# Temporary Structures – Jacking

## Revision and Approval

| Revision | Date | Nature of Changes | Approved By |
|---|---|---|---|
| 0 | 04-29-2022 | Original Issue | Richard Foley |

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## Background

This process establishes Structure Construction (SC) responsibilities and procedures for the review and authorization of submittals, quality assurance, installation and removal of jacking systems, and the procedure for jacking the bridge superstructure.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the *Contract Specifications*, Section 48-5, *Temporary Structures – Jacking*, that this BCM is based on as identified in the title block above. The information in the contract specifications typically will not be repeated in the text of this BCM.

## Process Inputs

1. Jacking support system submittal
2. Jack Calibration Charts

## Procedure

1. All work associated with this process is charged as Project Direct – Construction
2. Inspection of field work for this process is:
   a. Benchmark inspection for maintenance of in-place jacking systems.
   b. Intermittent inspection of jacking system construction, erection, and removal.
   c. Continuous for displacement monitoring and jacking operations.
3. Before construction begins:

a. Review the following:
    i. Contract documents
    ii. Railroad and local Right of Way guidelines and requirements (if applicable)
    iii. The contractors work schedule
b. Review the temporary jacking support system submittal for conformance with contract documents and railroad requirements and authorize in accordance with BCM C-11, *Shop Drawing Review of Temporary Structures* and *Falsework Manual,* Chapter 2, *Review of Shop Drawings.*
c. Verify displacement monitoring system is installed for the structure and jacking support system.
d. Verify baseline data has have been collected.
e. Verify that the contractor coordinates work with the railroad or other right-of-way entities when required in contract documents.
f. Verify soil bearing capacity based on soil test results or other geotechnical information.
g. Discuss the redundant system of support for jacking activities with the contractor.
h. Verify that the jack and pressure gauge or load cell have been calibrated by an authorized laboratory within 6 months of use or after each repair:
    i. Check with the METS Representative for the certification of the authorized laboratory.
i. Coordinate traffic control and local agency requirements, including the railroad, with the Resident Engineer and the contractor.

4. During construction:
    a. Verify the contractor's jacking system matches the certified calibration charts.
    b. During installation of temporary jacking supports, confirm the contractor is following the requirements of the authorized temporary jacking support system submittal:
        i. See Attachment 1, *Jacking System for Jacking a Bridge Superstructure,* for a photo of a jacking system.
    c. Coordinate the final walk-through with the Bridge Construction Engineer prior to jacking.
    d. Verify jacking loads are applied in conformance with the authorized temporary jacking support system submittal and requirements of the contract documents.

e. Verify the contractor performs displacement monitoring activities per authorized temporary jacking support system submittal.

f. Verify the redundant system of support is installed.

g. Ensure that the contractor and operation comply with applicable safety requirements. Refer to the *Construction Manual,* Section 2-103, *Managing Safety Hazards*.

h. Document displacement at the minimum intervals specified in the contract documents and verify displacement complies with contract tolerances.

i. Verify monitoring records are available at the job site.

j. Monitor the jacking operation for unplanned events, including unanticipated displacement, equipment failures, cracking, damage, or unanticipated jack loads. If unplanned or unanticipated events occur, take the following steps:

   i. Stop work

   ii. Notify the contractor

   iii. Check all equipment

   iv. Require the contractor's engineer to submit a proposal for correction

   v. Authorize corrective measures

k. During removal of temporary jacking supports, confirm the contractor is following the requirements of the temporary jacking support system submittal.

l. Verify all attachments to the existing structure are removed and concrete surfaces are repaired.

m. 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. Following construction:

   a. File all project documentation (correspondence, material acceptance documentation, authorized shop drawings, daily reports, etc.) in the appropriate category in the project records as specified in the *Construction Manual,* Section 5-102, *Organization of Project Documents.*

   b. Review and file all displacement monitoring records.

# Process Outputs

1. Authorized jacking superstructure shop drawings
2. Temporary Structure Analysis Report(s) (as applicable)
3. Transmittal Letter

4. Chronological record of jacking superstructure review
5. Daily reports
6. Signed displacement monitoring records

# Attachments

Attachment 1: *Jacking System for Jacking a Bridge Superstructure*