Cazadero Music Camp

Dining Hall Roof Replacement

Project Specifications

Project Location:

Cazadero Music Camp

5385 Cazadero Highway

Cazadero, CA 95421

Owner Contact:

Project Manager:

Robert Hall

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Contractor:

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TECHNICAL SPECIFICATIONS

DINING HALL ROOF REPLACEMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. All work performed under this section of the specifications shall be subject to the General Conditions of the Contract. All work will be performed under a General Construction contract provided by Owner representative. At Owner's discretion, AIA 101 – 2017 Standard Form of Agreement Between Owner and Contractor may be used for contract purposes

B. Workers Compensation Insurance to be provided in accordance with State of California Workers Compensation Insurance Laws with minimum limits shown below covering Employers' Liability Limits:
   1. Bodily injury by accident $500,000 each accident
   2. Bodily injury by disease $500,000 each employee
   3. Policy limit 1,000,000

C. General Liability Insurance shall be provided in accordance with the following limits:
   1. General Aggregate Limit 2,000,000
   2. Each Occurrence Limit 1,000,000

D. Contractor to provide certificates of insurance to Owner before work commences.

   1. Owner shall be named as 'additional insured' with respect to work performed for the Owner

1.2 SUMMARY

A. Section includes composition asphalt shingles and TPO membrane installation, including but not limited to, the following:
   1. Moisture shedding underlayment
   2. Installation of roof shingles
   3. Associated metal flashings and accessories
   4. TPO membrane on low slope roof including accessories
   5. Removal of existing roofing
   6. Replacement of wood fascia and wood decking as needed
   7. Leveling of roof support beams including additional bracing as necessary
   8. Installation of mechanical connectors at rafters to support beams
   9. Remove and replace gutters and downspouts and install leaf and debris guards
   10. Connect downspouts to storm drain or other approved discharge locations

B. It is not the intent to herein describe all the details for roofing, flashing and gutters. Ensure that all items and details not otherwise specified, or as otherwise required to achieve a complete watertight roofing installation, shall be provided under this Section at no additional cost to the Owner.

1.3 DEFINITIONs

A. Roofing Terminology: See ASTM D1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 CONSTRUCTION MEETINGS

A. Contractor shall arrange for a pre-construction meeting at minimum of 7 days prior to commencement of construction or demolition. Attendees shall be Owner's representative, Project Manager and Contractor.
    1. Pre-construction conference will outline sequence of construction including a construction schedule.
    2. Pre-construction conference will establish in writing the areas on site and within the building that will be used by contractor to access construction, store materials and equipment as well as loading zones around the building that will be used for stocking materials to roof.
        a. Above locations to be approved by Owner's representative
B. Contractor shall arrange for weekly progress meetings after construction has commenced. The purpose of the meeting is to update progress, identify potential issues that could cause construction delays and discuss unforeseen issues that need to be resolved.
    1. Weekly progress meeting to be attended by Contractor, Owner's representative, and Project Manager.
    2. Location of progress meetings will be at a site convenient for all parties as designated by the Owner.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data indicating material characteristics, performance criteria, and limitations.
B. Samples: Submit shingle manufacture's sample board with shingle color and classification attached to board. Submit TPO membrane 6"x 6" square with color and thickness specified.
C. Manufacturer's Installation Instructions: Submit installation criteria and procedures for each material component of specified work to be performed.

1.6 SUBSTITUTIONS

A. Substitutions shall be submitted to Owner representative and Project Manager for approval.

1.7 PERFORMANCE REQUIREMENTS

A. Shingles shall comply with ASTM D3462 and meet the following requirements:

1. ASTM E108, Class A, fire exposure-test requirements.
2. Pass ASTM D3161 wind resistance-test requirements of 110 mph

B. TPO membrane shall:
1. Provide a roofing system achieving a UL Class A rating for roof slopes indicated.
2. Provide a roofing system which does not permit the passage of water and will achieve a Factory Mutual 1-90 wind uplift rating, as listed in the current FM Approval Guide.

