1.2.2 Product Data: For each type of decking, accessory and mechanized fasteners (if used), submit manufacturer's specifications and other data needed to demonstrate compliance with the specified requirements.

1.2.3 Shop Drawings: Submit detailed drawings showing layout and types of deck panels, anchorage details and conditions requiring closure panels, supplementary framing, sump pans, cant strips, cut openings, special jointing or other accessories.

1.2.4 Installation Instructions: Submit manufacturer's recommended installation procedures which, when approved by the Engineer, shall become the basis for accepting or rejecting actual installation procedures used on the work.

1.2.5 When the materials of this section are used as part of or as specifically indicated on the drawings as which fire-resistive construction ratings are required, submit evidence of approval by Underwriters' Laboratories, Inc. and the local Authority having jurisdiction.

1.2.6 Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certifications as may be necessary in connection with fire and extended coverage insurance.

1.3 Quality Assurance:

1.3.1 Codes and Standards: Comply with provisions of the following codes and standards, except as otherwise specified:

1.3.1.1 AISC "Specification for the Design of Light Gage Cold-Formed Steel Structural Members".

1.3.1.2 AWS "Structural Welding Code- Steel" and "Structural Welding Code-Sheetsteel".

1.3.1.3 SDI "Design Manual for Floor Decks and Roof Decks".

1.3.2 Qualifications of Field Welding: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure". Also follow requirements of Division 5 Section 5.6 "Welding" of this specification.

1.3.2.1 Welded decking in place is subject to inspection and testing. Expense of removing and replacing portions of decking for testing purposes will be borne by Owner if welds are found to be unsatisfactory. Remove work found to be defective and replace with new acceptable work.

1.3.3 FM Listing: Provide metal roof deck units which have been evaluated by factory mutual system and are listed in "Factory Mutual Approval Guide" for "Class I" fire rated construction.

1.4 Manufacturer:

1.4.1 All roof decking shall be the product of a single manufacturer, all floor decking shall be the product of a single manufacturer.

1.4.2 Manufacturer shall be a member of the Steel Deck Institute.

2. Products:

2.1 Roof Deck (roof roofing equipment noted floor decking)

2.1.1 Provide minimum 22 gauge SDI Type "B" deck (1 1/2 in.), capable of supporting uniformly distributed live roof dead load of 50 psf over 6'-0" clear span, with deflection limited to 1/240 of the span. See design documents for minimum gauge requirements.

2.1.2 Provide galvanized, top and bottom prime painted deck. Prior to painting, the galvanized steel shall be chemically cleaned and pre-treated in accordance with paint-system manufacturer's recommendations. Prime paint shall be water-borne, rust inhibitive, recommended by manufacturer for use over galvanized steel, compatible with specified field applied finish coats- color: grey.

2.1.2.1 Primer: Manufacturer's standard primer, unless noted otherwise.

2.1.2.2 Steel shall conform to ASTM A653, Structural Quality, G-60.

2.2 Floor Deck

2.2.1 Provide minimum 28 gauge SDI type "C" deck (9/16 inch). See design documents for additional deck requirements.

2.2.2 Steel shall conform to ASTM A653, Structural Quality, G-60. Deck shall have overlapped side joints and span at least 3 supports.

3. Execution

3.1 Inspection

3.1.1 Installer shall examine areas and conditions under which metal decking is to be installed and notify Contractor in writing of conditions considered to require additional work prior to commencement of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 Installation

3.2.1 General: Install deck units and accessories in accordance with Manufacturer's recommendations, current specifications and consistency of SDI, and final Shop Drawings, and as specified herein.

3.2.1.1 Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before permanently fastened. Do not stretch or contract side lap interlocks.

3.2.1.2 Place deck units flat and square, accurate to adjacent framing without warp or deflection.

3.2.1.3 Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.

3.2.1.4 Cutting and fitting: Cut and neatly fit deckunits and accessories around other work requiring through or adjacent to the decking, as shown.

3.3 Fastening Roof Deck Panels:

3.3.1 Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of not less than 5/8" diameter. Use welding washers where recommended by deck manufacturer.

3.3.1.1 Weld Spacing: Space end fasten welds as indicated in the Structural section of the Public Construction Documents. Mechanically fasten with self-drilling No. 10 diameter or larger carbon steel screws, unless otherwise indicated in the Public Construction Documents.

3.3.1.3 End Bearing: Install deck ends over supporting framing with a minimum end bearing of 1-1/2 inches, with end joints lapped 2 inches minimum, or as per SDI.

3.3.2 Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.

