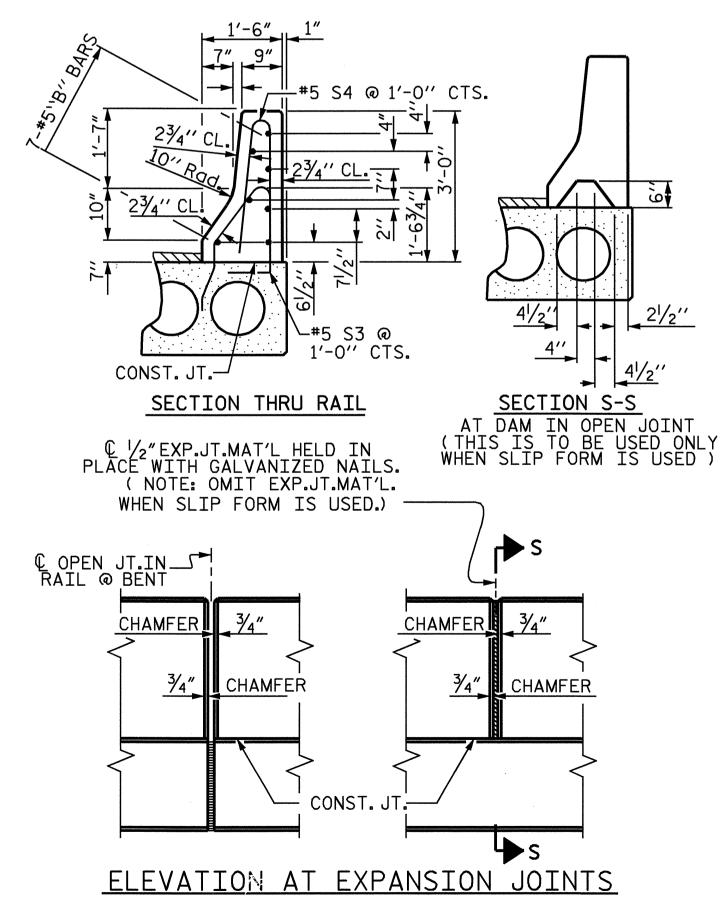
	BILL	OF	MATE	RIAL	FOR	CONCRI	ETE E	BARR	IER RA	\IL
BAR		BA	RS PER	SPAN		TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	5	SPAN A	SPAN B	SPAN C						
* B2		56		- 56		112	#5	STR	12'-6"	1460
* B4			56			56	#5	STR	15′-3″	891
* S4		88	110	88		286	#5	2	5′-10″	1740
* El	*EPOXY COATED REINFORCING STEEL LBS. 4091								4091	
CLA	CLASS AA CONCRETE CU.YDS. 31.1								31.1	
TOT	TOTAL LIN.FT. OF CONCRETE BARRIER RAIL 284.21									284.21

DEAD LOAD DEFLECTION AND CAMBER									
	SPAN A	SPAN B	SPAN C						
	1/2″Ø L.R. STRAND	√2″Ø L.R. STRAND	½″Ø L.R. STRAND						
CAMBER (SLAB ALONE IN PLACE)	1 ³ ⁄ ₁₆ "	3 ¹ / ₁₆ " \	1 ³ / ₁₆ " ▲						
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/16″ ₩	7/16″ ♦	3/16″ ♦						
FINAL CAMBER	1"	25/8″ ₩	1″ ∤						

** INCLUDES FUTURE WEARING SURFACE

	CORED S	LABS	REQUI	RED
		NUMBER	LENGTH	TOTAL LENGTH
SPAN A	EXTERIOR C.S.	2	$43'-7\frac{1}{2}''$	87′-3″
	INTERIOR C.S.	9	$43'-7\frac{1}{2}''$	392'-71/2"
SPAN B	EXTERIOR C.S.	2	54'-101/4"	109'-8 ¹ / ₂ "
	INTERIOR C.S.	9	54'-101/4"	493'-8 ¹ / ₄ "
SPAN C	EXTERIOR C.S.	2	43'-71/2"	87′-3″
	INTERIOR C.S.	9	43'-71/2"	392'-7 ¹ / ₂ "
	TOTAL	33		1563 . 15′

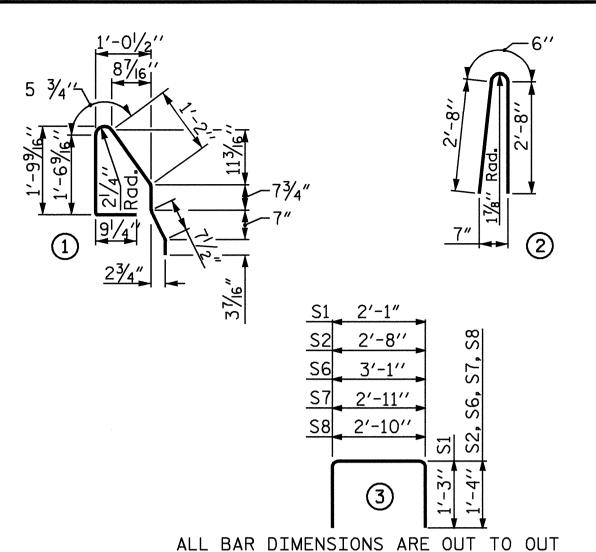
GRADE 270 STRANDS						
	½″Ø L.R.					
AREA (SQUARE INCHES)	0.153					
ULTIMATE STRENGTH (LBS.PER STRAND)	41,300					
APPLIED PRESTRESS (LBS.PER STRAND)	30,980					