C. For each roofing component Contractor or Subcontractor shall be certified by manufacture(s) as an approved installer for materials being used and qualified per manufacture(s) warranty requirements.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle and TPO membrane installation to be performed according to manufacture's written instructions and warranty requirements.

B. Contractor shall leave roof in watertight condition at the end of each day.

1.9 DELIVERY, STORAGE AND HANDLING

A. Store roofing materials according to manufacturer's written instructions.
B. When staging roofing materials on the roof, place in a manner to avoid permanent damage to roof deck or structural supporting members. All material to be secured in a manner that prevents material from becoming dislodged and falling from the roof to the ground below.

1.10 WARRANTY

A. Shingle Manufacture Warranty: Manufacture's standard form in which manufacturer agrees to repair or replace composition shingles that fail in materials within specified warranty period. Material failure includes manufacturing defects and failure of composition shingles to self-seal after a reasonable time.

1. Material Warranty Period: 40 years

B. TPO Membrane Warranty: Manufacture's standard form in which manufacture agrees to repair or replace TPO roof system that fail in materials withing specified warranty period.

1. Material Warranty Period: 20 years

C. Workmanship and Product Warranty: In addition to the manufacturer's product warranties, provide a one (1) year written guarantee commencing from the date of acceptance by owner's representative for all work related to roof replacement, including but not limited to asphalt shingle installation, TPO membrane installation, flashing work, gutters and downspouts, as well as any related installed work.

1.11 SAFETY AND SITE PROTECTION

A. Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs with the Work, including without limitation, giving all notices and complying with all laws, regulations and orders of Federal OSHA standards and Cal-OSHA standards.

B. Contractor will clearly delineate construction zones within and around the building and install appropriate barriers to keep Camp employees and members of the public from accessing the construction zones.

B. Contractor will designate a Site-Specific Safety Supervisor for all work performed under this Contract.

1. Contractor and all subcontractors will hold ~~daily~~ Weekly tailgate meetings and post JHA's as required.

C. Contractor shall designate superintendent or other responsible personnel as Emergency Contact and provide a contact number at which personnel will be available 24 hours per day in the event there is an emergency regarding construction, materials or weather events.

1.12 SCHEDULE OF VALUES

A. Submit Schedule of Values that correlates to the Construction Schedule and each division of the Scope of Work to be performed.

1. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide several line items for principal subcontract amounts, where appropriate.

1.13 PAYMENT

A. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Application for Payment

1. Application for payment shall be consistent with sequence of construction noted on Schedule of Values and reflect percentage of work completed for each line item on the Schedule.

B. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors and suppliers for construction period covered by the previous application.

1. When an application shows completion of an item, submit final or full waivers.

2. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

C. Final payment shall be approved after acceptance of Owner that all items contained in Contract Documents have been completed.

1.14 CONTRACT MODIFICATION PROCEDURES

A. Proposal Requests

1. Owner-Initiated Proposal Requests: Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum. If necessary, the description will include supplemental or revised Drawings and Specifications.

a. In case specified above, the Contractor to submit a quotation estimating the cost adjustments to the Contract Sum. Estimate shall include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made.

2. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for change to the Owner.

a. Include a statement outlining reasons for the change and the effect of the change. Provide a completed description of the proposed change and indicate adjustments to Contract Sum

b. Include a list of quantities of products required or eliminated and unit costs, with total amounts of purchases and credits to be made.

B. Change Order Procedures

1. On Owner's approval of a Proposal Request, Owner will issue a Change Order for signatures of Owner and Contractor

PART 2 – PRODUCTS

2.1 COMPOSITION ASPHALT SHINGLES

A. Laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing shingles that comply with ASTM D3462. Shingles shall meet the Cool Roofs requirements of the California Energy Code. Shingles shall be designated by manufacture to have protection from blue-green algae discoloration.