3.3.3 Mechanical fasteners may be used in lieu of welding to fasten deck. Install according to deck manufacturer's instructions. Submit fastener data for approval, if approved, fastener will determine fastener spacing.

3.3.4 Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, and closures, and reinforcing channels according to manufacturer's recommendations. Weld to substrate to provide a complete deck installation.

3.4 Mechanized Fastening Roof Deck Panels (Alternate to Welding)

3.4.1 Powder driven and Pneumatic Fasteners: Fasteners shall have knurled shank, minimum 1.2" diameter steel washer, electroplated zinc conforming to ASTM B633, Sc 3, Type II, meet SDI design requirements, PA approx at.

3.4.1.1 Acceptable Fasteners for Steel: (3/4" minimum thickness to 3/8" minimum thickness) which Hilti (SMD6-26-L15, X-HSN19-21HQ21 HSN or X-H37MX-22 WQ21 HSN).

3.4.1.2 Acceptable Fastener for Structural Steel (1/4" thickness and greater) is Hilti (S-HSN24-L15.

3.4.2 Use of Powder actuated Tools shall only be by a qualified operator, trained and licensed by the tool manufacturer in accordance with the manufacturer's and OSHA requirements.

3.4.3 Install fasteners to steel members as indicated below:

3.4.3.1 For 20ga(0.91-1.25 thickness to accept roof deck to structural steel members using Hilti Powder Actuated tools DX-750 or DX-460.

3.4.3.2 For 20GA(0.20-1.37 thickness to accept roof deck to supporting Hilti Powder Actuated tools DX-750

3.4.3.3 For 3/4"(19.0) (1.25) HSN or X-H19-MX-22 WQ21 HSN Fasteners to secure roof deck to top joists using Hilti Powder Actuated tools DX-750 or the Hilti Powder Actuated tools DX-460 with

3.4.3.4 Install sound tight fastening at sidelaps, ends, openings, and perimeter in accordance with manufacturer's recommendations. Install welds in accordance with AWS D1.3 "Welding Sheet Steel in Structures".

3.4.3.5 Install fasteners in accordance with manufacturer's instructions and at spacings and in quantities as required to meet specified uplift pressure.

3.4.3.6 Install fasteners using power tools with depth of penetration adjustable to suit conditions encountered, and with operators trained in proper use and maintenance of tools.

3.5 Field and Shop Control

3.5.1 Testing Agency

3.5.2 Engage an independent testing agency employed and paid by the contractor with qualifications as specified herein.

3.5.3 Field reports: Submit report to inspection requirements of Section 05120, "Structural Steel".

3.6 Deck Attachment pattern will be subject to inspection

3.6.1 Testing agency will report test results promptly and in writing to Owner and Engineer.

3.6.2 Remove and replace work that does not comply with specified requirements.

3.6.3 Additional testing, at Contractor's expense, will be performed to determine compliance with specified requirements.

3.7 Repairs and Protection

3.7.1 Touchup Painting: Wire brush, clean and paint scarred areas, welds, and rust spots on both surfaces of installed deck panels.

3.7.2 Provide final protection and maintain conditions to ensure steel decking is without damage or deterioration at time of Substantial Completion.

3.8 Cooler Armor: Apply shop formed galvanized sheet steel armor where indicated on the Drawings, using set-bolts as shown, spaced 1'-0" o.c. top and bottom. Apply sealant top and bottom.

3.9 Solid Surfacing Material: Work material to produce lines and forms as shown. Where horizontal surfaces abut, weld sheets to form seamless joints, invisible as defined by manufacturer of sheet material, inspection by penetration and stains.

3.9.1 Protection: Handling, woodwork, trim, doors, hardware, etc., shall be protected after delivery to job and after installation.

End of Section 06 00 00

Section 07 21 00

Thermal Insulation

V02212011

1. General

1.1 This Section includes the following:

Concealed building insulation (refrigerated case walls)
Insulation with membranes (barriers)

1.2. Related Sections include the following:

1.2.1 Section 04 20 00 Unit Masonry for insulation installed as part of unit masonry construction.

1.2.2 Section 07 51 00 Built-Up Bituminous Roofing for insulation installed as part of roofing construction

1.3. Submittals:

1.3.1 Submit LOI in accordance with Section 01 33 00 Submittal Procedures

1.3.2 No product submittals are needed

1.4 Quality Assurance

1.4.1 Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

1.5. Delivery, Storage and Handling:

1.5.1 Protect insulation materials from physical damage and from deterioration by moisture, soiling and other sources. Store inside and in dry location. Comply with manufacturer's written instructions for handling, storing and protecting during installation.

