ADDENDUM #1

TO ALL PREQUALIFIED BIDDERS

SUBJECT: IFB NO. 18-014
Marshall High School Modular Relocation

BID DUE DATE: November 15, 2017

THIS ADDENDUM IS SUPPLEMENTARY TO THE PLANS AND SPECIFICATIONS FOR THE SUBJECT REQUIREMENT. ALL CHANGES, ADDITIONS AND DELETIONS SHALL BECOME PART OF THE CONTRACT AS IF ORIGINALLY CALLED FOR IN THE SPECIFICATIONS.

SPECIFICATIONS
1.01 07530 Add the specification section 07530 "TPO Single Ply Membrane Roofing".
1.02 07600 Add the specification section 07600 "Flashing and Sheet Metal".

DRAWINGS
1.03 A-1 Revision: Revise Note #19. Existing soap dispensers and paper towel dispensers shall remain in classrooms.

GENERAL
1.04 Pre-Bid Conference: Pre-Bid Conference agenda, as well as, the attendees list from the pre-bid conference on November 8, 2017 is attached.

All other terms and conditions remain the same.

Subhash Gambhir, Architect
Office of Design and Construction Services

Attachments: Pre-Bid Conference Agenda, Pre-Bid Attendees List, Sketch SK-1 (location of bleachers), Specification Sections 07530 (TPO Single Ply Membrane Roofing) and 07600 (Flashing and Sheet Metal)

cc: Contract File
November 8, 2017

Pre-Bid Conference Agenda

Marshall HS Modular Relocation

Introduction of the Project Team

➢ Owner / Construction Team
➢ Rinker Design Associates (Civil)

Bid Date

➢ November 15, 2017 at 3:00 here at Gatehouse

General Project Overview

➢ Existing Building
  o Modular low voltage systems are being provided from the existing building.

➢ Existing Modular
  o Twelve (12) classroom modular with support spaces.
  o Electric room, toilets and conference room.
  o Some interior architectural finishes are being repaired or replaced.
  o Currently located at Mount Vernon Woods Elementary School
  o Successful bidder will dismantle and relocate the existing units to the Marshall site and re-assemble them on the structural slab.
  o Existing plumbing and electrical tie-ins to new systems.

➢ Site Work
  o New Dominion VA Power transformer on a contractor supplied pad. The contractor must coordinate this work.
  o New 2 inch water line service to the modular will be by the contractor to a new meter. The contractor must coordinate this work during the school hours.
  o New sanitary and storm sewer lines
  o New structural concrete slab on grade with piers for the modular.
  o New concrete sidewalk, ramps, stairs and concrete island work.
  o Minor site grading.
  o New parking stall striping shown on C.14.

➢ Product Substitutions (10 day prior approvals should already be submitted).
  o Due by Sunday, November 5, 2017.
  o There are no approved Substitutions.
  o A VDOT permit is not required.
Addenda

➢ It shall be the contractor's responsibility to ensure they have received all the addenda. This meeting will be part of the 1st addendum, which is scheduled to be sent out on or before November 9. There may be more.

➢ The specification sections 07530 and 07600 for roofing and flashing will be included within Addendum #1.

Allowances

➢ See spec 01020- Currently $100,000.

Subcontractors

➢ Within 48 hours of the bid opening the apparent 3 lowest bidders will need to submit a list of subcontractors (section 00300) only one subcontractor per trade per section shall be listed!

  o  Electrical
  o  Plumbing
  o  Mechanical
  o  Site and Site Utilities

Project Award

➢ Scheduled School Board Approval will be December 7, 2017.

➢ We may provide letter of intent to award.

➢ We may defer NTP for 60 days.

Construction Time

➢ The existing modular at Mount Vernon Woods must be removed from that site no later than March 30, 2018.

➢ Substantial completion date of the work in August 10, 2018.

➢ Final completion date of the work is September 14, 2018.

➢ Tight schedule

Work Sequence

➢ There are no construction phases shown. The Contractor must keep the access between the quad and school open. The kiss and ride must remain open during school arrival and dismissal times. There is a fire lane between the building and the new modular location that must be accounted for during any work. A major school entrance #5 must be maintained.

