

Family Activity Center Roof Replacement Project Shelbyville-Shelby County Parks Request for Proposals

The Shelbyville-Shelby County Parks and Recreation Board hereby requests proposals for **Family Activity Center (FAC) Roof Replacement Project** to be provided in accordance with terms, conditions and specifications established herein.

Sealed proposals will be received in the Parks Director's Office, Family Activity Center, 717 Burks Branch Road, Shelbyville, Kentucky 40065, until **4:00 PM**, Eastern time, on **Thursday, February 28th**.

It is the sole responsibility of the Proposer to assure that his/her proposal is received by the Parks Director before the date and time set for receiving proposals. Proposals must be sealed in an envelope and the envelope prominently marked:
RFP - Family Activity Center (FAC) Roof Replacement Project

Proposals, once submitted, may not be withdrawn for a period of sixty (60) calendar days. The Proposer must submit three (3) hardcopies and (1) electronic version in PDF format on a flash drive of their proposal for evaluation purposes.

The Shelbyville-Shelby County Parks (or "Owner") reserves the right to reject any or all proposals, and to waive technicalities and informalities when such waiver is determined by the Shelbyville-Shelby County Parks to be in its best interest.

Signature of this proposal by the Proposer constitutes acceptance by the Proposer of terms, conditions and requirements set forth herein. Minor exceptions may not eliminate the proposal. Any exceptions to the specifications established herein shall be listed in detail on a separate sheet and attached hereto.

Submitting a proposal in no way obligates the Owner to compensate contractor for any costs associated with development of such a proposal.

PRE-BID MEETING AND QUESTIONS:

A **mandatory** pre-bid meeting will be held on **Thursday, February 7th at 2:00 PM** Eastern time at the Family Activity Center, 717 Burks Branch Road, Shelbyville, Kentucky 40065. Company representative(s) are required to be on hand to get a clear expectation / explanation of the project and provide a time for all contractors to ask questions. Questions about the project may be submitted in writing to Shawn Pickens, Director of Parks to Spickens@shelbycountyparks.com. **Deadline for questions shall be Monday, February 25th**. NO questions will be entertained or responded to verbally during the bid period.

PROJECT SCOPE:

Total roof replacement for the Family Activity Center (FAC) including gymnasium, Waldrige Center, conference room, breeze ways, administrative areas, fitness room, concession area, aerobic room, party room, and indoor pool. The FAC is a multi-use facility for family activities, fitness programs, youth and adult sports, swimming, and other special events and activities. The Shelbyville / Shelby County Parks Board's preference is a coated foam type commercial roof for the flat sections of the facility as well as the Waldrige Center. The indoor pool roof is preferred to be commercial grade standing seam metal roof. Proposer **may submit** alternate roof replacement options if they so choose and provide an explanation of the benefits over a coated foam roof material. Proposers are also permitted to submit multiple types of roof options, including but not limited to EPDM, TPD, and PVC.

CONTRACTOR QUALIFICATIONS:

Proposing contractors (also the "contractor" or "firm") shall have experience in commercial roofing projects, have an office and construction staff within 100 miles of Shelbyville and have been in business for at least 5 years.

PROJECT REQUIREMENTS:

- 1) The proposal shall include all necessary work for a turn-key project, including design, procurement, and installation of the scope of work concept and specifications provided below. This includes, but is not limited to
 - Design and stamped drawings for both flat roof of the Family Activity Center and metal roof over pool area.
 - Permits, reviews by state and other authorities having jurisdiction, if necessary.
 - Any needed mechanical and electrical changes, construction, etc.
 - General construction.
- 2) The owner's expectation with the design-build approach is to not have change orders, unless there are exceptional circumstances clearly beyond the firm's control.
- 3) Contractor is responsible for verifying existing field conditions. The building is accessible during normal business hours of 5:30 AM – 9:00 PM, M-F with 24 hours advance notice.
- 4) Some construction drawings are available of the original 1999 roof design. This can be provided upon request. Copies of drawings are out contractors expense.
- 5) Direct supervision of the design shall be provided by a professional engineer with substantial commercial roofing experience or commercial grade roofing professional competent in commercial grade roofing to serve as the engineer/professional of record. This person shall either be the direct employee or a subcontractor to the proposing contractor. They shall carry professional liability insurance.

