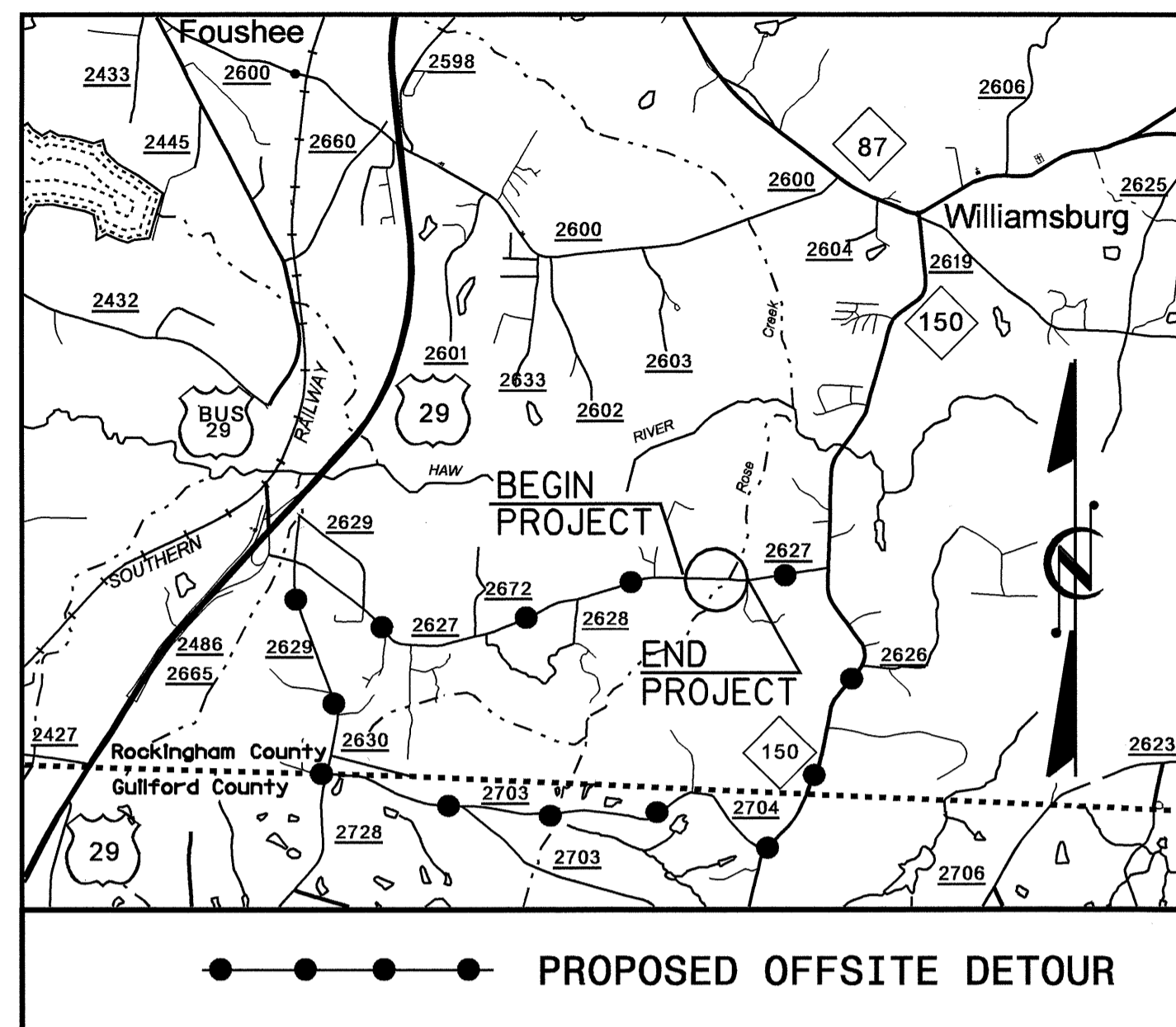


CONTRACT: C201773 TIP PROJECT: B-4254

STRUCTURE



VICINITY MAP

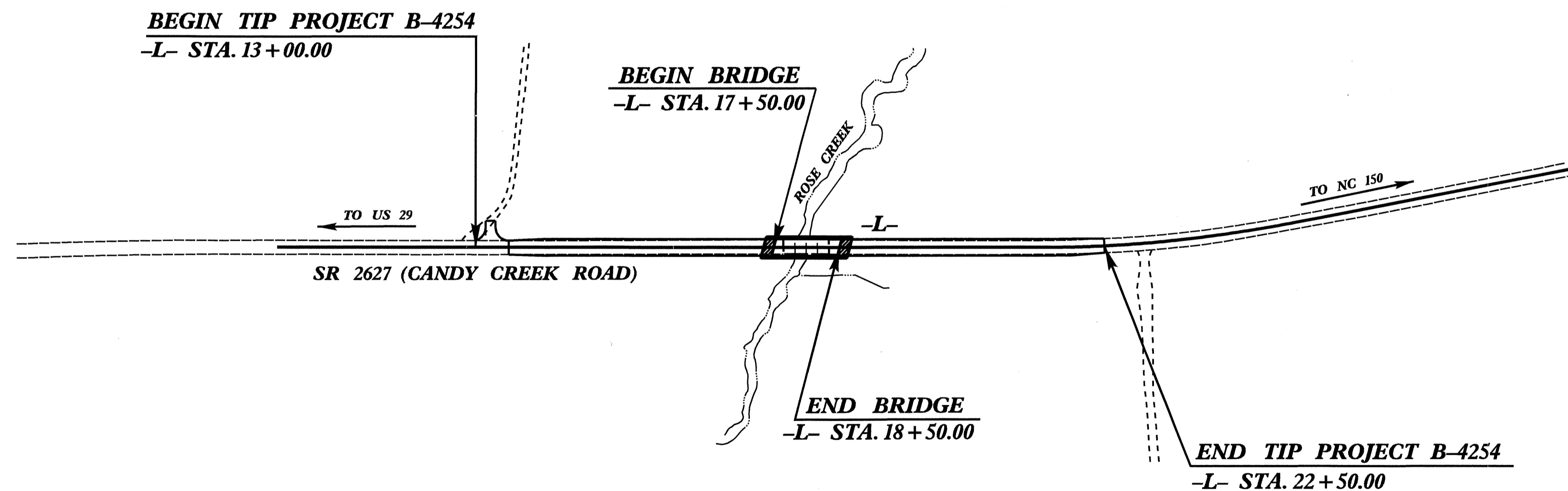
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

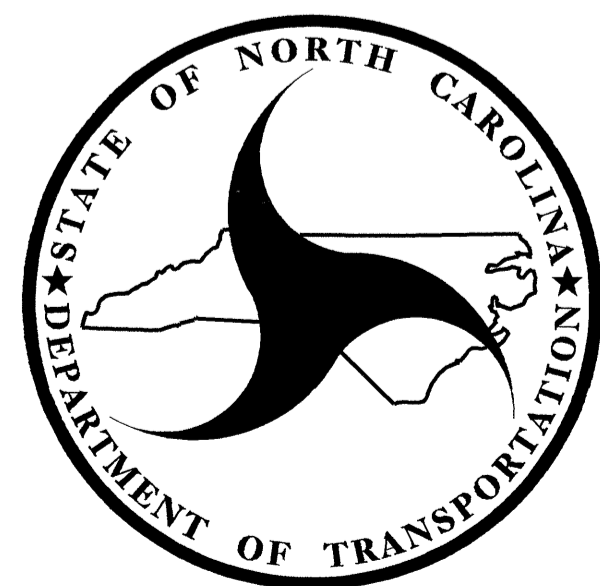
LOCATION: BRIDGE NO. 89 OVER ROSE CREEK ON
SR 2627 (CANDY CREEK ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING &
STRUCTURE

STATE	STATE PROJECT REFERENCE NO.		
N.C.	B-4254		
WM PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33596.1.1	BRZ-2627(1)	P.E.	
33596.2.1	BRZ-2627(1)	RW & UTIL	
33596.3.1	BRZ-2627(1)	CONST.	



** DESIGN EXCEPTION REQUIRED FOR VERTICAL ALIGNMENT



DESIGN DATA
(RURAL LOCAL)

ADT 2007 = 1790
ADT 2027 = 2690
DHV = 10 %
D = 65 %
T = 3 % *
** V = 60 MPH
* TTST 1% + DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4254 = 0.161 MI
LENGTH STRUCTURE TIP PROJECT B-4254 = 0.019 MI
TOTAL LENGTH TIP PROJECT B-4254 = 0.180 MI

2006 STANDARDS SPECIFICATION

LETTING DATE:
FEBRUARY 19, 2008

Prepared In the Office of:
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1000 Birch Ridge Drive Raleigh, N.C. 27610

B. S. COX, P.E.
PROJECT ENGINEER

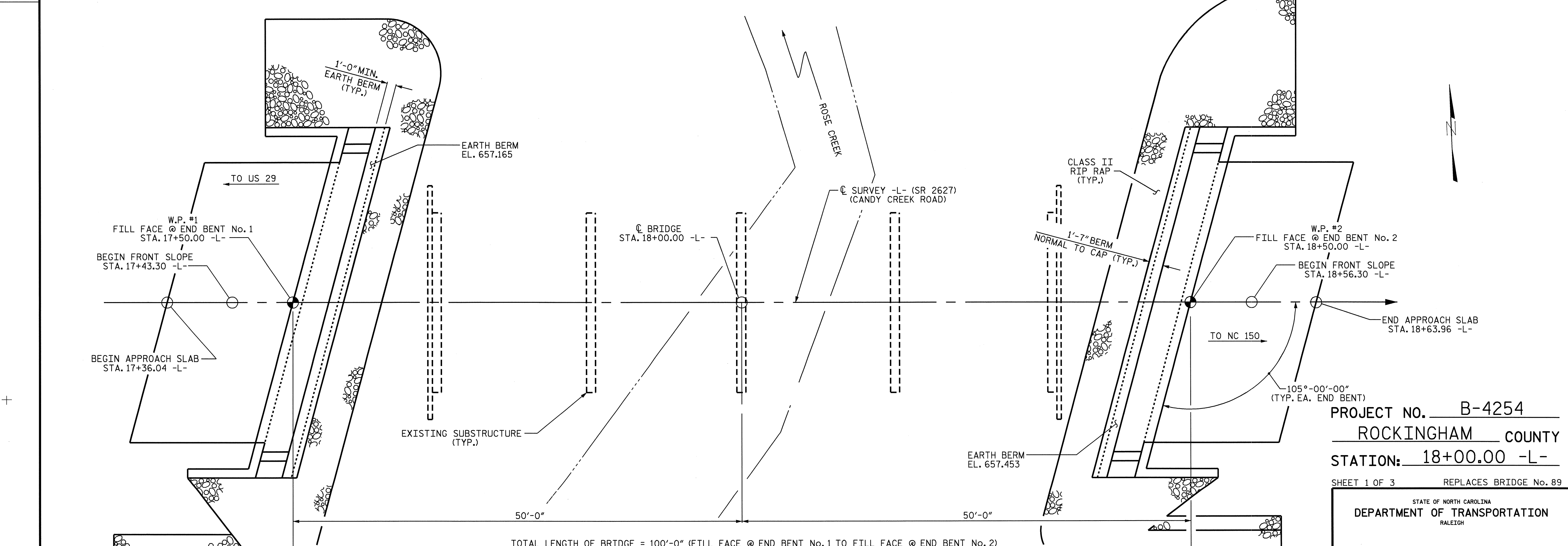
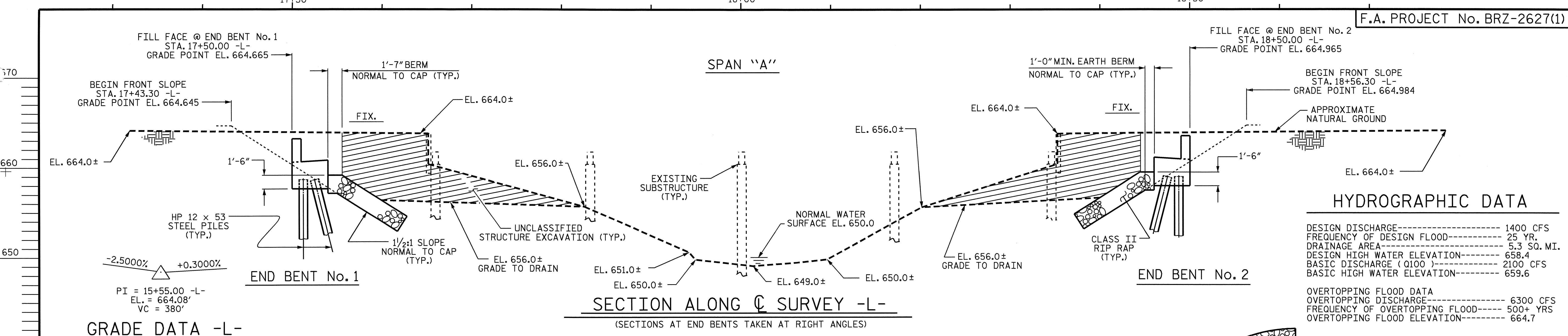
T. J. BEACH, P.E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

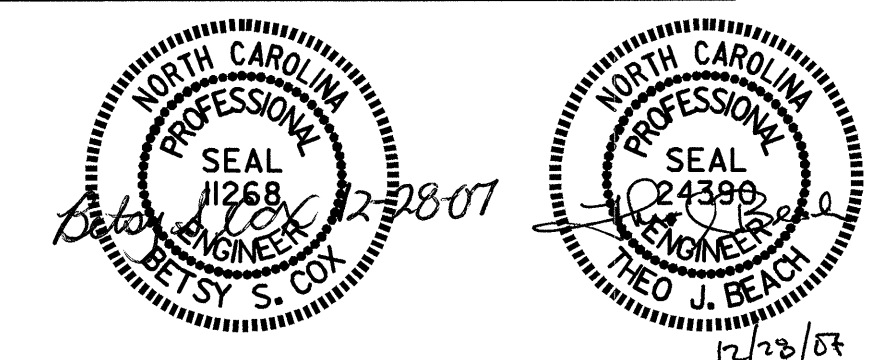
APPROVED FOR
DIVISION ADMINISTRATOR
DATE

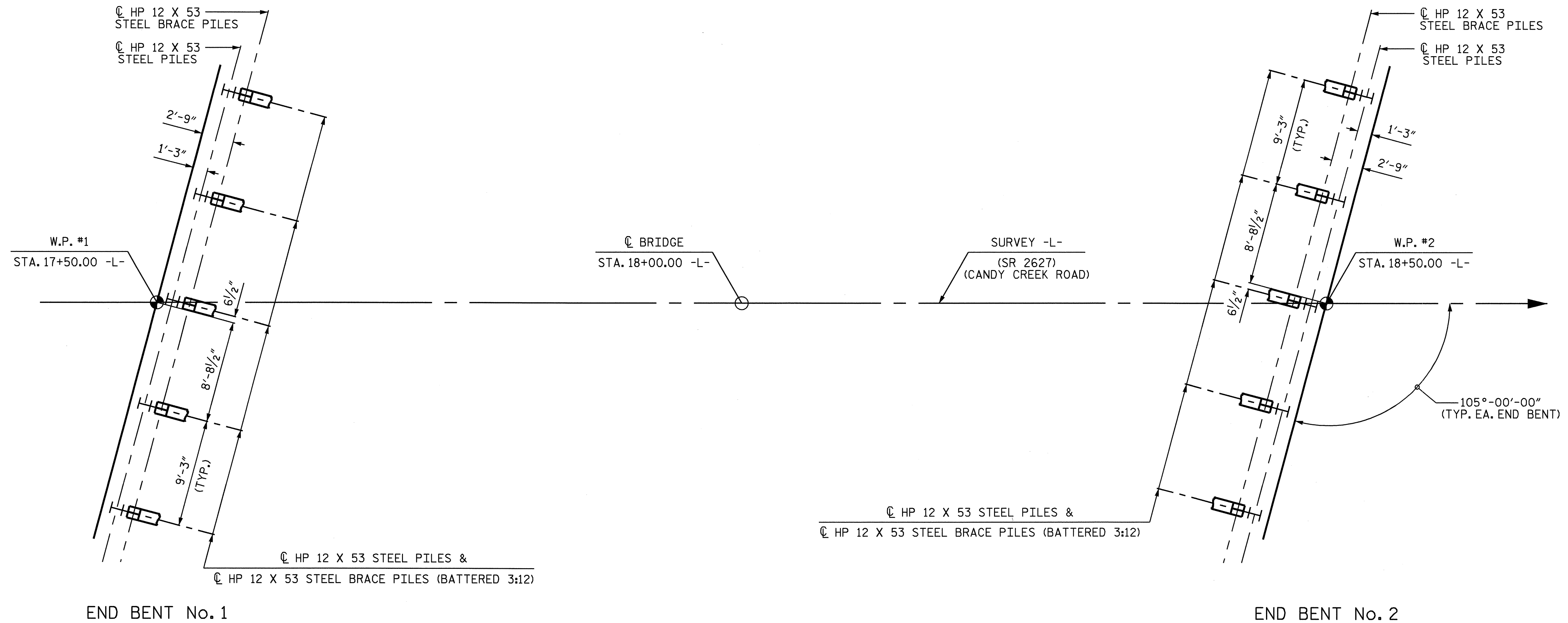


PROJECT NO. B-4254
 ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-
 SHEET 1 OF 3 REPLACES BRIDGE No. 99

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE OVER ROSE CREEK ON SR 2627 BETWEEN US 29 AND NC 150					
REVISIONS					SHEET NO. S-1 TOTAL SHEETS 18
NO.	BY:	DATE:	NO.	DATE:	
1			3		
2			4		

DRAWN BY: T. BANKOVICH DATE: 10/07
 CHECKED BY: T. J. BEACH DATE: 10/07





FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILES CENTERLINE AT THE BOTTOM OF THE CAP)

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT BOX BEAMS UNITS HAVE BEEN DESIGNED FOR HS 25.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN OF 17'-3 1/2", 1 SPAN OF 16'-9", 1 SPAN OF 16'-11", 1 SPAN OF 17'-6" WITH A CLEAR ROADWAY WIDTH OF 22.0 FEET; REINFORCED CONCRETE DECK WITH AWS ON TIMBER JOISTS; WITH END & INTERIOR BENTS CONSISTING OF TIMBER CAPS AND PILES, LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA (SHEET S-1) SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, 'EVALUATING SCOUR AT BRIDGES', MAY, 2001.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

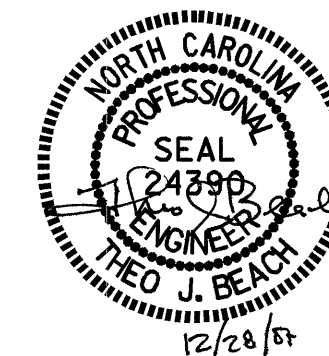
DRIVE PILES AT END BENT No. 1 AND No. 2 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT No. 1 AND No. 2 IS 50 TONS PER PILE.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT BRIDGES IN THE VICINITY OF THIS PROJECT ARE POSTED BELOW LEGAL LOAD LIMIT, SEE STANDARD SPECIFICATIONS 105-15.

DRAWN BY : T. BANKOVICH DATE : 10/07
 CHECKED BY : T. J. BEACH DATE : 10/07

28-DEC-2007 13:44
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 tbeach



PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

SHEET 2 OF 3

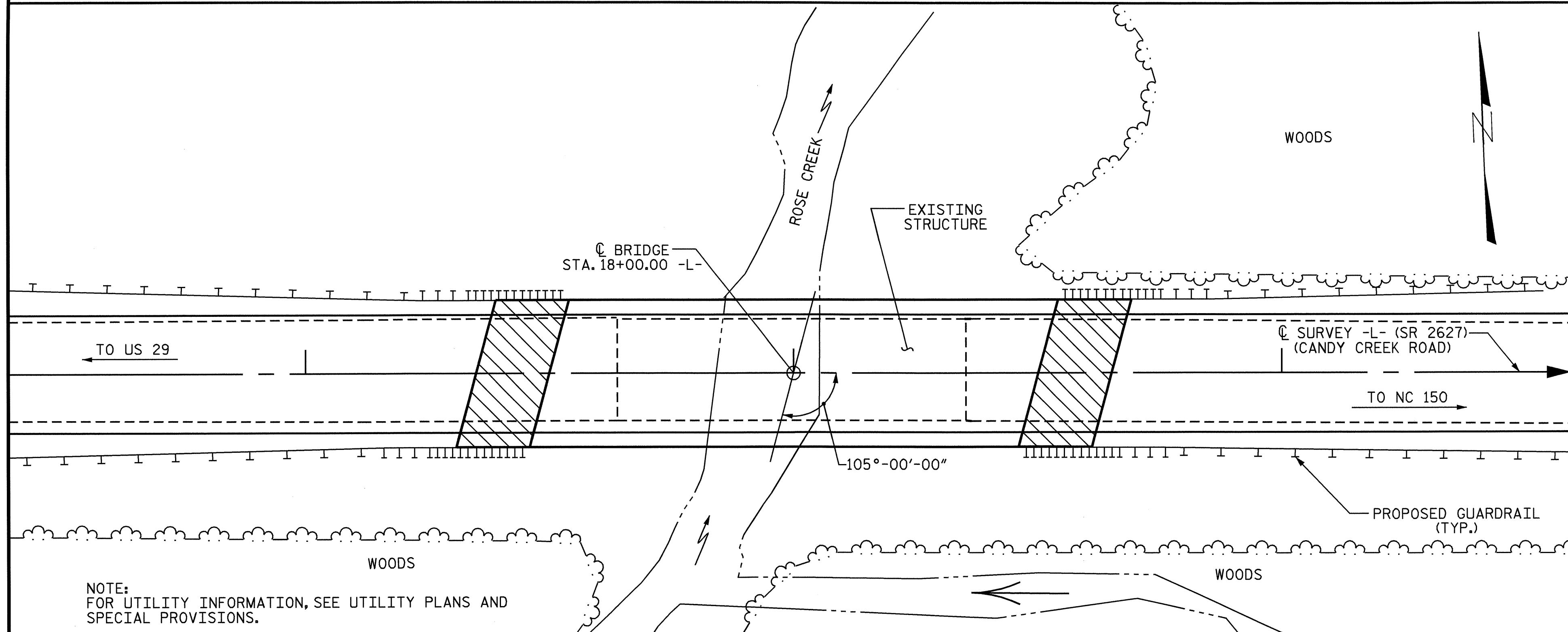
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE OVER ROSE CREEK
 ON SR 2627 BETWEEN
 US 29 AND NC 150

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			18

BENCHMARK #1: R.R. SPIKE IN BASE OF 30" HICKORY TREE 61.80' RIGHT OF STA. 17+27.91 -L- ELEV. = 657.59



LOCATION SKETCH

TOTAL BILL OF MATERIAL

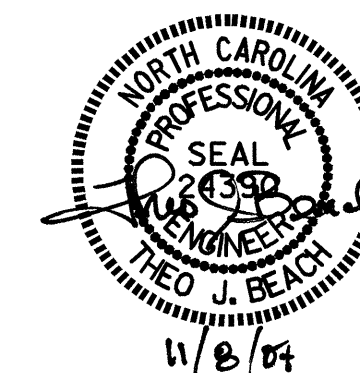
	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAMS		
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN.FT.	TONS	SQ.YDS.	LUMP SUM	NO.	LIN.FT.	
SUPERSTRUCTURE				LUMP SUM			195.33			LUMP SUM	11	1,074.33	
END BENT NO. 1			25.2		3,710	10	200	82	91				
END BENT NO. 2			25.2		3,710	10	200	88	98				
TOTAL	LUMP SUM	LUMP SUM	50.4	LUMP SUM	7,420	20	400	195.33	170	189	LUMP SUM	11	1,074.33

PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER ROSE CREEK
 ON SR 2627 BETWEEN
 US 29 AND NC 150



DRAWN BY: T. BANKOVICH DATE: 10/07
 CHECKED BY: T. J. BEACH DATE: 10/07

08-NOV-2007 07:45
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 tjbankovich

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			18

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 BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH GROUT.

