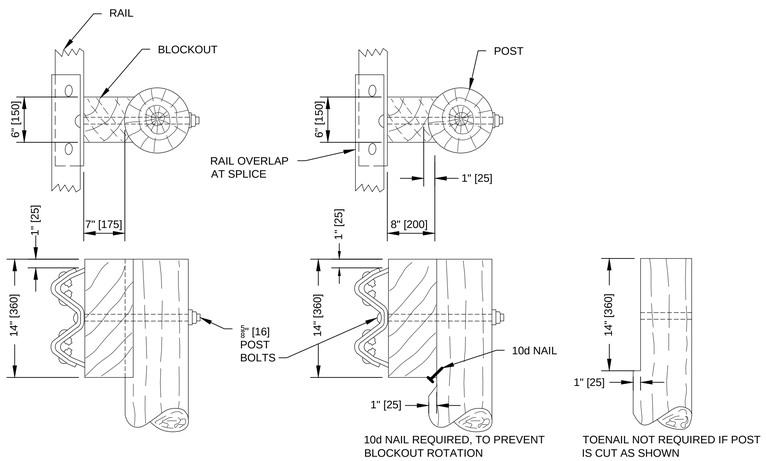


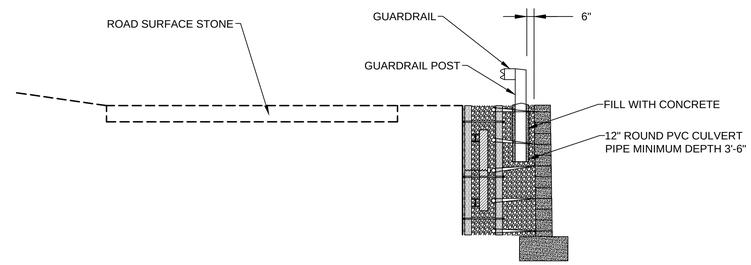
METHOD 1
ROUTED BLOCKOUT

METHOD 2
NOTCHED POST

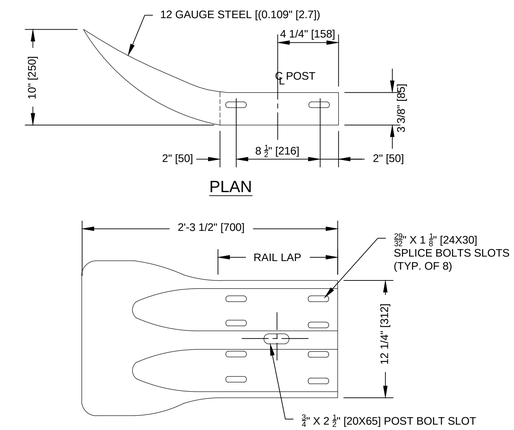
ALTERNATE METHODS OF PLACING THE BLOCKOUTS ON ROUND POSTS MAY BE SUBMITTED FOR CONSIDERATION AND APPROVED BY THE ENGINEER.

ROUND WOOD POSTS

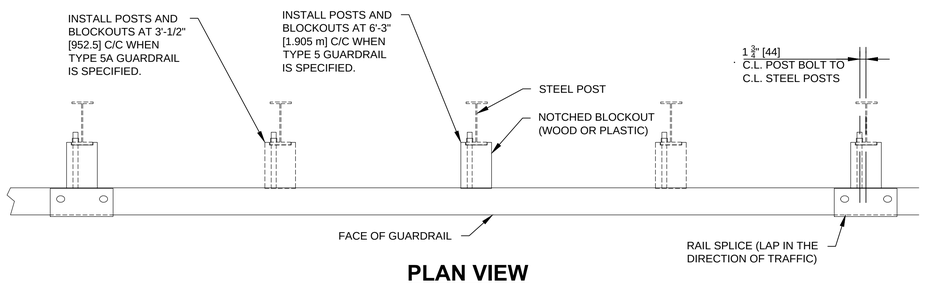
SINGLE SIDED RUNS ONLY (STANDARD DESIGN)