➢ The project perimeter, storage and laydown areas must be maintained with 6 foot chain link fencing.
Parking is extremely tight at both schools.

The contractor shall relocate the two (2) existing aluminum tennis bleachers. One (1) set will be placed onto the existing basketball court asphalt which will take some of the laydown and storage area from the contractor. The remaining set will be placed onto the existing concrete pad by the softball field. *(See SK-1 for locations of bleachers)*

The contractor shall provide new fencing and gates at each end of the completed modular building to keep people from entering the confined space between the completed modular and the existing tennis court fencing.

All contract revision, prior to bid, shall be made by addenda ONLY.

All bid related questions shall be made in writing to Subhash Gambhir *(SGambhir@fcps.edu)* or by fax at 571-423-2237; or to the Senior Buyer at fax number 571-423-2317.

Deadline for Contractor questions is Friday, November 10 @ 4:00 p.m. Any questions after the 10th may or may not be responded to. Only contract changes will be issued in an addendum.
<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave Campbell</td>
<td>FCPS</td>
<td>571-423-2230</td>
<td><a href="mailto:dcampbell@fcps.edu">dcampbell@fcps.edu</a></td>
</tr>
<tr>
<td>David Bailey</td>
<td>VMT35</td>
<td>404-788-0591</td>
<td><a href="mailto:dbailey@vanguardmodular.com">dbailey@vanguardmodular.com</a></td>
</tr>
<tr>
<td>Kevin York</td>
<td>VMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paul Schmidt</td>
<td>PBS Contracting</td>
<td>571-550-2141</td>
<td><a href="mailto:paul.schmidt@pbscontracting.com">paul.schmidt@pbscontracting.com</a></td>
</tr>
<tr>
<td>Subhash Grambhir</td>
<td>FCPS</td>
<td>571-423-2236</td>
<td><a href="mailto:sgambhir@fcps.edu">sgambhir@fcps.edu</a></td>
</tr>
<tr>
<td>V R Bagga</td>
<td>FCPS</td>
<td>571-423-2232</td>
<td>v@fcps-edu</td>
</tr>
<tr>
<td>To Lim</td>
<td>FCPS</td>
<td>571-423-8238</td>
<td><a href="mailto:tolim@fcps.edu">tolim@fcps.edu</a></td>
</tr>
<tr>
<td>Russell Cross</td>
<td>FCPS</td>
<td>703-878-3342</td>
<td><a href="mailto:rcross@fcps.edu">rcross@fcps.edu</a></td>
</tr>
<tr>
<td>Shannon</td>
<td>FCPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eric Brown</td>
<td>FCPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Howard Cooper</td>
<td>FCPS</td>
<td>703-878-3325</td>
<td><a href="mailto:howcooper@fcps.edu">howcooper@fcps.edu</a></td>
</tr>
<tr>
<td>Charles Cook</td>
<td>Pennacce Co., Inc.</td>
<td>540-379-3393</td>
<td><a href="mailto:cc@pennaccecontractors.com">cc@pennaccecontractors.com</a></td>
</tr>
</tbody>
</table>
MARSHALL HIGH SCHOOL MODULAR RELOCATION
SK-1
SECTION 07530
TPO SINGLE-Ply MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS
A. Drawings and General Provisions of Contract, including General Conditions and other Division 1 Specification Sections, apply to the Work of this Section.

1.02 SUMMARY
A. This Section includes the following:
   1. Mechanically attached and adhered single-ply sheet roofing
   2. DensDeck Prime Roof Insulation

B. RELATED WORK
   1. Section 06100: Rough Carpentry
   2. Section 07600: Flashing and Sheet Metal
   3. Section 07900: Sealants

1.03 DEFINITIONS
A. Roofing Terminology: Refer to ASTM D 1079 for definition of terms related to roofing work not otherwise defined in this Section.

1.04 SUBMITTALS
A. Product Data: For each type of roofing product specified. Include data substantiating that materials comply with requirements.

B. Shop Drawings:
   1. Include plans, sections and details.
   2. Base flashings and membrane terminations.
   3. Tapered insulation, including slopes.