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

THE JOINT OPENING BETWEEN THE BACKWALL AND BOX BEAM UNITS SHALL BE FILLED WITH GROUT.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 5400 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

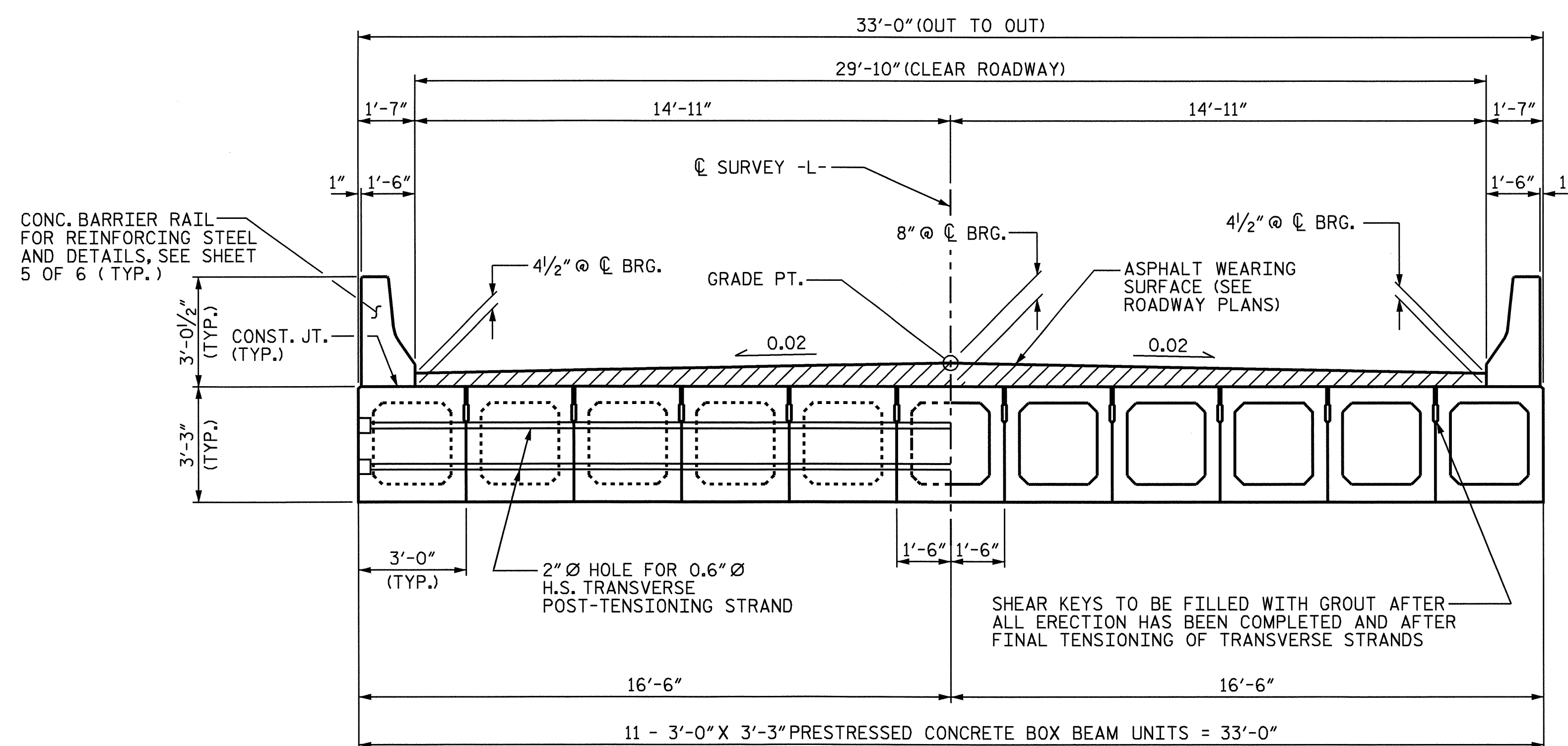
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

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.

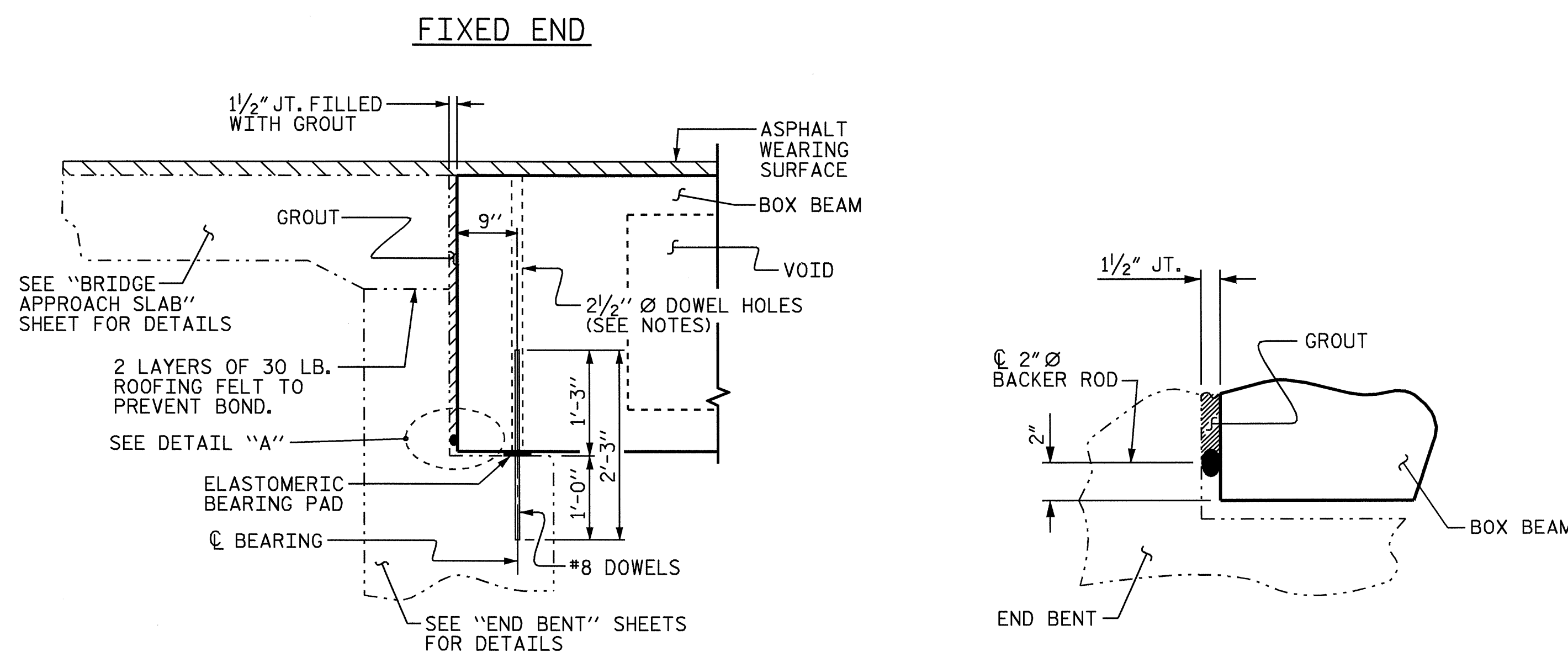
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.



HALF SECTION @ INTERMEDIATE DIAPHRAGMS HALF SECTION @ VOIDS

TYPICAL SECTION



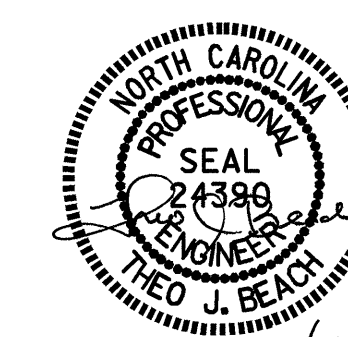
SECTION AT END BENT
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR)

DETAIL "A"

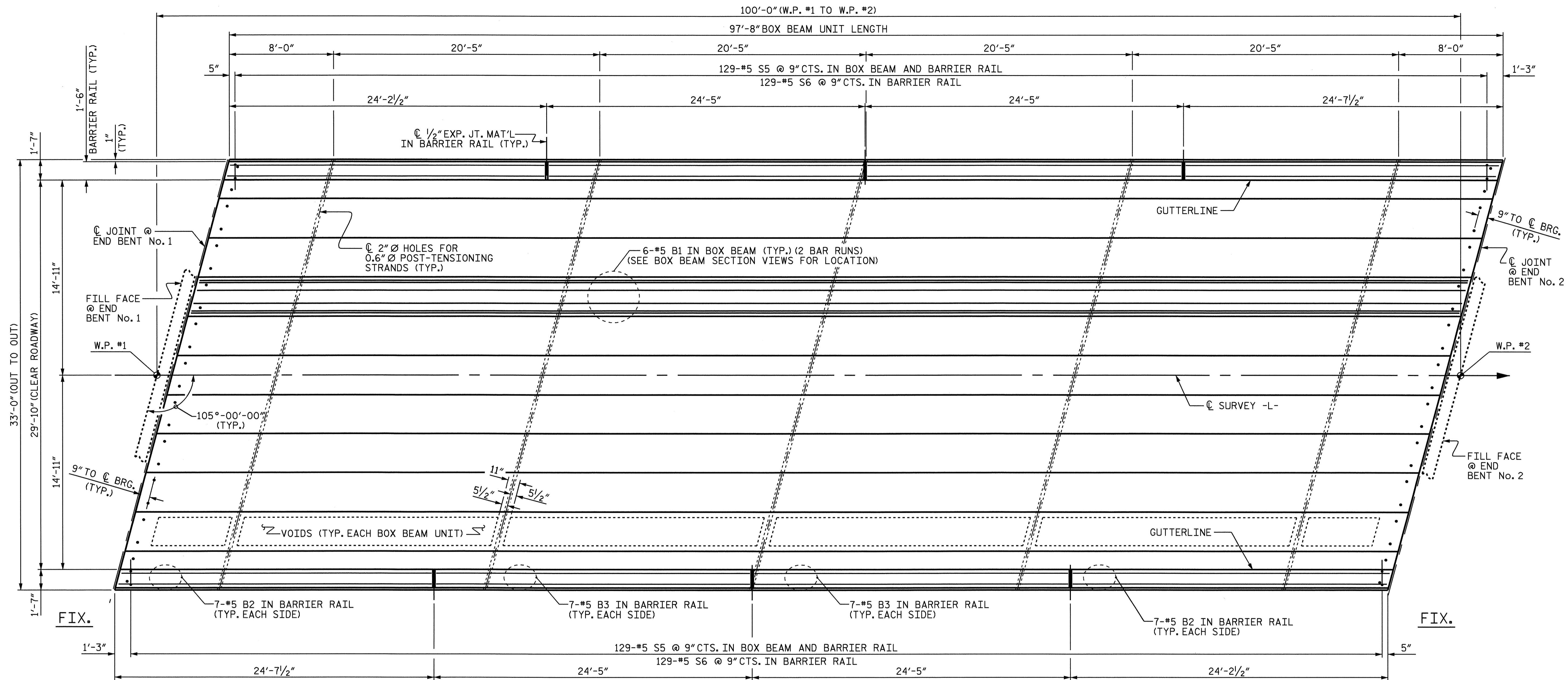
PROJECT NO. B-4254
ROCKINGHAM COUNTY
STATION: 18+00.00 -L-

SHEET 1 OF 6

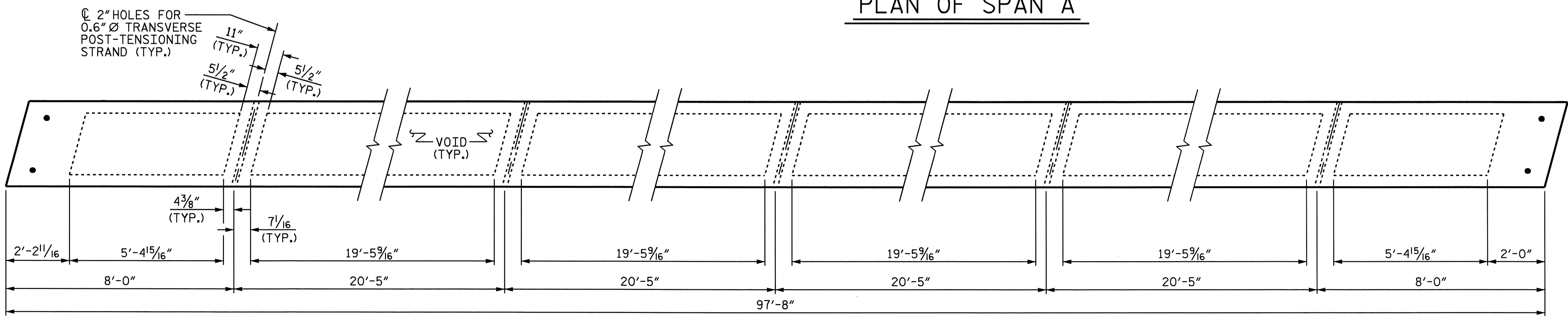
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-4
STANDARD 3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAM UNIT						
REVISIONS						TOTAL SHEETS 18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ASSEMBLED BY : T. BANKOVICH	DATE : 10/07
CHECKED BY : T. J. BEACH	DATE : 10/07
DRAWN BY : TLA 5/05	ADDED 7/11/05R
CHECKED BY : GM 6/05	



PLAN OF SPAN A



DIAPHRAGM AND VOID LAYOUT

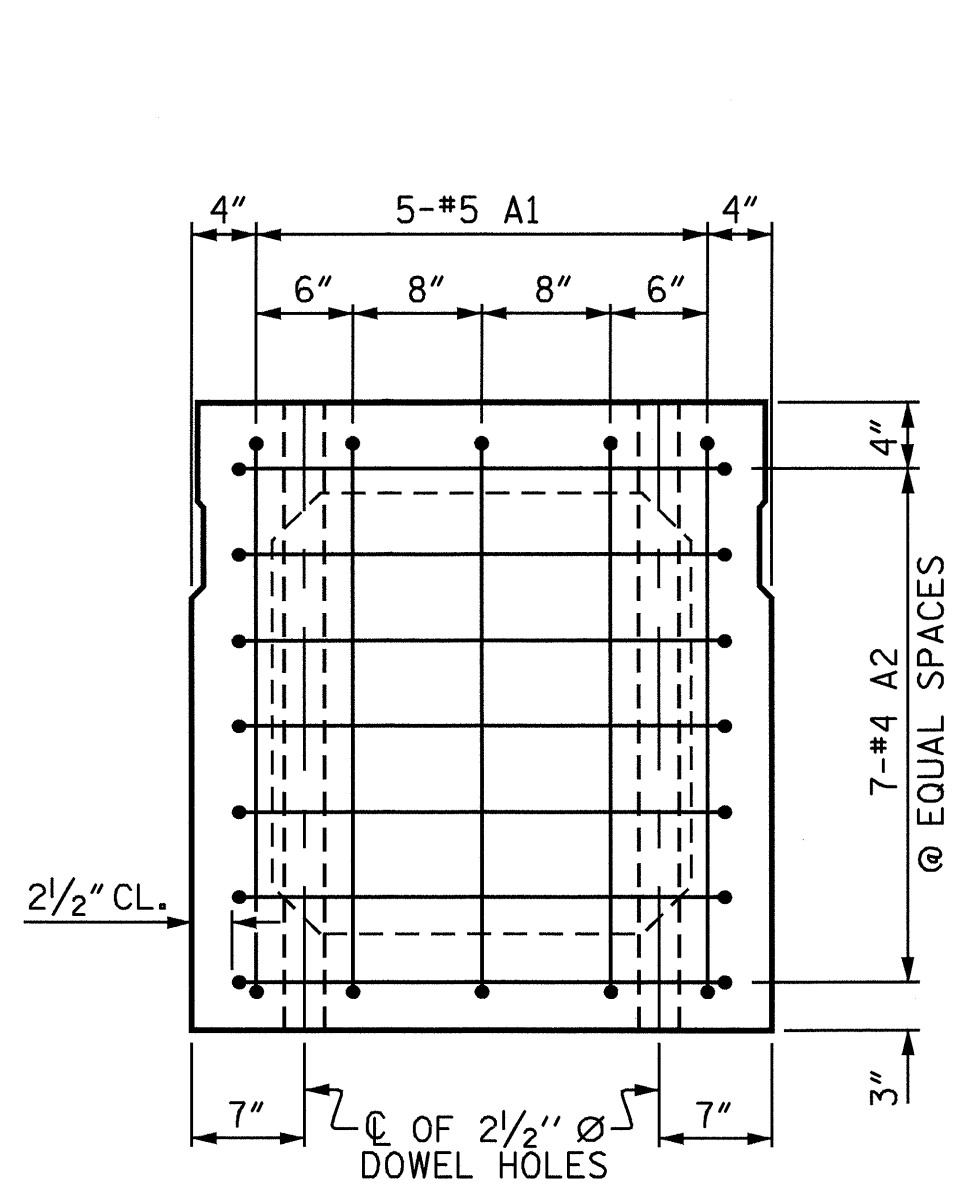
PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-
 SHEET 2 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-5	
SUPERSTRUCTURE PLAN OF SPAN A						TOTAL SHEETS 18	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				



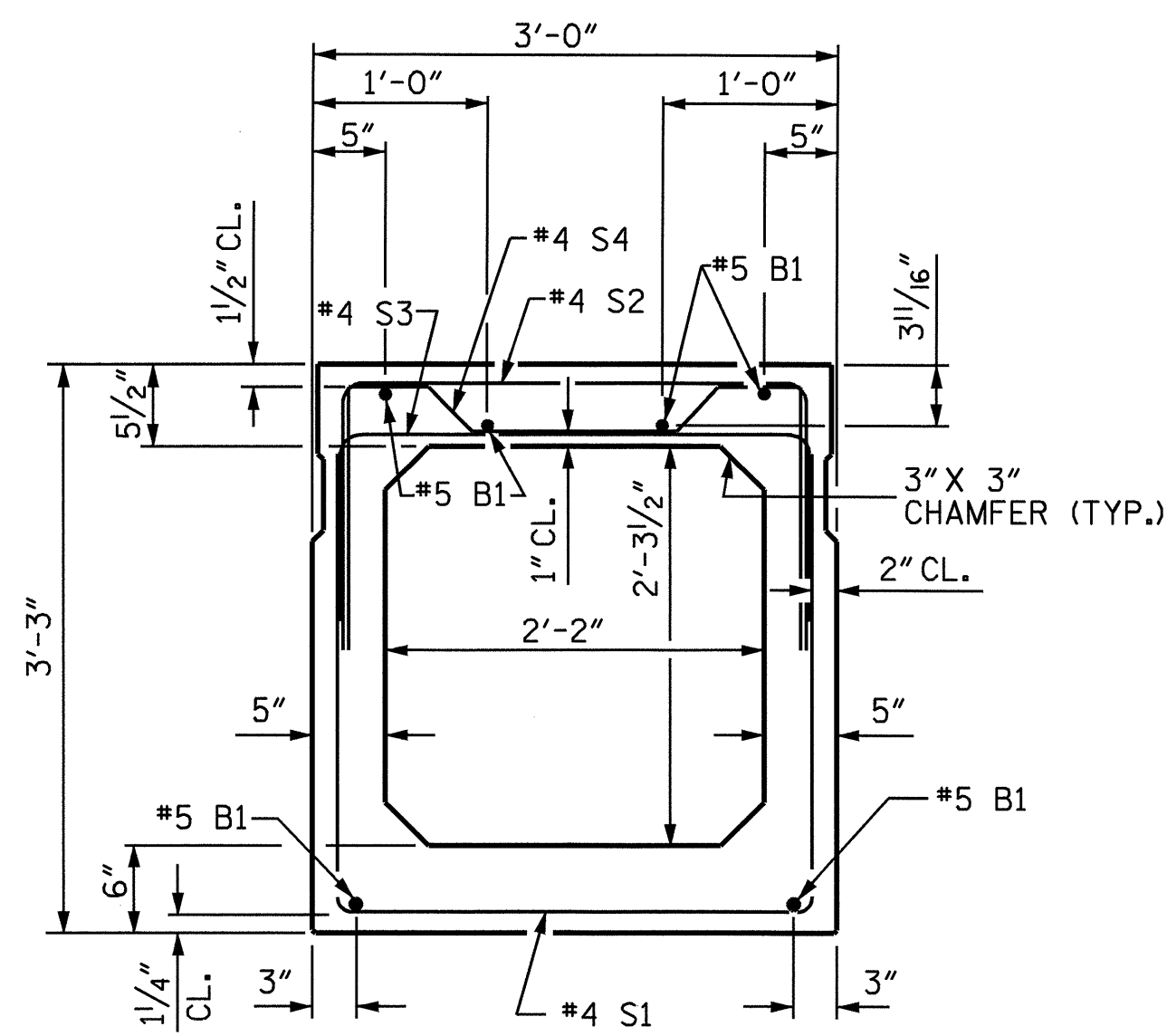
DRAWN BY: T. BANKOVICH DATE: 10/07
 CHECKED BY: T. J. BEACH DATE: 10/07

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 Tjbankovich



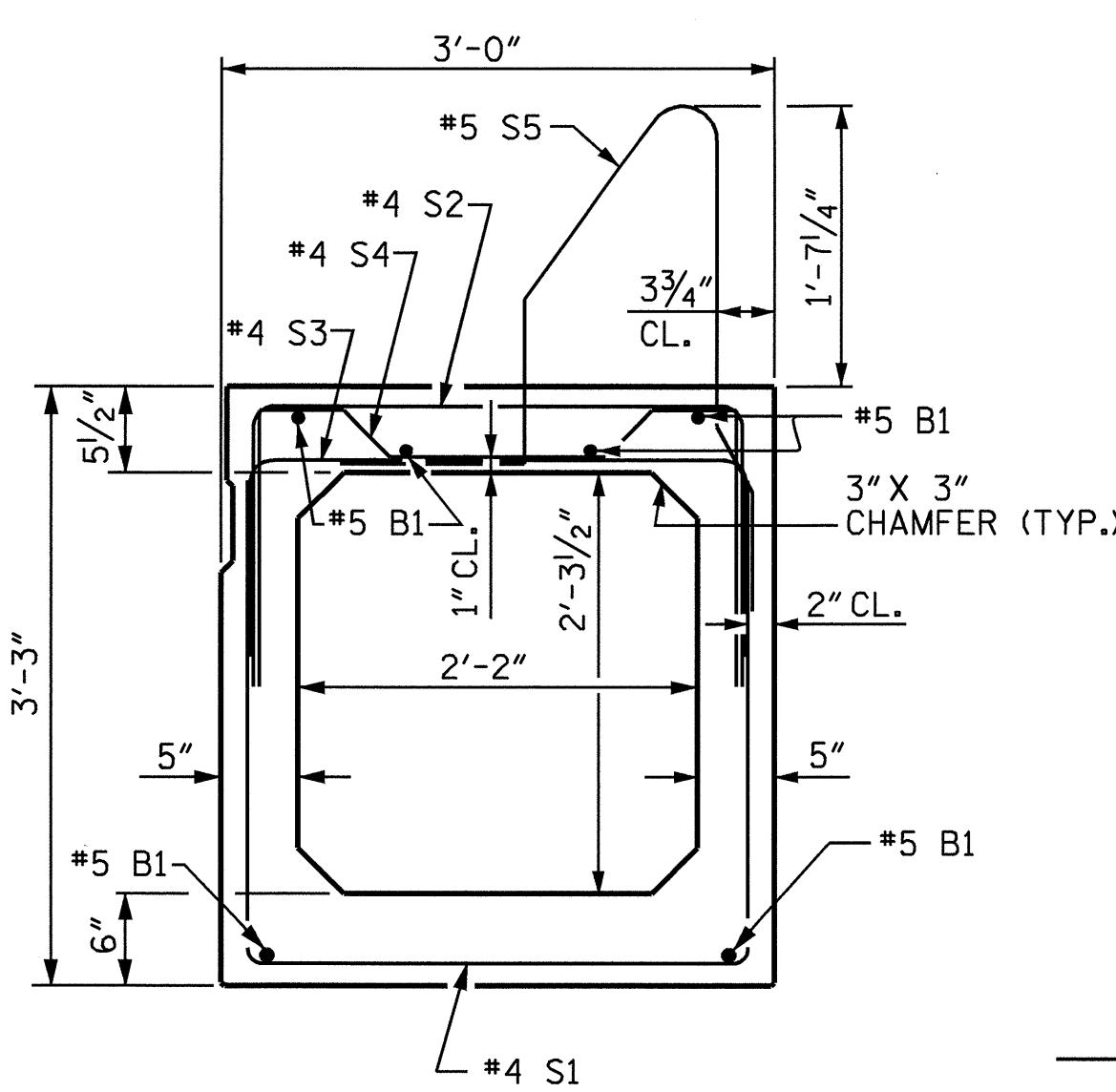
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION, STRAND LAYOUT NOT SHOWN.)



