

STRUCTURE ENGINEER

ENGINEER

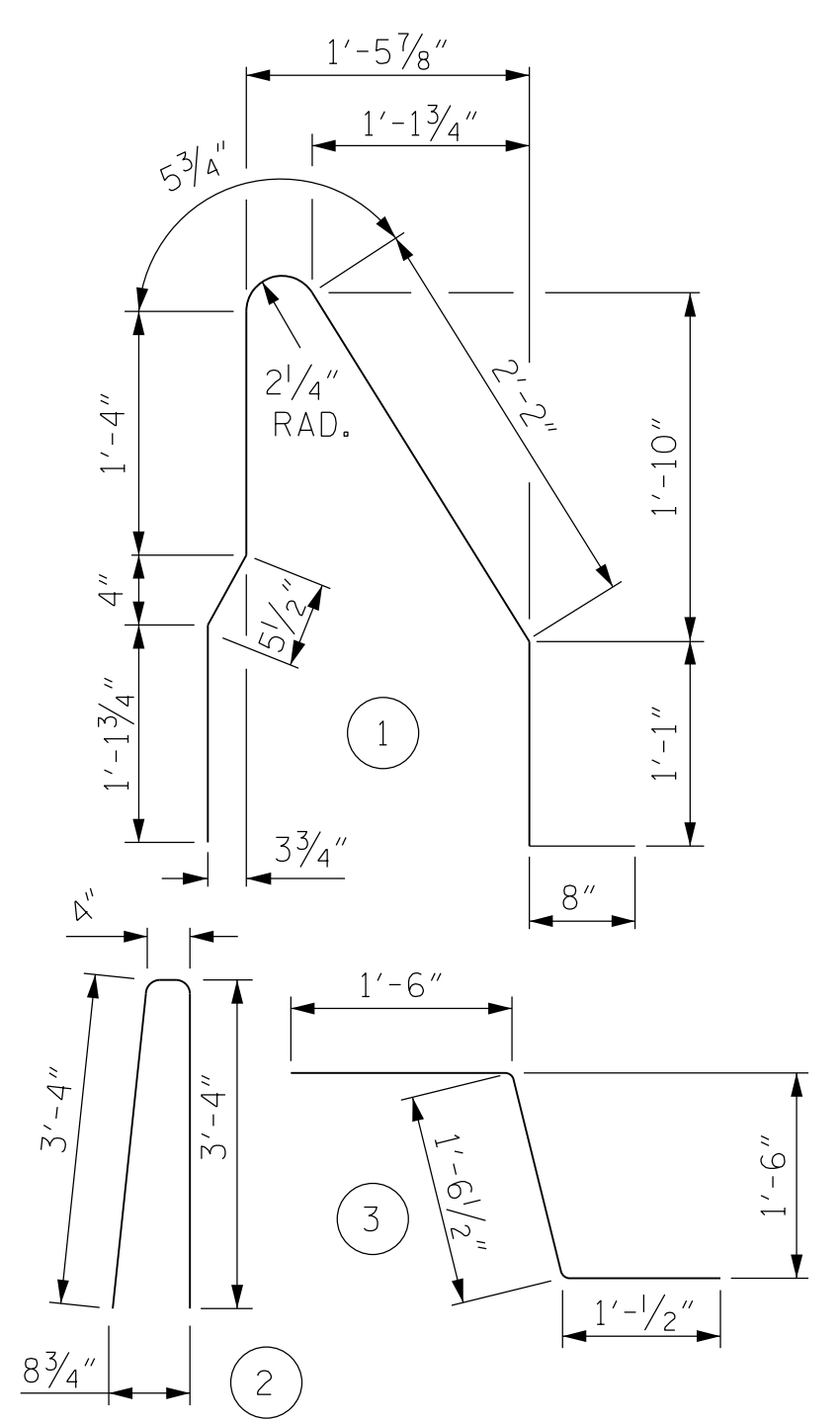
DocuSigned by:
Stephen C Crockett
05/02/2022

DATE: 05/02/2022

SIGNATURE: _____ DATE: _____

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR ONE 30'-0" SECTION OF CONCRETE BARRIER RAIL WITH MOMENT SLAB

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	14	#4	STR	29'-7"	277
* B2	11	#5	STR	29'-7"	339
G1	31	#5	STR	4'-4"	140
G2	31	#4	STR	4'-4"	90
* S1	31	#5	1	7'-4"	237
* S2	31	#5	2	7'-0"	226
S3	30	#5	3	4'-1"	128

REINFORCING STEEL	635 LB
* EPOXY COATED REINFORCING STEEL	802 LB
CLASS AA CONCRETE BARRIER RAIL	4.1 CY
CLASS A CONCRETE MOMENT SLAB	9.1 CY
CONCRETE BARRIER RAIL WITH MOMENT SLAB	30 LIN FT

NOTES:

FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB, SEE SECTION 460 OF THE STANDARD SPECIFICATIONS.

