

SPECIFICATION SECTION 05 90 04: SOLAR PHOTOVOLTAIC ROOF MOUNTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The Contract and any design-build bridging documents.
- B. Section 26 00 00: General Electrical Specifications.
- C. Section 48 14 00: Photovoltaic System Specifications.
- D. DIVISION TWO: TECHNICAL CRITERIA, Chapter 11, Architectural (roofing)
 - 1. [California Trial Court Facilities Standards](#) (Included as O-10 in this set)
Adopted in November 2020
The facilities standards define the minimum space and the functional, technical, and security requirements for the design of trial court facilities in the state of California. They reflect best practices and successful solutions as the basis for design and construction of functional, durable, maintainable, efficient, and secure contemporary court facilities.
- E. Other relevant Judicial Council Specifications.

NOTE: Where this specification and other specifications or bridging-documents are in conflict, the more stringent shall apply. Contractor shall identify conflicts and confirm recommended equipment or procedures with the Judicial Council.

1.02 CODES & REFERENCES

- A. The design and installation shall conform to all requirements as defined by the applicable codes, laws, rules, regulations, and standards of applicable code enforcing authorities (Latest Edition unless otherwise noted). The following are key standards that shall be followed. The Contractor shall ensure all applicable codes are followed:
 - 1. Aluminum Association (AA) (www.aluminum.org) - Aluminum Standards and Data, 2003 Edition.
 - 2. ASTM International (ASTM) (www.astm.org):
 - a. A484/A484M-16 – Standard Specifications for General Requirements for Stainless Steel Bars, Billets, and Forgings.
 - b. A554-16 – Standard Specification for Welded Stainless Steel Mechanical Tubing.
 - c. A555/A555M-16 – Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods.
 - d. B85-03 - Standard Specification for Aluminum-Alloy Die Castings.
 - e. E2766-13 - Standard Practice for Installation of Roof Mounted Photovoltaic Arrays on Steep-Slope Roofs
 - f. E3010-15 - Standard Practice for Installation, Commissioning, Operation, and Maintenance Process (ICOMP) of Photovoltaic Arrays
 - g. F836M-02 (2015) – Standard Specification for Style 1 Stainless Steel Metric Nuts (Metric).

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- h. F880-12 – Standard Specification for Stainless Steel Socket, Square Head, and Slotted Headless-Set Screws.
- 3. American National Standards Institute (ANSI)
- 4. American Society of Civil Engineers (ASCE), Minimum Design Loads and Associated Criteria For Buildings And Other Structures (7-16)
- 5. California Building Code (CBC), with State of California Amendments
- 6. California Energy Commission Title 24 Building Energy Efficiency Requirements
- 7. California Department of Forestry and Fire Protection, Office of the State Fire Marshal – Solar Photovoltaic Installation Guidelines
- 8. Local and State Fire Code
- 9. Factory Mutual (FM)
- 10. Institute of Electrical and Electronics Engineers (IEEE)
- 11. National Electrical Manufacturers Association (NEMA)
- 12. National Fire Protection Association (NFPA), National/CA Electrical Code
- 13. Occupational Safety and Health Administration (CAL_OSHA)
- 14. Underwriters Laboratory (UL), including:
 - a. UL 2703 – Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules.
- 15. Utility company standards and requirements
- 16. For projects under the Purview of the Division of the State Architect (DSA)
 - a. DSA IR-16-8 (most recent) Guidelines
 - b. DSA PL-07-02 (most recent) Guidelines
- 17. Judicial Council Specifications and Requirements
- 18. All other applicable Codes and Ordinances

1.03 GENERAL

- A. "Judicial Council" shall refer to Judicial Council of the State of California, owner of the site(s) where project will be located, regardless of system ownership, and include any representative of the site Judicial Council, such as independent engineers, consultants, or inspectors. "Contract" refers to the design-build and/or construction contract and any associated design-build bridging documents, inclusive of requirements outlined in the request for proposals (RFP). "Contractor" refers to the entity performing the work, inclusive of Engineer(s) and Architect(s) of Record for design-build contracts, post construction system operator, and financier.
- B. This section describes requirements for solar photovoltaic system mounting on roofs, including design requirements.
- C. This is a design-build project and includes the design and construction of complete Photovoltaic (PV) Roof Racking Systems. The Contractor shall include all work reasonable inferred by these specifications and the design-build bridging documents, to comply with applicable codes, and to provide complete PV mounting systems acceptable to Authorities Having Jurisdiction (AHJs).
- D. The Contractor shall coordinate with the respective utility company for the installation of each PV system and incorporate all related utility requirements into the design of the system.
- E. The Contractor shall prepare complete drawings and specifications and all final approvals necessary to commence the work. Provide all engineering design services and complete

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coordination with other disciplines, trades, utility companies, labor, materials, apparatus, tools, equipment, transportation, temporary construction, and power and special or occasional services as required to provide complete PV mounting systems at each location.

- F. The structural mounting designs shall be fully developed. Locate, layout and identify means of attachment for all equipment. The site, plans, elevations, schedules, and detail drawings must be sufficiently developed to reflect the overall system design. Provide arrangement of equipment, including attachment details and structural calculations for all roof mounted PV modules, inverters and any other balance-of-system items mounted on the roof, and conduit/conductor routing.
- G. For any roof-mount system locations that have specified at RFP roofing replacement or repair scope – the vendor shall include the cost for roofing work in the proposal and must perform these tasks in conformance with DIVISION TWO: TECHNICAL CRITERIA, Chapter 11, Architectural.
- H. EXCLUSIONS AND SUBSTITUTIONS
 - 1. The Contractor shall be allowed freedom to pursue a DSA, Fire, and any other AHJ approved design toward the Judicial Council’s benefit with respect to cost and performance.
 - 2. Base design shall be based on the general systems described herein and in any bridging documents. The Contractor may offer alternatives, substitutions, or exclusions in any area of the work, provided that each case is clearly described with the benefits noted and that all other applicable Judicial Council specifications are met. This applies to systems, methods, equipment, and material for which such alternatives or substitutions would, in the Contractor’s opinion, be beneficial to the projects and the Judicial Council, so far as safety, health, and comfort of occupants are satisfied and the requirements of Codes are met.
 - 3. Burden of proof of equality of any substitution for a specified product is the responsibility of the Contractor.

1.04 WORK INCLUDED

- A. The scope of work shall include the design of the roof mounted PV system, means of attachment, materials, equipment, fabrication, installation, and tests in conformity with applicable codes, professionally recognized standards and authorities having jurisdiction.
- B. Provide all required construction documents and compliance documentation.
- C. Provide all materials, labor, equipment, services, power, lighting, and incidentals necessary to install the PV mounting systems as shown on the drawings and as specified hereinafter.
- D. Provide coordination with roofer/roof warranty holder. Ensure all work maintains roof warranty, inclusive of having roof warranty holder provide waterproofing where required by the warranty.
- E. Include all required incidental work, such as pull tests, blocking, lashing, sealing, fire stopping, waterproofing, roof repair, commissioning, and testing.
- F. Include any other electrical, roof attachment or PV support structure work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the drawings.

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1.05 DESIGN PROCEDURE & REQUIREMENTS

- A. Engineering calculations, drawings and specifications shall be prepared and signed by a Structural Engineer, registered in the State of California, and regularly employed in the design of photovoltaic electrical systems on roofs. The Structural Engineer shall be the Engineer of Record as required by code-enforcing authorities. The Engineer of Record shall provide required statements and certifications. All designs must be approved by the Judicial Council, State Fire Marshall, and DSA (as it pertains to ADA requirements).
- B. Contractor shall perform an as-built survey of all roofs to receive PV systems.
- C. Contractor's licensed structural engineer shall perform a structural review of all roofs to receive solar PV systems unless explicitly excluded by the Contract.
- D. Structural design shall be complete and comply with all requirements specified, including materials, workmanship, and performance.
- E. The Contractor must conduct a structural analysis study of each roof and design the PV system to ensure the structural integrity of the PV installation. The Contractor must determine that the structure of the building is not compromised. The structural analysis study shall include, but not be limited to, the weight of the PV system itself, seismic loads, and water, snow, and ice ponding. If the roof has existing water ponding issues, the addition of arrays shall not substantially worsen ponding conditions. Existing ponding conditions shall be considered a possible indication of an underlying structural issue needing special attention by a structural engineer.
- F. The design and installation of solar systems on roofs shall adhere to the California State Fire Marshal Solar Photovoltaic Installation Guideline.
- G. The structural analysis study shall include considerations of concentrated loads as equipment is staged prior to or during the installation of the PV system. It is ultimately the Contractor's responsibility to perform its own field investigations and determination of system design.
- H. If the structural analysis shows that the roof requires major repairs, either the Judicial Council shall pay for the repairs, or the building can be eliminated from the project upon agreement between the Judicial Council and the Contractor.
- I. For systems on flat or low-slope roofs (7-degree slope or less), the Contractor shall augment ASCE-7.16 with all relevant complimenting guidance in "Wind Design for Solar Arrays" published by Structural Engineering Society of California (SEAOC)- SEAOC Report #PV2-2017 July 2017.
 - 1. Each chapter of the report includes a section titled "Recommended additional requirements (not included in ASCE 7-16) which must be utilized. The submittal must include responses and calculations from each of these "recommended additions."
 - 2. The SEAOC guidance document PV2-2017 July 2017 is designed to work as a companion guidance document to ASCE-7.16. In addition to use of ASCE-7.16 and SEAOC guidance, project engineers must address the three key topics of 1. Pure uplift 2. Uplift and Sliding and 3. Overturning in the Design Submittal process and as described in Appendix A of RMI Solar Under the Storm 2 (<https://rmi.org/insight/solar-under-storm/>).

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- J. Roofing work shall be warrantied for the Term of the Agreement plus any extensions. If the roof is under warranty at the time of construction, the vendor shall utilize a Judicial Council approved roofing installer. The vendor shall produce documentation at the end of construction certifying the warranty has not been voided. For locations where the system is roof mounted but a roof replacement is not specified a pre and post construction roof inspection must be completed by the roofer holding the warranty. Any roof damage caused by the construction or operation of the system shall be promptly repaired.
- K. Design of racking structures and the subsequent installation of the PV system and all ancillary equipment shall provide adequate room for access to and inspection/maintenance of existing equipment on the building roofs. A minimum of three feet of clearance will be provided between PV equipment and existing mechanical equipment and other equipment mounted on the roof or as required by code. A minimum of four feet of clearance shall be provided between PV equipment and the edge of the roof or as designated by the local AHJ and State Fire Marshall. Clearance guidelines of the AHJs shall be followed. In the event of conflicting requirements, the greater clearance requirement shall be used.
- L. ROOF PENETRATIONS
 - 1. Penetrations shall be minimized within code requirements. All penetrations shall be waterproofed. Roof repair and waterproofing work shall be performed by an experienced and licensed roofer, who regularly engaged in the waterproofing of roof penetrations for the type of roof and is subject to approval by the Judicial Council. Contractor shall perform all work so that existing roof warranties shall not be voided, reduced, or otherwise negatively impacted.
 - 2. Detail(s) for the sealing of any roof penetrations shall be approved in writing by the Judicial Council, as well as the manufacturer of the existing roofing system, as part of system design review and approval – prior to Contractor proceeding with work.
 - 3. Fully Attached Systems are preferred over ballasted or hybrid systems.
- M. The PV equipment shall not be installed in a way that obstructs air flow into or out of building systems or equipment.
- N. No work shall compromise roof drainage, cause damming or standing water or cause excessive soil build-up.
- O. All materials and/or sealants must be chemically compatible. Special attention shall be paid to avoiding dissimilar metal contact and minimizing corrosion.
- P. Designs shall account for thermal movement and any thermal/seismic joints on buildings. Thermal movement that causes scuffing to the roof must be mitigated as part of the mounting solution.
- Q. Flat and low slope roofs
 - 1. Shall have a minimum of a 1-inch standoff for non-ballasted PV system.
 - 2. Design shall minimize interrow shading.
 - 3. Panel tilt shall be a minimum of 5 degrees absolute (not relative to roof slope)

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- R. The installation of PV modules, inverters and other equipment on building roofs will be designed to minimize visibility of the equipment from the ground as feasible.
- S. The Contractor shall design and install the PV system in accordance with CEC 2022 690.12 for all rooftop arrays. The Contractor shall ensure that the rapid shutdown initiation methods are labeled in accordance with CEC 2022 690.56. The Contractor shall ensure that upon submittal to the Judicial Council that all rapid shutdown equipment is listed and labeled. The Contractor shall include module level power electronics (MLPE) that are rapid shutdown listed and labeled in all roof mounted arrays.
- T. Contractor shall coordinate racking design with other design engineers and disciplines to ensure completely coordinated construction documents. Racking shall be designed to provide code compliant, and manufacturer recommended access for servicing, maintenance, inspection, and testing of PV system and for other equipment, vents, etc. in the vicinity of the system. Walkways In and Around Arrays: No part of the array shall block access to other building equipment (HVAC, telecommunications, rigging). No part of the array shall be "stranded" so that it prohibits full access to inspection, testing, and repairing of all components. All walkways shall comply with International Fire Code (IFC) 2018 and National Fire Prevention Act 2018.
- U. Conduit Transecting Walkways: Where the array conduit transects existing equipment access walkways, steps, ramps, or a bridging assembly meeting ASCE 7-16 and OSHA requirements must be provided. Such systems shall protect conduit, pipe, and/or duct runs passing underfoot from damage and allow for movement of personnel, tools, and replacement parts.
- V. All roof mounted array systems shall allow normal routine annual roof inspections and maintenance to continue unimpeded and shall allow for visual inspections and physical access to the underlying roof system to perform needed roof inspections and repairs. Access to visually inspect and clean all roof drains shall be maintained. No component of the array shall abrade the underlying roof membrane. The array shall not trap moisture, dirt, and debris leading to algal and or weed growth. No component of the array shall be entrapped, inhibiting inspection, testing, tightening, and repair.
- W. Contractor is responsible for familiarizing themselves with all discernible site conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not. All dimensions, partitions, etc. are to be verified at site by the Contractor. Before ordering any material or closing in any work, Contractor is responsible for verifying all measurements at each project site. Any differences found between dimensions on the drawings and actual measurements shall be brought to the Judicial Council's attention for consideration before proceeding.
- X. DEAD LOAD, WIND LOADING AND SEISMIC DESIGN
 - 1. Systems shall not exceed the ability of the existing structure to support the entire solar system and withstand increased wind uplift and seismic loads. The capability of the existing structure to support proposed solar systems shall be verified by a licensed structural engineer prior to design approval.
 - 2. Comply with all applicable codes and standards and provide wind load restraints for all equipment installed under this contract that requires restraint. The photovoltaic array wind loading restraint shall be designed as required by code and AHJ requirements.

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3. The photovoltaic array shall be designed to accommodate lateral displacement in the event of an earthquake based on a nonlinear response-history seismic analysis for the appropriate seismic zone.

Y. PERMITS AND INSPECTIONS

1. The Contractor shall obtain all required permits and arrange for all required inspections including utility requirements, inspections, and sign-offs.
2. Contractor shall not allow or cause any of the work to be covered or enclosed until it has been tested and/or inspected.
3. Contractor shall endeavor not to cause any roof damage to the roof membrane and related components. The Contractor shall work with the roofing contractor currently holding the roof warranty (or other Judicial Council-approved roofing contractors) to conduct pre-construction and post-construction roof inspection, repair all damages caused in the course of the PV System install, and reinstate the roof warranty to the original duration.

1.06 SUBMITTALS

- A. Submit each item in this Article according to the Conditions of the Contract.
- B. Design Drawings: For design-build projects, prepare working drawings that shall include but not be limited to the following:
 1. Complete racking and module layout designs, inclusive of roof plans showing locations of photovoltaic attachment devices on roof with attachment details and spacing.
 2. Equipment mounting details
 3. Inverter and any other balance of system mounting details and layout, inclusive of conduit/conductor routing.
 4. Equipment space layouts and clearances
 5. Details of waterproofing for any penetrations
- C. Roofing Warranty: Contractor shall obtain and submit to Judicial Council signed certificates from the roofing manufacturer/warranty holder stating:
 1. Roofing contractor is certified installer of Complete Roofing System.
 2. Manufacturer's Technical Representative is qualified and authorized to approve project.
 3. Project plans and specs meet the requirements of the warranty of the Complete Roofing System for the specified period.
 4. Existing warranty incorporates the new roofing work and flashing work.
- D. Shop Drawings: Submit shop drawings indicating profiles, sizes, connection attachments, reinforcing, anchorage, size, and type of fasteners accessories. Include erection drawings, elevations, and details where applicable.
- E. **PRODUCT DATA**

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1. Complete material list of all items proposed to be furnished and installed under this Section, including but not limited to the following items: Stanchions, stanchion hardware including; means of structural attachment to building framing and racking systems, flashing, PV rails, PV module attachment hardware, grounding lugs/washers (WEEBS), etc.
 2. Manufacturers' specifications and other data required to demonstrate compliance with the specified requirements.
 3. Manufacturers' recommended installation procedures which, when approved by the Judicial Council, shall become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.
 4. Samples of all attachment hardware
- F. Test Results: In-situ pull-test or other testing results where required by AHJ.
- G. AS-BUILTS
1. Maintain "as-built" records at all times, showing the exact location of racking system, including concealed conduits and feeders installed under this contract.
 2. Upon completion of work and before acceptance can be considered, the Contractor must forward to the Judicial Council, a corrected set of plans to show the mounting system work as installed in both PDF and CAD format.
 3. Comply with additional "As-built" requirements in other sections of the Specifications.

PART 2 - PRODUCTS

2.01 MANUFACTURER QUALIFICATIONS:

- A. All equipment shall be from a manufacturer specializing in the production of roof attachment products and racking materials of the type specified with a minimum of 5 years documented experience.
- B. Supply all new equipment and accessories free from defects and listed by Underwriter's Laboratories, Inc., or bearing its label or label of a Nationally Recognized Testing Laboratory (NRTL).
- C. All items of a given type shall be the products of the same manufacturer.

2.02 RACKING

- A. All racking and attachment materials shall be aluminum or stainless steel, suitable for marine environments. Where no alternative to steel exists, product shall be hot-dipped galvanized with no field cuts wherever feasible.
- B. Standing-seam, non-penetrating attachments shall be S-5! Clamps or equivalent. Attachment system to provide attachment to standing seam with only minor dimpling of panel seams, without penetrations through seams or panels, without use of sealers or adhesives and without voiding roof warranty.
- C. Fully anchored systems are preferable.

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2.03 CUSTOM FABRICATION

A. MATERIALS

1. Steel Sections: ASTM A36.
2. Steel Pipe: ASTM A53, Type E or S, Grade. B.
3. Steel Bolts, Nuts, and Washers: ASTM A307.
4. Welding Materials: AWS D1.1; type required for materials being welded.
5. Galvanizing: Hot-dip process ASTM A123 typical and ASTM A153 for threaded fasteners performed after fabrication into largest practical section. Weight of coating not less than 2 oz. per sq. ft. of surface. Where damaged, repair surface with one coat of hot process galvanizing repair compound, "Galvalloy," Galvweldalloy," or approved equal.
6. Primer: Tnemec Company "Series V10 Red Primer," Sherwin-Williams "Steel Spec Universal Primer," or approved equal.
7. Dissimilar Materials: Separate dissimilar surfaces in contact with or in close proximity to non-compatible metals, concrete masonry, or plaster with neoprene gasket; or other approved means.

B. FABRICATION

1. Verify dimensions on site prior to shop fabrication.
2. Fabricate items with joints tightly fitted and secured.
3. Fit and shop assemble in largest practical sections, for delivery to jobsite.
4. Grind exposed welds flush and smooth adjacent finished surfaces. Ease exposed edges to small uniform radius.
5. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of structure, except where specifically noted otherwise.
6. Make exposed joints butt tight, flush and hairline.
7. Supply components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.

C. FINISH

1. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
2. Do not prime surfaces in direct contact bond with concrete or where field welding is required.
3. Prime paint interior items with one coat unless scheduled to be galvanized.
4. Galvanize exterior items and scheduled interior items to minimum 2.00 oz/sq ft zinc coating.

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PART 3 - EXECUTION

3.01 ROOFING

- A. All roof penetrations shall be designed and constructed in collaboration with the roofing professional or manufacturer responsible for the roof and roofing material warranty. The number and size of the penetrations necessary to extend the power and control cable into the building must be kept to a minimum and grouped in a single location when practicable. All weatherproofing of penetrations shall be compatible with the roof warranty. Describe the materials and methods to be undertaken to create watertight seals in the roofing systems for anchor points and conduit.
- B. Contractor shall perform all work such that existing roof warranties shall not be voided, reduced, or otherwise negatively impacted.
- C. Waterproofing shall be performed by the entity holding the roof warranty or approved by that entity. The Contractor shall engage the manufacturer representative and any other companies involved with service contracts or warranties regarding the PV system design, applied stresses, materials compatibility (chemical or physical), installation details and methods, and repairs to any damage to the roof during installation of the solar arrays.
- D. Contractor shall document condition of roofing with roofing representative and Judicial Council prior to beginning work.
- E. For locations where the system is roof mounted but a roof replacement is not specified in the RFP but identified as a requirement, a pre and post construction roof inspection must be completed by the roofer holding the warranty.
- F. Any damage to roofing material during installation of solar systems shall be remedied by Contractor and approved by roof warranty holder and Judicial Council.

3.02 INSTALLER QUALIFICATIONS:

- A. Installer to be certified in solar PV roof attachment products and racking installation with a minimum of 5 years documented experience.
- B. Where manufacturer certifies installers, installer shall possess certification from the manufacturer's products being installed.
- C. If the roof is under warranty at the time of construction, the vendor shall utilize a Judicial Council approved roofing installer.

3.03 STANDING SEAM ATTACHMENT

- A. Examination: Prior to beginning installation, verify that:
 - 1. Panel seaming or fastening is complete.
 - 2. Roof panel attachment is sufficient to withstand loads applied by the photovoltaic attachment system, photovoltaic system and associated components.
 - 3. Where required, ensure pull tests have been completed and pass requirements.
 - 4. Installation will not impede roof drainage.

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B. PREPARATION

1. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.

C. INSTALLATION

1. Install system in accordance with manufacturer's instructions and approved Shop Drawings.
2. Place clamps as required by PV layout and in-service loads.
3. Install with careful consideration of aesthetics to ensure alignment of modules and fasteners. Place clamps in straight, aligned rows.
4. Tighten set screws to manufacturer's recommended torque. Verify set screw torque using calibrated torque wrench.

3.04 PENETRATING ATTACHMENT

A. PREPARATION

1. Prior to beginning installation, verify that installation will not impede roof drainage.
2. Locate mount placements per design over rafter, blocking or designated attachment points.
3. Clean areas to receive attachments; remove loose and foreign matter that could interfere with installation or performance.
4. Utilize certified roofer approved by roof warranty holder to expose attachment points.

B. INSTALLATION

1. Using the base as a template, mark the penetration points.
2. If required by manufacturer, drill pilot holes perpendicular and centered on rafter or designated attachment with appropriate size bit. Fill pilot holes with a sealant compatible with roofing materials.
3. Attach base to roof with specified lag bolts or other approved fastening method.
4. Attach any hardware to the top of the post/attachment. Seal top of post/attachment from weather exposure
5. After inspection of attachment, install appropriate waterproofing in accordance with roof warranty requirements. Utilize certified roofer approved by roof warranty holder.

3.05 CUSTOM FABRICATED PENETRATING ATTACHMENTS

A. PREPARATION

1. Follow preparation requirements per Penetrating Attachment listed above.
2. Obtain Judicial Council's approval prior to site cutting or making adjustments not scheduled.
3. Clean and strip primed steel items to bare metal where site welding is scheduled.
4. Make provision for erection loads with temporary bracing. Keep work in alignment.

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5. Supply items required to be cast into concrete with setting templates, for installation under appropriate Sections.

B. INSTALLATION

1. Install items plumb and level, accurately fitted, free from distortion or defects.
2. After installation, touch-up field welds, scratched or damaged surfaces with primer, except repair exposed galvanized work (not to be painted) with hot process field galvanizing, in accord with manufacturer's published directions.
3. After inspection of attachment, install appropriate waterproofing in accordance with roof warranty requirements. Utilize certified roofer approved by roof warranty holder.

3.06 RACKING

- A. Follow manufacturer instructions for installation. Utilize a calibrated torque wrench and verify torque of fasteners to manufacturers requirements.
- B. Perform and obtain approval for all required field testing of attachment devices and racking as required by manufacturer, AHJ and building codes.

END OF SPECIFICATION SECTION 05 90 04