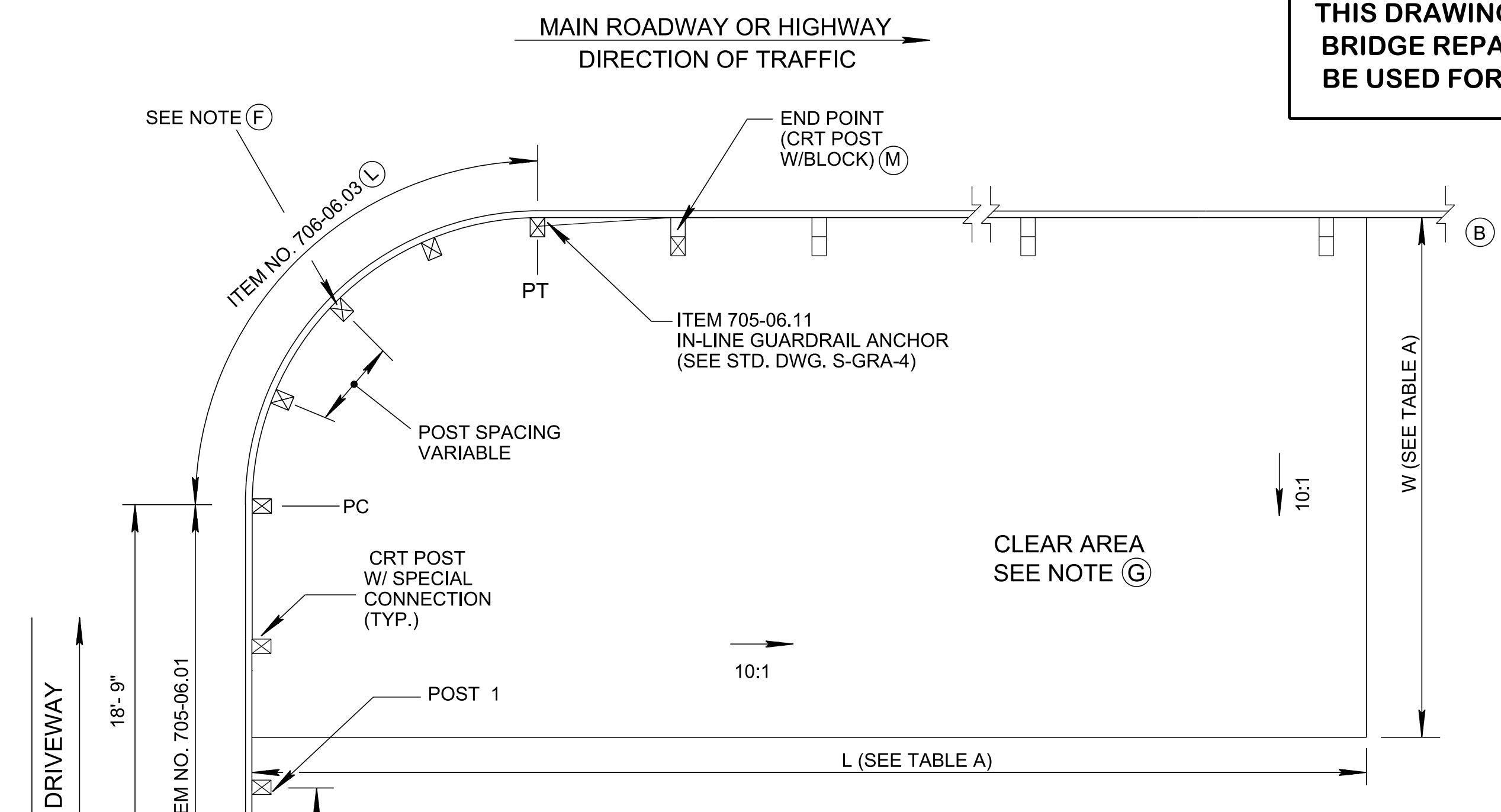


4/18/2023 9:22:43 AM P:\StandDraw\DESIGN STANDARDS\Standards Drawings\Standard Roadway Drawings - CURRENT\In Progress\10-106.00 Safety Design and Guardrails IP\106.10 Guardrail Maintenance IP\REVISED IB 23

THIS DRAWING IS TO BE USED FOR RESURFACING, MAINTENANCE, AND BRIDGE REPAIR PROJECTS ONLY, THIS DRAWING IS NOT INTENDED TO BE USED FOR NEW CONSTRUCTION OR RECONSTRUCTION PROJECTS.



