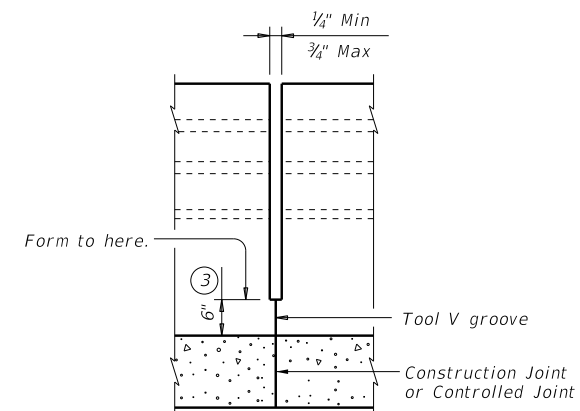
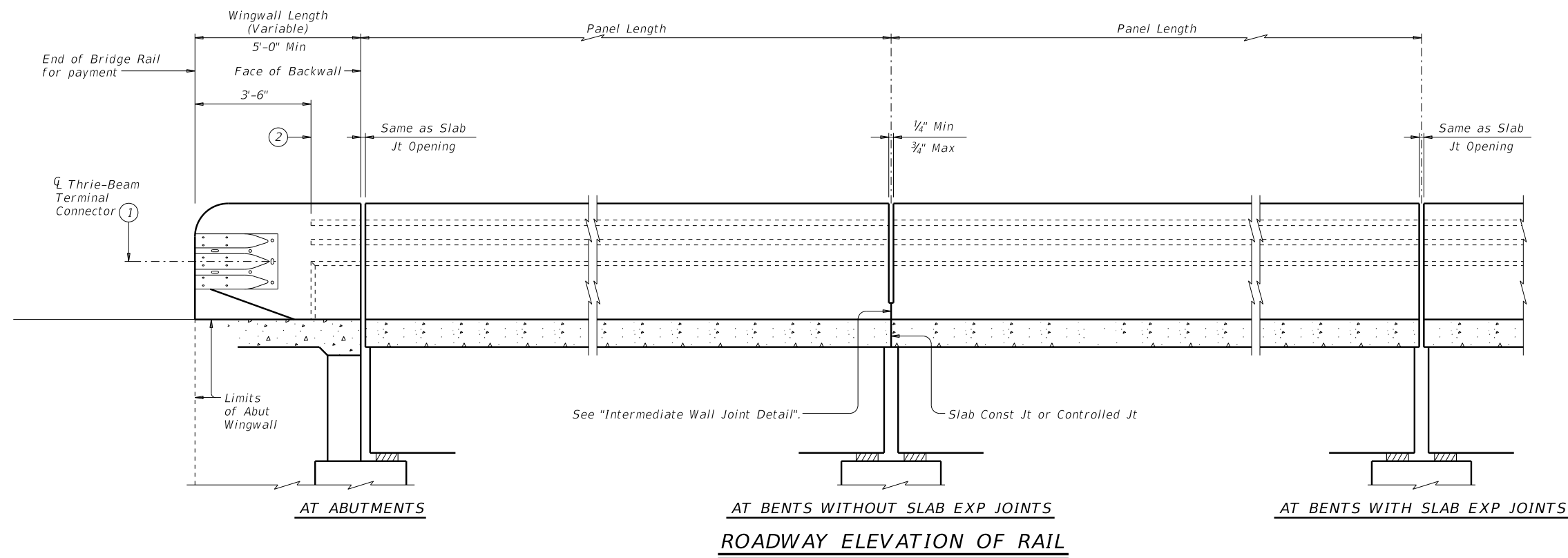
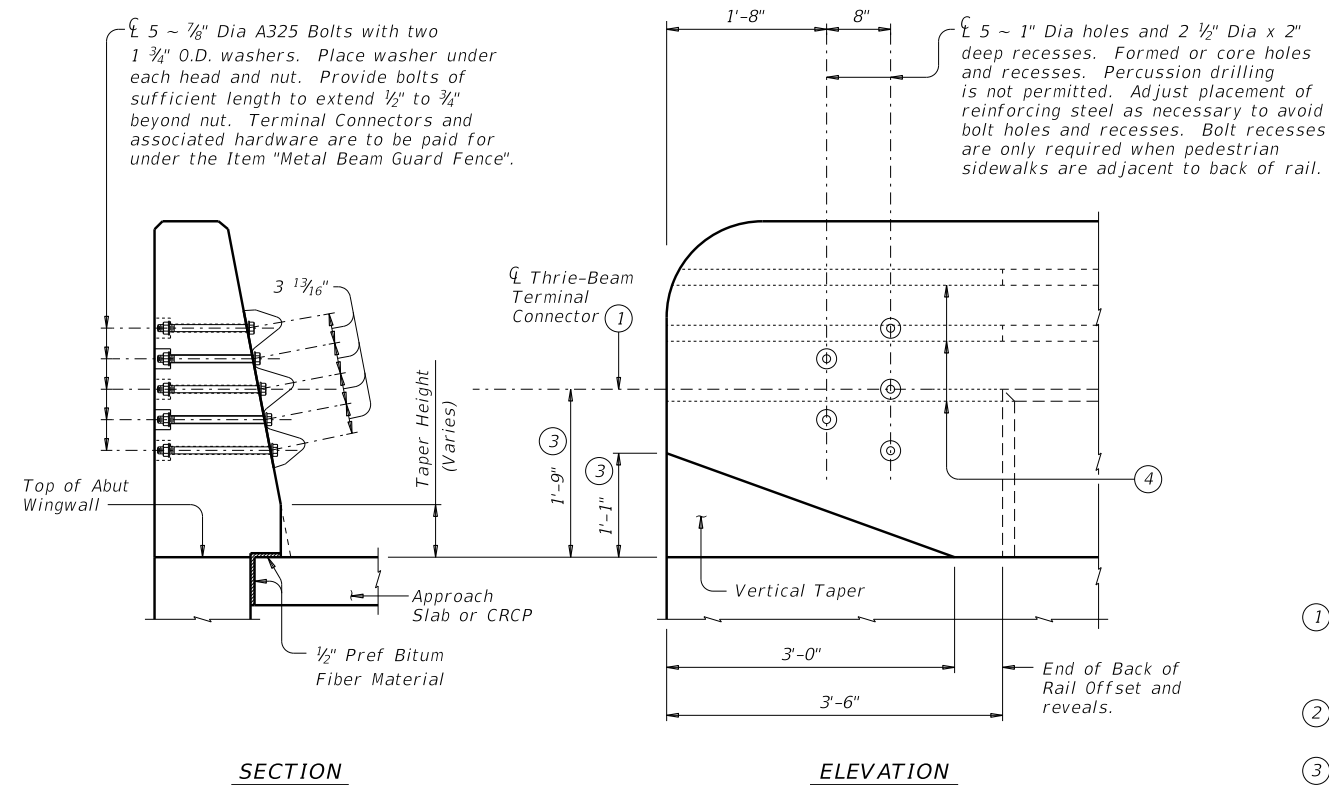


