

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER ONE MODIFIED INTERIOR UNIT	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B3	20	100	#5	STR	29'-7"	3086
*S13	68	340	#5	2	7'-2"	2542
* EPOXY COATED REINFORCING STEEL						LBS. 5,628
CLASS AA CONCRETE						CU.YDS. 35.7
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 300.5

FOR BAR TYPES, SEE SHEET 16 OF 16.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER ONE MODIFIED INTERIOR UNIT	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
*B4	20	100	#5	STR	27'-1"	2825
*S13	62	310	#5	2	7'-2"	2318
* EPOXY COATED REINFORCING STEEL						LBS. 5,143
CLASS AA CONCRETE						CU.YDS. 32.8
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN. FT. 275.6

FOR BAR TYPES, SEE SHEET 16 OF 16.

BILL OF MATERIAL FOR CONCRETE CURB AND END POSTS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B1	80	#4	STR	29'-7"	1581
*B2	80	#4	STR	27'-1"	1448
*E1	8	#7	STR	2'-10"	47
*E2	8	#7	STR	3'-1"	51
*E3	8	#7	STR	3'-4"	55
*E4	8	#7	STR	3'-8"	60
*E5	8	#7	STR	3'-11"	65
*F1	24	#6	STR	3'-5"	124
*F2	8	#6	STR	2'-3"	28
*F3	8	#6	STR	3'-3"	40
* EPOXY COATED REINFORCING STEEL					LBS. 3,499
CLASS AA CONCRETE					CU.YDS. 80.4
TOTAL CONCRETE CURB					LN. FT. 1152.3

THE REINFORCING STEEL AND CONCRETE IN THE CURB AND END POSTS ARE INCLUDED IN THE UNIT PRICE BID FOR THE 42" OREGON RAIL

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 BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULOUS SILICONE SEALANT. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX 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 THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS, CONCRETE CURB AND END POSTS 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.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND CURB, 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 AND CURB EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL AND CURB SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PRESTRESSED CONCRETE CORED SLAB UNITS ARE DESIGNED FOR 0 PSI TENSION IN THE PRECOMPRESSED TENSILE ZONE UNDER ALL LOADING CONDITIONS.

PRESTRESSED CONCRETE CORED SLAB UNITS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT ALL FIXED AND EXPANSION ENDS OF CORED SLAB SECTIONS WITH HOLD-DOWN ANCHOR BOLTS, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED AND THEN BACKED OFF 1/2" TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF CORED SLAB SECTIONS WITH HOLD-DOWN ANCHOR BOLTS SHALL BE FILLED WITH NON-SHRINK GROUT TO THE BOTTOM OF THE ANCHOR BOLT BLOCKOUT PRIOR TO INSTALLING THE ANCHOR PLATES, WASHERS, AND NUTS. THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF CORED SLAB SECTIONS WITH HOLD-DOWN ANCHOR BOLTS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO THE BOTTOM OF THE ANCHOR BOLT BLOCKOUT PRIOR TO INSTALLING THE ANCHOR PLATES, WASHERS, AND NUTS.

THE ANCHOR BOLT BLOCKOUTS OF CORED SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT PRIOR TO PLACEMENT OF THE WEARING SURFACE.

THE TOP SURFACE OF THE CORED SLAB UNITS SHALL HAVE A 3/8" RAKED FINISH.

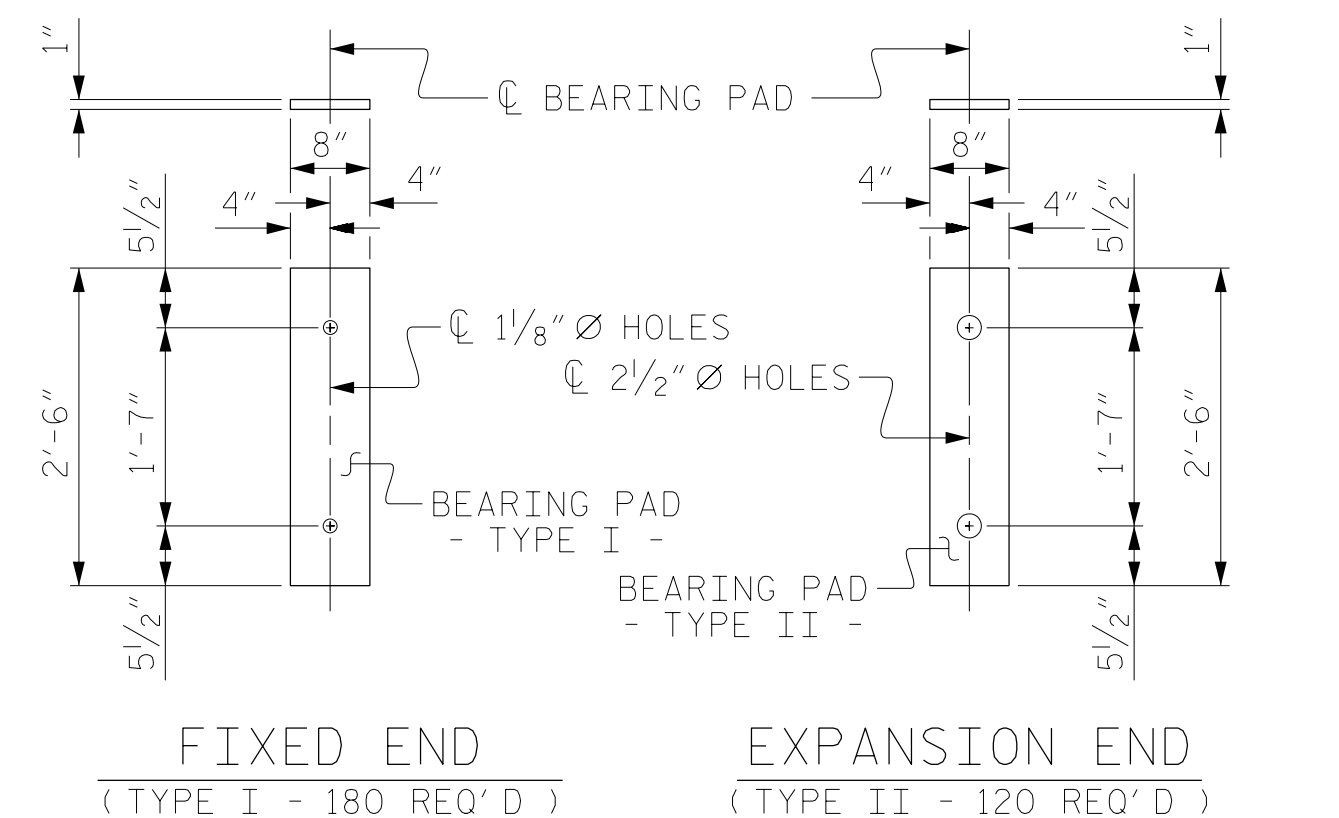
GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH SHALL BE TOOLED IN THE TOP OF WEARING SURFACE AT INTERIOR BENTS WITH CONTINUOUS CONCRETE WEARING SURFACE IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF ALL RIGHT EXTERIOR CORED SLAB UNITS.

THE COST OF THE METAL RAIL POST ANCHOR ASSEMBLY CAST WITH THE CORED SLAB UNITS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

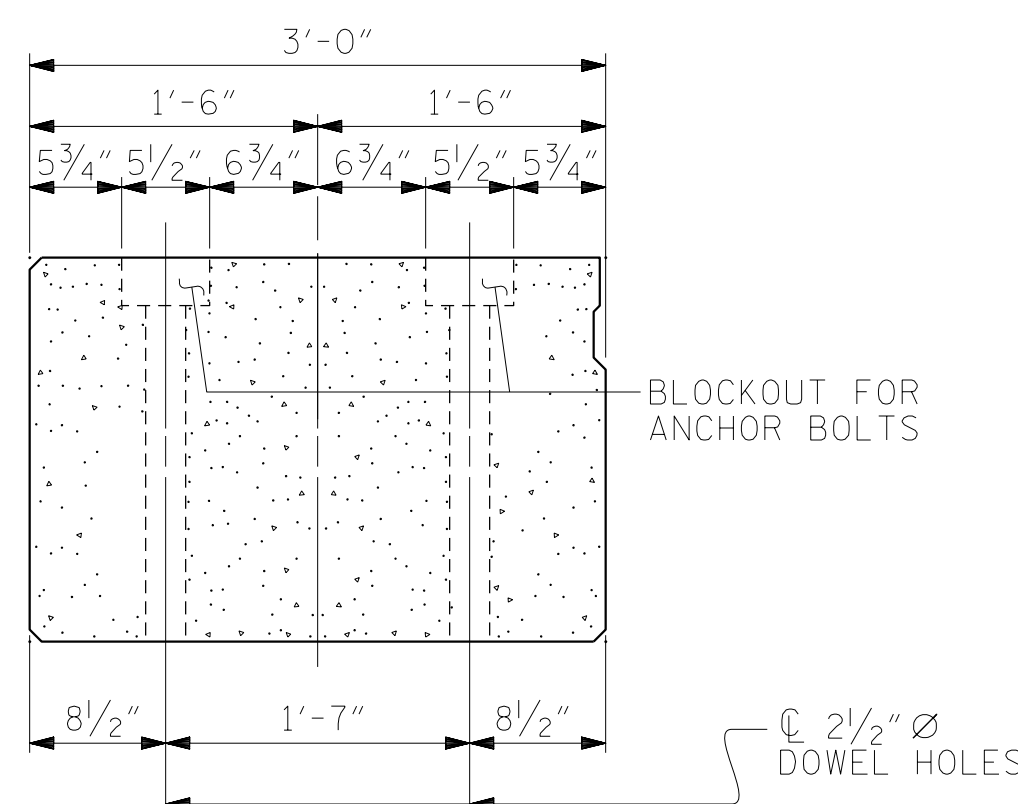
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F1554 GR. 105. ANCHOR PLATES, WASHERS, AND NUTS SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. ANCHOR BOLTS, ANCHOR PLATES, WASHERS, AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

NO SEPARATE PAYMENT SHALL BE MADE FOR THE ANCHOR BOLTS, ANCHOR PLATES, WASHERS, AND NUTS. THE COST OF THE MATERIAL AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.



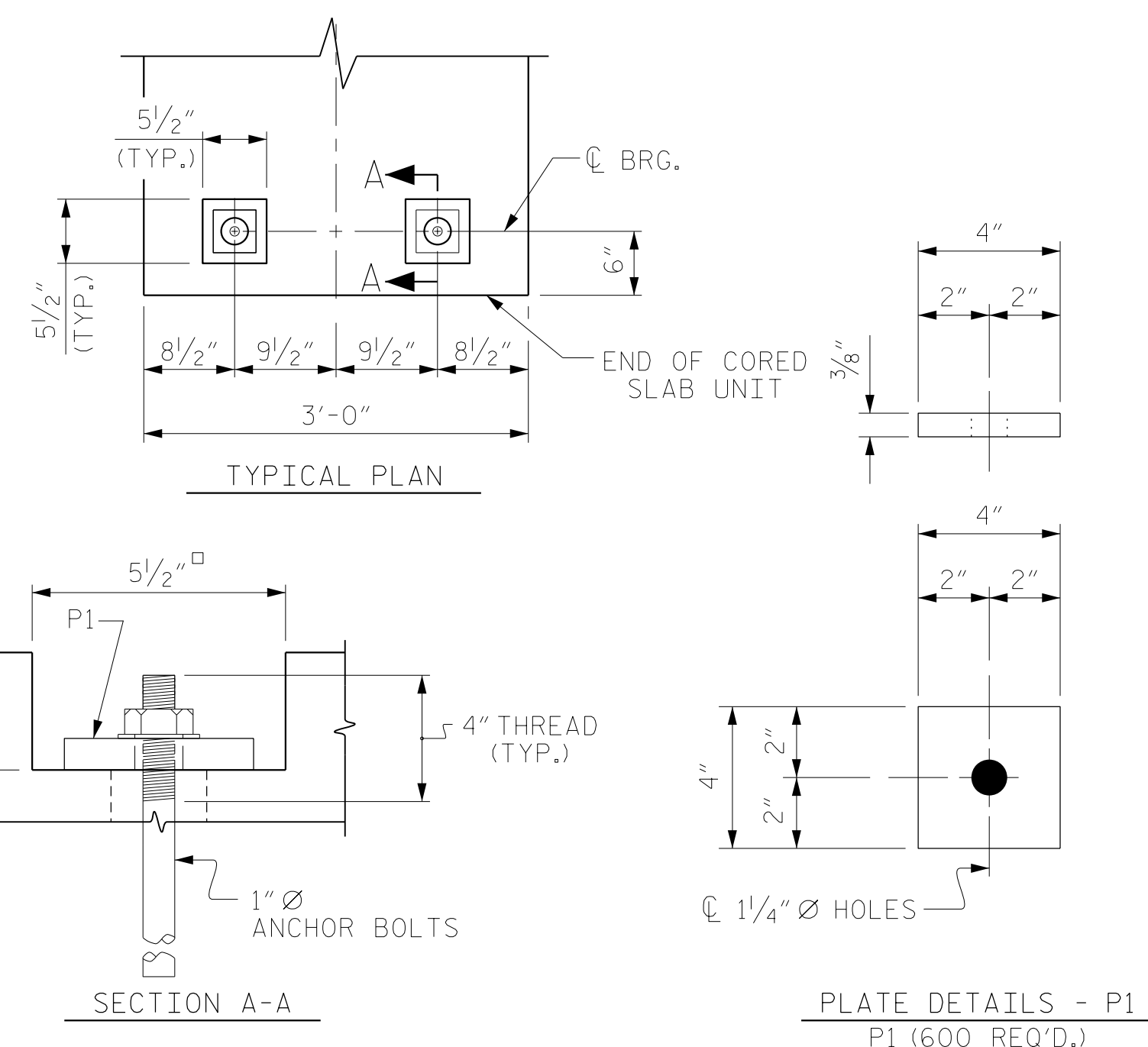
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



END ELEVATION

SHOWING LOCATION OF BLOCKOUT FOR ANCHOR BOLTS AND DOWEL HOLES.



BLOCKOUT DETAIL FOR ANCHOR BOLTS

(TYP. FOR ALL CORED SLABS)

DRAWN BY :	MRA	DATE :	02/2023
CHECKED BY :	MKO	DATE :	02/2023
DESIGN ENGINEER OF RECORD:	RLB	DATE :	03/2023

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Professional Engineer Seal for Leon Bollinger, State of North Carolina, License No. 18442, dated 3/28/2023. RS&H Architects-Engineers-Planners, Inc. 8521 Six Forks Road, Suite 400, Raleigh, NC 27615, 919-926-4100 FAX 919-846-9080, www.rsandh.com, North Carolina License Nos. 5073-F-0403-C-28

PROJECT NO. BR-0160  
BRUNSWICK COUNTY  
STATION: 21+77.50 -L-

SHEET 15 OF 16

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-23
TOTAL SHEETS					42