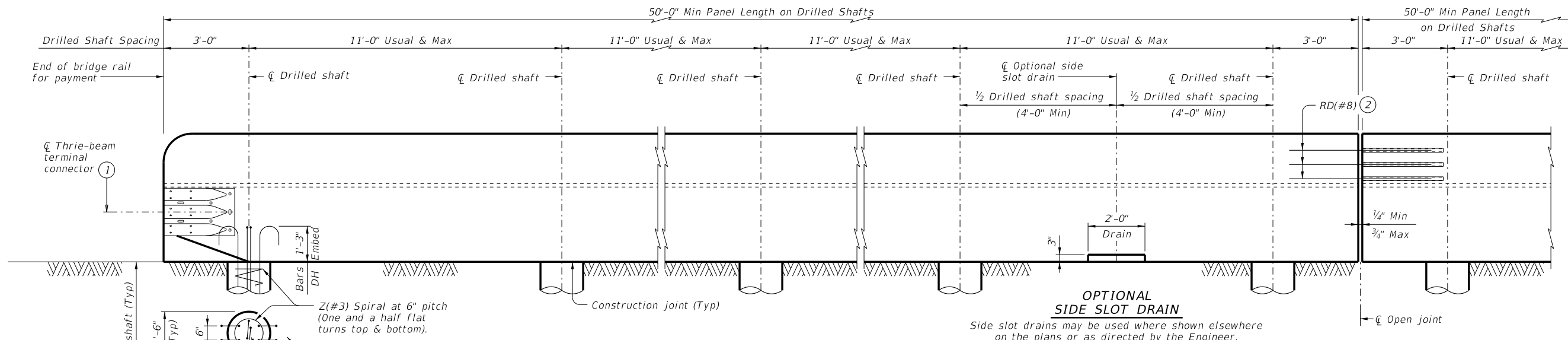
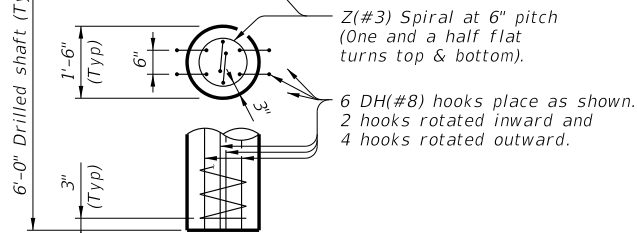


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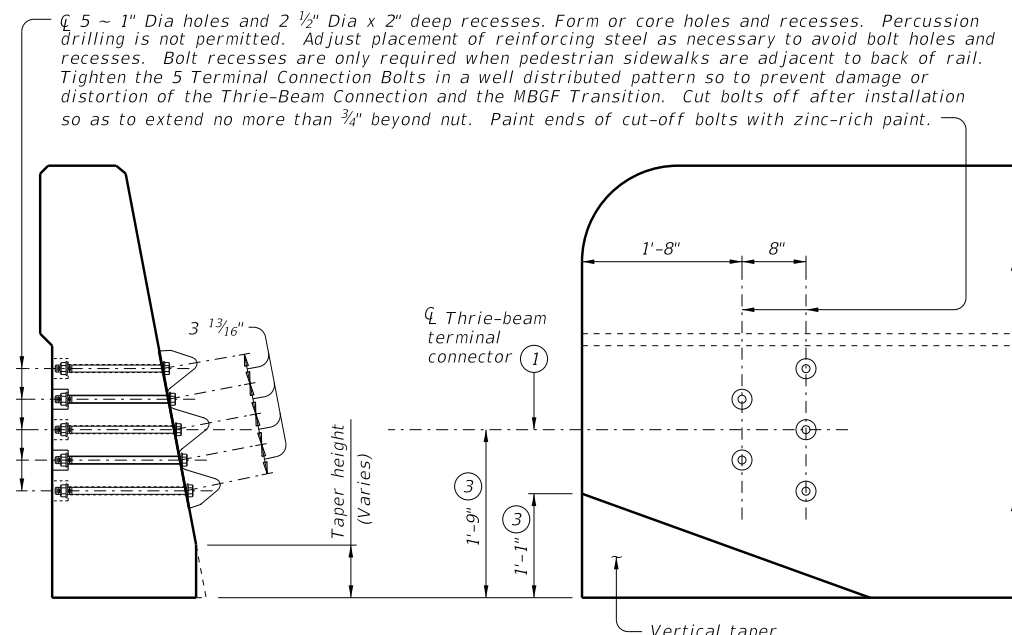
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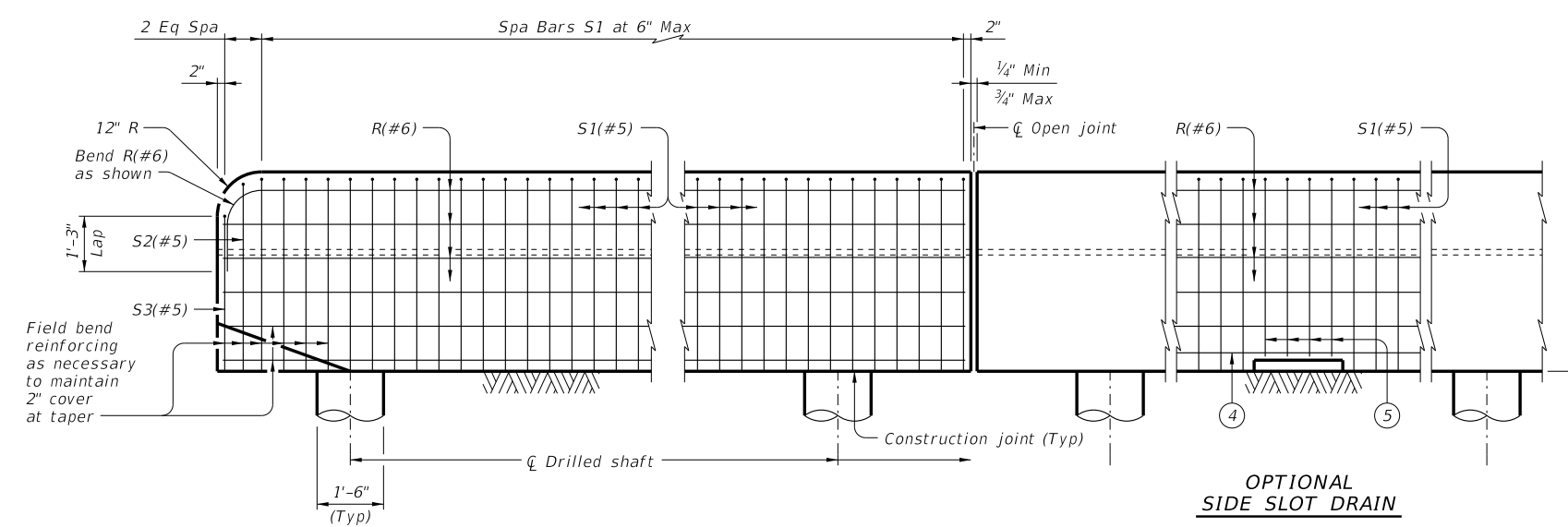
ROADWAY ELEVATION OF RAIL ON DRILLED SHAFTS
(T80PP rail reinforcing not shown for clarity.)



