

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-84923	2011	8	63

Design Parameters				
Design Speed (mph)	Flare Rate (a:b)	Radius (R)	Flare Rate (2a:b)	Radius (R)
70	15:1	375.55'	30:1	375.14'
60	14:1	350.59'	26:1	325.16'
55	12:1	300.69'	24:1	300.17'
50	11:1	275.76'	21:1	262.70'
45	10:1	250.83'	18:1	225.23'
40	8:1	201.04'	16:1	200.26'

GENERAL NOTES

Guardrail posts attached to the top of a concrete culvert are steel posts only. Use wood or steel posts for the remaining posts except where a specific material is required for features shown on other standard drawings such as end terminals or guardrail at intersecting roadways.

Drill or form holes in culvert top slab as approved by the Engineer. When holes are drilled be careful to avoid excess breakage of the concrete around the hole.

See Standard Drawings RD611 for guardrail post and blockout details.

Use Standard W-Beam guardrail throughout.

Guardrail contractor will furnish and install the attachment assembly to the culvert. The installation and attachment assembly are subsidiary to the bid item "Steel Plate Guardrail".

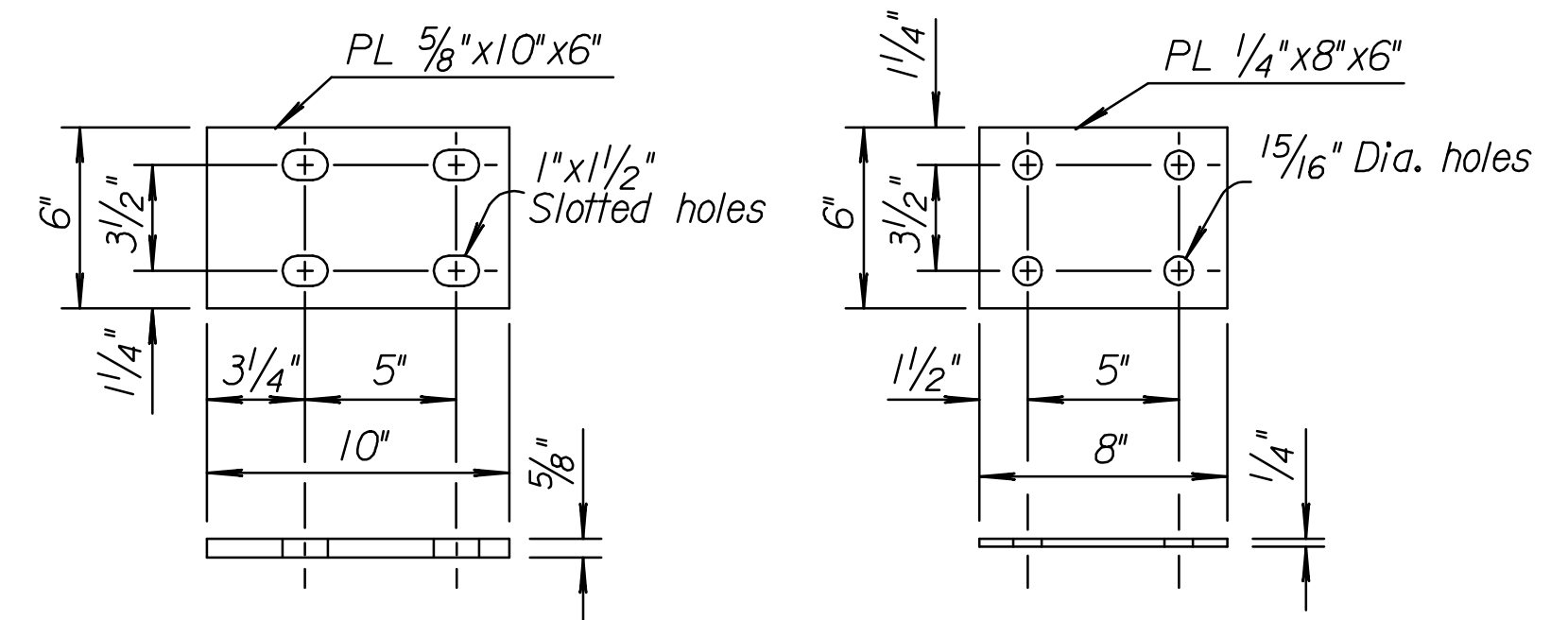
Fabricate posts and steel plates from steel meeting the requirements of the standard specifications.