1. Manufacturers offering products which meet compliance requirements described in in these specifications include but are not limited to, the following:

a. GAF Materials Corporation

b. Owens Corning

c. CertainTeed Corporation

2.2 UNDERLAYMENT AND ASHPALT SHINGLE ACCESSORIES

A. Underlayment shall be synthetic materials as specified by shingle manufacturer

B. All components of the shingle roofing system shall be approved by the manufacturer

1. Minimum number of components required by manufacturer for warranty purposes shall be incorporated into the shingle roofing system. Components include, but are not limited to underlayment, starter strip, ridge cap and sealants.

C. Fasteners must comply with ASTM F1667 and must be minimum 12 gage, 3/8 inch diameter head, galvanized, barbed or smooth-shank roofing nails. Fasteners must be of sufficient length to penetrate 3/4 inch into the sheathing or through the sheathing, whichever is less.

2.3 TPO (Thermoplastic Polyfolefin) ROOF MEMBRANE

A. Smooth type, polyester scrim reinforced thermoplastic polyofelin membrane for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. Membrane thickness to be 60mil.

1. Manufactures' offering products which meet compliance requirements described in these specifications include, but are not limited to, the following:

1. GAF Materials Corp

2. Versico Roofing Systems

3. Carlisle Syn-Tech

2.4 TPO ROOF MEMBRANE ACCESSORIES

A. All accessories as required by manufactures' installation instructions shall be approved for use by manufacture within the roof assembly specified.

1. Accessories include but are not limited to fasteners, fastener plates, membrane non-reinforced flashings, TPO clad metal.

2. All membrane adhesives and seam cleaner to meet Low VOC requirements.

3. Prior to installation of roofing membrane the existing roof deck shall have a separation barrier installed. The barrier selected shall maintain the Fire Resistive Rating and wind uplift requirements of these specifications. The barrier may consist of either one of the following:

a. Fire resistant fiberglass slip sheet.

b. Fiber reinforced gypsum suitable for installation with roof membrane.

c. Composite material recovery board.

2.5 FLASHING, GUTTERS, LEADERS AND TRIM

A. General: All miscellaneous formed flashings, wall to roof, saddles and crickets to be minimum 24 gage G90 galvanized and bonderized steel. Flashings to be formed per standard SMACNA details.

B. Gutter and Rain Leader: Gutter and leader profiles to match existing. Materials to be 24 gage G90 galvanized and bonderized steel. Gutter shall be fabricated in as long as lengths as practical; provided with expansion joint covers and end caps. Install gutter spacer supports at 2'-6" on center. Provide discharge outlet and concrete splash blocks at each rain leader which does not connect to the storm drain or area drain system.

C. Provide gutter debris and leaf guard protection at gutters.

2.6 WOOD PRODUCTS

A. Wood Trim and Fascia: All exterior wood trim shall match size and species of wood that is being replaced. Wood shall be thoroughly seasoned and kiln dried.

B. Roof decking: All roof decking shall match size and species of wood that is replaced. Wood shall be kiln dried and installed only if moisture content is less than 19%. If unable to obtain roof decking of the same nominal thickness as existing deck board, then furring should be done on roof side of decking so that it will not be visible below. All furring materials shall be suitable for use intended.

C. Wood for repair of roof support beams and posts shall match size, species, and grade of existing lumber. For horizontal supplemental support beams LVL lumber may be used as a substitute.

2.7 STORM DRAIN MATERIALS

A. Storm drainpipe to be 4-inch SDR35

1. Use PVC Hub to SDR35 adapter attachment for leaders which drain into area or storm drains.

2. Where SDR pipe will be exposed to sunlight, piping to be wrapped with UV protection tape or painted with latex paint to protect from UV rays.

3. Where pipe supports are required, support material and methods shall be approved by manufacturer.

PART 3 – EXECUTION

3.1 REMOVAL OF EXISTING WORK

A. Work to be removed to make ready for new asphalt shingle and TPO membrane roofs. Work includes but is not limited to the removal of all existing asphalt shingles, low slope hot mop roof and related flashing, gutters and leaders.