1.5.2 Protect plastic insulation as follows:

1.5.2.1 Do not expose to sunlight, except to extent necessary for period of installation and concealment.

1.5.2.2 Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.

1.5.2.3 Complete installation and concealment as rapidly as possible in each area of construction.

1.6.1 Physical Properties:

1.6.1.1 R-Value (ASTM C1518):

8.5 at 1 inch
13 at 2 inches
19 at 3 inches
22 at 3.5 inches

1.7.0.2 Flammability at 4 inches (ASTM E84):

Flame Spread Index: <25
Smoke Development: <450

1.7.0.3 Water Vapor Transmission (ASTM E96):

0.9 perm per 3 inch

1.7.0.4 Air Permeance (ASTM 283):

<0.06(L/s)/(L/s) m2

2. Products

2.1 Spray Foam Polyurethane Insulation

2.1.0.1 Products:

"PROVISAL CON, Dupont
"BID-C-2000", Armacor
"Tough N Seal", Dap Products
"SEALTITE SOY", Demilec

3. Execution

3.1 Examination

3.1.1 Examine all substrates, with Installer present, for condition compliance prior to installation. Correct all unsatisfactory conditions before proceeding.

3.2. Installation

3.2.1 Comply with insulation manufacturer's written instructions applicable to products and application indicated.

3.2.2 Proceed with spray polyurethane foam application only after substrate construction, substrate penetration work, and related welding and other hot work has been completed.

3.2.3 Apply insulation uniformly to substrates by method indicated, complying with manufacturer's written instructions.

End of Section 07 21 29

Section 07 51 00

Bituminous Built-Up Roofing

V12202016

1. General

1.1 This Section includes the following:

Built-Up Roofing
Roofing Insulation

1.2. Related Sections include the following:

1.2.1 Section 07 60 00 Flashing and Sheet Metal

1.2.2 Section 07 72 33 Roof Hatches.

1.3. System Requirements:

1.3.1 Wind Resistance:

1.3.1.1 Comply with the requirements of the Authority Having Jurisdiction.

1.3.1.2 Public's Minimum Requirement: Factory Mutual "Class 1-90" wind resistance.

1.3.1.3 Comply with all of the requirements for a Factory Mutual approved installation, including but not limited to all Loss Prevention data sheets for roofing and for the wind uplift pressures as calculated per ASCE 7-10 which ever is the more stringent.

1.3.2 Fire Performance:

1.3.2.1 Minimum Requirement: Underwriters Laboratories "Class C"

1.3.2.2 For items located in a Fire District provide Underwriters Laboratories "Class A"

1.3.3 Materials used shall be listed in the latest editions of the Factory Mutual Approval Guide. Categories are:

Membrane Materials
Insulation
Insulation Fasteners
Stress Plates
Steel Deck
Other materials as applicable

1.4 Submittals:

1.4.1 Submit LOI in accordance with Section 01 33 00 Submittal Procedures. This is Contractor's understanding of the specified roofing system and not the qualifications of the Installer.

1.4.2 Materials: Submit product data sheets stating that materials comply with requirements, including limitations, and delivery logs for bulk materials, and manufacturer's literature for each product required. Include roof plans, flash points, cut, and other quality control testing as required.

1.5 Quality Assurance:

1.5.1 Installer:

1.5.1.1 Roofing Installer (Roofer) shall perform the work of this Section, the acceptable Built-Up Roofing System work for at least 5 years, and be capable of showing successful installations similar to the work required for this project.

1.5.1.2 The Installer shall be one who is approved by GAF/ELK Intec as an Installer qualified to perform work eligible for the Manufacturer's 15-year Non-No Dollar Limit Warranty.

1.5.1.3 The Installer shall be one of the Roofing Contractors approved by the Public roofing steering team at the time of bidding. Contact the regional Public construction manager for the current approved list.

1.5.1.4 Provide primary products, including each type of Roofing, Sheet (Felt), Elastomeric Installation, and Vapor Flow Retarder (if any) produced or primarily labelled by the same single Manufacturer.

1.5.1.5 Provide secondary products which are acceptable to Manufacturer of primary products.

1.5.2 Inspections:

1.5.2.1 Public Construction Field Supervisors will visit the Site periodically.

1.5.2.2 Notify ASI Associates ten days before anticipated roof start.

1.5.2.3 ASI's inspector shall make a minimum of three inspections per job. ASI's representative has full authority to stop roofing work if conditions are not in conformance with manufacturer's requirements.

