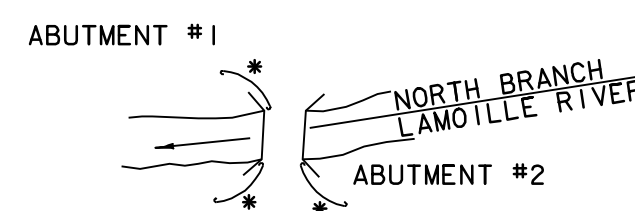
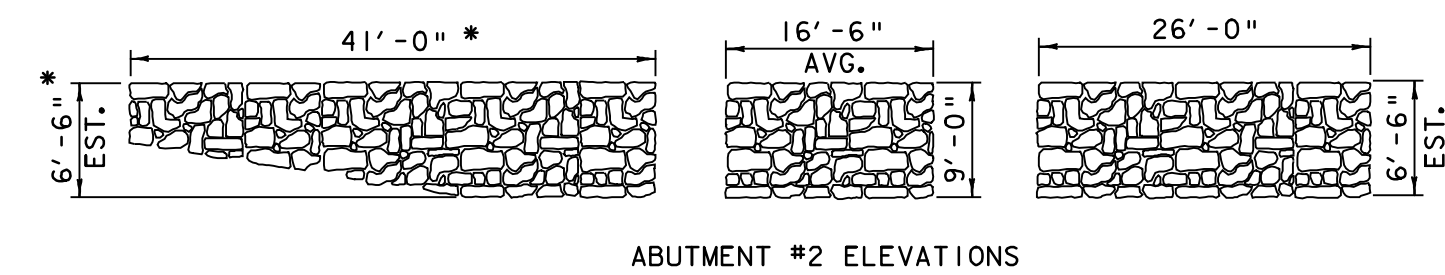


RAILING PLAN
N. T. S.



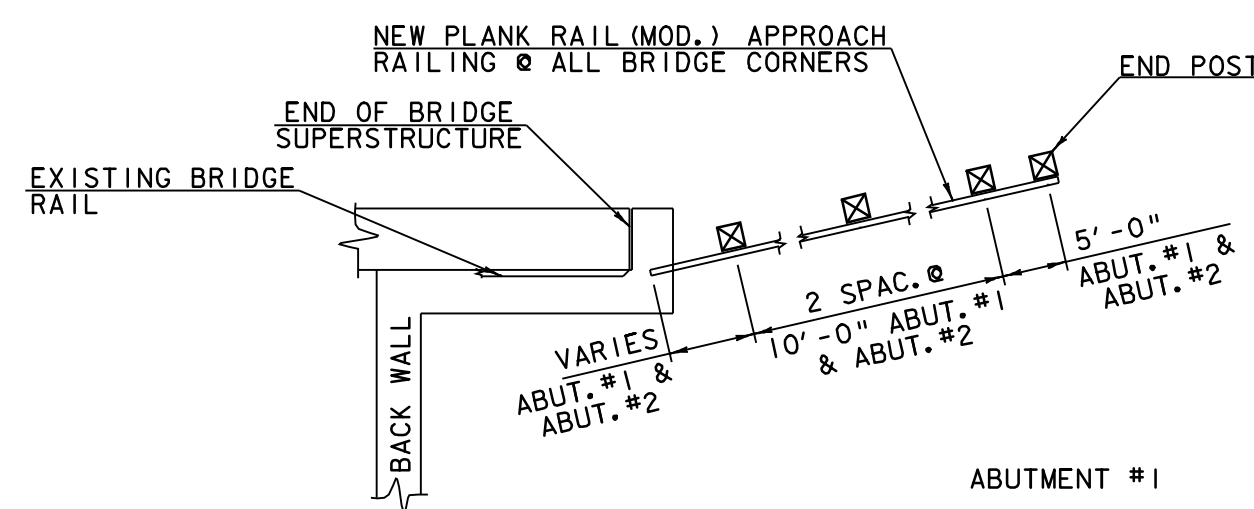
SCHEMATIC PLAN



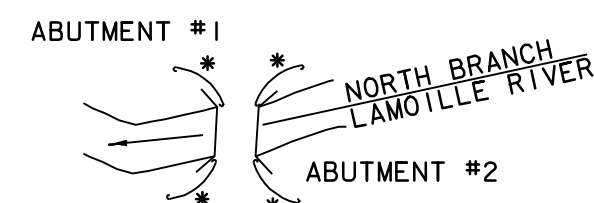
ABUTMENT #2 ELEVATIONS

* NOTE: RE-BUILD AREA @ END OF WINGWALL ESTIMATE 16'-0" x 5'-0"

