BILL OF MATERIAL FOR CONCRETE BARRIER RAIL

BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN "A"	SPAN "B"	SPAN "C"					
✳B3	56		56	112	#5	STR	11'-10"	1382
✳B4		56		56	#5	STR	15'-7"	910
✳S4	80	110	80	270	#5	2	5'-11"	1666
✳EPOXY COATED REINFORCING STEEL								3,958 LBS.
CLASS AA CONCRETE								32.7 CU. YDS.
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL								270.21

DEAD LOAD DEFLECTION AND CAMBER

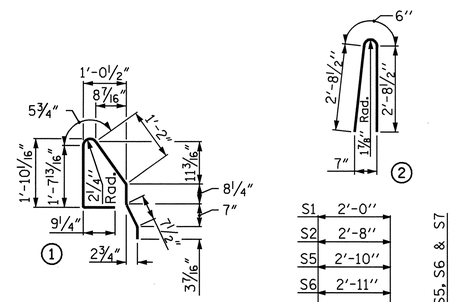
	3'-0" x 1'-9"
SPAN "A" OR "C"	½" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	11/16" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ✳✳	1/8" ↓
FINAL CAMBER	9/16" ↑
SPAN "B"	½" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2½" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ✳✳	½" ↓
FINAL CAMBER	2" ↑

✳✳ INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED

SPAN "A" & "C"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	40'-1½"	160'-6"
INTERIOR C.S.	18	40'-1½"	722'-3"
SPAN "B"	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	54'-10¼"	109'-8½"
INTERIOR C.S.	9	54'-10¼"	493'-8¼"
TOTAL	33	——	1486.15'

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

	SPAN "A" OR "C"				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE		LENGTH	WEIGHT	LENGTH	WEIGHT
B1	4	#4	STR		21'-2"	57	21'-2"	57
S1	8	#5	3		4'-6"	38	4'-6"	38
S2	72	#4	3		5'-4"	257	——	——
S2	58	#4	3		——	——	5'-4"	207
✳S3	40	#5	1		5'-8"	236	——	——
S5	4	#4	3		5'-6"	15	5'-6"	15
S6	4	#4	3		5'-7"	15	5'-7"	15
S7	4	#4	3		5'-9"	15	5'-9"	15
REINFORCING STEEL						397 LBS.		347 LBS.
✳EPOXY COATED REINFORCING STEEL						236 LBS.		——
5,000 P.S.I. CONCRETE						5.7 CU. YDS.		5.7 CU. YDS.
½" Ø L.R. STRANDS		No.				13		13

BILL OF MATERIAL FOR ONE CORED SLAB SECTION

	SPAN "B"			EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B2	4	#4	STR	28'-6"	76	28'-6"	76
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	100	#4	3	5'-4"	356	——	——
S2	80	#4	3	——	——	5'-4"	285
✳S3	55	#5	1	5'-8"	325	——	——
S5	4	#4	3	5'-6"	15	5'-6"	15
S6	4	#4	3	5'-7"	15	5'-7"	15
S7	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL					515 LBS.		444 LBS.
✳EPOXY COATED REINFORCING STEEL					325 LBS.		——
5,000 P.S.I. CONCRETE					7.8 CU. YDS.		7.7 CU. YDS.
½" Ø L.R. STRANDS		No.			24		24

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 CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

THE 2½"Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2½"Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1½" 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. THE 2"Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, 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 CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

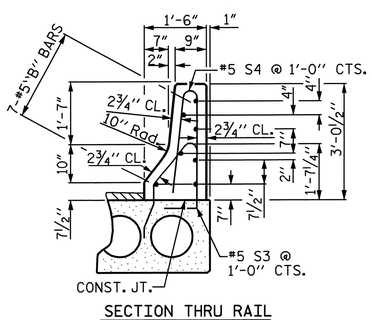
VERTICAL GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION 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.

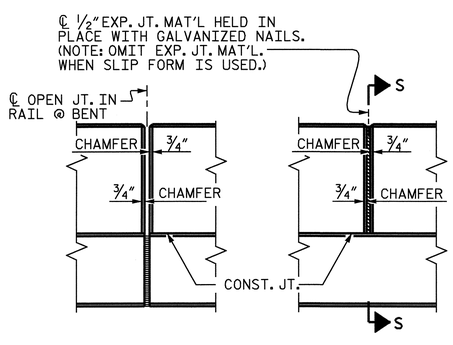
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

GRADE 270 STRANDS

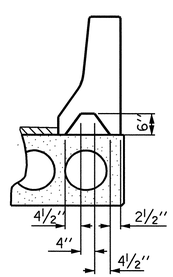
	½" Ø L.R.
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980



SECTION THRU RAIL

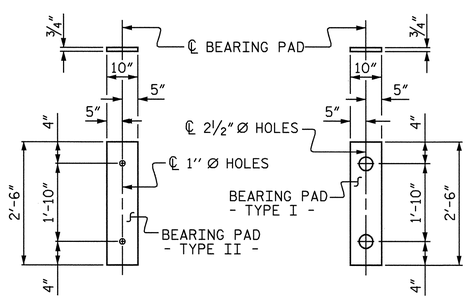


ELEVATION AT EXPANSION JOINTS



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

BARRIER RAIL DETAILS



FIXED END
(TYPE II - 33 REQ'D)

EXPANSION END
(TYPE I - 33 REQ'D)

ELASTOMERIC BEARING DETAILS

6/1/05

PROJECT NO. B-3899
ROCKINGHAM COUNTY
STATION: 23+91.00 -L-

SHEET 7 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD 3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT

OCTOBER 1981

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			24

ASSEMBLED BY : P.C. BREWER	DATE : 3/29/04	
CHECKED BY : S.B. WILLIAMS	DATE : 5/5/04	
DRAWN BY : WJH 4/89	REV. 10/17/00	RWW/LES
CHECKED BY : FCJ 5/89	REV. 7/10/01	RWW/LES
	REV. 5/7/03	RWW/JTE

31-MAY-2005 12:19
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STD. NO. PCS3