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INTERMEDIATE WALL JOINT DETAIL

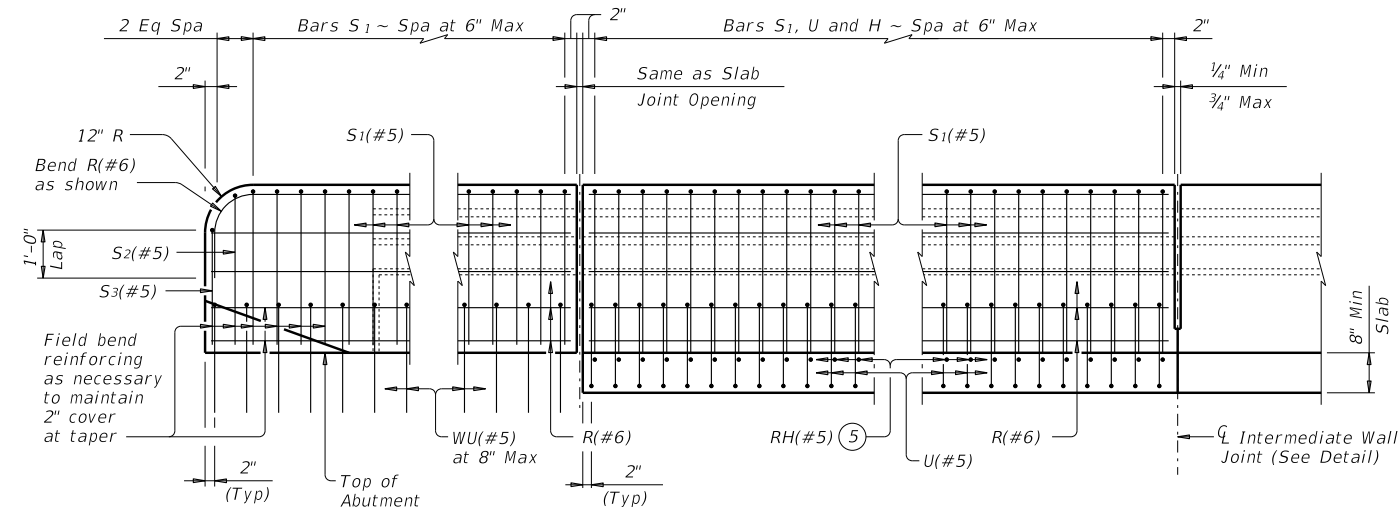
Provide at all Interior Bents without slab expansion joints.