C. Samples for Verification: Of the following products (Edit samples below per project requirements):
   1. Manufacturer's standard sample of sheet roofing.
   2. Manufacturer's standard sample of roof insulation and cover board.
3. Manufacturer's standard sample of metal termination bars.

4. 6 roof cover fasteners of each type, length, and finish.

D. Installer Certificates: Signed by roofing system manufacturer certifying that installer is approved, authorized, or licensed by manufacturer to install specified roofing system.

E. Manufacturer Certificates: Signed by roofing manufacturer certifying that the roofing system complies with requirements specified in the "Performance Requirements" Article. Upon request, submit evidence of meeting requirements.

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

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

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

I. Maintenance Data: For roofing system to include in the maintenance manuals specified in Division 1.

J. Warranty: Sample copy of standard roofing system manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.

K. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing roofing similar to that required for this Project and who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product.

B. Pre-installation Conference: Before installing roofing system, conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings." Notify participants at least 5 working days before conference.
1. Meet with Owner; Architect; Owner's insurer, if applicable; testing and inspecting agency representative; roofing Installer; roofing system manufacturer's representative; deck Installer; and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

4. Review loading limitations of deck during and after roofing.

5. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.

6. Review governing regulations and requirements for insurance, certificates, and inspection and testing, if applicable.

7. Review temporary protection requirements for roofing system during and after installation.

8. Review roof observation and repair procedures after roofing installation.

9. Document proceedings, including corrective measures or actions required, and furnish copy of record to each participant.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.07 PROJECT CONDITIONS

A. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed according to manufacturers' written instructions and warranty requirements.

1.08 WARRANTY

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

B. Standard Roofing Manufacturer's Warranty: Submit a written warranty, without monetary limitation, signed by roofing system manufacturer agreeing to promptly repair leaks resulting from defects in materials or workmanship and to repair cuts and punctures caused by rooftop service and maintenance activities for the following warranty period:

1. Base Bid Warranty Period: 20 years.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Product: Subject to compliance with requirements, provide fully adhered UltraPly TPO as manufactured by Firestone Building Products or a comparable product by one of the following:

1. Carlisle Syntec Systems
2. Genflex Building Products

2.02 TPO SHEET

A. Base Bid TPO Sheet: Uniform, flexible sheet formed from thermal polyolefin, complying with ASTM D 4637, Type I, of the following grade, class, thickness:

1. Grade: Reinforced
2. Thickness: 60 mils, nominal.
3. Color shall be white- Color must have reflective index of 78 or more
2.03 INSULATION MATERIALS

A. General: Provide preformed, roofing insulation boards that comply with requirements, selected from manufacturer’s standard sizes and of thicknesses indicated.

B. DensDeck Prime Roof Board meeting ASTM 3273 by Georgia Pacific Company size ¼".

2.04 INSULATION ACCESSORIES

A. General: Furnish roofing insulation accessories recommended by insulation manufacturer for intended use and compatible with sheet roofing material.

1. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions of FM 4470, designed for fastening roofing insulation to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.

2.05 AUXILIARY MATERIALS

A. General: Furnish auxiliary materials recommended by roofing system manufacturer for intended use and compatible with TPO membrane roofing.

1. Furnish liquid-type auxiliary materials that meet VOC limits of authorities having jurisdiction.

2. Sheet Flashing: 60 mil thick TPO, uncured or cured, according to application.

B. Bonding Adhesive: Manufacturer’s standard bonding adhesive.

C. Lap Sealant: Manufacturer’s standard single-component sealant.

D. Water Cutoff Mastic: Manufacturer’s standard butyl mastic sealant.

E. Metal Termination Bars: Manufacturer’s standard aluminum bars, approximately 1 inch wide, roll formed and pre-punched.

F. Metal Battens: Manufacturer’s standard polymer or zinc-coated steel sheet, approximately ¾” wide by 0.05 inch thick, pre-punched.

G. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions of FM 4470, designed for fastening sheet to substrate, and acceptable to roofing system manufacturer.

H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint

07530-5 01/17
PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions under which roofing will be applied, with installer present, for compliance with requirements.

