



BID DOCUMENTS COVER SHEET

CONTRACT DOCUMENTS

FOR

L-527
College Complex Sector 13 Roof
Replacement

DSA File #N/A

DSA Application # N/A

AT

LOS MEDANOS COLLEGE

2700 East Leland Road, Pittsburg, California 94565

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

ADDENDUM #3

May 17, 2018



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

L-527 College Complex Sector 13 Roof Replacement

Los Medanos College

ADDENDUM #3

Date: 5/17/2018

NOTICE TO ALL PRE-QUALIFIED CONTRACTORS ONLY

You are hereby notified of the following changes, clarifications and/or modifications to the original Contract Documents, Project Manual, Drawings, Specifications and/or previous Addenda. This Addendum shall supersede the original Contract Documents and previous Addenda wherein it contradicts the same, and shall take precedence over anything to the contrary therein. All other conditions remain unchanged.

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated **4/19/18**. Acknowledge receipt of this Addendum in space provided on the Bid Proposal Form. Failure to acknowledge may subject Bidder to disqualification.

A. Deletions, Additions, Changes, Revisions – Technical Specifications:

1. **REPLACE Section 07 52 16 Modified Bituminous Membrane Roofing with the attached revised Section 07 52 16.**
 - i. **2.03 Auxiliary Roofing Materials – Added item R. Fluid-Applied Waterproofing**
 - ii. **3.01 Preparation – Added item H. regarding application and surface preparation [Roof surface will be left in broom swept condition after prior demo by others – surface prep per item H is the responsibility of the roofing bidder on this project].**

B. Revisions to Drawing Sheets: N/A

C. Attachments:

1. **Section 07 52 16 Modified Bituminous Membrane Roofing**

ADDENDUM #3

DSA Appl. # N/A

If you have any questions regarding this Addendum, please contact:

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All other terms and conditions of BID are to remain the same.

Steelhead Engineers, Inc.
2570 W. El Camino Real, Suite 320
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END OF ADDENDUM #3

SECTION 07 52 16

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies requirements for the new roof systems of the main building roofs as shown on the Drawings:
 - 1. Provide new 2-ply, cold process adhesive, modified bitumen roof membrane, 2-ply modified bitumen base flashings and strippings.

1.02 RELATED SECTIONS

- A. Section 07 60 00 – Flashing and Sheet Metal
- B. Section 07 90 00 – Sealants

1.03 SUBMITTALS

- A. Certificates of Compliance: Roof membrane manufacturer's certification that materials are chemically and physically compatible with each other and suitable for inclusion in roof system and are acceptable for warranty specified. Do not submit materials without obtaining membrane manufacturer's written certification. Explicitly identify in writing, difference between manufacturer's written requirements and these specifications, and membrane manufacturer's approval of proposed asphalt source.
- B. Product data: For each product specified in Part 2.
- C. Shop Drawings: Plans, elevations, sections, details, and attachments to other work.
 - 1. Base flashings, cants, and membrane termination.
- D. Samples:
 - 1. Smooth membrane sheet
 - 2. Mineral-surfaced membrane sheet.

- E. Warranties
- F. Contractor's letter certifying a minimum of 5-years commercial built-up roofing experience with list of project references, including names and phone numbers.

1.04 QUALITY ASSURANCE

A. Manufacturer Approval:

1. Installer Qualifications: Approved by manufacturer to install manufacturer's products. A single applicator with a minimum of five years previous successful experience in installations of similar systems.
2. Source Limitations: To greatest extent possible, obtain auxiliary materials for roofing system from roofing membrane manufacturer. Provide letter of acceptance from manufacturer for auxiliary materials from other sources.
3. System Approval: Provide statement from manufacturer that specified roof system meets requirements for requested warranty.
4. Comply with manufacturer's written instruction and these Specifications for roofing and associated work. Provide skilled tradesmen experienced in installation of 2-ply modified bitumen roofing systems. Foreman shall have a minimum of 5 years of previous membrane installation experience.
5. Identify in writing specific contract requirements that are not approved or warrantable by manufacturer.

