



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

June 18, 2013

CONTRACT: DB00120
WBS ELEMENT: 17BP.2.R.19
COUNTY: Lenoir
ROUTE: NC 58
DESCRIPTION: Replace Bridge #50 over Stonyton Creek
ADDENDUM NUMBER 1

TO: Prospective Bidders

Please note the following revisions to the contract proposal for the above-referenced project. These changes are required due to the revision of the vertical concrete barrier rail height.

- Replace plan sheets S-4 through S-8 with the versions attached. Note that this revision does not affect contract bid quantities.

If you should have any questions concerning this addendum, please call me at (252) 439-2807.

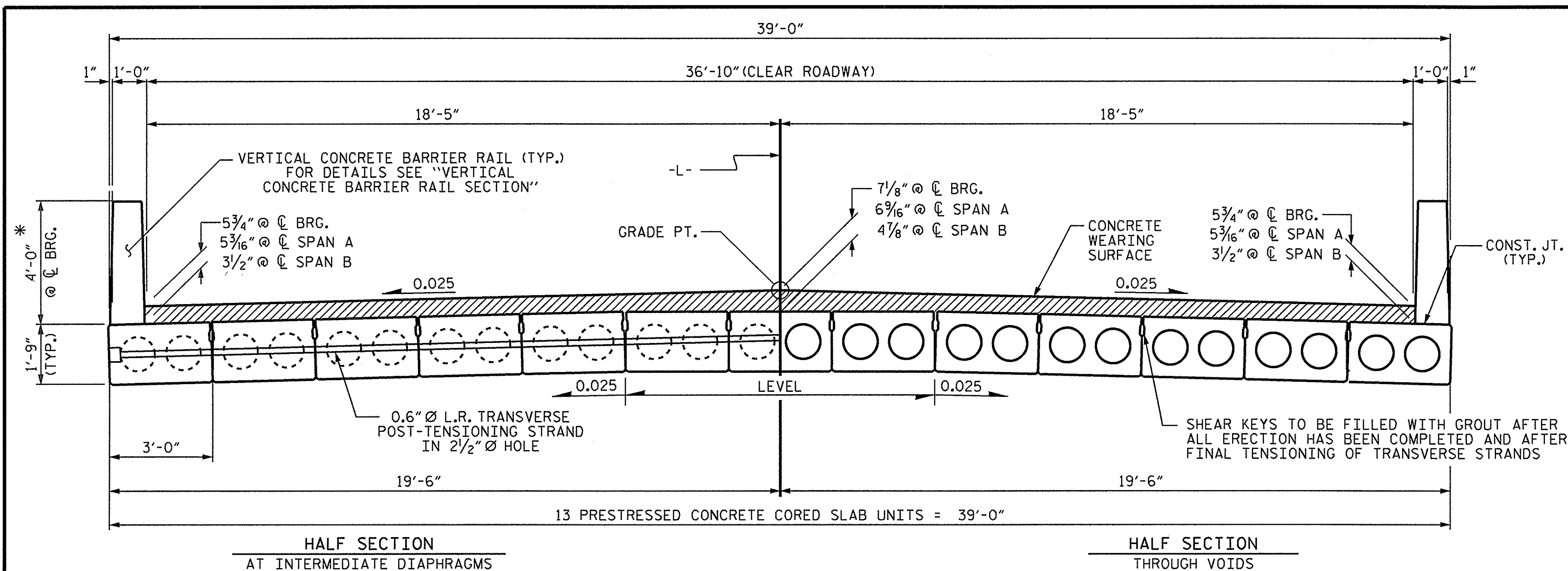
Sincerely,

A handwritten signature in black ink, appearing to read "A Bullard".