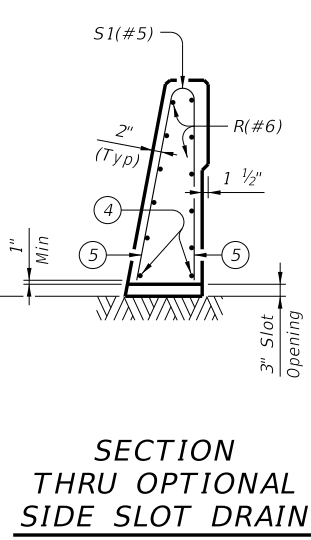
- ① Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- ② Located at rail joints. For placement and assembly of Bar RD(#8), see "Section Thru Rail On Drilled Shafts" and "Bar RD(#8) Assembly Detail".
- ③ Increase 2" for structures with overlay.
- ④ Adjust bottom bars R(#6) as required to maintain 1 1/2" cover over slots.
- ⑤ Cut Bars S1(#5) as required to maintain 1" end cover over drain slot.



TERMINAL CONNECTION DETAILS



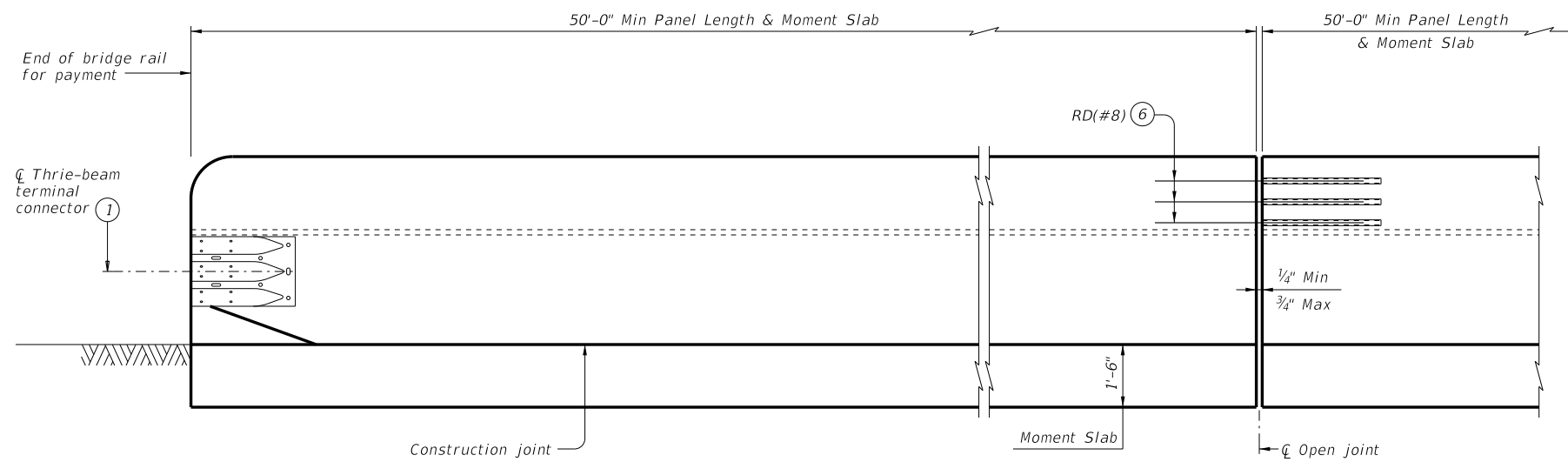
ELEVATION SHOWING RAIL REINFORCING ON DRILLED SHAFT FOUNDATIONS
(Drilled shaft reinforcing and RD(#8) bars not shown for clarity.)



