



Leon County

Board of County Commissioners

301 South Monroe Street, Tallahassee, Florida 32301
(850) 606-5302 www.leoncountyfl.gov

Purchasing Division
1800-3 Blair Stone Road
(corner of Miccosukee and Blair Stone Roads)
Tallahassee, Florida 32308
(850) 606-1600

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October 7, 2011

RE: Bid Title: Lake Jackson Branch Library, Community Center and Huntington Oaks Renovations; Bid No. BC-10-12-11-02
Opening Date: Wednesday, October 12, 2011 at 2:00 PM

ADDENDUM #2

Dear Vendor:

This letter serves as Addendum # for the above referenced project.

Please see the attached Addendum 2 (19 pages) from Johnson Peterson Architects..

Acknowledgment of this addendum is required as part of your bid submittal. Failure to acknowledge this addendum may result in rejection of your bid.

Should you have any questions, feel free to call me at (850) 606-1600.

Sincerely,

Keith M. Roberts
Purchasing Director

October 06, 2011

John Ward
Leon County Facilities Management
1907 South Monroe Street
Tallahassee, Florida 32301

**RE: ADDENDUM TWO - LEON COUNTY LIBRARY – LAKE JACKSON
PROJECT ADDRESS: 3840 NORTH MONROE STREET**

**CC: IVAN JOHNSON, AIA
DOUG SHULER, PM, JPA
DOUGLAS BARKLEY, PE
JAMIE MACDONNELL, PE
JEREMY PARKER, PE
JAMES LAMB, PE**

Modifications to Project Manual:

Architectural:

- APM1:** *Reference New Technical Specification 07550 - The entire roof, including the docking bay to the rear and electrical room tower of the existing grocery store from column line 6 shown on sheet A1.1 to column line SC16 as shown on sheet ASC1.1, will get a new roof. Adhere to the new technical specification 07550. The technical specification is only a **basis of design**. All companies/manufacturers that meet or exceed this technical specification will be accepted. Remove the entire built-up roof to existing metal deck. Remove all parapet metal copings, cant strips & vertical built-up on the parapet walls. Review sheet MD1.1 demolition plan for existing roofing components, kitchen equipment, roof curbs, HVAC equipment, steel racking systems and roof vents to remain and/or to be removed. Remove all metal gutters from the northwest side of the building and replace with new aluminum gutters that have the same size, shape and profile as those being removed. See technical specifications 07714 Parapet Copings & 07711 Gutters & Drainware. Dispose of all materials as may be required by local authorities having jurisdiction over such work. **Work will be bid as Phase III. Provide separate line item cost.***
- APM2:** *Reference New Technical Specification 07550 – The entire retail store located between column lines EXSC29 and EXSC22 as shown on sheet ASC1.1 will get a new roof. Adhere to the new technical specification 07550. The technical specification is only a **basis of design**. All companies/manufacturers that meet or exceed this technical specification will be accepted. Remove the entire built-up roof to existing metal deck. Remove all parapet metal copings, cant strips & vertical built-up on the parapet walls. All existing roofing components, HVAC equipment, roof curbs and roof vents are to remain. Remove all metal gutters from the northwest side of the building and replace with new aluminum gutters that have the same size, shape and profile as those being removed. See technical specifications 07714 Parapet Copings & 07711 Gutters & Drainware. Dispose of all materials as may be required by local authorities having jurisdiction over such work. **Work will be bid as Phase III. Provide separate line item cost.***
- APM3:** *Reference New Technical Specification 07714 Parapet Copings – The technical specification is only a basis of design. All companies/manufacturers that meet or exceed this technical specification will be accepted. This technical specification will be for all parapet copings (where copings are called to be added) for the library, community center and shopping center facility.*

APM4: *Reference New Technical Specification 07711 Gutters & Drainware - The technical specification is only a basis of design. All companies/manufacturers that meet or exceed this technical specification will be accepted. This technical specification will be for all gutters (where gutters are called to be added) for the library, community center and shopping center facility.*

APM5: *Reference New Technical Specification 10255, Part 2 Products, 2.01 Manufacturer – BASF is an acceptable manufacturer.*

Modification to Drawings:

Architectural:

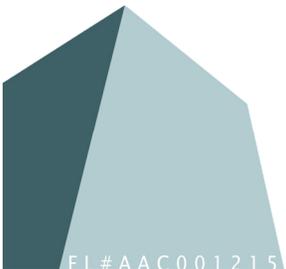
A1: *Reference Architectural Sheet A1.4 – Lobby 101 shall have C2 walk off carpet, Tuff Stuff 524 Stepping Stone. Size 2x2.*

A2: *Reference Architectural Sheet A1.4 – All areas noted with square hatching located in the community room (rooms 118-121), phase IB shall have RCF Rubber Commercial Flooring, Mondo 2mm Geode, G18, Paon, Peacock. Size 2x2.*

A3: *Reference Architectural Sheet A1.4 – Clarification: T3W8 is only a wall base that is 12” tall. Refer to addendum one, A8.*

