Prevention Data Sheet 1-28, “Wind Loads to Roof Systems and Roof Deck Securement.”
- C. The assembly shall conform to the Florida Building Code requirements for Certification of Exterior Products and Materials (Notice of Approval).

#### 1.04 QUALITY ASSURANCE

- A. Installer's Qualifications:
  - 1. Flashing and sheet metal work shall be fabricated by a qualified sheet metal fabricator with at least five (5) years documented experience in installations of a similar nature.



## 1.05 SUBMITTALS

### A. Product Data:

1. Submit complete product data for each type of product specified. Include details of construction relative to materials, dimensions of individual components, profiles, finishes, and installation instructions.

### B. Shop Drawings:

1. Submit complete shop drawings for all flashing and sheet metal work, indicating fabrication, assembly, and attachment details, size of all members, fastenings, supports and anchors, patterns, clearances, and all necessary connections to work of other trades. Provide manufacturer's standard details for PVC downspout cleanouts.

### C. Samples for Verification:

1. Submit to the Architect or Department for review and approval, samples for each type of exposed finish and color required, prepared on actual metal proposed for use, of size indicated below:
  - a. Sheet Metal Soffits, fascia, gutters, downspouts, flashing: 12 inches long. Include fasteners, closures, and other attachments.
  - b. Trim: 12 inches long. Include fasteners and other exposed accessories.
  - c. Accessories: Full size sample.

### D. Installer's Qualifications:

1. Submit documented evidence of installer's qualifications.

### E. Warranty:

1. Submit specimen copy of specified warranty.

## 1.06 HANDLING AND STORAGE

- A. Sheet metal materials shall be carefully handled to prevent damage to surfaces, edges, and ends; and shall be stored at the site above the ground in a covered, dry location. Damaged items that cannot be restored to original condition will be rejected and shall be replaced at no additional cost to the Department.

## 1.07 JOB CONDITIONS

- A. Coordinate work of this Section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance, durability of work and protection of materials and finishes. **Field verify dimensions of all roof areas receiving this Work.**

## 1.08 WARRANTY

- A. Provide five (5) year full materials and workmanship warranty on all sheet metal work.
- B. Finish Warranty: Provide manufacturer's standard twenty (20) year finish performance warranty.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Prefinished Galvanized (Hot-Dipped) Sheet Metal Material:
  - 1. Galvanized (hot-dipped) sheet metal sheet metal soffits, fascia, gutters, downspouts and all miscellaneous sheet items indicated on Drawings shall be fabricated to shapes detailed on Drawings. Size gutters and downspouts to comply with SMACNA sheet metal manual for area of roof, slope, and location of Project.
  - 2. Galvanized steel sheet shall comply with ASTM A 653, G 90, commercial quality, for hot-dip galvanized steel sheet, mill phosphatized where indicated for painting. Provide minimum 24 gauge unless greater thickness is required by SMACNA for sizes and configurations indicated on Drawings.
  - 3. Finish:
    - a. Provide manufacturer's standard fluoropolymer 2-coat thermocured coating system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
      - (1) Color to be selected by Architect and/or Department.
    - b. Products, Resin Manufacturers: Provide fluoropolymer coating systems containing one of the following resins:
      - (1) "Hylar 5000"; Ausimont USA, Inc.
      - (2) "Kynar 500"; Atofina Chemicals, Inc.

B. Fasteners:

1. All fasteners shall be stainless steel.

2.02 FABRICATION

A. Sheet Metal Fabrication:

1. Shop-fabricate work to greatest extent possible, with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work.
2. Form work to fit substrates. Comply with material manufacturer instruction and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Surfaces that are to receive sheet metal work shall be even, smooth, sound, thoroughly clean and dry, and free from defects that might affect their application.

3.02 INSTALLATION

- A. Install all sheet metal gutters, receiver boxes, downspouts and all miscellaneous sheet metal work required for roofing and related work.
- B. Cutting, fitting, drilling, and other operations in connection with sheet metal work required to accommodate roofing work shall be performed by sheet metal mechanics. Accessories and other components essential to complete the sheet metal installation, though not specifically indicated or specified, shall be provided. Where sheet metal abuts or extends into adjacent materials, the juncture shall be executed in a manner to assure weathertight construction.
- C. Manufactured items shall be installed in strict accordance with manufacturer's published instructions.
- D. Use longest pieces practical. End joints shall be lapped minimum 6 inches with laps set in plastic cement and edges finished with sealant. Exposed edges shall be hemmed 2 inch.