- 6) Conduct an in-progress design review meeting with the owner before the half-way point of the design period to gain confirmation of design and construction approach.
- 7) Coordination with the Shelbyville-Shelby County Parks and Family Activity Center (FAC) staff regarding scheduling. The site superintendent is responsible to notify the Director of Parks of utility shutdowns or other potential building interruptions with 48 hours' notice.
- 8) Conduct a pre-construction meeting at least one week before significant on-site work begins. Conduct weekly construction meetings during on-site work.
- 9) Remove and legally dispose of all equipment and material required for the scope of work. The contractor shall provide, maintain, and remove dedicated trash bin(s) as required.
- 10) The roof is to be removed down to the metal decking, removing any damaged insulation and replacing appropriate insulation that meets Kentucky building code requirements.
- 10) Develop and maintain a safety plan in accordance with the firm's safety policies and OSHA and industry standards. Provide signage, barriers, and other precautions appropriate to protect the public.
- 11) Clean the area of work to a reasonable extent during the project and to "as found" condition after the completion of work. Protect other areas of the FAC from construction dirt and debris as best as possible.
- 12) All work shall be accomplished in accordance with applicable Federal, State, and Local Codes and restrictions. This contractor is responsible for securing and paying any fees associated with the required inspection of this work. Copies of all approved inspections shall be presented to The Owner.

SUBMITTAL REQUIREMENTS:

Proposal submittal shall include the following:

- 1) Turn-key price for base scope.
- 2) Company information: annual revenue, ownership, history, locations.
- 3) Up to five (5) reference projects of similar type, especially flat roof and metal roofing projects.
 - a. Project name, customer, location, date
 - b. Cost
 - c. Customer reference familiar with the project, phone and email contact information
- 4) Resumes of up to three (3) key personnel that will actually work on the project. Indicate primary contact, project manager, job foreman, and engineer of record. Indicate

whether design will be in-house or sub-contracted.

5) Project Schedule. The owner's intent is to start construction near the end of July and beginning of August of 2018. The facility will be accessible from approx. 6AM – 8PM. This is during slower business times. Indicate the number of calendar days the facility (including pool area) is expected to be unusable by the public. The contractor shall submit a preliminary work schedule, as well as a desired payment schedule along with the proposal.

6) Warranty duration and terms, for materials and labor.

7) Service capabilities: location of service office or personnel, expected response time.

8) For all project inspections – documenting inspections with a summative field report is required at startup, interim 50% completion, and upon final inspection.

9) Proposal for annual service (if needed) and/or inspections.

10) Roofing material type, durability, life expectancy, weather rating, maintenance, long term maintenance cost, etc.

11) Upon an approved executed contract, a 100% Performance and Payment Bond is required of the contractor.

****See attached specifications for coated foam roofing and metal standing seam roofing. Specifications are subject to change and are a minimum standard.**

***ADDITIONAL NOTE: All fasteners on metal roofing are NOT to be exposed.**

Section 07 57 00 -- COATED FOAM ROOFING

Part 1 - General

1.1 Related Documents

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 Summary

A. Section includes:

1. Gravel removal
2. Thermal infra-red survey and roof disposal
3. Board insulation
4. Spray-applied, coated polyurethane foam roofing
5. Walkways

B. Related sections include:

1. Section 07 41 13 – Standing Seam Metal Roof Panels

1.3 Definitions

- A. Installer – A qualified firm contracted to install coated polyurethane foam roofing.
- B. Applicator – A qualified person employed by Installer to apply coated polyurethane foam roofing.

