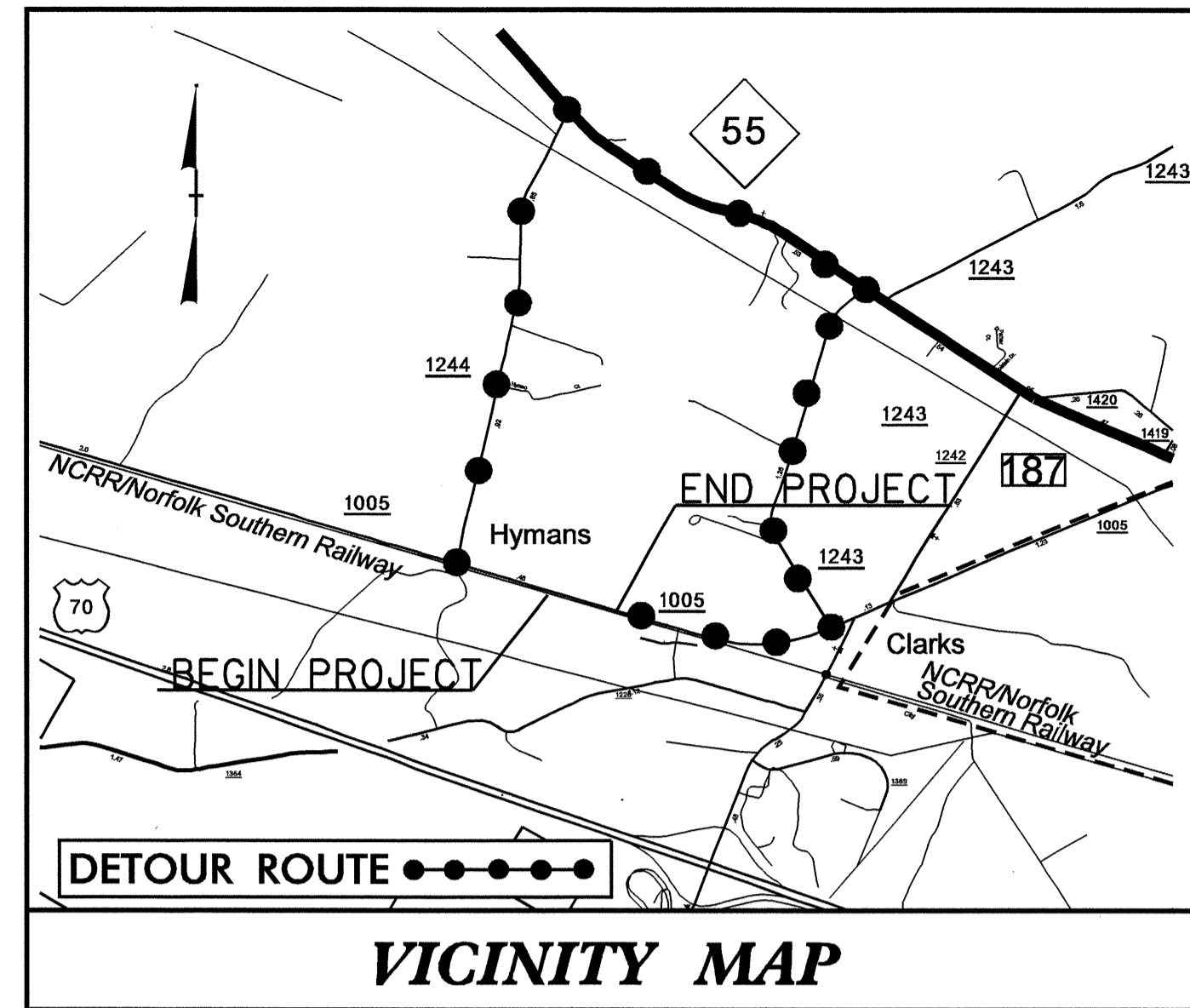


CONTRACT: C201428 TIP PROJECT: B-4085

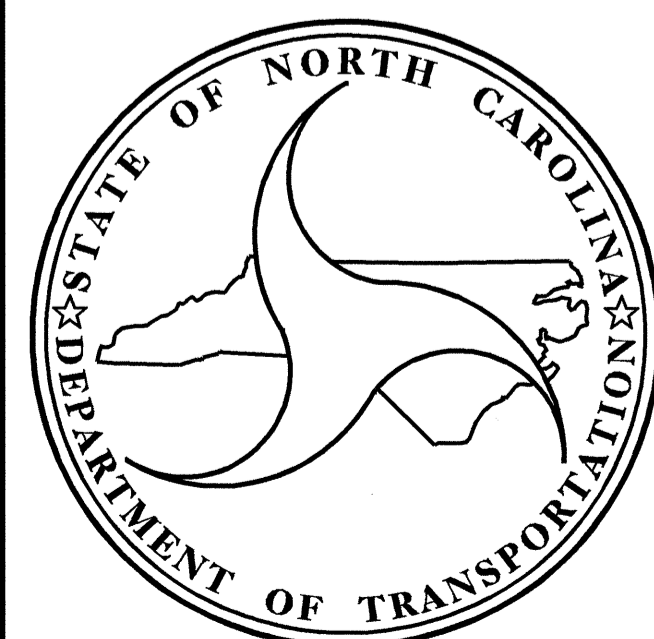
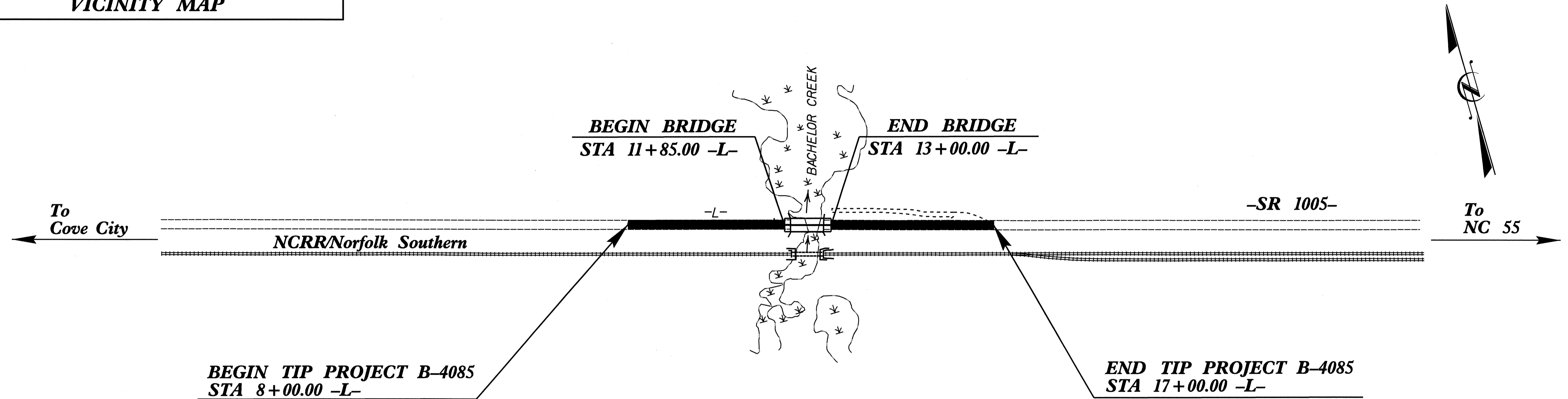
STRUCTURE



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CRAVEN COUNTY

LOCATION: BRIDGE NO. 212 OVER BACHELOR CREEK ON SR 1005
TYPE OF WORK: SIGNALS, STRUCTURE, GRADING, DRAINAGE, PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4085		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33444.1.1	BRSTP-1005(7)	P.E.	
33444.2.1	BRSTP-1005(7)	UTIL. & RW	
33444.3.1	BRSTP-1005(7)	CONST	



