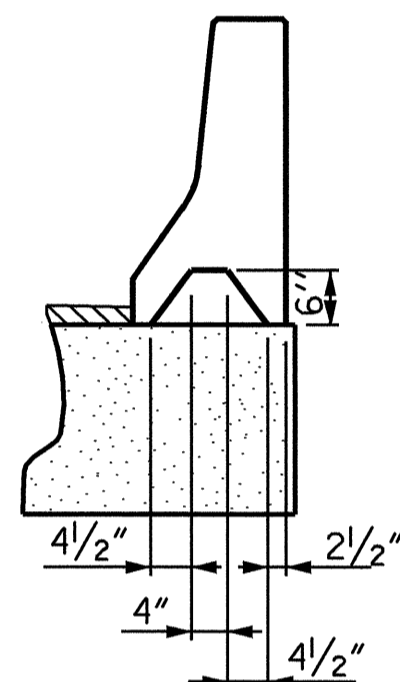
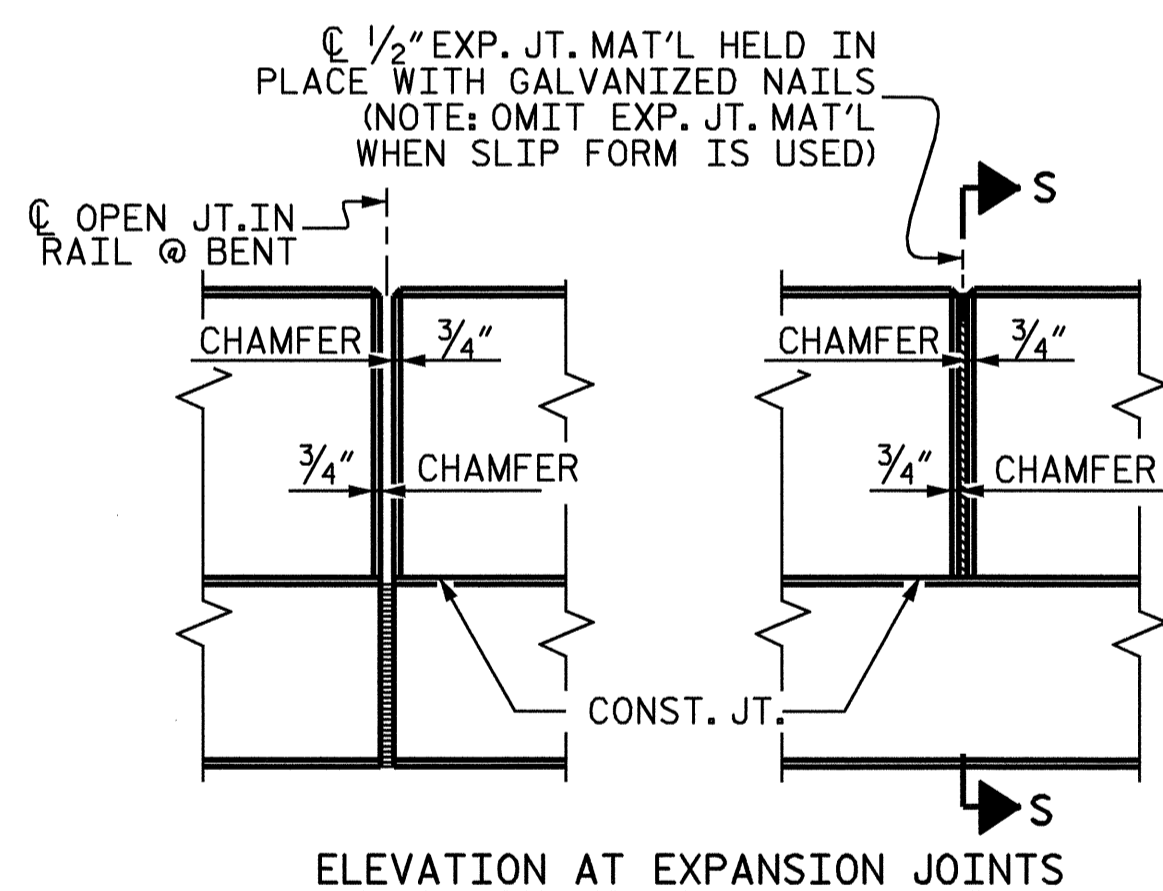