B. Verify that roof openings and penetrations are in place and set and braced and that roof drains are properly clamped into position.

C. Verify that wood nailers are in place and secured and match thicknesses of insulation required.

D. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrate of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of the roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.03 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer's written instructions for installing roofing insulation.

C. Install one layer of insulation under area of roofing to achieve required thickness.

D. Install insulation with long joints of insulation in continuous straight lines with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.

E. Attached Insulation: Install the insulation by securing to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roofing insulation to deck type indicated.

3.04 ADHERED SHEET INSTALLATION

A. Install TPO sheet over area to receive roofing according to roofing system manufacturer’s written instructions. Unroll sheet and allow to relax for a minimum of 30 minutes.

B. Start installation of sheet in presence of roofing system manufacturer’s technical personnel.

C. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Apply bonding adhesive to substrate and underside of sheet at rate required by manufacturer and allow to partially dry. Do not apply bonding adhesive to splice area of sheet.

E. Mechanically or adhesively fasten sheet securely at terminations and perimeter of roofing.

F. Apply roofing sheet with side laps shingled with slope of roof deck where possible.

G. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing sheet in place with clamping ring.

H. Install adhered TPO sheet and auxiliary materials to tie in to existing roofing.

3.05 SEAM INSTALLATION

A. Clean both faces of lap areas, heat weld laps to overlapping sheets according to manufacturer’s written instructions to ensure a watertight seam installation.

B. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

3.06 FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer’s written instructions.
B. Apply bonding adhesive to substrate and underside of flashing sheet at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing as recommended by manufacturer.

D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.07 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.

1. Notify Architect or Owner 48 hours in advance of the date and time of inspection.

3.08 PROTECTING AND CLEANING

A. Protect sheet membrane roofing from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing that does not comply with requirements, repair substrates, reinstall roofing, and repair sheet flashings to a condition free of damage and deterioration at the time of Substantial Completion and according to warranty requirements.

1. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION
SECTION 07600
FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:
   A. Drawings and general provisions of Contract, including General Conditions and
      Division-1 Specification sections, apply to work of this section.

1.02 RELATED WORK
   A. Section 07530 – TPO Single-Ply Membrane Roofing

1.03 DESCRIPTION OF WORK:
   A. Extent of each type of flashing and sheet metal work is indicated on the drawings
      and by provisions of this section.
   B. Type of work specified in this section includes, but is not limited to, the
      following:
      1. Metal counter flashing; and base flashing.
      2. Metal wall flashing and expansion joints.
      4. Exposed metal trim/fascia units/coping units.
      5. Gravel stops.
   C. Integral masonry flashings are specified as masonry work in Section 04200.
   D. Roofing accessories, which are installed integral with roofing membrane, and
      provided by the roofing manufacturer, are specified in Section 07530 as part of
      roofing work.
   E. Set-on type, pre-manufactured unit roof accessories are specified in Section
      07530 as part of roofing work.
1.04 SUBMITTALS:

A. Product Data: Submit manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

B. Samples: Submit minimum 8" square samples of each type of specified sheet materials to be exposed as finished surfaces.

C. Shop Drawings: Submit shop drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counter-flashings, gutters, downspouts, scuppers and expansion joint systems. Provide layouts at 1/4"=1'-0" scale and details at 3"=1'-0" scale.

1.05 JOB CONDITIONS:

A. Coordinate work of this Section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

1.06 WARRANTIES

A. Provide a five (5) year written guarantee on labor and a ten (10) year written guarantee on materials for all flashing and sheet metal work.

PART 2 - PRODUCTS

2.01 FLASHING AND SHEET METAL MATERIAL:

A. Sheet Metal Flashings and Trim:

1. Counter Flashings, Scuppers, Built-in Receivers, Expansion Joint flashings and umbrella cones for roof mounted pipe supports:

   a. Stainless Steel: ASTM A167 AISI 302/304, No 2D finish, temper as required for forming and performance; 0.018" thick (28 gage) except as otherwise indicated.

   b. Copper: ASTM B370, cold rolled unless soft temper required for forming and performance; 16 ounce (0.0216" thick), except as noted

2. Copings, Gravel Stops, Gutters, Drain Spouts:

   a. Sheet Aluminum: ASTM B 209, aluminum alloy, embossed with "Kynar" fluorocarbon enamel finish; 0.032" thick except as otherwise indicated. Color as selected by Architect.
B. Miscellaneous Materials and Accessories:

1. Fasteners: Same metal as flashing and sheet metal or other non-corrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

2. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

3. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

4. Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior nonmoving joints including riveted joints.

5. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.

6. Solder for Sheet Metal: Except as otherwise indicated or recommended by metal manufacturer, provide 50/50 tin/lead type complying with ASTM B32; use rosin flux.

7. Reglets: Metal or plastic units of type and profile indicated, compatible with flashing indicated, non-corrosive.

8. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gauge required for performance.


C. Weather-Resistant Barrier


2. Grace Ice & Water Shield is a cold-applied, self-adhering membrane composted of a high density, cross laminated polyethylene film coated on one side with a layer of rubberized asphalt adhesive. An embossed, slip resistant surface is provided on the polyethylene. Grace Ice & Water Shield is interwound with a disposable silicone coated release sheet.

   a. Membrane shall conform to the physical properties as listed in table below:

   
   07600-3
   
   07/17
### Addendum #1 (18-014)

**Property** | **Value** | **Test Method**
---|---|---
Color: | Gray black | 
Thickness/ Membrane: | 40 mil (1.02 mm) | ASTM D3767 procedure A (Section 9.1) 
Tensile Strength/ Membrane: | 250 psi (1720 kN/m²) | ASTM D412 (Die C Modified) 
Elongation, Membrane: | 250% | ASTM D412 (Die C Modified) 
Low Temperature, Unaffected @ Flexibility: | -20°F (-29°C) | ASTM D1970 
Adhesion to Plywood: | 3.0 lbs/in. width (525 N/m) | ASTM D903 
Permeance (Max): | 0.05 Perms (2.9 ng/m²s Pa) | ASTM E96 
Material Weight Installed (Max) | 0.3 lb/ft² (1.3 kg/m²) | ASTM D461 

3. Provide High Temperature “Ice and Water Guard” at all metal roof and wall panel areas including covering all fascia and perimeter edge wood. Provide one of the following: Carlisle “WIP 300” or Soprema “Lasto Bond Shield HT”.

#### 2.02 FABRICATED UNITS:

A. **General Metal Fabrication:** Shop-fabricate work to greatest extent possible. Comply with details shown, and 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. Form work to fit substrates. Comply with material manufacturer instructions 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.

B. **Seams:** Fabricate nonmoving seams in sheet metal with flat-lock seams. Horizontal seams, such as copings, shall be standing seams. Gutters-seams, apply waterblock or butyl caulk before joining pieces together. Seal joined seams with EPDM flashing membrane.

---

07600-4 | 07/17
C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

PART 3 - EXECUTION

3.01 INSTALLATION REQUIREMENTS:

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.

B. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

C. Install reglets to receive counter-flashing in manner and by methods indicated. Where shown in concrete, furnish reglets for installation in work of Division 3 Sections. Where shown in masonry, furnish reglets for installation in work of Division 4 Sections.

D. Install counter flashing in reglets, either by snap-in seal arrangement, or by wedging in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.

E. All stainless steel or copper metal through wall flashing, gravel stops, pitch pockets, rain collars and expansion joints with lapped joints shall be soldered water tight.

3.02 WEATHER-RESISTANT BARRIER

A. Install the membrane directly on a clean, dry, continuous structural plywood sheathing, blocking, and other locations as indicated. Remove dust, dirt, loose nails, and old roofing materials. Protrusions from the substrate area must be removed. Decks shall have no voids, damaged, or unsupported areas. Repair
areas before installing the membrane. Install membrane in accordance with manufacturer’s printed directions.

3.03 CLEANING AND PROTECTION:

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Protection: Installer shall advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction. Ensure that work shall be without damage or deterioration, due to factors other than natural weathering, at time of acceptance by Owner.

END OF SECTION