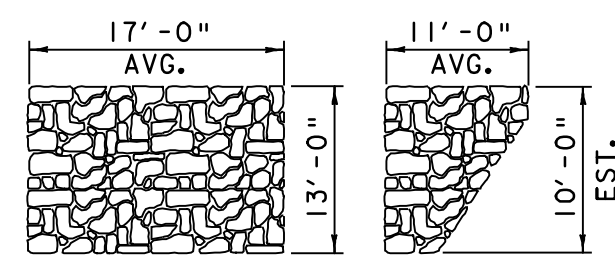
WATERVILLE BHO 1448 (34)
C. B. 16 DETAILS



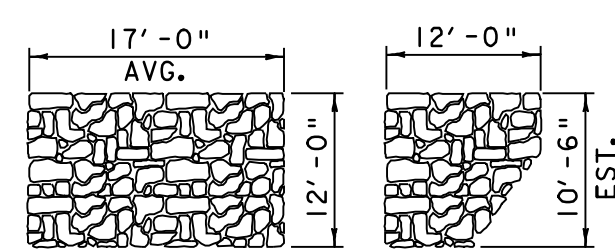
RAILING PLAN
N. T. S.



SCHEMATIC PLAN

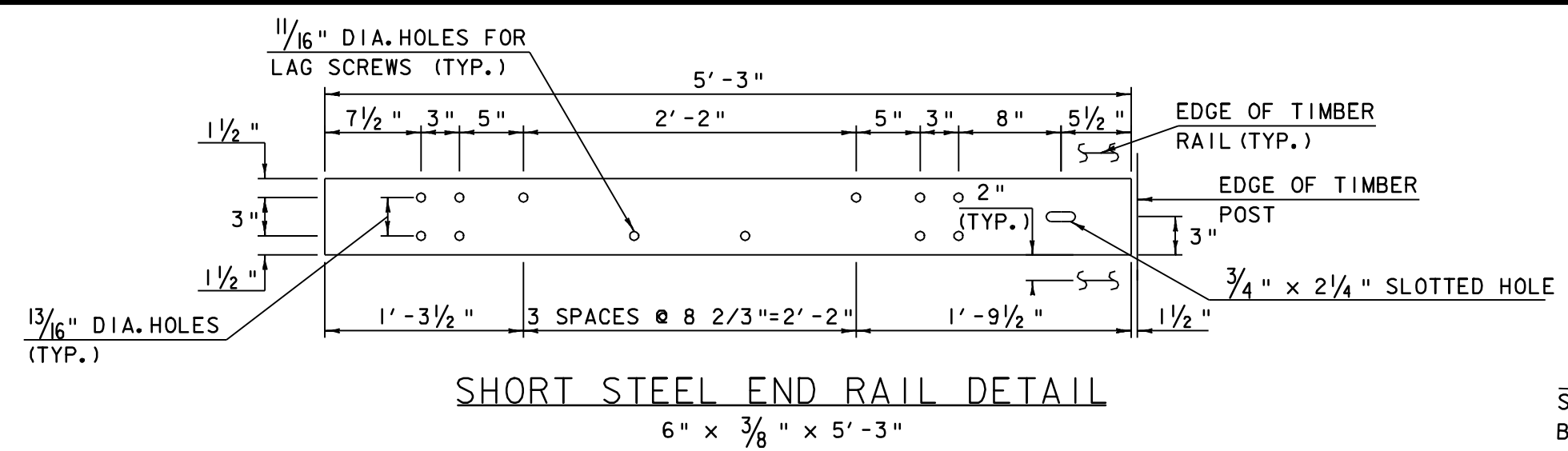


ABUTMENT #2 ELEVATIONS