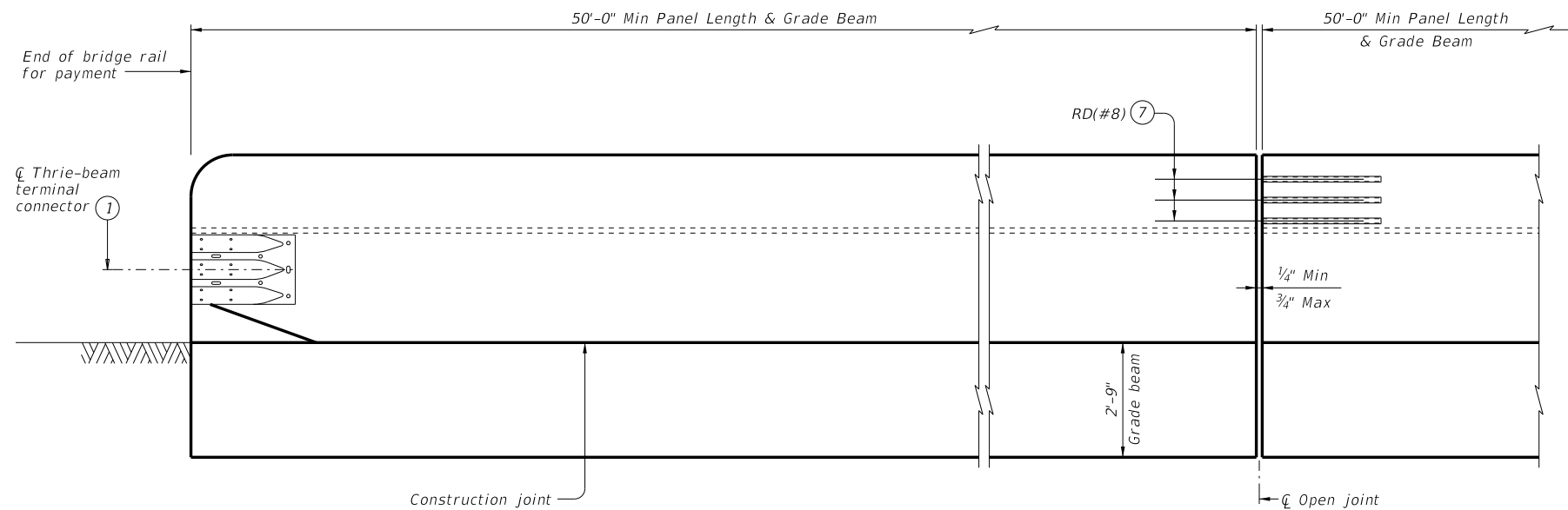
SHEET 1 OF 4

		Bridge Division Standard	
T80PP TRAFFIC RAIL AND TRAFFIC RAIL FOUNDATION FOR MASH TL-5 PIER PROTECTION			
T80PP-RF			
FILE: RL-T80PP-RF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR
©TxDOT July 2020	CONT	SECT	JOB
REVISIONS			HIGHWAY
	DIST	COUNTY	SHEET NO.

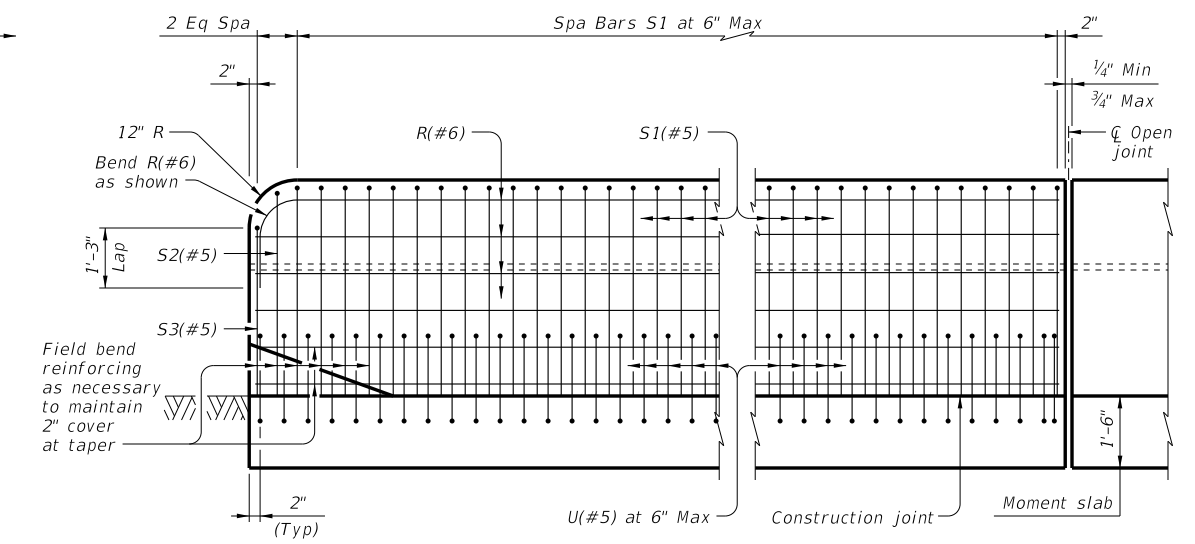
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ROADWAY ELEVATION OF RAIL ON MOMENT SLAB