**BARRIER RAIL
END OF RAIL DETAILS**

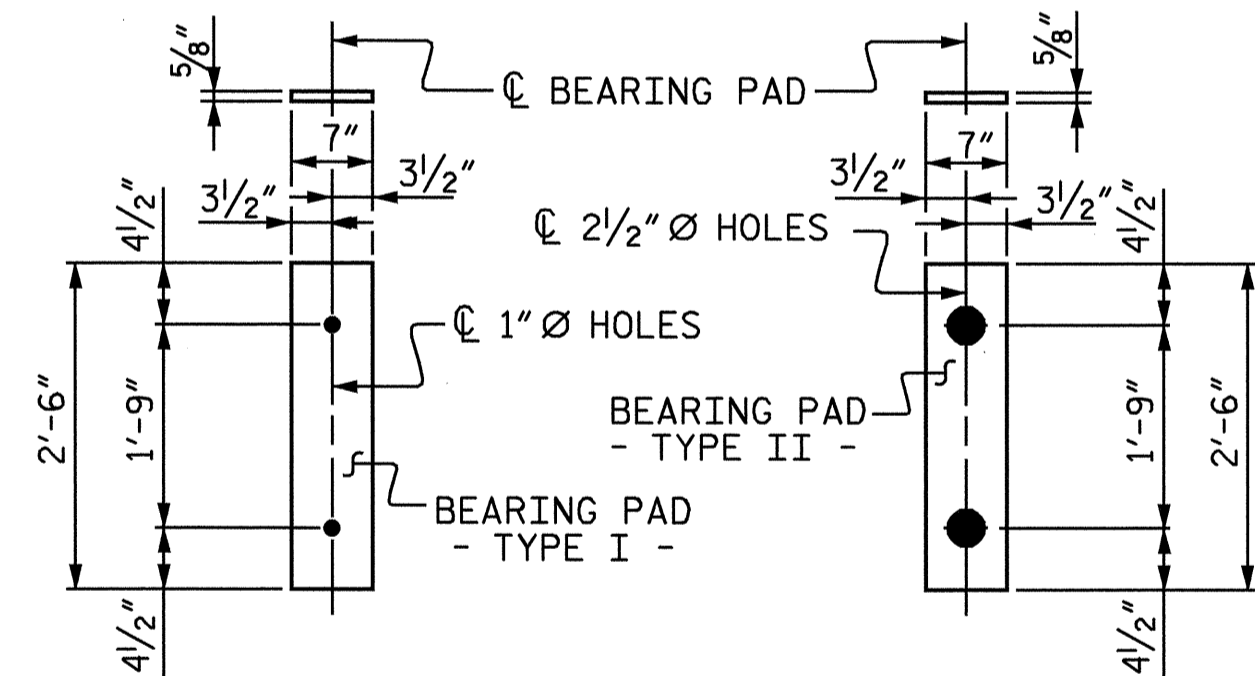


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



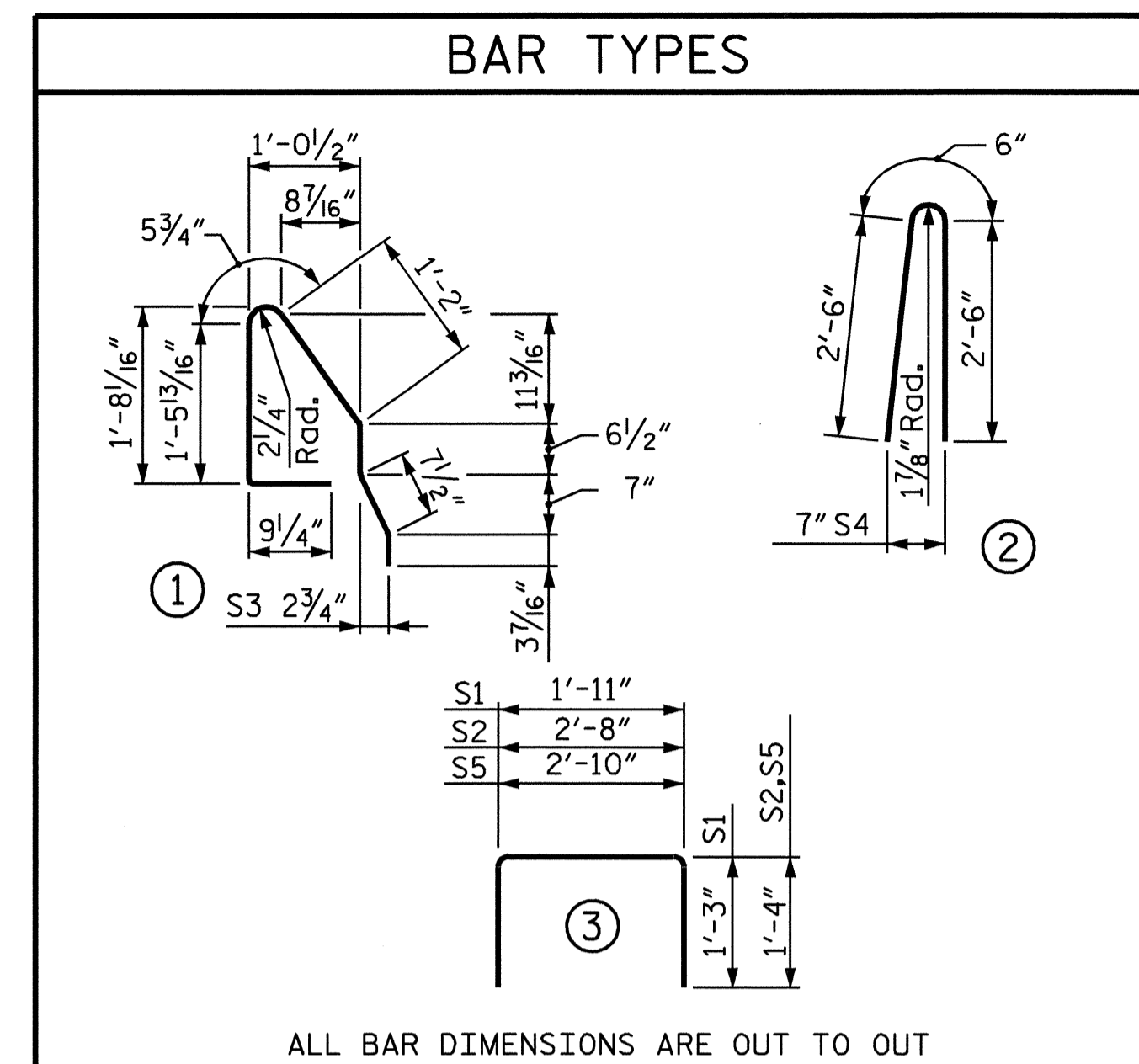
FIXED END (TYPE I - 36 REQ' D)
EXPANSION END (TYPE II - 36 REQ' D)