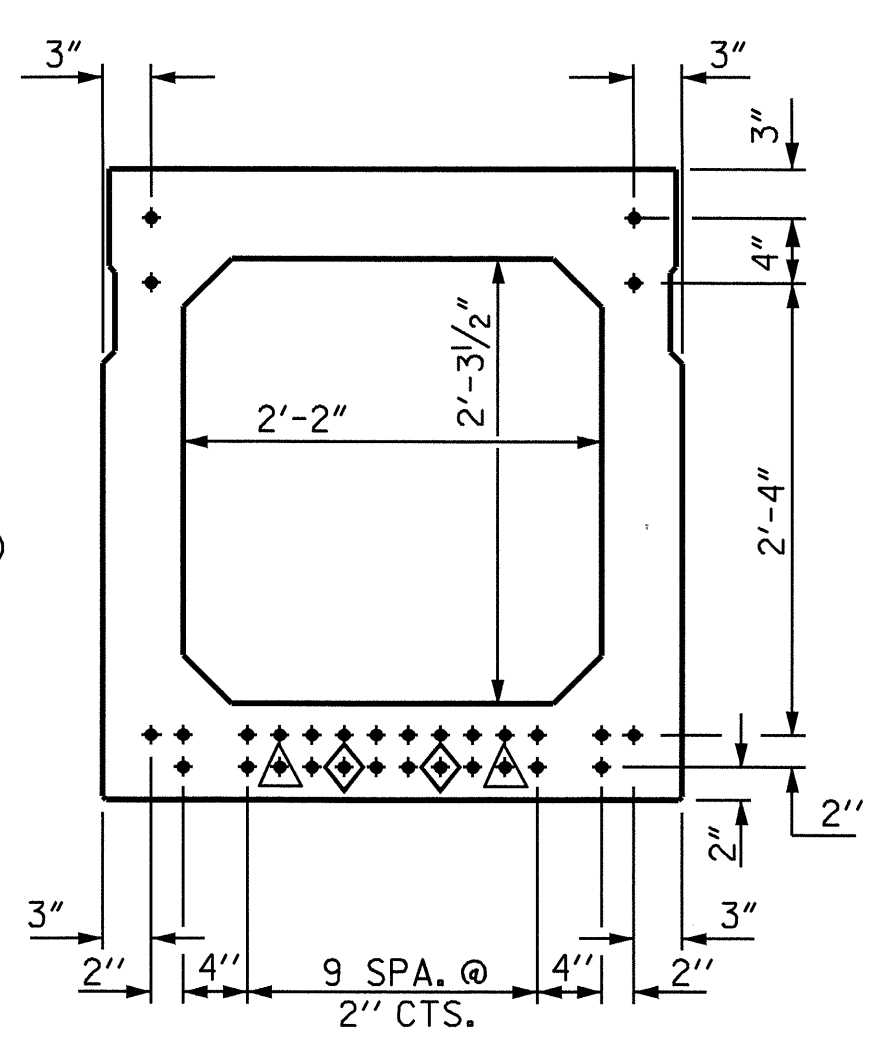
INTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)



TYPICAL STRAND LOCATION

(30 STRANDS REQUIRED)

(INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION)

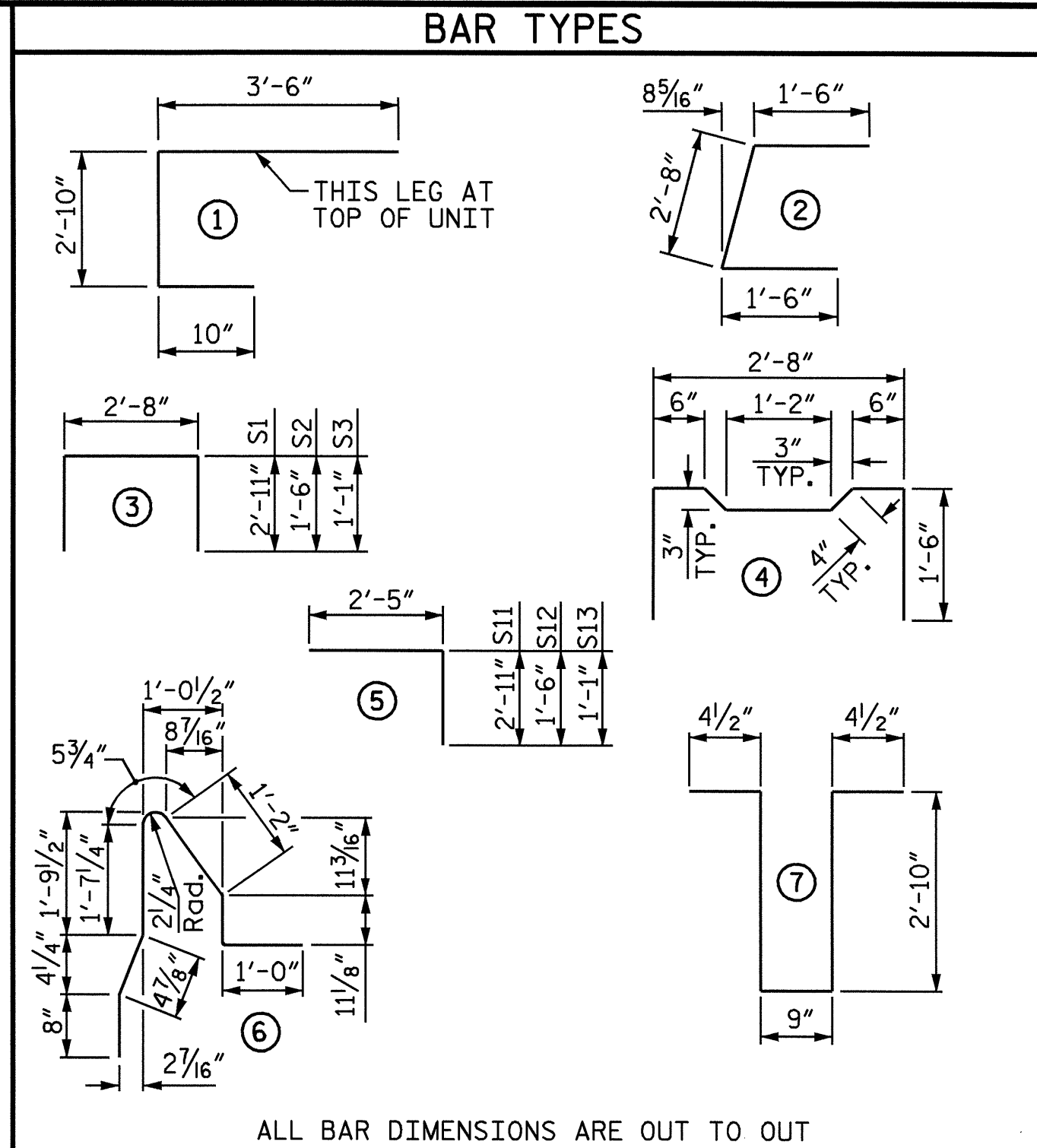
DEBONDING LEGEND

- FULLY BONDED STRANDS
- ▲ STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER
- ◆ STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

NOTE: BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7

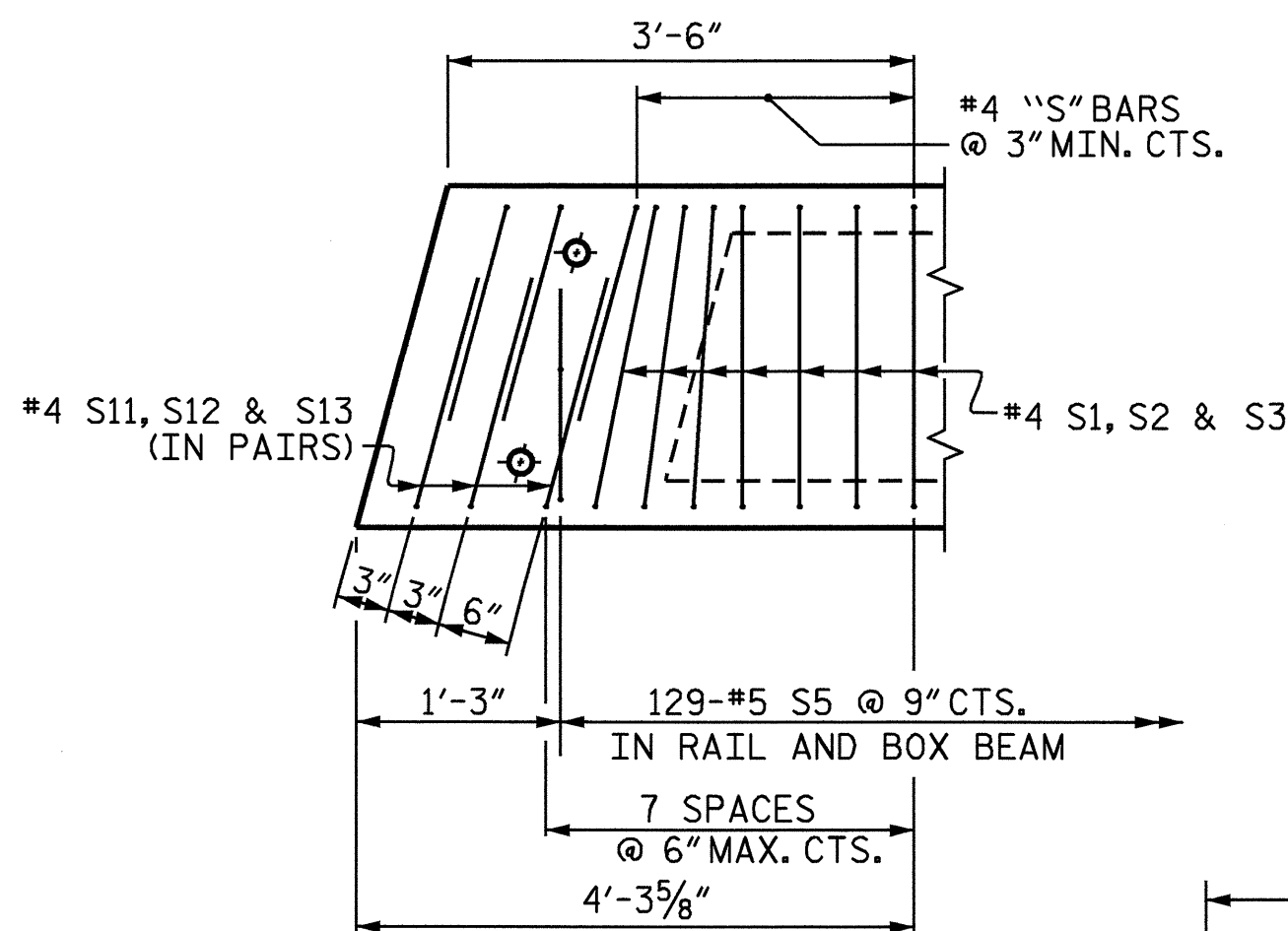
GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



ALL BAR DIMENSIONS ARE OUT TO OUT

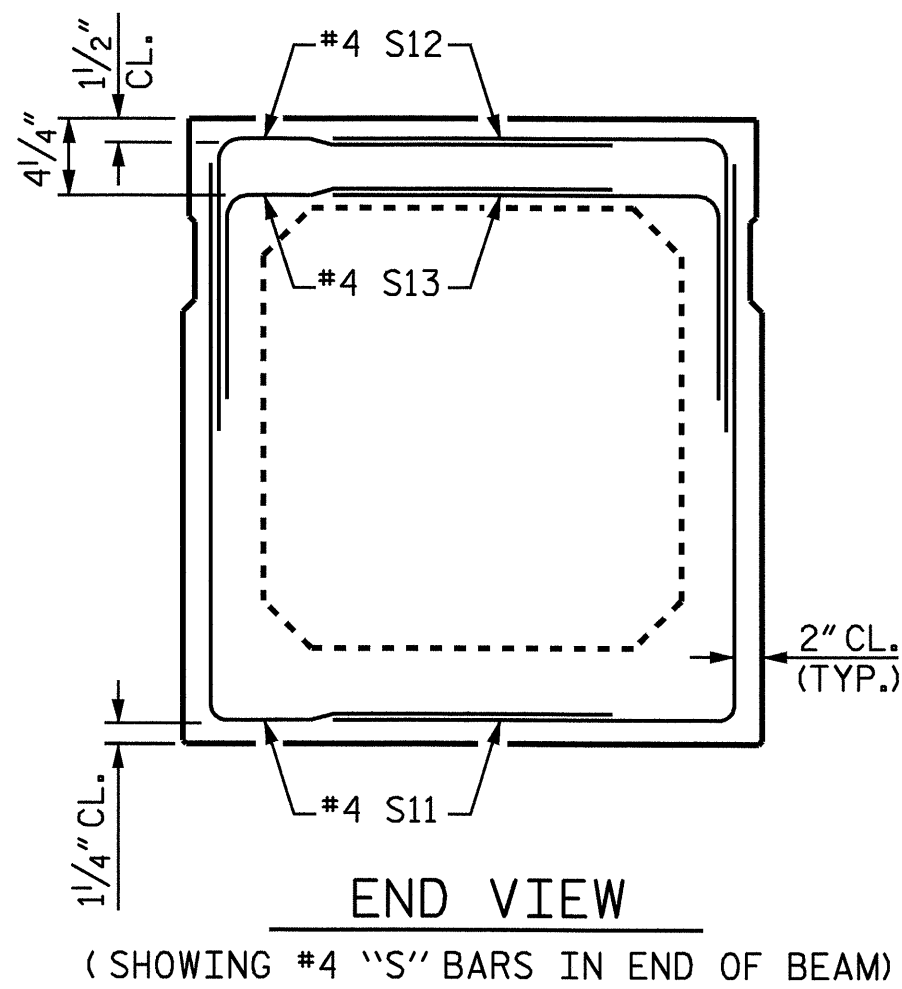
BILL OF MATERIAL FOR ONE BOX BEAM SECTION

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
A1	10	#5	1	7'-2"	75	7'-2"	75
A2	44	#4	2	5'-8"	167	5'-8"	167
B1	12	#5	STR	50'-3"	629	50'-3"	629
K1	15	#4	7	7'-2"	72	7'-2"	72
K2	10	#4	STR	2'-8"	18	2'-8"	18
S1	74	#4	3	8'-6"	420	8'-6"	420
S2	74	#4	3	5'-8"	280	5'-8"	280
S3	133	#4	3	4'-10"	429	4'-10"	429
S4	59	#4	4	5'-10"	230	5'-10"	230
S11	12	#4	5	5'-4"	43	5'-4"	43
S12	12	#4	5	3'-11"	31	3'-11"	31
S13	12	#4	5	3'-6"	28	3'-6"	28
*S5	129	#5	6	6'-3"	841	--	--
REINFORCING STEEL				2422 LBS.		2422 LBS.	
*EPOXY COATED REINF. STEEL				841 LBS.			
6800 P.S.I. CONCRETE				19.1 CU. YDS.		18.9 CU. YDS.	
0.6" Ø L.R. STRANDS				No. 30		No. 30	



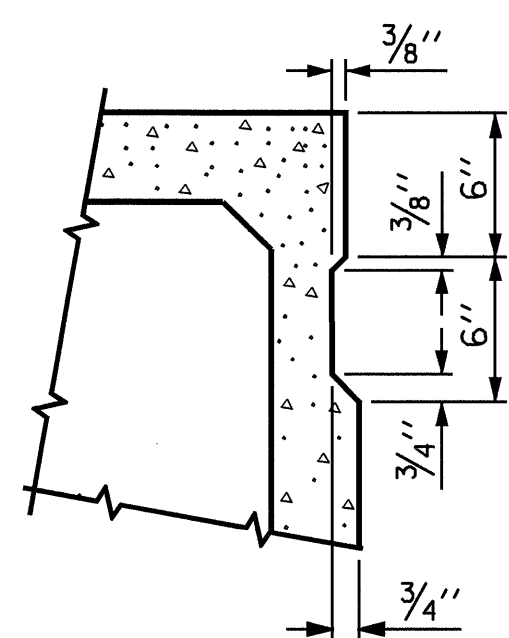
DETAIL "B"

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS. "B" BARS AND "A" BARS NOT SHOWN.



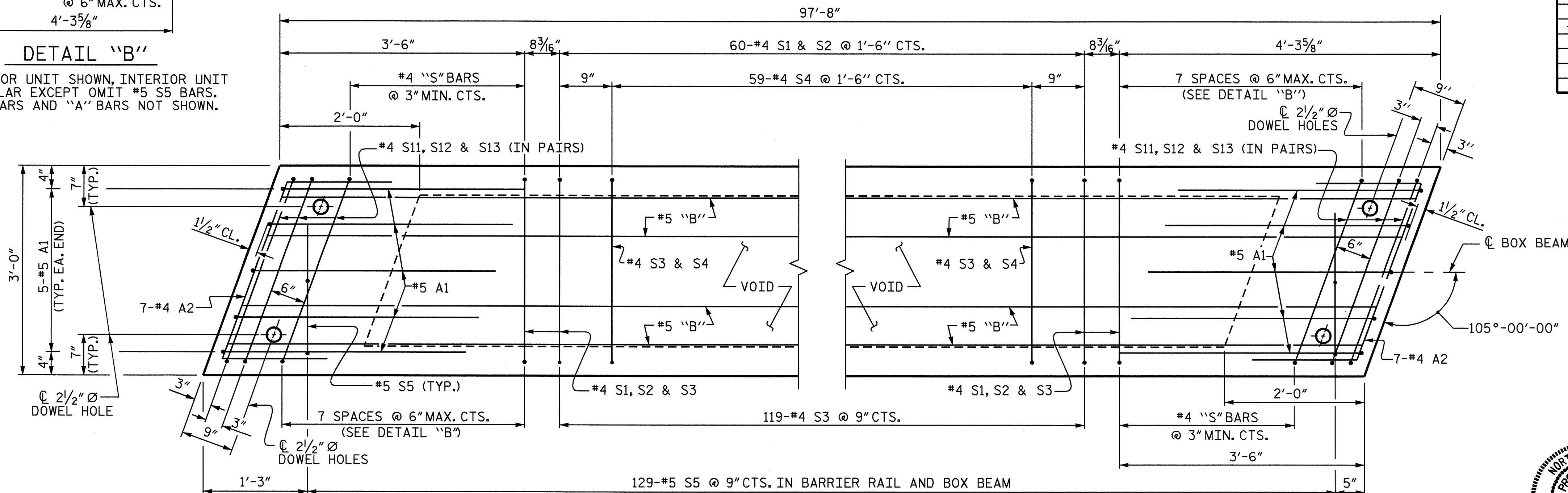
END VIEW

(SHOWING #4 "S" BARS IN END OF BEAM)



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

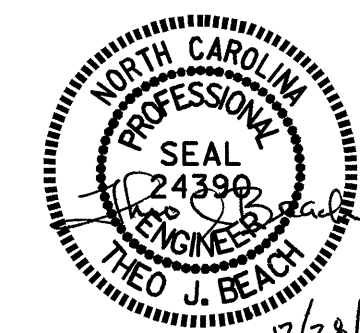


PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS. FOR LOCATION OF DIAPHRAGMS AND VOIDS, SEE "DIAPHRAGM AND VOID LAYOUT" SEE SHEET 2 OF 5. FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.