**PLAN VIEW
(15' RADIUS SHOWN, TYPICAL DRIVEWAY ENTRANCE)**

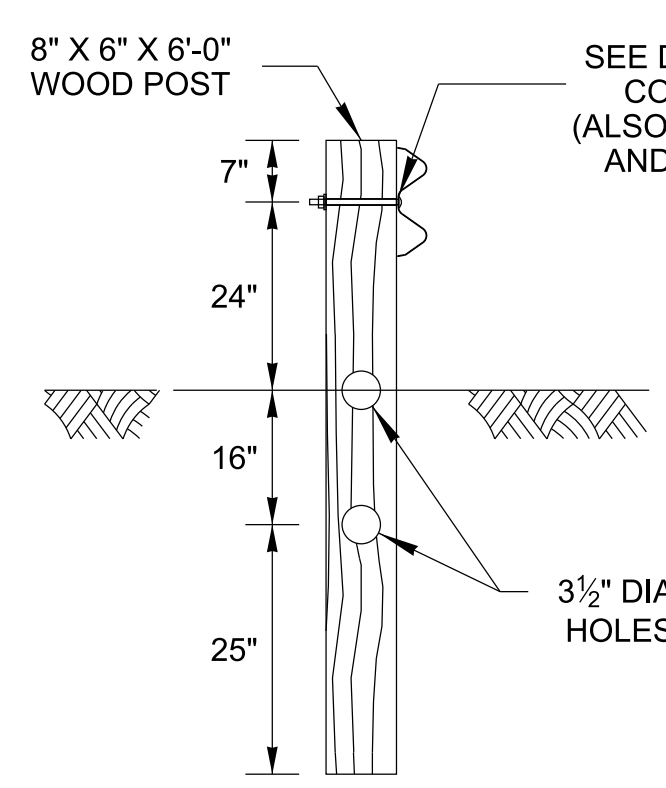
**TABLE A
POST AND CLEAR AREA REQUIREMENTS**

GUARDRAIL RADIUS	NUMBER OF CRT POSTS	CLEAR AREA	
		L	W
(F) 15'	9	30'	15'
20'	10	30'	15'
40'	15	50'	20'
50'	18	70'	35'

