

NOTES

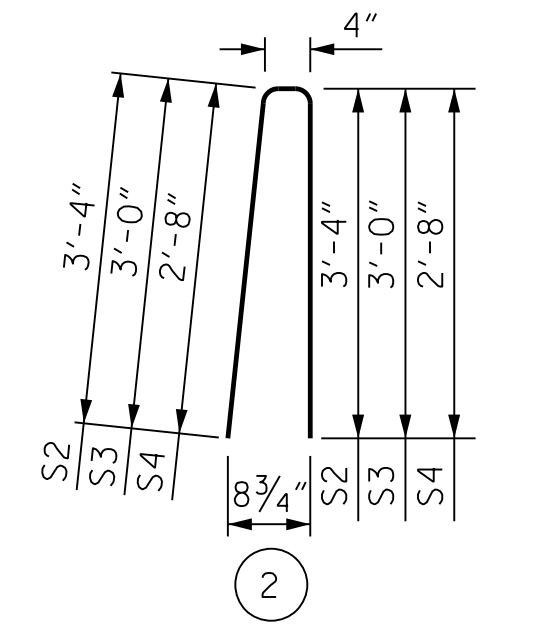
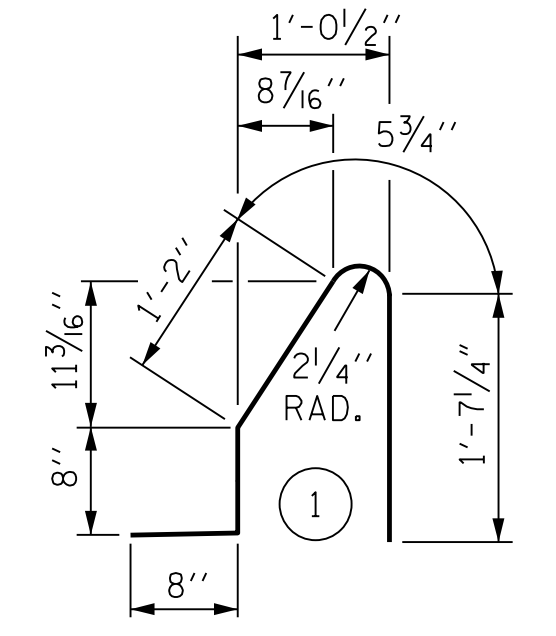
THE BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS, THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE #5 S1 AND S2 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 2" MINIMUM CLEARANCE TO THE 1/2" EXPANSION JOINT MATERIAL.