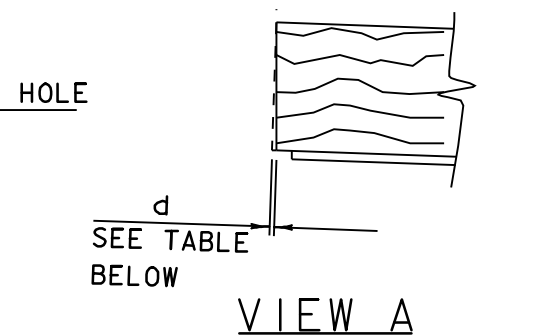


ABUTMENT #1 ELEVATIONS

WATERVILLE BHO 1448 (33)
C. B. 14 DETAILS



SHORT STEEL END RAIL DETAIL



SIDE VIEW

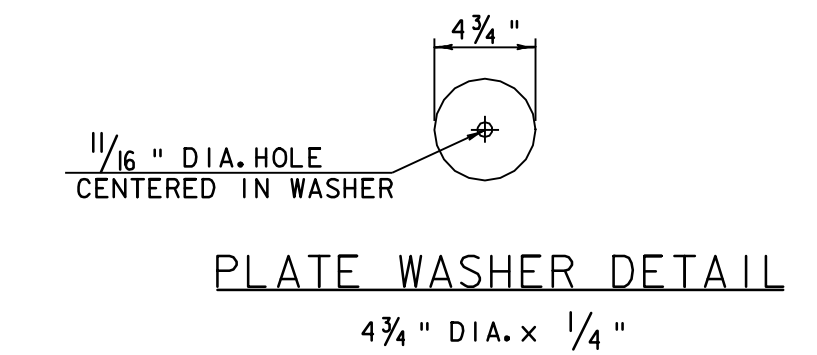
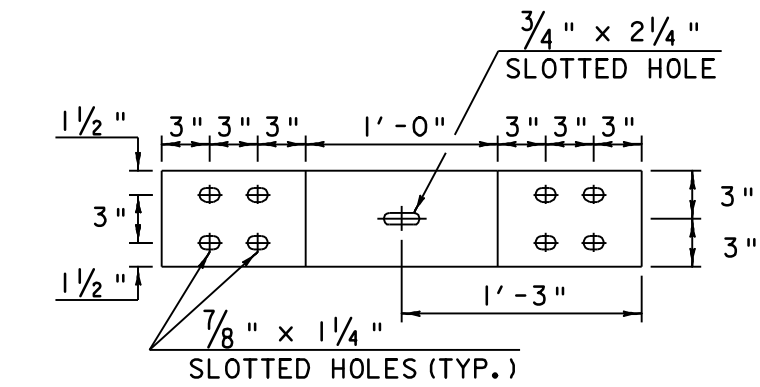