1.5.3 Warranty:

1.5.3.1 All work shall be accomplished in a manner to be eligible for Manufacturer's Fifteen Year No-Dollar Limit Warranty.

1.5.3.2 While Manufacturer's Twenty Year No-Dollar Limit Warranty is not normally required, it may be for some projects. The owner/developer must express their intent to obtain the roof warranty prior to the pre-roofing conference

1.6. Product Handling

1.6.1 General: Handle and store roofing system products in a manner which will assure no possibility of significant moisture pick-up. Store in a dry, well ventilated, clean area. Do not store with petroleum materials on roof overnight. Store rolls of felt and other sheet goods on end.

1.6.2 When materials are stored outside, they shall be placed on platforms that are raised off the ground or roof deck, and they shall be covered with waterproof coverings. Coverings that are "breathable" (such as canvas) are preferred.

1.6.3 Roofing materials shall be delivered to the Job Site just prior to roof installation and stored in manufacturer's original containers.

1.6.4 Roofing laborers may be stored unprotected on the ground. However, moisture and dirt shall be removed from roofing laborers before installation.

1.6.5 Roof Loading: Do not store materials on roof decks, nor position roofing installation equipment on roof decks, in concentrations exceeding design live load appropriate.

1.7. Job Conditions:

1.7.1 Pre-Roofing Conference:

1.7.1.1 Approximately five working days prior to installation of Roofing System, meet at Project Site with Installer (Roofer), installers of substrate construction (decks and other work adjacent roof system including penetrating work and roofing units and representatives of other trades directly concerned with performance of roofing system. Discuss the following:

1.7.1.2 Review methods and procedures related to roofing installation, including manufacturer's written instructions. Review methods and procedures related to roofing system, including each type of roofing system.

1.7.1.3 Examine roofing system materials and installation facilities, preparation, installation schedule, required mock-up for inspection and testing or certification, proposed installation sequence, record documentation, including requirements for documentation as the work progresses.

1.7.1.4 Review roofing system protection requirements for construction traffic and subsequent trades.

1.7.1.4 Furnish minutes of meeting to each participant.

1.7.2 Weather Conditions: Proceed with roofing system installation only when existing and forecasted weather conditions are for stable and will allow work to proceed in accordance with requirements and recommendations of manufacturers of primary roofing system materials.

1.8. Testing By Public Representative

1.8.1 After Substantial Completion, the Public Consultant will conduct testing to determine watertightness of all roofing assemblies. If, in the opinion of the Consultant, the moisture content of an assembly is too high, the Contractor shall remove and replace all affected materials, and take all steps necessary to make the assembly watertight.

1.8.2 Tests when ambient humidity is less than 90%. Assembly shall contain less than 8% moisture by weight.

2. Products

2.1 Roof Insulation

2.1.1 Mineral Roof Insulation shall be 4" Energy Guard Polyisocyanurate roof insulation in 2 layers, staggered patterns. Exception: North Carolina stores shall receive minimum 7" Energy Guard polyisocyanurate roof insulation in 2 layers to equal R-49 roof insulation may be required due to building's orientation to nearby climate zone). Refer to Contract Documents for roof insulation thickness requirements.

2.1.2 Dock Canopy and Riser Room: Insulation shall be 1.5" Energy Board polyisocyanurate roof insulation.

2.2 Roof insulation fasteners shall be Drill-Tec #14 case-assembled fasteners with 3" metal stress plates. Length must be sufficient to penetrate top flute of metal deck by 3/4".

2.3. Dash-Up Roof Membrane materials

2.3.1 Roof membrane (over steel decks): The following are the only acceptable products:

GAF/ELK Intec Spec SPBS - BPBTF - R3 or, for locations requiring a fire rated top sheet, #190 PR - PPWP - R3.

2.3.2 There are no exceptions or substitutions for approved maintenance or specifications.

2.3.3 Bitumen: Steep asphalt complying with ASTM D-312-89, Type IV.

2.3.4 Base Flashing Adhesive: Matrix 201.

2.3.5 Base Flashing: Glass-Backed Modified Bitumen: Specified Cap Sheet

2.3.6 Asphaltic Concrete Primer: Comply with ASTM D-41-78 for all exposed masonry surfaces above roof line.

2.3.7 Perforated Edge Strips: Rigid asphalt impregnated organic fiber insulation or molded perlite insulation, molded to form 3 1/2" x 3 1/2" x 48" (perforations) more than one hour prior to time of application. Discard bitumen which has been held at temperature exceeding Finished Blowing Temperature (FBT) for a period exceeding 4 hours. Determine final point. Installed blowing temperature and FBT of bitumen, either by information from bitumen producer or by suitable tests, and determine customer. Reweigh handling temperature and do not exceed that temperature in heating bitumen; but in no case heat bitumen to a temperature higher than 25 F (-4 C) below flash point.

