

723-B-300 REINFORCED CONCRETE THREE-SIDED STRUCTURES

(Adopted 08-20-15)

The Standard Specifications are revised as follows:

SECTION 723, BEGIN LINE 162, INSERT AS FOLLOWS:

(c) Working Drawings

Working drawings shall be submitted in accordance with 105.02 for fabrication of a precast or cast-in-place reinforced concrete three-sided structure, precast or cast-in-place reinforced concrete three-sided structure extension, precast or cast-in-place headwalls, precast or cast-in-place wingwalls, and precast or cast-in-place spandrel walls. The working drawings shall include all details, dimensions, and quantities necessary to construct the structure, headwalls, wingwalls, or spandrel walls and shall include, but not be limited to, the following information.

1. Structure span and rise.
2. Structure section details showing all concrete dimensions and reinforcement requirements. An analysis of the precast segment modeled as a simple span and designed in accordance with AASHTO LRFD Bridge Design Specifications Section 5.7.3. This analysis shall demonstrate that the precast segment is designed to withstand the forces of erection. *Details for providing horizontal restraint of the structure legs during installation until after the completion of backfill placement shall be included unless the analysis indicates such details are not needed.*
3. Headwall details showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, spacings, and anchorage details. Headwall elevation and section views shall be provided.
4. Wingwall design calculations and details showing all concrete dimensions, elevations, reinforcement sizes, bending diagrams, lengths, spacings, and anchorage details. Wingwall plan, elevation, and section views shall be provided.
5. Spandrel wall details showing all concrete dimensions, elevations, reinforcement sizes, bending diagrams, lengths, spacings, and anchorage details. Spandrel wall elevation and section views shall be provided.
6. Footing design calculations and details showing all concrete dimensions, elevations, reinforcing bar sizes, reinforcing bar bending diagrams, lengths, and spacings indicated. Footing plan and section views shall be provided. If a pile footing is required, the pile layout shall be shown. The actual soil bearing pressure shall be shown on the footing detail sheets.

7. Design calculations and details for pedestals or closure pours, if required.
 8. Structure backfill type and limits for the structure and wingwalls.
 9. Minimum concrete strength for all concrete portions of the structure.
 10. *Bridge load rating calculations and load rating summary shall be submitted with the working drawings where the structure span length measured along the roadway centerline is greater than 20 ft, except where the height of cover is greater than 8 ft and exceeds the perpendicular span length. The structure shall load rate greater than 1.0 for the loading described herein or as shown on plans. The load rating methodology shall be in accordance with the AASHTO Manual of Bridge Evaluation using the LRF method.*
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