GUARDRAIL DETAIL

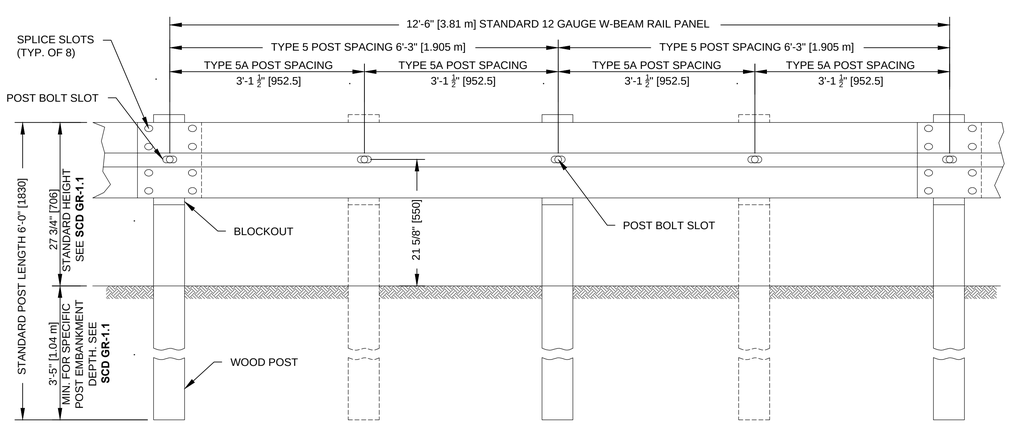


W-BEAM FLARED END SECTION



PLAN VIEW

(STEEL POSTS SHOWN)



ELEVATION

(WOOD POSTS SHOWN)

NOTES

RAIL: USE W-BEAM RAIL MEETING AASHTO M 180 TYPE II CLASS A, AS SPECIFIED IN CMS 606.

POSTS: POSTS MAY BE CONSTRUCTED OF WOOD OR STEEL . WOOD POSTS MAY BE ROUND OR 6" X 8" [150X200] SQUARE-SAWED.

USE ROUND WOOD POSTS ON RUNS OF SINGLE-SIDED RAIL. THE ROUND POSTS SHALL BE 8" +/-1 [200+/-25] IN DIAMETER AT THE TOP AND NOT MORE THAN 3" [75] LARGER AT THE BUTT WITH A UNIFORM TAPER.

FABRICATE WOOD POSTS WITH SQUARE ENDS. POSTS SHALL BE PRESSURE-TREATED AS PER CMS 710.14. BORE BOLT HOLES AND, IF REQUIRED, TRIM THE TOPS OF POSTS AFTER THE POSTS ARE SET.

STEEL POSTS ARE TO BE W6X9 [W150X13.5] OR W6X8.5 [W150X12.8] GALVANIZED STEEL. USE THE SAME TYPE OF POST THROUGHOUT THE LENGTH OF THE PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS OR PERMITTED BY THE ENGINEER.

ALL POSTS ARE 6'-0" [1830] LONG UNLESS SPECIFIED OTHERWISE IN THE CONTRACT DOCUMENT. POSTS MAY BE SET IN DRILLED HOLES OR MAY BE DRIVEN TO GRADE.

WELDED BEAM POSTS: WELDED BEAM GUARDRAIL POSTS MAY BE USED FOR ITEM 606, GUARDRAIL, PROVIDED THE WEB AND FLANGE SIZES ARE AS SHOWN HERE. WELDING OF THE WEB TO THE FLANGES MUST COMPLY WITH ASTM A 769, CLASS I, USING GRADE 36 STEEL [250 MPa YIELD POINT] WITH THE FOLLOWING EXCEPTIONS:

- SEC. 7.2 TEST REPORTS OF TENSILE PROPERTIES FOR EACH LOT SHALL ACCOMPANY EACH SHIPMENT.
- SEC. 12 BEAMS THAT HAVE IMPERFECTIONS REPAIRED BY WELDING SHALL NOT BE ACCEPTED FOR USE IN ITEM 606.
- SEC. 13 RANDOM SAMPLES SHALL BE TESTED BY THE DEPARTMENT FROM MATERIALS DELIVERED TO THE PROJECT SITE OR OTHER LOCATIONS DESIGNATED BY THE LABORATORY.