2.3.8 Bitumen Mopping Weights: For unvented roofing and for other mopping except as otherwise indicated, apply bitumen at an average rate of not less than 20 lbs. (+25%) on a total job average basis per roof square.

2.3.9 Base Coat: When required for delayed cap sheet installation longer than 30 days. Over ply sheet assembly, apply base coat at a rate of 30-32 lbs. per roof square.

2.3.10 Substrate Joint Penetrations: Do not allow bitumen to penetrate substrate joints and cause buckling or damage insulation.

2.3.11 At end of each day roofing installation, protect exposed edge of incomplete work, including ply sheets and insulation.

3.1. Installation Installers:

3.3.1 General: Comply with insulation manufacturers' instructions and recommendations for the handling, installation, and bonding to substrate of insulations.

3.3.2 Do not apply hot materials to, or coat hot continuous on insulation at temperatures above those recommended by insulation manufacturers.

3.3.3 Cut to fit tightly and neatly around all obstructions and roof penetrations.

3.3.4 Lay no more insulation in one day than can be covered with roofing that same day.

3.3.5 Use tapered insulations to provide cricklets on the upwind side of all curbs over 2'-0" wide.

3.3.6 FM 1-90 Assemblies: The foam insulation panels shall be mechanically attached to metal deck, through the gypsum board, if present, with factory bitumal and U.L. approved fasteners, with #6 joists staggered. Subsequent layers, if required, shall be fully set, with three joists staggered, in hot asphalt at a nominal rate of no less than 50 lbs. per 100 sq.ft. unless governing codes or regulations require total mechanical attachment. Attachment shall be in accordance with FM., FM., and manufacturers recommendations in matter of application.

3.3.7 FM 1-120 and higher Assemblies: The foam insulation panels and the subsequent layer(s) shall be mechanically attached to metal deck through the gypsum board (if present), with specified fasteners. Apply all layers with joints staggered over layer below. Attachment shall be in accordance with FM., FM., and manufacturers recommendations.

3.4. Roof Membrane Installation:

3.4.1 Sloping of Plies: Except as otherwise indicated, install membrane with ply sheets shingled uniformly to achieve required number of plies at membrane throughout. Shingle in proper direction to shed water on each area of roofing.

3.4.2 Bitumen in each ply as strained by manufacturer. Use hotter approved by manufacturer.

3.4.3 Cant Strips/Tapered Edge Strips: Except as otherwise shown, install preformed 45 deg. insulation cant strips at junctures of DUS membrane with vertical surfaces. Provide preformed tapered edge strips at areas shown on drawings as needed to direct water

3.4.4 Base Ply Sheets: Provide the number and types of ply sheets (felts) indicated, lapped (shingled) sheets as required to form a continuous, uniform membrane with bitumen mopping between sheets so that ply sheet does not touch ply sheet. Extend built-up roofing membrane or 2" (nominal) above top edge of cant strip and terminate.

3.4.5 All edge metal shall be installed before installation of Cap Sheet. Backwater lugs are not allowed.

3.4.6 Install cap sheet in strict compliance with manufacturer's instructions.

3.4.6.1 Adhered lugs, cut use joints 45 degrees. Round exposed corners.

3.4.6.2 Provide additional layer of cap sheet as shown of mechanical equipment screens and at roof hatches.

3.4.7 Membrane Flashings:

3.4.7.1 Provide 2 ply base flashing at all angle changes consisting of 1 ply of ASTM D-2178 Type IV glass felt set in hot mopping of Type IV asphalt followed by 1 ply of SBS cap sheet (same material as roofing cap sheet) set in continuous bonding of Matrix 201. Similar to U.S. Intec Glass SPBS. Cement not to be flashed per details SBS 11 and SBS 12 (formerly Flex-3).

3.4.7.2 At horizontal metal flanges, i.e. Gravel Guard MG, electrical and mechanical metal flanges, metal to be primed with a Hot-Tar primer and set in a fish-tail of Matrix 201. Metal flanges are to be flashed the same day they are installed with 1 ply of Intec Flex Smooth, 6" wider than the flange being flashed, set in a continuous bonding of Matrix 201.

3.4.8 At all locations where "Bleed-out" of asphalt is present, apply mineral granules which match the granules of the cap sheet to achieve 100% hiding of the asphalt. Apply granules while asphalt is warm enough to allow total embedment.