BAR TYPES

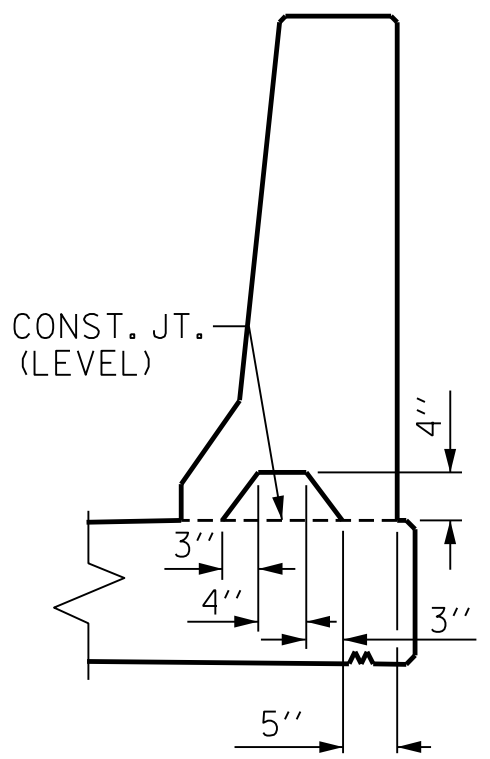
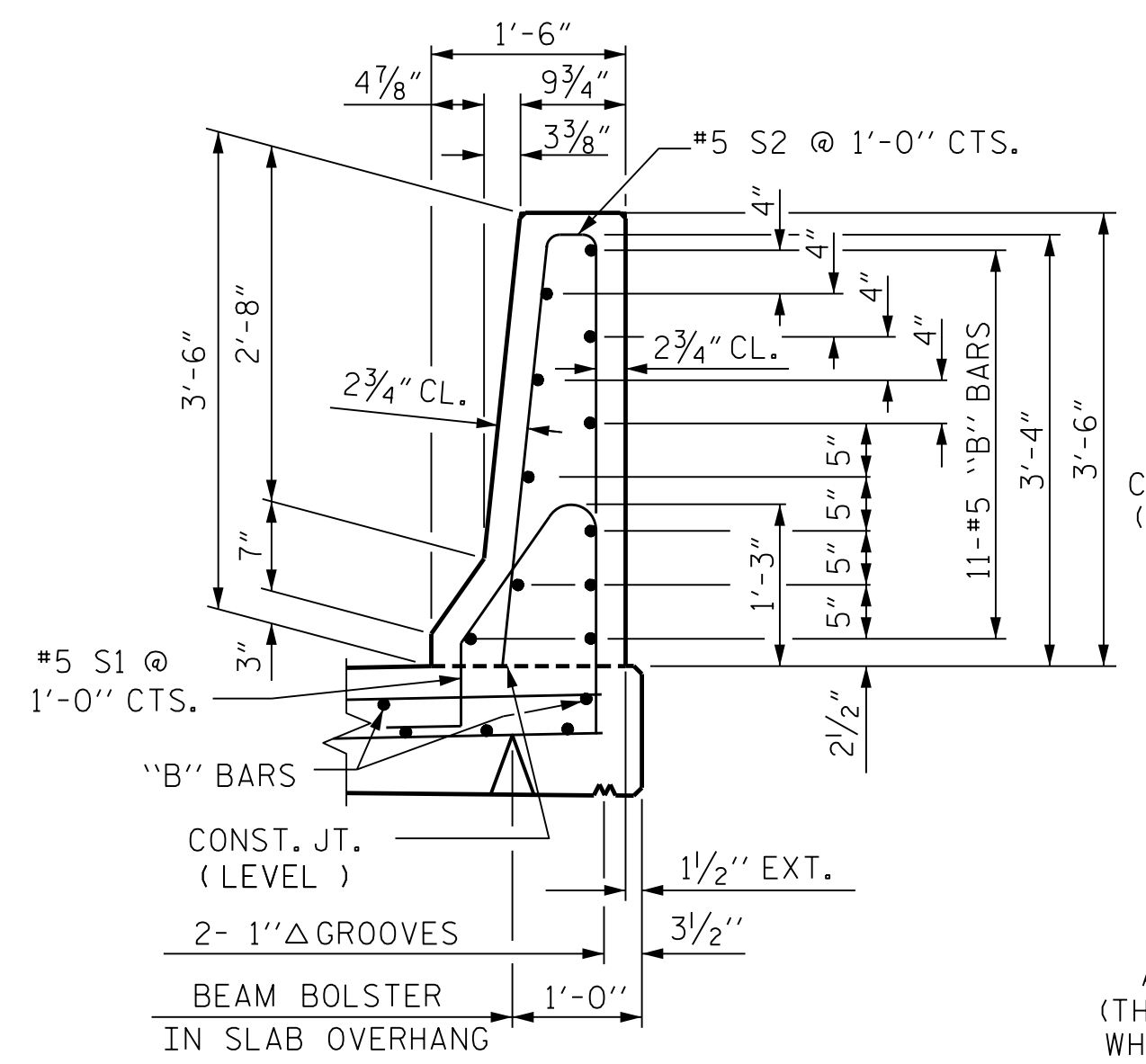


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

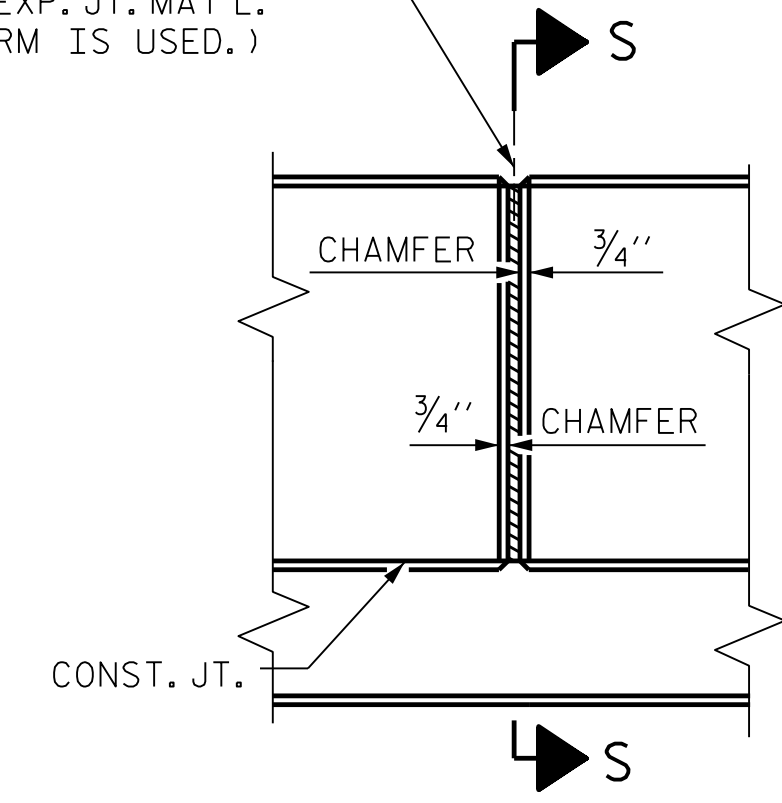
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	44	#5	STR	13'-1"	600
* B2	22	#5	STR	22'-8"	520
* B3	66	#5	STR	23'-8"	1,629
* B4	22	#5	STR	20'-8"	474
* B5	44	#5	STR	12'-7"	577
* S1	322	#5	1	4'-7"	1,539
* S2	314	#5	2	7'-0"	2,293
* S3	4	#5	2	6'-4"	26
* S4	4	#5	2	5'-8"	24
* EPOXY COATED REINFORCING STEEL					7,682 LBS.
CLASS AA CONCRETE					43.5 CU. YDS.
CONCRETE BARRIER RAIL					320.6 LIN. FT.