ALTERNATE POSTS: ENGINEERED GUARDRAIL POSTS HAVING MET NCHRP 350 CRITERIA, AND LISTED ON THE **OFFICE OF MATERIALS MANAGEMENT'S** APPROVED LIST ARE PERMITTED AS AN EQUAL ALTERNATE WHEN INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND WITHIN THE LIMITATIONS SHOWN ON THE APPROVED LIST.

BLOCKOUTS: BLOCKOUT DIMENSIONS ARE DEPENDENT ON POST USED. WOOD BLOCKOUTS ARE TO BE PRESSURE TREATED AS SPECIFIED IN CMS 710.14. BORE BOLT HOLES. APPROVED ALTERNATE BLOCKOUTS MAY BE USED IN LIEU OF THE WOOD BLOCKOUTS SHOWN. THE APPROVED LIST IS MAINTAINED BY THE **OFFICE OF MATERIALS MANAGEMENT.**

WASHERS: INSTALL APPROPRIATE SIZED STANDARD GALVANIZED STEEL WASHERS ON THE NUT SIDE OF BOLTS INSTALLED ON WOOD POSTS.

DELINEATION: FOR BARRIER REFLECTORS, SEE CMS 626.

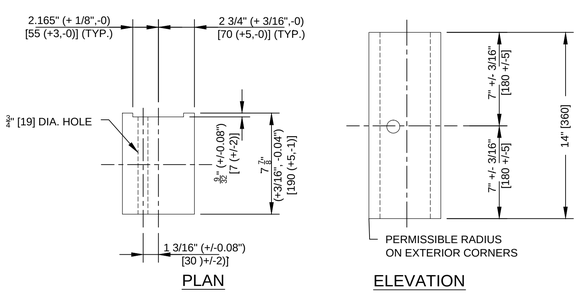
MISCELLANEOUS: FOR OTHER GUARDRAIL DETAILS, SEE **SCD GR-1.1.**

STEEL BEAM POSTS (ENGLISH)

SIZE	BEAM DEPTH	FLANGE WIDTH	FLANGE THINKNESS	WEB THINKNESS
ROLLED W6x8.5	5.8"	3.94"	0.193"	0.170"
ROLLED W6x9	5.9"	3.94"	0.215"	0.170"
WELDED 6x8.5	6.0"	3.94"	0.193"	0.170"
WELDED 6x9	6.0"	3.94"	0.215"	0.170"

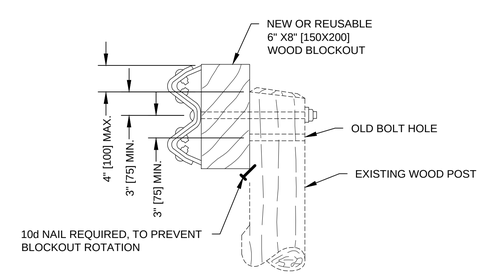
STEEL BEAM POSTS (METRIC)

SIZE	BEAM DEPTH	FLANGE WIDTH	FLANGE THINKNESS	WEB THINKNESS
ROLLED W150X12.6	148 mm	100 mm	4.9 mm	4.3 mm
ROLLED W150X13.5	150 mm	100 mm	5.5 mm	4.3 mm
WELDED150X12.6	152 mm	100 mm	4.9 mm	4.3 mm
WELDED150X13.5	152 mm	100 mm	5.5 mm	4.3 mm



NOTCHED BLOCKOUTS FOR STEEL POSTS

SEE BLOCKOUTS NOTE ON THIS SHEET



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

No.	Revision/Issue	Date
2		
1		

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Region 9
EASTERN REGION

Project Name
FS-132
PINE CREEK ROAD
LANDSLIDE REPAIR
IRONTON RANGER DISTRICT

Drawing Title
GUARDRAIL DETAILS - SITE #2

Drawn: DWS
Project
Design: TCW
Checked: TCW
Drawing No.
CAD File No. Pine_Creek_Road_Plan.dwg
Date: APRIL 25, 2012
Scale: PLOT ARCH SIZE "D"
Sheet 17 of 18