B. Removal work shall include the examination of the existing wood deck, fascia and trim to determine the scope of replacement necessary to provide an acceptable surface and trim. Replacement work shall include removal of all unacceptable wood sheathing, fascia and wood trim. All wood replaced shall match existing conditions. Quantities are unknown. This will need to be billed forced account or by set unit costs

C. In addition to the work outlined above, include re-nailing all loose nails and/or replacing with additional nails to make the sheathing tight and properly secured to the structural framing.

1. Knot holes in sheathing that are smaller than 2-inches and larger than 1-inch in diameter may be patched by placing a minimum 6”x6” 24 gage piece of galvanized sheet metal over the hole from the top side and securing with a minimum of 2 roofing nails.

D. It is the responsibility of this trade to make watertight all areas after removal operation as specified herein. Any damage resulting from the work performed by this trade shall be paid for without cost to the Owner.

E. Remove any unused or abandoned vent pipes through the roof. Terminate below the roof line and repair holes with sheathing to match existing.

F. Dispose of all materials in accordance with State, Local and Environmental regulations.

3.2 REALIGN AND ADJUST EXISTING SUPPORT POSTS AND BEAMS

A. For any rafters that have become deformed or deflected so as to be structurally suspect, realign rafter as close as possible to original position and sister a new rafter alongside the existing rafter. New rafter to be continuous from ridge beam to support beam or wall and have same nominal dimension as existing rafter. New rafter to be attached to existing rafter with 3" Simpson SWDS Framing Screws 16" on center with a staggered pattern.

B. Realign horizontal beams which support the roof rafters on West and East side of dining hall, restoring them as close as possible to their original position.

1. Shore beams in place using accepted industry practices, while repair work to connecting columns is in progress.

Quantities are unknown. This will need to be billed forced account or by set unit costs

C. Replace any damaged columns that support beams noted in item B above in the dining hall.

1. Replacement columns shall be wood of same species, grade and dimension as original column. If necessary wood of a larger nominal dimension shall be milled down to match existing dimension. In no case shall new column be smaller than existing columns.

D. For any columns which are resting on earth or crumbled concrete, provide new concrete placement pad. New pad to be of sufficient size to meet requirements to install Simpson PBS connector so that column may be secured in place at finished floor. New and existing columns to be secured to existing horizontal beam by means of Simpson 1212T connector with connector installed on interior side (so that they will be hidden by new framing members in items E and F below).

1. Placement pad is not an engineered pier but merely a means to allow for a 'like for like' replacement of deteriorated columns. The result is a thickened slab in these locations. Where possible install dowels into existing slab; length and embedment to be determined by site conditions.

E. At support columns in dining hall sister new 2x lumber of same species and width as existing columns on interior side of the column. New lumber to extend from floor to top of column. Fasten 2x lumber to columns using Simpson SWDS Timber screws 3-1/2" in length in a staggered pattern 12" on center.

F. Along horizontal support beams in dining room, sister new 2x lumber of same species and width (or wider) on the interior side of beams. New lumber to be installed above new 2x material that has been sistered to columns and to be continuous except as spliced at column locations if necessary. Fasten new 2x lumber to beams with Simpson SWDS Timber screws 5” in length in a staggered pattern 12” on center.

1. Upon approval by Owner, LVL lumber may be substituted to sister alongside the existing beams, using the same fasteners and fastening pattern.

3.3 INSTALL CONNECTORS AT RAFTERS

A. In accessible areas install one (1) Simpson A35 (or equivalent) connector at rafter to wall top plate connection and one (1) A35 at rafter to ridge beam connection using Simpson #9 x 1-1/2” SDS screws. Minimum 2 screws into rafter 2 screws into perpendicular connection.

B. Reattach and or tighten bolts, nuts, and buckles of existing hardware at collar ties and rafter connections. For any missing pieces of hardware, install Simpson architectural hardware to match as close as possible existing hardware design. For existing nails that have come loose or show signs of failure, remove nail and install SDS screw to match length of existing nail; diameter of screw to be one size larger in diameter than existing nail.

3.4 FASCIA INSTALLATION

A. Remove damaged or decayed fascia boards and install new wood fascia to match existing. Install work plumb, level, true and straight with no distortions.