SECTION

TERMINAL CONNECTION DETAILS

ELEVATION



ELEVATION SHOWING
TYPICAL REINFORCING PLACEMENT

- ① Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- ② End back of rail offset and reveals. See "Terminal Connection Details".
- ③ Increase 2" for structures with Overlay.
- ④ Back of rail offset and reveals may, with Engineer's approval, be continued to end of the railing.
- ⑤ Bars RH(#5) are part of rail reinforcing and are included in unit price bid for railing. Bars RH(#5) are in addition to slab overhang reinforcement shown elsewhere. Extend Bars RH(#5) 2'-0" Min past \bar{C} of beam/girder. Space with Bars U(#5). Bars RH(#5) match slab bar cover. Bars RH(#5) may be bundled with top slab reinforcing if spacing is equivalent. Omit Bars RH(#5) when top slab reinforcement is spaced less than 4".

SHEET 1 OF 3




Texas Department of Transportation

**Bridge
Division
Standard**

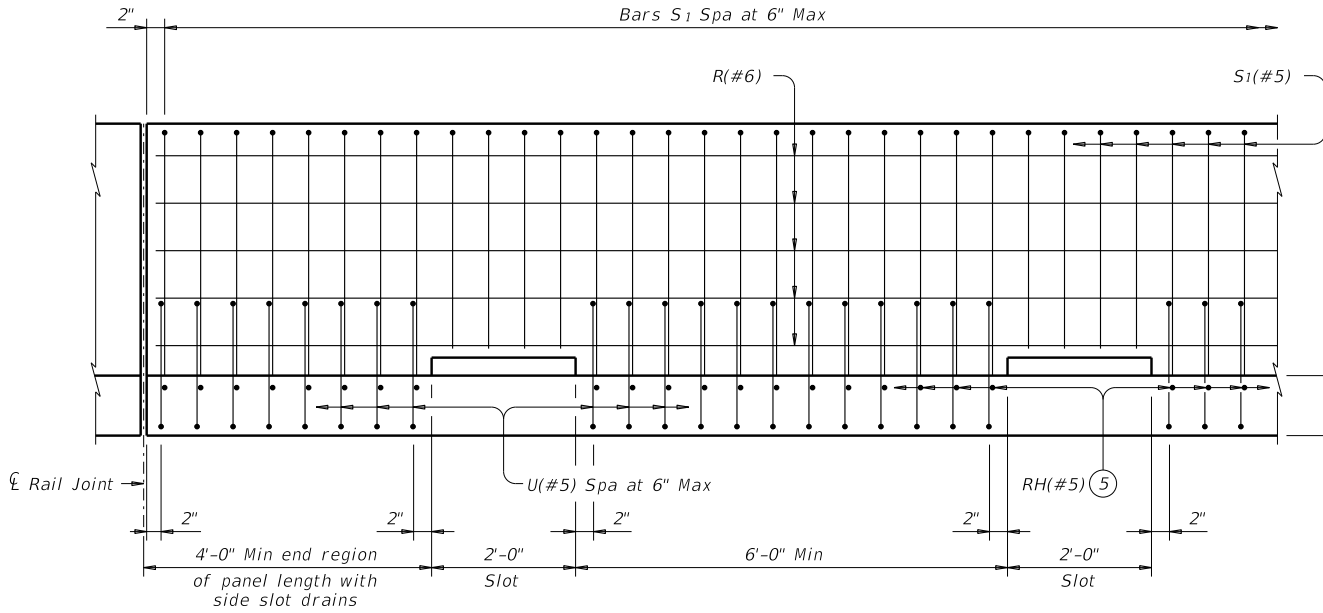
TRAFFIC RAIL

TYPE T80SS

FILE:	r1std01d.dgn	DN:	TxDOT	CK:	TxDOT	DW:	JTR	CK:	JMH
 TxDOT	July 2014	CONT	SECT	JOB		HIGHWAY			
REVISIONS									
03-16: Changed H bar to RH. Added WASH TL-5 to General Notes.									
		DIST	COUNTY			SHEET NO			