Galvanize all steel parts after fabrication, see standard specifications.

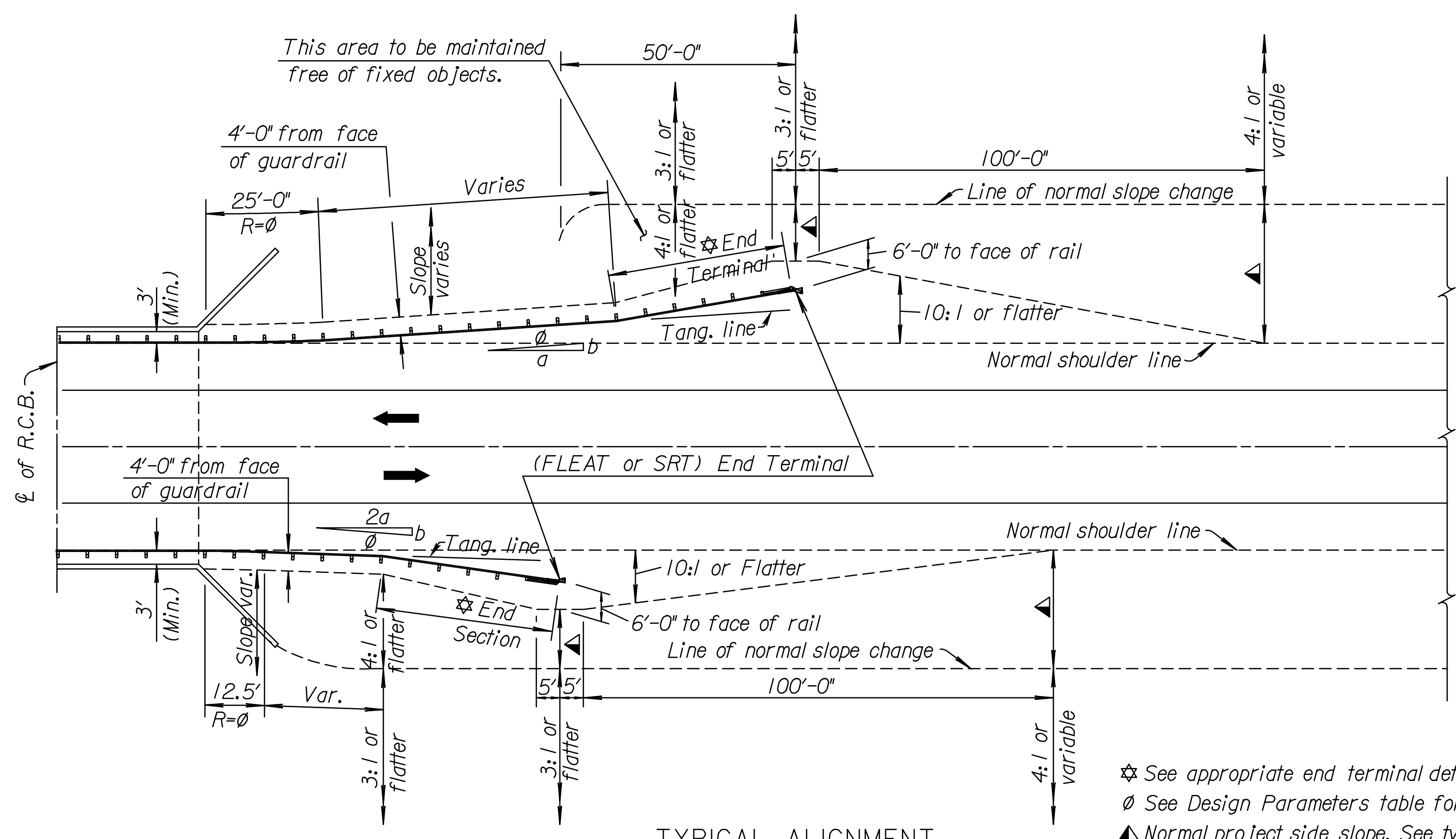
Shop weld guardrail post connection to base plate, see standard specifications.