ASSEMBLED BY : T. BANKOVICH	DATE : 10/07
CHECKED BY : T. J. BEACH	DATE : 10/07
DRAWN BY : TLA 5/05	ADDED 7/11/05
CHECKED BY : GM 6/05	

28-DEC-2007 13:45 R:\Structures\SuperstructureDrawings\B4254.ed.BX.dgn tbeach

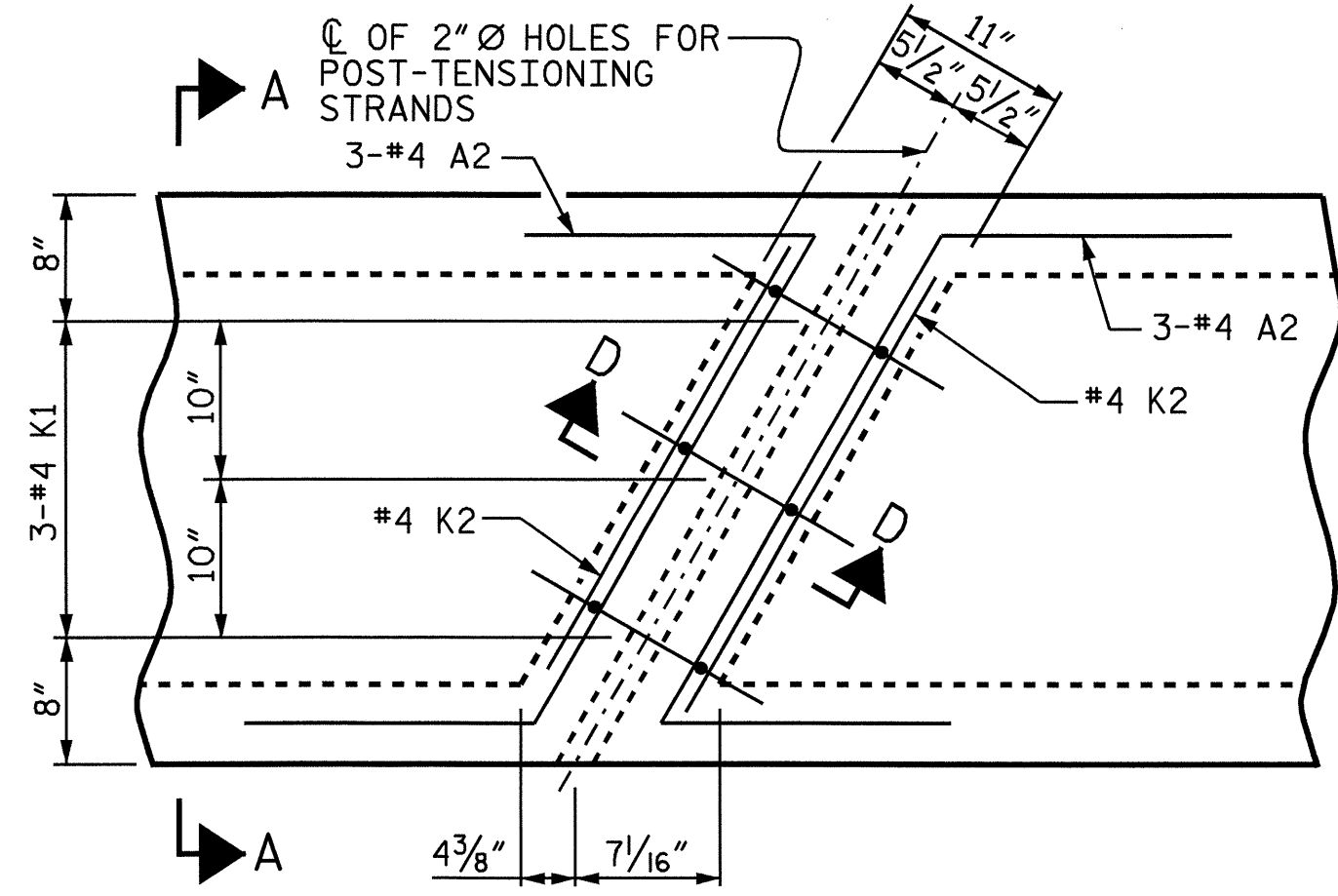


PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

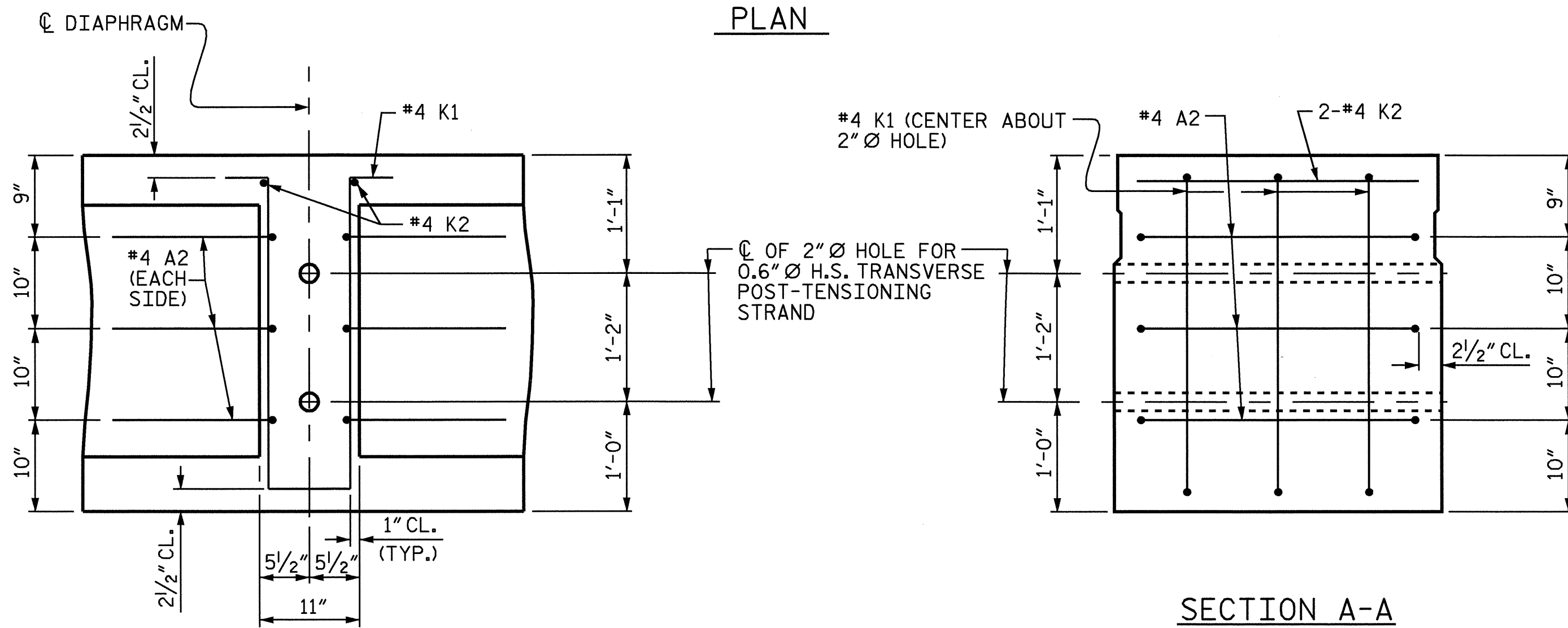
SHEET 3 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				STANDARD 3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAM UNIT SPAN "A"	
REVISIONS				SHEET NO. S-6	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS 18	

STD. NO. PCBB6



PLAN

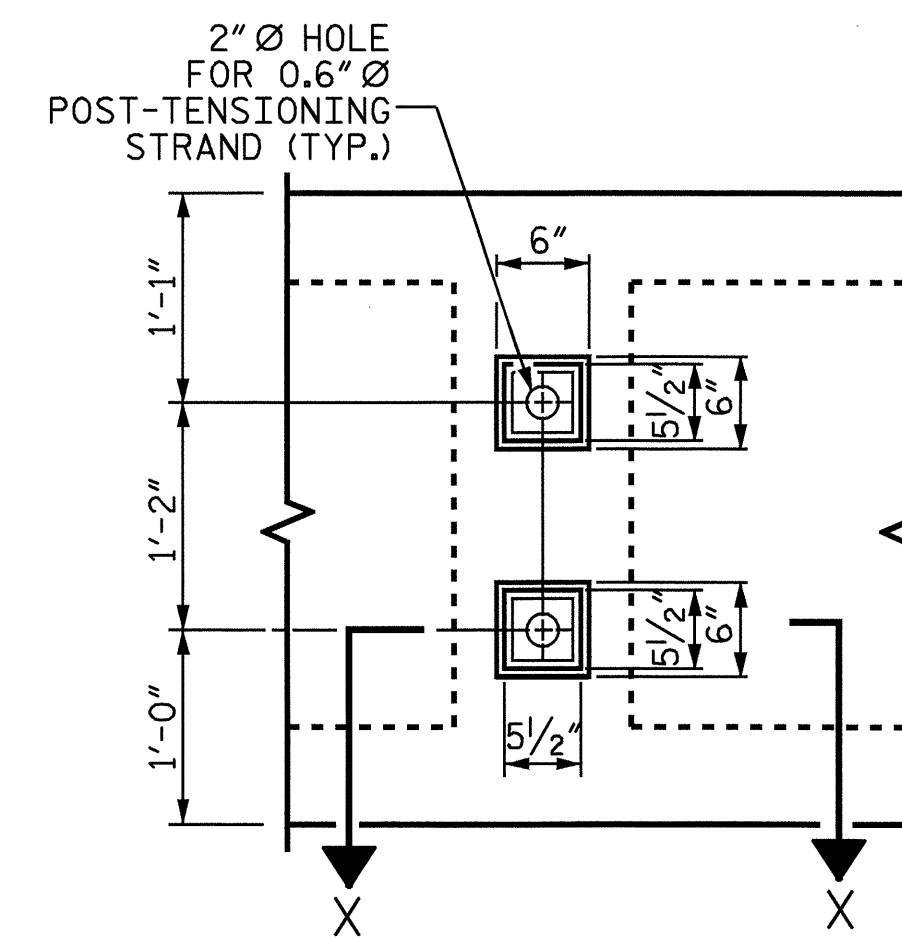


SECTION A-A
VOIDS NOT SHOWN

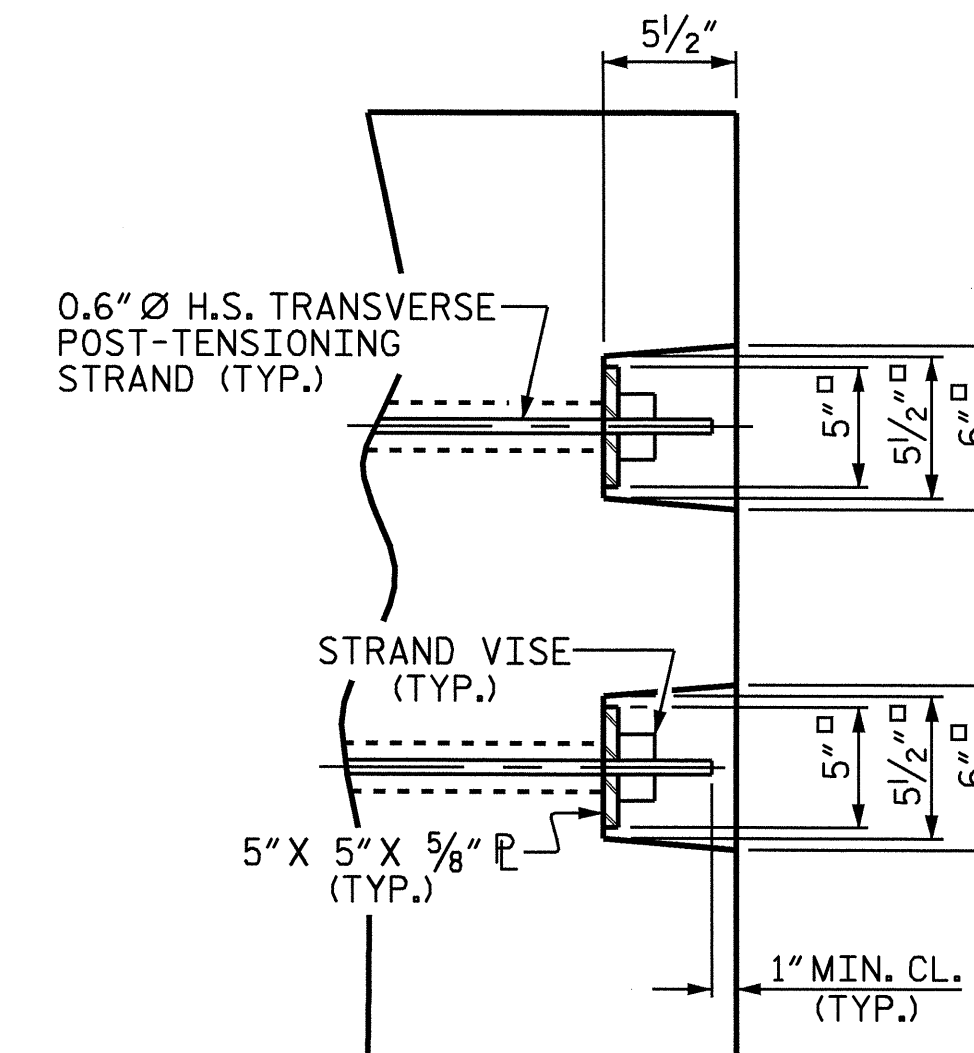
SECTION D-D

DOUBLE DIAPHRAGM DETAILS

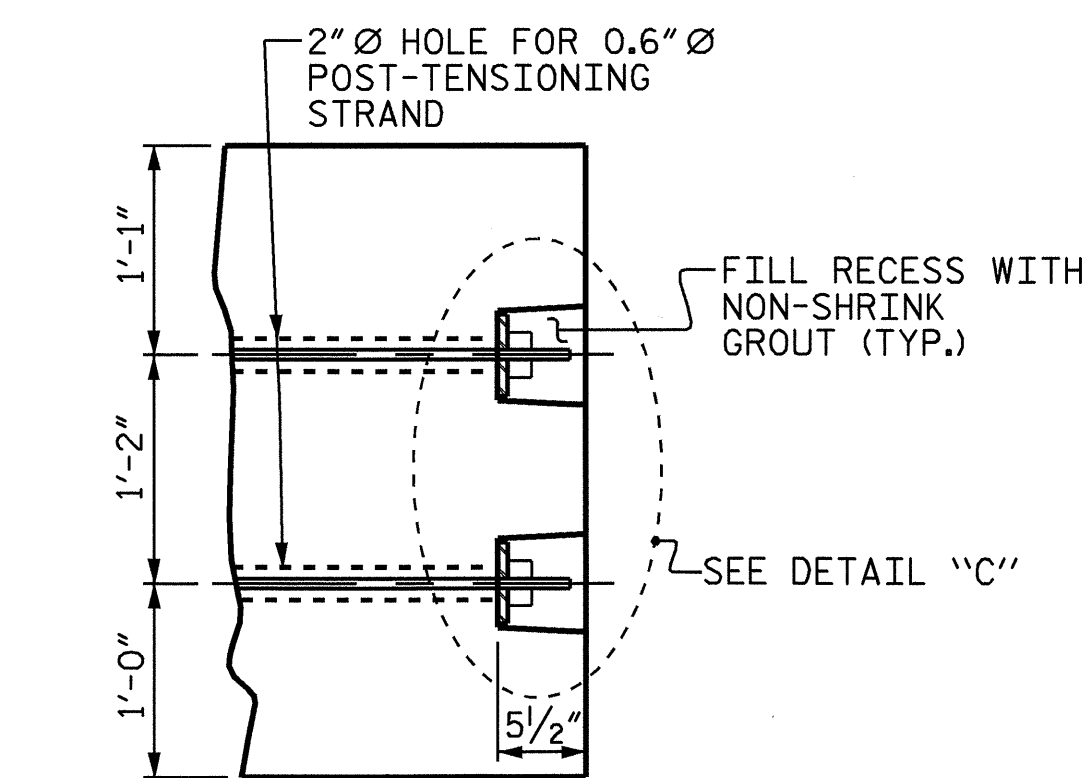
#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2" Ø HOLE.



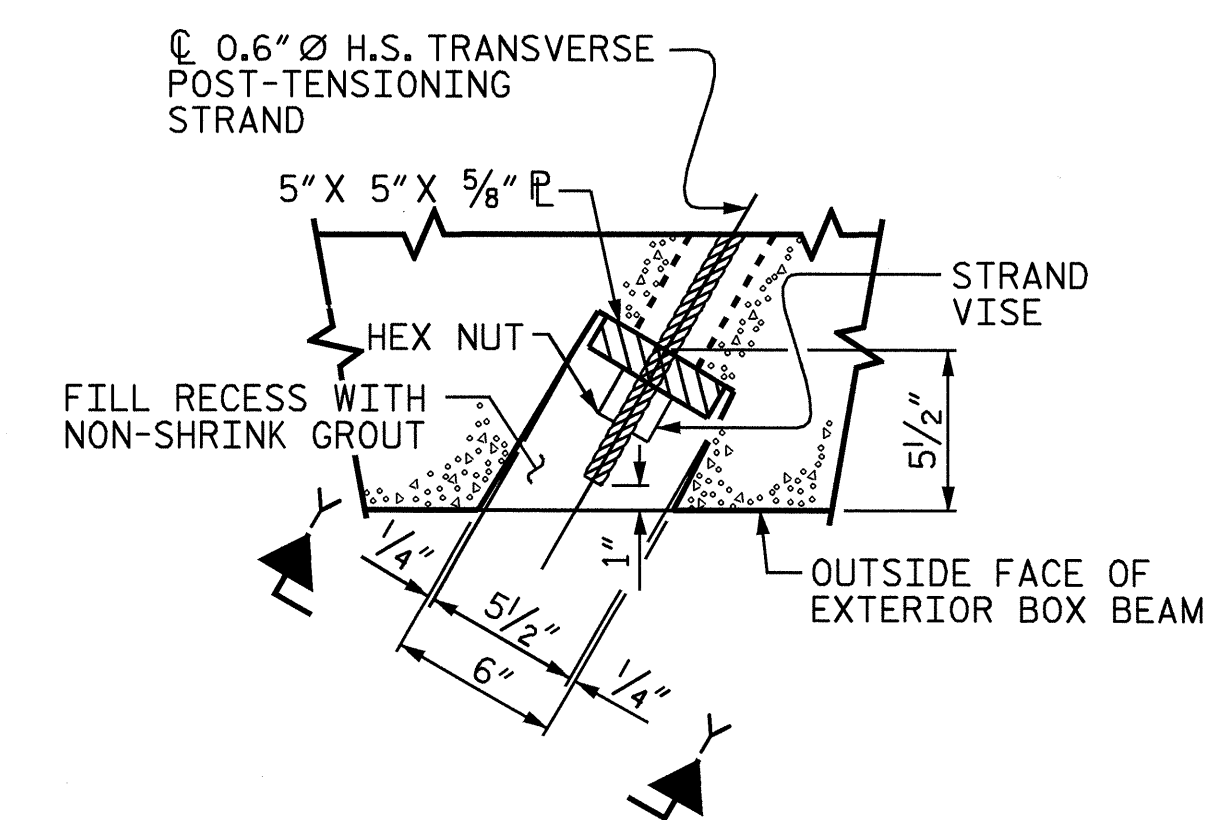
VIEW Y-Y
SHOWING ELEVATION VIEW OF GROUTED RECESS



DETAIL "C"

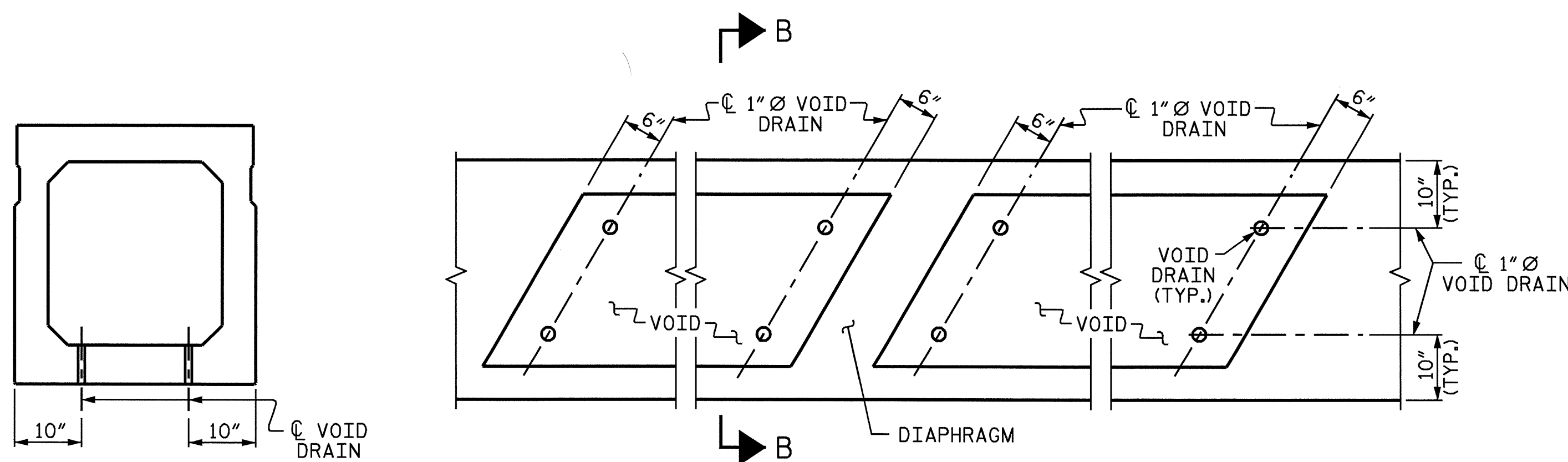


PART SECTION AT RECESS



SECTION X-X
SHOWING PLAN VIEW OF GROUTED RECESS

GROUTED RECESS DETAIL AT
END OF POST-TENSIONED STRANDS
OF EXTERIOR BOX BEAM



SECTION B-B

PART PLAN

VOID DRAIN DETAILS

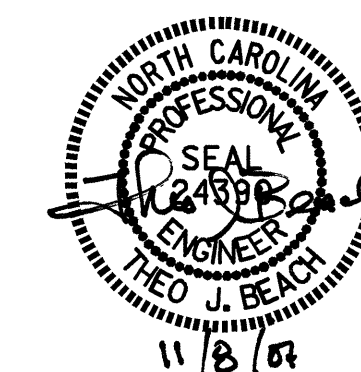
(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" X 3'-3"
	0.6" Ø L.R. STRAND
	SPAN "A"
CAMBER (BEAM ALONE IN PLACE) ↓	3 3/4"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ** ↓	1 1/8"
FINAL CAMBER ↑	2 5/8"

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. B-4254
ROCKINGHAM COUNTY
STATION: 18+00.00 -L-

SHEET 4 OF 6

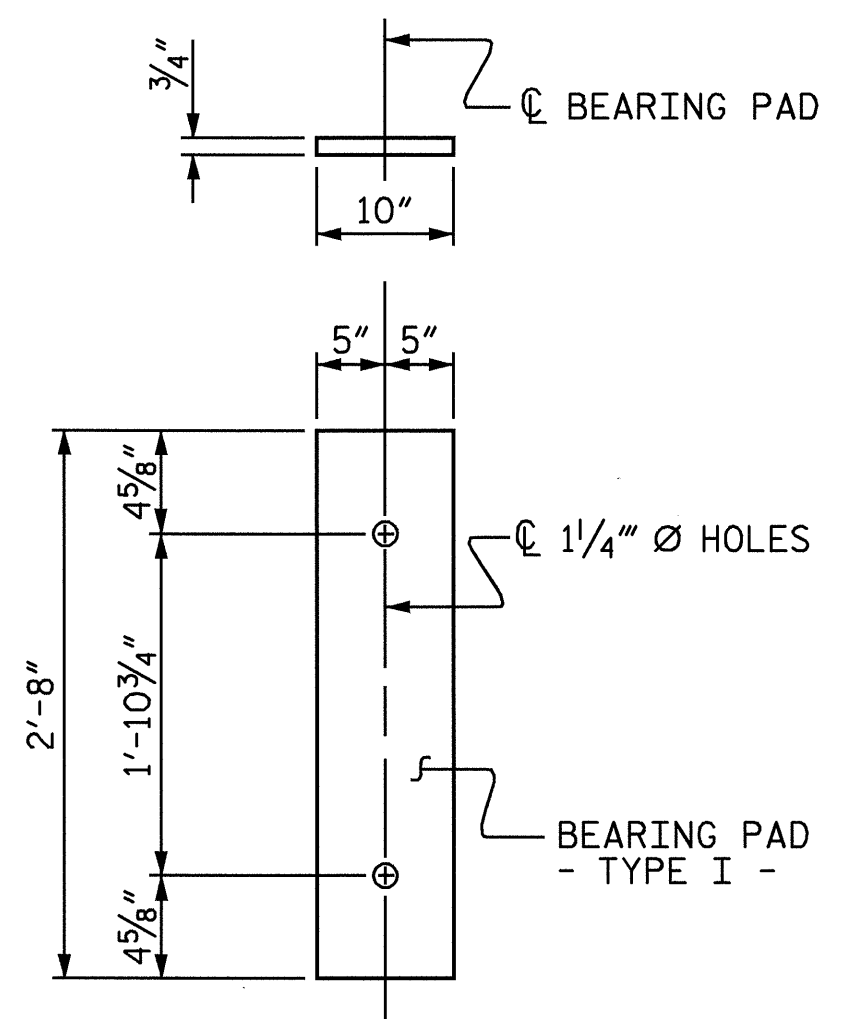


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 3'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT

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

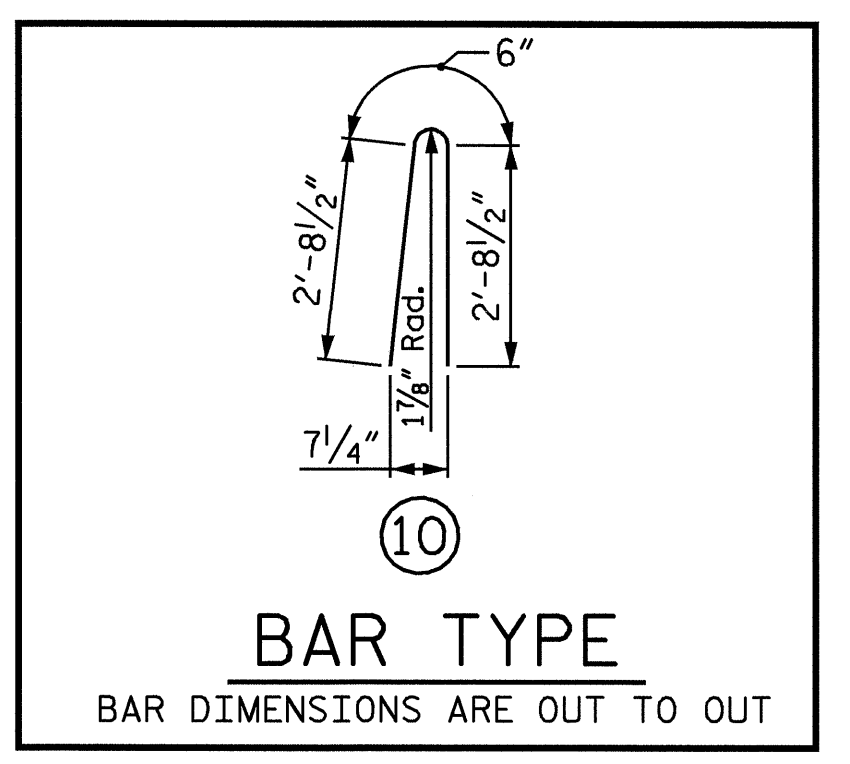
ASSEMBLED BY: T. BANKOVICH	DATE: 10/07
CHECKED BY: T. J. BEACH	DATE: 10/07
DRAWN BY: TLA 5/05	ADDED 7/11/05
CHECKED BY: GM 6/05	

TOTAL SHEETS	
18	



FIXED END
(TYPE I - 22 REQ'D)

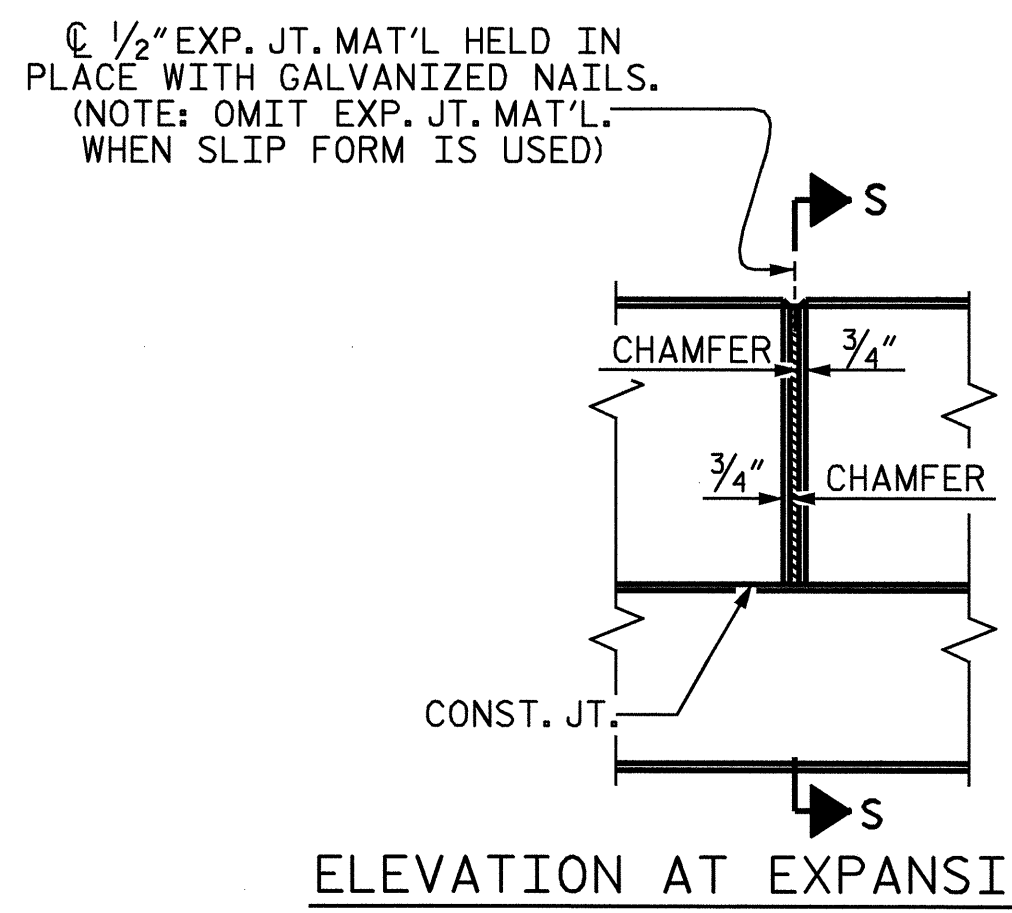
ELASTOMERIC BEARING DETAILS



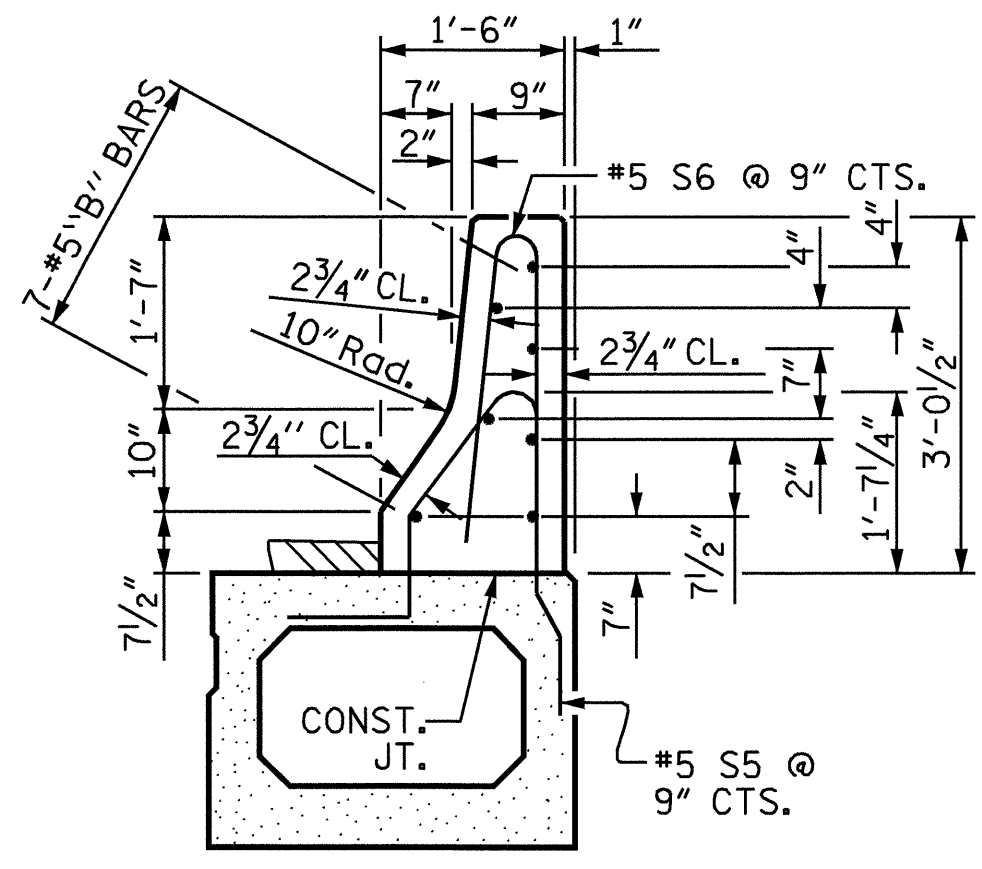
BAR TYPE
BAR DIMENSIONS ARE OUT TO OUT

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
SPAN A			
EXTERIOR B. B.	2	97'-8"	195'-4"
INTERIOR B. B.	9	97'-8"	879'-0"
TOTAL	11		1074.33'

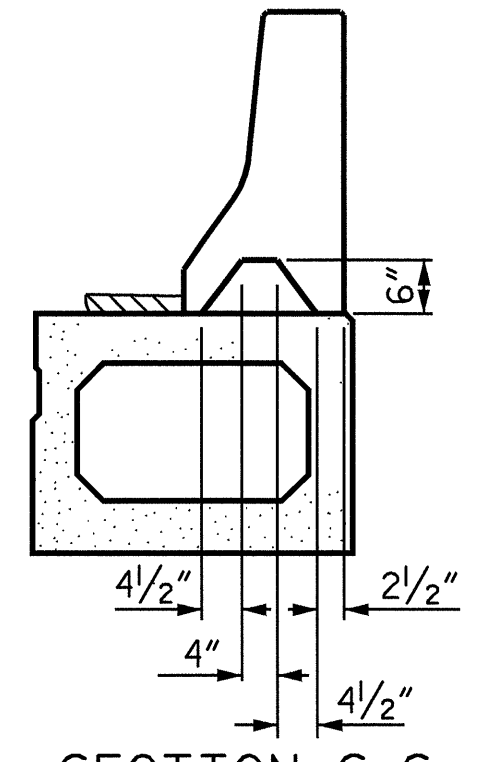
BILL OF MATERIAL FOR CONCRETE BARRIER RAIL					
BAR	BARS PER SPAN	SIZE	TYPE	LENGTH	WEIGHT
SPAN A					
*B2	28	#5	STR	23'-10"	696
*B3	28	#5	STR	24'-1"	703
*S6	258	#5	10	5'-11"	1592
* EPOXY COATED REINFORCING STEEL					LBS. 2991
CLASS AA CONCRETE					CU.YDS. 23.7
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					195.33



ELEVATION AT EXPANSION JOINTS



SECTION THRU RAIL



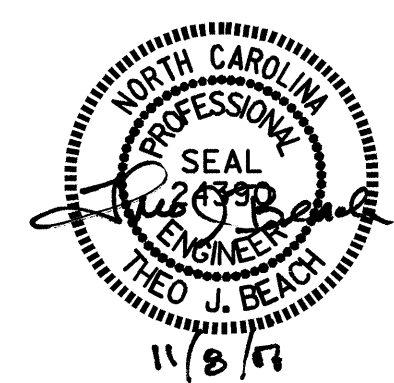
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

BARRIER RAIL DETAILS

PROJECT NO. B-4254
ROCKINGHAM COUNTY
STATION: 18+00.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 3'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT
DETAILS



ASSEMBLED BY : T. BANKOVICH	DATE : 10/07
CHECKED BY : T. J. BEACH	DATE : 10/07
DRAWN BY : TLA 5/05	ADDED 7/11/05R
CHECKED BY : GM 6/05	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			18

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M11.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

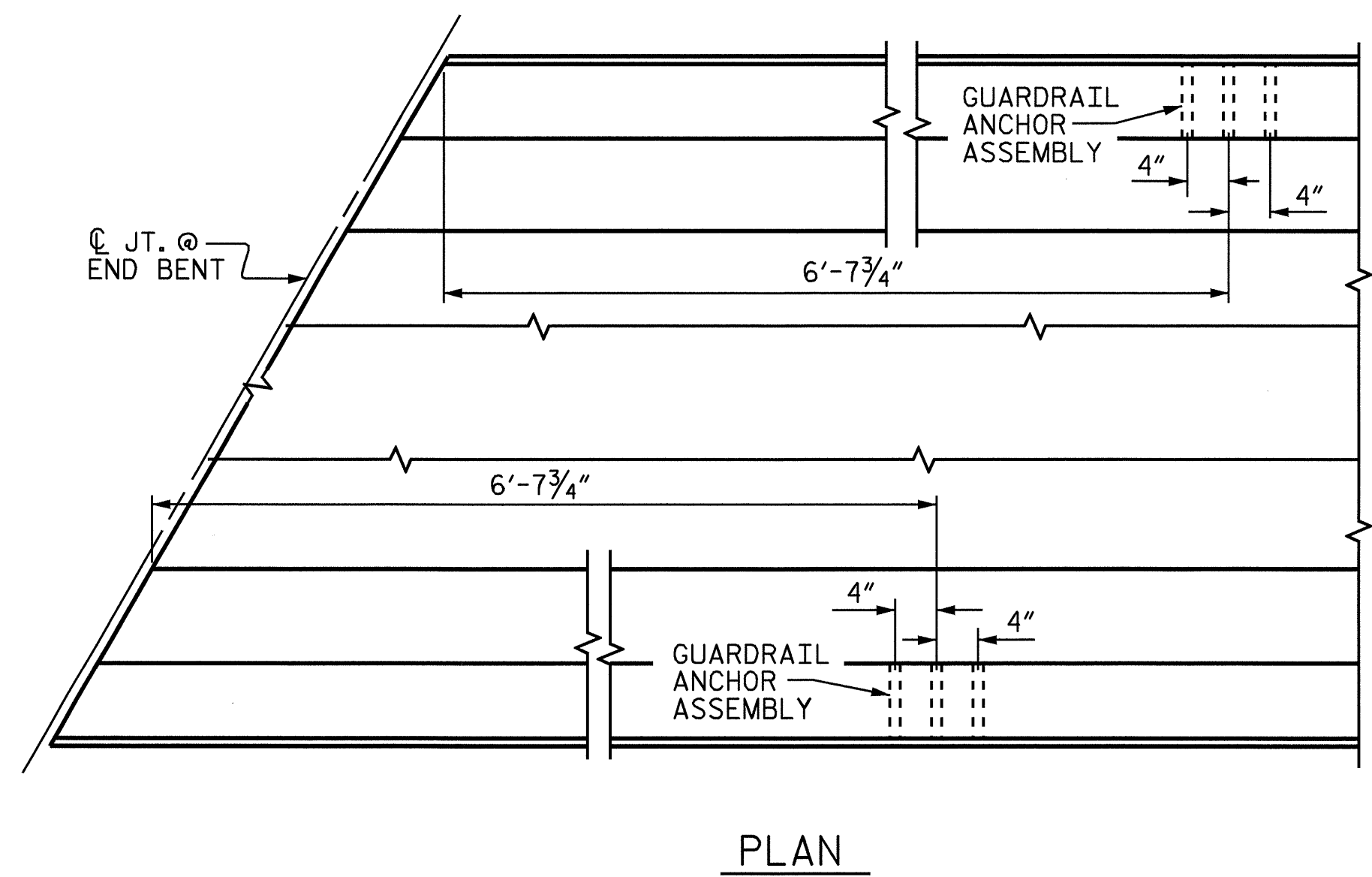
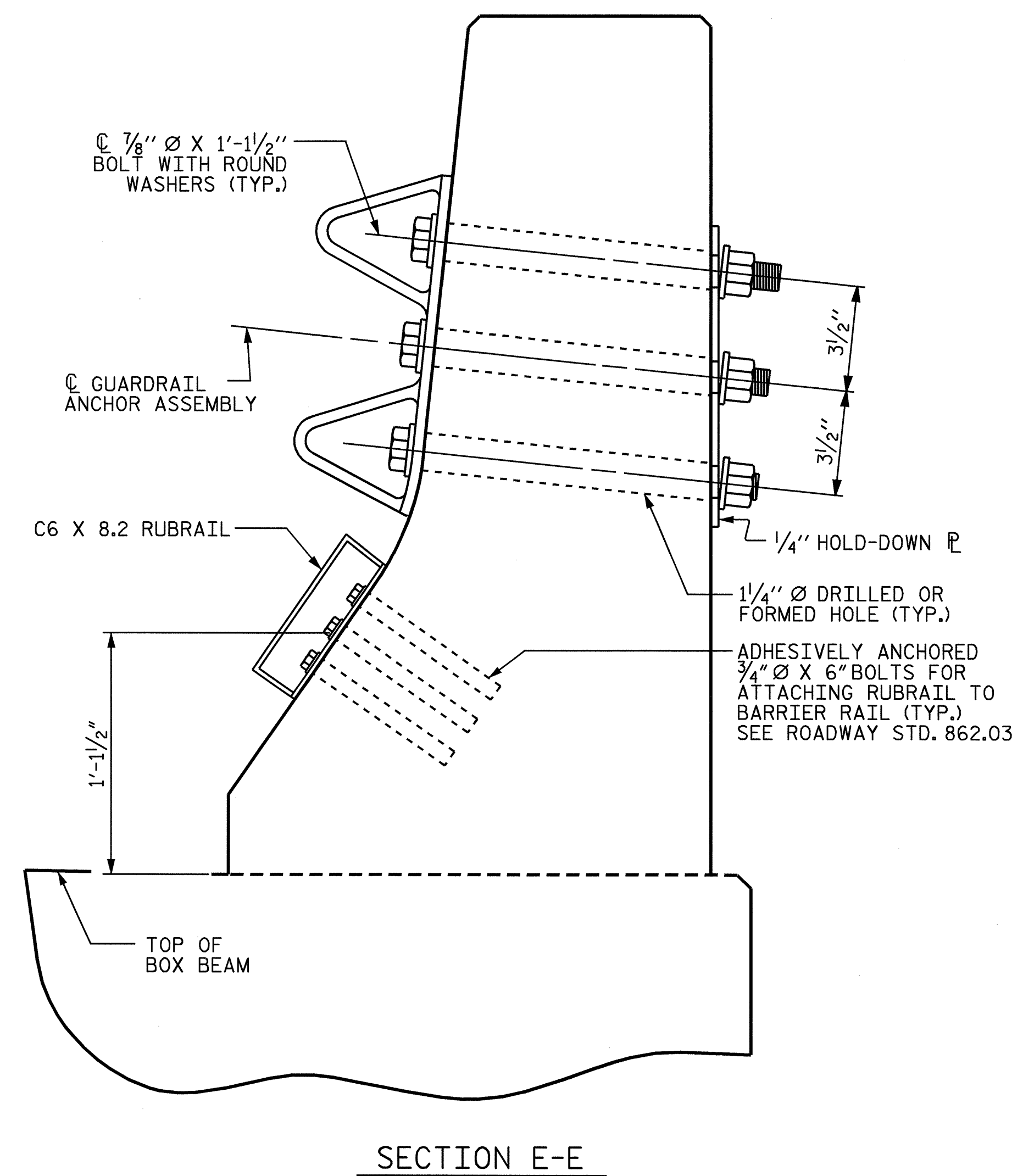
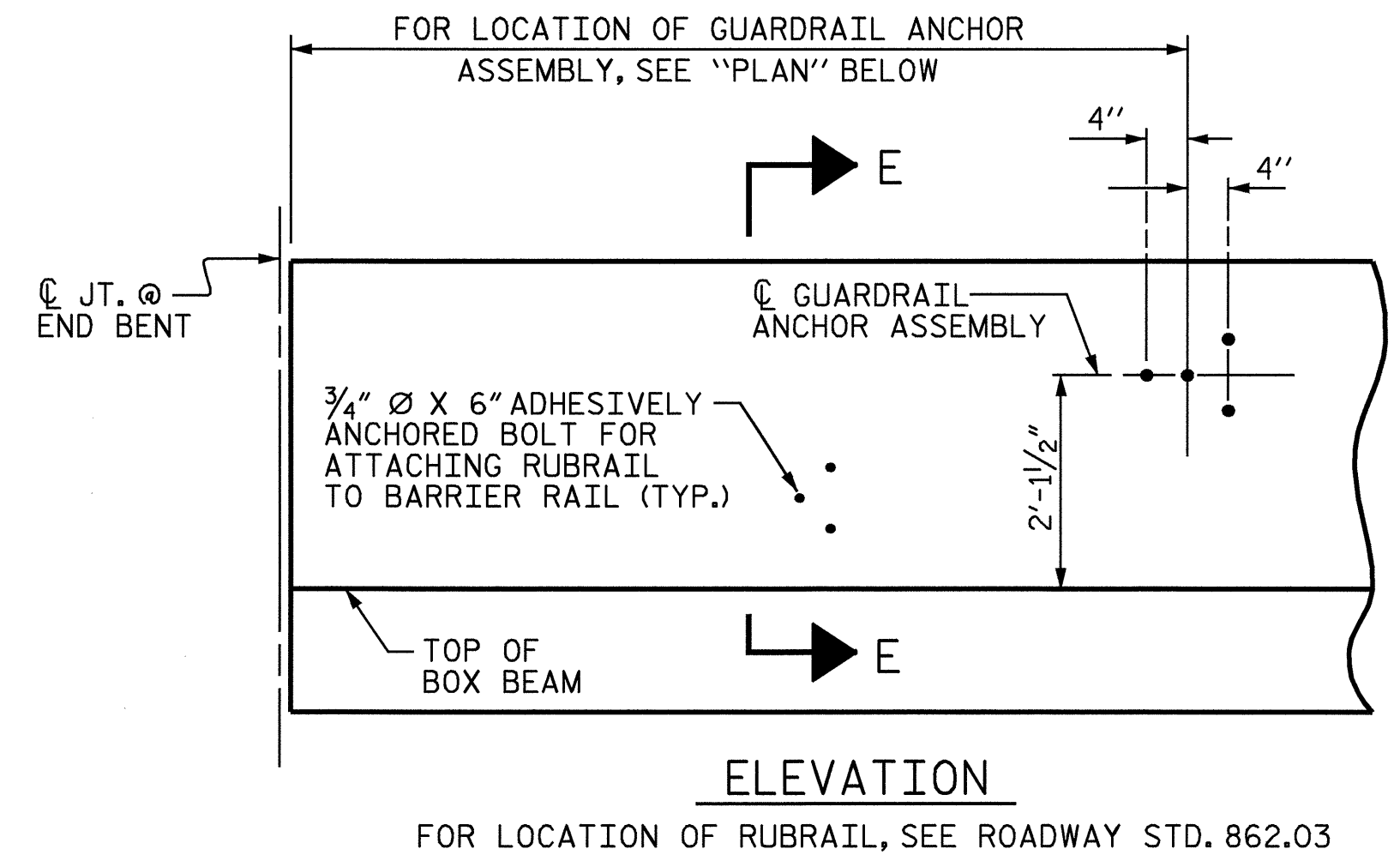
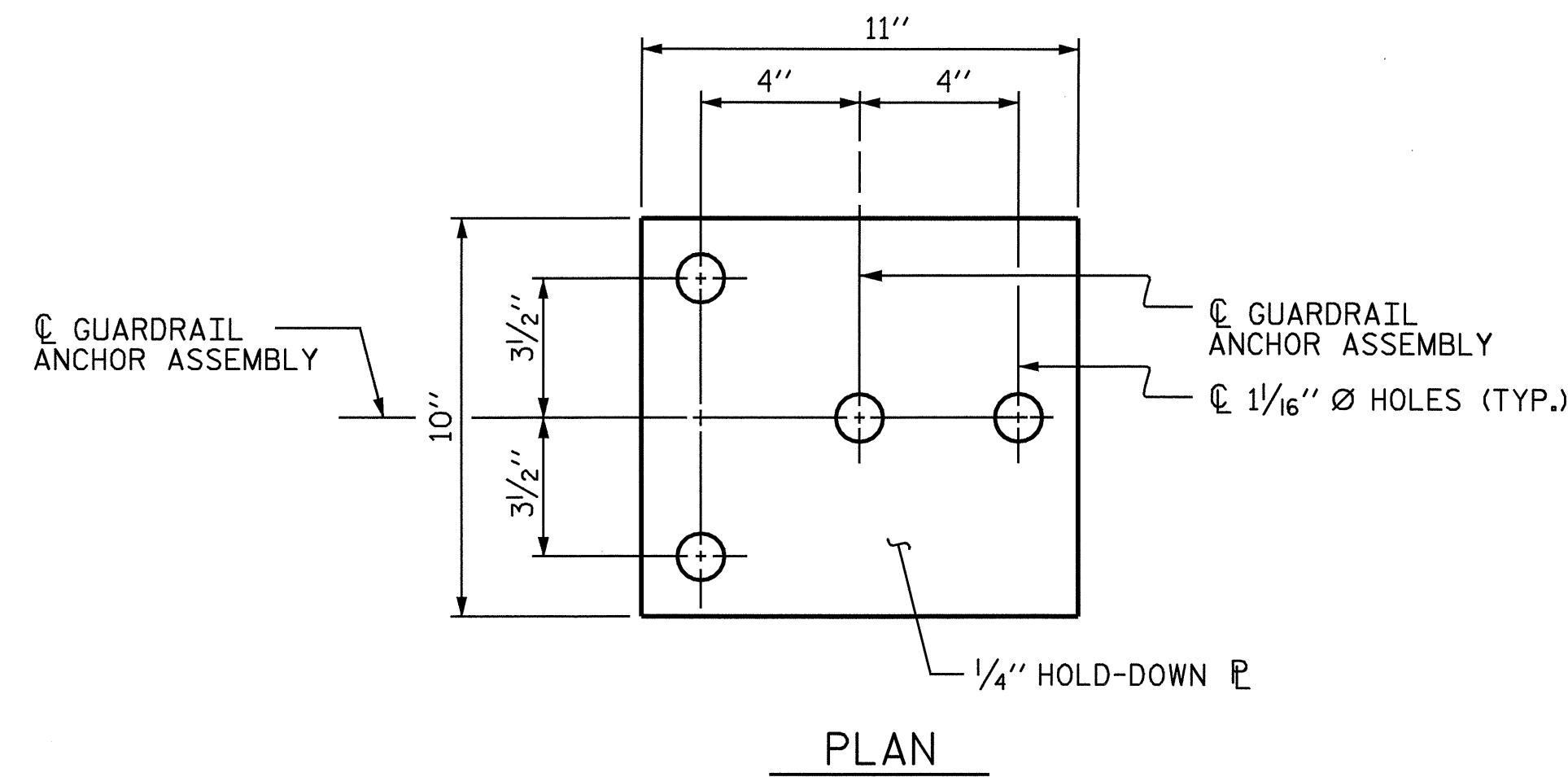
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

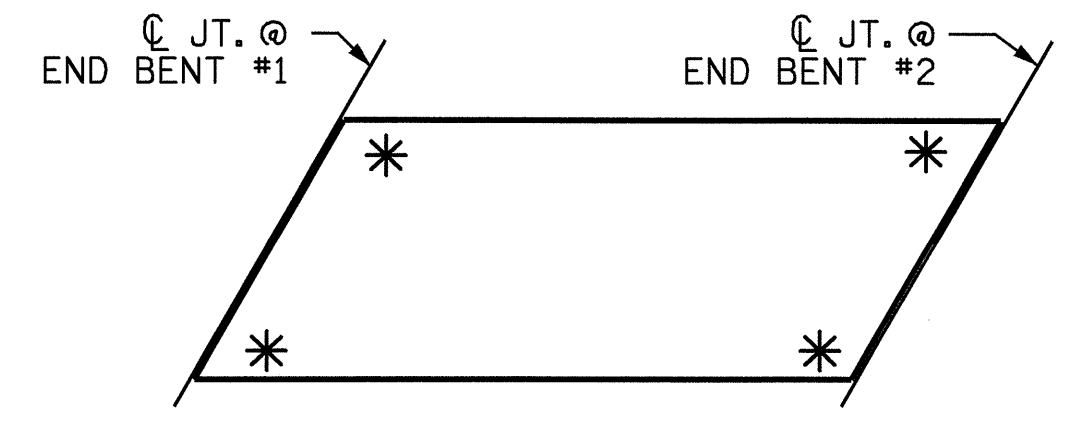
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



LOCATION OF ANCHORS FOR GUARDRAIL
END BENT #1 SHOWN, END BENT #2 SIMILAR.