B. Scribe and cut work to fit adjoining work, refinish cut surfaces and repair damaged finish at cuts. Wood against other materials shall have gaps of up to 1/4” maximum.

C. Anchor wood to rafters, built-in blocks or directly attach to substrates using Simpson SDWS timber screws (exterior grade) or equivalent. Install extra blocking to support fascia when necessary.

D. Wood with minor checking that is still structurally sound may be repaired in an approved manner that meets the architectural expectations of the Owner.

3.5 GUTTERS, METAL FLASHING AND ACCESSORIES INSTALLATION

A. Workmanship shall be in accordance with SMACNA publication specifications. Sheet metal work shall be adequate to provide water and weathertight work. Lines, arises and angles shall be sharp and true. Plane surfaces shall be free from waves and buckles.

B. Install gutters along all edges where existing gutters were removed. Pitch gutters to achieve minimum 1-inch per 32-feet slope towards rain leaders. Install all brackets, spacers, expansion joints, end caps, and fasteners as required.

C. Downspouts shall be installed plum and in accordance with the recommended practice and standards set forth in the industry.

D. Install gutter guard protections to minimize leaf and debris collection in gutters.

3.6 COMPOSITION SHINGLE INSTALLATION

A. Install underlayment per manufactures' installation guidelines for fasteners, side laps and end laps. Stagger end laps between succeeding courses a minimum of 72-inches.

B. Install metal edge flashing and starter strips according to manufacturer's specifications.

C. Install shingles and ridge cap according to manufacturer's specifications for stagger starter courses and exposure.

1. Shingles shall be attached using fasteners per the 'Steep Slope' requirements by manufacture for both number of fasteners and location of fasteners.

2. For all side wall locations shingles must be installed using step metal shingles with one step metal shingle per each course of composition shingle.

3. Install shingles to provide uniform distribution of color blend.

D. Provide extra layers of underlayment or self-adhered bituminous membrane at all valleys prior to shingle installation.

E. All exposed nails to be sealed with approved sealant.

3.7 TPO MEMBRANE INSTALLATION

A. Verify that deck is clean and smooth, free of depressions, waves or projections, and properly sloped to drains and gutters. Deck should be free of ice and snow.

B. Install separation barrier to provide smooth clean base for installation of membrane. Separation barrier, whether slip sheet or board materials to be attached to roof deck per manufacturer's specifications.

C. Install TPO roofing system according to all current application requirements by manufacturer. Install half sheets at perimeter per manufacturer's requirements. Start application of the membrane plies at the low point of the roof or at drains, so that the flow of water is over or parallel to, but never against the laps.

D. Mechanically attach membrane to roof deck with screws and plates a minimum of 12-inches on center. Welds shall be 1-inch minimum in width for automatic welding machines and 2-inch minimum in width for hand welding.

1. Membrane attachment to the roof deck is required at locations of deck angle change in excess of 1:12.

2. Membrane must be mechanically secured at perimeter walls, curbs, and at all penetrations.

E. Coated metal used for roof edging shall be butted together with a 1/4” gap to allow for expansion. Heat weld a 6-inch wide reinforced membrane flashing strip to each side of joint with approximately 1-inch on either side of the joint left unwelded to allow for expansion and contraction.

3.8 STORM DRAIN CONNECTION AND DISCHARGE

A. For leaders which do not drain into area drains or are not designed for natural runoff, install SDR pipe hub connector at gutter leader discharge locations.

1. Connector from leader to hub to be an indirect connection or have overflow features integral to the design of the connector.

B. Install SDR35 storm drainage piping to approved discharge locations. Drainage pipe to have a running slope of minimum 1%

1. All SDR pipe to be supported at 6-foot on center by methods approved by manufacturer. Support may require additional blocking installed at deck areas or propped supports from grade below.

2. Some discharge locations may require core through retaining walls (both concrete and wood). Where storm drainage piping discharges at the exterior of a retaining wall, concrete splash blocks or riprap shall be installed at locations where water stream discharges to finish grade.

C. All piping that will be exposed to direct sunlight shall be protected by paint or wrapped with UV protection tape.