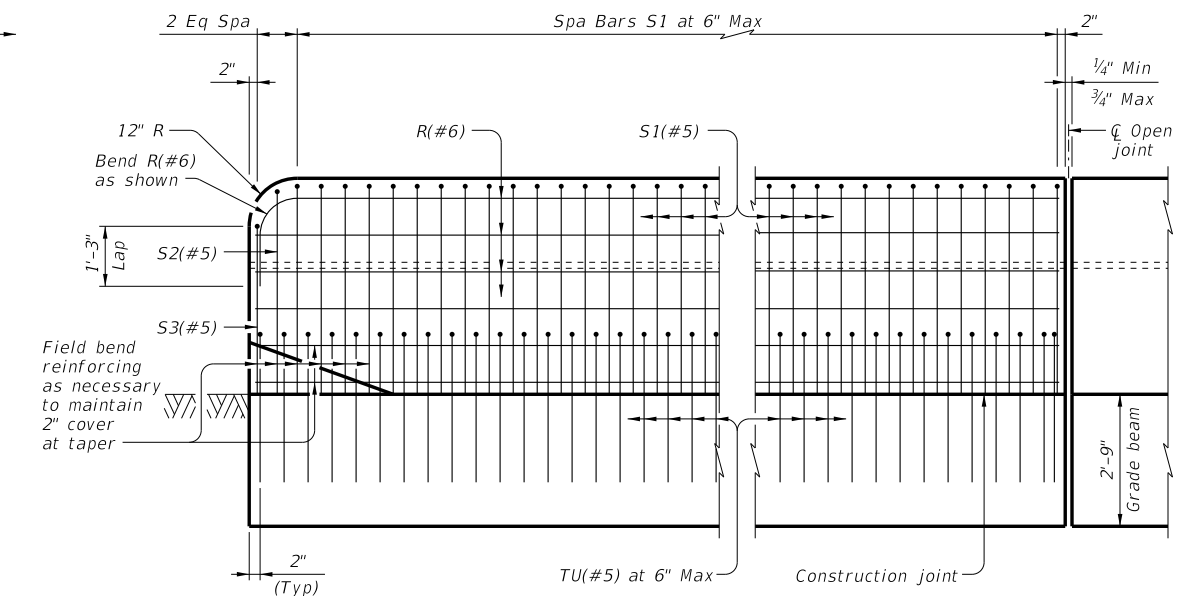


ROADWAY ELEVATION OF RAIL ON GRADE BEAM



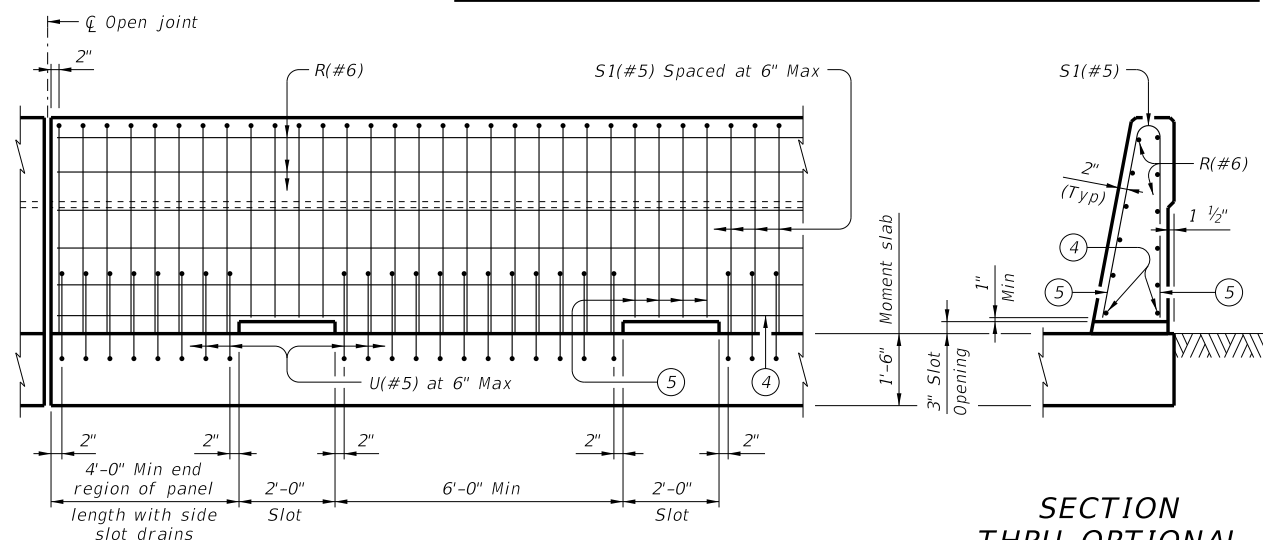
ELEVATION SHOWING RAIL REINFORCING ON MOMENT SLAB

(Moment slab reinforcing and Bars RD(#8) not shown for clarity.)



ELEVATION SHOWING RAIL REINFORCING ON GRADE BEAM

(Grade beam reinforcing and Bars RD(#8) not shown for clarity.)



SECTION THRU OPTIONAL SIDE SLOT DRAIN

OPTIONAL SIDE SLOT DRAIN DETAIL

Side slot drains may be used where shown elsewhere on the plans or as directed by the Engineer. (Showing T80PP rail on moment slab, rail on grade beam is similar. Moment slab reinforcing and RD(#8) bars are not shown for clarity.)

- 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.
- 4 Adjust bottom bars R(#6) as required to maintain 1 1/2" cover over slots.
- 5 Cut Bars S1(#5) as required to maintain 1" end cover over drain slot.
- 6 Located at rail joints. For placement and assembly of RD(#8) bar, see "Section Thru Rail On Moment Slab" and "Bar RD(#8) Assembly Detail".
- 7 Located at rail joints. For placement and assembly of RD(#8) bar, see "Section Thru Rail On Grade Beam" and "Bar RD(#8) Assembly Detail".