3.4.9 Allow for expansion of running metal flashing and edge trim which adjoins roofing.

3.4.10 Counter Flashings: Counter flashings, cap flashings, expansion joints and similar work shall be coordinated with built-up roofing work.

3.4.11 Screw, rivet and solder all joints in gravel stops. Other joints shall be formed for back water joints as required. Seal with urethane sealant.

3.5. Protection of Roofing:

3.5.1 Upon completion of roofing work (including associated metal work), Installer shall advise Contractor of recommended procedures for protection and maintenance of roofing during remainder of construction period.

3.5.2 Installer shall repair or replace damage to roofing system as directed by Owner. Install at time of Final Inspection. Installer shall be engaged in roofing operations to repair damages to roofing which occur before Substantial Completion of roofing and prior to Final Inspection. Repair or replace damaged roofing and sheet metalwork to a condition free of damage and deterioration at time of Substantial Completion.

3.6. Cleaning:

3.6.1 Remove bituminous materials from finished surfaces where flashings, sheet metal and other adjacent work has been stained by bituminous materials. Consult Manufacturer for recommended cleaning methods and materials and conditions to these affected.

3.6.2 Remove excess and unused materials from the site, lawfully disposed, and replace with clean materials or as expose to

End of Section 07 51 00

Section 07 60 00

Flashing and Sheet Metal

V02212011

1. General

1.1 This Section includes all Sheet Metal Work, e.g. overflow scuppers, gutter, downspouts, gravel stop, parapet coping cap and counter flashing.

Related Sections include the following:

1.2.1 Section 07 51 00 Bituminous Built-Up Roofing.

1.2.2 Section 07 60 00 Flashing and Sheet Metal.

1.3. Submittals:

1.3.1 Letter Of Intent (LOI): Information for this Section will be submitted as part of the LOI for Section 07 51 00 Bituminous Built-Up Roofing.

1.3.2 Shop drawings of flashing details will accompany the submittal package for Section 07 51 00 Bituminous Built-Up Roofing.

1.3.3 Materials on Site: Provide documents stating that materials comply with requirements, including certificates and delivery logs for bulk materials, and manufacturer field testing for softening point, flash point, ext, and other quality control testing as required.

1.4. Quality Assurance

1.4.1 Installer (Roofer):

1.4.1.1 All Work of this Section shall be by the approved Installer of Section 07 51 00 Bituminous Built-Up Roofing.

1.4.1.2 Provide products which are acceptable to Manufacturer of primary products.

1.5 Product Handling

1.7.1 When materials are stored outside, they shall be placed on platforms that are raised off the ground or roof deck, and they shall be covered with waterproof coverings. Coverings that are "breathable" (such as canvas) are preferred.

1.7.2 Roofing materials shall be delivered to the Job Site just prior to roof installation and stored in manufacturer's original containers.

1.7.3 Roof Loading: Do not store materials on roof decks, nor position roofing installation equipment on roof decks, in concentrations exceeding design live loading.

2. Products

2.1. Sheet Metal

2.1.1 In general, all sheet metal shall be fabricated from stainless steel. Use prefinished sheet metal only where required to touch other work (facade) or the Owner.

2.1.2 Stainless Steel

2.1.2.1 Fabricate from stainless steel sheet conforming to ASTM A666, Type 302 or 304, annealed, 18/8 finish or 2B finish.

2.1.2.2 Use gauge indicated below or as permitted by SMACNA gauge recommendations.

2.1.2.3 Finish: No. 2D "bright" mill-rolled finish.

2.1.3 Sheet Metal Accessory Materials

2.1.3.1 Where available, use pre-assembled, pre-finished accessories for all roof penetrations, gravel stops, gutters, and support assemblies.

2.1.3.2 Acceptable manufacturers:

McGard Division of GAF/ELK Intec

2.1.3.3 Accessories

2.1.3.3.1 Edge Metal: Corrugated MB with perforated outside and inside corners.

2.1.3.3.2 VER flashing, Antenna Support flashing: 6" adjustable M-Vent with stainless steel draw-band.

2.1.3.3.3 Flues: Manufacturer's UL compliant insulated double wall flue flashing.

2.1.3.3.4 Penetration Seals: Closed-Cell "Chem-aseal" polyseamr with 1 part polyamide sealer.

2.1.4 Aluminum Wall Panels:

2.1.4.1 Provide prefinished 9/16" thick .032ga. "Fabral-R" Aluminum wall panel as manufactured by Fabral.

2.1.4.2 Panel Attachment: wall panels to 18 ga. 7/8" hat channels w/ #12 screws @ 8" o.c. horizontal and 24" o.c. vertical