DESIGN DATA

ADT 2007	=	3622
ADT 2030	=	5500
DHV	=	10 %
D	=	60 %
T	=	6 % *
**V	=	60 MPH
* TTST	3% DUAL	3%
FUN. CLASS	=	COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4085	=	0.148 MI
LENGTH STRUCTURE TIP PROJECT B-4085	=	0.022 MI
TOTAL LENGTH TIP PROJECT B-4085	=	0.170 MI

Prepared In the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

<p>LETTING DATE :</p> <p><u>JANUARY 15, 2008</u></p>	<p>J. C. FRYE, P.E. <small>PROJECT ENGINEER</small></p> <hr/> <p>W.A. DAVIS, P.E. <small>PROJECT DESIGN ENGINEER</small></p>
--	--

STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

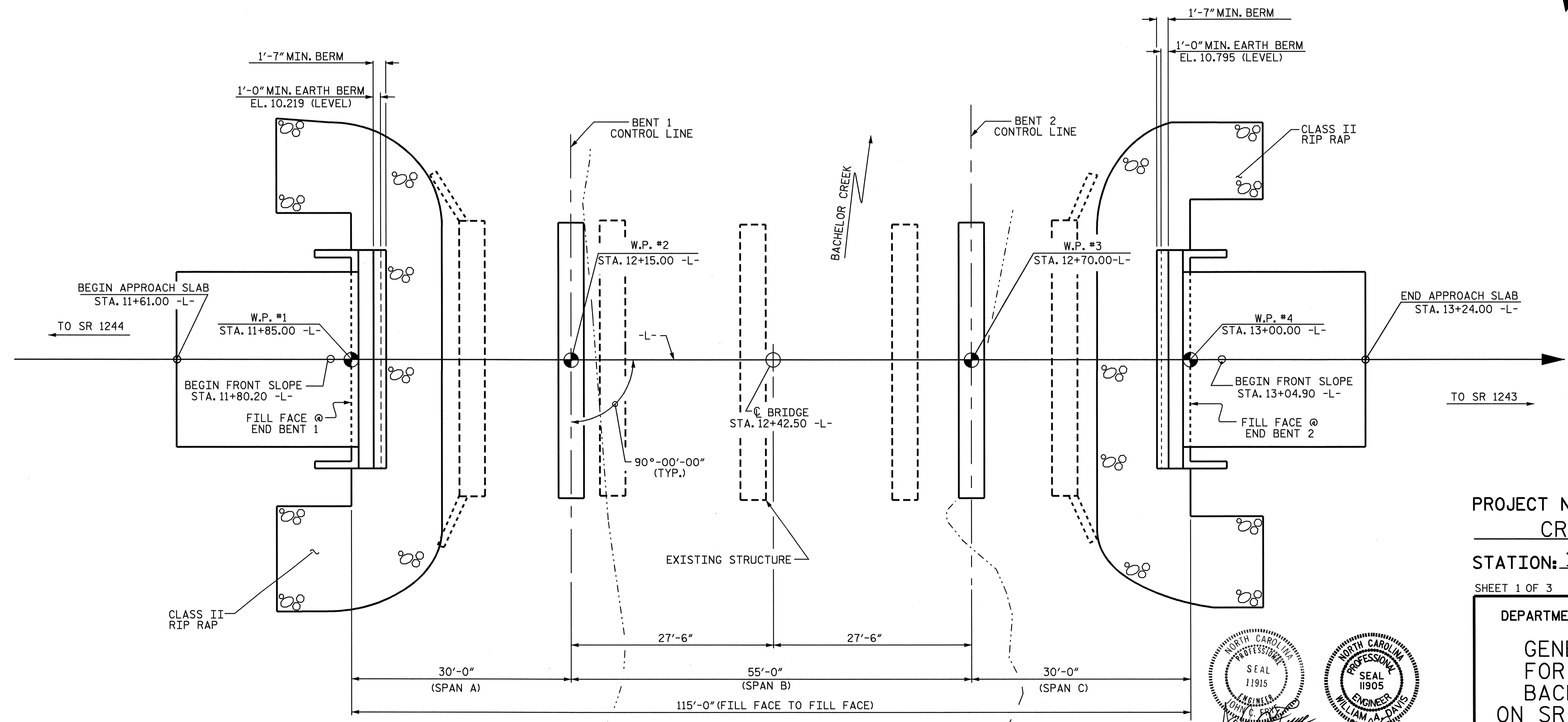
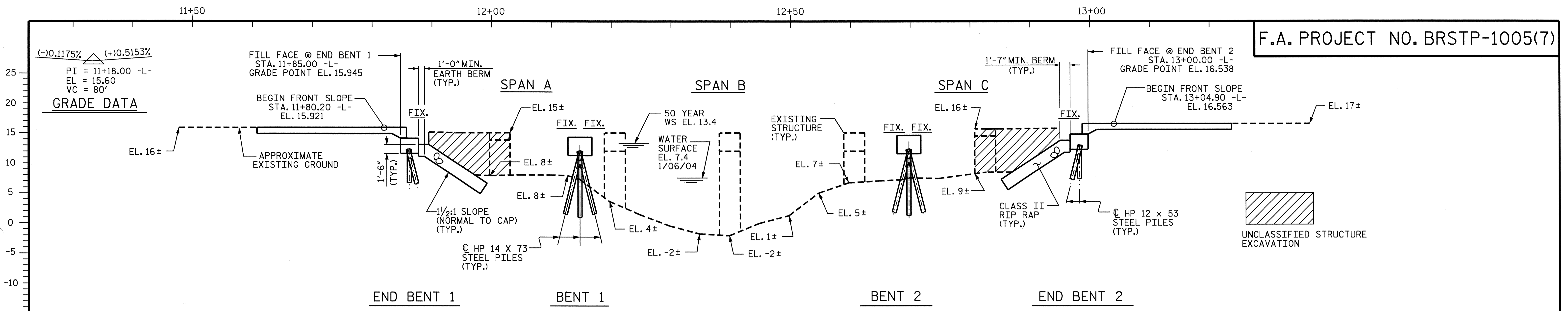
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE



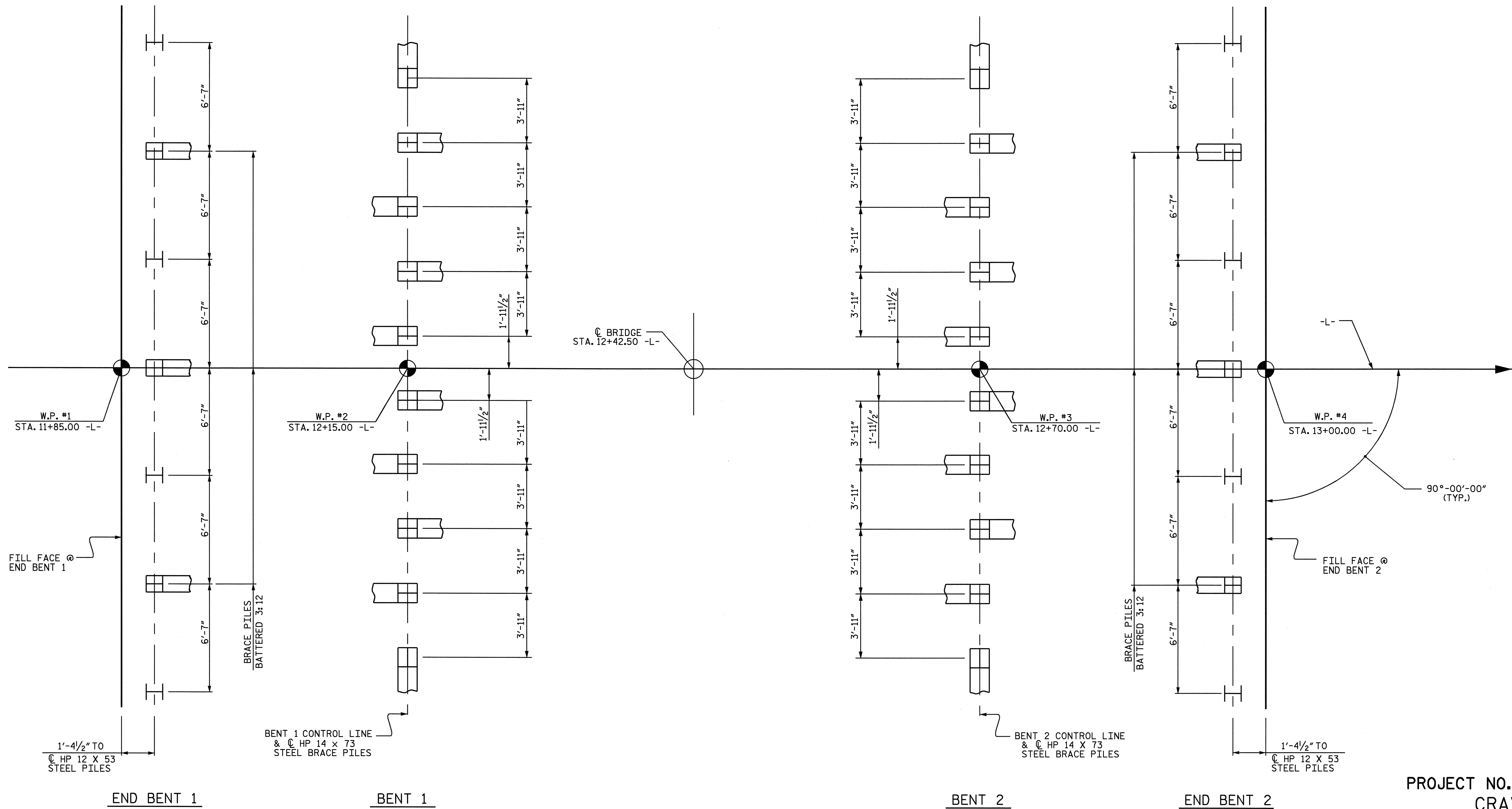
PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-
 SHEET 1 OF 3 REPLACES BRIDGE No. 212

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER
 BACHELOR CREEK
 ON SR 1005 BETWEEN
 SR 1244 AND SR 1243



DRAWN BY: QT NGUYEN DATE: 6-07
 CHECKED BY: J.L. WALTON DATE: 9/07

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



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINES

NOTES

ALL PILES IN BENT 1 AND BENT 2 ARE BRACE PILES. BATTER PILES ARE IN DIRECTION SHOWN ON THE PLAN. ALL PILES ARE BATTERED 1 1/2°.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 AND BENT NO.2 IS ELEVATION -8 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

DRIVE PILES AT END BENT NO.1 AND END BENT 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 END BENT NO.2 IS 50 TONS PER PILE.

DRIVE PILES AT BENT NO.1 AND BENT NO.2 TO A REQUIRED BEARING CAPACITY OF 117 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWN DRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

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

STEEL PILE POINTS ARE REQUIRED FOR STEEL PILES AT BENT NO.1 AND BENT NO.2. SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRAWN BY : QT NGUYEN DATE : 6/07
 CHECKED BY : J.L. WALTON DATE : 9/07

30-NOV-2007 12:21
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PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 3

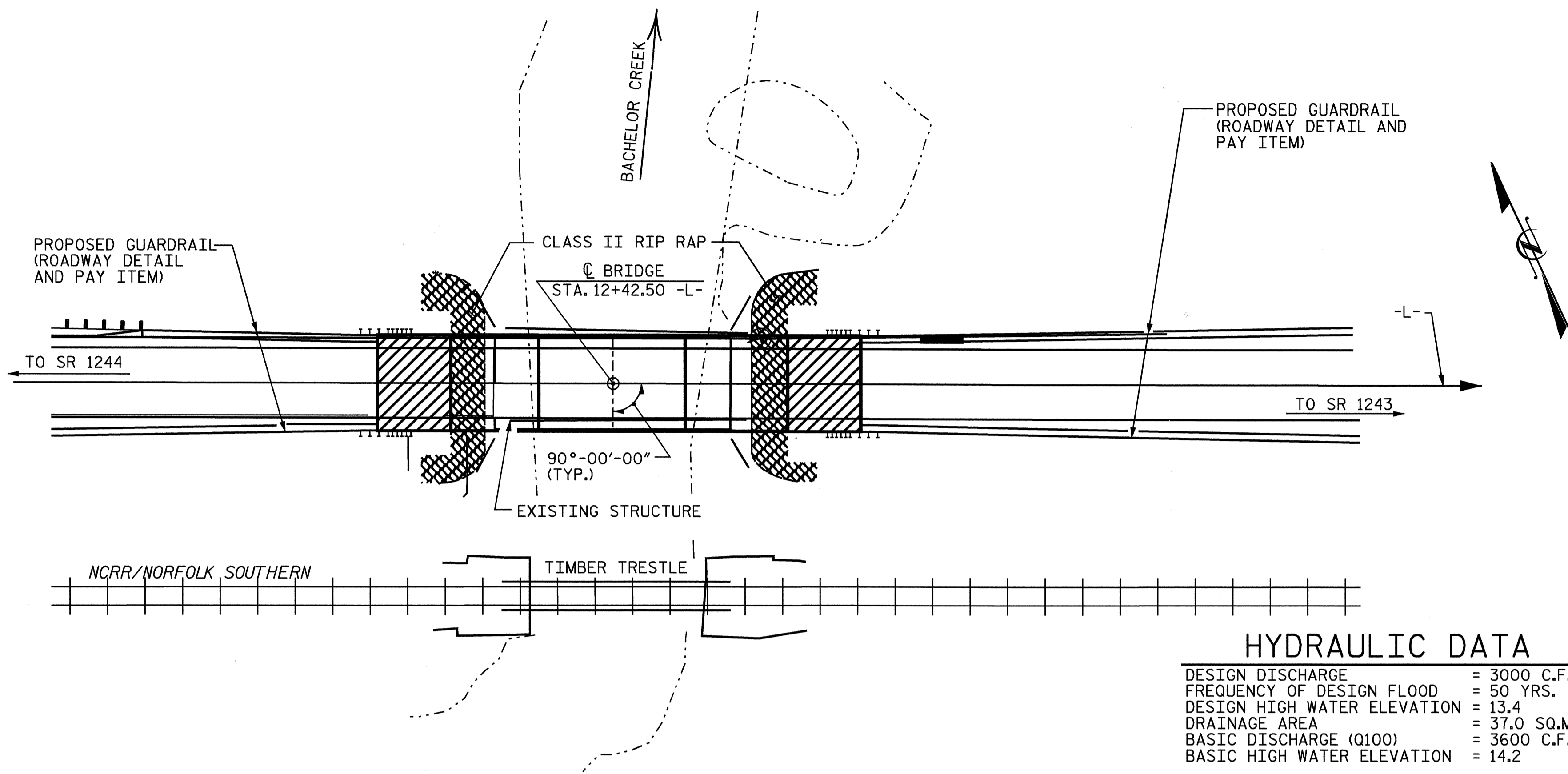


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER
 BACHELOR CREEK
 ON SR 1005 BETWEEN
 SR 1244 AND SR 1243

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

BM#2: ELEV. 29.67' -L- STA. 16+56.72, 84.16' LT, RR SPIKE SET IN 30" PINE



HYDRAULIC DATA

DESIGN DISCHARGE	= 3000 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 13.4
DRAINAGE AREA	= 37.0 SQ.MI.
BASIC DISCHARGE (Q100)	= 3600 C.F.S.
BASIC HIGH WATER ELEVATION	= 14.2

OVERTOPPING DATA

OVERTOPPING DISCHARGE	= 5400 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500 YRS.
OVERTOPPING FLOOD ELEVATION	= 16.3

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

NOTES:

ASSUMED LIVE LOAD = HS20 OR ALTERNATE LODING, EXCEPT THAT THE CORED SLAB UNITS HAVE BEEN DESIGNED FOR HS25.

