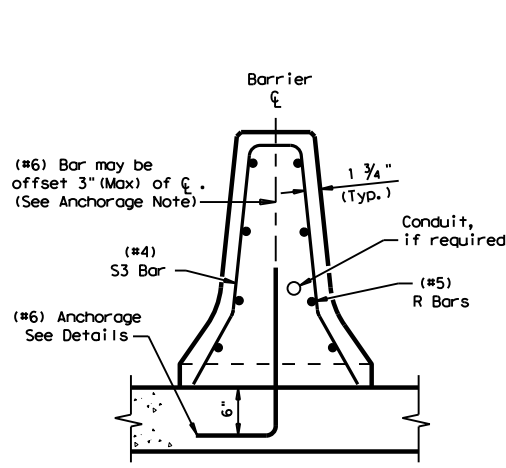
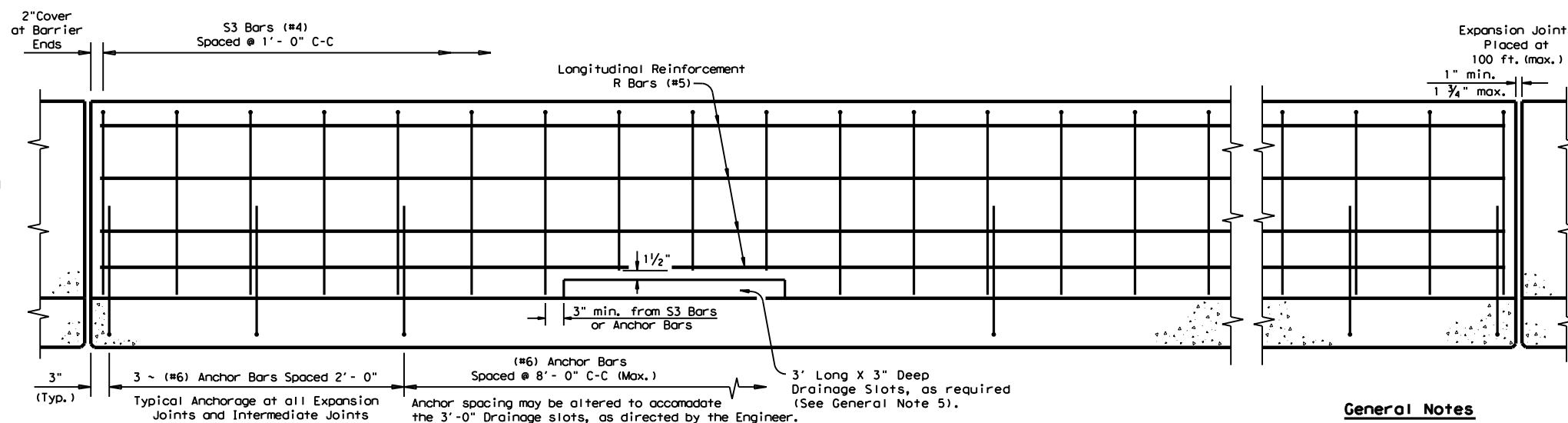


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**END VIEW**

**Cast-in-Place (CIP) Barrier**  
Barrier is Symmetrical About the Center Line



**ELEVATION VIEW**

**Cast-in-Place (CSB) on Bridge Decks or Continuously Reinforced Concrete Pavement (CRCP) (Showing Reinforcement and Anchor Requirement)**