CONCRETE BARRIER RAIL WITH MOMENT SLAB SHALL BE A MINIMUM OF 15' IN LENGTH.

EXPANSION JOINTS SHALL BE PLACED IN THE BARRIER RAIL AND MOMENT SLAB AT A MAXIMUM SPACING OF 30'.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED SURFACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MID-POINT OF BARRIER RAIL SEGMENTS LESS THAN 20' IN LENGTH.

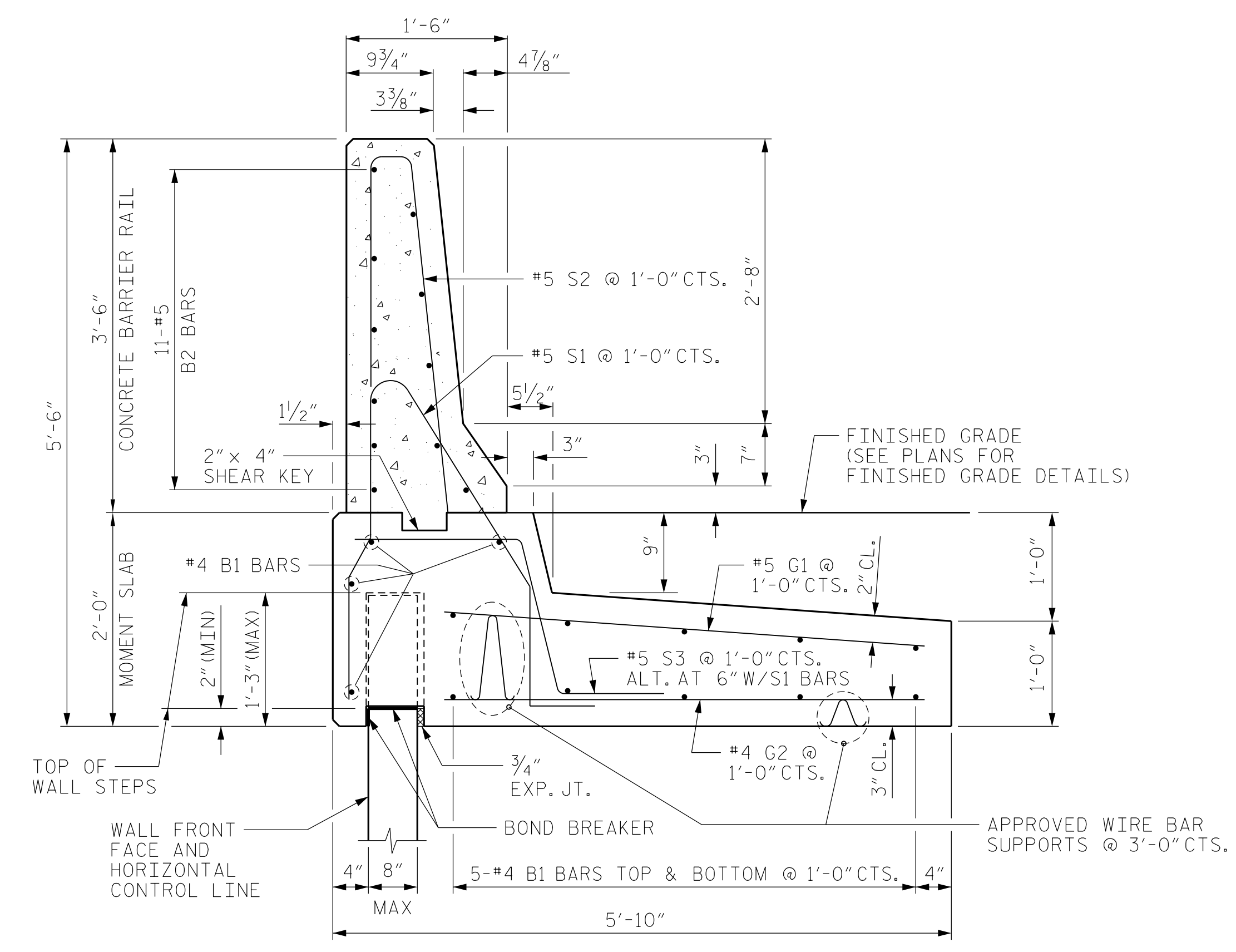
EXPANSION OR CONTRACTION JOINTS IN THE BARRIER RAIL AND MOMENT SLAB SHALL BE ALIGNED WITH JOINTS IN WALL FACING BELOW.