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.

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 EXISTING STRUCTURE CONSISTING OF A REINFORCED CONCRETE FLOOR ON CONTINUOUS I-BEAMS WITH 4 SPANS 1 @ 21'-6", 2 @ 20'-0" AND 1 @ 21'-6" AND WITH A CLEAR ROADWAY WIDTH 31.8' ON TIMBER CAPS AND TIMBER PILES AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF THE 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.

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.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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

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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 12+42.50 -L-."

FOR CRANE SAFTY, SEE SPECIAL PROVISIONS.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURE, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

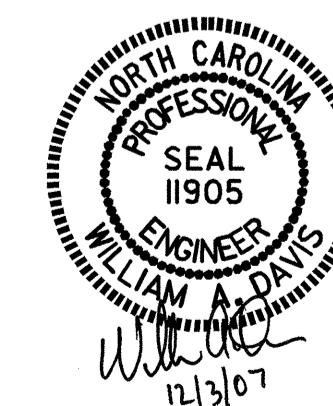
	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		HP 14 X 73 STEEL PILES		STEEL PILE POINTS	CONCRETE BARRIER RAIL	CLASS II RIP RAP (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS				
								LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.							CU. YDS.	LUMP SUM	LBS.	NO.	LIN.FT.
SUPERSTRUCTURE			3672	4742		LUMP SUM							225.00						LUMP SUM	LUMP SUM	36	1350'-0"
END BENT 1					14.3		2111	7	175					188	209							
BENT 1					11.6		1980			10	250	10										
BENT 2					11.6		1980			10	250	10										
END BENT 2					14.3		2111	7	175					185	206							
TOTAL	LUMP SUM	LUMP SUM	3672	4742	51.8	LUMP SUM	8182	14	350	20	500	20	225.00	373	415	LUMP SUM	LUMP SUM	36	1350'-0"			