- E. All surfaces exposed to view shall be fastened using cleats to provide no visible fasteners. Nailing of sheet metal shall be confined generally to sheet metal having a width of less than 18 inches. Nailing of flashings shall be confined to one edge only. Nails shall be evenly spaced not over 3 inches on centers and approximately 2 inch from edge unless otherwise specified or indicated. Where sheet metal is applied to other than wood surface, pressure treated wood sleepers and nailing strips required to properly secure the work shall be installed.
- F. Use pipe flashings with rain bonnets (rain collars) whenever possible for roof penetrations of conduits, condensate piping, vents, etc.

### 3.03 CLEAN UP

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- B. Remove scrap and debris from surrounding areas and grounds.

END OF SECTION

## SECTION 07 92 00 – SEALANTS AND CAULKING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. This Section includes the furnishing and installation of joint sealants required for roof replacement work as indicated on the Drawings and as specified herein.

#### 1.02 RELATED WORK

- A. PREFORMED METAL ROOF PANELS: Section 07 41 13.
- B. FLASHING AND SHEET METAL: Section 07 60 00.

#### 1.03 QUALITY ASSURANCE

- A. Installer Qualifications: The Installer shall have a minimum of five (5) years continuous documented experience in the application of the types of materials required, and approved or licensed by the manufacturer to install elastomeric sealants required for this Project.
- B. Product Testing: Obtain test results for test reports required as submittals from a qualified testing agency based on testing current sealant formulations within a 36 month period preceding commencement of the Work.
  - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
  - 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.
  - 3. Test other joint sealants for compliance with requirements indicated by referencing standard specification and test methods.
- C. Performance Requirements: Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

#### 1.04 SUBMITTALS

- A. Product Data: Submit complete manufacturer's technical data for each manufactured item. Include the following:
  - 1. Certification that each product to be furnished is recommended for the application shown.

2. Complete instructions for handling, storage, mixing, priming, installation, curing, and protection of each type of sealant.
- B. Samples: Submit the following samples:
1. One tube, in original sealed container, of each sealant specified.
  2. 12-inch length of each joint filler specified.
- C. Qualification Data: For Installer and testing agency.
- D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
1. Materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with joint sealants.
  2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

#### 1.05 PRODUCT DELIVERY AND STORAGE

- A. Deliver all products to the Project site undamaged, and in the manufacturer's original packing. Store products within the manufacturers' published temperature tolerances.

#### 1.06 ENVIRONMENTAL CONDITIONS

- A. Do not install joint sealant materials when the ambient and substrate temperatures are below 40 degrees F, unless the manufacturer specifically recommends application of materials at lower temperatures. If Project progress or any other condition requires installations when ambient and substrate temperatures are below 40 degrees F (or below the minimum installation temperature recommended by the manufacturer), consult the manufacturer's representative and establish the minimum provisions required to ensure satisfactory work. Record in writing to the manufacturer, with a copy to the Engineer, the conditions under which such installation must proceed, and the provisions made to ensure satisfactory work.
- B. Do not proceed with installation of bulk compounds during inclement weather unless the full compliance with all requirements and manufacturer's published instructions. Do not proceed with the installation of elastomeric sealants under extreme temperature conditions which would cause joint openings to be at either maximum or minimum width, or when such extreme temperatures or heavy wind loads are forecast during the period required for initial or nominal cure of elastomeric sealants. Whenever possible, schedule the installation and cure of elastomeric sealants during periods of mean temperatures (nominal joint width shown) so that subsequent stresses upon the cured sealants will be minimized.

## 1.07 WARRANTY

- A. Special Project Warranty: Provide a written warranty, signed by the installer and Contractor, against defects materials and workmanship for joint sealants which fail to perform as airtight or watertight joints; or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability; or appear to deteriorate in any other manner not clearly specified in joint sealant manufacturer's published data as an inherent quality of the material for the exposure indicated.

