

**NOTES**

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT. THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1/2" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

WHEN BOX BEAMS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING BOX BEAMS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5800 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

VERTICAL 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. A VERTICAL 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.

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

FOR EVAZOTE JOINT SEAL, SEE SPECIAL PROVISIONS.

PLACEMENT OF THE CONCRETE OVERLAY SHALL OCCUR AFTER CASTING THE CONCRETE RAIL.

FOR PRESTRESSED CONCRETE MEMBER, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE BOX BEAMS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

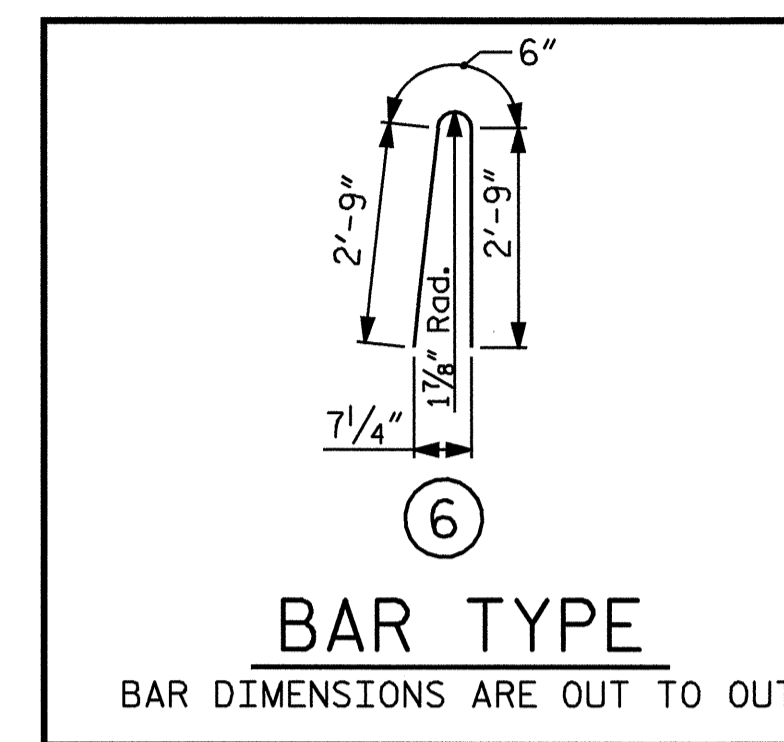
THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

CONCRETE WEARING SURFACE	REINFORCING STEEL (FOR WEARING SURFACE)
SQ. FT.	APPROX. LBS.
7515	5712

GRADE 270 STRANDS	
AREA ( SQUARE INCHES )	0.6" Ø L.R.
ULTIMATE STRENGTH ( LBS. PER STRAND )	58,600
APPLIED PRESTRESS ( LBS. PER STRAND )	43,950

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
<b>SPAN A</b>			
EXTERIOR B.B.	2	59'-10 1/2"	119'-9"
INTERIOR B.B.	13	59'-10 1/2"	778'-4 1/2"
<b>SPAN B</b>			
EXTERIOR B.B.	2	59'-10 1/2"	119'-9"
INTERIOR B.B.	13	59'-10 1/2"	778'-4 1/2"
<b>SPAN C</b>			
EXTERIOR B.B.	2	59'-10 1/2"	119'-9"
INTERIOR B.B.	13	59'-10 1/2"	778'-4 1/2"
<b>TOTAL</b>	<b>45</b>		<b>2694.38</b>