2.1.5 Solder for Sheet Metal: Except as otherwise authorized or recommended by sheet Manufacturer, provide 50/50 unfluxed type (ASTM-B32) for tinning and soldering joints

2.1.6 Fasteners: Same metal as flashing sheet metal or other non-corrosive metal as recommended by Manufacturer.

2.1.7 Aluminum Stainless Steel sheet thickness

Counterpoints	24 Ga.
Guttering	20 Ga.
Pitch Roof Over Hangers	10 Ga.
Gutter Spacer Brackets	16 Ga.
Gravel Stop	24 Ga.
Counter Flashing	26 Ga.
Rain collars	24 Ga.
Parapet Copings (<16" girth)	24 Ga.
Parapet Copings (16" girth and above)	22 Ga.

Other Sheet metal items: Comply with SMACNA recommendations.

2.2 Fabrication of Sheet Metal Accessories:

2.2.1 SMACNA and NRCA Details: Conform work with details shown and with "Architectural Sheet Metal Manual" by SMACNA. Comply with installation details of "Roofing and Waterproofing Manual" by NRCA.

2.2.2 Prefabricated units as indicated or provide standard manufactured units complying with requirements, fabricate from sheet metal indicated

2.2.3 Provide 4" wide flanges for setting on built-up roofing membrane with concealment by cooperation stripping.

2.2.4 Guttering and downspouts on exterior sized as shown on drawings. Support gutters at maximum 36" o.c. and downspouts at four (4) feet on center. All joints, end caps and/or miters shall be riveted and soldered. NO CAN-LIKING FERRULE TYPE.

2.2.5 Penetration seals for refrigeration penetrations per detail. Verify pipe sizes prior to fabrication. Penetration seals for electrical penetrations shall have conduit welded to base plate 3" min. water-tight couplings.

2.3. Paint: The following paints will be needed for all PVC penetrations.

2.3.1 Primer: Sherwin Williams ProIndustrial ProBlock Latex Sealer.

2.3.2 Finish: Sherwin Williams SuperHide Interior Latex Semi-Gloss.

3. Execution

3.1 General Installation Requirements

3.1.1 Sequencing of work:

3.1.1.1 Install all sheet metal edge trim, flashings, counter flashings, etc. before installation of membrane roofing. Strip in membrane roofing.

3.1.2 Coordinate the installation of insulation, roofing sheets, flashings, flashing, coatings and surfacings with flashings and sheet metal work so that new exposed penetrations are not exposed.

3.1.3 Provide manufactured roof pitch pockets for all roof penetrations. Fabricate penetrations of sheet metal to accommodate pipes, conduits, ducts, etc. Solder all joints to form watertight units.

3.2. Fabrication: Fabricate all required sheet metal work before in place with one piece where possible. Where not possible, use solder selected to provide an unobtrusive finished surface.

3.3. Cleaning:

3.3.1 Clean off excess solder and solder flux immediately after soldering is complete.

3.3.2 Clean and neutralize flux materials. Clean off excess solder and solution.

3.3.3 Remove temporary protective coverings and strippable films, if any, as sheet metal flashing and trim are installed. Upon completion of installation, clean finished surfaces, including removing tarnished bituminous mortar, metal filings, pop rivet stems and pieces of flashing. Maintain in a clean condition during construction.

3.3.4 Replace sheet metal flashing and trim that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

End of Section 07 60 00

Section 07 72 33

Roof Hatches

V09252015

1. General

1.1 Scope: This Section includes information pertaining to roof hatches

1.2. Related sections include the following:

1.2.1 Section 07 51 00 Bituminous Built-Up Roofing.

1.2.2 Section 07 60 00 Flashing and Sheet Metal.

1.3. Submittals:

1.3.1 Letter Of Intent (LOI): Information for this Section will be submitted as part of the LOI for Section 07 51 00 Bituminous Built-Up Roofing.

1.4 Quality Assurance

1.5. Delivery, Handling and Storage

1.5.1 Pack, handle and ship properly labeled in heavy-duty packaging to prevent damage.

2. Products

2.1. Roof Hatch: Provide aluminum roof hatch with safety pole:

2.1.1 Bilco 95-30 Aluminum Roof Hatch

2.1.2 Babcock-Davis Model BSBTAS6.30SBT. For high velocity wind zones use model BSBTAS6.30SSBT

2.2. Execution

2.3. Installation

2.3.1 Install according to manufacturer's written instructions. Install to resist exposure to weather without failing, rattling and leaking.