PROJECT NO. B-4085

CRAVEN COUNTY

STATION: 12+42.50 -L-

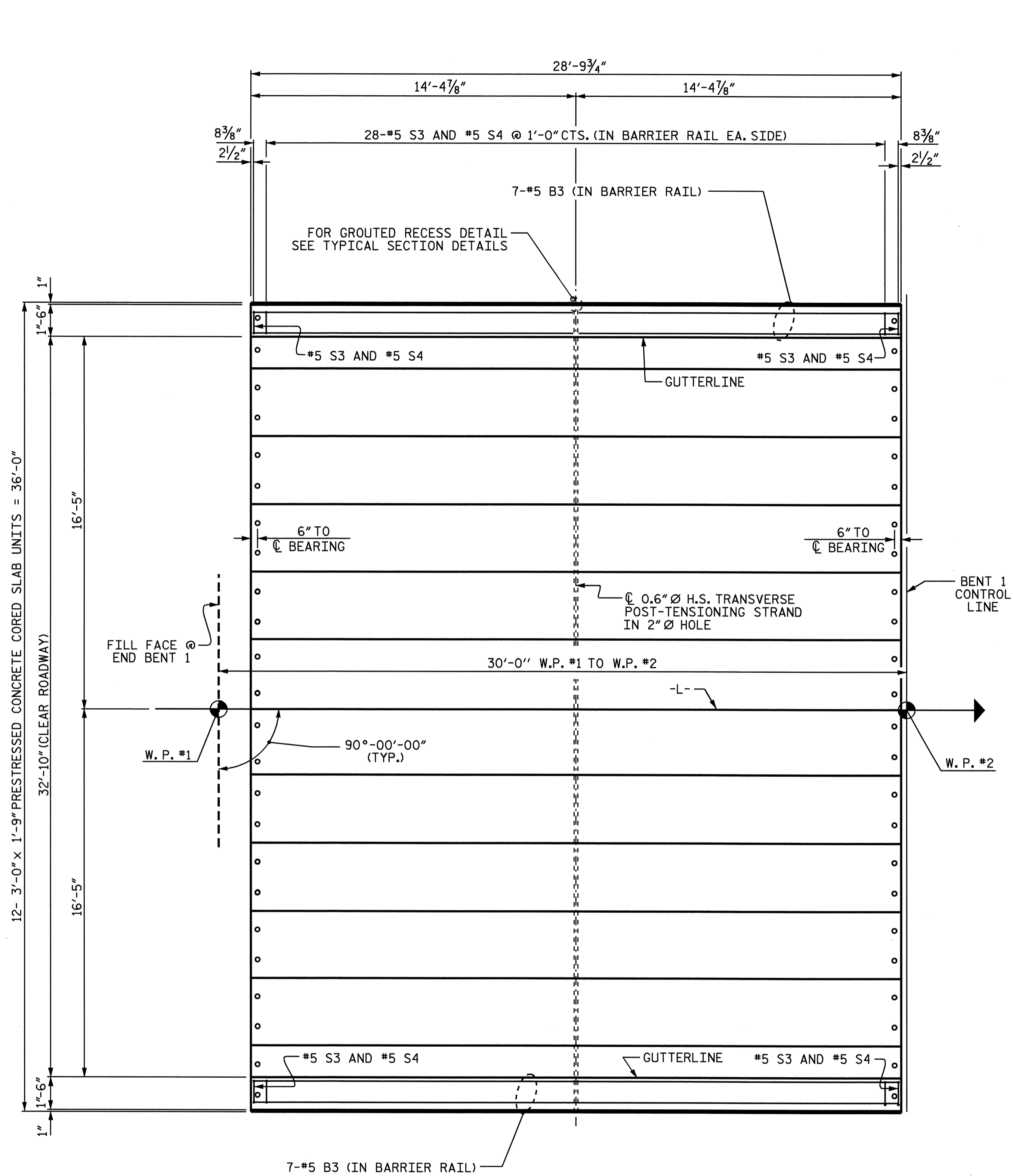
SHEET 3 OF 3



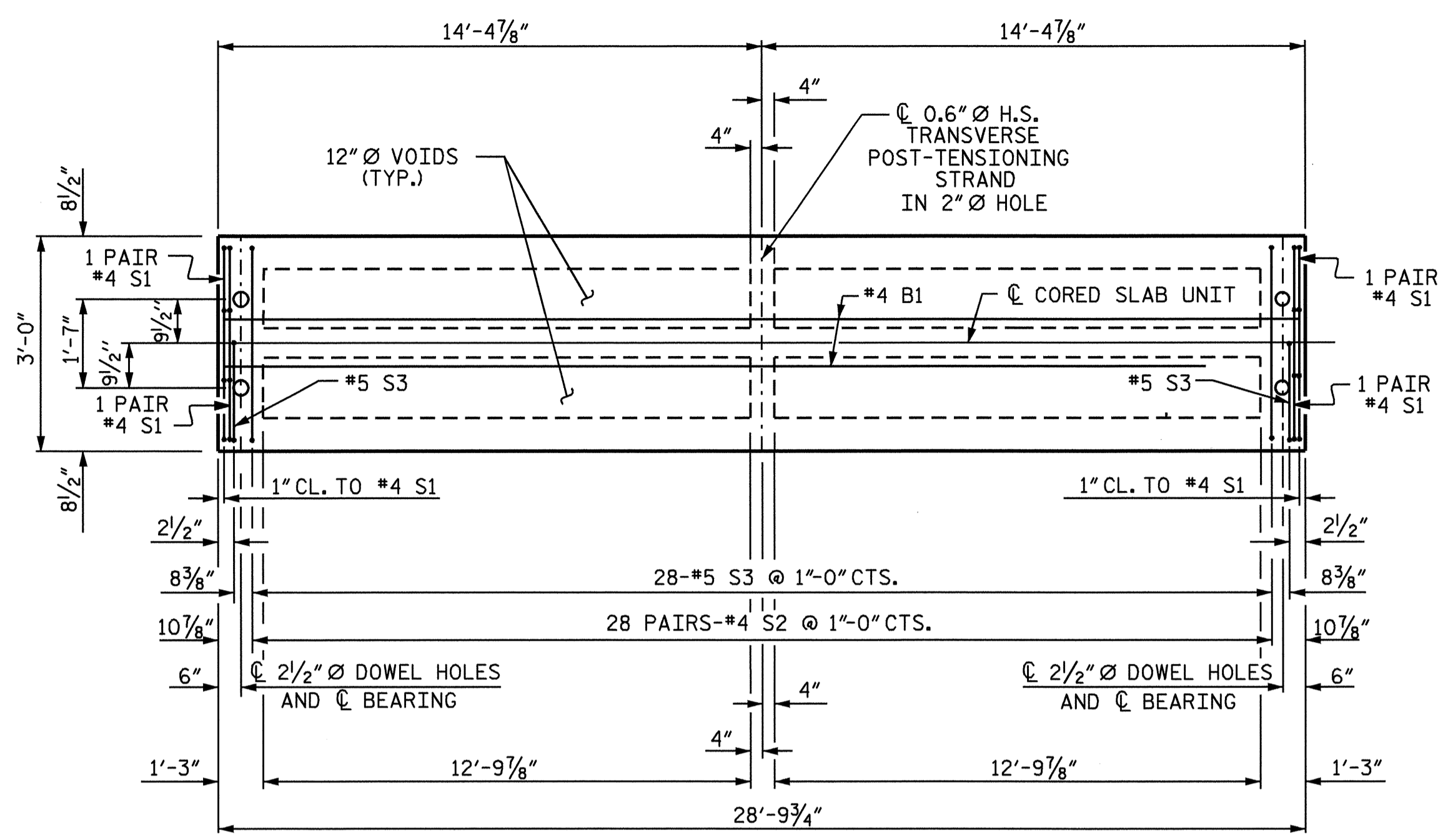
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER
BACHELOR CREEK
ON SR 1005 BETWEEN
SR 1244 AND SR 1243

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

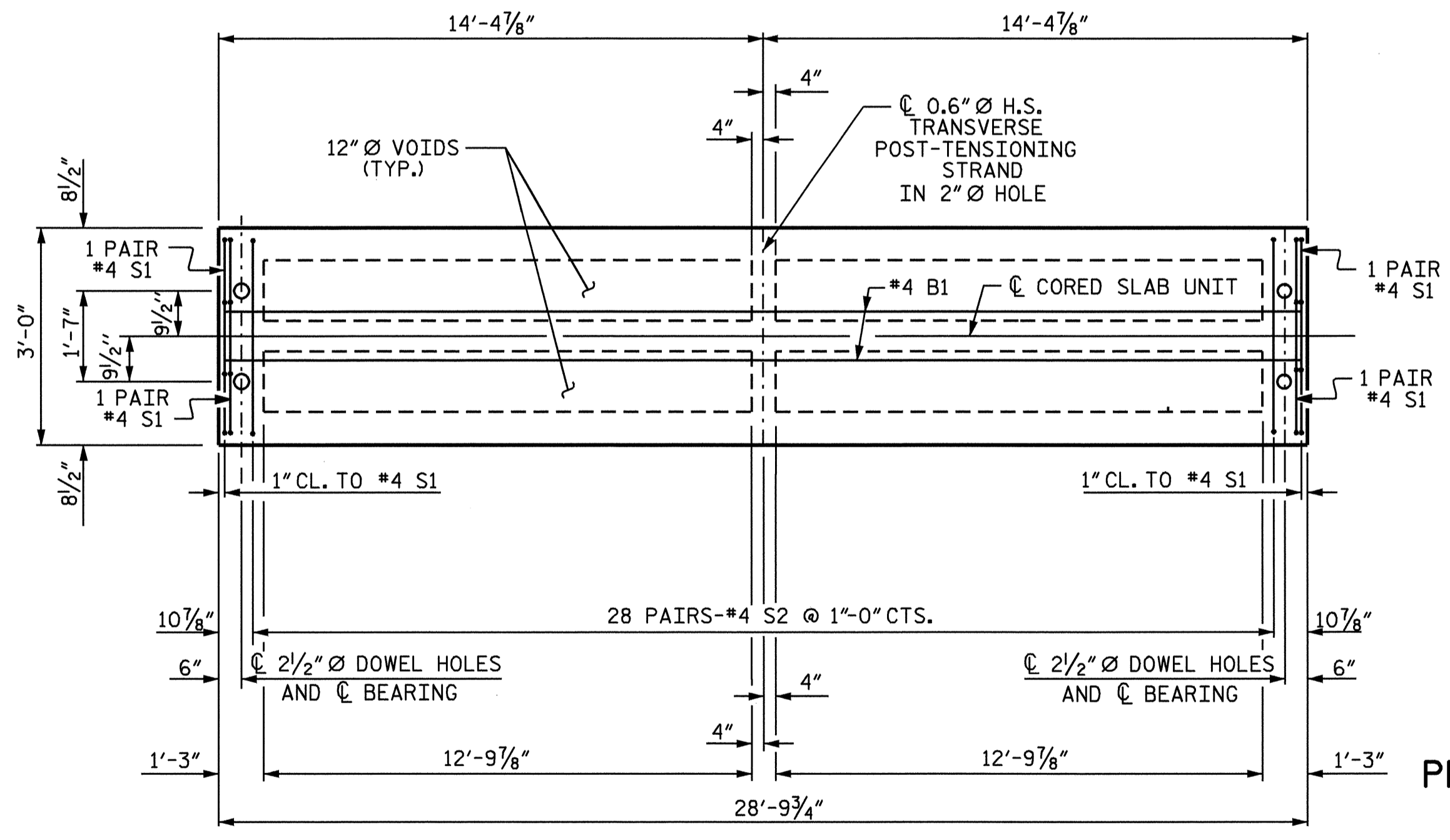
DRAWN BY: QT NGUYEN DATE: 6/07
CHECKED BY: J.L. WALTON DATE: 9/07