**BRIDGE INTERMEDIATE JOINT DETAIL**

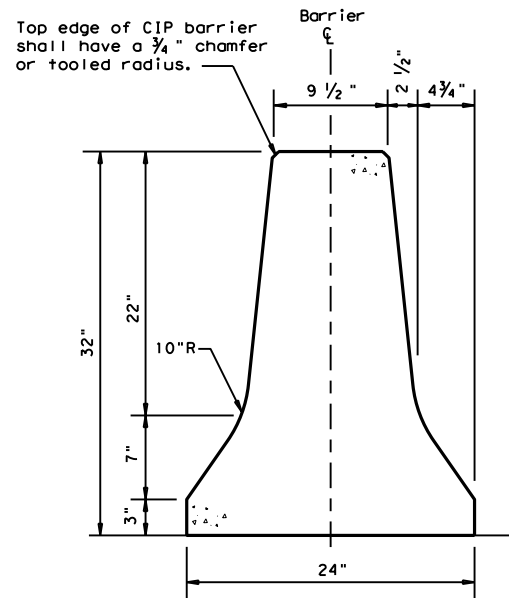
Place at all Bent C's, without Exp. joints and spaced at 33 ft. (max.), 10 ft. (min.)

**CRCP EXPANSION JOINT PLACEMENT**

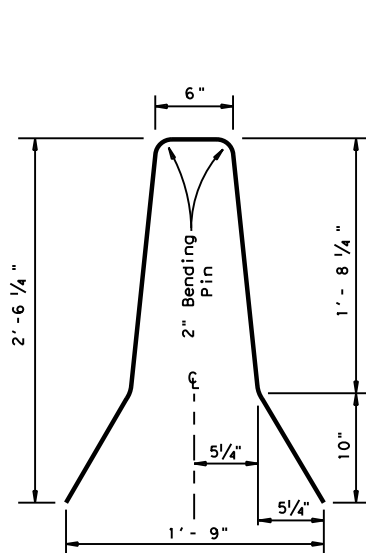
Place at all transverse joints or 100 ft. (max.), 10 ft. (min.)

**General Notes**

- Concrete shall be Class C, unless otherwise specified in the plans.
- Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615. If the bridge deck requires epoxy "coated" reinforcement, the barrier and/or anchorage may require the same, as shown elsewhere in the plans.
- Axis of cast-in-place barrier shall be vertical, except where the roadway is superelevated, then axis shall be normal to roadway surface.
- Top edges of cast-in-place barrier shall have a 3/4" chamfer or tooled radius.
- Anchorage: The "Optional" Anchor system shall be embedded 6" into fresh concrete or using a Type III, Class C Epoxy anchorage system. Follow the manufacturer's directions for installing the expoxied anchor bars. All anchorage shown is the minimum required, and considered subsidiary to the bid item.
- Drainage slot depths may be increased 1" to accommodate ACP. Slot locations (12'-0", C-C Min. Spacing) are shown elsewhere, or as directed by the Engineer.
- Cast-in-place barrier may be slip formed. Bracing may be tied or tack welded to the reinforcement cage to provide cage stability. Do not weld to anchor bars. The reinforcement cage may rest on the top of the finished grade.
- For locations where lighting is required, see the CSB(4) sheet for the proper reinforcement and anchorage.



**CONCRETE SAFETY BARRIER (CSB)**



**S3 Bar (#4) Bar**

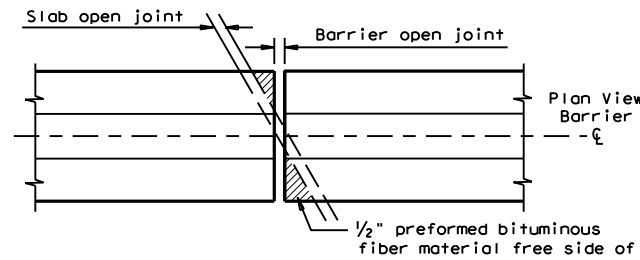
Note: Reinforcement cage may rest on top of the finished grade.

**BARRIER PLACEMENT OVER (CRCP) JOINTS**

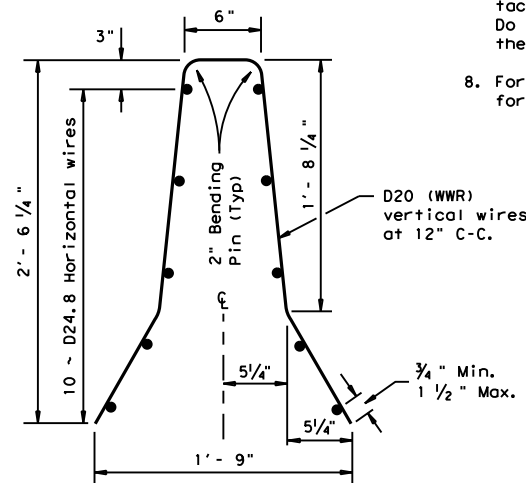
Barrier may be cast over a "Longitudinal" CRCP joint.

