Existing Structures – Structure Rehabilitation – Deck Overlays – Concrete Overlays

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	01-05-2023	Original Issue	Richard Foley

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Background

This process establishes Structure Construction (SC) responsibilities for review and authorization of operations for concrete overlays, including submittals, materials, and construction.

Prior to reviewing this Bridge Construction Memo (BCM), it is essential to review the *Contract Specifications*, Section 60-3.04D, *Existing Structures – Structure Rehabilitation – Deck Overlays – Concrete Overlays,* 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. Contractor's 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 installation of forms and reinforcement.

b. Benchmark for:
    i. Inspection of deck preparation
    ii. Final inspection of the finishing equipment prior to concrete placement.
c. Full-time for:
    i. Removal and repair of existing bridge deck
    ii. Concrete placement of concrete overlay
    iii. Installation of any drill and bond dowels.

3. Before construction begins, the Structure Representative (SR) or delegate must:
    a. Review the following:
        i. Contract documents
        ii. *Concrete Technology Manual* (*CTM*), Chapter 6, *Structure Concrete Repair and Rehabilitation*, the section titled *Conventional Portland Cement Concrete Overlays*
        iii. BCM 51-1.01, *Concrete Structures – General*
        iv. BCM 51-1.03C-D, *Concrete Structures – General – Construction – Preparation and Placing Concrete*
        v. BCM 51-1.03F(5-6), *Concrete Structures – General – Construction – Finishing Concrete – Finishing Roadway Surfaces and Finishing Pedestrian Overcrossing Surfaces*
        vi. BCM 60-3.02, *Existing Structures – Structure Rehabilitation – Bridge Deck Repair and Preparation*
        vii. *Contract Specifications*:
            1. Section 51-1.01C, *Concrete Structures – General – Submittals*
            2. Section 51-1.03I, *Concrete Structures – General – Construction – Protecting Concrete Structures*
        viii. *Reinforced Concrete Construction Manual*, Chapter 7, *Bridge Deck Construction*
        ix. Resident Engineer (RE) Pending File for any pertinent information about overlay
        x. Authorized lead compliance plan.
    b. Review and authorize the following submittals:
        i. Concrete mix designs
        ii. Deck placement work plan

c. Hold preconstruction meeting with the Contractor to discuss the required deck repair area, skid testing, safety, and authorized deck placement work plan.

d. Communicate all authorized submittals with Assistant Structure Representative and Resident Engineer.

e. Review the Contractor's three week look-ahead and discuss upcoming friction tests with the Materials Engineering and Testing Services (METS) Representative.

4. During construction, the SR or delegate must:

   a. Inspect the bridge deck for existing spalls/unsound concrete and repair as needed. Refer to BCM 60-3.02, *Existing Structures – Structure Rehabilitation – Bridge Deck Repair and Preparation,* and the *Concrete Technology Manual*, Chapter 6, *Structure Concrete Repair and Rehabilitation.*

   b. If the contract documents require trial overlay, perform the following:

      i. Verify the concrete surface is cleaned prior to placement of concrete overlay.

      ii. Coordinate lane closures with the District.

      iii. Verify that the overlay location and limits comply with contract requirements.

      iv. Track the amount of material placed and produce pay quantities.

      v. Verify that the concrete surface is finished and cured per contract requirements. Arrange for coefficient of friction test, CTM 342, *Method of Test for Surface Skid Resistance with the California Portable Skid Test*.

      vi. Verify concrete compressive strength is in compliance with contract requirements.

      vii. Verify that concrete is protected after placement.

   c. For production work, repeat steps 4.b.i thru 4.b.vii.

   d. 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, the SR or delegate must:

   a. Verify the completed concrete deck surface has:

      i. A uniform surface texture with a coefficient of friction of at least 0.35 when tested under CTM 342.

      ii. Surface smoothness complying with the *Contract Specifications*, Section 51-1.01D(3)(b)(ii), *Concrete Structures – General – Quality Assurance – Department Acceptance – Testing Concrete Surfaces – Surface Smoothness.*

b. 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, *Organization of Project Documents.*

c. Record any changes to the as-built project plans.

Process Outputs

1. Authorized submittals
2. Weekly and daily reports
3. Materials certifications
4. Rehabilitated bridge deck
5. Lane Closure coordination
6. Overlay placement quantities
7. Skid test results
8. As-built project plans

Attachments

None