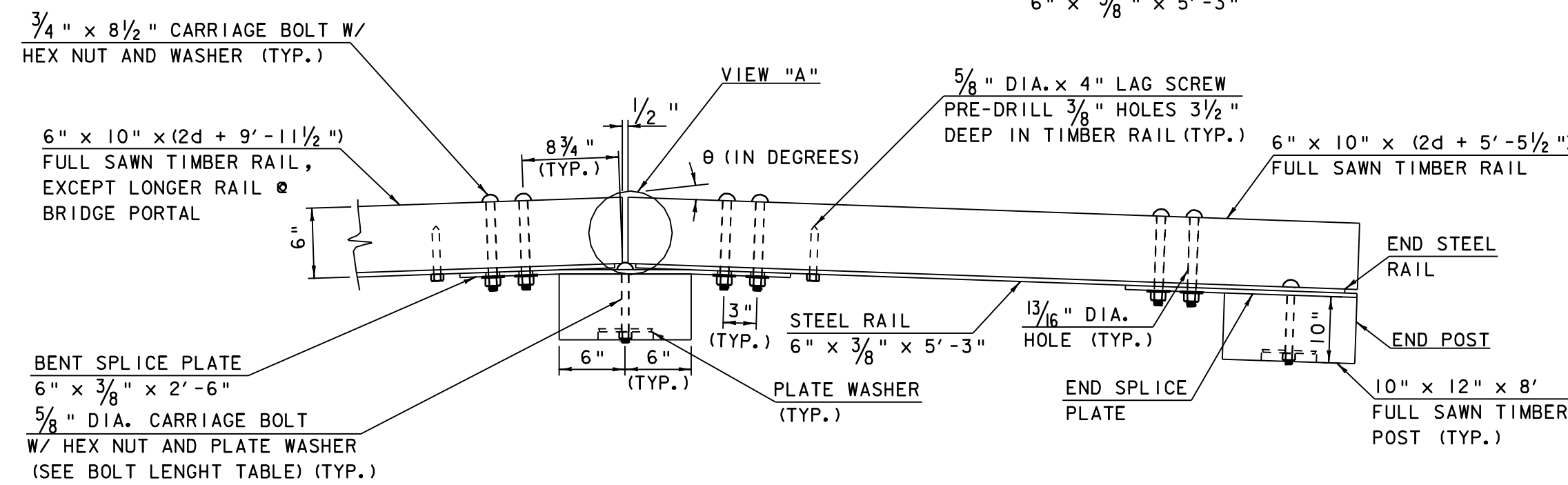
PLATE WASHER DETAIL



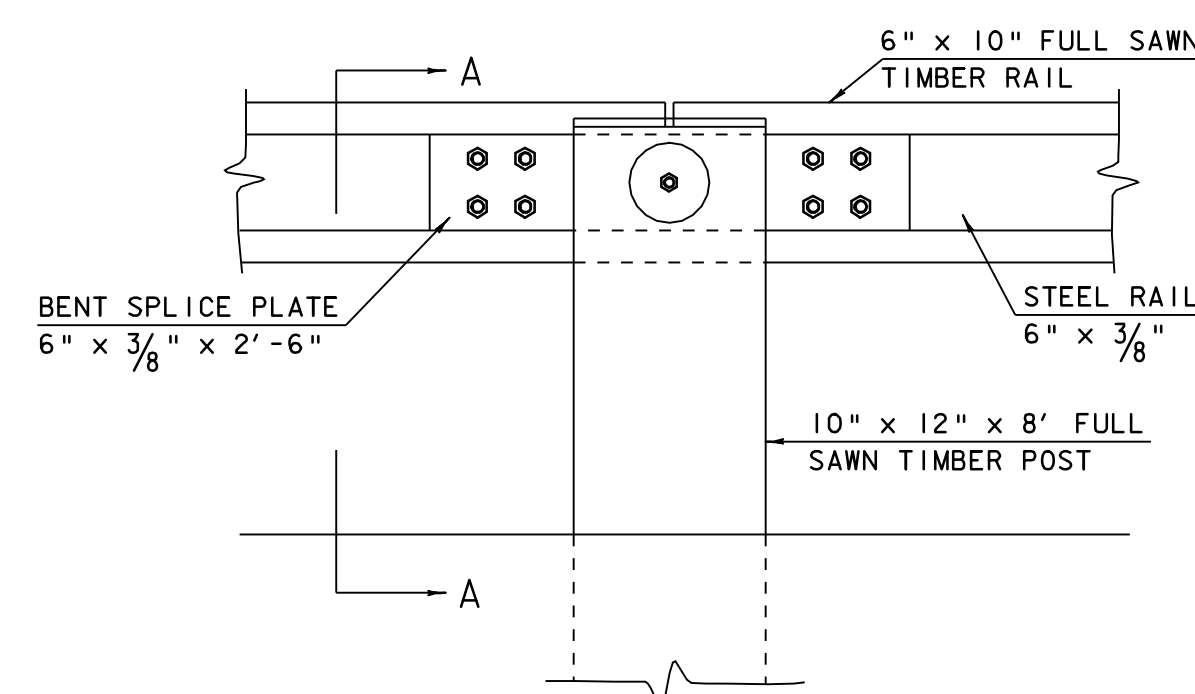
BENT SPLICE PLATE DETAIL

NOTES

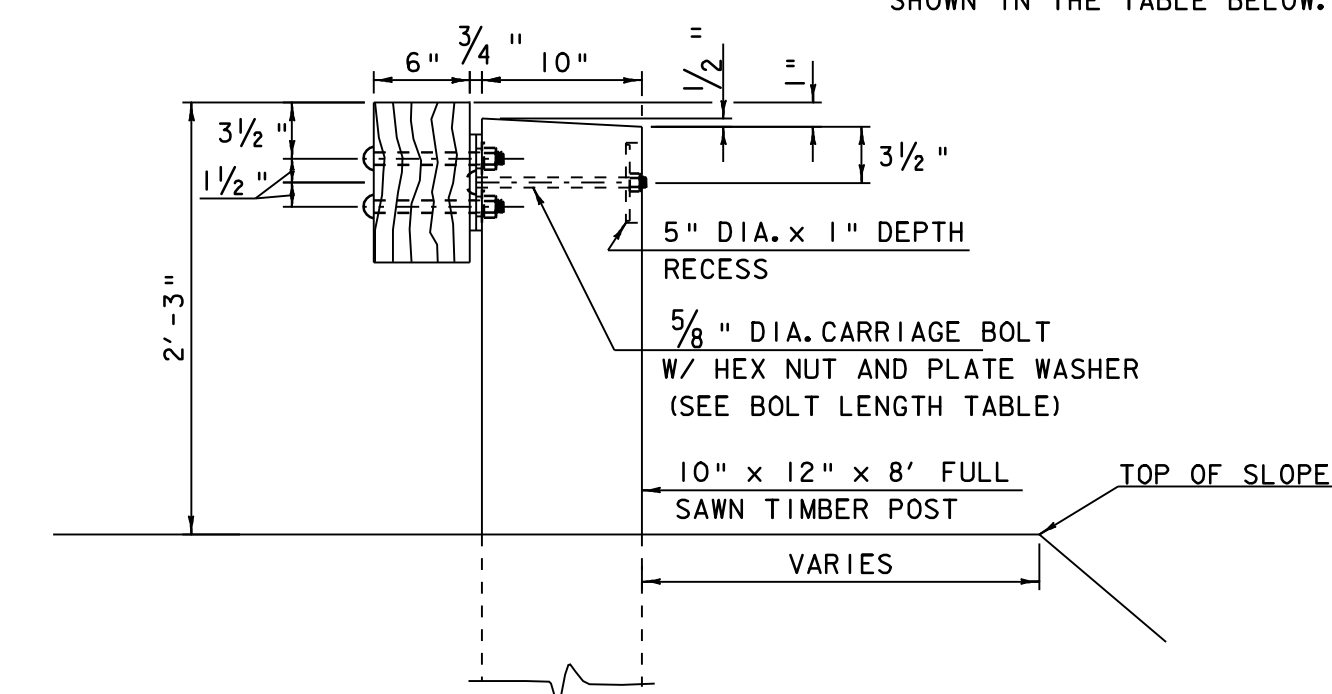
