



# Existing Structures – Modifying Structures – Steel Column Casings

## Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	05-31-2022	Original Issue	Richard Foley

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## Background

This process establishes Structure Construction (SC) responsibilities and procedures for review and authorization of operations for steel column casings, including submittals, materials, and construction.

Steel column casings are generally specified for bridges that require a substructure retrofit for seismic safety or other reasons.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the [Contract Specifications](#), Section 60-4.06, *Existing Structures-Modifying Structure-Steel Column Casings*. that this BCM is based on as identified in the title block above. The information in the contract specification(s) typically will not be repeated in the text of this BCM.

## Process Inputs

1. Submittals per the [contract documents](#)

## Procedure

1. All work associated with this process is charged as [Project Direct – Construction](#).
2. Inspection of field work for this process is:

- a. [Intermittent](#) for excavation, column cleanup, waterproofing, steel casing placement, backfill, removal of concrete and welding operations.
  - b. [Continuous](#) for grouting operations.
3. Before construction begins:
- a. Review the following:
    - i. Contract documents
    - ii. Project-specific Code of Safe Practice (COSP)
    - iii. [Attachment 1](#), *Steel Column Casing Guidance*
    - iv. Authorized Traffic Management Plan
    - v. Environmental compliance (i.e., bats, birds, lead etc.)
    - vi. [BCM 11](#), *Welding*, for welding submittals
    - vii. [BCM 55-1.01C](#), *Steel Structures – General – Submittals*, for steel column casing submittals
    - viii. [BCM 59-2](#), *Structural Steel Coatings – Painting Structural Steel*, for paint submittals
    - ix. [BCM 59-5](#), *Structural Steel Coatings – Thermal Spray Coat Structural Steel*, for paint submittals
  - b. Confirm that the Contractor has verified the controlling field dimensions by taking measurements in the field. Work with the Bridge Design (BD) Project Engineer to take corrective action should the actual field dimension differ from those on the contract plans. Write a change order when planned dimensions are changed by the BD Project Engineer.
  - c. Review and authorize (reject as necessary and work with Contractor to get them authorized) the following submittals:
    - i. Column casing shop drawings
    - ii. Painting quality work plan
    - iii. Welding quality control plan
    - iv. Excavation plan
    - v. Concrete/grout mix designs
    - vi. Manufacturer’s product data and Safety Data Sheet (SDS)
  - d. Coordinate review and authorization of steel column casing shop drawings with the BD Project Engineer and the Materials Engineering and Testing Services Representative ([METS Rep](#)).

- e. Coordinate inspection of steel column casing fabrication, and field welding with the METS Representative. After fabrication, verify materials is released and [Form TL-29](#), *Report of Inspection of Material* is issued by METS.
  - f. The Structure Representative (SR) should communicate with ASR, and Resident Engineer to verify that all staff are aware of the applicable submittals for performing work.
4. During construction:
- a. Collect orange tags from fabricated steel column casings delivered to the job site and match them with Form TL-29, *Report of Inspection of Material*. Verify that steel column casing was not damaged during transportation.
  - b. Verify the column footing area is excavated per the limits shown on the contract plan.
  - c. For Type P/F casing, verify that polystyrene is placed around the bottom of the column with a waterproof adhesive.
  - d. Verify the material used for column and footing waterproofing is authorized and adhesive is applied to the entire contact surface.
  - e. Verify steel column casing placement, and fit-up provides clearances with the column as shown in the contract plan.
  - f. Coordinate the field welding operation schedule with the METS Rep and verify that welds are per authorized shop drawings.
  - g. Verify the grouting operation is in accordance with the requirements of the contract documents and there are sufficient and properly spaced grout ports and grout lifts.
  - h. Work with the Contractor to take corrective action should casing shift during grouting.
  - i. Verify the steel column casing painting operation is in accordance with the authorized painting quality control plan as follows:
    - i. Prior to application of paint, verify that weather conditions and relative humidity comply with the contract requirements.
    - ii. After the application of the paint, measure and verify paint thickness and adhesion (pull test) for compliance with contract requirements.
  - j. Document all inspection, construction, and quality assurance activities, pertinent to this BCM, in the Daily Reports per [BCM C-7](#), *Daily and Weekly Reports*.
5. After construction:
- a. Document any changes on the as-built plans per [BCM C-6](#), *Required Documents to be Submitted During Construction*.

6. File all project documentation (correspondence, materials acceptance documentation, daily reports, etc.) in the appropriate category in the project records as specified in the *Construction Manual*, [Section 5-102](#), *Contract Administration – Project Records and Reports – Organization of Project Documents*.

## **Process Outputs**

1. Authorized submittals
2. Form TL-29, *Report of Inspection of Material*, and orange tags
3. Daily reports
4. Steel column casings installed in conformance with the contract documents

## **Attachments**

1. [Attachment 1](#), *Steel Column Casing Guidance*