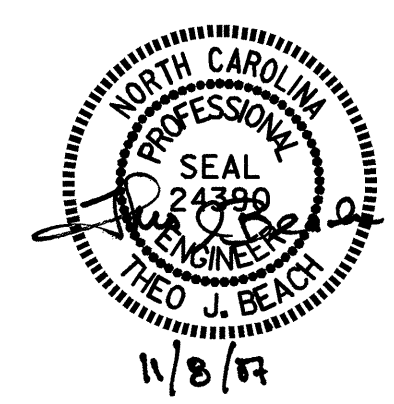


SKETCH SHOWING POINTS OF ATTACHMENTS
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

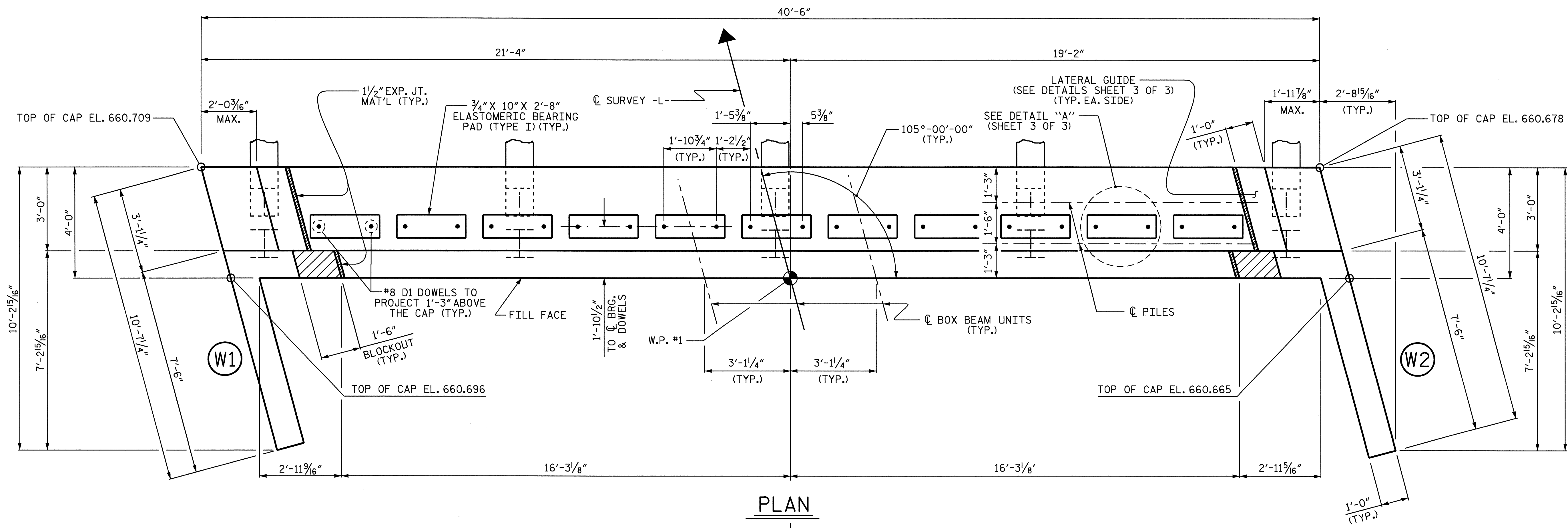
PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

SHEET 6 OF 6

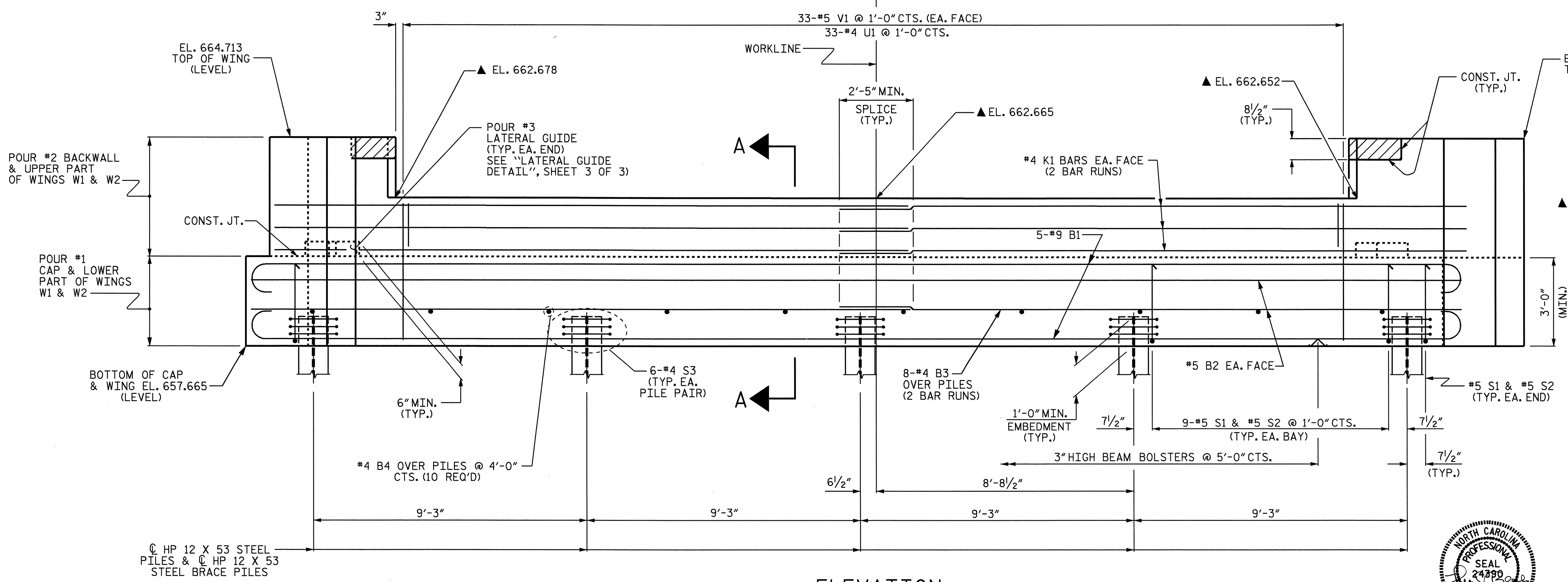
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-9
STANDARD GUARDRAIL ANCHORAGE FOR BARRIER RAIL						
REVISIONS						TOTAL SHEETS 18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ASSEMBLED BY : T. BANKOVICH	DATE : 10/07
CHECKED BY : T. J. BEACH	DATE : 10/07
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	



PLAN



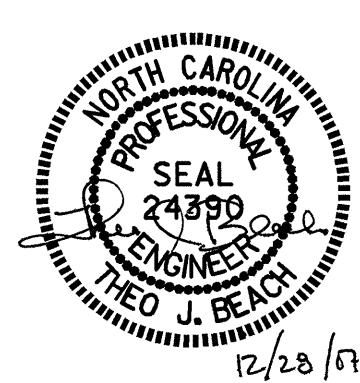
ELEVATION

FOR SECTION A-A SEE SHEET 3 OF 3

PROJECT NO. B-4254
 ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-
 SHEET 1 OF 3

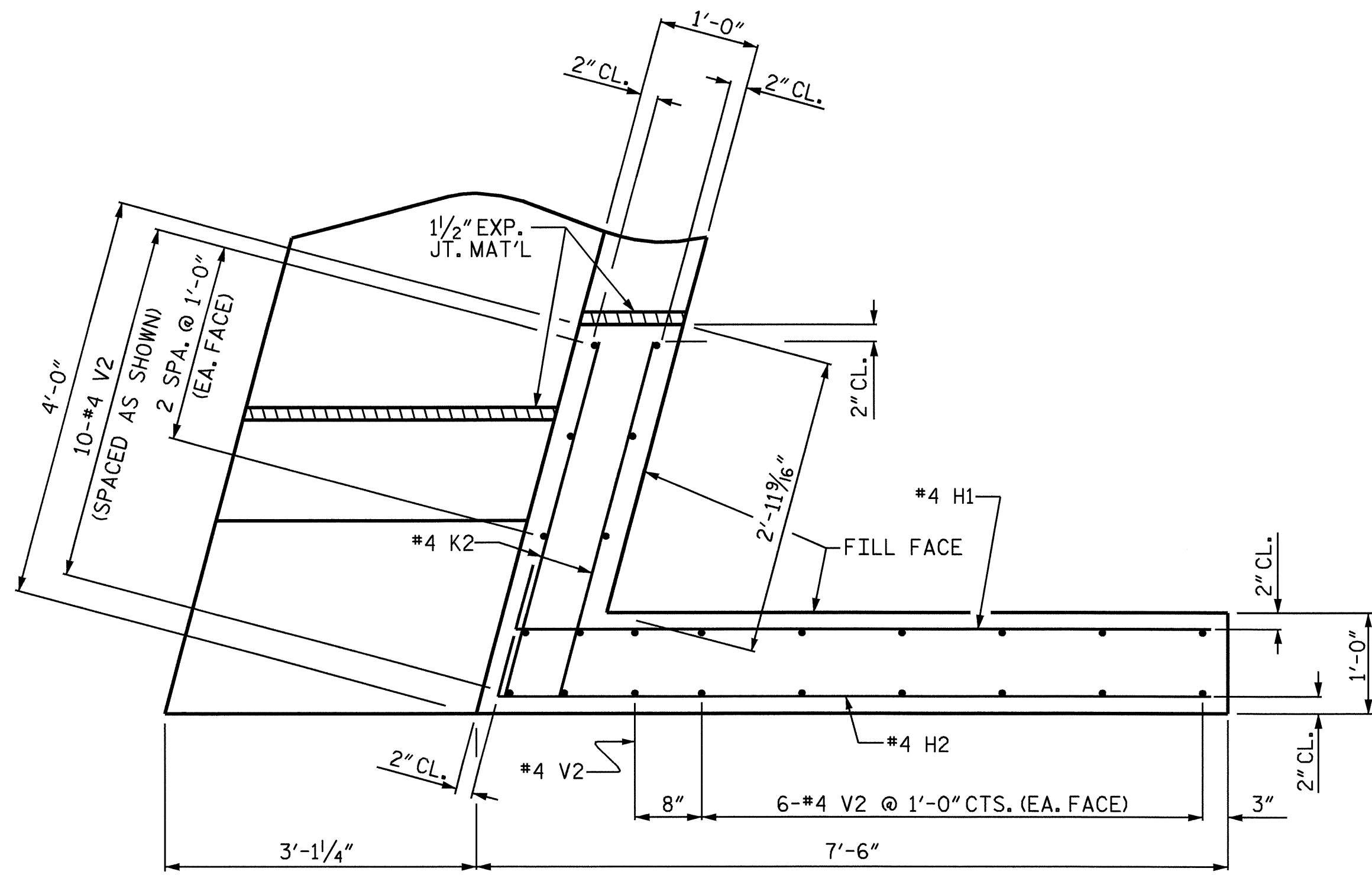
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1

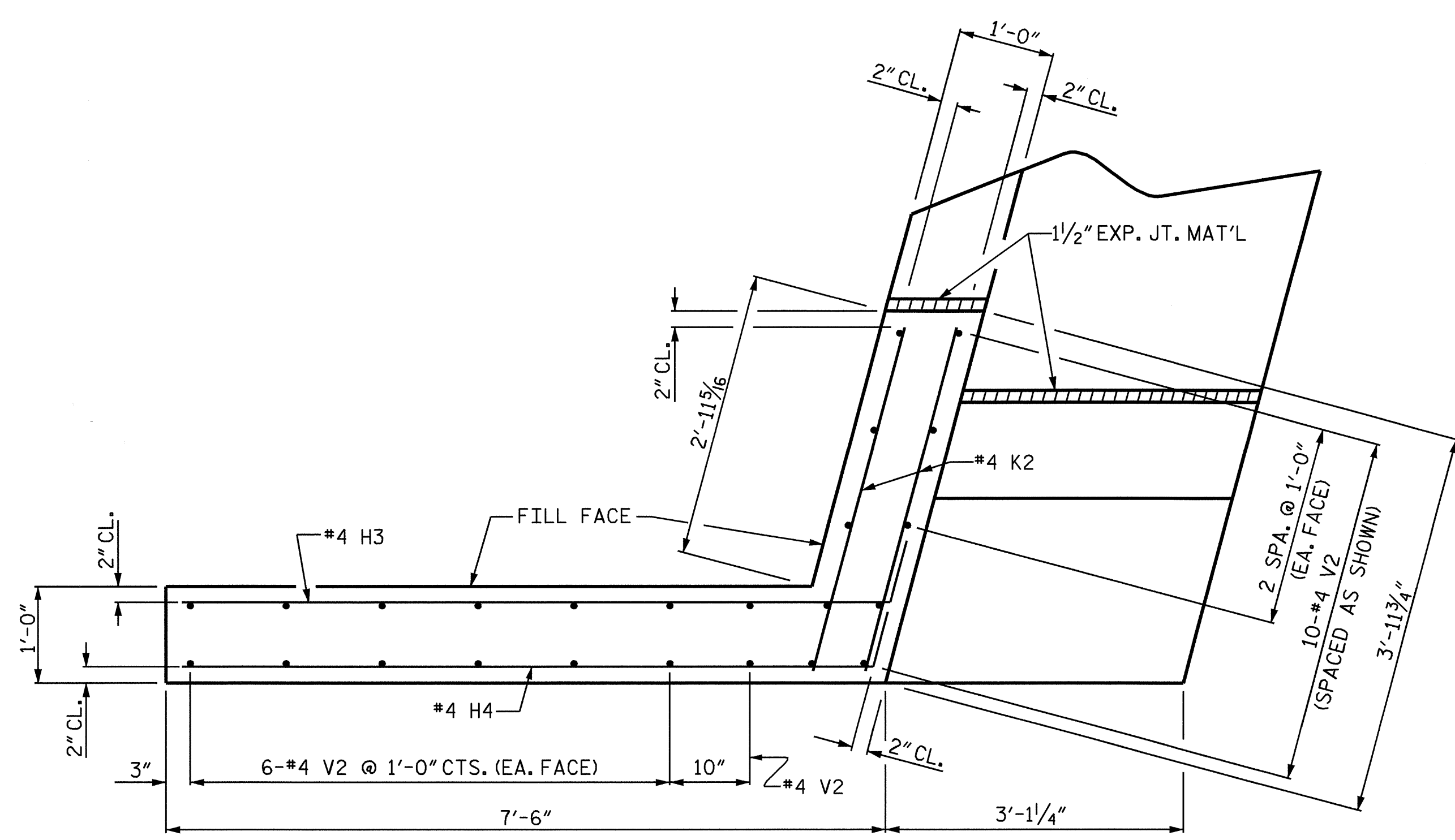


DRAWN BY: S.B. WILLIAMS DATE: 6-06
 CHECKED BY: A.V. ROYAL DATE: 7-06

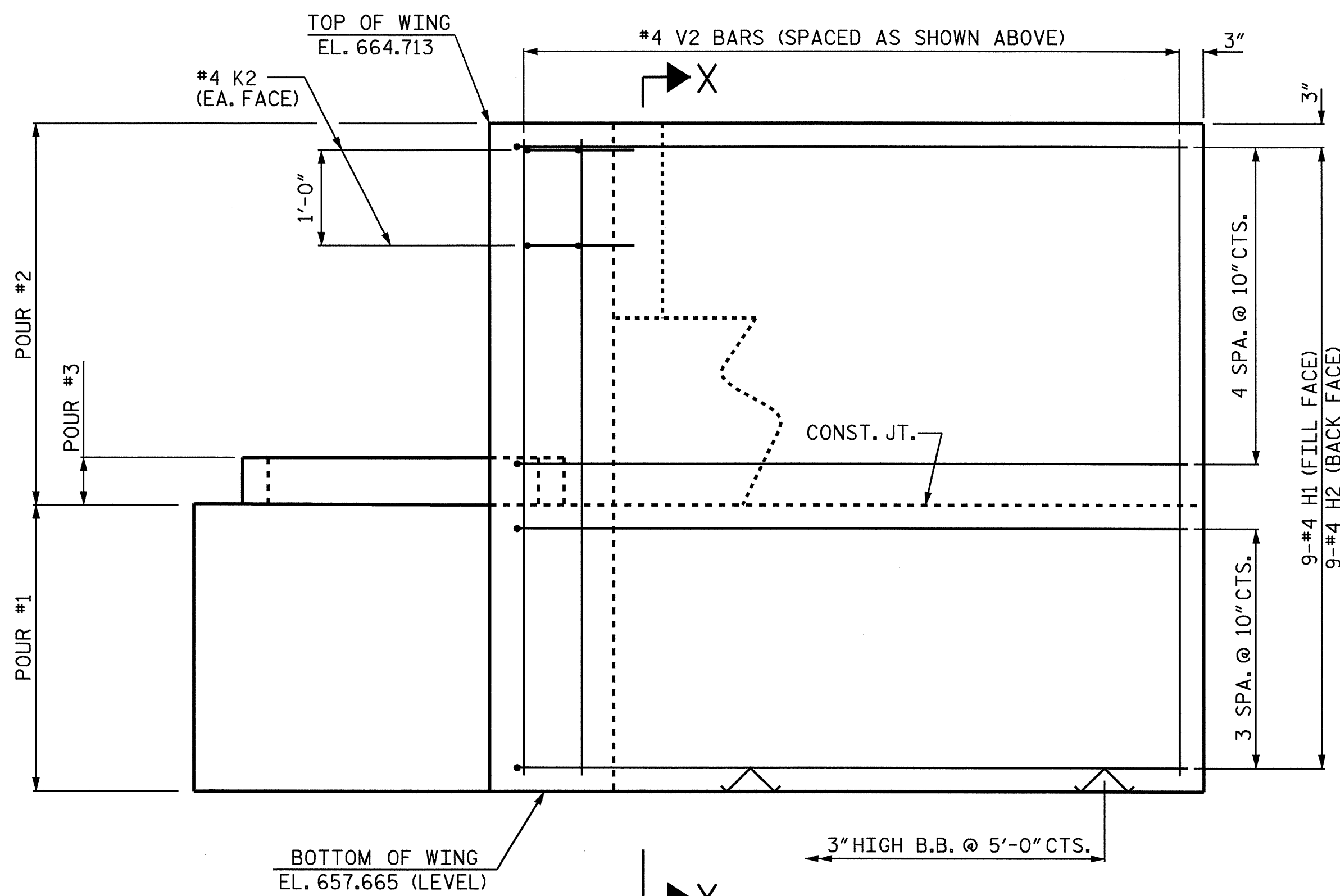
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			18