1.4 Pre-Installation Meetings

- A. Pre-Installation Conference: Conduct conference at jobsite.
 1. Review methods and procedures related to coated foam roofing, including, but not limited to, the following:
 - a. Load limitations on in-place roofing
 - b. Construction schedule: Verify availability of materials, installer's personnel and equipment, and facilities needed to make progress and avoid delays
 - c. Surface preparation
 - d. Minimum curing period
 - e. Forecasted weather conditions
 - f. Special details and sheet flashings
 - g. Repairs

1.5 Action Submittals

A. Product Data: For each type of product

1. Include manufacturer's written instruction for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties.

B. Samples: For each type of exposed product, finish, and color.

1. Include samples of auxiliary materials and accessories involving color and finish selection.

1.6 Informational Submittals

A. Qualification Data: For SPFA-qualified installer and applicators and for level one (1) thermographer status.

B. Product Certificates: For each type of coated foam roofing

C. Evaluation Reports: For coated foam roofing, from ICC-ES

D. Field quality-control reports

E. Sample Warranty: For special warranty

F. Preventative Maintenance Program Manual

1.7 Closeout Submittals

A. Maintenance Data: For coated foam roofing to include in maintenance manuals.

1.8 Quality Assurance

A. Installer Qualifications: A qualified coated foam roofing installer who is approved, authorized, and licensed by coated foam roofing manufacturer for installation of manufacturer's products.

B. Comply with recommendation in SPFA AY-104

C. Manufacturer: Company specializing in manufacturing product systems specified in this Section with a minimum twenty (20) years of experience as an incorporated business. Manufacturer to be capable of issuing the specified twenty (20) year NDL roof warranty. The roof system manufacturer must also have a current International Code Compliance Evaluation System available.

D. Installer: Firm specializing in performing work of this Section with a minimum twenty (20) years of experience as an incorporated business and with the manufacturer. Installer must be an approved applicator by the manufacturer proving the warranty. Applicator status cannot be given or transferred to a sub-contractor.

1. Installer to be located and have maintained an office within fifty (50) miles of the jobsite for at least the last ten (10) years.
2. Installer to provide 100% payment & performance bond to Owner.
3. Installer to have fulfilled requirements of the SPFA program for company accreditation as "SPFA PCP Accredited Company" with individual applicator certification for personnel assigned to work on Project.
4. Installer to provide a list of at least five (5) jobs similar in size, dollar amount, and scope, which have been completed within the last 12 months.
5. To ensure safety training, all applicators working on the project must have successfully completed the SPFA Fundamentals of Spray Foam course and the SPFA/CPA Health and Safety Training Course and shall have obtained such certifications prior to submitting a bid on Project.
6. Installer to provide proof that all supervising personnel onsite have current 30-hour OSHA cards.

1.9 Delivery, Storage, and Handling

- A. Deliver materials to project site with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for storing and mixing with other components.
- B. Store materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by manufacturer.
- C. Remove and replace material that cannot be applied within its stated shelf life.

1.10 Field Conditions

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing work to be performed according to manufacturer's written instructions and warranty requirements.
 1. Apply materials within the range of ambient and substrate temperatures recommended in writing by the manufacturer, but not below 50 degrees Fahrenheit.
 2. Apply materials within range of relative humidity recommended in writing by the manufacturer of each component, but not when relative humidity exceeds 85% or when temperatures are less than 5 degrees Fahrenheit above dew point.
 3. Do not apply materials to damp or wet surfaces.
 4. Do not apply primer, polyurethane foam, or coating in snow, rain, fog, mist, or when such weather conditions are imminent during application and curing period.

5. Do not apply polyurethane foam when wind conditions result in surface finish textures not complying with requirements.
6. Do not apply coating when wind conditions prevent uniform coating application.

1.11 Warranty

- A. Special Warranty: Manufacturer agrees to repair or replace coated foam roofing that does not comply with requirements or that does not remain watertight within specified warranty period.
 1. Warranty Period: Twenty (20) years from date of Substantial Completion. Provide non-prorated no dollar limit warranty from manufacturer.

Part 2 -- Products

2.1 Manufacturers

- A. Source limitations for coated foam roofing system: Obtain coating and polyurethane foam from single source from single manufacturer.

2.2 Performance Requirements

- A. General Performance: Coated foam roofing shall withstand exposure to weather without failure due to defective manufacture, installation, or other defects in construction. Roof shall remain watertight.
 1. Material Compatibility: Provide polyurethane foam, coating, substrate board, and auxiliary materials that are compatible with one another and with substrate under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Fire Test Response Characteristic: Provide coated foam roofing with the fire test response characteristics indicated, as determined by testing identical systems according to test methods below for deck type and slopes indicated by a qualified testing and inspecting agency that is acceptable to authorities having jurisdiction.
 1. Class A roof covering according to ASTM E 108
 2. Surface-Burning Characteristics: Comply with ASTM E 84, testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 75% or less
 3. Fire Resistance Ratings: Comply with ASTM E 119, testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.3 Polyurethane Foam

- A. Polyurethane Foam: Rigid, cellular polyurethane, complying with ASTM C 1029 Type III, spray-applied, with fire retardants as required, and acceptable to coating manufacturer.
 - 1. Basis of Design: Provide GacoRoofFoam F2733 product by Gaco Western.
 - a. Subject to compliance with requirements, substitutions will be considered provided that submittals are approved one (1) week prior to time of bid opening.
 - 2. In-Place Density: 2.8 to 3.0 lb./cu. ft.; ASTM D 1622/D 1622M
 - 3. Thickness: 1.5"

2.4 Silicone Coating

- A. Silicone Coating: Liquid silicone elastomeric coating system complying with ASTM D 6694 and specifically formulated for coating spray-applied polyurethane foam roofing.
 - 1. Basis of Design: Provide GacoFlex S20 Series Solvent-Free 100% Silicone Coating product by Gaco Western.
 - a. Subject to compliance with requirements, substitutions will be considered provided that submittals are approved one (1) week prior to time of bid opening.
 - 2. Composition: One-component silicone
 - 3. Solids by Volume: 95%
 - 4. Base Coat Color: Dark Gray
 - 5. Top Coat Color: Light Gray
 - 6. Top Coat Color at Walkways: Yellow

2.5 Roof Board Insulation

- A. Recovery Board: 1/2" high-density wood fiberboard
 - 1. Board shall be coated on all six (6) faces.
 - 2. Fastener pattern shall provide for a minimum I-90 wind uplift.

2.6 Auxiliary Materials

- A. General: Auxiliary materials recommended in writing by roofing manufacturer for intended use.
- B. Mineral Granules: Ceramic roofing granules, No. 11 screen size with 100% passing No. 8 sieve and 98% of mass retained by No. 40 sieve.
 - 1. Color: Gray
- C. Sealant: As recommended in writing by coated foam roofing manufacturer for substrate and joint conditions and for compatibility with roofing materials.
- D. Sheet Flashing and Accessories: Types recommended in writing by coated foam roofing manufacturer, provided at locations indicated and as recommended.

Part 3 – Execution

3.1 Examination

- A. Verify that related work is complete. Do not install coated foam roofing until roof openings, curbs, and parapets, if any, are complete and roof drains, vents, and other roof penetrations are in place.
- B. Examine substrates, areas, and conditions under which coated foam roofing will be applied, with installer present, for compliance with requirements.
- C. Proceed with installation only after unsatisfactory conditions have been corrected and substrates are dry.
- D. Proceed with installation only after minimum curing and drying period recommended in writing by coated foam roofing manufacturer.

3.2 Gravel Removal

- A. Remove existing gravel and dispose of properly at appropriate off-site location.

3.3 Thermal Infra-red Survey

- A. General: Perform thermal infra-red survey over roof surface in order to detect saturated roofing.
 - 1. Survey shall be performed after gravel is completely removed.
 - 2. Installer shall employ a Level One (1) Thermographer to perform survey.
- B. Provide detailed report of findings, including square footage determined to be saturated, aerial map outlining saturated areas, and recommendation for removal.
- C. Saturated roof areas shall be removed, properly disposed of, and replaced at a unit price agreed upon by Owner and Installer.
 - 1. Replacement shall be performed per manufacturer's written instructions.
- D. Upon removal, if deck is determined to be unfit for roof assembly requirements, deck shall be removed, properly disposed of, and replaced at a unit price agreed upon by Owner and Installer.
 - 1. All rusted panels shall be properly prepared and primed to prevent further deterioration.
 - 2. All deck areas exposed must be photographed to show proof of structural stability and be verified by Owner.

3.4 Substrate Board

- A. General: Install substrate board with long joints in continuous, straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
- B. Recovery Board: Install according to coated foam roofing manufacturer's written instructions. Fasten through existing roofing to roof structure as indicated.

3.5 Surface Preparation

- A. General: Clean and prepare substrate according to coated foam roofing manufacturer's written instructions. Provide clean, dust-free, dew-free, and dry substrate for coated foam roofing application.
- B. Remove grease, oil, form-release agents, curing compounds, and other contaminants from substrate.
- C. Cover and mask adjoining surfaces not receiving coated foam roofing to prevent overspray or spillage affecting other construction. Temporarily close off roof drains, removing roof-drain plugs when not performing roofing work or when rain is forecast.
 - 1. Remove masking after polyurethane foam application; cover and re-mask adjoining surfaces before coating polyurethane foam.
- D. Prime substrate as recommended in writing by coated foam roofing manufacturer.
- E. Fill, cover, and tape joints and cracks in substrate that exceed a width of $\frac{1}{4}$ ". Remove dust and dirt from narrower joints and cracks before applying polyurethane foam.

3.6 Polyurethane Foam Application

- A. General: Mix and apply polyurethane foam according to ASTM D 5469/D 5469M and coated foam roofing manufacturer's written instructions.
 - 1. Fill irregularities and depressions to prevent ponding water.
 - 2. Apply only the area of polyurethane foam that can be covered with required base coat on same day or within 24 hours.
- B. Apply polyurethane foam in lift thicknesses of no less than $\frac{1}{2}$ " and no more than $1\frac{1}{2}$ ".
- C. Apply polyurethane foam to roof penetrations, terminations, and vertical surfaces as indicated. Unless otherwise indicated, extend polyurethane foam at least four (4) inches above elevation of adjacent roof field.

- D. Surface Finish: Provide finished surface of polyurethane foam within the following range of surface textures as defined by ASTM 5469/D 5469M
 - 1. Texture: Smooth to orange peel
- E. Remove and replace polyurethane foam not complying with surface texture limitations. Remove defective thickness and prepare and re-apply polyurethane foam with acceptable, uniform results.
 - 1. Grinding trenches to facilitate drainage shall not be allowed. Any removal of top "skin" shall be coated and reinforced with polyester fabric in three-course fashion.

3.7 Coating Application

- A. Allow polyurethane foam substrate to cure for a minimum of two hours before coating and apply coating to polyurethane foam no later than 24 hours after applying the foam.
- B. Remove all dust, dirt, water, and other contaminants before applying coating.
- C. Apply coating to polyurethane foam by spray, roller, or other suitable application method according to coated foam roofing manufacturer's written instructions.
- D. Apply base coat and one or more top coats to obtain a uniform, seamless membrane free of blisters and pinholes. Apply each coat at right angles to preceding coat, using contrasting color tints for successive coats.
 - 1. Apply top coat after removing dust, dirt, water, and other contaminants from base coat.
 - 2. Silicone Coating: Apply coating to a minimum dry film thickness recommended in writing by the coated foam roofing manufacturer in order to meet specified warranty requirements.
- E. Height at terminations: Apply coating at wall terminations and other vertical surfaces to extend vertically beyond polyurethane foam by a minimum of four (4) inches.
- F. Mineral Granules: Apply mineral granules over wet top coat using pressure equipment at the rate of 0.5 lb./sq. ft.
 - 1. Removal of excess granules after top coat has cured is mandatory.
- G. Sealant: Apply sealant to perimeter and other terminations where indicated on drawings or required by coated foam roofing manufacturer.
- H. Walkways: Install roof walkways in pattern and locations indicated and as follows:

1. Fluid-Applied Walkways: Mask off completed coating adjacent to walkways and apply two (2) coats of high-build yellow silicone coating at a minimum dry film thickness recommended by coated foam roofing manufacturer. Spread mineral granules uniformly at a rate recommended in writing by coated foam roofing manufacturer into wet top coat. Remove masking and excess granules after top coat has cured.

3.8 Field Quality Control

- A. Manufacturer's Inspection: Identify, seal, and certify samples of materials taken from project site with Installer present.
 1. Manufacturer will perform tests for product characteristics specified or cited in product data.
 2. Two core samples will be required for roof areas of up to 10,000 sq. ft. and one core sample will be required for each additional 10,000 sq. ft. or part thereof.
 3. Three (3) slit samples will be required for each 5,000 sq. ft. of roof area to determine, at a minimum, the number of coats applied and dry film thickness of coating.
 4. Manufacturer will verify that surfaces slope to drain.
- B. Coated foam roofing will be considered defective if it does not pass tests and inspections.
- C. Refill cores, repair slits, and re-coat test areas.
- D. Prepare test and inspection reports.

3.9 Repair and Re-Coating

- A. Correct deficiencies in foam or coating that do not comply with manufacturer's requirements. Fill and repair substrates and re-apply materials.
- B. Repair and re-coat coated foam roofing according to ASTM D 6705/D 6705M and manufacturer's written instruction.

3.10 Curing, Protecting, and Cleaning

- A. Cure coatings according to manufacturer's written instructions, taking care to prevent contamination and damage during application stages and curing. Do not permit traffic on uncured coatings.
- B. Protects coated foam roofing from damage and wear during remainder of construction period.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

End of Section 075700

SECTION 07410

PREFORMED METAL STANDING SEAM ROOFING

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. This section covers the pre-finished, pre-fabricated Architectural standing seam roof system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
- C. Related Work Specified Elsewhere
 - 1. Roof Deck structural steel, flat roof systems, perimeter edge systems. Roof hatches, firestopping not included in this section.

1.2 SUMMARY

- A. Section Includes
 - 1. Factory formed Standing Seam metal roof panels
- B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
 - 1. Section 05100 - Structural Steel
 - 2. Section 05200 or 05400 - Steel Joists
 - 3. Section 07600 - Flashing and Sheet Metal

1.3 DEFINITIONS

- A. Metal Roof Panel Assembly: Metal roof panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight roofing system.
- B. References:
 - 1. American Society for Testing and Materials (ASTM)
 - a. ASTM A 653: Steel Sheet, Zinc Coated by the Hot Dip Process
 - b. ASTM A 792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process
 - 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
 - a. SMACNA Architectural Sheet Metal Manual, 1993 edition
 - 3. American Iron and Steel Institute (AISI)
 - a. AISI Cold Formed Steel Design Manual
 - 4. Aluminum Association
 - a. Aluminum Design Manual
 - 5. Metal Construction Association
 - a. Preformed metal Wall Guidelines
 - 6. Code References
 - a. ASCE, Minimum Loads for Buildings and Other Structures

- b. BOCA National Building Codes
- c. UBC Uniform Building Code
- d. SBC Standard Building Code

1.4 QUALITY ASSURANCE

- A. Petersen Aluminum Corporation products establish a minimum of quality required.:
 - a. Petersen Aluminum Corp, Elk Grove Village, IL, 800-323-1960
 - b. Petersen Aluminum Corp, Annapolis Junction, MD, 800-344-1400
 - c. Petersen Aluminum Corp, Tyler, TX, 800-441-8661
 - d. Petersen Aluminum Corp, Acworth, GA, 800-272-4482
 - e. Petersen Aluminum Corp., Fridley, MN, 877-571-2025
- B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- C. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

1.5 SUBSTITUTIONS

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.6 SYSTEM DESCRIPTION

- Material to comply with: ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated by the Hot-Dip Process - 24 GA

1.7 ROOF SYSTEM PERFORMANCE TESTING

- A. General Performance: Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Roof System shall be designed to meet Standard Building Code Wind Load requirements.
- C. Panels to meet:
 - 1. Water Penetration: When tested per ASTM E-289/1680 and ASTM E-331/1646 there shall be no uncontrolled water penetration or air infiltration through the panel joints.
 - 2. Roof System shall be designed to meet a UL Class 90 wind uplift in accordance with UL standard 580 and panel system shall be ASTM 1592 Tested and approved
 - 3. UL 2218 – Impact Resistance rated.

1.8 WARRANTIES

- A. Weathertight warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
 - 1. Warranty Period: 20 Years from date of Substantial Completion
- B. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.
 - 1. Exposed Panels Finish – deterioration includes the following:
 - a. Color fading more than 5 hunter units when tested according to ASTM D 2244
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
 - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
 - 2. Warranty Period: 20 Years from the date of substantial completion
- C. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition

1.9 SUBMITTALS

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal roof panels, metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
- D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved:
 - 1. Roof panels and attachments
 - 2. Metal trusses, bracings and supports
 - 3. Roof-mounted items including snow guards and items mounted on roof curbs.
- E. LEED Submittals
 - 1. Product Test reports for Credit SS 7.2. For roof panels, indicating that the panels comply with Solar Reflective Index requirement
 - 2. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal roof panels and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.
- C. Unload, store and erect metal roof panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.11 PROJECT CONDITIONS

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.12 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
- B. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leakproof, secure and noncorrosive installation.

PART 2 – PRODUCTS

2.1 PANEL DESIGN

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates and accessories required for a weathertight installation.
- B. Roof panels shall be standing seam Snap Clad, in 18 widths with 1 3/4" high seams.
- C. Panels to be produced with / without Factory supplied hot melt mastic in the seams.
- D. Panels to be produced:
 - Smooth – Note this is factory standard if other not indicated
 - With Striations
 - With One Stiffening Rib

▪ With Two Stiffening Ribs

- E. Panels to be designed for attachment with concealed fastener clips, spaced as required by the manufacturer to provide for both positive and negative design loads, while allowing for the expansion and contraction of the entire roof system resulting from variations in temperature.
- F. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.

2.2 ACCEPTABLE MANUFACTURERS

This project is detailed around the Snap Clad Panel of Petersen Aluminum Corporation.

2.3 MATERIALS AND FINISHES

- A. Preformed roofing panels shall be fabricated of 24 GA G-90 Galvanized Steel
- B. Color shall be PAC-CLAD standard color chosen from current color chart.
- C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
- D. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
- E. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer or their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- F. Closures: use composition or metal profiled closures at the top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.
- G. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the roof panel system. Exposed fasteners shall not restrict free movement of the roof panel system resulting from thermal forces, except at designed points of roof panel fixity
- H. Substrate shall be:
 - Polyiso insulation with full ice and water shield coverage and a bearing plate clip/panel attachment assembly.

- I. Roofing Underlayment
 1. On all surfaces to be covered with roofing material, furnish and install a 40 mil "Peel & Stick membrane", required as outlined by metal panel manufacturer. Membrane to be a minimum of 40 mil thickness, smooth, non-granular, by one of the following manufacturers:
 - a. W.R Grace "Ice & Water Shield"
 - b. Cetco Strongseal
 - c. Carlisle CCW WIP 300HT
 - d. Interwrap Titanium PSU
 - e. MFM Corp "Wind & Water Shield"
 - f. Polyguard Deck Guard HT or Polyglas HT
 - g. Tamko TW Tile and Metal Underlayment
 2. Underlayment shall be laid in horizontal layers with joints lapped toward the eaves a minimum of 6", and well secured along laps and at ends as necessary to properly hold the felt in place. All underlayment shall be preserved unbroken and whole.
 3. Ice and Water Shield shall lap all hips and ridges at least 12" to form double thickness and shall be lapped 6" over the metal of any valley or built-in gutters and shall be installed as required by the Standing Seam Panel Manufacturer to attain the desired 20 Year Weathertightness Warranty.
- J. Sealants
 1. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
 2. One part polysulfide not containing pitch or phenolic extenders or
 3. Exterior grade silicone sealant recommended by roofing manufacturer or
 4. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

2.4 FABRICATION

- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
- B. Fabricate components of the system in factory, ready for field assembly.
- C. Fabricate components and assemble units to comply with fire performance requirements specified.
- D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FASTENERS

- A. Secure units to supports
- B. Place fasteners as indicated in manufacturer's standards.

3.3 INSTALLATION

- A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.
- C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

3.4 DAMAGED MATERIAL

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

END OF SECTION