

Reinforcement: Grade 60

Girder Spacing (S)	Deck Thick. (T)	Typ. Deck Reinforcement		Additional Overhang Bars at Wall Section			Additional Overhang Bars at End Section		
		Transverse Bars	Long. Bars	TL-3 BR200	TL-4 BR222	TL-4 BR290	TL-3 BR200	TL-4 BR222	TL-4 BR290
5'-0"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 6 1/2"	#4 @ 6 1/2"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"
5'-3"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 6 1/2"	#4 @ 6 1/2"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"
5'-6"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 6 1/2"	#4 @ 6 1/2"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"
5'-9"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 6 1/2"	#4 @ 6 1/2"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"
6'-0"	8"	#4 @ 6"	#4 @ 8"	#4 @ 6"	#4 @ 6"	#4 @ 6"	2-#6 @ 6"	2-#6 @ 6"	2-#6 @ 6"
6'-3"	8"	#4 @ 6"	#4 @ 8"	#4 @ 6"	#4 @ 6"	#4 @ 6"	2-#6 @ 6"	2-#6 @ 6"	2-#6 @ 6"
6'-6"	8"	#4 @ 6"	#4 @ 8"	#4 @ 6"	#4 @ 6"	#4 @ 6"	2-#6 @ 6"	2-#6 @ 6"	2-#6 @ 6"
6'-9"	8"	#4 @ 6"	#4 @ 8"	#4 @ 6"	#4 @ 6"	#4 @ 6"	2-#6 @ 6"	2-#6 @ 6"	2-#6 @ 6"
7'-0"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 5 1/2"	#4 @ 5 1/2"	#4 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"
7'-3"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 5 1/2"	#4 @ 5 1/2"	#4 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"
7'-6"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 5 1/2"	#4 @ 5 1/2"	#4 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"
7'-9"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 5 1/2"	#4 @ 5 1/2"	#4 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"	2-#6 @ 5 1/2"
8'-0"	8"	#4 @ 5"	#4 @ 7"	#4 @ 10"	#4 @ 10"	#4 @ 5"	#6 @ 5"	2-#6 @ 5"	#6 @ 5"
8'-3"	8"	#4 @ 5"	#4 @ 7"	#4 @ 10"	#4 @ 10"	#4 @ 5"	2-#6 @ 5"	2-#6 @ 5"	#6 @ 5"
8'-6"	8"	#4 @ 5"	#4 @ 7"	#4 @ 10"	#4 @ 10"	#4 @ 5"	2-#6 @ 5"	2-#6 @ 5"	#6 @ 5"
8'-9"	8"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"
9'-0"	8 1/4"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
9'-3"	8 1/4"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
9'-6"	8 1/2"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
9'-9"	8 1/2"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
10'-0"	8 3/4"	#5 @ 6 1/2"	#5 @ 8"	#5 @ 13"	#5 @ 13"	#5 @ 13"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
10'-3"	8 3/4"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 6"
10'-6"	8 3/4"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 6"
10'-9"	9"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 6"
11'-0"	9"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 6"
11'-3"	9"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"
11'-6"	9 1/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"
11'-9"	9 1/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"
12'-0"	9 1/2"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"
12'-3"	9 1/2"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"	#5 @ 5 1/2"
12'-6"	9 3/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 11"	#5 @ 5 1/2"	#5 @ 11"
12'-9"	9 3/4"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 5"	#5 @ 10"
13'-0"	10"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
13'-3"	10"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
13'-6"	10 1/4"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
13'-9"	10 1/4"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
14'-0"	10 1/2"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
14'-3"	10 1/2"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
14'-6"	10 3/4"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 10"	#5 @ 15"
14'-9"	10 3/4"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"
15'-0"	11"	#5 @ 5"	#5 @ 7"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"	#5 @ 15"