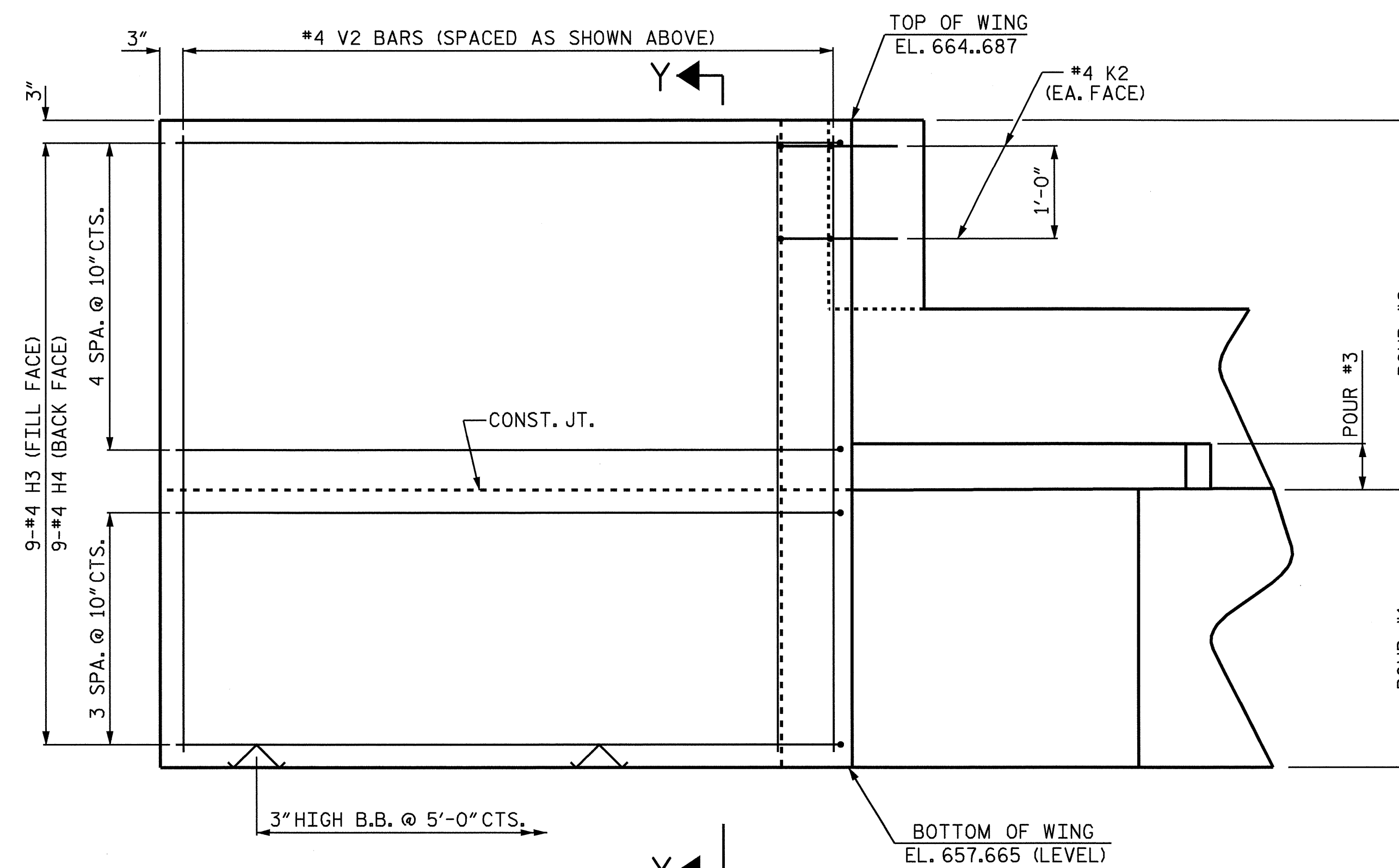
PLAN OF WING (W1)



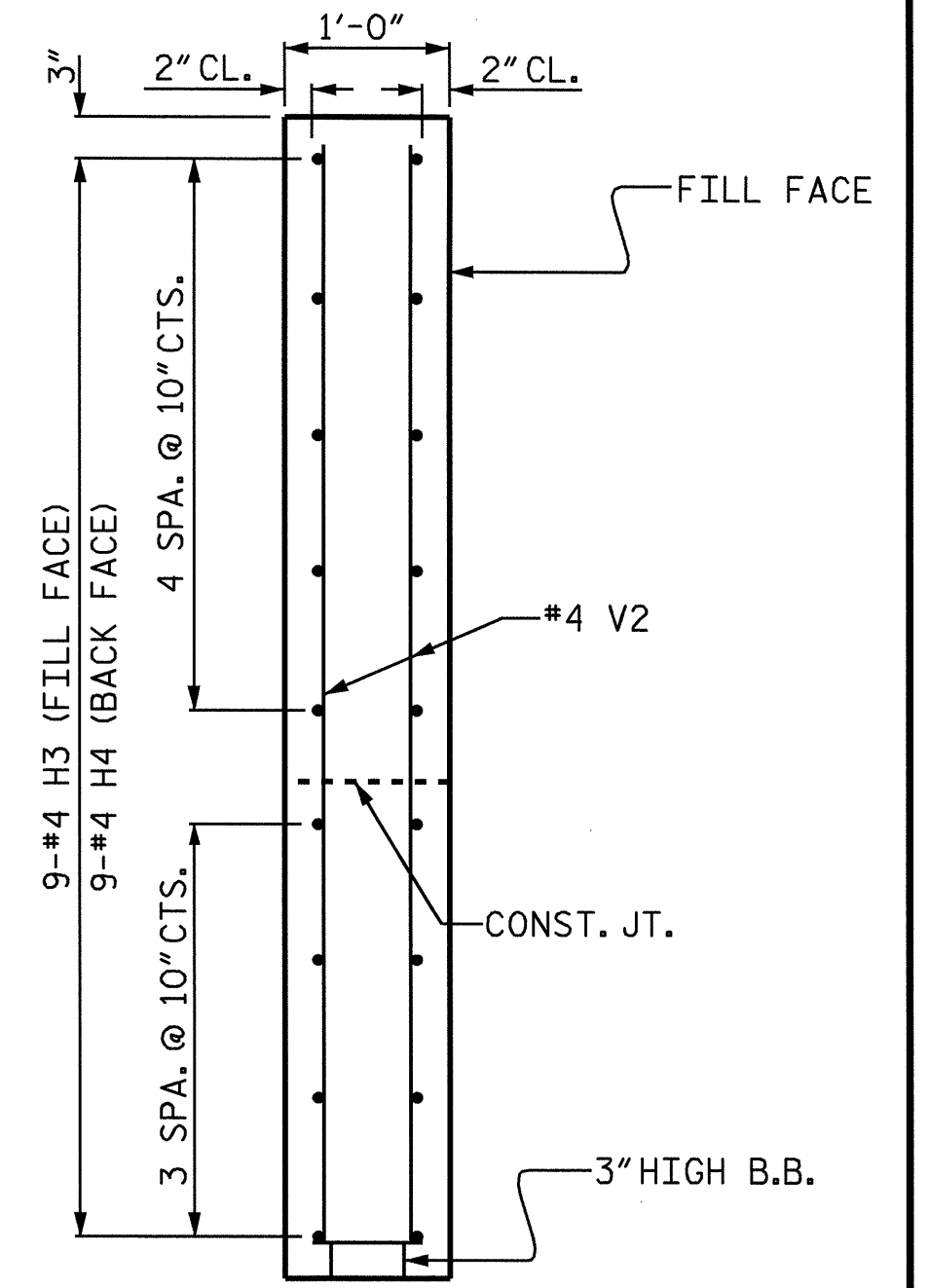
PLAN OF WING (W2)



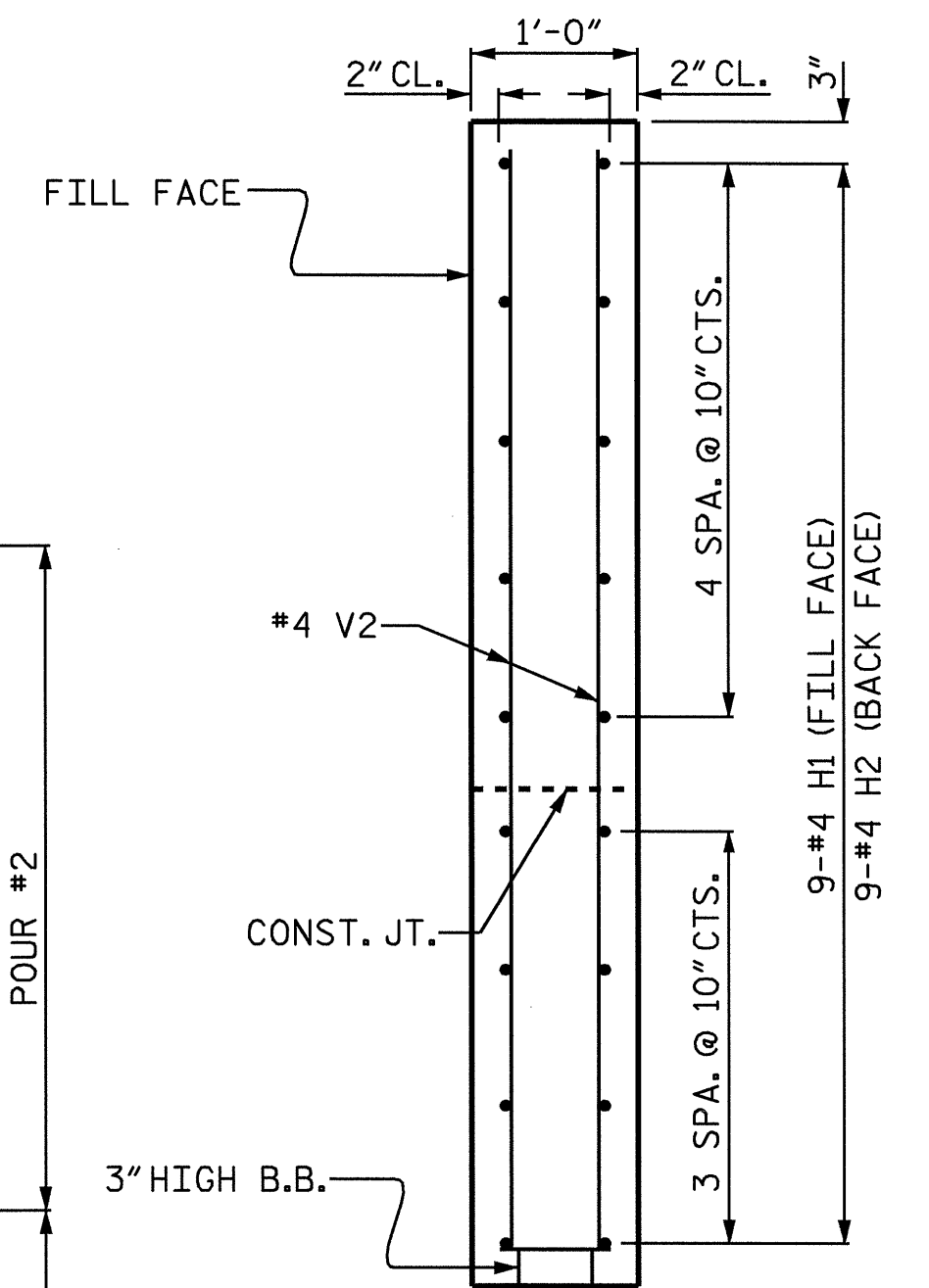
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y



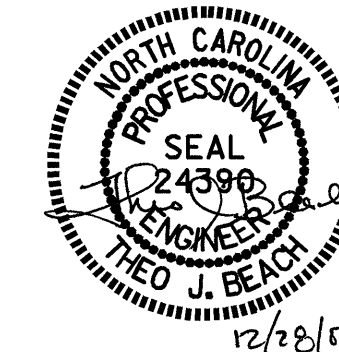
SECTION X-X

PROJECT NO. B-4254
 ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1

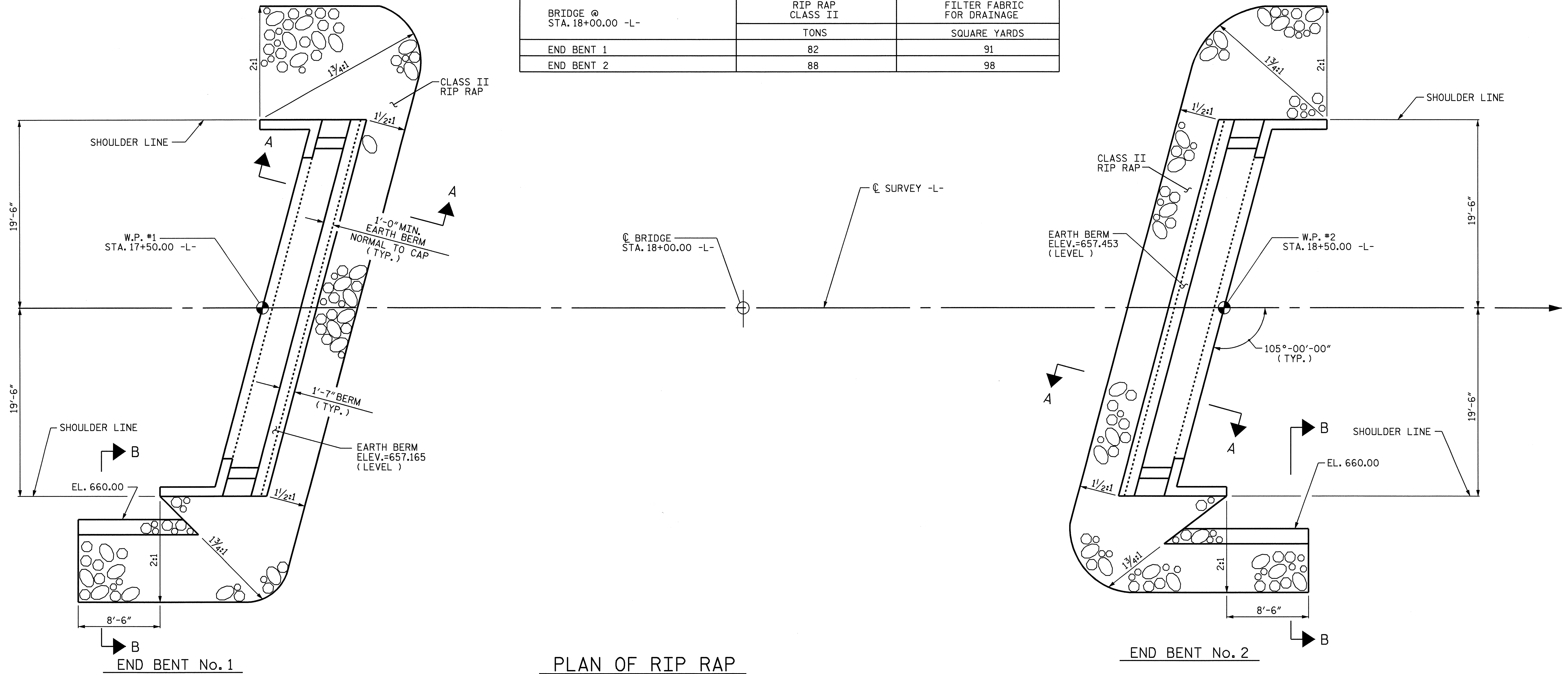


DRAWN BY: S.B. WILLIAMS DATE: 6-06
 CHECKED BY: A.V. ROYAL DATE: 7-06

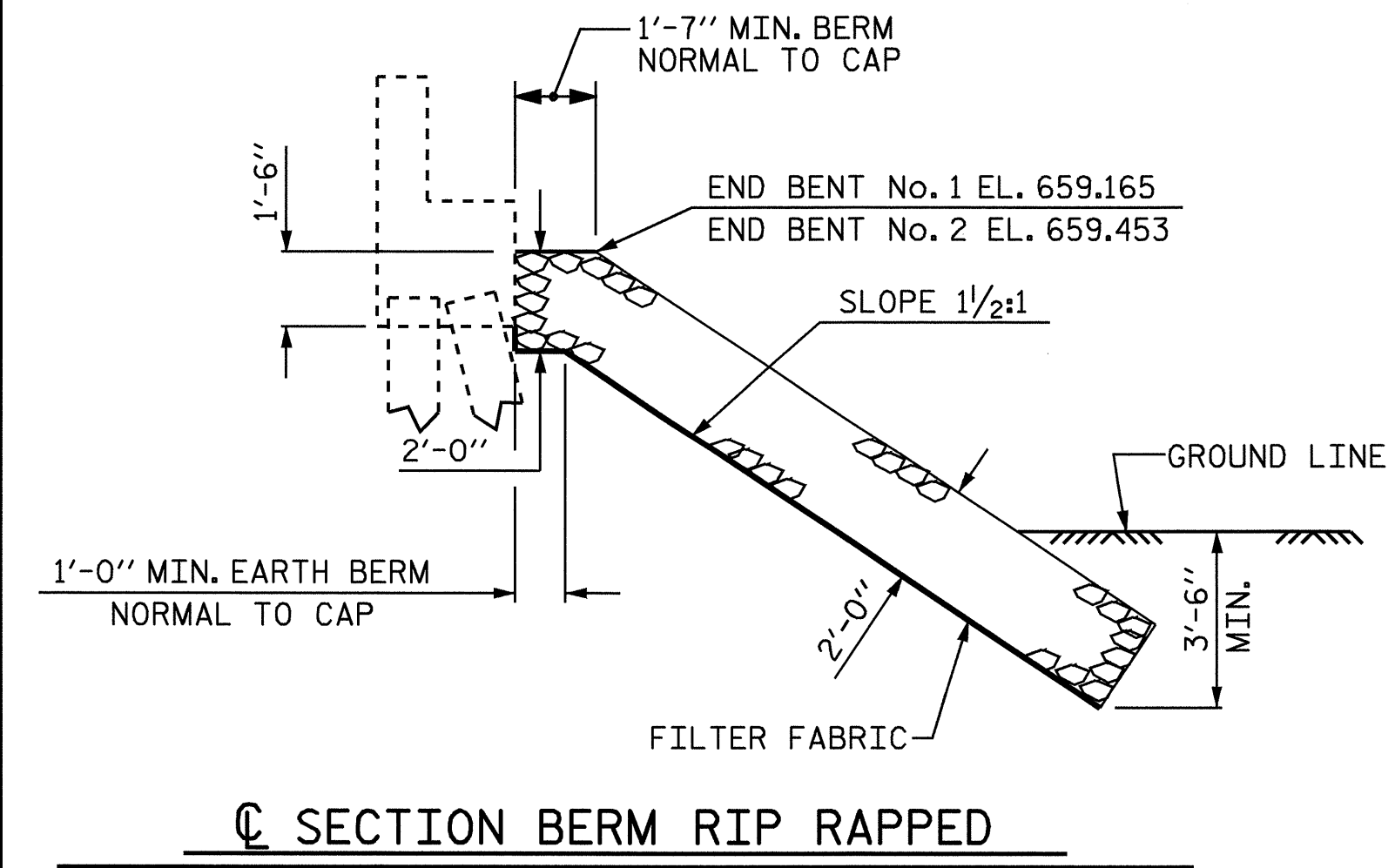
28-DEC-2007 13:46
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 tbeach

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			18

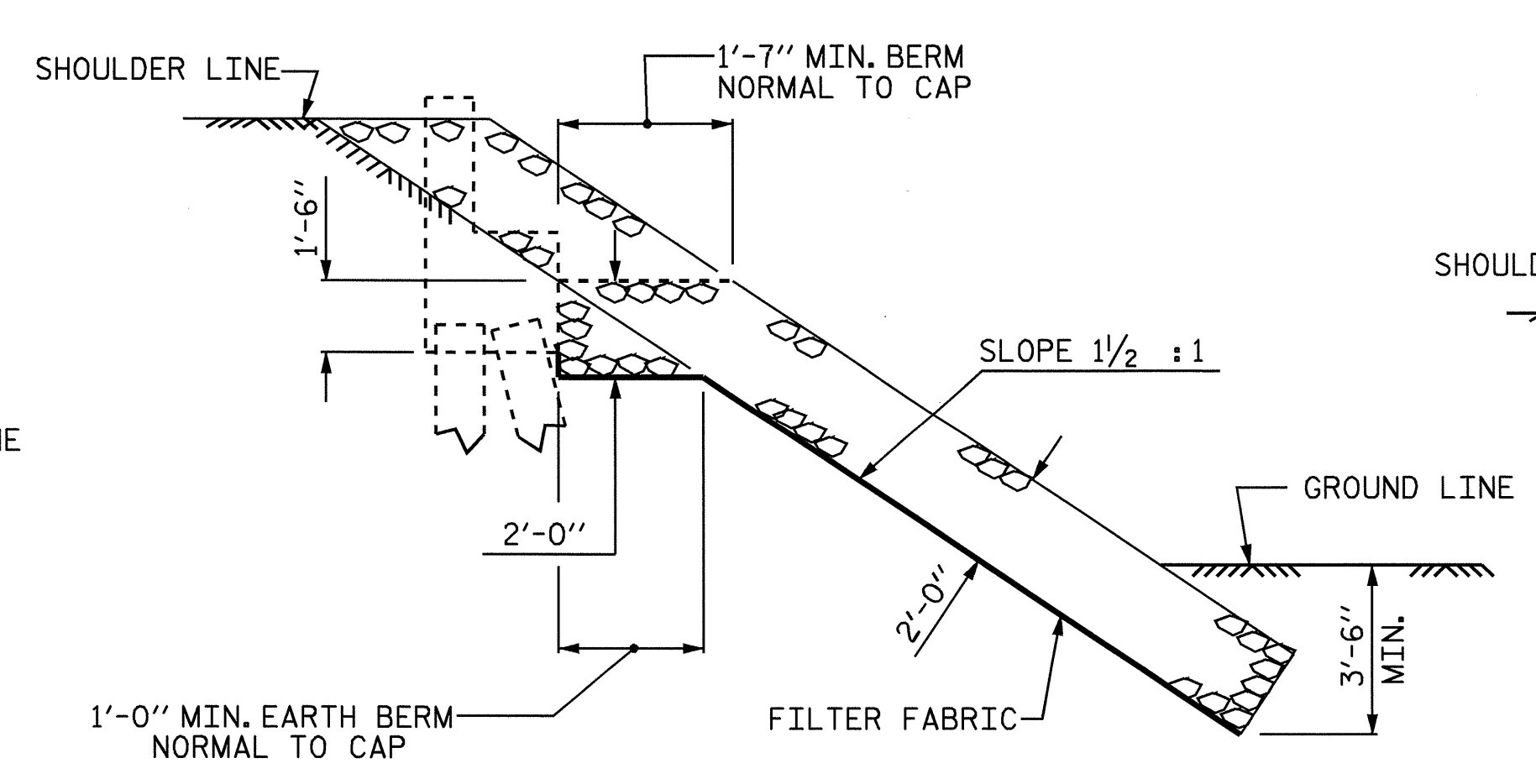
ESTIMATED QUANTITIES		
BRIDGE @ STA. 18+00.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	82	91
END BENT 2	88	98



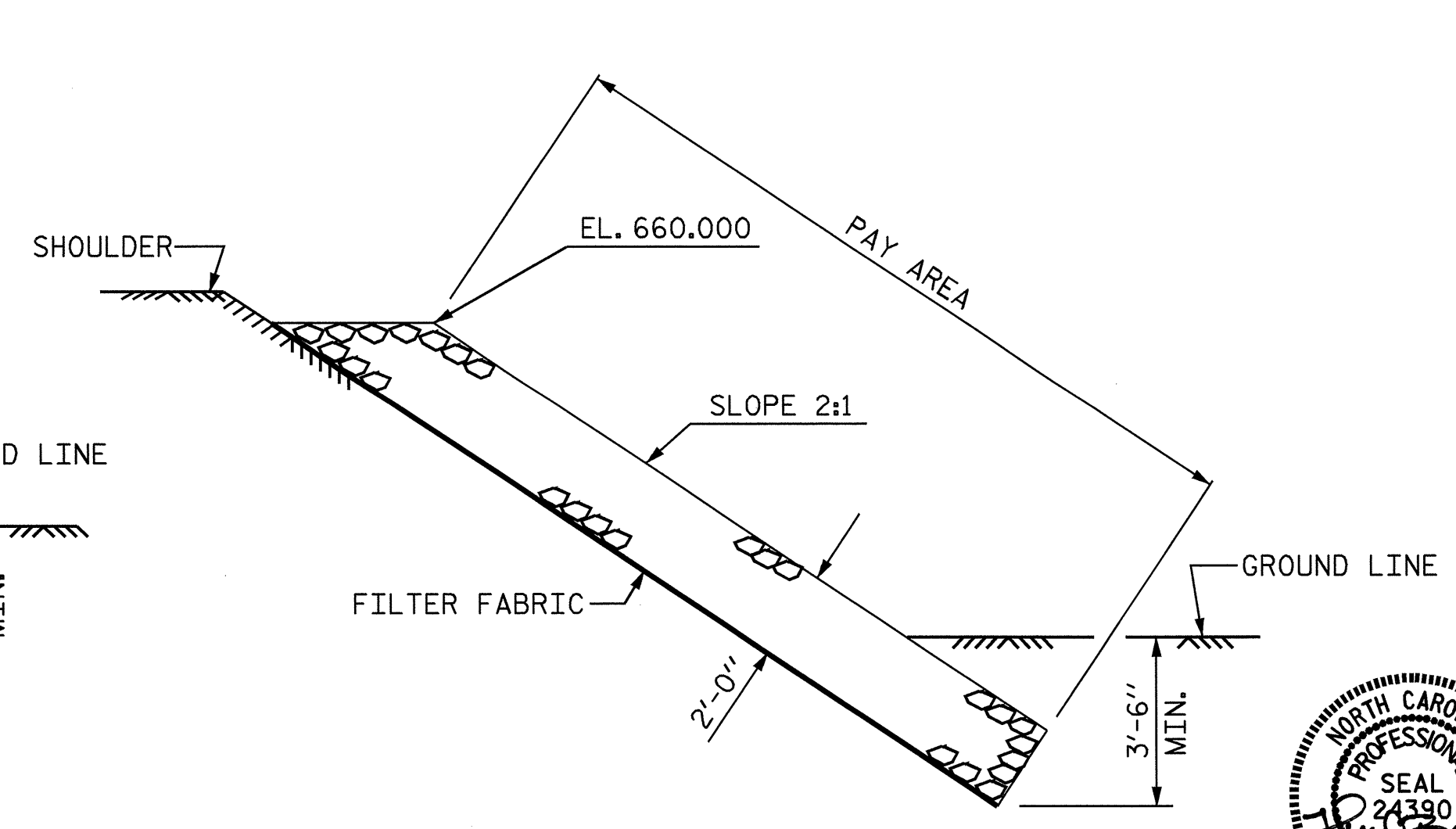
PLAN OF RIP RAP



SECTION BERM RIP RAPPED



SECTION A-A

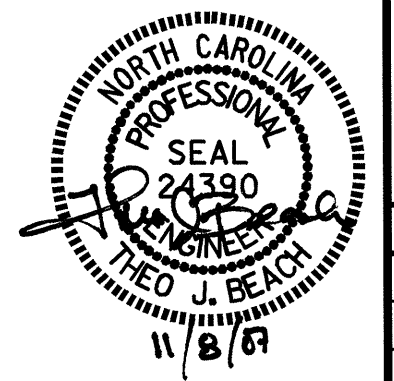


SECTION B-B

PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD RIP RAP DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