THE BARRIER RAIL SHALL NOT BE CAST UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

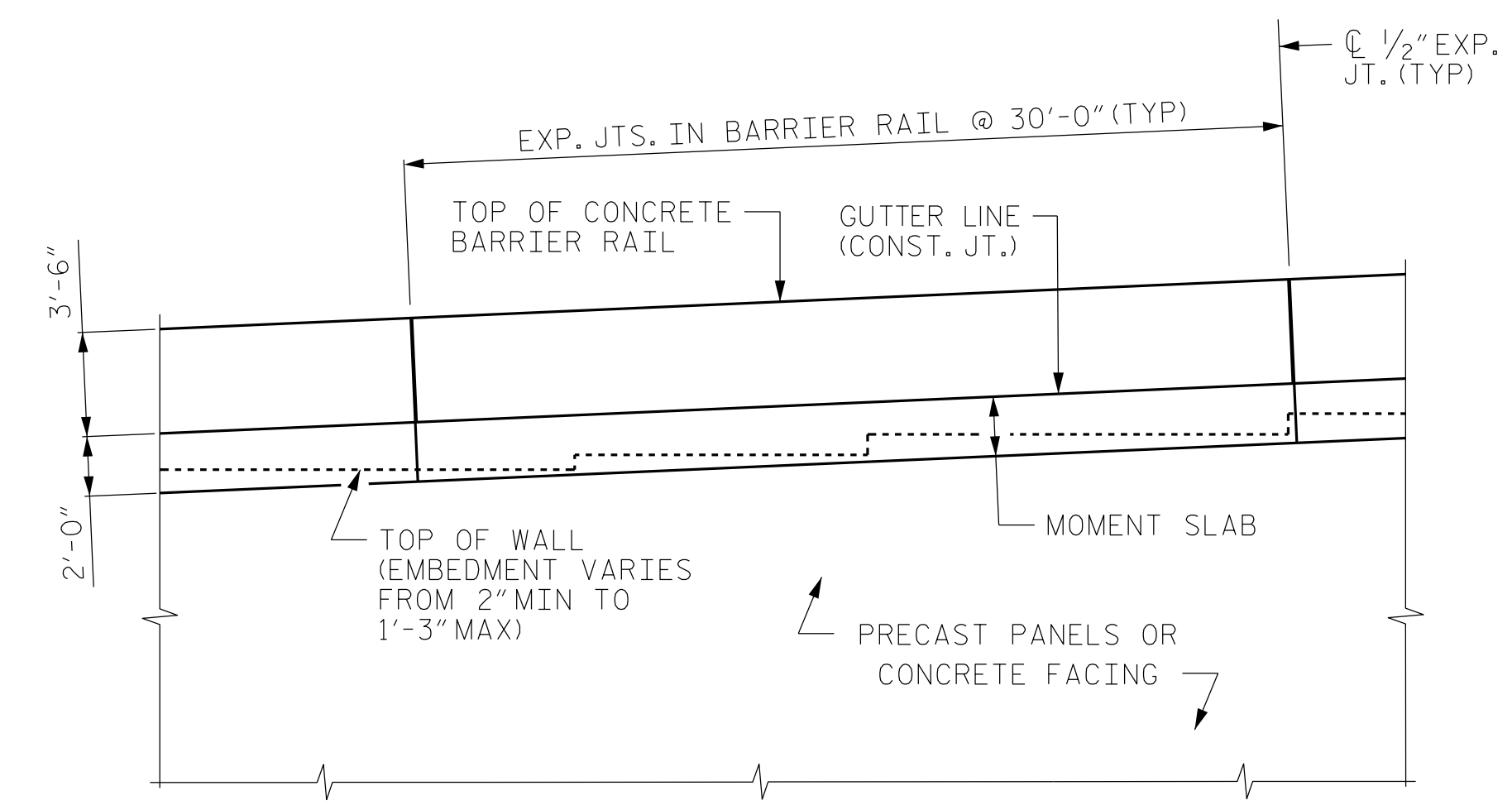
ALL REINFORCING STEEL IN THE BARRIER RAIL SHALL BE EPOXY COATED.

IF EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, BARRIERS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH CONCRETE BARRIER RAIL WITH MOMENT SLAB OR CONCRETE FACING FOR RETAINING WALL WILL BE THICKER THAN 8", CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS SHALL BE REVISED AND SUBMITTED FOR APPROVAL.