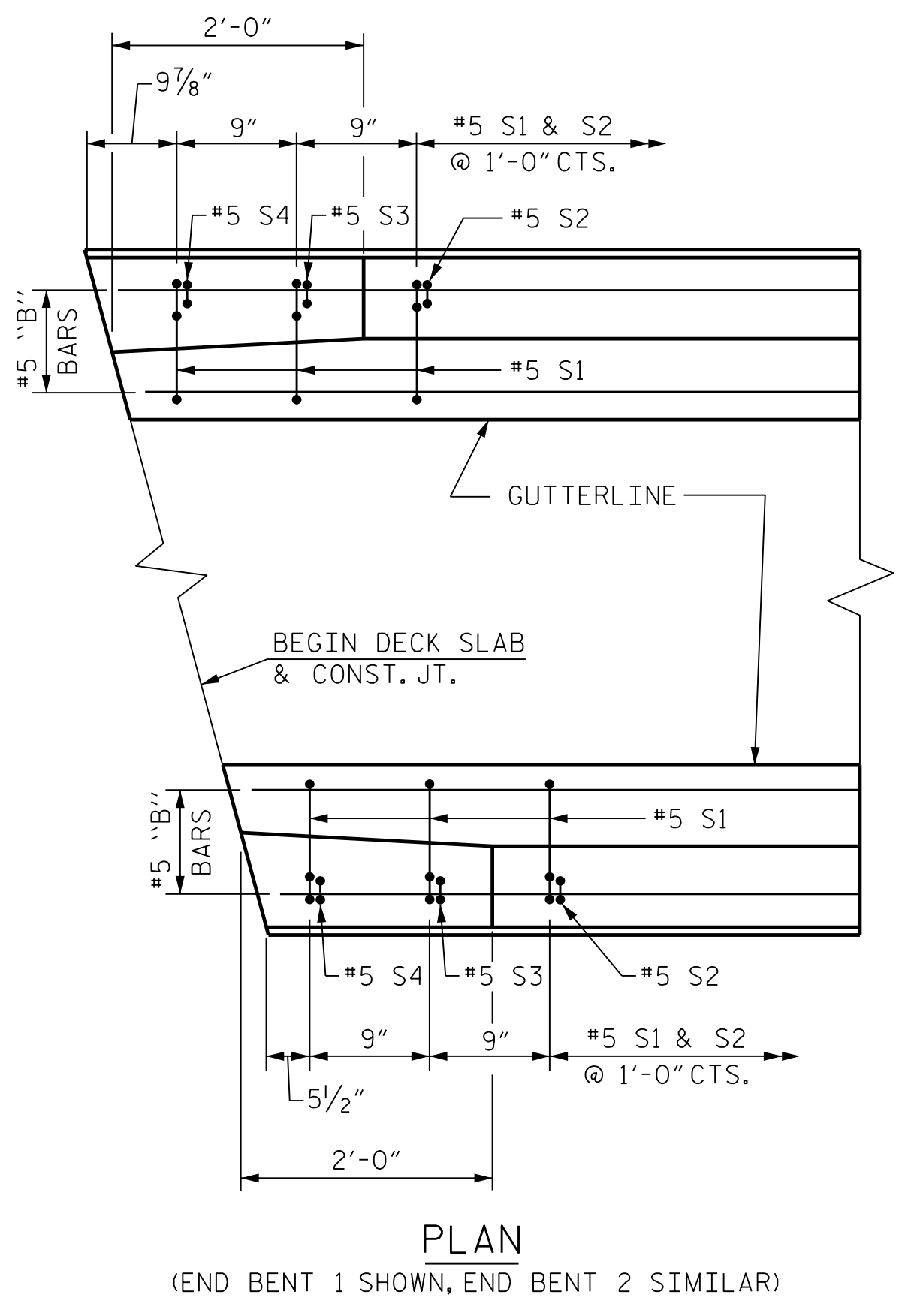
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)