- FURNISH SHOP BENT SPLICE PLATES. USE THE MINIMUM BEND ANGLE SHOWN IN THE TABLE BELOW.



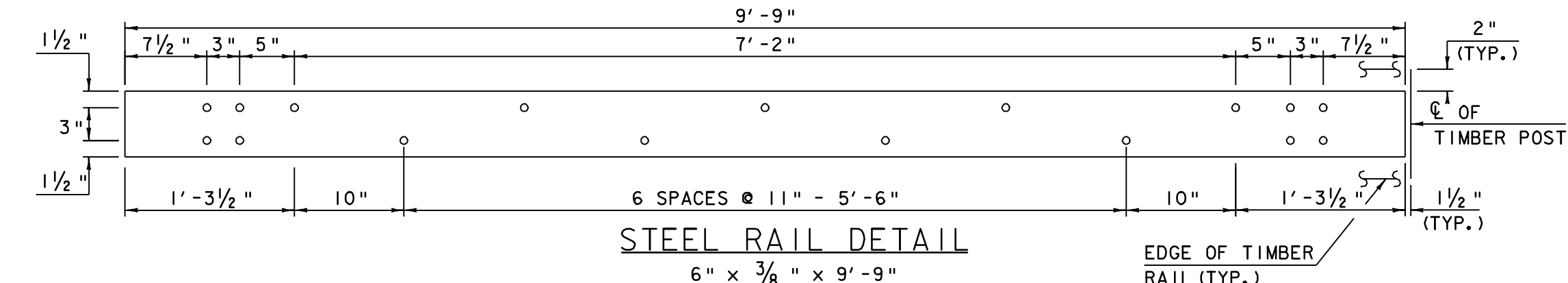
POST CONNECTION PLAN



POST CONNECTION ELEVATION
(TYPICAL INTERIOR CONNECTION)