SHEET 2 OF 4



T80PP TRAFFIC RAIL AND TRAFFIC RAIL FOUNDATION FOR MASH TL-5 PIER PROTECTION

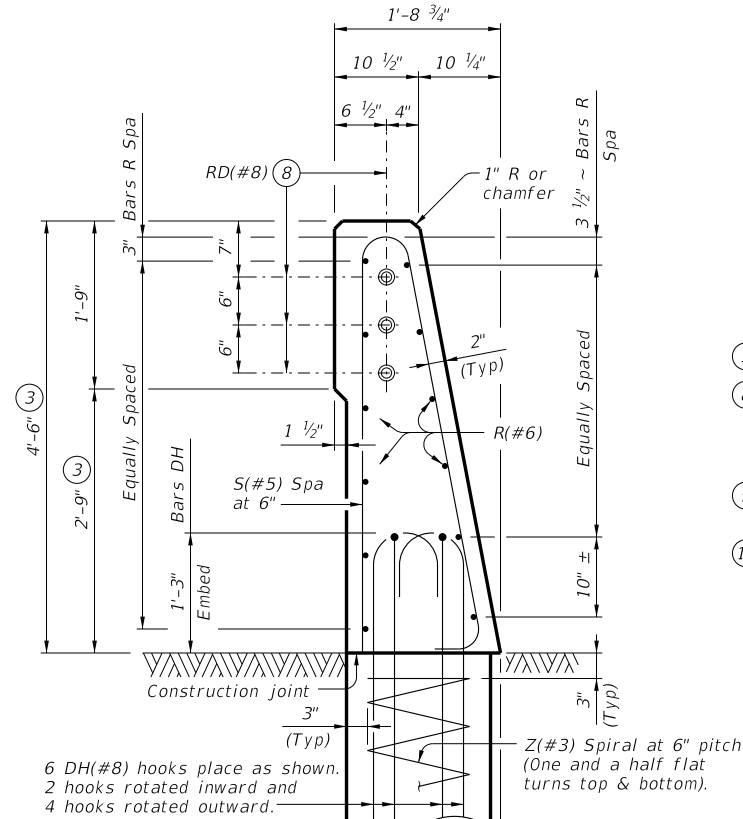
T80PP-RF

FILE: RL-T80PP-RF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR	CK: TAR
©TxDOT July 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE: FILE:

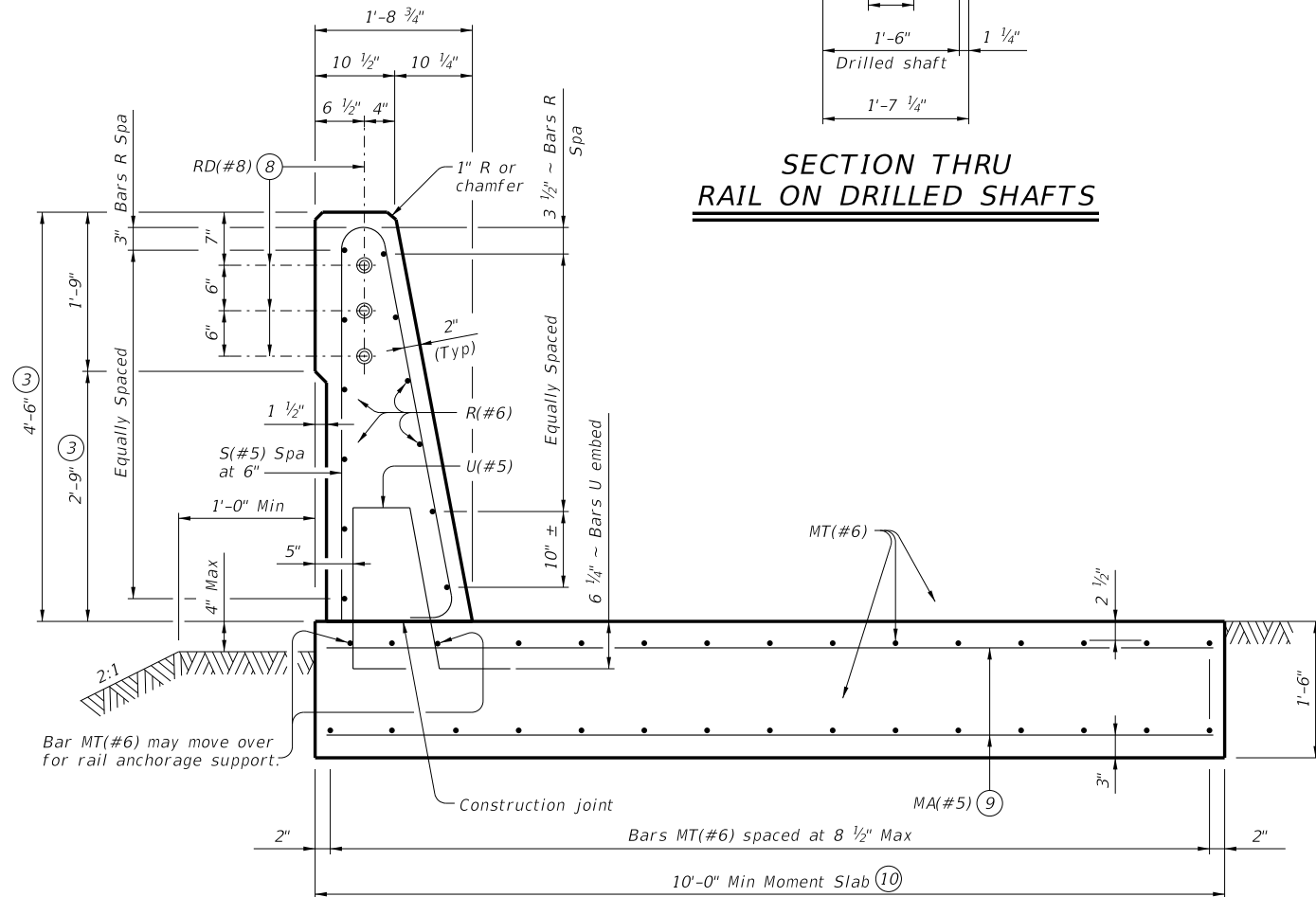
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DATE: FILE:

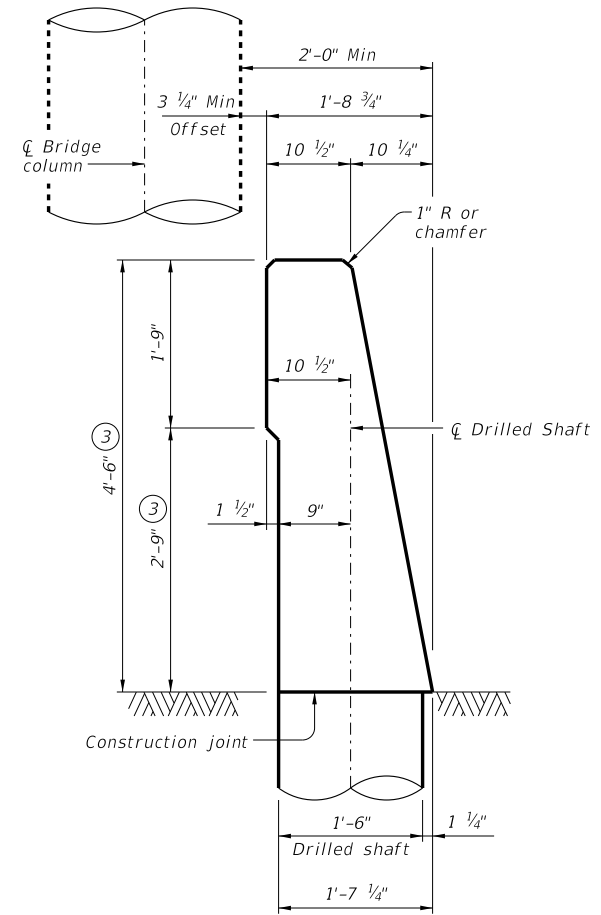


SECTION THRU RAIL ON DRILLED SHAFTS

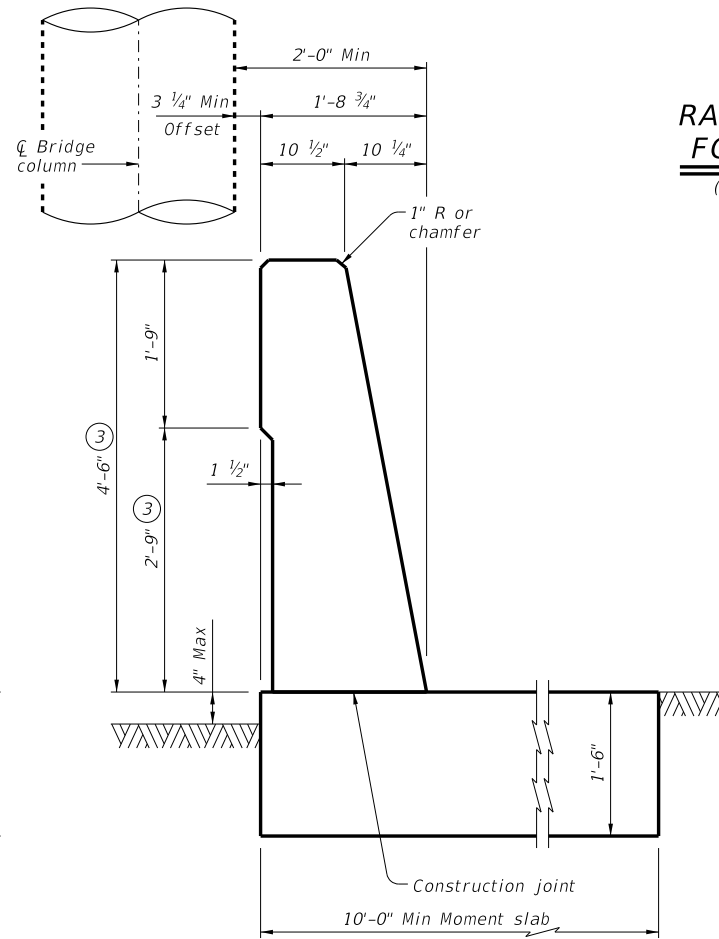
- ③ Increase 2" for structures with overlay.
- ⑧ 3 Bars RD(#8) placed as shown at each joint. Center Bar RD(#8) at joint locations with 1 1/4" PVC pipe Sch 80 sleeve on one side of joint. See "Bar RD(#8) Assembly Detail".
- ⑨ MA(#5) space longitudinally along moment slab at 12" Max (Spaced 2" longitudinally from outside edge of moment slab).
- ⑩ Approximate moment slab concrete = 0.56 CY/LF and reinforcement = 65.4 LB/LF.



SECTION THRU RAIL ON MOMENT SLAB



SECTION THRU RAIL ON DRILLED SHAFT FOR PIER PROTECTION
(Reinforcing not shown for clarity.)



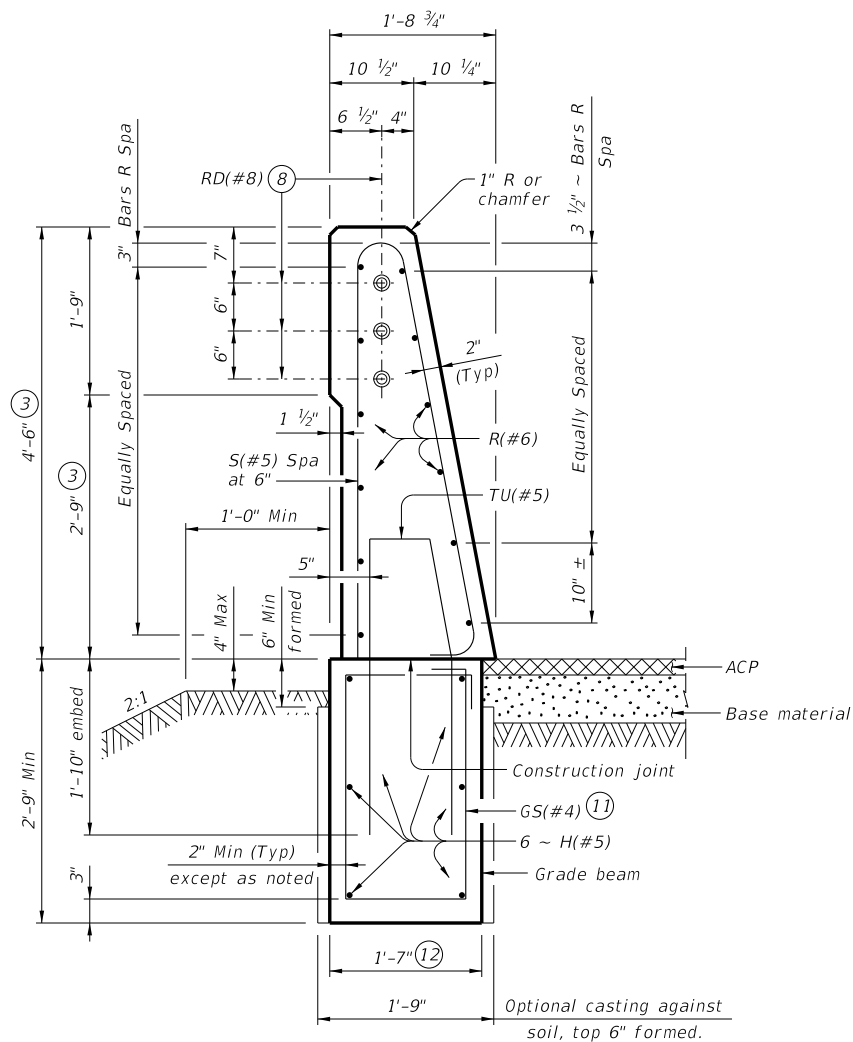
SECTION THRU RAIL ON MOMENT SLAB FOR PIER PROTECTION
(Reinforcing not shown for clarity.)