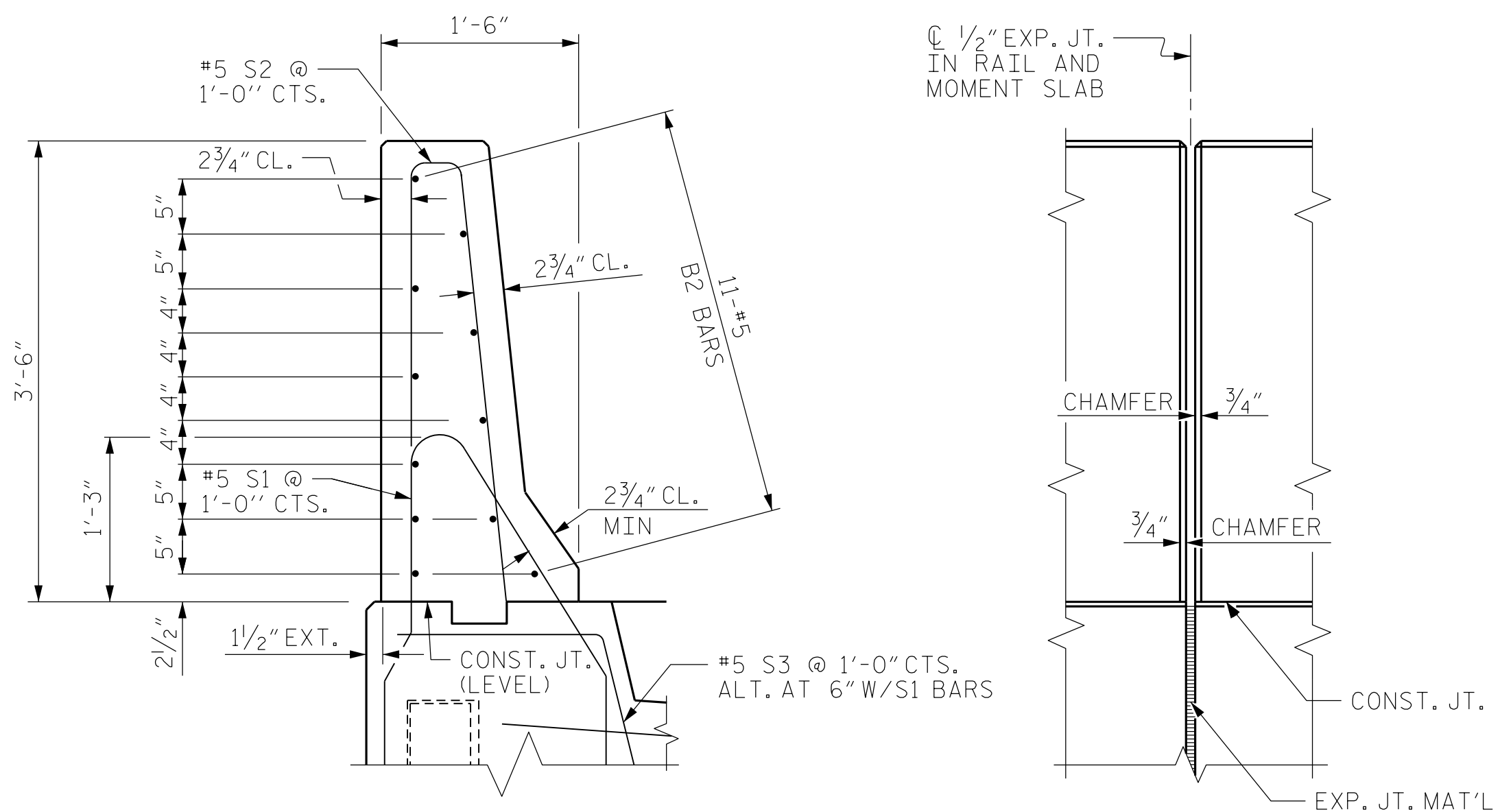
CONCRETE BARRIER RAIL WITH MOMENT SLAB	
MSE RETAINING WALL NO. W5A	PAY LENGTH = 1039 LIN FT
MSE RETAINING WALL NO. W5B	PAY LENGTH = 1122 LIN FT



CONCRETE BARRIER RAIL WITH MOMENT SLAB



CONCRETE BARRIER RAIL WITH MOMENT SLAB - PARTIAL ELEVATION



SECTION THRU RAIL

ELEV. @ EXP. JOINTS

BARRIER RAIL DETAILS

PREPARED BY: S. CROCKETT	DATE: 3/29/22
REVIEWED BY: J. HAMM	DATE: 3/29/22



**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

PROJECT NO.: I-5987B
ROBESON COUNTY
STATION: _____
SHEET 16 OF 19

CONCRETE BARRIER RAIL WITH MOMENT SLAB FOR PRECAST PANELS AND CONCRETE FACING FOR RETAINING WALLS NO. W5A AND W5B

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	S. CROCKETT	5/2/22	3		
2			4		

SHEET NO. W-16