SECTION A-A



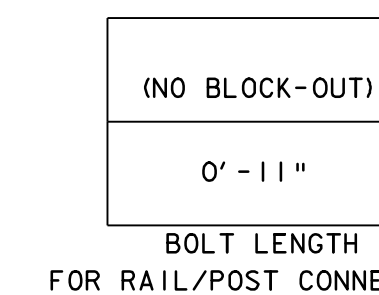
STEEL RAIL DETAIL

6" x 3/8" x 9'-9"
(LONG STEEL END RAIL SIMILAR)

STEEL-BACKED TIMBER GUARDRAIL NOTES

- THE STEEL-BACKED TIMBER GUARD RAIL SHALL BE PAID FOR UNDER ITEM 621.15, PLANK RAIL (MOD.). THE QUANTITY MEASURED FOR PAYMENT SHALL BE ALONG THE FACE OF RAIL, INCLUDING TERMINAL SECTIONS. THE ORDINARY POST SPACING SHALL BE 10 FEET. IN LOCATIONS WHERE POST SPACING IS DETAILED AT 5 FEET, THE QUANTITY FOR PAYMENT WILL BE FACTORED BY 1.4.
- THE POSTS AND THE TIMBER RAIL ELEMENTS SHALL CONFORM TO VAOT STANDARD SPECIFICATIONS SECTION 728.01 AND 728.02. IN ADDITION, ALL TIMBER USED IN THE RAIL SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS OF 1450 PSI.
- THE STEEL RAILS AND SPLICE PLATES SHALL CONFORM TO AASHTO M270 M/M 270 GRADE 50 STEEL AND BE GALVANIZED PER AASHTO M111/M111 SPECIFICATIONS.
- ALL BOLTS AND LAG SCREWS SHALL CONFORM TO ASTM A307 GRADE A. ALL WASHERS SHALL CONFORM TO ASTM F844. ALL NUTS SHALL CONFORM TO AASHTO M291. ALL FASTENER HARDWARE SHALL BE GALVANIZED ACCORDING TO AASHTO M232.
- DRIVE POSTS INTO PILOT HOLES THAT ARE PUNCHED OR DRILLED. THE DIMENSIONS OF THE PILOT HOLE SHALL NOT EXCEED THE DIMENSIONS OF THE POST BY MORE THAN 1 INCH. SET THE POSTS PLUMB, BACKFILL AND COMPACT.
- IF AN IMPENETRABLE HOLE IS ENCOUNTERED WHILE PLACING POSTS, ENLARGE THE HOLE TO PROVIDE NOT LESS THAN 6 INCHES CLEARANCE ON ALL SIDES, AND TO A MINIMUM DEPTH OF 2.5 FEET. SET THE POST IN CONCRETE TO WITHIN 6 INCHES OF THE TOP OF THE HOLE. BACKFILL AND COMPACT THE REMAINING 6 INCHES WITH AN ACCEPTABLE MATERIAL.
- FIELD CUT TIMBER RAILS TO PRODUCE A CLOSE FIT AT ALL JOINTS. TREAT FIELD CUTS WITH APPROVED TREATMENT AS DETERMINED BY THE RESIDENT ENGINEER.

LAYOUT RADIUS R @ FACE OF RAIL (FT.)	θ/2 (DEGREES)	d (INCHES)
25	5.74	5/8"
30	4.78	1/2"
35	4.10	5/16"
38	3.77	3/8"
40	3.58	3/8"
45	3.18	5/16"
50	2.86	5/16"
55	2.60	1/4"
60	2.40	1/4"
65	2.20	1/4"
70	2.05	1/4"
OVER 70	FLAT	0



WATERVILLE BHO 1448 (33)
C. B. 14 DETAILS

(CONTINUED)

PROJECTS: NORTHERN REGION	
DESIGN FILE NAME: 04j150/Structures/04j150det.dgn	PLOT DATE: 06-MAY-2008
IPARM FILE NAME: 04j150det2.i	DRAWN BY: J. WHITE
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
DETAIL SHEET 2	SHEET: 7 OF 9