Reinforcement: Grade 80

Girder Spacing (S)	Deck Thick. (T)	Typ. Deck Reinforcement		Additional Overhang Bars at Wall Section			Additional Overhang Bars at End Section		
		Transverse Bars	Long. Bars	TL-3 BR200	TL-4 BR222	TL-4 BR290	TL-3 BR200	TL-4 BR222	TL-4 BR290
5'-0"	8"	#4 @ 8"	#4 @ 8"	#4 @ 8"	#6 @ 8"	#6 @ 16"	2-#6 @ 8"	2-#6 @ 8"	2-#6 @ 8"
5'-3"	8"	#4 @ 8"	#4 @ 8"	#4 @ 8"	#6 @ 8"	#6 @ 16"	2-#6 @ 8"	2-#6 @ 8"	2-#6 @ 8"
5'-6"	8"	#4 @ 7 1/2"	#4 @ 8"	#4 @ 7 1/2"	#6 @ 15"	#4 @ 7 1/2"	2-#6 @ 7 1/2"	2-#6 @ 7 1/2"	2-#6 @ 7 1/2"
5'-9"	8"	#4 @ 7 1/2"	#4 @ 8"	#4 @ 7 1/2"	#6 @ 15"	#4 @ 7 1/2"	2-#6 @ 7 1/2"	2-#6 @ 7 1/2"	2-#6 @ 7 1/2"
6'-0"	8"	#4 @ 7"	#4 @ 8"	#4 @ 7"	#4 @ 7"	#4 @ 7"	2-#6 @ 7"	2-#6 @ 7"	#6 @ 7"
6'-3"	8"	#4 @ 7"	#4 @ 8"	#4 @ 7"	#4 @ 7"	#4 @ 7"	2-#6 @ 7"	2-#6 @ 7"	#6 @ 7"
6'-6"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 13"	#4 @ 6 1/2"	#4 @ 6 1/2"	#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
6'-9"	8"	#4 @ 6 1/2"	#4 @ 8"	#4 @ 13"	#4 @ 6 1/2"	#4 @ 6 1/2"	2-#6 @ 6 1/2"	2-#6 @ 6 1/2"	#6 @ 6 1/2"
7'-0"	8"	#4 @ 6"	#4 @ 8"	#4 @ 12"	#4 @ 6"	#4 @ 12"	#6 @ 6"	2-#6 @ 6"	#6 @ 6"
7'-3"	8"	#4 @ 6"	#4 @ 8"	#4 @ 12"	#4 @ 6"	#4 @ 12"	#6 @ 6"	2-#6 @ 6"	#6 @ 6"
7'-6"	8"	#4 @ 6"	#4 @ 8"	#4 @ 12"	#4 @ 6"	#4 @ 12"	#6 @ 6"	2-#6 @ 6"	#6 @ 6"
7'-9"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
8'-0"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
8'-3"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
8'-6"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
8'-9"	8"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
9'-0"	8 1/4"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
9'-3"	8 1/4"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
9'-6"	8 1/2"	#4 @ 5 1/2"	#4 @ 8"	#4 @ 11"	#4 @ 11"	#4 @ 11"	#6 @ 5 1/2"	2-#6 @ 5 1/2"	#6 @ 5 1/2"
9'-9"	8 1/2"	#4 @ 5"	#4 @ 7"	#4 @ 15"	#4 @ 15"	#4 @ 15"	#6 @ 5"	#6 @ 5"	#4 @ 5"
10'-0"	8 3/4"	#4 @ 5"	#4 @ 7"	#4 @ 15"	#4 @ 15"	#4 @ 15"	#6 @ 10"	#6 @ 5"	#4 @ 5"
10'-3"	8 3/4"	#4 @ 5"	#4 @ 7"	#4 @ 15"	#4 @ 15"	#4 @ 15"	#6 @ 5"	#6 @ 5"	#4 @ 5"
10'-6"	8 3/4"	#4 @ 5"	#4 @ 7"	#4 @ 15"	#4 @ 15"	#4 @ 15"	#6 @ 10"	#6 @ 5"	#4 @ 5"
10'-9"	9"	#4 @ 5"	#4 @ 7"	#4 @ 15"	#4 @ 15"	#4 @ 15"	#4 @ 5"	#6 @ 5"	#4 @ 5"
11'-0"	9"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 12"
11'-3"	9"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 12"
11'-6"	9 1/4"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 6"	#6 @ 6"	#5 @ 18"
11'-9"	9 1/4"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 12"	#6 @ 6"	#5 @ 18"
12'-0"	9 1/2"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 12"	#5 @ 6"	#5 @ 18"
12'-3"	9 1/2"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 12"	#5 @ 6"	#5 @ 18"
12'-6"	9 3/4"	#5 @ 6"	#5 @ 8"	#5 @ 18"	#5 @ 18"	#5 @ 18"	#5 @ 12"	#5 @ 6"	#5 @ 18"
12'-9"	9 3/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
13'-0"	10"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
13'-3"	10"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
13'-6"	10 1/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
13'-9"	10 1/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
14'-0"	10 1/2"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
14'-3"	10 1/2"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 5 1/2"	#5 @ 16 1/2"
14'-6"	10 3/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 11"	#5 @ 16 1/2"
14'-9"	10 3/4"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 11"	#5 @ 16 1/2"
15'-0"	11"	#5 @ 5 1/2"	#5 @ 8"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 16 1/2"	#5 @ 11"	#5 @ 16 1/2"

GENERAL NOTES
Designed in accordance with the 2020 edition of the AASHTO LRFD Bridge Design Specifications.

Concrete Class: HPC 4500

Top Mat Orientation: Transverse bars on top

Dead Load: 150 pcf + 25 psf future wearing surface

Surface Wear: ½" allowance for surface wear subtracted from positive moment "d".

Steel Girders: Top flange width not less than 24". Project specific design is required when top flange is less than 24".

Concrete Box Girders: Girder stem width not less than 12". For girder stem greater than or equal to 16", use Deck Design Chart for Precast P/S Concrete Members.