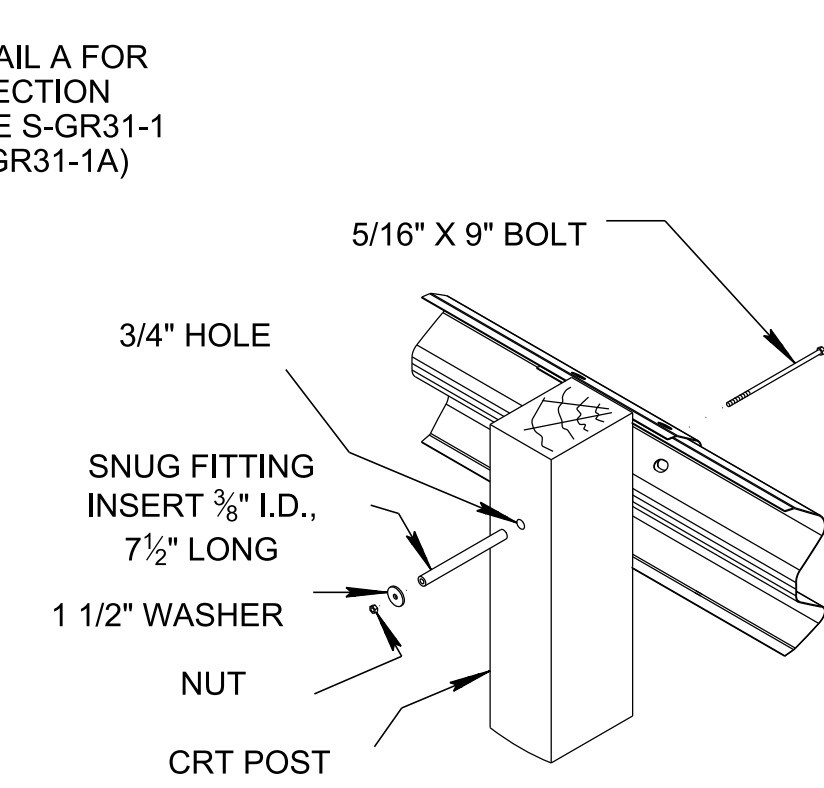
**TABLE B
ESTIMATED QUANTITIES FROM BEGINNING POINT TO END POINT**

RADIUS	705-06.01	705-06.11
(F) 15'	51'-8"	1 *
20'	59'-6 1/2"	1 *
40'	90'-11 1/2"	1 *
50'	106'-8"	1 *

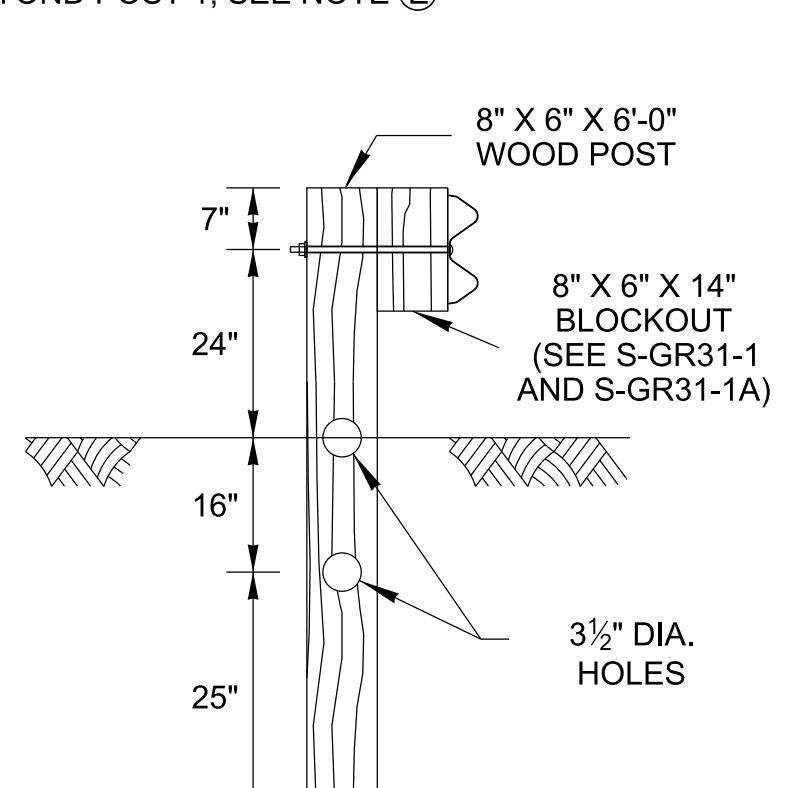
* IF GUARDRAIL CONTINUES BEYOND POST 1, SEE NOTE (E)



TYPICAL CRT POST DETAIL



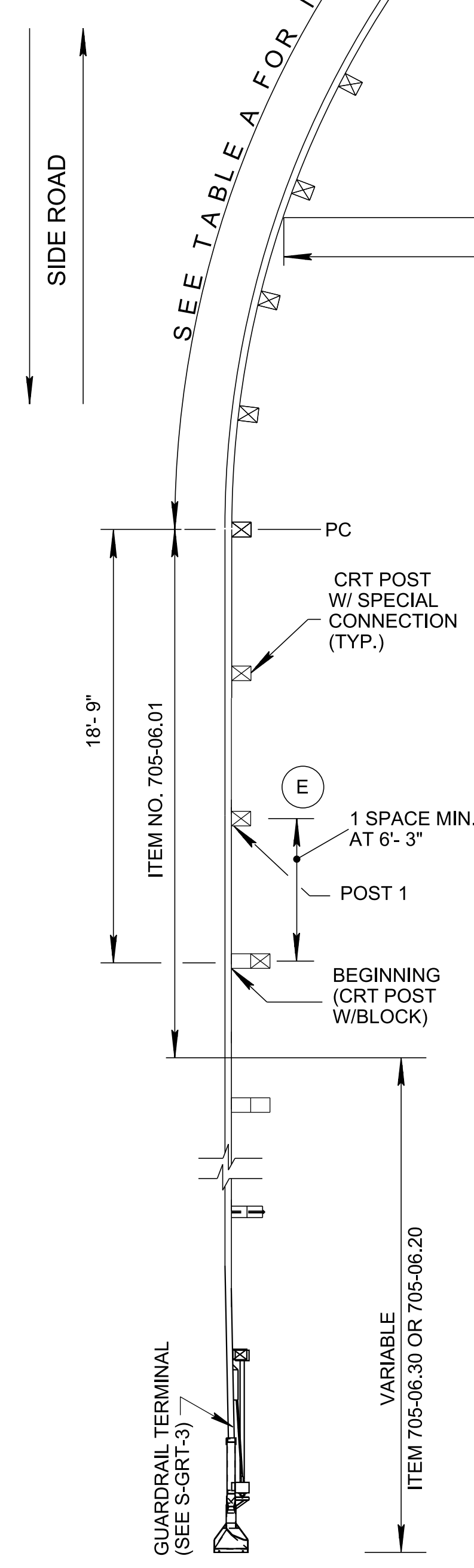
**DETAIL A
SPECIAL CONNECTION DETAIL**



CRT POST WITH BLOCK DETAIL

SPECIAL CRT POST NOTES

- 1 FEWER CRT POSTS ARE REQUIRED FOR SMALLER RADII. ATTACH GUARDRAIL TO POST WITH A 5/16" X 9" LONG BOLT, A 3/8" X 7 1/2" SNUG FITTING INSERT AND A 1 1/2" WASHER WITH NUT ON BACK OF POST.
- 2 THE FLAT WASHER IS USED UNDER THE NUT, BEHIND THE POST ONLY. NO WASHER IS USED AT THE RAIL.