Aaron Bullard, PE
Division Contract Officer

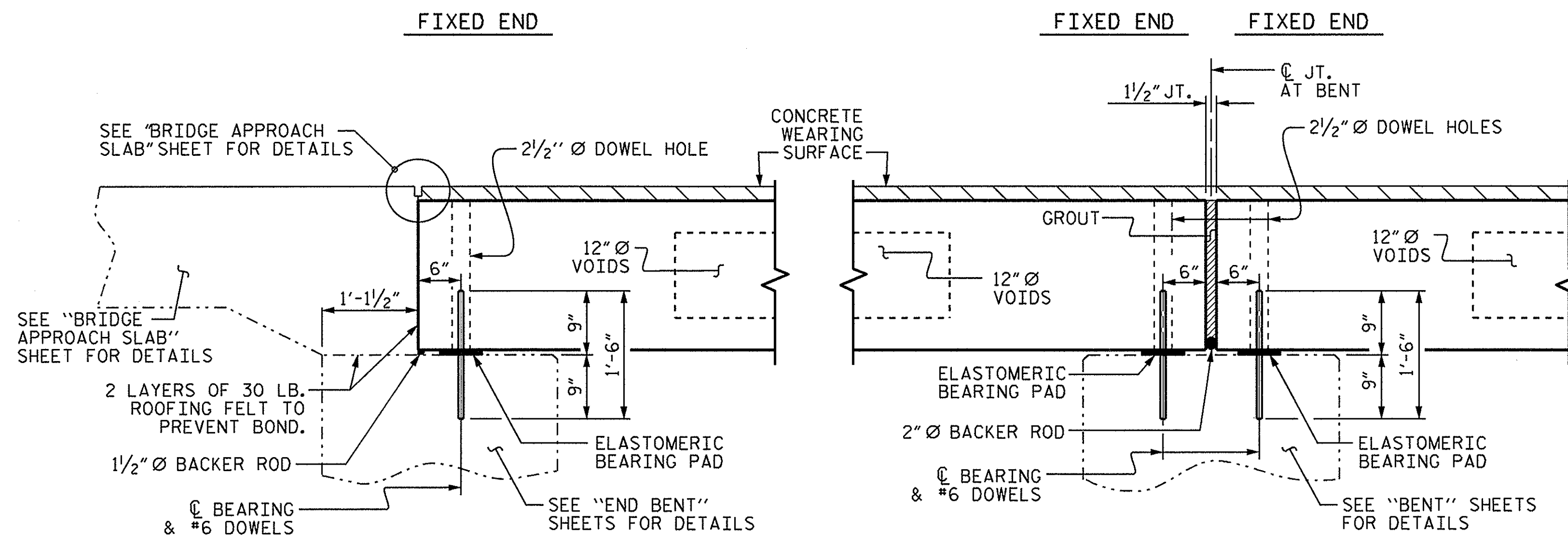
Attachments

cc: Mr. Ed Eatmon, PE
Mr. Bill Kincannon, PE
Ms. Maria Rogerson, PE



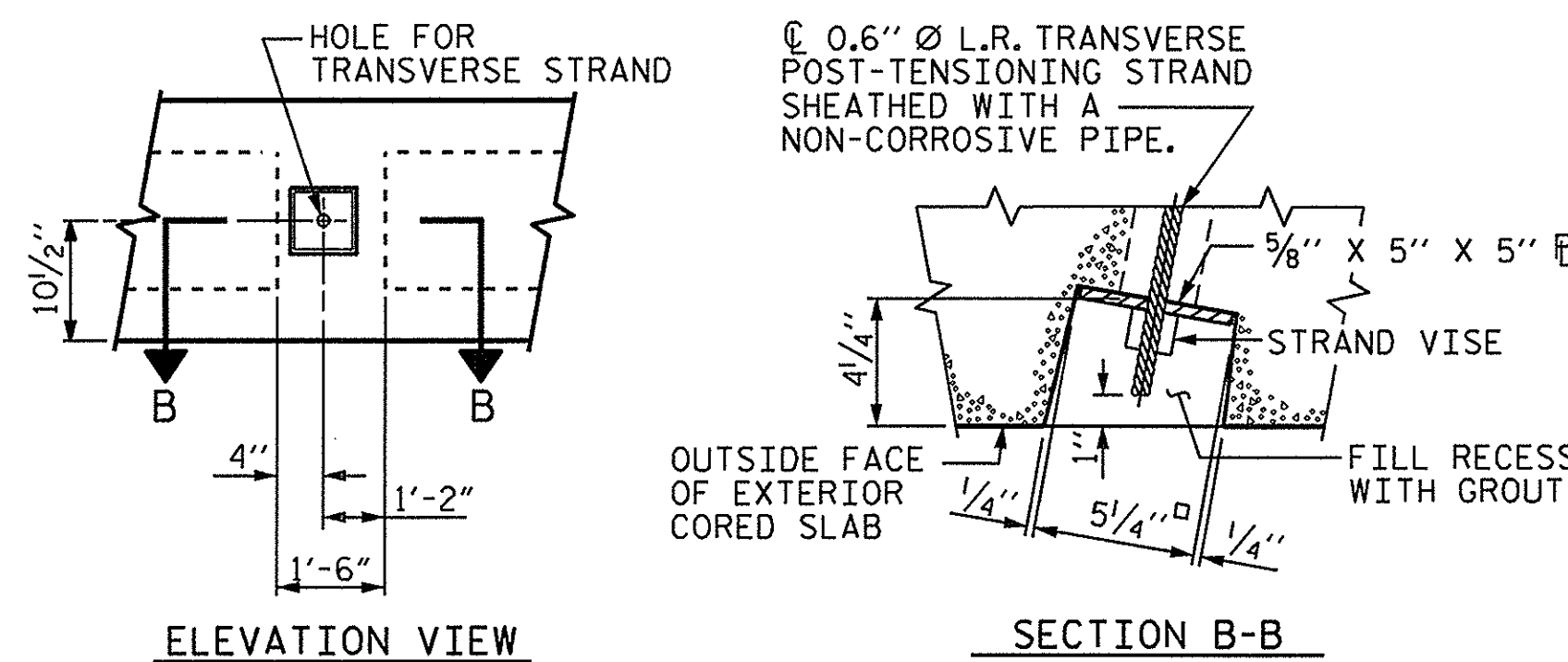