A4: *Reference Architectural Sheet A8.1 – Roofing located around the perimeter of tower two is labeled incorrectly. The roofing material surrounding tower two is an existing metal roof. The General Contractor shall carefully remove/demolish only the necessary portion of the metal roof so that tower two can be constructed. Re-install new materials to produce a waterproof, warranted roof system. Adhere to ‘NOTE:’ located on sheet 8.1.*

END OF COMMENTS





PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Asphaltic modified bituminous roofing
2. Insulation

B. Related Sections

1. Section 06100: Rough Carpentry
2. Section 07620: Sheet Metal Flashing and Trim
3. Section 15430: Plumbing Specialties

1.02 REFERENCES

A. Factory Mutual (FM Global) - *Approval Guide*

B. Underwriters Laboratories (UL) - *Roofing Systems and Materials Guide* (TGFU R1306)

C. American Society for Testing and Materials (ASTM) - *Annual Book of ASTM Standards*

D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - *Architectural Sheet Metal Manual*

E. Asphalt Roofing Manufacturers Association (ARMA)

F. National Roofing Contractors Association (NRCA)

G. American Society of Civil Engineers (ASCE)

1.03 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) *Roofing and Waterproofing Manual* for definitions of roofing terms related to this section.

1.04 PERFORMANCE REQUIREMENTS

A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.

B. General Contractor shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.05 SUBMITTALS

A. Product Data: Provide product data sheets for each type of product indicated in this section.

B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.



C. Samples: Provide samples of insulation(s), fasteners and roll goods for verification of quality.

D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

1.06 QUALITY ASSURANCE

A. Manufacturer's Qualifications: MFG. shall provide a roofing system that meets or exceeds all criteria listed in this section.

B. Installer's Qualifications:

1. Installer shall be classified as a *Master* or *Master Select* contractor as defined and certified by GAF or other MFG.

C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.

D. Final Inspection: Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.07 PRE-INSTALLATION CONFERENCE

A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, MFG representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.08 REGULATORY REQUIREMENTS

A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.

1.09 DELIVERY, STORAGE AND HANDLING

A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a qualified MFG label.

B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.

C. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products.

D. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.

E. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material is to be installed.

F. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.



1.10 PROJECT CONDITIONS

A. Weather

1. Proceed with roofing only when existing and forecasted weather conditions permit.
2. Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water based adhesives.

1.11 WARRANTY

A. Provide Manufacturer's standard Guarantee with single source coverage and no monetary limitation, where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.

1. Duration: Twenty (20) years from the date of all roof system completion. Materials and workmanship of listed products within this section when installed in accordance with current GAF® application and specification requirements. Contact GAF® Contractor Services for the full terms and conditions of the guarantee.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. GAF Basis of Design

2.02 INSULATION

A. Rigid polyisocyanurate board, with a strong white or black fibrous glass facer conforming to or exceeding the requirements of ASTM C 1289 / FS HH-I-1972. EnergyGuard Polyiso, by BMCA or equal with the following characteristics:

1. Board Thickness: 2 layers total 3.3"
2. Thermal Resistance (LTTR value) of: 20.4
3. Compressive Strength: 20 psi

2.03 INSULATION ACCESSORIES

A. Cant Strip: Factory fabricated rigid perlite strip cut at angles to provide a true 45 degree Angle between horizontal and vertical surfaces, EnergyGuard Perlite Cant Strip, by BMCA or equal.

B. Tapered Edge Strip: Factory fabricated rigid perlite strip cut at angles to provide a smooth transition between differences in elevation. EnergyGuard Tapered Edge Strip, by BMCA or equal.

2.04 BASE / PLY SHEETS

A. Heavyweight asphalt coated glass fiber base sheet: Conforms to or exceeds requirements of ASTM D 4601, Type II, UL Type G2 BUR, and Federal Spec SS-R-620B Type II. Each roll contains three (3) squares (320 sq. ft.) of material, approximately 39.375" x 97.5' (1 m x 29.7 m); 68 lbs. (30.8 kg), GAFGLAS #75 base sheet or equal.

B. Premium glass fiber asphalt saturated ply sheet with flexible design: Conforms to or exceeds requirements of ASTM D 2178 Type VI and UL Type G1 BUR. Each roll contains five (5) squares (530 sq. ft.) of material, approximately 39.375" x 161.8' (1.0m x 49.3m), 44 lbs. (20 kg), GAFGLAS FlexPly 6 or equal.

2.05 MEMBRANE MATERIALS



A. ENERGY STAR listed, fire resistant, coated granule surfaced modified bitumen sheet containing a core of non-woven glass fiber mat coated with flexible SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6163 Type I Grade G. Each roll contains one square of material, approximately 39.4' x 33.7' (1 m x 10.27 m), 98.4 lbs. (44.6 kg), Ruberoid® EnergyCap™ SBS 30 FR roof membrane or equal.