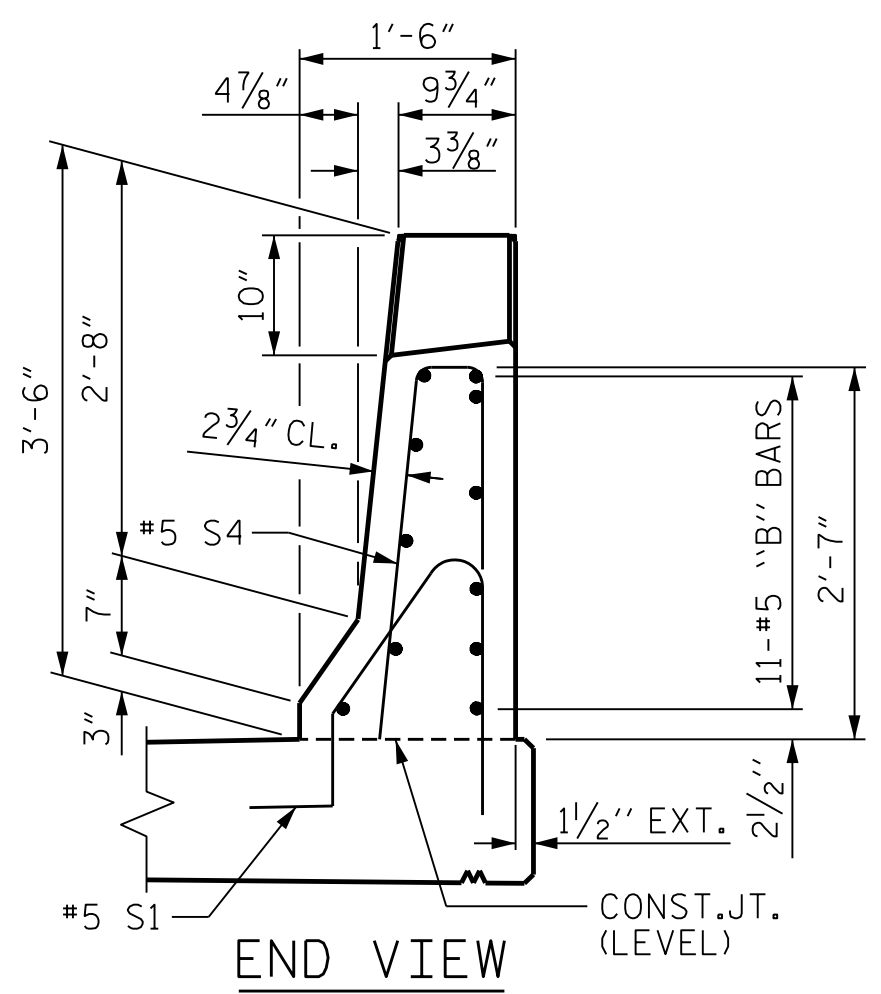


ELEVATION AT EXPANSION JOINTS

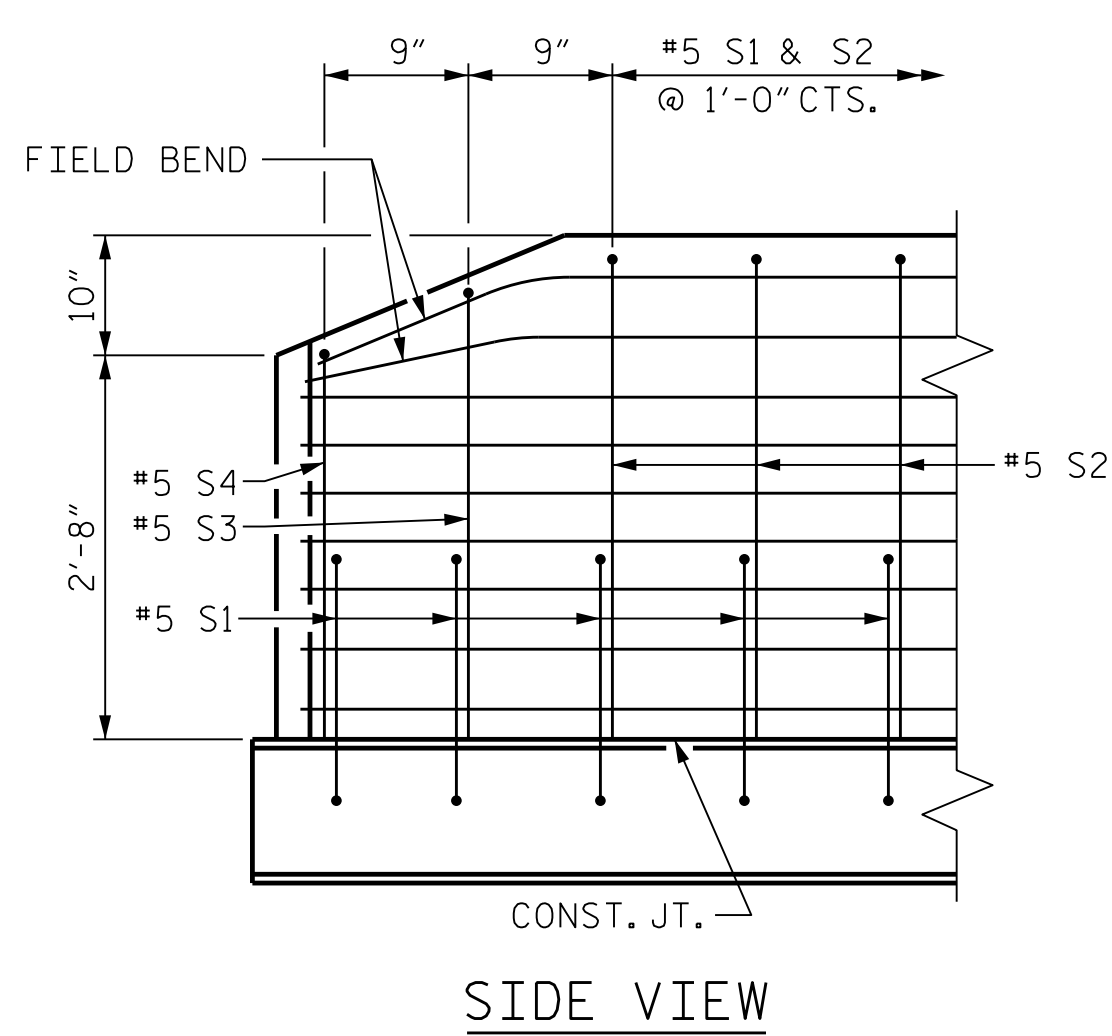
BARRIER RAIL DETAILS



PLAN
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

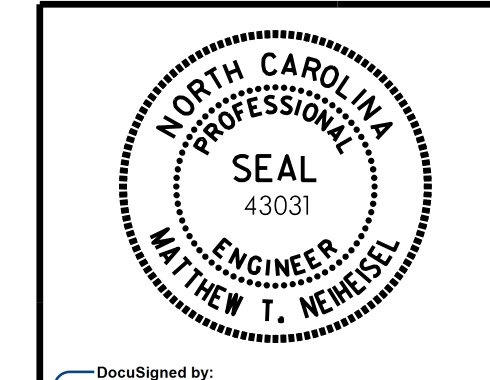


END OF RAIL DETAILS



SIDE VIEW

DRAWN BY : D. H. CARTER DATE : FEB 2018
 CHECKED BY : M. T. NEIHEISEL DATE : FEB 2018
 DESIGN ENGINEER OF RECORD : M. T. NEIHEISEL DATE : FEB 2018



DocuSigned by:
 Matthew T. Neiheisel
 2/20/2018
 04E31BF9E50749E

PROJECT NO. B-5352
 ROCKINGHAM COUNTY
 STATION: P.O.T. 22+16.89 -L-
 SHEET 2 OF 2

REVISIONS					
BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
		3			S-21
		4			TOTAL SHEETS 37

ICA Engineering, Inc.
 555 Fayetteville St., Suite 900
 Raleigh, NC 27601
 NC License No: F-0258

PLOT DRIVER: NCDOT STRUCTURES DEFAULT PLOTTER.PH
 PENTABLE: NCDOT STRUCTURES DEFAULT PEN.FBI
 USER: dcarter DATE: 2/19/2018 TIME: 1:44:02 PM
 FILE: ... \Structures\dgm\Final\CAD\0601