R. G. EMERSON DATE: 1/04
A. V. ROYAL DATE: 2/04 CHECKED BY : A. V. ROYAL

BARRIER RAIL DETAILS

BAR TYPES

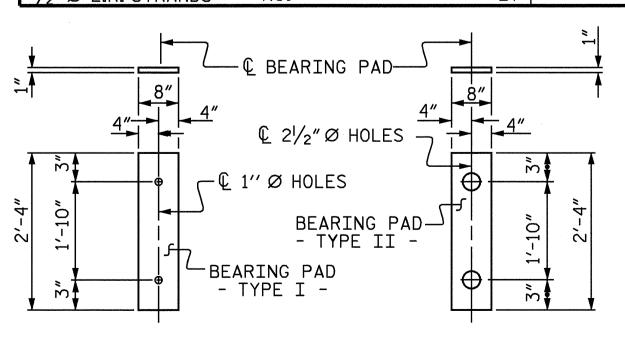


BILL OF MATERIAL FOR ONE CORED SLAB SECTION SPAN A & SPAN C

				EXTERI	OR UNIT	INTERI	OR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	
B1	4	# 4	STR	22'-11"	61	22'-11"	61	
S1	8	# 5	3	4′-7″	38	4′-7″	38	
S2	78	# 4	3	5′-4″	278			
S2	62	# 4	3			5′-4″	221	
* S3	44	# 5	1	5′-7″	256			
S6	4	# 4	3	5′-9″	15	5′-9″	15	
S7	4	# 4	3	5′-7″	15	5′-7″	15	
S8	4	# 4	3	5′-6″	15	5′-6″	15	
REINFORCING STEEL LBS. 422							365	
* EPOXY COATED REINFORCING STEEL LBS. 256								
5,000	P.S.I. CO	NCRETE	1	CU. YDS. 6.3 6.		6.2		
1/2"Ø L	.R. STRA	NDS	No.		17 17			

BILL OF MATERIAL FOR ONE CORED SLAB SECTION SPAN B

				EXTERIO	OR UNIT	INTERI	OR UNIT		
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT		
B3	4	# 4	STR	28′-6″	76	28′-6″	76		
,									
S1	8	# 5	3	4′-7″	38	4'-7"	38		
S2	100	# 4	3	5′-4″	356				
S2	80	# 4	3			5′-4″	285		
* S3	55	# 5	1	5′-7″	320				
S6	4	# 4	3	5′-9″	15	5′-9″	15		
S 7	4	# 4	3	5′-7″	15	5′-7″	15		
S8	4	# 4	3	5′-6″	15	5′-6″	15		
REINFO	ORCING S	STEEL	.BS. 515		444				
* EPOX	* EPOXY COATED REINFORCING STEEL LBS. 320								
5,000	P.S.I.CC	NCRETE	,	CU. Y	/DS. 7.9		7.8		
$\frac{1}{2}$ " Ø L.R. STRANDS No. 2						27			



FIXED END (TYPE I-33 REQ'D.)

EXPANSION END (TYPE II- 33 REQ'D.)

ELASTOMERIC BEARING DETAILS

(60 DUROMETER HARDNESS)

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 LUMP SUM PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE.

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

THE 21/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE $2^{1}\!\!/_{2}{}''\varnothing$ DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO $1^{1}\!\!/_{2}{}''$ ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT. THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. THE 12" WIDE BOND BREAKING TAPE SHALL BE CENTERED OVER THE JOINT AND CONFORM TO THE REQUIREMENTS OF TYPE N 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 4100 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

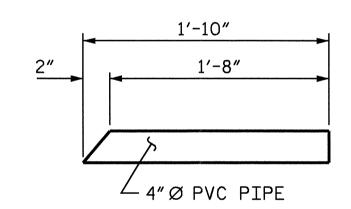
APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

VERTICAL GROOVED CONTRACTION JOINTS, 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.

ALL ELASTOMERIC BEARING PADS SHALL BE 60 DUROMETER HARDNESS.

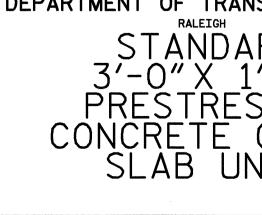
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.



DRAIN DETAIL (12 DRAINS REQUIRED)

> B-3901 PROJECT NO. _ ROCKINGHAM _ COUNTY 23+37.40 -L-STATION:

SHEET 5 OF 5





DEPARTMENT OF TRANSPORTATION SLAB UNI

STATE OF NORTH CAROLINA

REVISIONS SHEET NO S-8 DATE: DATE: BY: BY: TOTAL SHEETS