2.06 FLASHING MATERIALS

A. Premium glass fiber asphalt saturated ply sheet with flexible design: Conforms to or exceeds requirements of ASTM D 2178 Type VI and UL Type G1 BUR. Each roll contains five (5) squares (530 sq. ft.) of material, approximately 39.375' x 161.8' (1.0m x 49.3m), 44 lbs. (20 kg), GAFGLAS FlexPly 6 or equal.

B. ENERGY STAR listed, fire resistant, coated granule surfaced modified bitumen sheet containing a core of non-woven glass fiber mat coated with flexible SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6163 Type I Grade G. Each roll contains one square of material, approximately 39.4' x 33.7' (1 m x 10.27 m), 98.4 lbs. (44.6 kg), Ruberoid EnergyCap SBS 30 FR roof membrane or equal.

2.07 BITUMEN / ADHESIVES

A. Asphalt Bitumen: ASTM D 312 Type III or IV

B. Asphalt Primer: ASTM D 41 Leakbuster Matrix 307 Premium Asphalt Primer, by BMCA® or equal.

2.08 ACCESSORIES

A. Mechanical Fasteners

1. DrillTec Standard Roofing Fastener: Alloy steel fastener with CR-10 coating with a .220" diameter thread: Factory Mutual Standard 4470 Approved, #3 Phillips truss head or hex head or equal.
2. DrillTec3" Galvalume Plate: Galvalume, 3" (7.5 cm) diameter, center hole .25" (inch), for use with Standard, Heavy Duty, CD-10, Fluted Nail or Toggle Bolt or equal.

B. Standard Vents

1. A spun aluminum vent, pre-flashed with modified bitumen designed to waterproof soil pipes and roofing protrusions. The Standard MVent, by MWeld or equal. *NOTE: Not for use over active pipes that emit steam or excessive moisture vapor, condensation may occur. Not for use over boiler or heater/furnace vent pipes.*

C. Adjustable Vents

1. A two-piece roof-flashing unit consisting of a pre-flashed spun aluminum base and a flexible upper boot, allowing for waterproofing of tall or awkward roof protrusions. The **Adjustable MVent**, by MWeld or equal.

D. Plumbing Vents

1. A pre-flashed with modified bitumen membrane and is designed to waterproof vent pipes. It can be used as a pipe cover to replace finger and cap flashing on standard vent pipe details. The Pre-Flashed Plumbing Vent, by MWeld or equal.

E. Drains

1. A spun aluminum (or copper) roof drain with gravel guard, strainer cap, and waterproofing plumbing seal attached. Pre-flashed with modified bitumen and available in full and insert sizes to accommodate new construction and retrofit applications. The MDrain, by MWeld or equal.



2. A Pre-flashed metal through-wall roof drain designed for easy installation to aid in quick lateral removal of water. The Mscupper, by MWeld or equal.

F. Sealant Pans

1. A structural urethane outer shell, bonded to the roof surface, filled with a urethane rubber sealant. The urethane sealant conforms to the shape of any roof penetration through a roof surface to protect the roof system from moisture. The M-Curb and M-Thane, by MWeld or equal.

G. Expansion Joint Covers

1. Factory fabricated assemblies used to accommodate three-dimensional joints in a roof structure. Heavy reinforced flexible cover with a flexible flame retardant foam bellows for support. Nailing flanges conform to curb irregularities. The Metalastic® Expansion Joint Cover, by BMCA or equal.

H. Gravel Guard

1. Three-piece fascia system with roof flange design that creates water and wind proof seals at the building perimeter. The Gravel Guard MB, by BMCA or equal.

- I. **EnergyCote Coating or equal**, a brilliant white, water based, low VOC, highly reflective elastomeric coating which cures to form a seamless rubber membrane. It has been specifically designed to treat seams, laps, flashings and other edges and details in reflective cap sheet products such as EnergyCap™. Designed to add reflectivity and protect areas of asphalt bleed-out on white reflective asphalt roll roofing to give a uniform, brilliant white finish across the whole roof area.

J. **TOPCOAT Flexseal or equal.**

1. Solvent-based synthetic elastomeric sealant.

K. **TOPCOAT Flashing Fabric or equal.**

1. Non-woven, 100% fully spun-bonded polyester fabric.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is cleaned and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of ice or snow.
- E. Verify that all roof openings, curbs, pipes, sleeves, ducts, vents or other penetrations through the roof are solidly set, and that all flashings are tapered.

3.02 SUBSTRATE PREPARATION

A. Steel Deck

1. Metal decks must be a minimum uncoated thickness of 22 gauge (0.8 mm) and shall have a G-90 galvanized finish on all panels.
2. Decks must comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.



3. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

3.03 INSTALLATION - GENERAL

- A. Install GAF®'s Ruberoid® roofing system according to all current application requirements in addition to those listed in this section.
- B. GAF® Ruberoid Specification #: I-3-1-30FR(EC)
- C. When the slope of the roof is $\frac{1}{2}$ " per foot or greater, install all plies parallel with the slope of the roof, and install intermediate wood nailers as required for the specific roof slope. Plies must extend over ridges and nailed on 6" centers.
- D. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

3.04 BITUMEN

- A. Do not mix different types of asphalt.
- B. Use only ASTM D 312, Type III or Type IV Steep Asphalt. Type III asphalt may be used on slopes up to $\frac{1}{2}$ " per foot (4cm/m). Type IV asphalt must be used on all slopes greater than $\frac{1}{2}$ " per foot (4 cm/m).
- C. Application with hot asphalt requires continuous, uniform interply mopping rates of 25 lbs. +/- 20% per 100 square feet of roof area (1.2 kg/m²).
- D. Application temperature of the asphalt must be at the Equiviscous Temperature (EVT) with a tolerance of +/- 25°F (13.9°C), at which a viscosity of 125 centipoise is attained. When using mechanical asphalt applicators, the target viscosity should be 75 centipoise.
- E. For all SBS modified asphalt flashings; the minimum application temperature of the asphalt must be at the EVT or 425°F (218°C), whichever is greater, with a rolling bank (puddle) of mopping asphalt across the full width of the roll.
- F. Do not heat the asphalt to or above its flash point or hold the asphalt at temperatures above the finished blowing temperature for more than 4 hours.
- G. Do not keep heated tankers above 325°F (163°C) overnight.

3.05 INSULATION - GENERAL

- A. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.
- B. Do not install wet, damaged or warped insulation boards.
- C. Install insulation boards with staggered board joints in one direction (unless taping joint).



- D. Install insulation boards snug. Gaps between board joints must not exceed $\frac{1}{4}$ " (6 mm). All gaps in excess of $\frac{1}{4}$ " (6 mm) must be filled with like insulation material.
- E. Wood nailers must be 3-1/2" (8.9 cm) minimum width or 1" (25 mm) wider than metal flange. They shall be of equal thickness as the insulation with a minimum 1" (25 mm) thickness. All nailers must be securely fastened to the deck.
- F. Do not kick insulation boards into place.
- G. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
- H. Do not install insulation over old lightweight insulating concrete decks without the use of a vapor retarder. Insulation should not be installed over new lightweight insulating concrete.
- I. Cant strips must be installed at the intersection of the roof and all walls, parapets, curbs, or transitions approaching 90°, to be flashed. They shall be approximately 4" (10.2 cm) in horizontal and 4" (10.2 cm) in vertical dimension. The face of the cant shall have an incline of not more than 45 degrees with the roof.
- J. Roof tape, if required over insulation joints, must be laid evenly, smoothly and embedded in a uniform coating of hot steep asphalt with 4" (10.2 cm) end laps. Care must be taken to assure smooth application of tape, and full embedment of the tape in the asphalt.
- K. Do not install any more insulation than will be completely waterproofed each day.

3.06 INSULATION

- A. Loose apply the base layer of insulation and subsequent layers of insulation for base sheet to be simultaneously attached. Minimal fastening should be performed to avoid movement of the boards.

3.07 BASE SHEET

- A. Roll the base sheet out over the insulation and allow it to relax. Lap the base sheet so the flow of water is over or parallel to, but never against the laps.
- B. Lap the base sheet 2" (5.1 cm), and 4" (10.2 cm) on the ends. Keeping the base sheet taut, push out all wrinkles and buckles ahead as fastening proceeds.
- C. Turn base sheet up to the top of the cant.
- D. Stagger adjacent end laps a minimum of 18" (45.7 cm).
- E. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM Fastening patterns. Factory Mutual requires fastener density increases in perimeter and corner zones for FM 1-60 and FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, 1-29 and 1-49. Note: When fastening base sheets using screws and plates without insulation, the plate must be of a design that allows it to lie flat on the deck.

3.08 INTERPLY SHEETS

- A. Two-ply interply application: Install 19 11/16" (50 cm) and 39 3/8" (100.0 cm) width starter plies, and follow with a second 39 3/8" (100.0 cm) width sheet with a maximum of 17 11/16" (44.9 cm) exposure, applied shingle



fashion. Lap felts 20 11/16" (52.6 cm) with an 18 11/16" (47.5 cm) exposure and 6" (15.2 cm) on end laps. Stagger adjacent end laps a minimum of 18" (45.7 cm).