**PLAN VIEW
(50' RADIUS SHOWN, OTHERS SIMILAR)**

NOTE TO DESIGNER

THIS STANDARD TO BE USED ON ROADWAYS ON THE NATIONAL HIGHWAY SYSTEM. FOR NON NATIONAL HIGHWAY SYSTEM FACILITIES, USE S-GRA-4.

GENERAL NOTES

- (A) THIS STANDARD DRAWING IS TO BE USED WHEN THE LENGTH OF NEED EXTENDS TO OR BEYOND AN INTERSECTION. DESIGNER IS TO VERIFY THAT THE ENTIRE LENGTH CAN BE CONSTRUCTED WITHIN THE PROPOSED RIGHT-OF-WAY. FOR INSTALLATION WHERE GUARDRAIL RADIUS IS NOT INCLUDED IN TABLE A, ROUND UP. FOR INSTALLATION WHERE GUARDRAIL RADIUS IS LARGER THAN 35 FEET, USE STANDARD INSTALLATION PER S-GR31-1.
- (B) IF CONNECTING TO BRIDGE RAIL OR OTHER CONCRETE BARRIER, SEE S-GRC SERIES FOR MINIMUM LENGTH OF TRANSITION SECTION BETWEEN GUARDRAIL AND RIGID WALL.
- (C) THE FORESLOPE FROM THE EDGE OF THE SHOULDER INTO THE FACE OF GUARDRAIL SHOULD NOT BE STEEPER THAN 10(H):1(V).
- (D) SEE S-GR31-1 AND S-GR31-1A FOR POSTS, RAIL, AND HARDWARE STANDARDS FOR CONSTRUCTION.
- (E) USE APPROPRIATE END TERMINAL PER STANDARD DRAWINGS:
FOR SIDE ROADS > 45 MPH, USE S-GRT-2
FOR SIDE ROADS < 45 MPH, USE S-GRT-3
FOR DRIVES, USE S-GRA-3
- (F) DO NOT CONNECT RAIL TO CENTER POST IN CURVE FOR 8'-6" RADIUS DESIGN.
- (G) THE CLEAR AREA BEHIND THE GUARDRAIL SHALL REMAIN UNOBSTRUCTED AND UNENCUMBERED TO ALLOW THE GUARDRAIL TO FUNCTION PROPERLY. OBSTACLES (I.E., ENDWALLS, SIGNS, DITCHES, ETC.) WITHIN THIS AREA MUST BE REMOVED, RELOCATED, OR REDESIGNED.
- (H) W-BEAMS SHALL BE SHOP BENT AS REQUIRED.
- (I) TO DETERMINE IF A ROAD IS ON THE NATIONAL HIGHWAY SYSTEM, CONSULT THE FUNCTIONAL CLASSIFICATION MAPS MAINTAINED BY THE TDOT LONG RANGE PLANNING DIVISION. SEE TDOT LONG RANGE PLANNING WEBSITE.
- (J) THE CURVED GUARDRAIL INSTALLATION SHOWN ON THIS STANDARD DRAWING HAS BEEN EVALUATED PER NCHRP 350 TL-2.
- (K) PAYMENT FOR TYPICAL INSTALLATION WILL BE UNDER ITEM NUMBERS:
705-06.01 W BEAM GR (TYPE 2) MASH TL3 PER L. F.
705-06.10 GR TERMINAL TRAILING END (TYPE 13) MASH TL3 PER EACH
705-06.11 GR TERMINAL (IN-LINE) MASH TL3 PER EACH
705-06.20 TANGENT ENERGY ABSORBING TERM MASH TL-3 PER EACH
705-06.30 GR TERMINAL (TYPE 21) MASH TL2 PER EACH
- (L) FOR RADIUS LESS THAN OR EQUAL TO 150', USE SHOP BENT W-BEAM ITEM NO. 706-06.03 INSTEAD OF ITEM NO. 705-06.01.
- (M) FOR PLACEMENT WITH GUARDRAIL CONNECTION TO BRIDGE ENDS OR BARRIER WALL THIS POST MAY BE USED AS THE LAST POST.

(Replaced Std Dwg S-PL-2)

**STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION**

**SAFETY PLAN
AT SIDEROADS
OR
PRIVATE DRIVES**