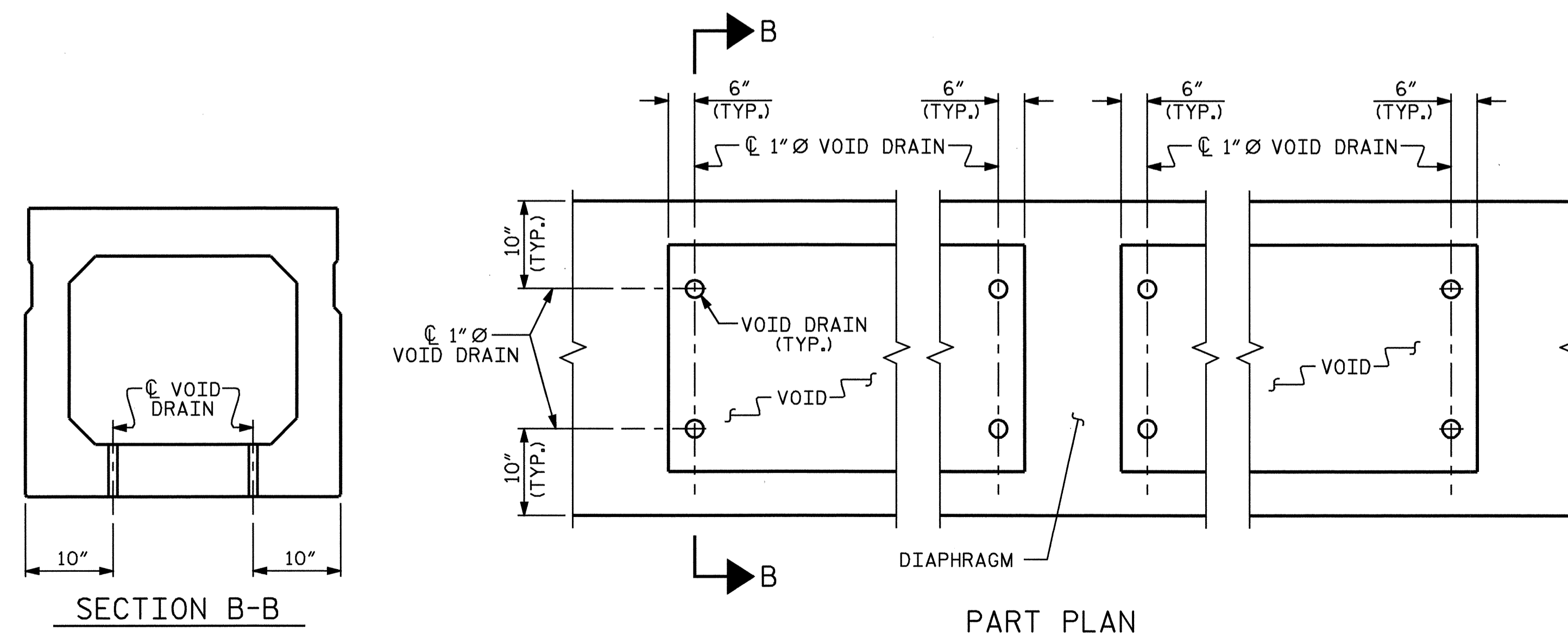
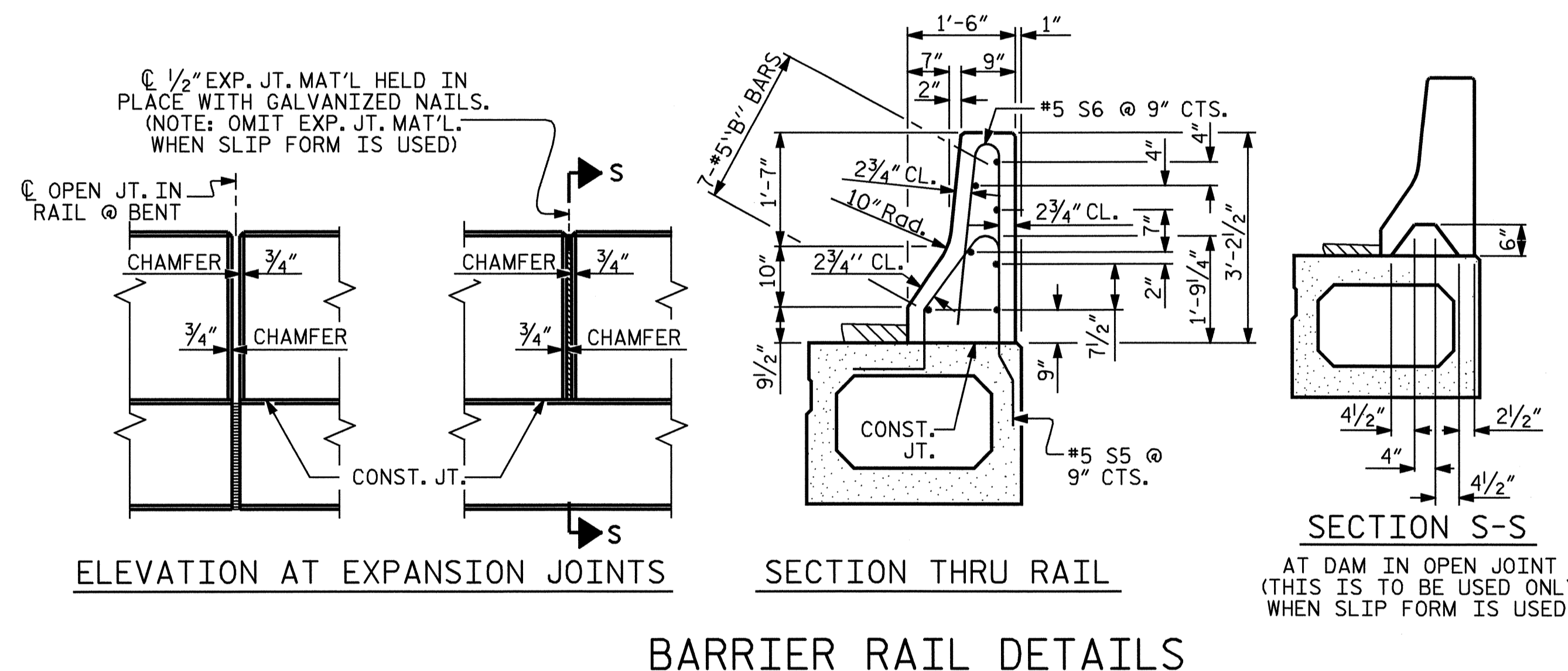