3.09 CAP SHEET

- A. For slopes less than 1/2" per foot (4.2 cm per meter), Type III or IV asphalt may be used. Type IV must be used on all slopes 1/2" per foot (4.2 cm per meter) and over. Asphalt shall be applied at its EVT temperature or 425°F (218°C), whichever is greater, in a uniform layer, without voids, at a rate of 25 lb/square (1.2 kg/m²) ±20%. See Article 3.04 "Bitumen". The mopping stroke will be such that the side lap is covered with asphalt last. A rolling bank (puddle) of mopping asphalt must be maintained across the full width of the roll.
- B. Cap sheet application: Install full width cap sheets, lapping 3" (7.62 cm) on the sides and 6" (15.2 cm) on ends. Stagger adjacent end laps a minimum of 18" (45.7 cm) apart. All side and end laps must be staggered from underlying plies.
- C. All laps must be parallel or perpendicular to the slope of the roof such that the flow of water is never against the lap.
- D. SBS membranes must not be applied during adverse weather or without precautionary measures in temperatures below 45°F (7.2°C). Contact GAF® Contractor Services for details.
- E. Coiled rolls should be unrolled, placed upside down and allowed to "relax" prior to installation. Then re-roll to apply.
- F. Care should be taken to insure that the cap sheet lays flat in the asphalt. There must be complete adhesion between the cap sheet and the mopping asphalt. Brooming of the plies may be necessary under certain conditions to insure that the cap sheet adheres solidly to the asphalt. Apply extra pressure to avoid creating open channels, where three or more membranes are lapped.
- G. A minimum 3/8" (10 mm) asphalt flow-out must be obtained at all laps. Dry laps are not acceptable. Check all seams for full and uniform adhesion.
- H. All end laps must be staggered a minimum of 18" (45.7 cm) so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of Ruberoid® Mop SBS membrane must be installed over the end laps.
- I. If damage by other trades or any inadvertent damage should occur to the EnergyCap™ product during installation, and for aesthetic purposes only, an additional fog coat of EnergyCote™ coating can be applied to the sheet at a rate of ½ to 1 gallon per 100 sq ft.

3.10 BITUMINOUS BASE FLASHINGS

- A. Install GAF® base flashing specification 3X66M over all cant strips, horizontal to vertical transitions, roof edges and roof penetrations. Flashings are to be secured in accordance with current GAF® application guidelines.
- B. Nailable curbs and walls must be covered with a layer of approved GAF®GLAS Base Sheet or backer ply fastened 8" (20.3 cm) o.c. in all directions with approved fasteners. All vertical laps shall be 4" (10.2 cm). Base sheet or backer ply must extend out onto the field of the roof as shown in the applicable GAF® construction detail.
- C. Prime all metal and masonry surfaces with asphalt primer, and allow adequate drying time prior to adhering flashing plies.



- D. Backer plies installed over masonry or other non-nailable substrates must be cut into manageable lengths to ensure adequate adhesion to the cant strip and vertical surfaces without excessive voids. All vertical laps shall be 4" (10.2 cm). Backer plies shall extend onto the field of the roof as shown in the applicable GAF® construction detail.
- E. The finished ply of base flashing shall be run vertically to provide a selvage edge that will aid in achieving proper adhesion at the 3" (7.6 cm) vertical laps. If the sheet is run horizontally, the vertical laps must be a minimum of 6" (15.2 cm) and the selvage edge must be removed from the sheet or fully covered by the counterflashing. The finished flashing ply must extend out onto the field of the roof as shown in the applicable GAF® construction detail, and must be extended a minimum of 4" (10.2 cm) beyond the edge of the prior flashing plies. The flashing must be soundly adhered to the parapet, cant area and roof surface to result in a minimum void, non-bridging construction.
- F. Base flashing heights must be a minimum of 8" (20.3 cm) and a maximum of 24" (61.0 cm) above the roofline.
- G. Use only Type IV hot asphalt. Maintain asphalt at the Equiviscous Temperature (EVT) +/- 25°F (13.9°C) for all base and ply sheets used in flashing details. Apply flashing membranes at the EVT temperature or 425°F (218°C) whichever is greater. Firmly press sheets into the adhesive, and immediately nail the top of the flashing as specified in the appropriate flashing detail.
- H. Corner membrane flashings, such as "bow ties" for outside corners and "footballs" for inside corners or other membrane reinforcements are required to ensure that base flashing corners are sealed at cant areas. An alternate method of corner reinforcing is to install a smooth MB membrane reinforcement piece on the prepared corner substrate prior to final surfacing membrane. Refer to MB Flashing Details section of the GAF® *Application and Specifications Manual*.

3.11 PENETRATIONS

- A. Horizontal penetrations shall be flashed with M-Curbs filled with M-Thane sealant, then coated with Topcoat® Flexseal.
- B. Vertical penetrations shall be flashed with Topcoat® Flashing Fabric embedded between two coats of Topcoat® Flexseal.

3.12 SHEET METAL

- A. Metal should not be used as a component of base flashing. Because of the high coefficient of expansion of sheet metals and the large temperature changes that can be experienced on a roof, sheet metal or exposed metal components must be isolated from the waterproofing components of the roofing and flashing system as efficiently as possible to prevent the metal from splitting the membranes. GAF® assumes no responsibility for damage to the roofing system caused by the movement of accessory metal.
- B. When it is unavoidable to use metal in the roofing system (i.e., lead flange at drains, gravel stops), treated wood nailers and insulation stops, 1" (25 mm) wider than the metal flange, should be provided for metal flange attachment. Metal flanges must always be set on top of the roof membrane with modified trowel grade cold adhesive applied material for SBS roof systems. The metal flange is then sealed using the applicable construction detail to meet applicable guarantee requirements. Metal accessories (gravel stops, counter flashing, etc.) should be 16 oz. (0.56 mm) copper, 24 gauge (0.71 mm) galvanized or stainless steel, 2 1/2 to 4 lb (1.1-1.8 kg) lead, or 0.032" (0.81 mm) aluminum.