SPAN A



PLAN OF EXTERIOR CORED SLAB UNIT



PLAN OF INTERIOR CORED SLAB UNIT

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 7

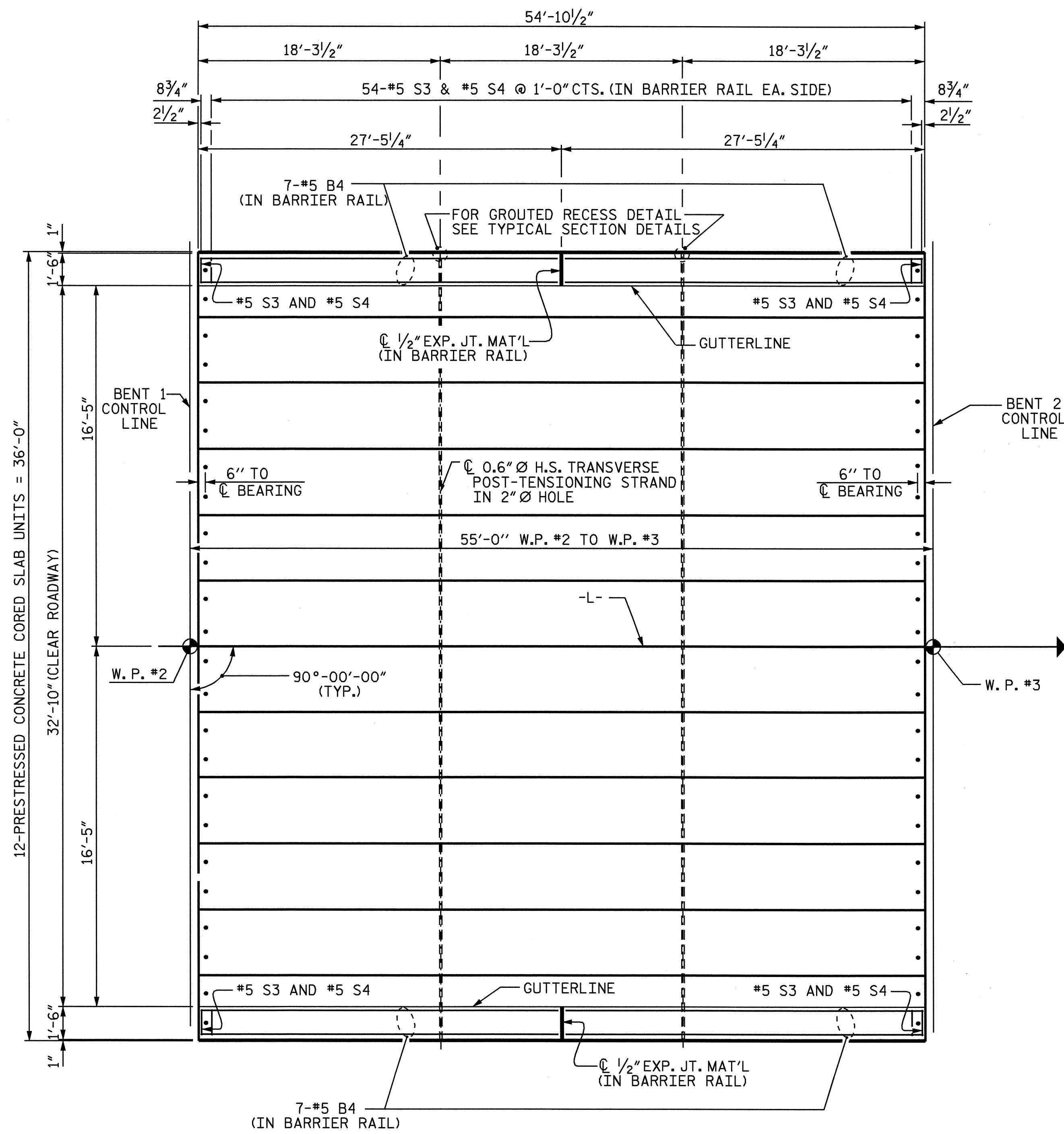
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPAN A**

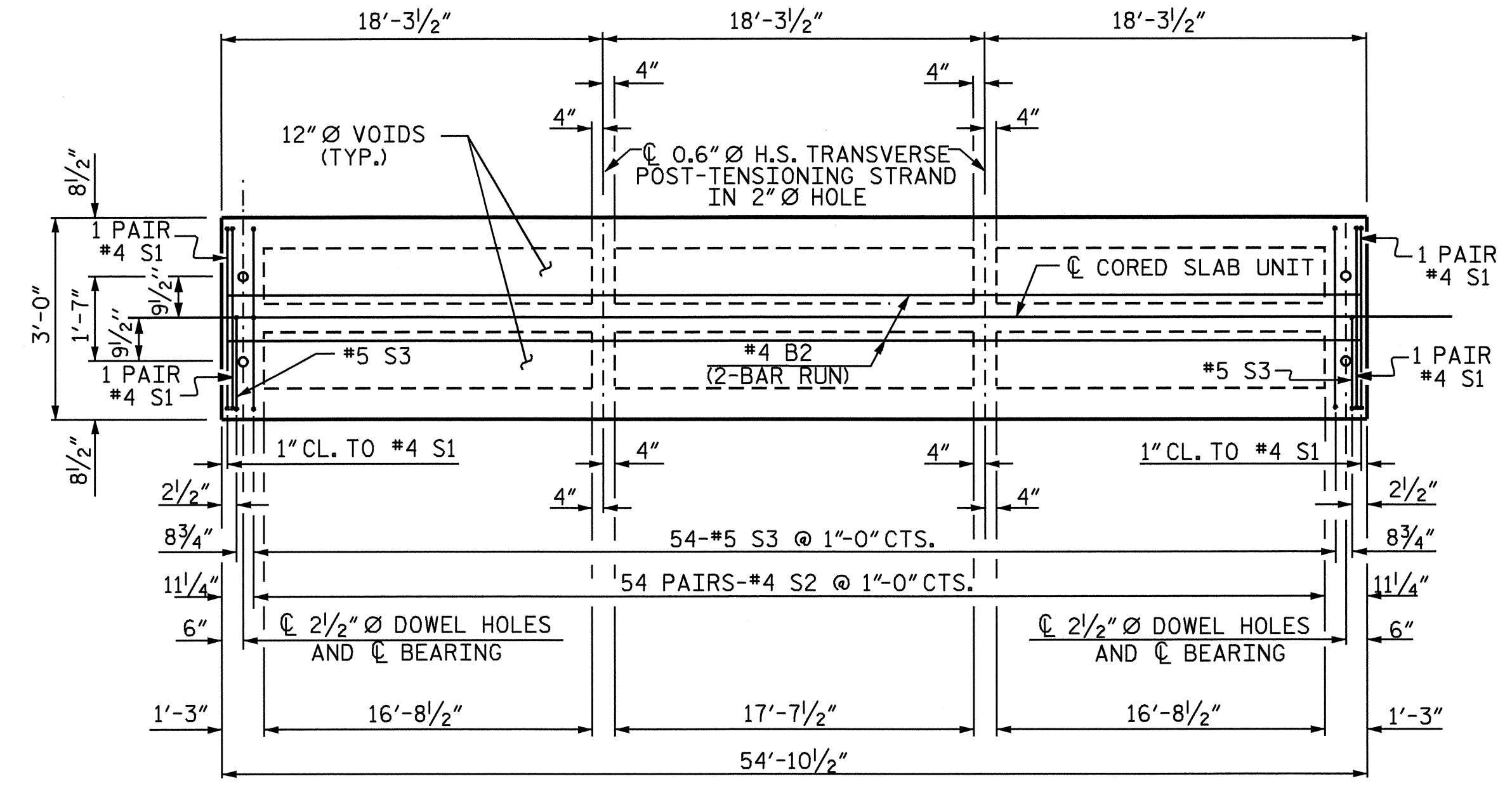


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 CHECKED BY: J.L. WALTON DATE: 9/07

