Bridge Deck Contours and Geometrics

Revision and Approval

Revision	Date	Nature of Changes	Approved By
0	04-22-2019	Original issue.	Steve Altman

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Background

This process establishes Structure Construction (SC) responsibilities, and procedures for obtaining and completing bridge deck contour plots.

Bridge deck contours and geometrics are provided by Structure Design for new bridges. Bridge deck contours for bridge widenings and partial deck replacements are developed by SC field staff.

Process Inputs

1. Assigned to project with new bridges, bridge widenings, or partial deck replacements.
2. Resident Engineer (RE) Pending File.
3. Contours are requested by the Contractor.

Procedure

1. All work associated with this process is charged as Project Direct – Construction.
2. Inspection of field work for this process is: Benchmark.
3. SC Staff:
    a. Review contract plans to determine if your project has new bridge structures, bridge widenings, or partial deck replacements.

b. For new bridges, verify two full sized “4-scale” copies of the deck contour plots were included with the RE Pending File sent from the SC Headquarters in Sacramento.

   i. Contact the Design Engineer to request additional copies or electronic copies.

   ii. Contact SC Office Associate if deck contour plots were not included in the RE Pending File.

   iii. Verify the deck contour plot is correct. If necessary, return to Structure Design Engineer for correction. See *SC Bridge Construction Survey Manual*, Chapter 3, *Deck Contour Sheets*.

   iv. Check deck contour plot against the final finish grade profiles and the superelevation diagrams shown in the roadway plan sheets. If there are discrepancies between district and structure profiles, notify the RE that discrepancies exists and facilitate correction. See *Reinforced Concrete Construction Manual*, Chapter 7, Section 7-6, *Grade Control*.

   v. After a detailed check of the plan dimensions and grades, errors and conflicting dimensions corrected, make copies of the deck contour plots available to the Contractor.

c. For bridge widenings and partial deck replacements, deck contour plots are not provided by Structure Design. They are developed by SC staff.

   i. Perform bridge construction survey.

      1. If the Contractor is unable to provide traffic control, contact Maintenance forces for assistance.

   ii. Review as-builts for existing structure, including existing bridge deck contours when matching to or replacing existing structures.

   iii. Prepare deck contour plot.

      1. Hand-draw bridge deck contour plots on the job.

      2. Request a plot from the Design Engineer after providing the following:

         a. A topographic survey with points recorded every 10 feet along the saw-cut line with at least one more point taken transverse to the saw cut line to approximate the existing cross-slope.

         b. A hand-plotted, profile grade along the saw-cut line, using a best-fit line or curve.

         c. Shots taken at the beginning of bridge (BB) and the end of bridge (EB).

         d. A few points taken off the structure, at either end, to help fit existing conditions.

i. Points should be stated in relation to station, offset (right or left), and elevation.

ii. Communicate with the Design Engineer to work out the best fit for any cross-slope discrepancies. (As-built versus as-designed)

3. Make copies of the deck contour plots available to the Contractor.

4. SC Supervisors:

   a. Provide tools and equipment to complete deck contour plot.

   b. Provide training and resources as necessary for timely completion of deck contour plot for bridge widening.

Process Outputs

1. Bridge Deck Contour Plot for Bridge Widenings and Partial deck replacements.
2. Bridge Deck Contour Plot for New Bridges.

Attachments

None