Locate guardrail post to concrete culvert connections symmetrical about center line of the culvert.

Note: Flare rate of a:b and curve length of 25'-0" shall be used when guardrail is beyond shy line. Flare rate of 2 a:b and curve length of 12'-6" shall be used when guardrail is located inside the shy line.

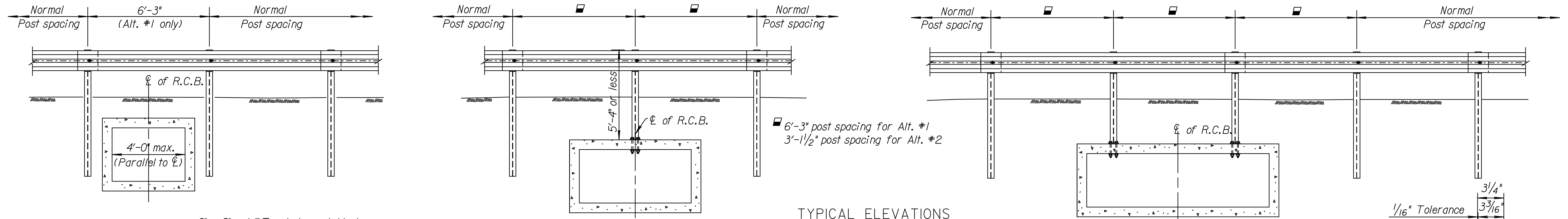


DETAIL OF BASE PLATE
DETAIL OF STEEL PLATE
PLATE DETAILS FOR ATTACHMENT ASSEMBLY



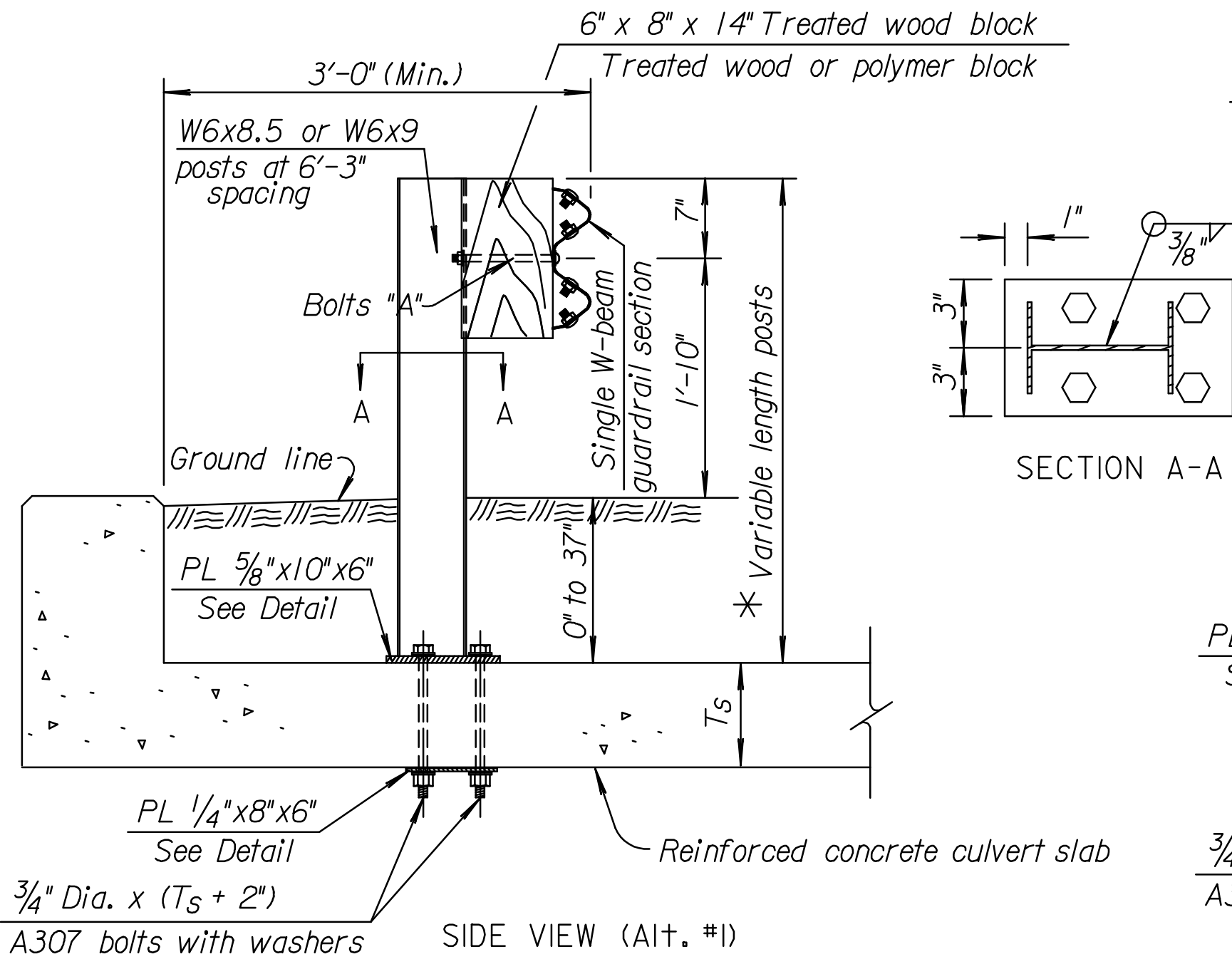
TYPICAL ALIGNMENT

☆ See appropriate end terminal details.
∅ See Design Parameters table for radius and flare rate.
▲ Normal project side slope. See typical sections.