- C. Fabricate and install all sheet metal materials as shown in applicable construction details. Refer to SMACNA (Sheet Metal and Air Conditioning Contractors National Association, Inc.) for guidance on sheet metal treatments not addressed in this specification.
- D. Clean metal and apply asphalt primer to all sheet metal surfaces that will come into contact with asphalt or other bituminous materials; allow the primer adequate time to dry.
- E. Use fastener types compatible with the sheet metal type.
1. Copper or lead-coated copper: use copper or bronze fasteners.
 2. Lead and galvanized steel: use galvanized or cadmium-plated sheet fasteners.
 3. Aluminum: use aluminum fasteners.
 4. Stainless steel: use stainless steel fasteners.
- F. Metal counter-flashing shall have a minimum 4" (10.2 cm) face with a drip lip. The bottom edge of the counterflashing shall cover the roofing membrane and/or base flashing by a minimum of 4" (10.2 cm). Metal counter flashing used for masonry walls, wooden walls, or through wall metal flashings should be a two piece design to allow for installation and later removal. Metal counter-flashings for stucco, EIFS, wood siding or similar materials should be designed appropriately, such as "Z" type flashing. End joints shall be lapped 3" (7.6 cm) or more. Adequate fasteners must be provided to secure against wind forces. Skirt fasteners shall be watertight.
- G. Metal termination bars shall be a minimum of 1/10" (3 mm) thick x 1" (25 mm) wide with preformed sealant edge lap. Bar should have 1/4" (6 mm) x 3/8" (10 mm) slotted holes on 4" (10.2 cm) centers to facilitate mechanical anchorage. Note: Termination bars are not suitable in all base flashing and wall flashing conditions. Termination bars may only be used in conjunction with an appropriate counter-flashing extending a minimum of 4" (10.2 cm) below the termination bar.
- H. Metal flanges for gravel stops, eave strips, and pitch pockets to be used in conjunction with roofing shall be primed (both sides), set in modified trowel grade cold adhesive applied material for SBS roof systems. Flanges shall be a minimum of 3 1/2" (8.9 cm) wide for gravel stops or eave strips and 4" (10.2 cm) wide for projections and extensions through the roof. The gravel stop lip should be at least 3/4" (19 mm) high. Eave strip lips shall be at least 3/8" (10 mm) high. Provisions must be made for securing the skirt to the face of the wall. This may be a wood nailer strip for masonry and metal construction. In all cases, gravel stop and eave strip nailer should be fastened to the deck or deck system with adequate resistance against wind forces.
- I. Stacks shall have metal sleeve flashing a minimum of 8" (20.3 cm) high. Pitch pockets for brackets, supports, pad-eyes, etc., shall have a 4" (10.2 cm) minimum height metal sleeve.
- J. On re-roofing projects, provisions shall be made for reinstallation of existing sheet metal duct work, equipment, coping metal and counter-flashing removed in conjunction with the new work. Also, provide for cleaning and repairing of existing defective sheet metal, and replacement of missing and irreparable sheet metal to match existing types. Light gauge sheet metal flashings which are incorporated into the Ruberoid® roof system are not suitable for re-use and must be replaced with new material.
- K. Conduits and piping such as electrical and gas lines must be set on wood blocking or some other form of support. Wood blocking/supports must be set on pads constructed of an additional layer of roof membrane material.

3.13 WALKWAYS

- A. Walkways for normal rooftop traffic may be constructed from two plies of modified bituminous membrane of the same type as the field of the roof. This type of walkway is not for sidewalk or patio-type use.



- B. Construct walkways by solidly adhering a first ply of smooth surfaced membrane to the field of the roof followed by a granule surfaced membrane to the surface of the first ply.
- C. Walkway sections should be no longer than 10' (3 m), with a 6" (15.2 cm) minimum gap between each section to allow for drainage.

3.14 ROOF PROTECTION

- A. Protect all partially and fully completed roofing work from other trades until completion.
- B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
- C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
- D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

3.15 CLEAN-UP

- A. All work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
- C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

END OF SECTION



SECTION 07550 – INDUSTRIAL SERIS COMMERCIAL GUTTER SYSTEM

PART I GENERAL

1.01 RELATED DOCUMENTS

- A. The provisions included under Division 1, General Requirements, are included as part of this section as though bound herein.