SHEET 3 OF 4

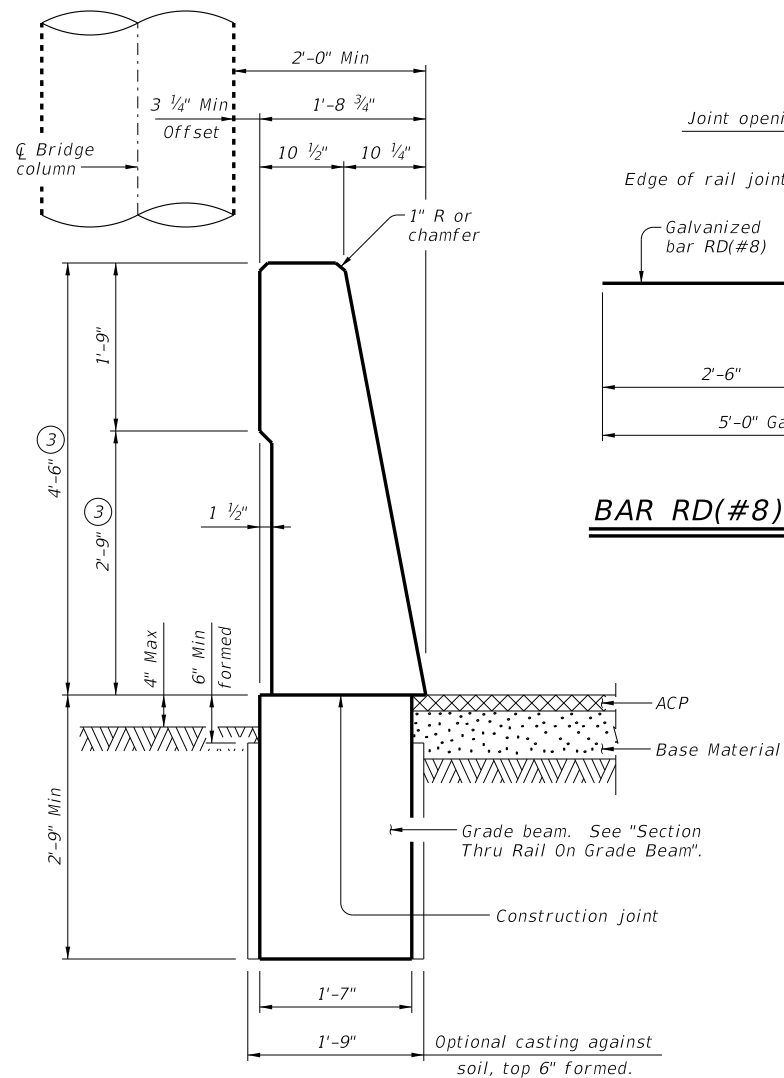
		Bridge Division Standard	
T80PP TRAFFIC RAIL AND TRAFFIC RAIL FOUNDATION FOR MASH TL-5 PIER PROTECTION			
T80PP-RF			
FILE: RL-T80PP-RF-20.dgn	DN: TxDOT	CK: TAR	DW: JTR
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REVISIONS	DIST		COUNTY
			SHEET NO.

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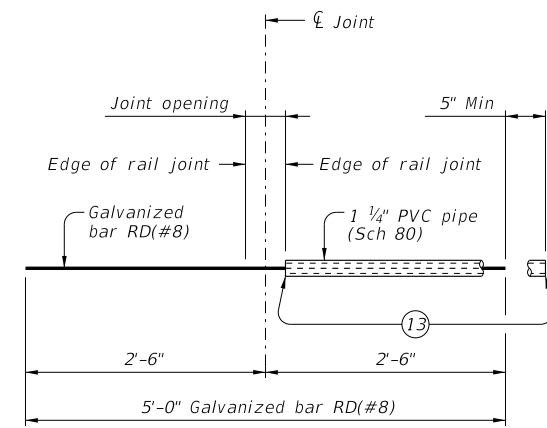
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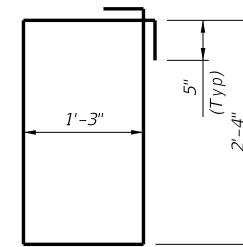
SECTION THRU RAIL ON GRADE BEAM



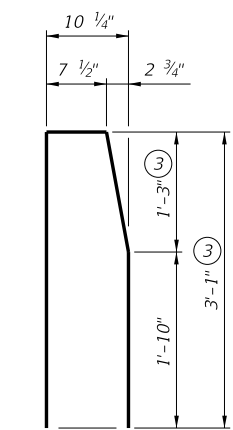
SECTION THRU RAIL ON GRADE BEAM FOR PIER PROTECTION
(Reinforcing not shown for clarity.)