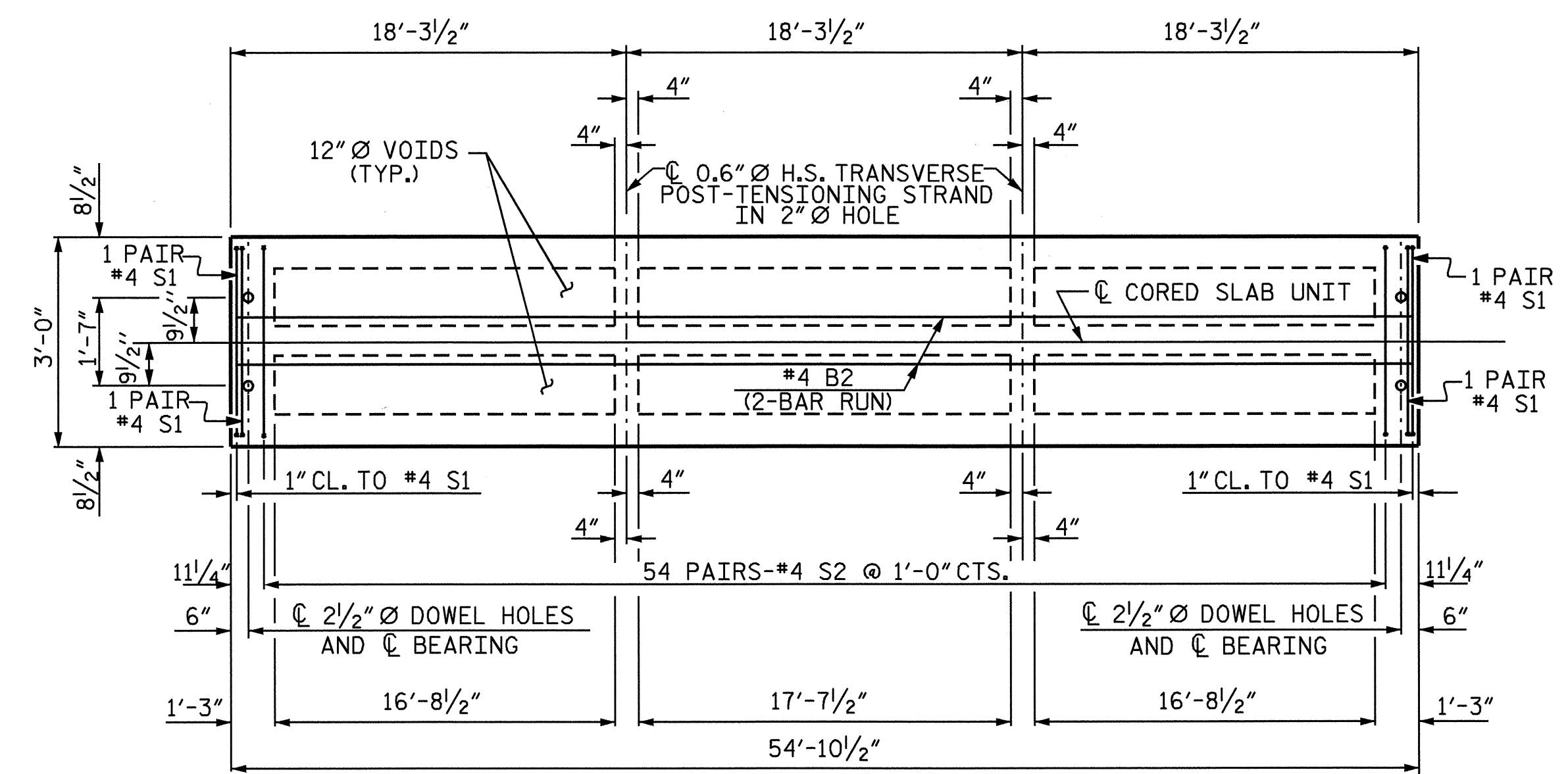
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			23