ASSUMPTIONS: TYPICAL DECK REINFORCEMENT
Deck DL moments: Negative -0.10wS²
Positive +0.08wS²

Live Load: LRFD Table A4-1 using 6" from ¢ of girder to the negative moment design section. Impact included in LRFD Table A4-1 live loads

Design Moment: 1.25*DL + 1.5*DW + 1.75*LL

ASSUMPTIONS: DECK OVERHANG REINFORCEMENT
Cross section is either (a), (c) or (d) from AASHTO Table 4.6.2.2.1-1.

Rail is not inboard of exterior girder.

Shear in deck was not investigated.

No allowance for sacrificial wearing surface at overhang, full deck thickness is assumed.

Provision made for future protective fencing with an assumed weight of 20plf.

Maximum assumed value of "d_e" is 0.3 times "S".

Overhang bars and typical top transverse reinforcement have a 180deg hook in the overhang.

Minimum length of L_{oh} is greater of:

- L_{overhang} + S/2 + 12"
- L_{overhang} + L_{min}
where L_{min} = 4'-6" for Wall Section, 6'-0" for End Section

The min. length of L_{oh} assumes uncoated bar and λ_{rc}=0.4. Increase length for epoxy coating or λ_{rc}>0.4.

Extreme Event II collision loads from BDM 1.13.5.

NOTE

"S" is measured parallel to the transverse bars. Bar spacing is measured perpendicular to the bars.

Place bottom mat bars directly below and in line with a top mat bar. At expansion and construction joints, however, it is not necessary for all bottom mat bars to be directly below a top mat bar.

For marine and coastal areas, see BDM Table 1.5.5-2 and BDM 1.9.2.1.3 for additional corrosion protection recommendations.

Bundling of additional overhang bars is indicated by "2-#6".

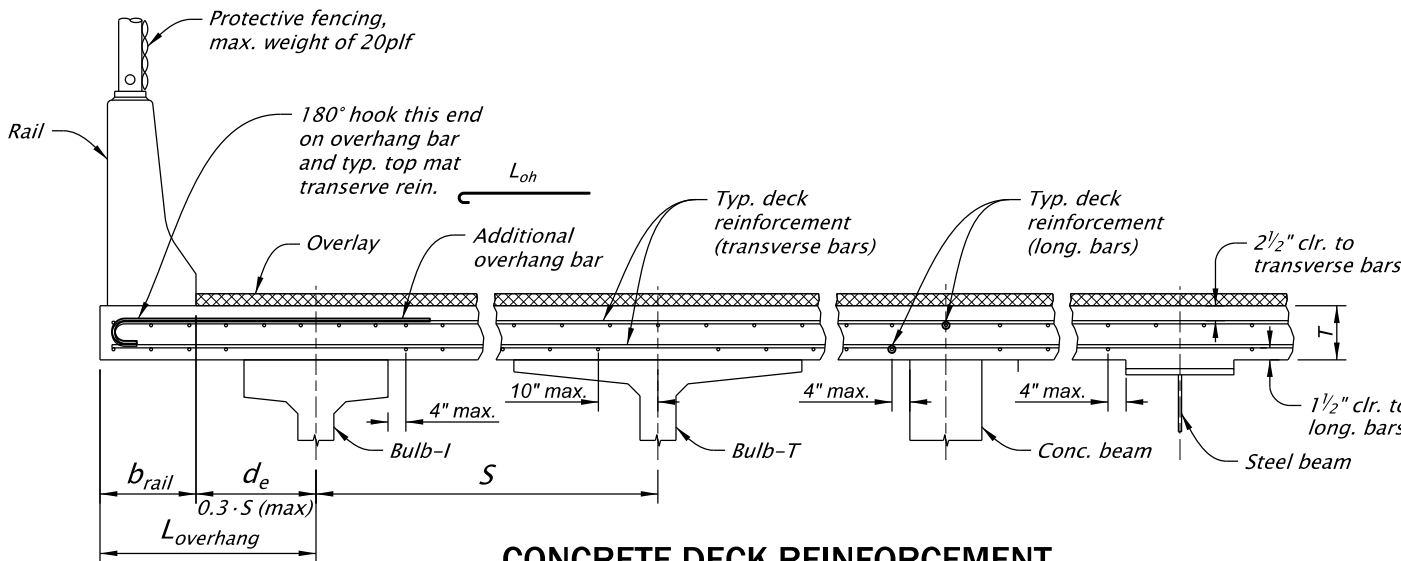
The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.



OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

CONCRETE DECK REINFORCEMENT
STEEL GIRDERS &
CIP CONC. BOX GIRDER

DETAIL NO.
DET3170



CONCRETE DECK REINFORCEMENT
WITH TRANSVERSE BARS ON TOP
STEEL GIRDERS & CAST-IN-PLACE CONCRETE BOX GIRDERS-SIMPLE SPANS
NO SCALE