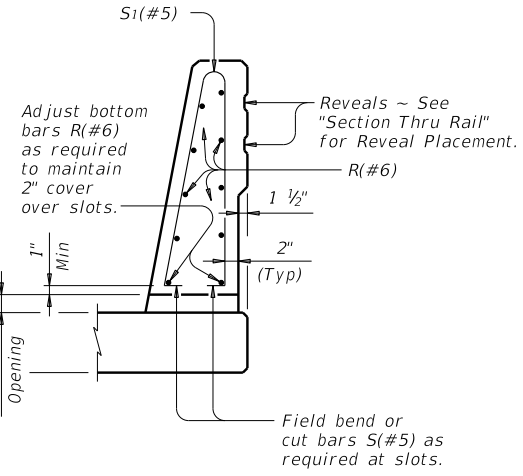
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

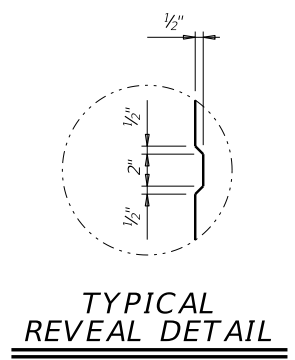


OPTIONAL SIDE SLOT DRAIN DETAIL

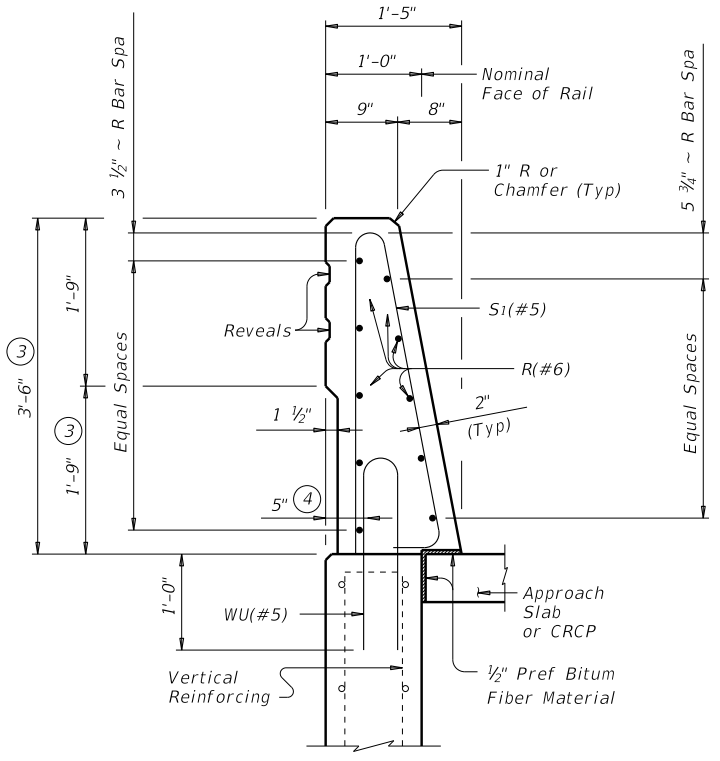
Note: Side Slot Drains may be used where shown elsewhere on the plans or as directed by the Engineer. Do not place drains over railroad tracks, lower roadways, or sidewalks. When this rail is used as a separator between a roadway surface and a sidewalk surface, side drain slots will not be permitted.