ELASTOMERIC BEARING DETAILS

50 DUROMETER HARDNESS

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL								
BAR	BARS PER SPAN			TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN A	SPAN B	SPAN C					
*B3	14	14	14	28	5	STR	10'-5"	304
*B4	14	14	14	28	5	STR	11'-1"	324
*B5	14	14	14	14	5	STR	23'-0"	336
*B6	14	14	14	14	5	STR	23'-8"	346
*S4	46	96	46	188	5	2	5'-6"	1078
* EPOXY COATED REINFORCING STEEL					LBS.	2388		
CLASS AA CONCRETE					CU.YDS.	21.3		
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					187.03			

DRAWN BY : M. M. PARSONS/DAD DATE : 10/30/02
CHECKED BY : H. T. BARBOUR DATE : 1/23/03



BAR TYPES

BILL OF MATERIAL FOR ONE CORED SLAB UNIT							
BAR NO.	SIZE	TYPE	INTERIOR UNIT		EXTERIOR UNIT		
			LENGTH	WEIGHT	LENGTH	WEIGHT	
B1	2	4	STR	22'-4"	30	22'-4"	30
S1	8	4	3	4'-5"	24	4'-5"	24
S2	40	4	3	5'-4"	143	5'-4"	143
*S3	23	5	1	5'-4"	128	5'-4"	128
S5	8	4	3	5'-6"	29	5'-6"	29

REINFORCING STEEL	LBS.	226	226
* EPOXY COATED REINF. STEEL	LBS.		128
5000 PSI CONCRETE	CU.YDS.	3.4	3.4
1/2" Ø L.R. STRANDS	NO.	9	9

BAR NO.	SIZE	TYPE	INTERIOR UNIT		EXTERIOR UNIT		
			LENGTH	WEIGHT	LENGTH	WEIGHT	
B2	4	4	STR	24'-8"	66	24'-8"	66
S1	8	4	3	4'-5"	24	4'-5"	24
S2	90	4	3	5'-4"	321	5'-4"	321
*S3	48	5	1	5'-4"	267	5'-4"	267
S5	8	4	3	5'-6"	29	5'-6"	29

REINFORCING STEEL	LBS.	440	440
* EPOXY COATED REINF. STEEL	LBS.		267
5000 PSI CONCRETE	CU.YDS.	6.9	6.9
1/2" Ø L.R. STRANDS	NO.	18	18

CORED SLABS REQUIRED			
SPANS A & C			
UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	20	22'-8 1/4"	453'-9"
EXTERIOR	4	22'-8 1/4"	90'-9"
TOTAL NUMBER	24	22'-8 1/4"	544'-6"
SPAN B ONLY			
UNIT TYPE	NUMBER	LENGTH	TOTAL LENGTH
INTERIOR	10	47'-10 3/8"	478'-7 3/4"
EXTERIOR	2	47'-10 3/8"	95'-8 3/4"
TOTAL NUMBER	12	47'-10 3/8"	574'-4 1/2"

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	1/2" Ø L.R. 0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	30,980

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 2 1/2" DIA. DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT. THE 2 1/2" DIA. DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1 1/2" ABOVE 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 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, 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.

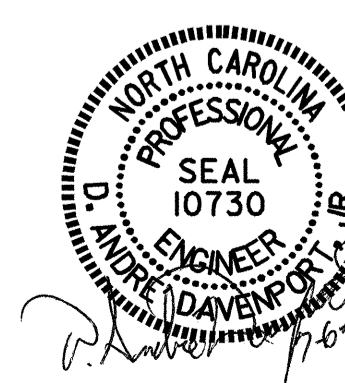
FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

DEAD LOAD DEFLECTION AND CAMBER			
	SPAN A 1/2" Ø L.R. STRAND	SPAN B 1/2" Ø L.R. STRAND	SPAN C 1/2" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3/16"	1 3/16"	3/16"
* DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	0"	5/16"	0"
FINAL CAMBER	3/16"	1/2"	3/16"

* INCLUDES FUTURE WEARING SURFACE

PROJECT NO. B-4134
HALIFAX COUNTY
STATION: 14+23.00 -L-

SHEET 5 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT

REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			