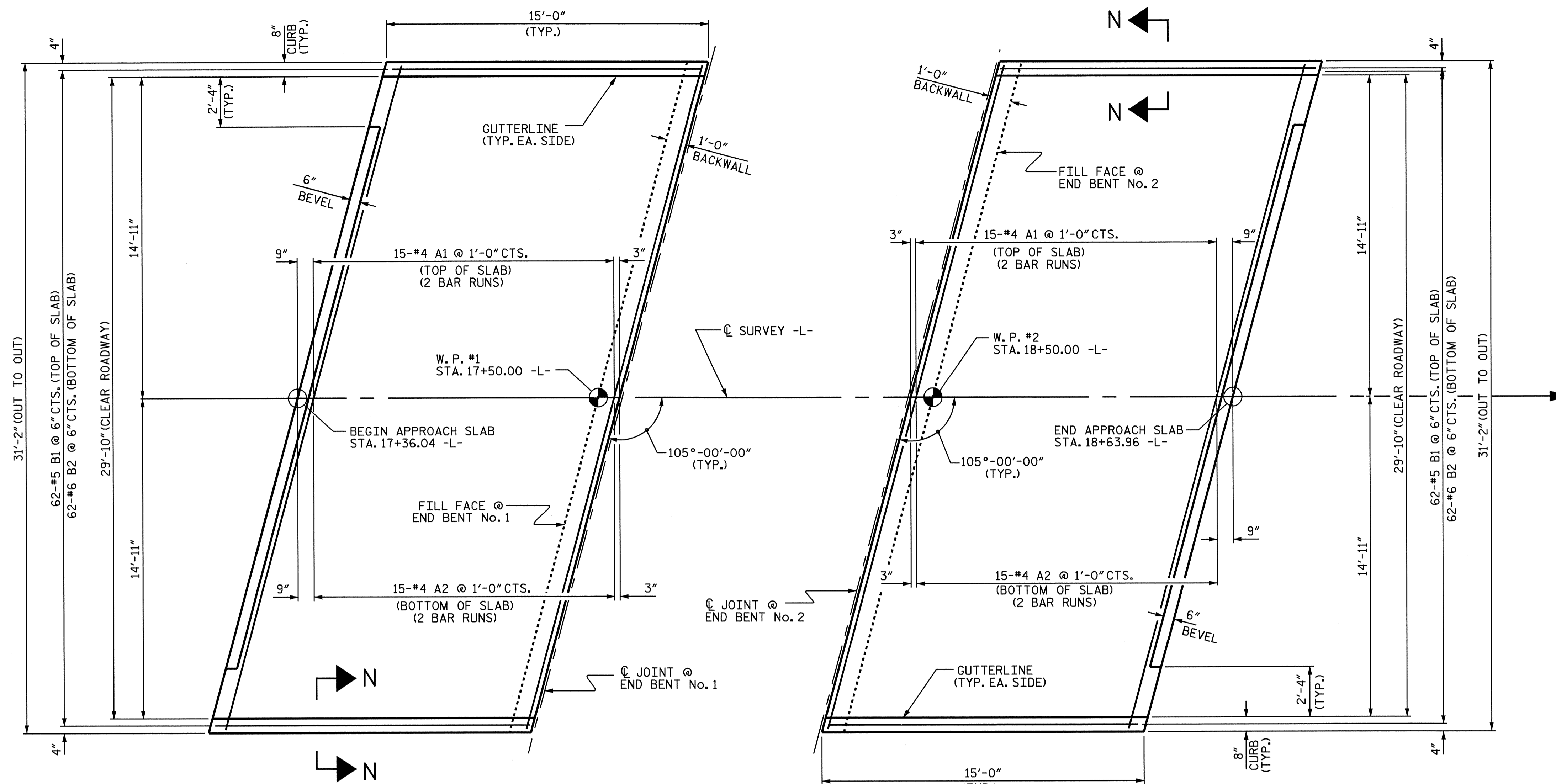
SHEET NO.
S-16
TOTAL SHEETS
18



DRAWN BY: T. BANKOVICH DATE: 10/07
 CHECKED BY: T. J. BEACH DATE: 10/07

08-NOV-2007 08:02
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 tjbankovich

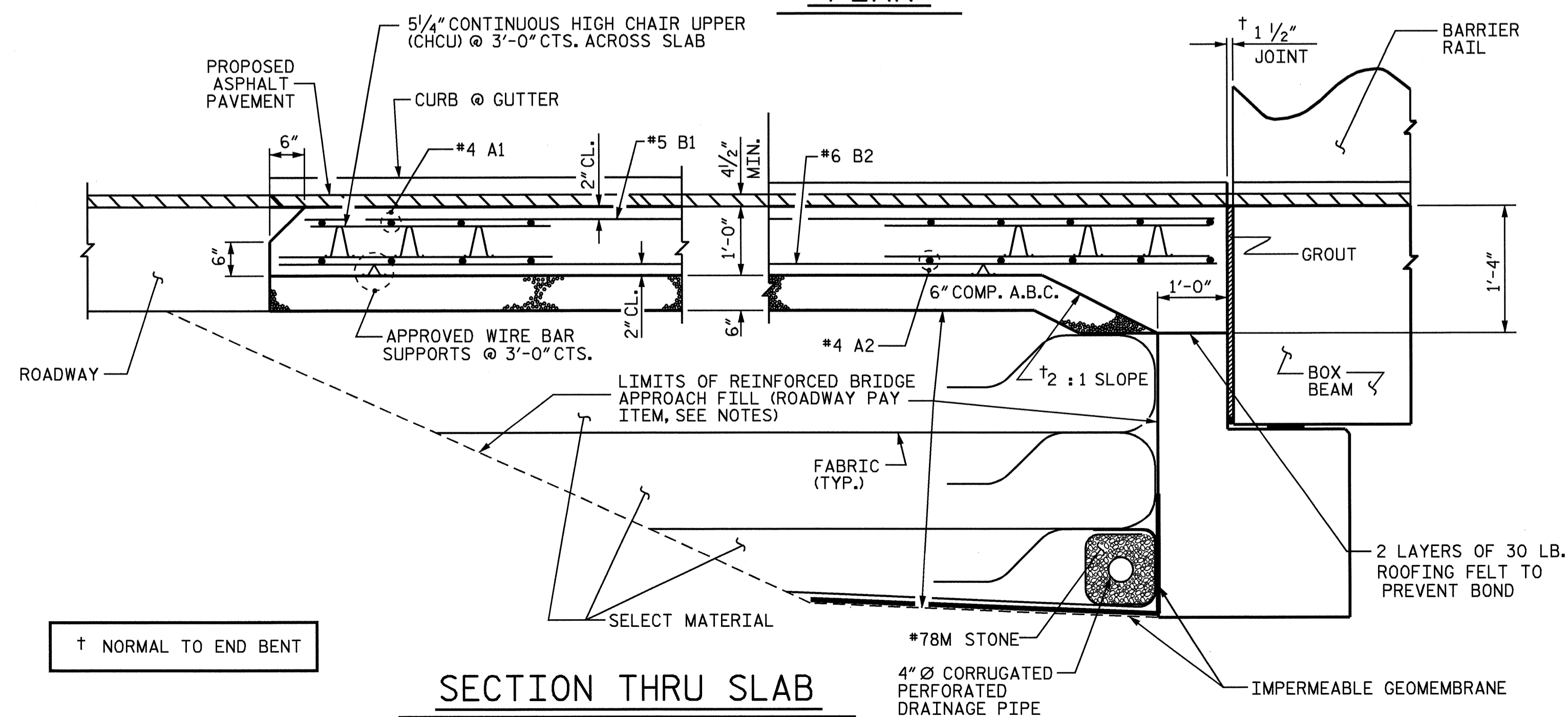
BILL OF MATERIAL					
APPROACH SLAB AT END BENT No. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	17'-0"	341
A2	30	#4	STR	16'-10"	337
*B1	62	#5	STR	14'-2"	916
B2	62	#6	STR	14'-8"	1366
REINFORCING STEEL				LBS.	1703
*EPOXY COATED REINFORCING STEEL				LBS.	1257
CLASS AA CONCRETE				C. Y.	18.1
APPROACH SLAB AT END BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	17'-0"	341
A2	30	#4	STR	16'-10"	337
*B1	62	#5	STR	14'-2"	916
B2	62	#6	STR	14'-8"	1366
REINFORCING STEEL				LBS.	1703
*EPOXY COATED REINFORCING STEEL				LBS.	1257
CLASS AA CONCRETE				C. Y.	18.1



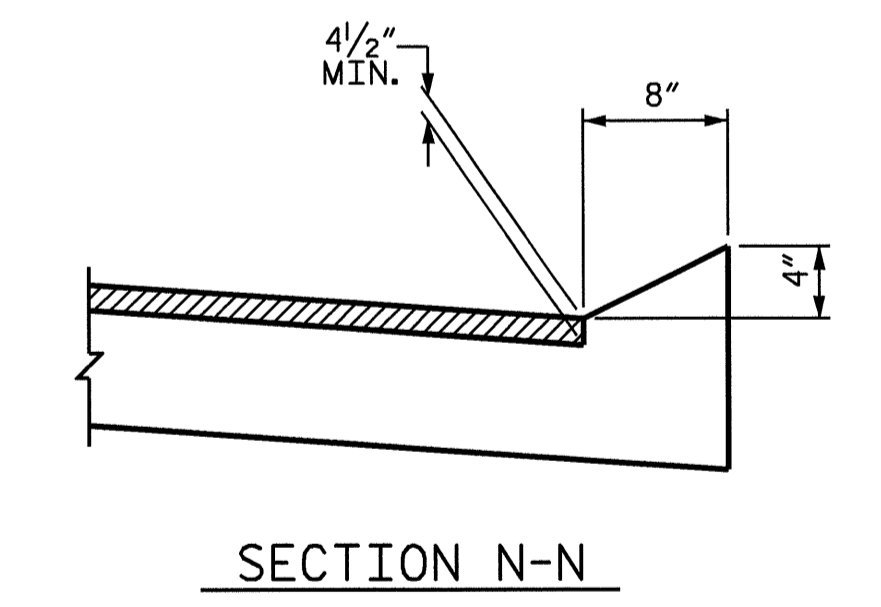
AT END BENT No. 1

AT END BENT No. 2

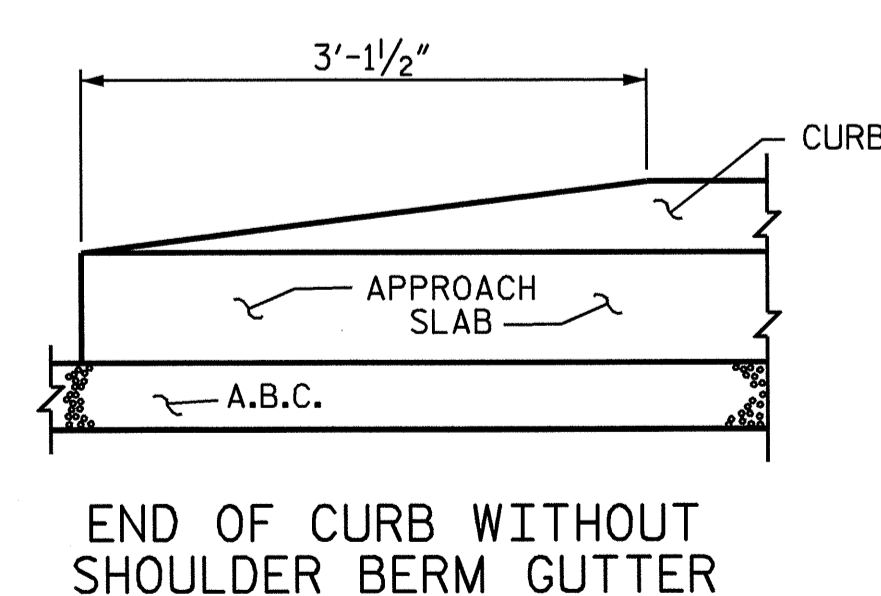
PLAN



SECTION THRU SLAB



SECTION N-N



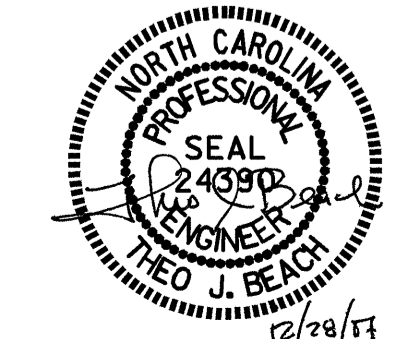
CURB DETAILS

PROJECT NO. B-4254
 ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

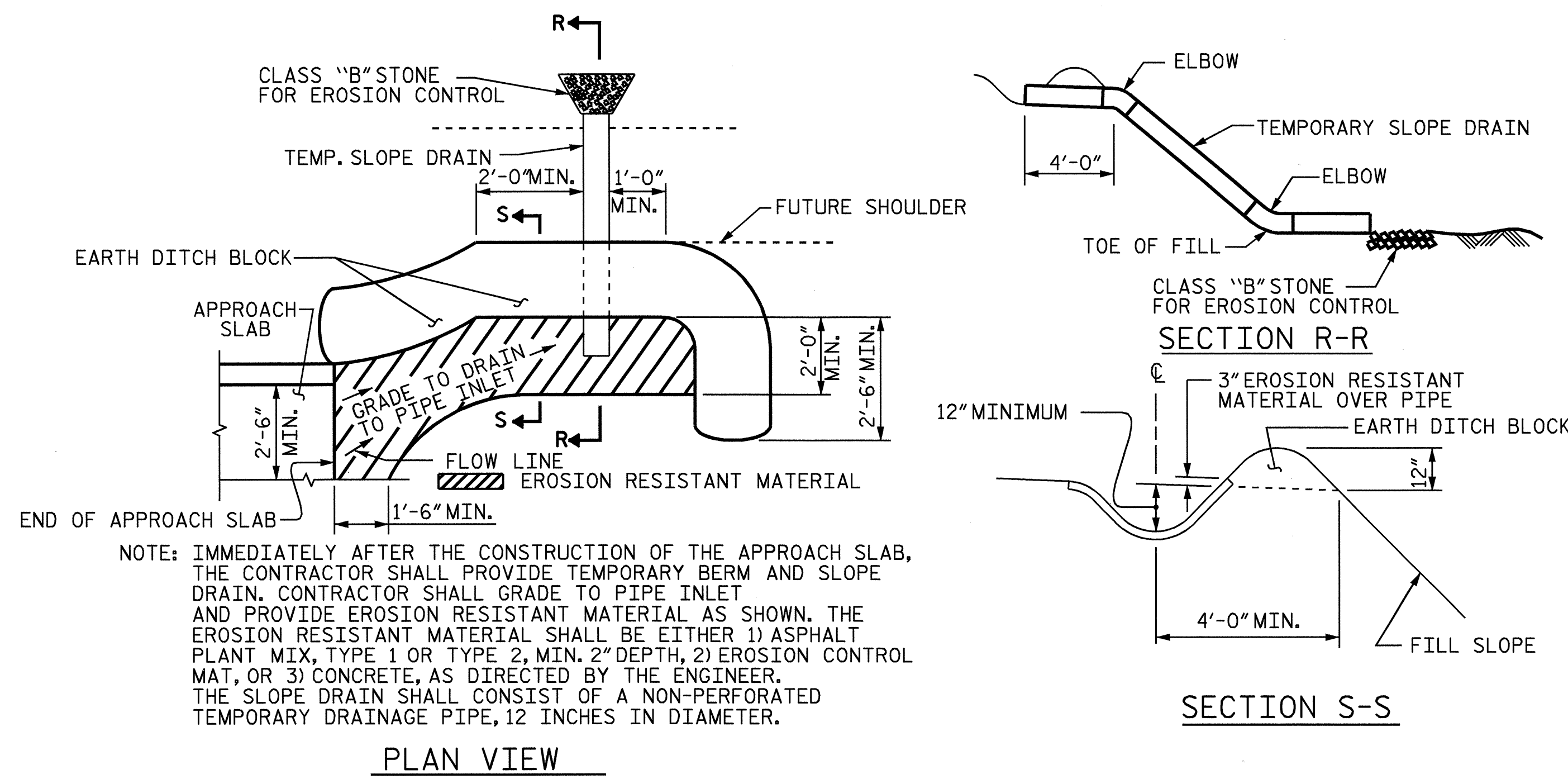
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD					
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE BOX BEAM					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-17
 TOTAL SHEETS 18



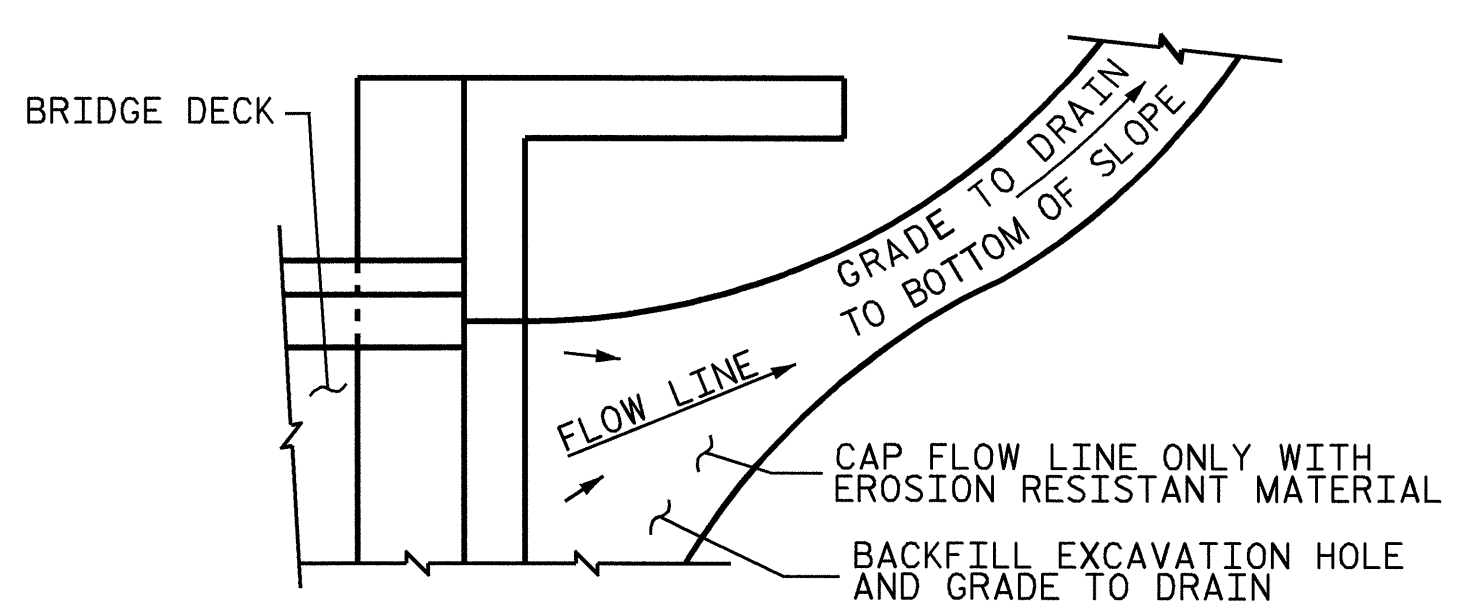
DRAWN BY : T. BANKOVICH DATE : 10/07
 CHECKED BY : T. J. BEACH DATE : 10/07



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 4" TYPE B-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE BOX BEAM UNIT" SHEETS.

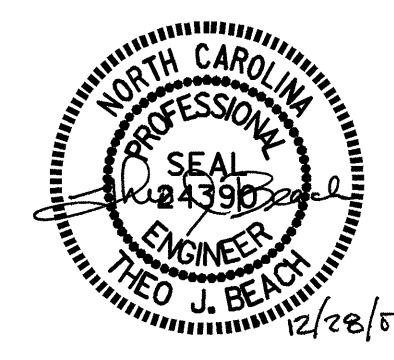
THE JOINT AT THE END BENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

PROJECT NO. B-4254
ROCKINGHAM COUNTY
 STATION: 18+00.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH
 SLAB DETAILS



ASSEMBLED BY : T. BANKOVICH	DATE : 10/07
CHECKED BY : T. J. BEACH	DATE : 10/07
DRAWN BY : LES 8/01	REV. 5/7/03R RWW/JTE
CHECKED BY : RDR 8/01	

REVISIONS					SHEET NO. S-18
NO.	BY:	DATE:	NO.	DATE:	
1			3		TOTAL SHEETS 18
2			4		

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2002 STANDARD SPECIFICATIONS "FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP; AND CLASS S SHALL BE USED FOR UNDERWATER FOOTING SEALS.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN, WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED WITH THE EXCEPTION OF #2 BARS WHICH MAY BE FABRICATED FROM COLD DRAWN STEEL WIRE. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

PLACEMENT OF BEAM OR GIRDER MEMBERS ON TRUCKS FOR HAULING SHALL BE DONE IN COMPLIANCE WITH LIMITS SHOWN ON SKETCHES PROVIDED TO THE MATERIALS AND TEST UNIT APPROVED BY THE STRUCTURE DESIGN UNIT DATED MAY 8, 1991. THESE SKETCHES PRIMARILY LIMIT THE UNSUPPORTED CANTILEVER LENGTH OF MEMBERS. WHEN THE CONTRACTOR WISHES TO PLACE MEMBERS ON TRUCKS NOT IN ACCORDANCE WITH THESE LIMITS, TO SHIP BY RAIL, TO ATTACH SHIPPING RESTRAINTS TO THE MEMBERS OR TO INVERT MEMBERS, HE SHALL SUBMIT A SKETCH FOR APPROVAL PRIOR TO SHIPPING. SEE ALSO ARTICLE 1072-11.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINISHES AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN