

# Sign Structure Installation Guide

The following is information to assist SC staff with inspecting the installation of overhead sign structures.

1. The Structure Representative (SR) will disseminate the latest authorized plans and shop drawings to all SC field staff:
  - a. The Assistant Structure Representative (ASR) will verify that the contractor is using the same copy.
2. Review the [Contract Specifications](#), Sections 49, *Piling*; Section 55, *Steel Structures*; Section 56, *Overhead Sign Structures, Standards, and Poles*; and the [Special Provisions](#).
3. Review the [Overhead Sign Structures Guide](#) (e.g., Section 7, *Installation*).
4. Check that the SR authorized the shop drawings and the Welding Quality Control Plan (WQCP). Verify that the method of sign or pole erection utilizes measures to control lateral movement to prevent incursion into traffic.
5. When applicable, review welding requirements in the *Contract Specifications* and the authorized WQCP. Refer to the *Overhead Sign Structures Guide*, Section 3, *Welding*.
6. Check the station, offset, and elevation of the overhead sign structure relative to the contract plans. Check that the overhead sign structure has vertical clearance necessary, or specified, based upon baseplate elevation.
7. Check the foundation and bolt template for proper orientation. Generally, with the long axis of the foundation parallel to the traveled way.
8. Review the Log of Test Borings to determine the potential groundwater elevations and possible effects on foundation work.
9. Verify that spread footing foundations are against competent undisturbed soil. Refer to the *Foundation Manual*, [Chapter 4](#), *Footing Foundations*.
10. Verify CIDH pile footings for size, depth, and clean bottom. Refer to the *Overhead Sign Structures Guide*, Section 6, *Foundations and Anchorages*, and the *Foundation Manual* [Chapter 14-3.1](#), *Overhead Sign Structure Pile Foundations*. A CIDH pile may require wet hole method if groundwater is encountered. Check both types in accordance with the authorized shop drawings and contract documents.
11. Review the authorized mix design prior to placement of concrete and field verify that all concrete loads delivered comply with contract requirements.
12. Check the electrical contract plan sheets for lighting requirements of the overhead sign structure to allow for conduit installation in the sign foundation. Verify that the

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post base plate opening can accommodate the conduits. Consult with Electrical Design to reduce the number of conduits or size if there are space issues.

13. Verify the contractor's method for maintaining anchor bolt spacing, orientation, and alignment during concrete placement.
14. Check the spacing, orientation, and elevation of the finished anchor bolts. Note any differences (or settlement):
  - a. Always make sure the anchor bolt assembly is set to err on the conservative side to exceed (rather than reduce) vertical clearance requirement.
15. Verify that the concrete has been in place seven full days prior to erection of the overhead sign structure.
16. Prior to drilling anchors into the side of a precast/prestressed (PC/PS) girder, verify that the prestressing steel is not in conflict.
17. Anchor bridge mounted sign structures as detailed on the contract plans and shop drawings. Verify that authorized anchorages and bonding agents are used. Do not allow the use of chemical anchors in a tension or withdrawal condition.
18. Check the sign structure for damage in transit after delivery to the project site. Collect the Materials Engineering and Testing Services (METS) Material Release Tags.
19. Verify that all components of the overhead sign structures are manufactured according to the authorized shop drawings. Refer to the *Overhead Sign Structures Guide*, Section 7, *Installation*.
20. For single post signs with cantilevered truss, verify post is shown on the correct side of the truss.
21. Review connection details in authorized shop drawings and applicable contract requirements. Refer to the *Overhead Sign Structures Guide* for detailed information. Also see *Bridge Construction Records and Procedures Manual*, Section 55, *Steel Structures*.
22. Conduct a pre-erection safety meeting with the contractor and ASRs prior to erection of the sign to discuss the requirements of the authorized Quality Control Plan, including but not limited to the following:
  - a. Sign handling is safe and appropriate, for example:
    - 1) Verification of staging area (and closure limits) for equipment and installation.
  - b. Splices of sign are correctly assembled.

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- c. Direct tension indicators (DTI) installation or torque verified by an approved method.
  - d. Discuss fastener tension verification to coordinate inspection times and access (for QA acceptance).
23. Verify the rake (lean) of the post, of a post-type overhead sign structure, such that the truss will be level relative to the traveled way.
24. Verify that the contractor adheres to the erection plan and discuss changes to the plan with the SR prior to the actual change.
25. Measure the vertical clearance of the completed overhead sign structure and complete the Vertical Clearance Diagram for Sign Structures contained in the *Construction Manual*, [Form TR-0020](#), *Notice of Change in Vertical or Horizontal Clearance*. Take measurements at the point of minimum vertical clearance. Re-measure the vertical clearance if the surfacing below is altered during the life of the contract.
26. If the measured vertical clearance is less than the minimum values shown on the contract plans:
- a. Remove the truss and do not reset pending corrective plan.
  - b. Consideration of removal of the truss is dependent upon the vertical clearance of the upstream and downstream structures.
27. Document as-built changes on the as-built plans.