

## Section 1 – Bridge Superstructure PC/PS Concrete Deck Panel Detail No. 1

### XS Sheet Numbers

xs01-180-1

### Description of Component

Precast prestressed concrete deck panel, details number 1

### Standard Drawing Features

There are two standard types of precast prestressed (PC/PS) partial depth concrete deck panels for bridge deck construction. Standard non-skewed panels (Type 1) can be used in bridges with no skew and interior panels of skewed bridges. Details of Type 1 panels are shown on XS1-180-1. The Type 2 panels (shown on XS1-180-2) can be used to accommodate skews at abutments or bents.

- Designer is responsible for design and design calculations of the deck panels and fill in the information in the table. Design guidance includes AASHTO LRFD Bridge Design Specifications, MTD 8-6, Standard Specs, etc.
- Use only 3/8 inch diameter Grade 270, seven wire low relaxation strands. To prevent panel cracking during de-tensioning, the maximum stress in the strands is limited to 70% of the specified minimum ultimate tensile strength.

### Plan – Type 1 (Non-Skewed Panel)

1. Panel length “L” is limited to 9 feet-6 inches maximum
2. Panel width “W” is limited to 8 feet maximum and 4 feet minimum
3. Designer shall determine the number of strands required and decides the appropriate strand spacing “S”. The spacing “S” should take into account the 2 ½ inches (minimum) to 4 inches (maximum) distance from edge of panel to centerline of strands.
4. Panel size (L and W) not in specified range requires special design.

### Section A-A

1. Minimum panel depth “D” shall be 3 ½ inches.
2. Top face of panel (interface between precast and cast-in-place deck concrete) shall be texture roughened per Standard Specifications.
3. PS strands are placed in the center of panel to avoid additional moment due to eccentricity.

### Deck Panel Typical Section

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1. The configuration of PC/PS partial depth deck panels on Bulb-Tee Girder is shown on the left, and panels on “I” Girder is shown on the right. Note that the girder types are shown for illustration purposes only. Similar details can be used for other girder types, such as Wide-Flange Girders and Bath Tub Girders. Designer shall use and detail the girder type from the project.
2. Minimum total deck thickness (T) shall be 7 ¾ inches. Cast-in-place deck depth shall be 4-1/4 inches minimum.
3. The height to width ratio of polystyrene camber strips shall be limited to max. 2:1 per Standard Specifications. Camber strip shall be located ¾ inch minimum and 1 inch maximum from edge of girders.
4. Concrete deck pour is divided into two stages: Stage 1 (Preliminary deck pour) and Stage 2 (remaining CIP topping pour) per Standard Specifications.
5. Additional U shape reinforcement (#4 U @ 12 inches) shall be provided in preliminary deck pour for girders with top flange wider than 19 inches.
6. The minimum clearance between bottom rebars of CIP deck to top surface of deck panel shall be 1 inch minimum.

### Design/General Notes

Many notes related to construction of PC/PS deck panels are in Section 51-4.02D(7) and Section 51-4.03G “Deck Panels” of Standard Specifications. Designers have to read the sections of the Standard Specifications.

### Additional Drawings Needed to Complete PS&E

This sheet works together with XS Sheet No. xs01-180-2.

### Contract Specifications

Standard Specifications 2015

### Restrictions on Use of Standard Drawings

The project designer and project engineer may modify this sheet to suit project requirements and needs.

### Special Considerations

The designer and project engineer are responsible for the structure components design and design calculations shown on this sheet. Designer/Project Engineer shall stamp this sheet with a valid California Professional Engineer License Stamp.