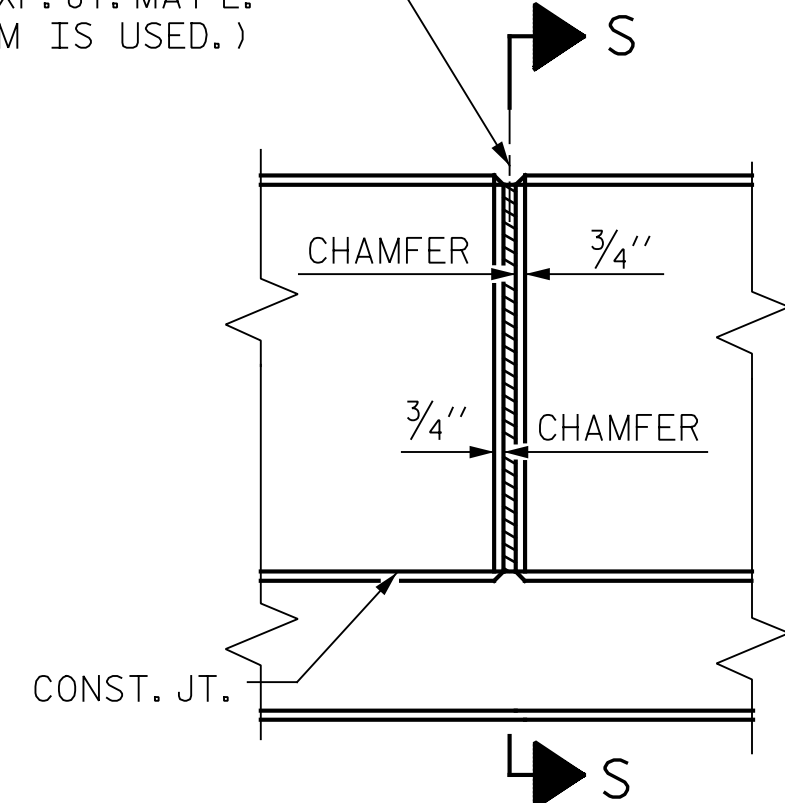
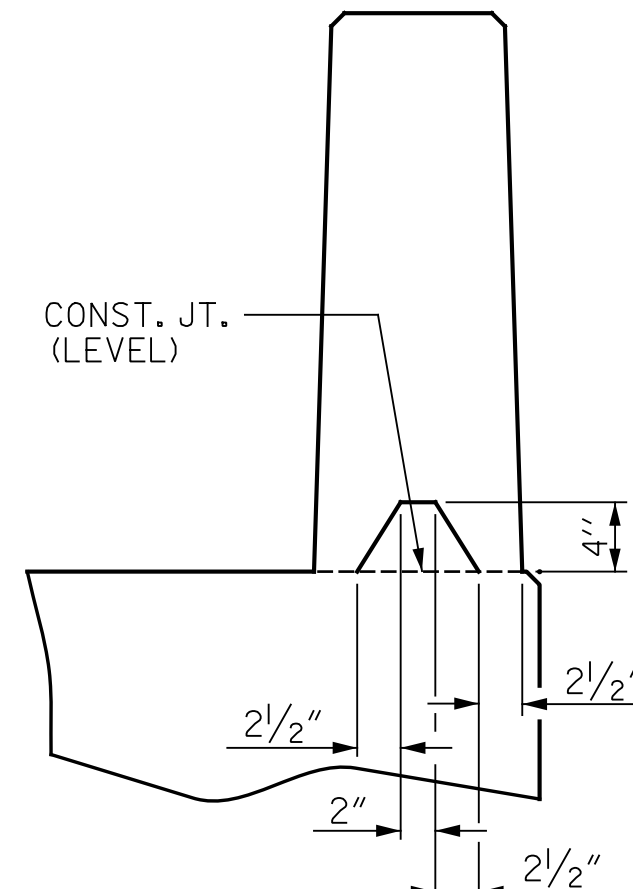


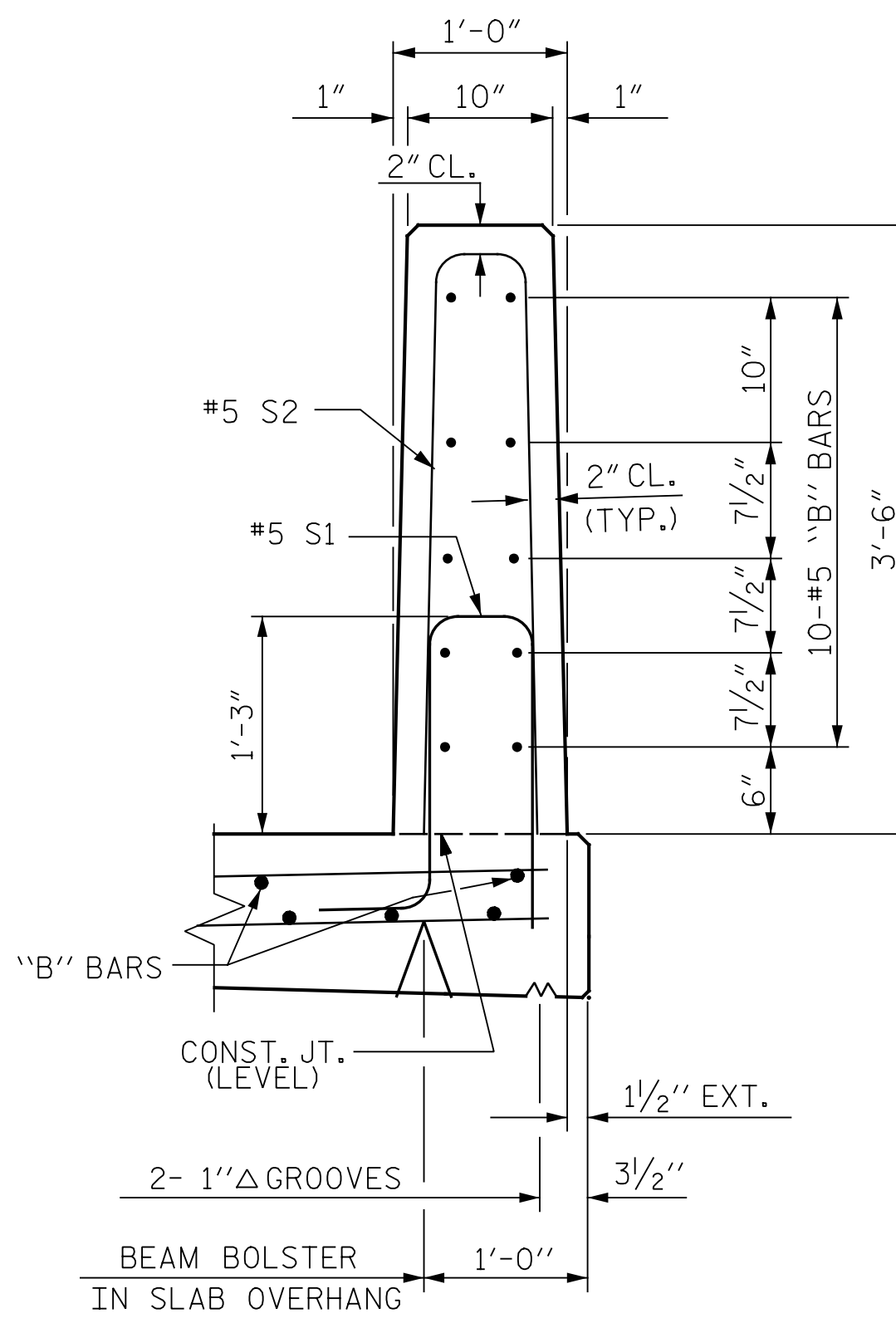
① 1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS



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



SECTION THRU RAIL

NOTES

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

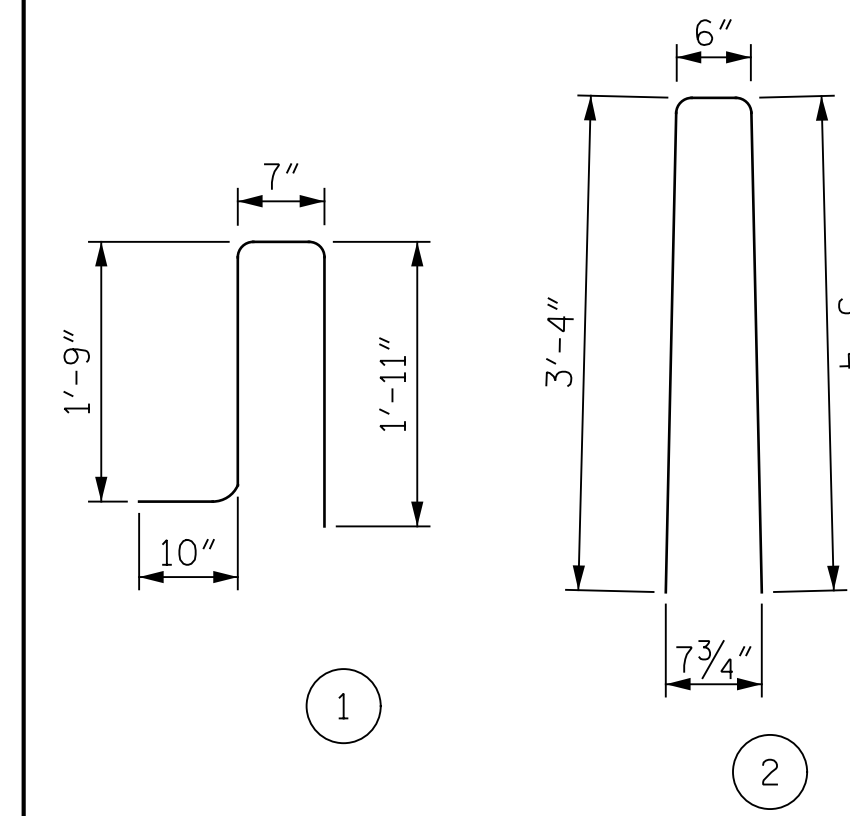
WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF VERTICAL CONCRETE BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 & S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 & S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

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.

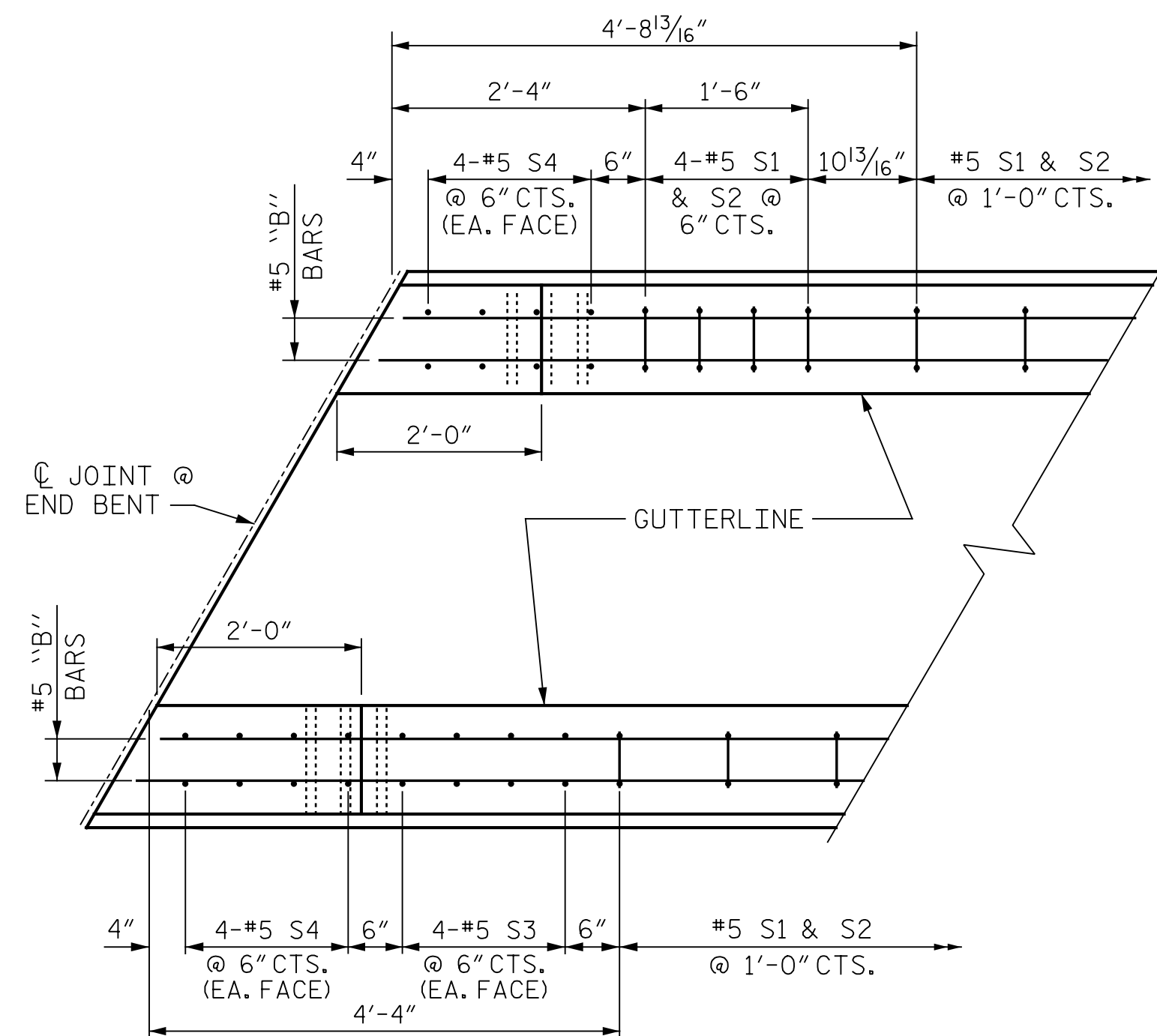
BAR TYPES



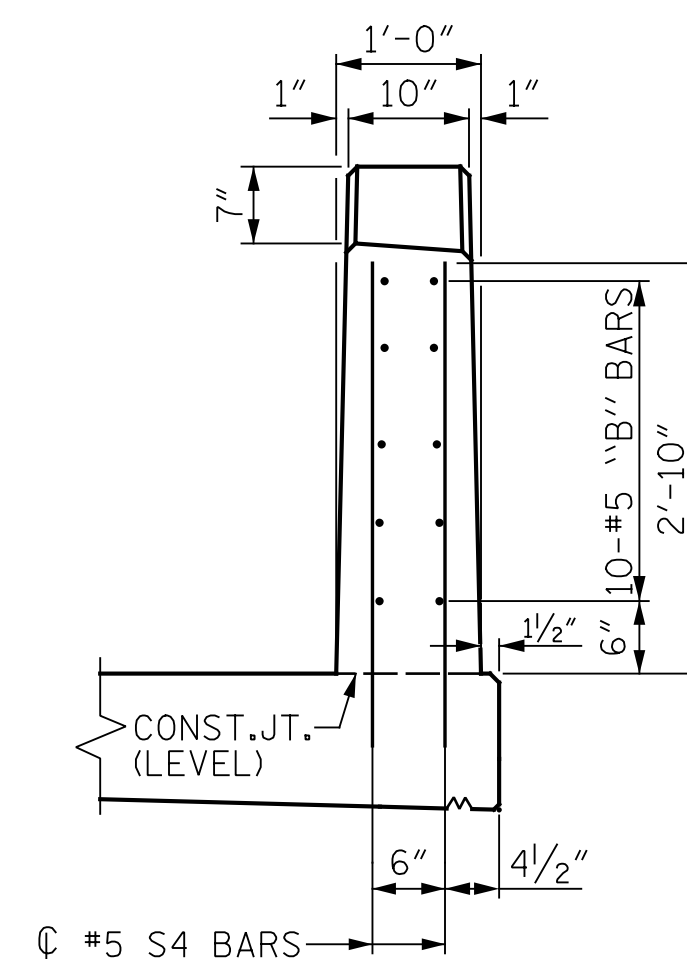
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

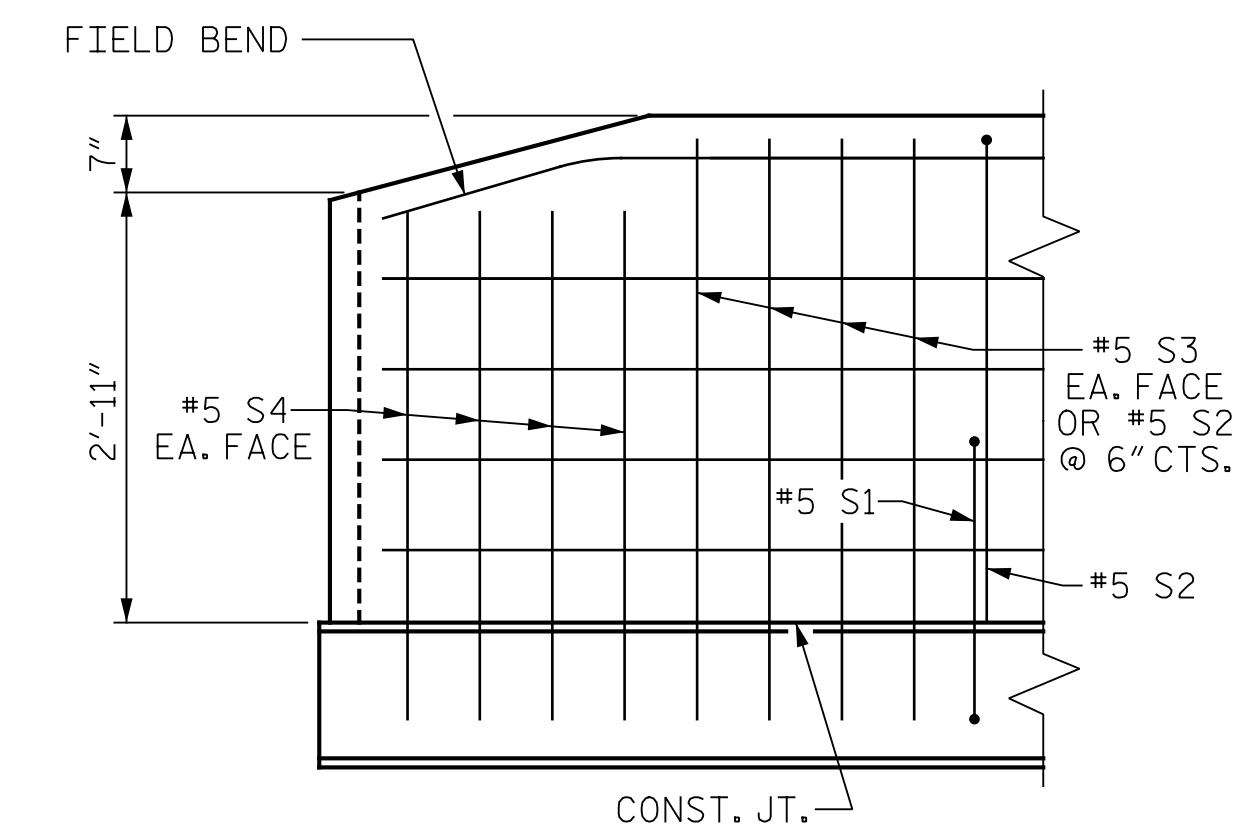
FOR CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	40	#5	STR	23'-8"	988
* B2	80	#5	STR	14'-2"	1182
* S1	182	#5	1	5'-1"	965
* S2	182	#5	2	7'-2"	1361
* S3	16	#5	STR	4'-0"	67
* S4	32	#5	STR	3'-6"	117
*EPOXY COATED REINFORCING STEEL					4,680 LBS.
CLASS AA CONCRETE					23.0 CU. YDS.
VERTICAL CONCRETE BARRIER RAIL					192.5 LIN. FT.



PLAN



END VIEW



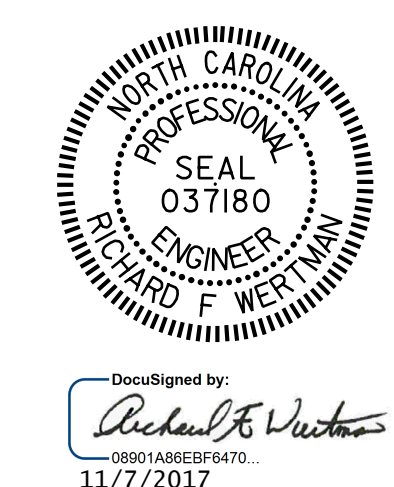
SIDE VIEW

END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

PROJECT NO. 41665.7A
CUMBERLAND COUNTY
STATION: 21+57.23 -L-
109+69.94 -L2-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
VERTICAL
CONCRETE
BARRIER RAIL

ASSEMBLED BY : B.A. WHITE	DATE : 09/11/17
CHECKED BY : T.M. FORD	DATE : 09/27/17
DRAWN BY : MAA 5/10	REV. 10/1/11 MAA/GM
CHECKED BY : GM 5/10	REV. 12/5/11 MAA/GM
	REV. 6/13 MAA/GM

PLANS PREPARED BY:
Gannett Fleming
Excellence Delivered As Promised
2610 Wycliff Road
Suite 102
Raleigh, NC 27607-3073
(919) 420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	S01-13
TOTAL SHEETS	24