2.3.2 Safety pole should be installed to far right or far left side of opening. Do not install safety pole centered with ladder as proposed.

2.3.3 Check roof hatch for proper operation. Adjust operating mechanism as required. Clean and lubricate joints and hardware.

2.4 Touch-up:

2.4.1 Touch up factory-painted surfaces with compatible primer ready for field painting in accordance with Section 09 91 00 Painting.

End of Section 07 72 33

Section 07 92 00

Joint Sealants

V02212011

1. General

1.1 Scope: This Section covers sealants for use in all locations except glazing.

1.2 Submit LOI in accordance with Section 01 33 00 Submittal Procedures.

1.3. Quality Assurance - Sealant Compatibility and Adhesion Testing: Use sealant manufacturer's standard test methods to determine whether primings and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

2. Products

2.1. Materials, General

2.1.1 Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as determined by sealant manufacturer based on testing and field experience.

2.1.2 Colors of Exposed Joint Sealants: Match color of materials being joined if possible. Where not possible, use color selected to provide an unobtrusive finished surface.

2.2. Elastomeric Joint Sealants

2.2.1 Use single-component urethane sealants. If unusual conditions or type of work to be accomplished makes the use of multi-component sealants desirable, contact Public Architect.

2.2.2 Elastomeric Sealants, General: ASTM C 920.

2.2.3 Sealants for Contact with Food: Comply with 21 CFR 177.2600

2.2.4 Single-Component Nonsag Urethane Sealant (non-grade):

2.2.4.1 Products:

Bostik Inc.; Chem-Calk 900
Tremco; Dymeric 511
Pecora Corporation; Dynatrol I.
Polymeric Systems, Inc.; PSI-901.

2.2.4.2 Type and Grade: S (single component) and NS (nonsag)

2.2.4.3 Class: 25.

2.2.4.4 Exposure: Use T (traffic) or NT (nontraffic)

2.2.4.5 Substrates: Use M, A, and, as applicable to joint substrates indicated, O.

2.2.5 Single-Component Pourable Urethane Sealant:

2.2.5.1 Products:

Bostik Inc.; Chem-Calk 950
Mameco International; Vulkem 45S SL.
Pecora Corporation; NR-200
Polymeric Systems, Inc.; Flexipruse PSI-951

2.2.5.2 Type and Grade: S (single component) and P (pourable).

2.2.5.3 Class: 25

2.2.5.4 Exposure: Use T (traffic) or NT (nontraffic)

2.2.5.5 Substrates: Use M, A, and, as applicable to joint substrates indicated, O.

2.3. Latex Joint Sealants: ASTM C 834. Use where sealant will be painted, and only where joint movement cannot occur.

2.3.1 Products:

Bostik Inc.; Chem-Calk 600
Pecora Corporation; AC-20
Tremco; Tremflex Inc.; PRI-701

2.4 Joint Sealant Backing

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3300 HARTSFIELD
PHYSICAL ADDRESS
3300 HARTSFIELD ROAD
LAKELAND, FL 33811-3011

PUBLIX FACILITIES DESIGN DEPARTMENT

DAVID RUSH
ARCHITECT, FL REG #13220
GA REG. 020-020
AL REG. 26744
MS REG. 16244
SC REG. 12482
NC REG. 2007
TN REG. 102997

CHRISTOPHER [illegible]
LANDSCAPE ARCHITECT
GA #000511
FL #6666197
AL REG. 01292
TN REG. 102997

PAUL C. HARMAN, PE
STRUCTURAL ENGINEER
GA REG. 027742
SC REG. 21724
FL REG. 69910
AL REG. 25760
NC REG. 29672
TN REG. 0402059022

JOHN J. CARAMALIS, PE
MECHANICAL, FL REG. 46881
GA REG. 031240
AL REG. 28251
MS REG. 19581
SC REG. 24601
TN REG. 0402055478

ANTHONY CLEMENTI, PE
ARCHITECT
AL REG. 24701
GA REG. 031240
SC REG. 28591
AL REG. 28492
MS REG. 19582
NC REG. 029648
TN REG. 0402055819

RAYMOND J. SELIANNI, PE
ELECTRICAL FL REG. 54650
GA REG. 029630
SC REG. 19742
AL REG. 26251
MS REG. 19578
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TN REG. 0402055379

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ELECTRICAL FL REG. 61422
GA REG. 031492
AL REG. 29251
AL REG. 29879

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