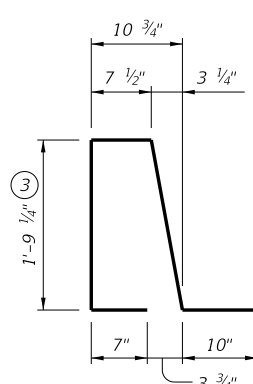
BAR RD(#8) ASSEMBLY DETAIL



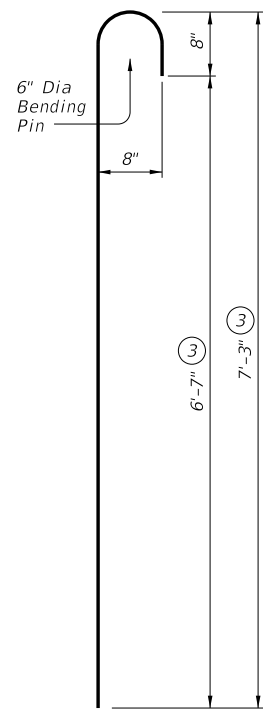
BARS GS(#4)



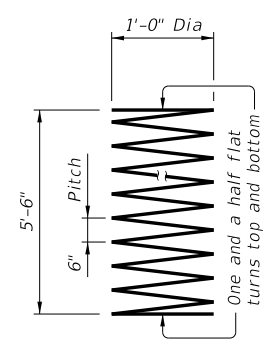
BARS TU(#5)



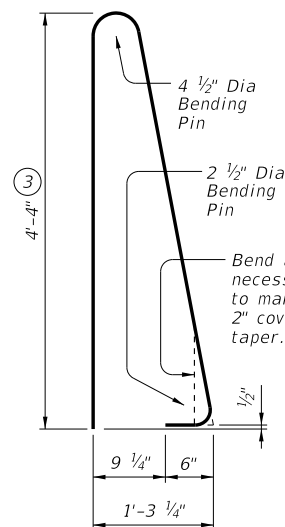
BARS U(#5)



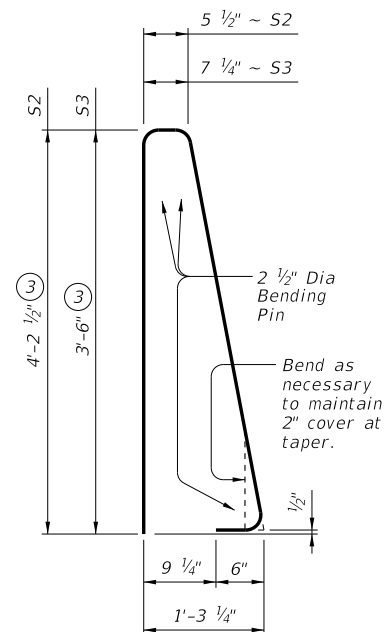
BARS DH(#8)



BARS Z(#3)



BARS SI(#5)



BARS S2-3(#5)

- ③ Increase 2" for structures with overlay.
- ⑧ 3 Bars RD(#8) placed as shown at each joint. Center RD(#8) bar at joint locations with 1 1/4" PVC pipe Sch 80 sleeve on one side of joint. See "Bar RD(#8) Assembly Detail".
- ⑪ GS(#4) space longitudinally along grade beam at 8" Max. (Spaced 2 1/2" longitudinally from outside edge of grade beam).
- ⑫ Approximate grade beam concrete = 0.16 CY/LF and reinforcement = 14.2 LB/LF.
- ⑬ Tape ends of 1 1/4" PVC Sch 80 to prevent concrete or mortar from seeping in.

CONSTRUCTION NOTES:

Align moment slab or grade beam open joints with rail open joints maintaining no less than the minimum rail length. Provide moment slab or grade beam with open joints at no greater than 105' spacing unless shown on the plans or approved by the Engineer. The back of railing must be vertical unless otherwise shown on the plans or approved by the Engineer.

MATERIAL NOTES:

Galvanize RD(#8) bar as shown. Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere. Provide Grade 60 reinforcing steel. Epoxy coat or galvanize all reinforcing steel if required elsewhere. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars GS(#4), H(#5), U(#5) and TU(#5) unless noted otherwise. Provide the same laps as required for reinforcing bars. Provide bar laps, where required, as follows:
 Uncoated or galvanized ~ #5 = 2'-4"
 Epoxy coated ~ #5 = 3'-6"
 Uncoated or galvanized ~ #6 = 2'-5"
 Epoxy coated ~ #6 = 3'-7"

GENERAL NOTES:

This rail has been successfully evaluated by full-scale crash test 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. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less. The foundation design resistance is based on the current AASHTO bridge railing requirements with the assumption of fair to good soil support conditions. Poor soil conditions will require suitably deeper and/or wider foundations. This detail is intended for use as a guide to unusual railing anchorage situations but may be included in the plans, modified as necessary to apply to specific installations required on the project. Payment for drilled shafts, moment slab and grade beam will be by Class "C" concrete or Class "C" (HPC) concrete for rail foundation. Payment for railing will be as per Item 450, "Railing" (Ty T80PP). Excavation will be subsidiary to other Items. See elsewhere in the plans for foundation type. Shop drawings are not required for this rail. Average weight of railing without rail foundation and no overlay is 828 p/f.

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

		Bridge Division Standard	
T80PP TRAFFIC RAIL AND TRAFFIC RAIL FOUNDATION FOR MASH TL-5 PIER PROTECTION			
T80PP-RF			
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	DIST	COUNTY	SHEET NO.