1. Warranty Period: Ten (10) years from the date of Final Acceptance.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Hardnesses indicated and specified are intended to indicate the general range necessary for overall performance. The manufacturer's technical representative shall determine the actual hardness recommended for the conditions of installation and use. Except as otherwise indicated or recommended, compounds shall be provided within the range of hardness (Shore A, Fully cured, at 75 degrees F) of 25 to 40.
- B. Prior to installation of each specified sealant, confirm its compatibility with the joint surfaces, joint fillers, and other materials in the joint system. Only materials that are known to be fully compatible with the actual installation conditions, as shown by manufacturer's published data or certification, shall be provided.

### 2.02 SEALANTS

- A. Exterior Sealants: Sealants for exterior locations shall be cold-applied elastomeric joint sealant, two-part polyurethane sealant complying with ASTM C 920.
1. Products, Horizontal Joints: Provide one of the following Type M (multicomponent), Class 25, Use T (traffic) sealants:
    - a. AUrexpan NR-200"; Pecora Corporation.
    - b. "Vulkem 245"; Tremco.
    - c. "Sonolastic SL 2"; Sonneborn, Div. of ChemRex Inc.
  2. Products, Vertical Joints: Provide one of the following Type M (multicomponent), Class 25, Use NT (nontraffic) sealants:
    - a. "Dynatrol II"; Pecora Corporation.
    - b. "Vulkem 227"; Tremco.
    - c. "Sonolastic NP 2"; Sonneborn, Div. of ChemRex Inc.

## 2.03 MISCELLANEOUS MATERIALS

- A. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by the sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.
- C. Backer Rods: Provide closed-cell, expanded polyethylene backer rods. The size and shape of the rod shall be that which will control the joint, form optimum shape of sealant bead on the back side, and provide a highly compressible backer to minimize the possibility of sealant extrusion when the joint is compressed.
  - 1. Basis of Design: "Ethafoam"; Dow Chemical Company.

## 2.04 COLORS

- A. For concealed joints, provide manufacturer's standard color from the product that has the best overall performance qualities for the application shown. For exposed joints, the Architect or Department will select colors from the manufacturer's standard or premium line of colors from the product that provides the match to the materials.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.



2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
  3. Remove laitance and form-release agents from concrete.
  4. Clean metal and similar nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint sealant manufacturer, based on prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.03 JOINT SEALANT INSTALLATION

- A. General: Comply with joint sealant manufacturers' published instructions, unless more stringent requirements are shown or specified, or the manufacturer's technical representative recommends otherwise.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Prime or seal joint surfaces as indicated or recommended by the sealant manufacturer. Do not spill or allow primers or sealers to migrate onto adjoining surfaces.
- D. Install sealant backer rods for all elastomeric sealants, unless indicated to be omitted or recommended to be omitted by sealant manufacturer for the application shown.
- E. Install bond breaker tape where required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly, or as indicated on the Drawings.
- F. Employ only proven installation techniques that will ensure sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of the joint bond surfaces equally on opposite sides. Unless otherwise indicated, fill sealant joints to a slightly concave surface and slightly below adjoining surfaces. Where horizontal joints occur between a horizontal surface and a vertical surface, fill joints to form a slight cove, so that the joint will not trap moisture and dirt.

1. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- G. Install sealants to depths indicated, or if not indicated, as recommended by the sealant manufacturer, but within the following general limitations measured at the center (thin) section of the bead.
1. For normal moving joints sealed with elastomeric sealants, but not subject to traffic, Fill joints to a depth equal to 50 percent of joint width, but not more than 3/8 inch nor less than 1/4 inch.
- H. Do not permit joint sealant materials (primers, sealers, or sealants) to spill onto adjoining surfaces, or be allowed to migrate into the voids of adjoining surfaces including rough textures. Use masking tape or other precautionary devices to prevent staining of adjoining surfaces.
- I. Promptly remove excess sealant from surfaces adjacent to joints as the work progresses. Clean adjoining surfaces as necessary to eliminate evidence of spillage, without damage to the adjoining surfaces or finishes.

#### 3.04 CURE AND PROTECTION

- A. Cure sealants in compliance with the manufacturer's published instructions and current recommendations to obtain high early bond strength, internal cohesive strength, and surface durability.
- B. The installer shall advise the Contractor of procedures required for the curing and protection of sealants compounds during the construction period, so that they will be without deterioration or damage (other than normal wear and weathering), at the time of Final Acceptance.

END OF SECTION