TYPICAL SECTION

*-THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



SECTION AT END BENT

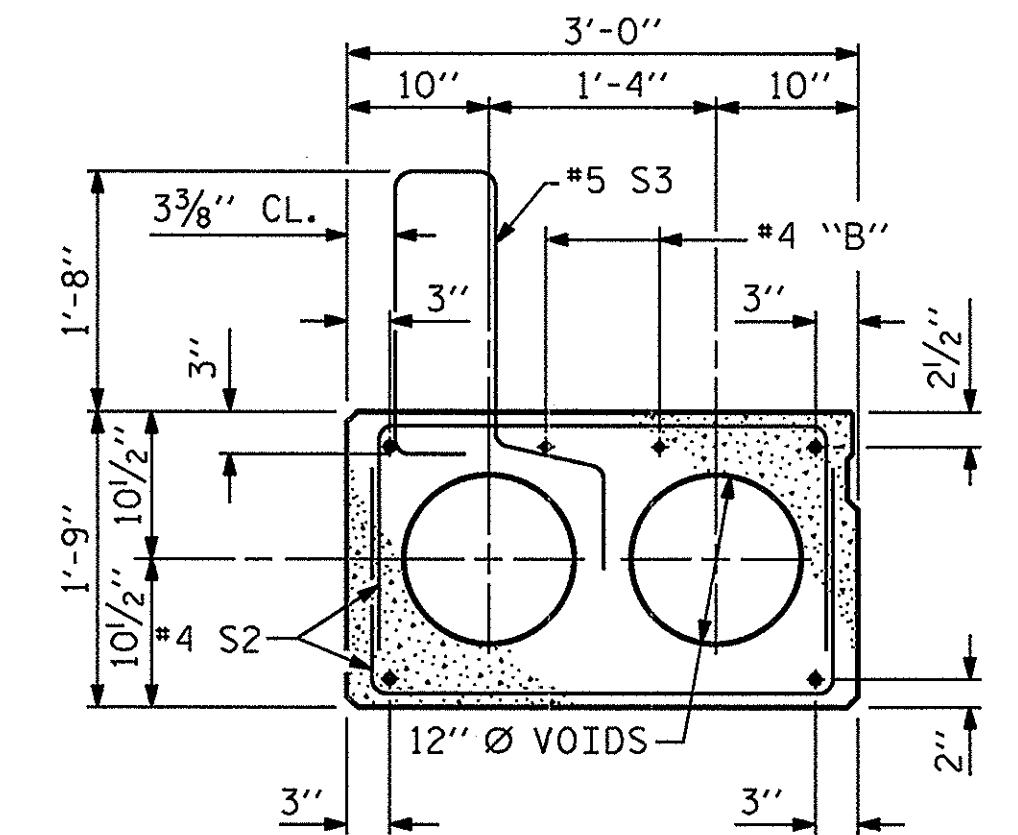
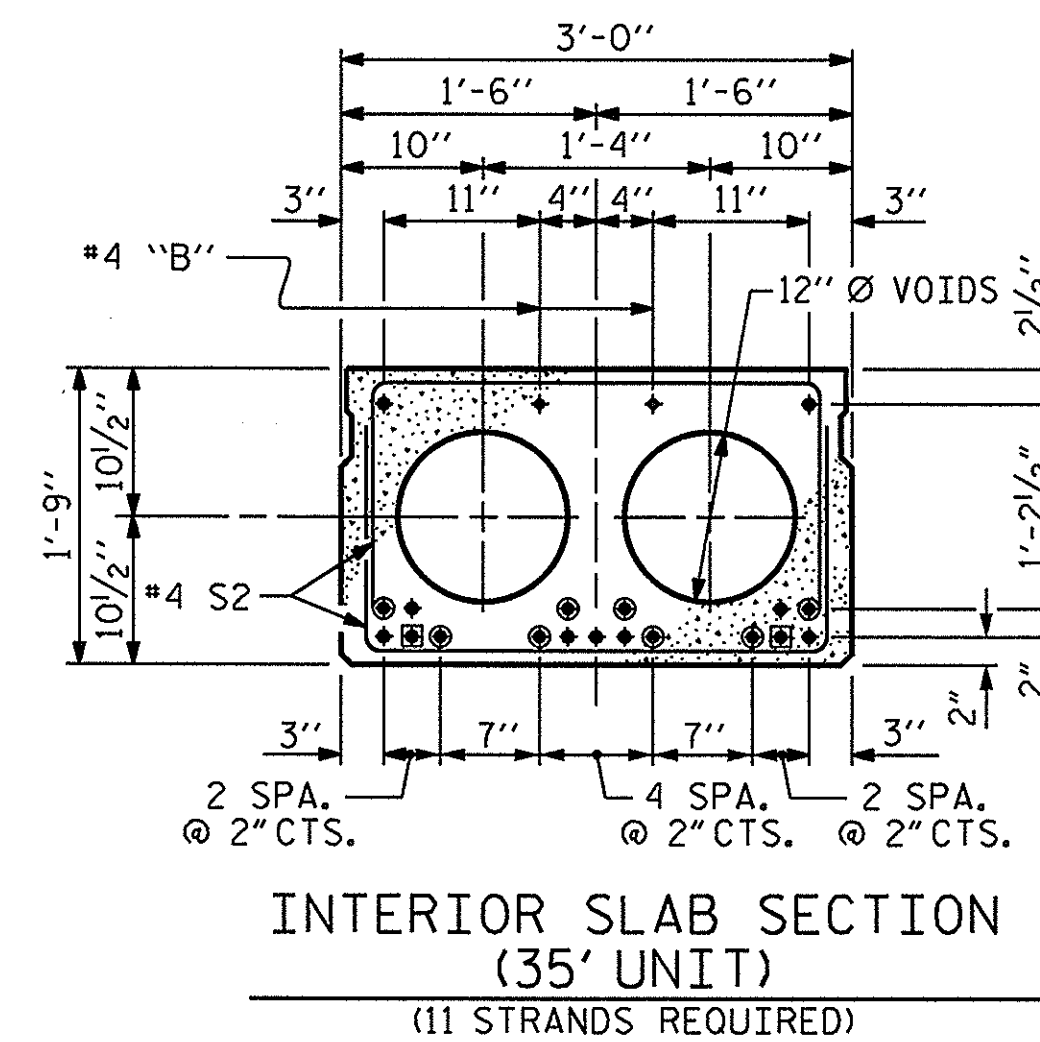
SECTION AT BENT



GRAUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS

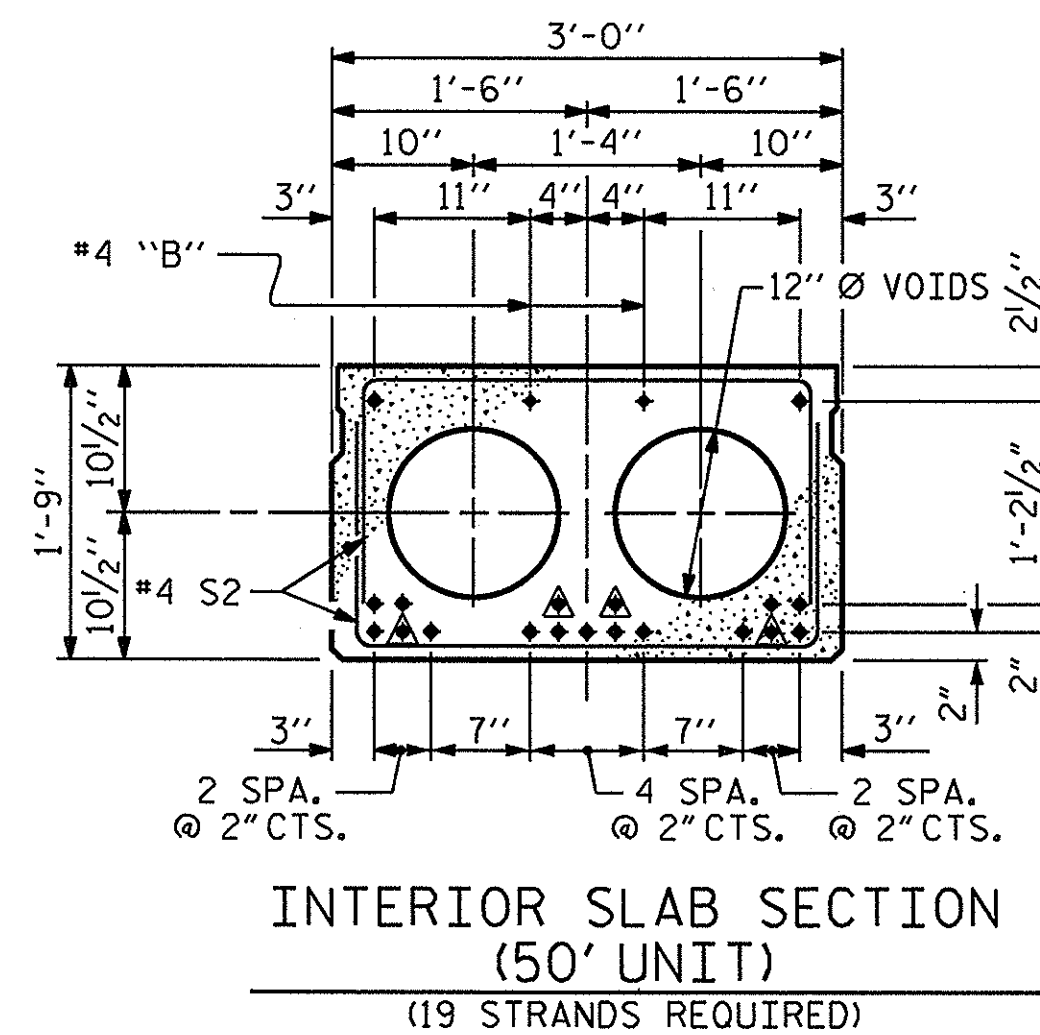
ASSEMBLED BY : E. K. POPE DATE : 2-1-13
 CHECKED BY : R. KOUCHEK DATE : 2-5-13
 DRAWN BY : DGE 5/09 REV. 12/11 MAA/AAC
 CHECKED BY : BCH 6/09

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EXT. SLAB SECTION

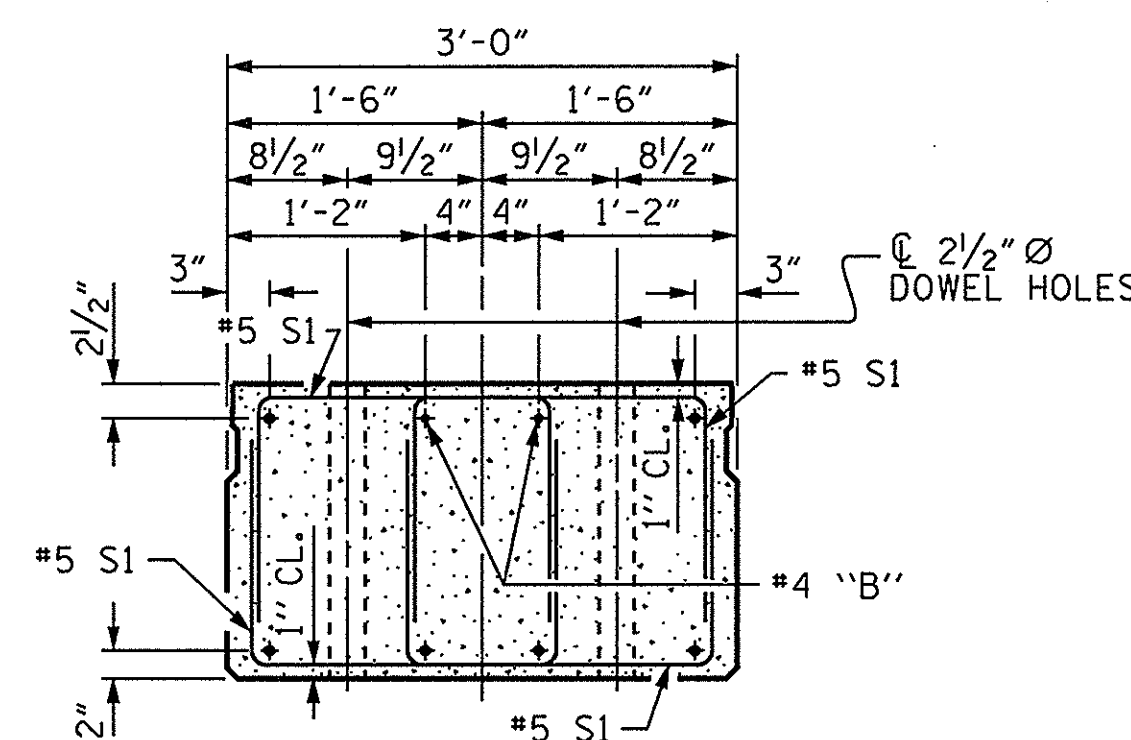
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



0.6" Ø LOW RELAXATION STRAND LAYOUT

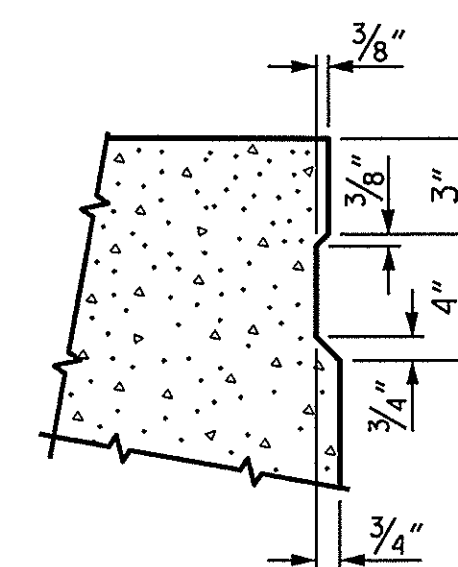
- ▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.)
 INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 17BP.2.R.19
 LENOIR COUNTY
 STATION: 14+27.50 -L-

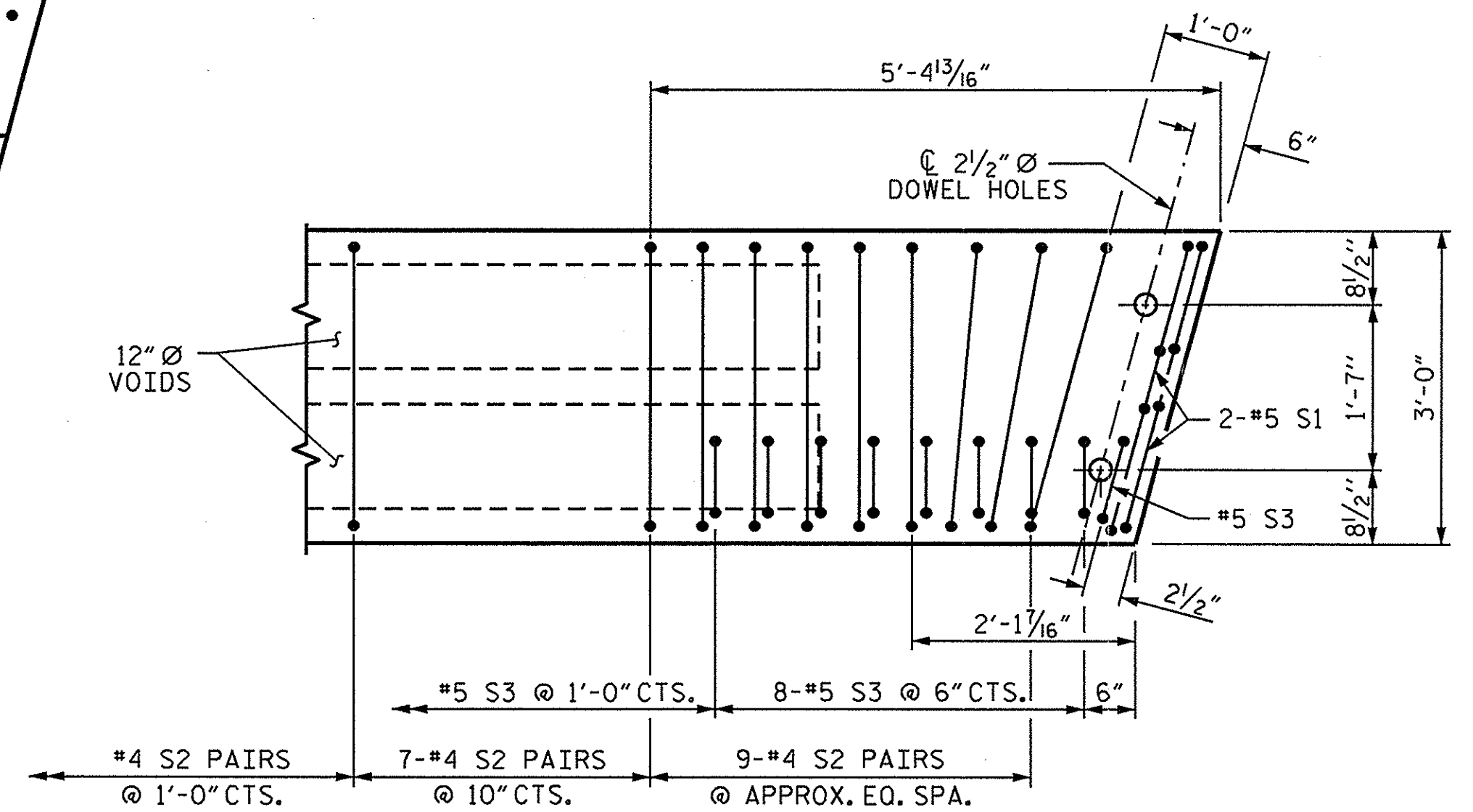
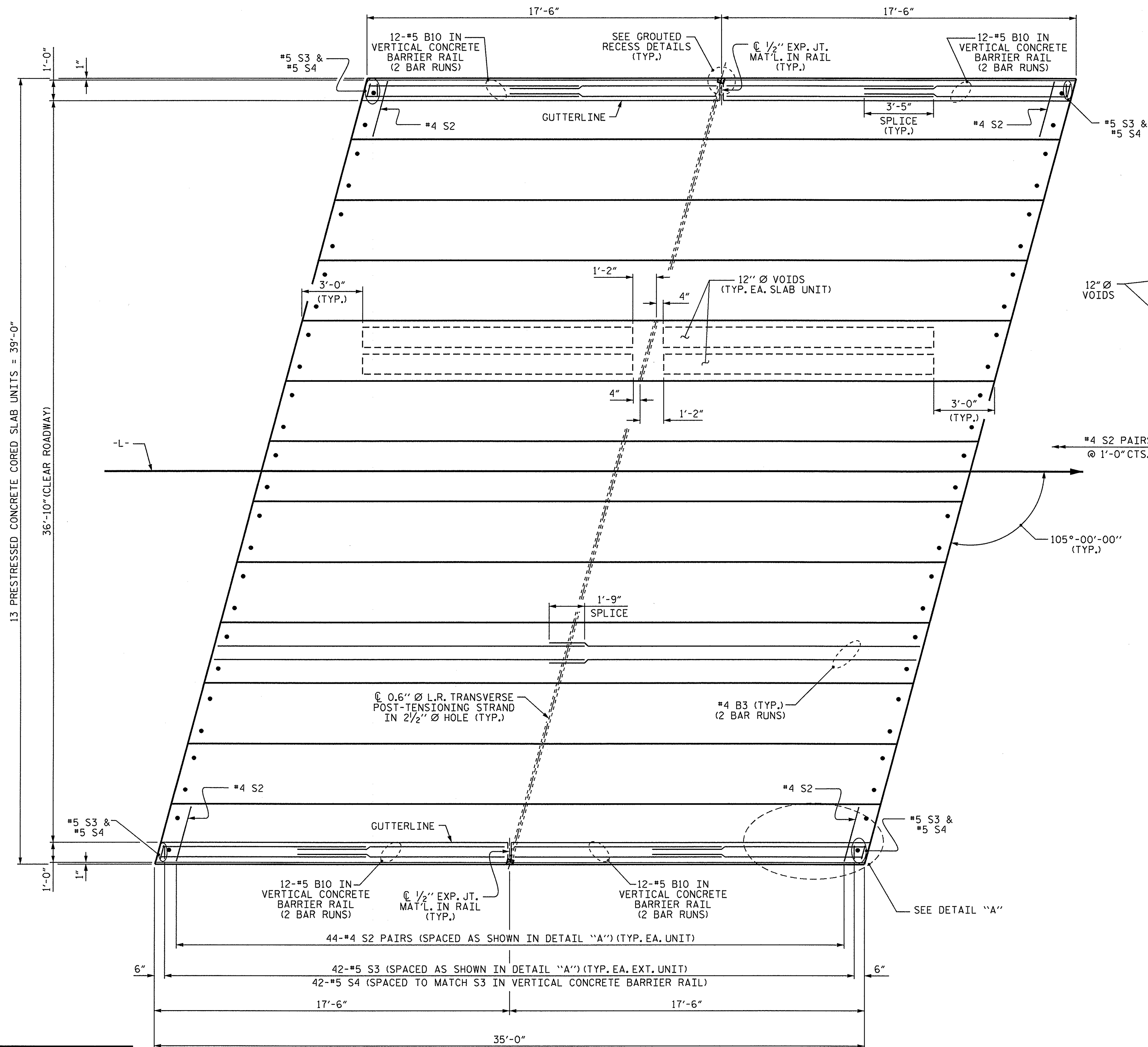
SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STD. NO. 21" PCS2-39-105S



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.2.R.19
LENOIR COUNTY
STATION: 14+27.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

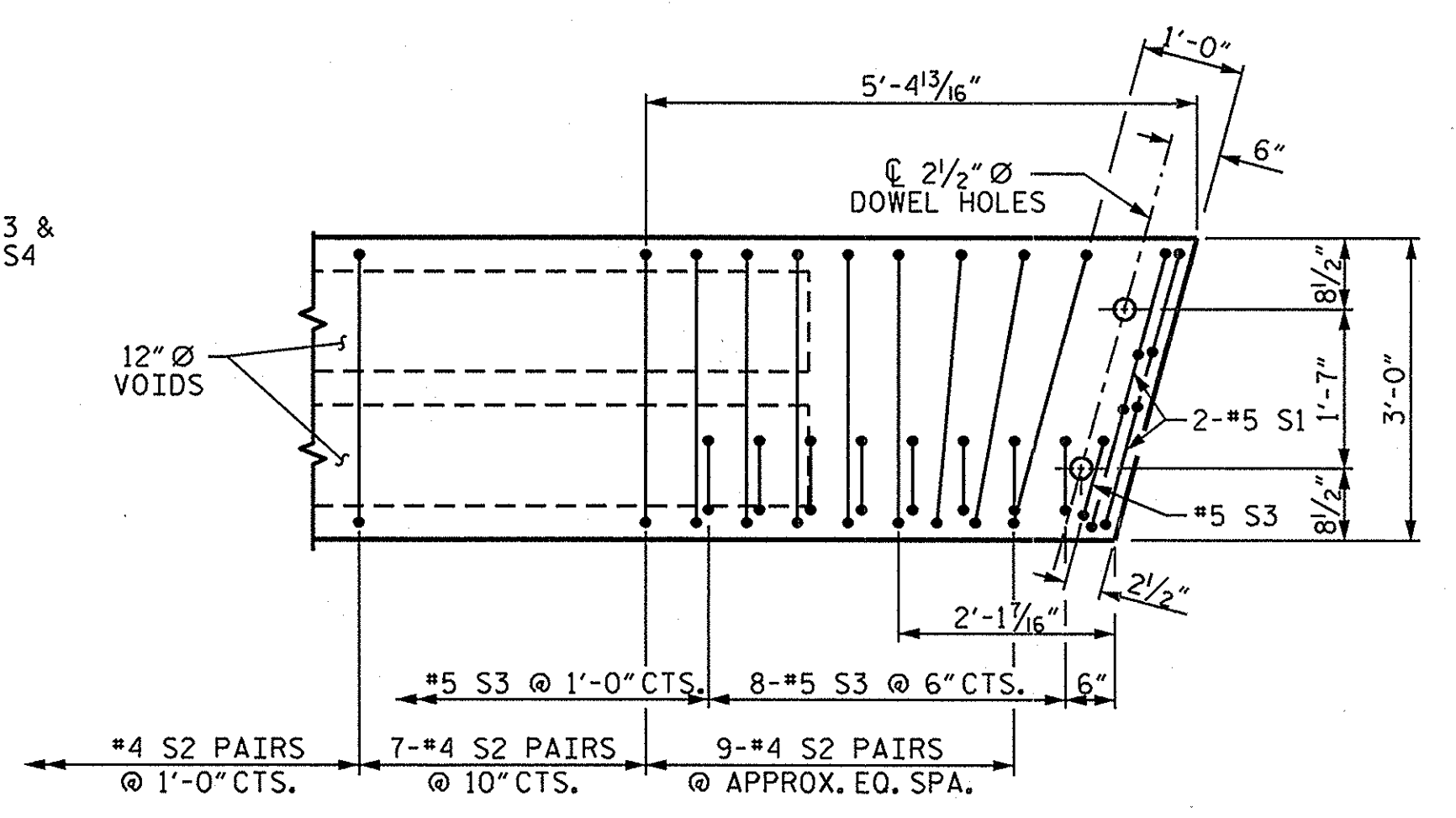
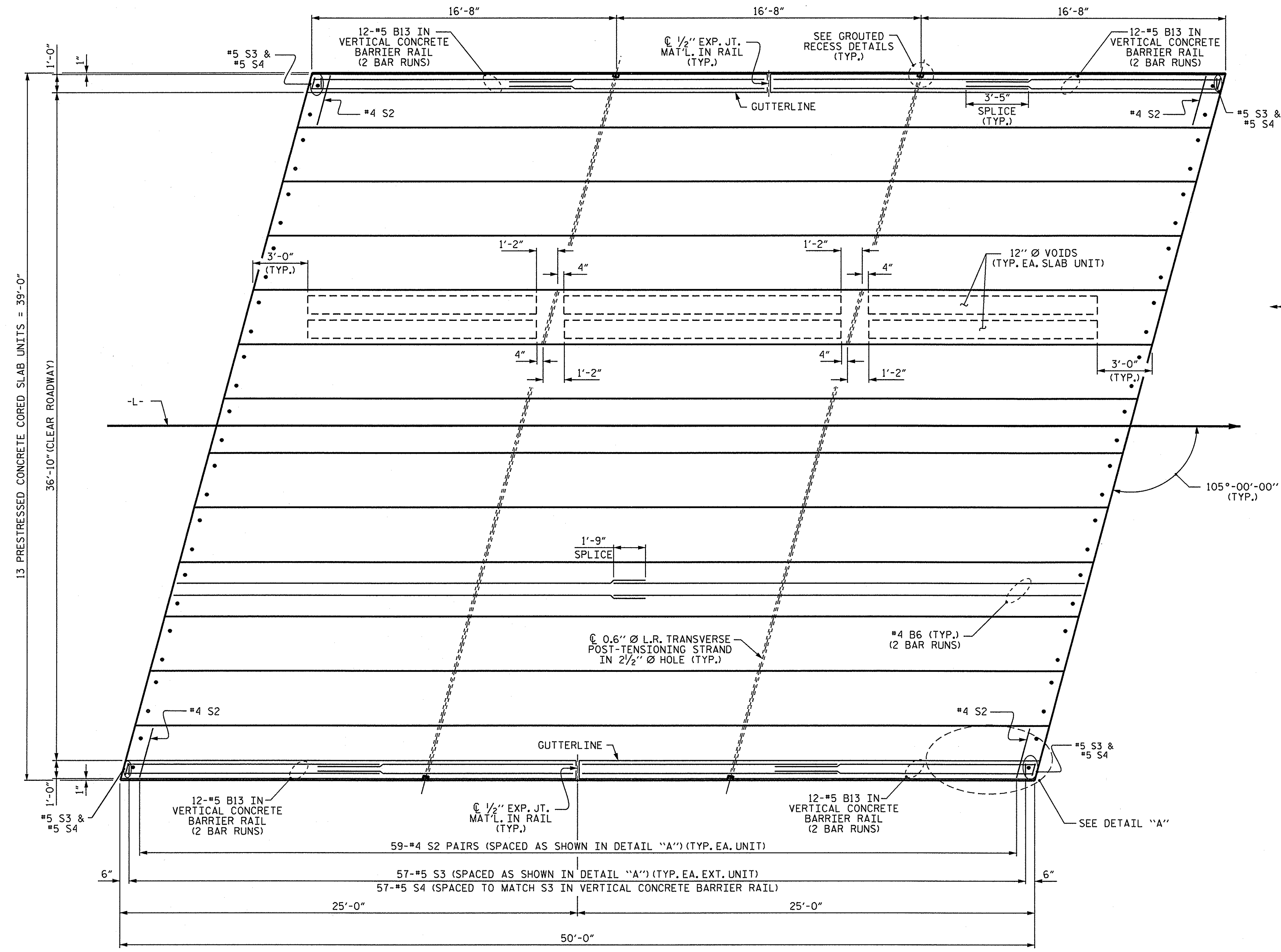
PLAN OF 35' UNIT
36'-10" CLEAR ROADWAY
105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

ASSEMBLED BY: E. K. POPE		DATE: 9-21-12	
CHECKED BY: REZA KOUCHEKI		DATE: 6-14-13	
DRAWN BY: DGE 6/09		REV. 12/5/11 MAA/AAC	
CHECKED BY: BCH 6/09			

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STD. NO. 21" PCS_39_105S_35L



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. 17BP.2.R.19
 LENOIR COUNTY
 STATION: 14+27.50 -L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

PLAN OF 50' UNIT
36'-10" CLEAR ROADWAY
105° SKEW

REVISIONS

SHEET NO.

NO.

BY:

DATE:

NO.

BY:

DATE:

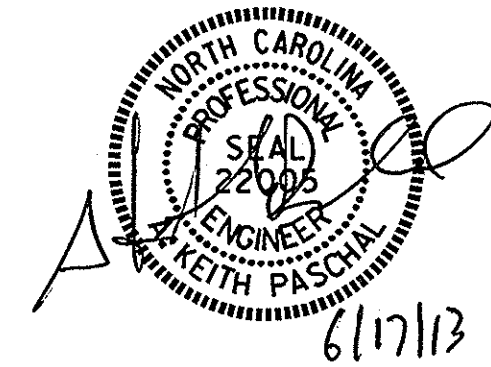
1

3

2

4

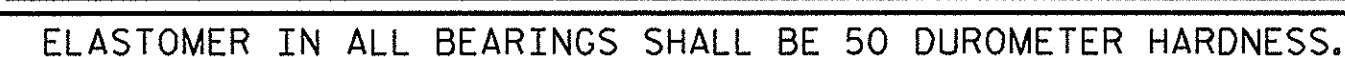
TOTAL
SHEETS



ASSEMBLED BY: E. K. POPE DATE: 9-21-12
 CHECKED BY: REZA KOUCHEKI DATE: 6-14-13
 DRAWN BY: DGE 6/09 REV. 12/5/11 MAA/AAC
 CHECKED BY: BCH 6/09

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STD. NO. 21" PCS_39_105S_50L



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SHEET 4 OF 5

3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
105° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STD. NO. 21" PCS3_39_105S

BILL OF MATERIAL FOR ONE 35' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B3	4	#4	STR	18'-3"	49	18'-3"	49
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	88	#4	3	5'-4"	314	5'-4"	314
* S3	44	#5	1	6'-4"	291		
REINFORCING STEEL				LBS.	398		398
* EPOXY COATED REINFORCING STEEL				LBS.	291		
5000 P.S.I. CONCRETE				CU. YDS.	5.2		5.2
0.6" Ø L.R. STRANDS				No.	11		11

BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT							
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	118	#4	3	5'-4"	420	5'-4"	420
* S3	59	#5	1	6'-4"	390		
REINFORCING STEEL				LBS.	524		524
* EPOXY COATED REINFORCING STEEL				LBS.	390		
6200 P.S.I. CONCRETE				CU. YDS.	7.3		7.3
0.6" Ø L.R. STRANDS				No.	19		19

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	35' UNIT					
*B10	96	96	#5	STR	10'-5"	1043
* S4	88	88	#5	2	7'-2"	658
* EPOXY COATED REINFORCING STEEL				LBS.		1701
CLASS AA CONCRETE				CU. YDS.		10.0
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		70.25

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	50' UNIT					
*B13	96	96	#5	STR	14'-2"	1418
* S4	118	118	#5	2	7'-2"	882
* EPOXY COATED REINFORCING STEEL				LBS.		2300
CLASS AA CONCRETE				CU. YDS.		14.3
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		100.25

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
35' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	5/8" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	1/16" ↓
FINAL CAMBER	9/16" ↑

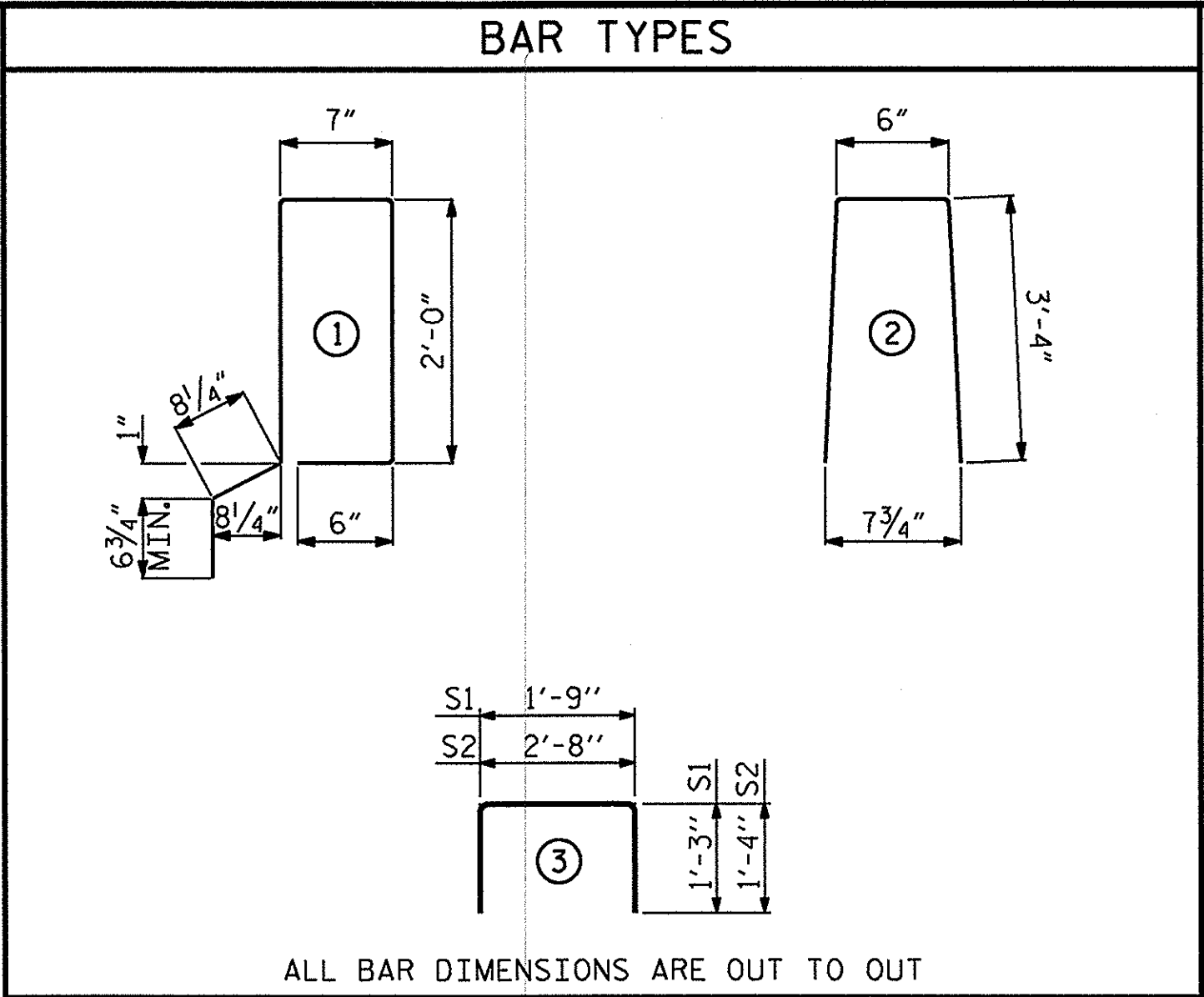
DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
50' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 7/16" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	3/16" ↓
FINAL CAMBER	2 1/4" ↑

GUTTERLINE CONCRETE THICKNESS & RAIL HEIGHT		
36'-10" CLEAR ROADWAY	CONCRETE OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
35' UNITS	5 3/16"	3'-11 3/16"
50' UNITS	3 1/2"	3'-9 1/2"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
35' UNIT			
EXTERIOR C.S.	2	35'-0"	70'-0"
INTERIOR C.S.	11	35'-0"	385'-0"
TOTAL	13		455'-0"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
35' UNITS	4000
50' UNITS	4900

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	340	#3	STR	19'-8"	2514
*R2	222	#3	STR	29'-3"	2024
*R3	73	#4	STR	20'-0"	975
* EPOXY COATED REINFORCING STEEL				LBS.	4538
CONCRETE WEARING SURFACE				SO. FT.	3135



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" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, 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.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL 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 IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A 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.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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.

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. 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.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
50' UNIT			
EXTERIOR C.S.	2	50'-0"	100'-0"
INTERIOR C.S.	11	50'-0"	550'-0"
TOTAL	13		650'-0"

GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

GROOVING BRIDGE FLOORS		
APPROACH SLABS	787	SO. FT.
BRIDGE DECK	2880	SO. FT.
TOTAL	3667	SO. FT.

PROJECT NO. 17BP.2.R.19
LENOIR COUNTY
STATION: 14+27.50 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 105° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS

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REV. 12/11	MAA/AAC