1.02 SUMMARY

- A. Provide labor, material, and equipment necessary for furnishing a complete installation of industrial series commercial gutter system.
- B. Related Work Specified Elsewhere
 - 1.Division 5 Sections for support framing.
 - 2.Division 6 Sections for nailers and support framing.
 - 3.Division 7 Sections for related roofing materials.

1.03 SUBMITTALS

- A. Product Data: Each type of product specified. Submit manufacturer's detailed technical product data, installation instructions and recommendations, dimensions of individual components, profiles, and finishes
- B. Shop Drawings: Show fabrication and installation of industrial series commercial gutter system including fully dimensioned roof plans, expansion joint locations, sections and details of components and other related trims.
- C. Finish & Color Selection: Furnish manufacturer's technical data for specified finish and color chart showing full range of colors available.

1.04 QUALITY ASSURANCE

- A. Where pre-engineered manufactured products are specified, other field fabricated or shop/field fabricated substitutions will not be accepted. However, where shop/field fabrications are indicated pre-engineered systems will be considered with Architect approval.
- B. Obtain all components and related accessories from one single source manufacturer.
- C. Follow manufacturer's printed instructions for installing industrial series commercial gutter system. Follow primary roofing manufacturer's printed instructions for installing associated roof material for flashing gutter system to roof.

1.05 DELIVERY, STORAGE & HANDLING

- A. All products delivered shall be stored in a clean dry location prior to installation.
- B. Products furnished with strippable protective masking shall not be exposed to direct sunlight for more than 30 minutes without removing masking.
- C. Do not install finished materials with scars or abrasions.

1.06 PROJECT CONDITIONS



- A. Coordinate work of this Section with adjoining work for proper sequencing to ensure protection from inclement weather and to protect materials and their finish against damage.
- B. Do not install industrial series commercial gutter system during inclement weather. When installing in cold climates, warm adhesives, caulks, and primers to at least 50 degrees Fahrenheit prior to application.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide industrial series commercial gutter system, accessories, and drainware as manufactured by Perimeter Systems, a division of Southern Aluminum Finishing Company Inc.
143 Charlotte Ave., Suite 102
Sanford, North Carolina 27330
1-800-334-9823

2.02 TYPE

- A. Provide Perimeter Systems' Industrial Series Commercial Gutter System Profile G4 6" Size Model Number G4-R6 for the two towers. When replacing with new gutters on the grocery store and retail, the gutters shall have the same size and profile as those being removed.

2.03 MATERIALS & FABRICATION

- A. Gutter shall be manufactured from 0.040" mill finished aluminum in 10'-0" lengths. Gutter shall be:
 - 1. Manufactured with 1' telescoping and notched end.
 - 2. Factory punched with fastening holes elongated to allow for thermal movement.
 - 3. Gutters shall be press formed on a CNC Press to provide repeated true and accurate profiles.
- B. Support Bracket shall be manufactured from 0.125" x 1.00', extruded aluminum bar, factory punched for fasteners.
- C. Interior Straps shall be manufactured from 0.125" x 1.00" extruded aluminum bar.

2.04 ACCESSORIES

- A. Mitered Corners, provide factory welded mitered corners.
- B. End Caps, provide factory end caps at all gutter ends and wall abutments.
- C. Gutter Expansion Joint, provide manufacturer's elastomeric expansion joints with exterior cover plates at 40' intervals.

2.05 DRAINWARE

- A. Replace with the same size, shape and profile as those being removed. Downspout & Elbows, provide downspout Model Number DS-FM in sizes and locations as indicated on plans. Downspouts shall be manufactured from 0.040" aluminum, finished to match gutter. Downspout elbows shall have heliarc welded joints.



- B. Outlets, at all downspout locations provide aluminum outlets to connect liner to downspout.
- C. Wall Brackets, provide Style 1 Wall brackets at 60" maximum spacing (minimum 2 brackets). Brackets shall be manufactured from 0.125" x 1.00" extruded aluminum bar, finished to match downspout.

2.06 FINISHES

- A. General: Apply coatings to exposed aluminum components after fabrication for maximum coating performance and to prevent crazing, abrasion, and damage to finished surfaces.
- B. Pretreatment: Aluminum components shall be pretreated with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a chrome phosphate conversion coating to which organic coatings will firmly adhere.
- C. Coating Type: High Performance Coating, two-coat, shop applied, 70% Polyvinylidene Fluoride (PVDF) coating based on Elf Atochem, Inc. Kynar 500 or Ausimont U.S.A., Inc. Hylar 5000 resin, meeting AAMA 2605 specification.
- D. Color: Select from manufacturer's full range of 56 EZ Mix Colors.

PART 3 EXECUTION

3.01 EXAMINATION

- A. The installer must examine substrates and conditions under which industrial series commercial gutter system will be installed. All wood plates and/or fascia boards shall be installed true, straight, and free of splits, cracks, or other irregularities. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Prior to the installation of the industrial series commercial gutter system, soffits, extenders, and associated trims shall be installed.

3.03 INSTALLATION

- A. General: The industrial series commercial gutter system shall be installed in strict accordance with manufacturer's printed instructions. Deviations from the instructions are not allowed.
- B. Support Brackets: Layout support brackets to provide 1/2" slope in 40 linear feet. Install support brackets with #10 x 2" stainless steel wood screws.
- C. Gutter: Install gutter onto support brackets and fasten to substrates with 1-1/2" aluminum or stainless steel nails. Rivet and seal gutter joints with high grade exterior sealant as recommended by gutter manufacturer.
- D. Expansion Joints: Install elastomeric expansion joints as shown on plans and/or shop drawings. Maximum expansion joint spacing shall be 40' centers.
- E. Install interior straps by fully engaging them into gutter's beaded edge, complete by securely riveting.

END OF SECTION



PART I GENERAL

1.01 RELATED DOCUMENTS

- A. The provisions included under Division 1, General Requirements, are included as part of this section as though bound herein.

1.02 SUMMARY

- A. Provide labor, material, and equipment necessary for furnishing a complete installation of parapet coping cap.
- B. Related Work Specified Elsewhere
 1. Division 4 Sections for masonry
 2. Division 6 Sections for nailers and support framing.
 3. Division 7 Sections for related roofing materials.

1.03 SUBMITTALS

- A. Product Data: Each type of product specified. Submit manufacturer's detailed product data showing dimensions of individual components, profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation of parapet copings including fully dimensioned roof plans, sections and details of components and other related trims.
- C. Finish & Color Selection: Furnish manufacturer's technical data for specified finish and color chart showing full range of colors available.

1.04 QUALITY ASSURANCE

- A. Where pre-engineered manufactured products are specified, other field fabricated or shop/field fabricated substitutions will not be accepted. However, where shop/field fabrications are indicated pre-engineered systems will be considered with Architect approval.
- B. Obtain all components and related accessories from one single source manufacturer.
- C. Follow manufacturer's guidelines & shop drawings for installing parapet copings. If copings join a roof system then follow primary roofing manufacturer's printed instructions for installing associated roof material for flashing parapets and coping.

1.05 DELIVERY, STORAGE & HANDLING

- A. All products delivered shall be stored in a clean dry location prior to installation.
- B. Do not install finished materials with scars or abrasions.

1.06 PROJECT CONDITIONS

- A. Do not install copings during incimate weather. When installing in cold climates warm sealants to at least 50 degrees Fahrenheit prior to application.



PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide manufactured aluminum coping system and accessories as manufactured by Perimeter Systems, a division of Southern Aluminum Finishing Company, Inc.
143 Charlotte Ave., Suite 104
Sanford, North Carolina 27330
1-800-334-9823

2.02 TYPE

- A. Provide Perimeter Systems' Press-Loc Coping

2.03 MATERIALS & FABRICATION

- A. Parapet copings shall be manufactured from 0.063" aluminum, 10'-0" lengths. Coping shall be formed with a 1/2" wash slope to divert water to roof side of parapet.
- B. Coping joints shall consist of a 6" wide concealed splice plate manufactured from 0.050" aluminum. Splice plate shall be formed to fit inside the coping and containing a stiffening bend to keep splice from flexing.
- C. Compression cleats shall be manufactured from 20 gauge galvanized steel, 12" widths, with factory mounted stainless steel spring clips.

2.04 ACCESSORIES

- A. Mitered Corners, provide factory welded mitered corners.
- B. End Caps, provide factory welded end caps.

2.05 FINISHES

- A. General: Apply coatings to exposed aluminum components after fabrication for maximum coating performance and to prevent crazing, abrasion, and damage to finished surfaces.
- B. Pretreatment: Aluminum components shall be pretreated with solutions to remove organic and inorganic surface soils, remove residual oxides, followed by a chrome phosphate conversion coating to which organic coatings will firmly adhere.
- C. Coating Type: High Performance Coating, two-coat, shop applied, 70% Polyvinylidene Fluoride (PVDF) coating based on Elf Atochem, Inc. Kynar 500 or Ausimont U.S.A., Inc. Hylar 5000 resin, meeting AAMA 2605 specification.
- D. Color: Select from manufacturer's full range of 56 EZ Mix Colors.

PART 3 EXECUTION

3.01 EXAMINATION



- A. The installer must examine substrates and conditions under which copings will be installed. All wood plates and/or fascia boards shall be installed true, straight, and free of splits, cracks, or other irregularities. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02INSTALLATION

- A. General: Parapet coping shall be installed in strict accordance with manufacturer's printed instructions and shop drawings.
- B. Fastening: Coping shall be snapped onto compression cleats spaced according to manufacturer's instructions. A cleat shall be located at the coping's splice joint and in the middle of each coping section. Cleat shall be fastened with (4) #10 x 1-1/2" stainless steel wood screw.
- C. Install splice plates at all coping joints. Splice plate shall be sealed with a non-hardening, low modulus, sealant as recommended by coping manufacturer.

END OF SECTION