B. Minimum quality standards: Comply with NRCA/ARMA publications "Quality Control Guidelines for the Application of Built-up Roofing" and "Quality Control Guidelines for Polymer Modified Bitumen Roofing". Standards within these specifications that exceed NRCA/ARMA shall prevail.

C. Regulatory Requirements

1. Federal regulations, safety standards, and codes mandated in the United States.
2. Products Manufactured in Countries Outside of United States: Products shall be approved by governing/sanctioning entity for country in which project is located and/or product is manufactured.
3. Classified by Underwriters' Laboratories, Inc. as a Class A roof covering.

4. Classified by Factory Mutual Engineering as a Class I, approved assembly.
 - a. 1-75
 5. Install in accordance with manufacturer's current published application procedures and recommendations of the National Roofing Contractor's Association.
- D. Make no deviations made from this Specification or the approved shop drawings without prior written approval of Architect/Engineer.
- E. Perform entire work of this Section in accordance with the best standards of practice relating to the trades involved.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.
- B. Store materials in accordance with manufacturer's recommendations. Store rolled goods on clean raised platforms. Store other materials in dry area, protected from water and direct sunlight, and maintain at a temperature of 60 to 80 degrees Fahrenheit.
- C. Provide continuous protection of materials against deterioration.
- D. Materials Stored on Roof Levels for Immediate Use.
 1. Distribute to prevent concentrated loads that would impose excessive strain on deck or structural members.
 2. Positively secure to prevent displacement by wind.
 3. Tarp for protection from exposure.
 4. Cut and remove manufacturer's plastic "shrink wrapping" from materials during storage.

1.06 PROJECT CONDITIONS

- A. Existing Conditions: Examine existing building and decking to determine physical conditions that affect installation of roofing.
- B. Environmental Requirements:
 1. Apply roofing in dry weather.

2. Do not expose membrane and accessories to a constant temperature in excess of 180 degrees Fahrenheit.
- C. Protection
1. Provide special protection or avoid heavy traffic on completed work when ambient temperature is above 80 degrees Fahrenheit.
 2. Restore to original condition or replace work or materials damaged during handling or roofing materials.
- D. Emergency Equipment: Maintain on-site equipment necessary to apply emergency temporary edge seal in the event of sudden storms or inclement weather.
- E. A minimum of two fully charged 20-pounds dry chemical fire extinguishers in separate, easily accessible torch work locations at all times.

1.07 SEQUENCING AND SCHEDULING

- A. Do not install more roofing in one day than can be night sealed with roofing and flashing in the same day.

1.08 GUARANTEES AND WARRANTIES

- A. Roofing Material Manufacturer's Warranty: Install in such a manner that the roof system manufacturer will furnish a written warranty agreeing to replace/repair defective materials, including leakage of water, abnormal aging or deterioration of materials, and other failures of the materials to perform as required within warranty period. Warranty period is twenty (20) years.
- B. Contractor's Workmanship Warranty: In addition, furnish a written warranty agreeing to repair/replace defective installation and workmanship labor causing leakage of water, deterioration of materials, and other failures of the installed system, sealants, painting, coatings, and related work on this project, to perform as required within the warranty period. Warranty period is two (2) years.

PART 2 – PRODUCTS

2.01 PRODUCT PERFORMANCE

- A. Provide products fully compatible with substrates and other assembly components. Materials shall be approved for UL Class A fire rating service and meet FM I-75 (minimum) wind uplift requirements.
- B. Modified bitumen products and systems shall comply with test methods designated in ASTM D 5147-91.

2.02 MODIFIED BITUMENT SHEETS

- A. 2-ply Roofing Membrane: ASTM D 6164, Grade S, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for cold process adhesive application.
 - 1. Base Ply: Ruberoid 20 by GAF or approved equal.
 - 2. Top Ply: Ruberoid SBS FR by GAF or approved equal.
- B. Modified Bitumen Flashing Ply: ASTM D 6164, Grade S, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for cold process adhesive application. Ruberoid Mop Smooth 1.5 by GAF or approved equal.
- C. Modified Bitumen Top Ply: ASTM D 6164, Grade G, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; white granule surfaced; suitable for application by torching. Base Ply: Ruberoid Mop Granule FR by GAF or approved equal.

2.03 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
- B. Asphalt Primer: ASTM D 41
- C. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied modified bitumen adhesive specially formulated for compatibility and use with roofing membrane. Field Adhesive: Matrix 102 by GAF or approved equal. Vertical Adhesive: Matrix 202 by GAF or approved equal.
- D. Sealant: One-part polyurethane, gunnable grade, high performance elastomeric sealant: ASTM C 920, Type S, Grade NS, Class 25, use NT.
- E. Cant Strip: wood fiber cant strips.
- F. Termination Bar: 34 mm wide, pre-punched metal strip of a U-shaped profile with holes 150 mm (6 inches) on center minimum spacing used to secure vertical edge of the flashing top ply.
- G. Polyethylene Slip Sheet: 6 mil minimum thick polyethylene.
- H. Lap Bleed Finish Granules: Ceramic granules sized and colored to match flashing sheet surfacing as supplied by membrane manufacturer. Color: White.

- I. Base Flashing Coating: SBR or SEBS Butyl rubber based bright white coating engineered to be applied over the specified roof system and to resist the affects of ponded water.
- J. Insulation: EnergyGuard Tapered Polyiso Foam Roof Insualtion Board by GAF or approved equal.
- K. Cover Board: ½ in. thick wood fiberboard, ASTM C208.
- L. Insulation and Cover Board Adhesive (Concrete Decks): GAF Olybond 500 or approved equal.
- M. Insulation and Cover Board Fasteners (Wood Decks): Drill Tec Standard #12 with Drill Tec Pressure Plates by GAF or approved equal.
- N. Coating: Topcat MB Plus by GAF or approved equal.
- O. Liquid-Reinforced Coating: Major Seal Liquid Flashing by GAF or approved equal.
- P. Walk Pads: A premanufactured ½ in. thick pad containing asphalt, reinforcing plies and mineral fillers. Product: 5040 Dek-Top Walk Pads by APOC or approved equal.
- Q. Sleeper: B-Line or approved equal.
- R. Fluid-Applied Waterproofing: Hydrostop BarrierGuard Waterprofing by GAF or approved equal.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Verify that the substrate is suitable for membrane application.
- B. Remove any loose/flaking particles, including film from removed light-weight concrete; follow manufacturer substrate recommendations.
- C. Prime masonry, concrete, and sheet metal surfaces in contact with bituminous materials, including sheet metal flanges (both sides) and lead sheet at drain sumps (both sides) with asphaltic primer prior to roofing or flashing installation. Allow primer to dry thoroughly prior to installing bituminous flashings.
- D. Do not deliver to site or install a material or system that has not been approved. Remove materials installed without prior approval upon Owner's request.

- E. Surfaces to receive new membrane and flashings shall be clean and thoroughly dry. Should surface moisture such as dew exist, provide necessary equipment to dry surface prior to application. Do not dry with open flames.
- F. Comply with Midwest Roofing Contractors Association MRCA publication "Safety in Torch Welded Roofing" specified to operation of liquefied petroleum gas (propane) hand torches and kettle.
- G. All reinforcing plies, self-adhering membrane envelopes, and base flashings must be installed concurrently with roof membrane installation work, and must be complete and up to date by end of each work week (i.e. Friday or next working day).
- H. Apply fluid-applied waterproofing to the top of the existing structural slab in accordance with the written manufacturer instructions.

3.02 INSULATION AND COVER BOARD

- A. Concrete Decks: Install insulation and cover boards in adhesive, following the written manufacturer instructions. Comply with the specified FM rating.
- B. Wood Decks: Install and fasten the insulation and cover board with fasteners, following the manufacturer written instructions. Comply the specified FM rating.

3.03 BASE PLY MEMBRANE SHEET INSTALLATION

- A. Sheets shall be laid parallel to longest dimension of tapered area to be roofed and/or perpendicular to slope of area. Application shall start at low point of area working to high point. Laps shall be parallel to slope of short dimension of tapered area and in no case shall laps buck flow of water. Stagger end laps and side laps relative to base sheet laps by 12 in., minimum.
- B. Unroll dry membrane on substrate and align with adjacent sheet, providing 3 in. side laps and 6 in. end laps. Stagger end laps of adjacent sheets by 12 in. minimum. Reroll approximately one-half of dry membrane sheet while maintaining alignment.
- C. Apply adhesive in accordance with roof manufacturer's written instructions. Membrane is not to be walked on while adhesive is not cured.
- D. Membrane sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should lap lines become misaligned while unrolling, cut sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.
- E. Inspect ply sheet application for defects. Cut wrinkles, creases, and fishmouths to relax membrane. Apply a full width strip of base ply membrane over defect in a full mopping of hot asphalt and lapped a minimum of 3 in. beyond cut. Unbonded lap seams of more than ½ in. wide shall be reheated and rolled-in.

3.04 REINFORCING PLY INSTALLATION

- A. Verify that repairs have been made to field membrane in areas adjacent to flashing area.
- B. Cut reinforcing plies for horizontal metal flange applications wide enough to provide full coverage of flange and 6 in. onto membrane. Ensure that membrane is solidly set with no voids. Provide 3 in. laps at end of strips.
- C. Cut reinforcing plies across width of roll for base flashings at walls, curbs, and other vertical applications to lengths sufficient to provide full coverage to top of vertical element, across cant, and 6-inches onto horizontal surface of built-up membrane.
- D. Provide 3-inch laps and stagger laps.

3.05 TOP PLY MEMBRANE SHEET INSTALLATION

- A. Verify that all repairs have been made to the field membrane and reinforcing plies have been properly installed. Surfaces should be free of sawdust, dirt, insulation debris, and other contaminants prior to starting installation.
- B. Sheets shall be laid perpendicular to the flow of water starting at the low point of the area and working to the high point. Unroll dry membrane and allow it to relax. Provide 3 in. side laps and 6 in. end laps, and stagger end laps of adjacent cap sheets by 24 in. Align the granulated side of the sheet over the selvage side of the adjacent sheet. While maintaining alignment, reroll approximately one-half of the dry membrane sheet.
- C. Apply adhesive in accordance with manufacturer's written instructions.
- D. Sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should the lap lines become misaligned while unrolling, cut the sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.
- E. Inspect sheet application for defects. Cut wrinkles, creases, and fishmouths to relax the membrane. Apply a full width strip of cap sheet membrane over the defect, lapped a minimum of 6 in. beyond the cut. Unbonded lap seams of more than 1/2 in. wide shall be reheated and rolled.

3.06 FLASHING AND STRIPPING SHEET INSTALLATION

- A. Apply stripping sheets using detail torch manufactured specifically for roofing membrane applications.

- B. Ensure that other wood, wood fiber, and other combustible components are enveloped with base sheet or ply sheet material. Maintain fire watch during and after torch applications.
- C. Verify repairs have been made to field membrane in area adjacent to cant to receive flashing sheet. Snap chalk line distance of 100-mm minimum from edge of reinforcing ply and on field side of roof.
- D. Install three-course flashing over termination bars and top of base flashing.

3.07 TEMPORARY PROTECTION

- A. Unfinished perimeter and penetration components: Provide temporary waterstops adequate to prevent moisture intrusion into newly installed work around exposed edges and incomplete flashing locations. Remove temporary materials completely prior to continuing with subsequent work.
- B. Tie-ins: Provide temporary waterstops at deck and tie-ins between newly installed and existing membrane as detailed. Inspect tie-ins thoroughly and repair as needed to provide watertight assembly prior to leaving site.

3.08 COATING

- A. Ensure roof system is clean, dry and acceptable for roof coating.
- B. Apply first coat over the existing exposed top ply using brush or spray applied techniques. Provide reinforcing mesh at inside and outside. Apply first coat using the manufacturer's recommended application rates but in no case less than 2 gallons per 9.2 sm.
- C. Allow first coat to dry 12-15 hours and apply second or top coat using the manufacturer's recommended application rates but in no case less than 2 gallons per 9.2 sm. The finished product shall provide a bright white appearance

END OF SECTION