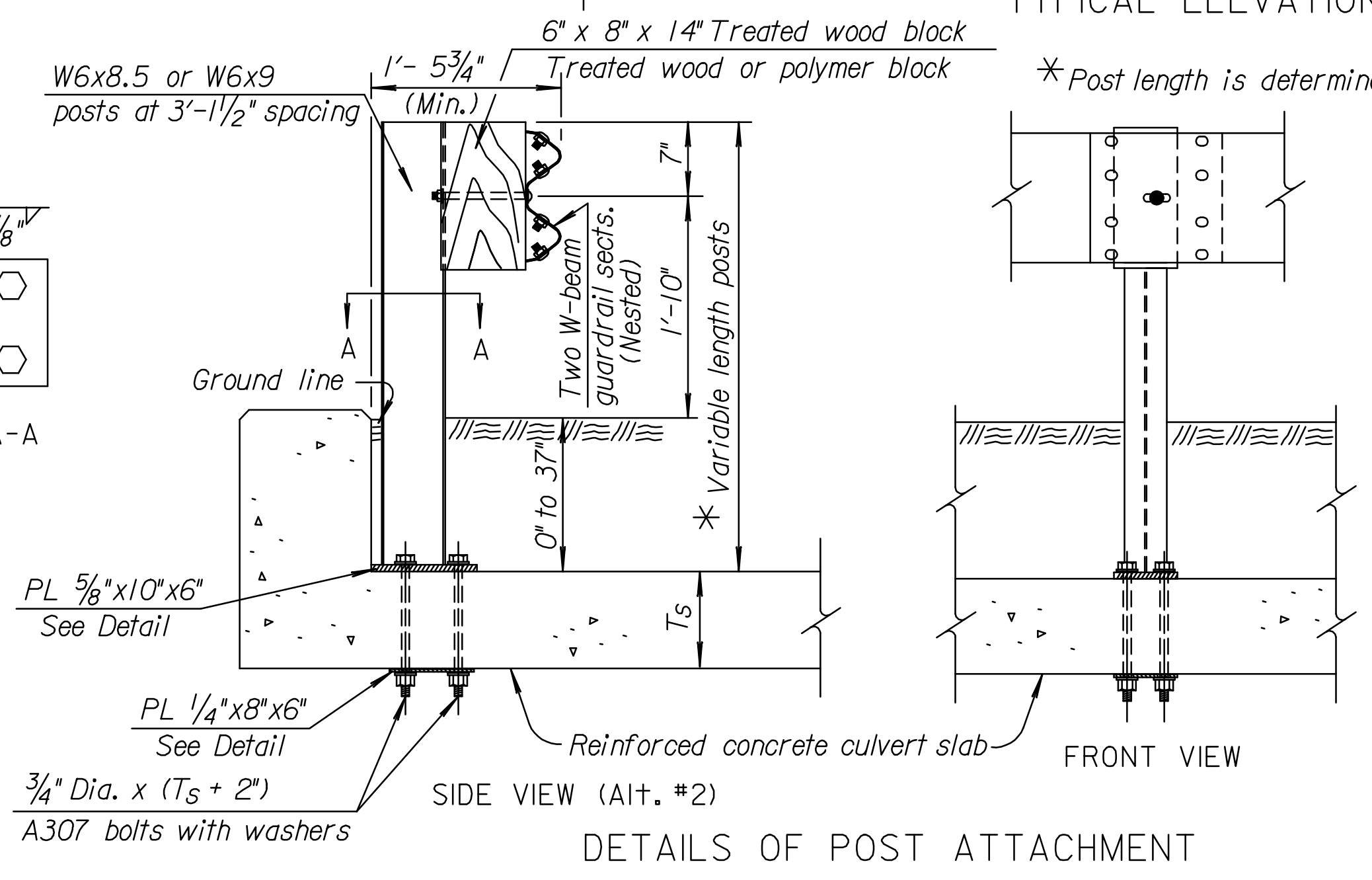


TYPICAL ELEVATIONS

6'-3" post spacing for Alt. #1
3'-1/2" post spacing for Alt. #2



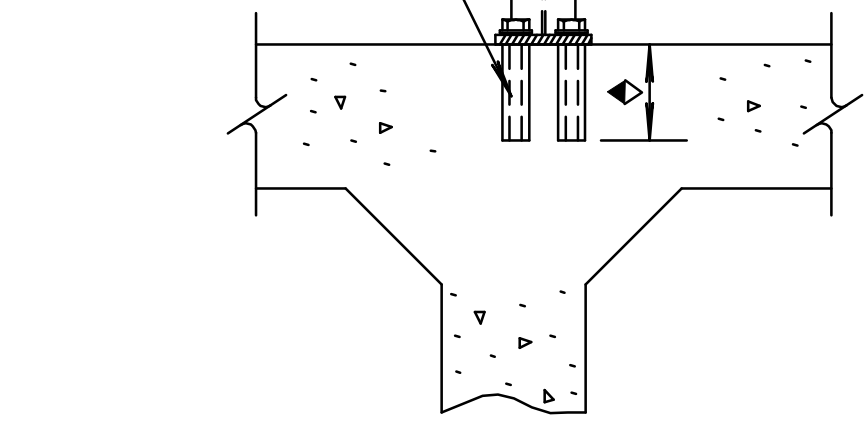
SECTION A-A



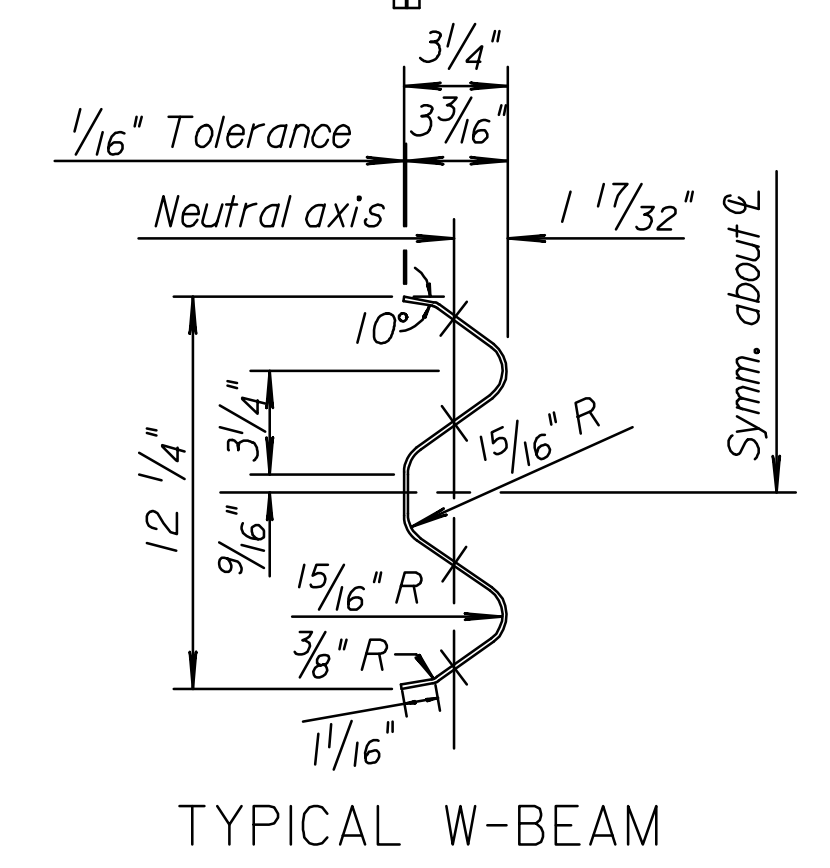
DETAILS OF POST ATTACHMENT

* Post length is determined by the Engineer in the field during installation.

3/4" Dia. A36 Threaded Rod to be grouted with an approved epoxy or polyester resin in accordance with standard specifications.



ALTERNATE POST ATTACHMENT
(This attachment to be used only when bolting through the top slab is not practical.)



TYPICAL W-BEAM

NO.	DATE	REVISIONS	BY	APP'D
5	12-14-10	Rev. notes, 28' rail height	S.W.K.	J.O.B.
4	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
3	2-4-04	Add polymer blockout, end terminal	S.W.K.	J.O.B.
2	5-11-00	Added post hole punching alternate	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

ALIGNMENT (FLARED) & DETAILS FOR GUARDRAIL PROTECTION ON LOW FILL CULVERTS

RD617A

DESIGNED	I-11-11	APP'D.	James O. Brewer
DESIGN CK.	DETAIL CK.	QUANTITIES	TRACED Bowser
		QUAN. CK.	TRACE CK. Seitz

Notes to Designer: Guardrail length of need shall be determined in accordance with the AASHTO Roadside Design Guide. L₁ for the length of need calculation on the flared typical alignment shown shall be measured to the P.I. of the curve. Under certain conditions, the designer may reduce the length of the flare section to include only the end terminal. This sheet shall be used when the flared guardrail design (FLEAT or SRT) is selected. Material for asphalt widening shall be included in the plan quantities.

Drawn By: cp
Plotted: 26-JUL-2011 11:42
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