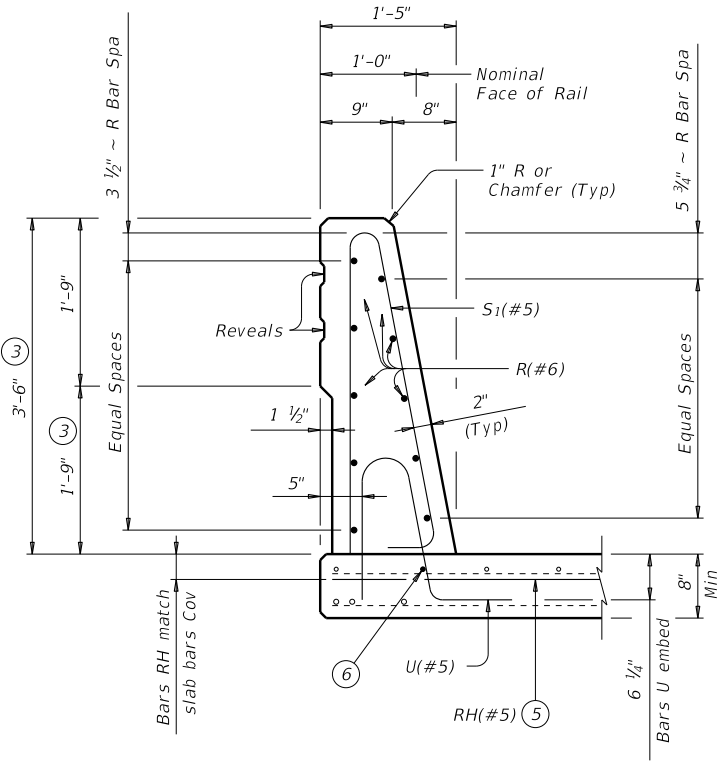
SECTION THRU OPTIONAL SIDE SLOT DRAIN



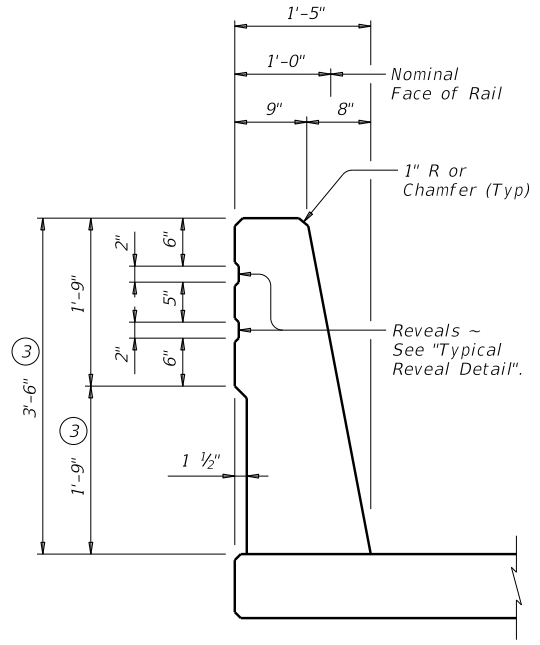
- ③ Increase 2" for structures with Overlay.
- ④ 5 1/4" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls on traffic side of wall.
- ⑤ Bars RH(#5) are part of rail reinforcing and are included in unit price bid for railing. Bars RH(#5) are in addition to slab overhang reinforcing shown elsewhere. Extend Bars RH(#5) 2'-0" Min past \bar{C} of beam/girder. Space with Bars U(#5). Bars RH(#5) match slab bar cover. Bars RH(#5) may be bundled with top slab reinforcing if spacing is equivalent. Omit Bars RH(#5) when top slab reinforcing is spaced less than 4".
- ⑥ Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- ⑦ Mounting this rail to retaining walls requires additional details not covered by this standard.



ON ABUTMENT WINGWALLS ⑦



**ON BRIDGE SLAB
SECTIONS THRU RAIL ⑦**



**REVEAL PLACEMENT
(Showing location of Reveals)**

SHEET 2 OF 3

Texas Department of Transportation

Bridge Division Standard

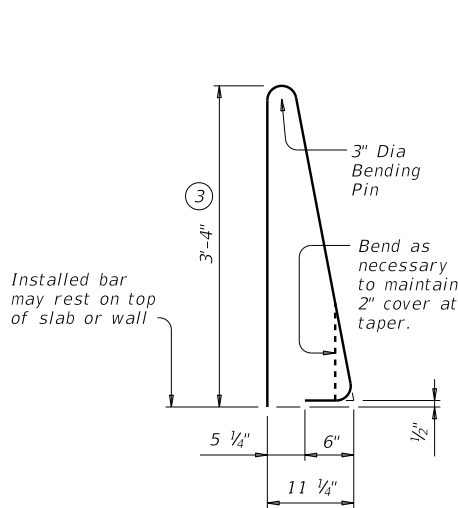
TRAFFIC RAIL

TYPE T80SS

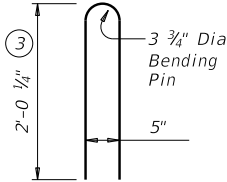
FILE: r1st0016.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT July 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS				
03-16: Changed H bar to RH. Added MASH TL-5 to General Notes.				
DIST	COUNTY			SHEET NO.

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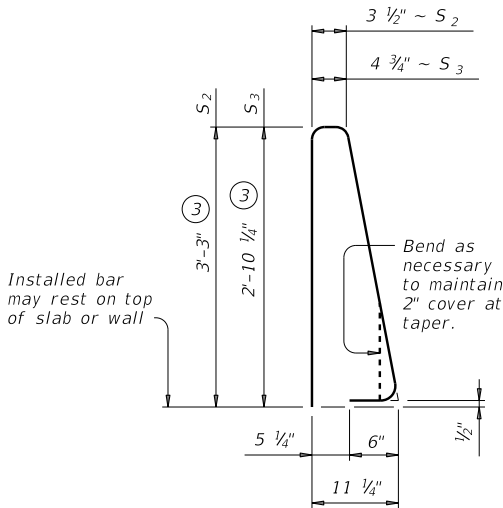
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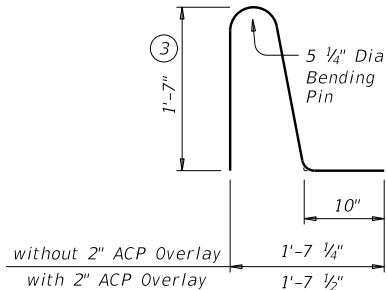
BARS S₁ (#5)



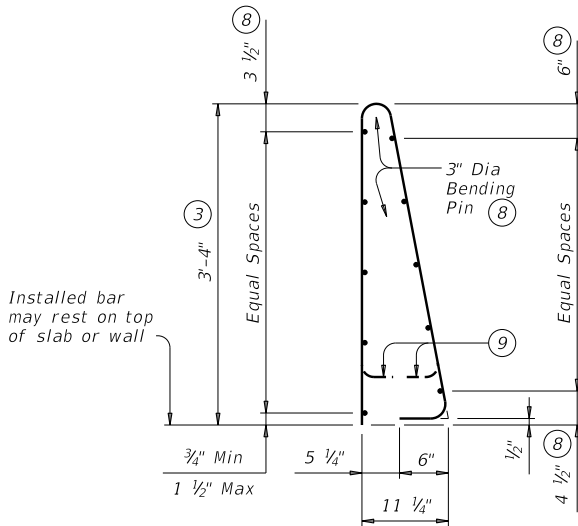
BARS WU (#5)



BARS S₂₋₃ (#5)



BARS U (#5)



OPTIONAL WELDED WIRE
REINFORCEMENT (WWR)

DESCRIPTION	LONGITUDINAL WIRES	VERTICAL WIRES
Minimum (Cumulative Total) Wire Area	3.770 Sq In.	0.530 Sq In. per Ft
Minimum	No. of Wires	Spacing
Maximum	10	4"
	14	8"
Maximum Wire Size Differential	The smaller wire must have an area of 40% or more of the larger wire.	

- ③ Increase 2" for structures with Overlay.
⑧ No longitudinal wires may be within bend area.
⑨ Bend or cut as required to clear drain slots.

CONSTRUCTION NOTES:

This railing may be constructed with slip-forms when approved by the Engineer, with equipment approved by the Engineer. Provide sensor control for both line and grade. Tack welding to provide bracing for slip-form operations is acceptable. Welding can be performed at a minimum spacing of 3 ft between the cage and the anchorage. It is permissible to weld to U, WU and S bars at any location on the cage. If increased bracing is needed, additional anchorage devices must be added and welding must be performed in the upper two thirds of the cage. The back of railing must be vertical unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:

Galvanize all steel components except reinforcing steel unless otherwise shown on plans. Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere. Provide Grade 60 reinforcing steel. Epoxy coat all rail reinforcement if slab bars are epoxy coated. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U and WU unless noted otherwise. Deformed WWR (ASTM A1064) may be substituted for Bars R and S, as shown. Combinations of reinforcing steel and WWR or configurations of WWR other than shown are permitted if conditions in the table are satisfied. Provide the same laps as required for reinforcing bars. Provide bar laps, where required, as follows:
Uncoated ~ #6 = 2'-1"
Epoxy coated ~ #6 = 3'-1"

GENERAL NOTES:

This rail has been evaluated and approved to be of equal strength to railings with like geometry, which have been crash tested to meet MASH TL-5 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. Do not use this railing on bridges with expansion joints providing more than 5" movement. Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications. Shop drawings are not required for this rail. Average weight of railing is 533 plf.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

SHEET 3 OF 3



TRAFFIC RAIL

TYPE T80SS

FILE: r1st0016.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT July 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS				
03-16: Changed H bar to RH. Added MASH TL-5 to General Notes.	DIST		COUNTY	SHEET NO.