**CRCP Joints (with or without tiebars):** Two layers of 30# roofing felt or 1/2" preformed bituminous fiber material.

**Barrier Anchorage Note:** Anchorage must be located at least 3" from a longitudinal joint.



**BARRIER OVER TRANSVERSE OPEN JOINT**



**Welded Wire Reinforcement (WWR) Option for Bars S and R**

**(WWR) General Notes**

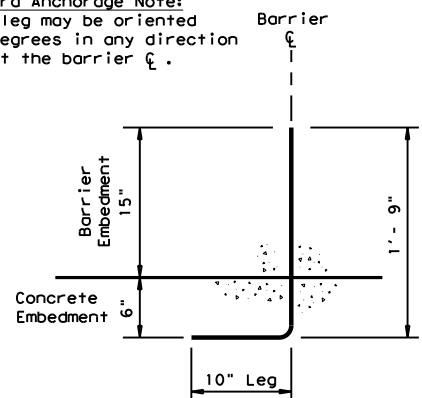
- Deformed Welded Wire Reinforcement (WWR) shall conform to ASTM A497.
- The welded wire cage at the drainage slots may be cut or bent to accommodate the edge and top clearances, as directed by the Engineer.
- The welded wire splice locations shall have a "minimum" splice lap length of 12".
- Combinations of reinforcing steel and WWR will be permitted, as directed by the Engineer. The dimension from the end of the barrier section to the first wire shall not exceed 3".

**Cast-In-Place or Slip-Formed (CSB)**

Cast-in-Place barrier may be connected to precast CSB. Joint connection "Types" may be used in Cast-in-Place barrier, to match the precast barrier connection. (See required connection "Type" elsewhere in the plans)

The weight of Cast-in-Place (CSB) (F-Shape) is approx. 440 lbs per ft.

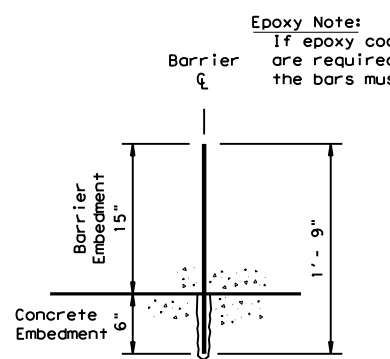
**Standard Anchorage Note:**  
10" leg may be oriented 90 degrees in any direction about the barrier C.



**STANDARD ANCHORAGE**

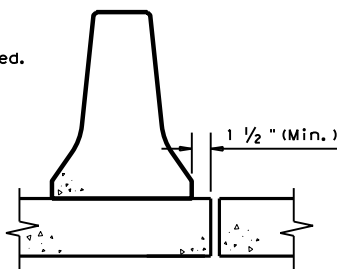
(#6) Bar  
Concrete Pavement / Bridge Deck Anchorage:  
Cast-in-Place or Slip-Formed Barrier  
(See General Note 2)

**Epoxy Note:**  
If epoxy coated anchor bars are required, the lower 6" of the bars must not be epoxy coated.



**"OPTIONAL" ANCHORAGE**

(#6) Bar  
Fresh insertion method or Type III, Class C Epoxy Method  
Concrete Pavement / Bridge Deck Anchorage:  
Cast-in-Place or Slip-Formed Barrier  
(See General Notes 2 & 5)



**Minimum Edge Distance From Longitudinal Joint**

Placement over a longitudinal bridge joint is not recommended.

		<b>Design Division Standard</b>	
<b>CONCRETE SAFETY BARRIER (F-SHAPE) CAST-IN-PLACE (TYPE 1) (BRIDGE DECK or CRCP) CSB(3) - 16</b>			
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