BILL OF MATERIAL FOR CONCRETE BARRIER RAIL								
BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
* B2	28	28	28	84	#5	STR	29'-7"	2592
* S6	160	160	160	480	#5	6	6'-0"	3004
* EPOXY COATED REINFORCING STEEL LBS.								5596
CLASS AA CONCRETE CU.YDS.								46.8
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL								359.25

DEAD LOAD DEFLECTION AND CAMBER			
3'-0" X 2'-3" BOX BEAM UNIT			
0.6" Ø L.R. STRAND			
	SPAN "A"	SPAN "B"	SPAN "C"
CAMBER ( BEAM ALONE IN PLACE )	3 5/16"	3 5/16"	3 5/16"
DEFLECTION DUE TO CONCRETE WEARING SURFACE	1/4"	1/4"	1/4"
FINAL CAMBER	3 5/16"	3 5/16"	3 5/16"

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1840 SQ.FT.
BRIDGE DECK	6830 SQ.FT.
<b>TOTAL</b>	<b>8670 SQ.FT.</b>

SPLICE LENGTH CHART	
BAR SIZE	UNCOATED
#3	1'-0"



ASSEMBLED BY : B.N. GRADY DATE : 5/05  
CHECKED BY : A.R. CHESSON DATE : 6/05

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PROJECT NO. B-1303  
NORTHAMPTON COUNTY  
STATION: 18+81.00 -L-

SHEET 7 OF 7

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT					
MARCH					2005
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-10
					TOTAL SHEETS 20

STD. NO. PCBB8