SPAN B

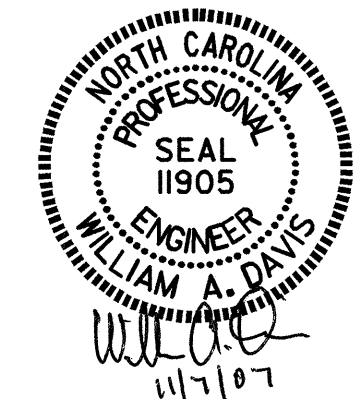


PLAN OF EXTERIOR CORED SLAB UNIT



PLAN OF INTERIOR CORED SLAB UNIT

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-
 SHEET 3 OF 7

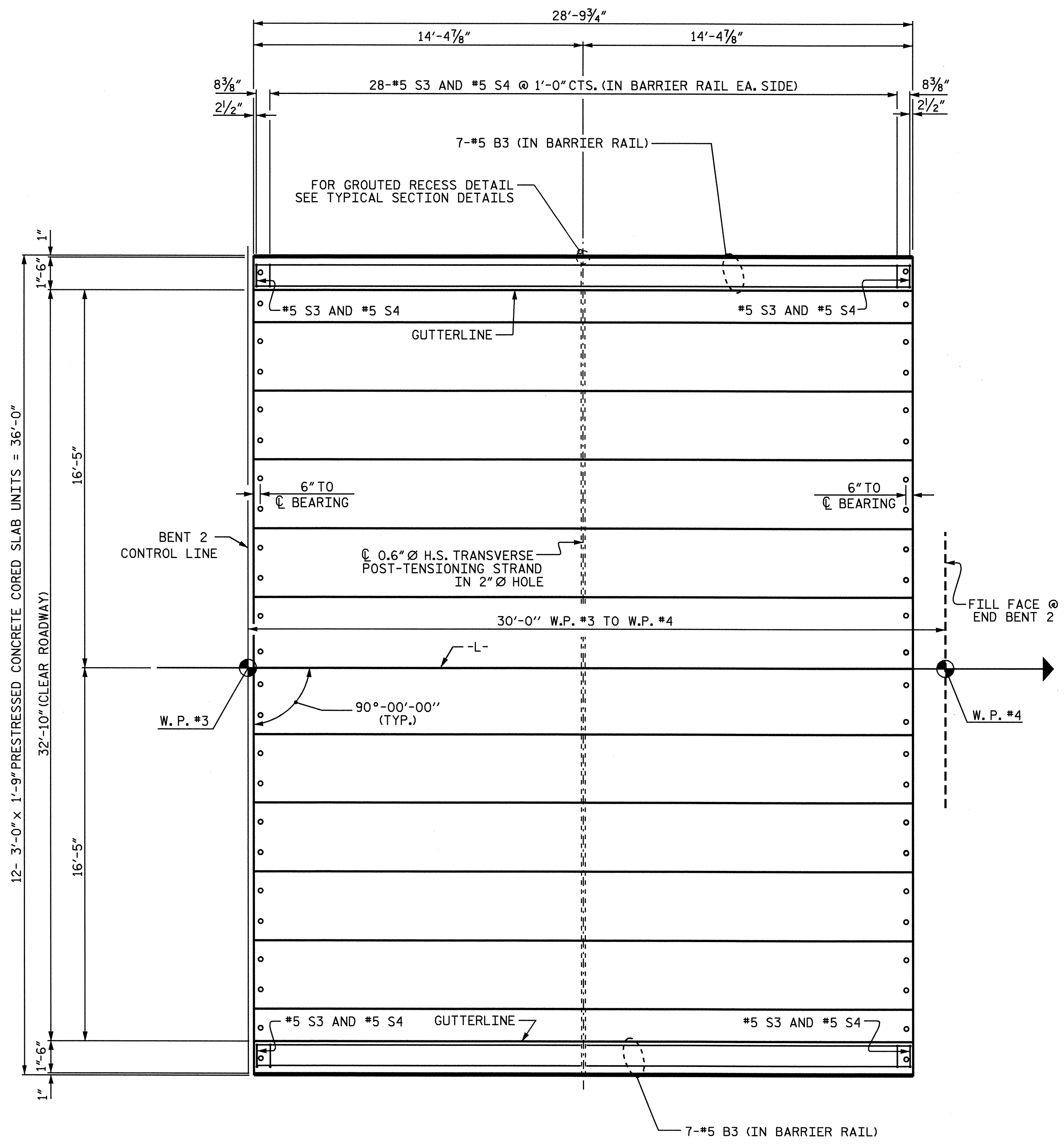


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

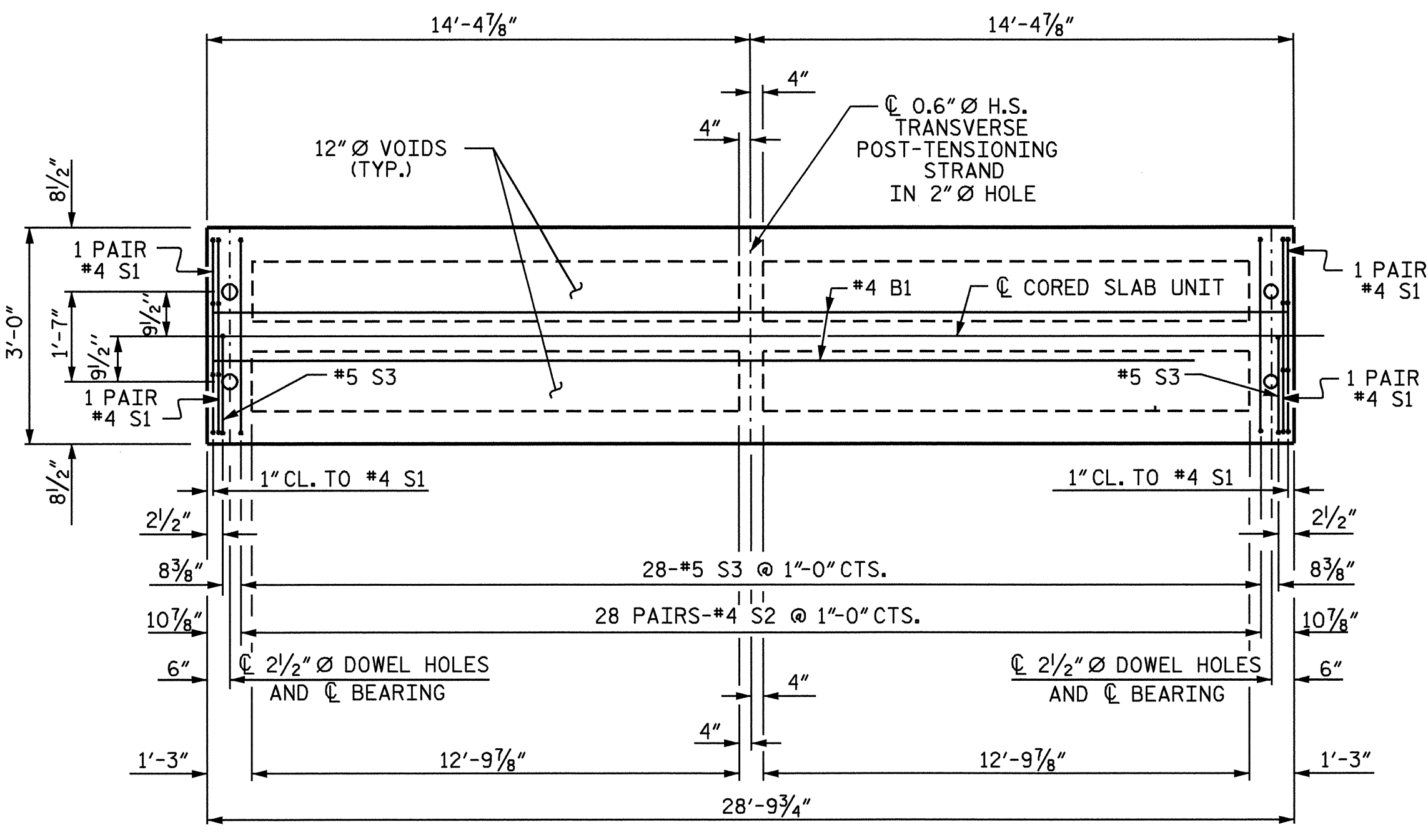
SUPERSTRUCTURE
 PLAN OF SPAN B

DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07

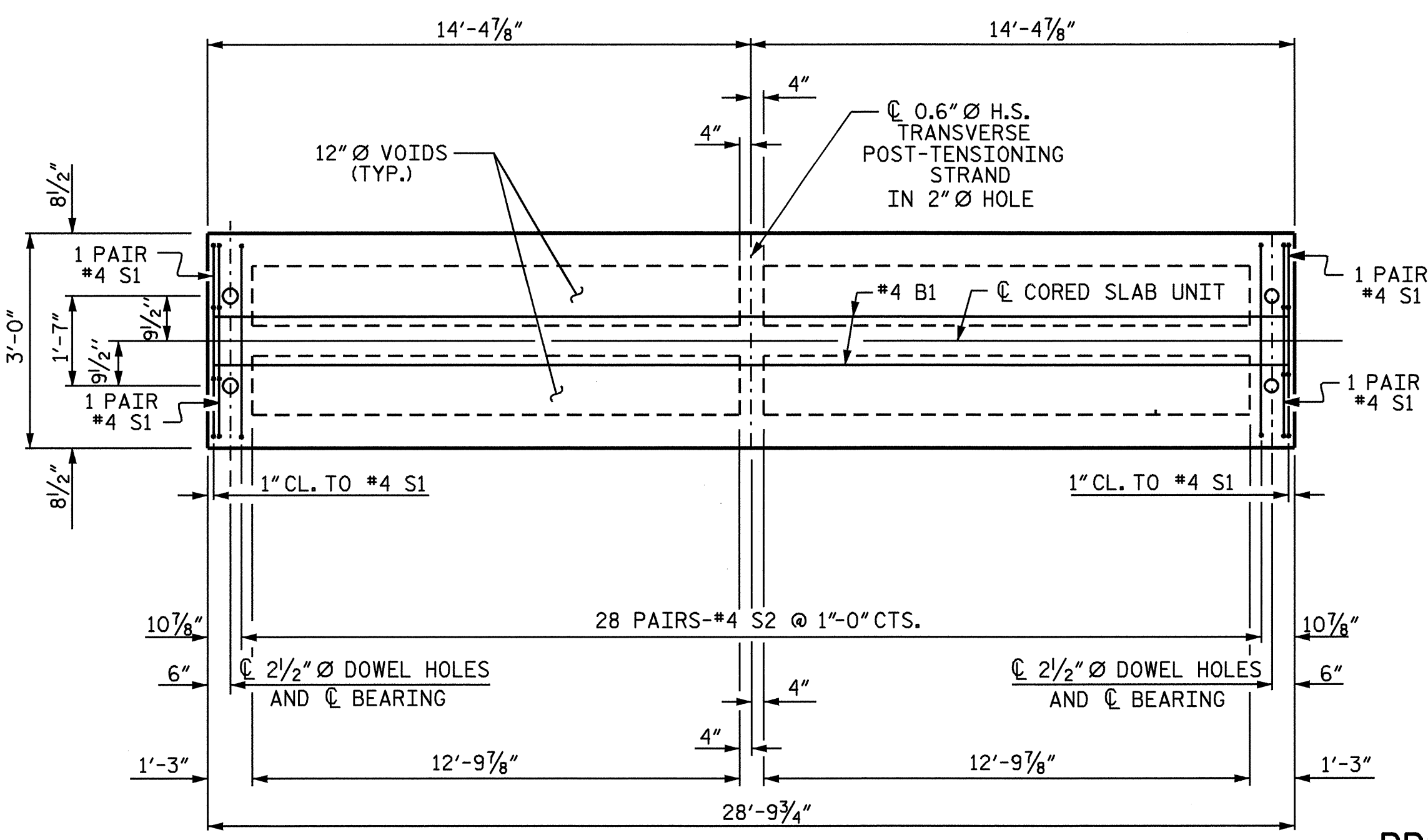
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			23



SPAN C

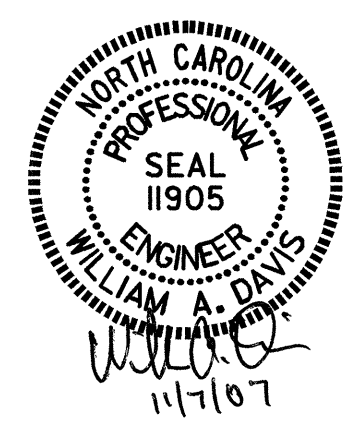


PLAN OF EXTERIOR CORED SLAB UNIT



PLAN OF INTERIOR CORED SLAB UNIT

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-
 SHEET 4 OF 7

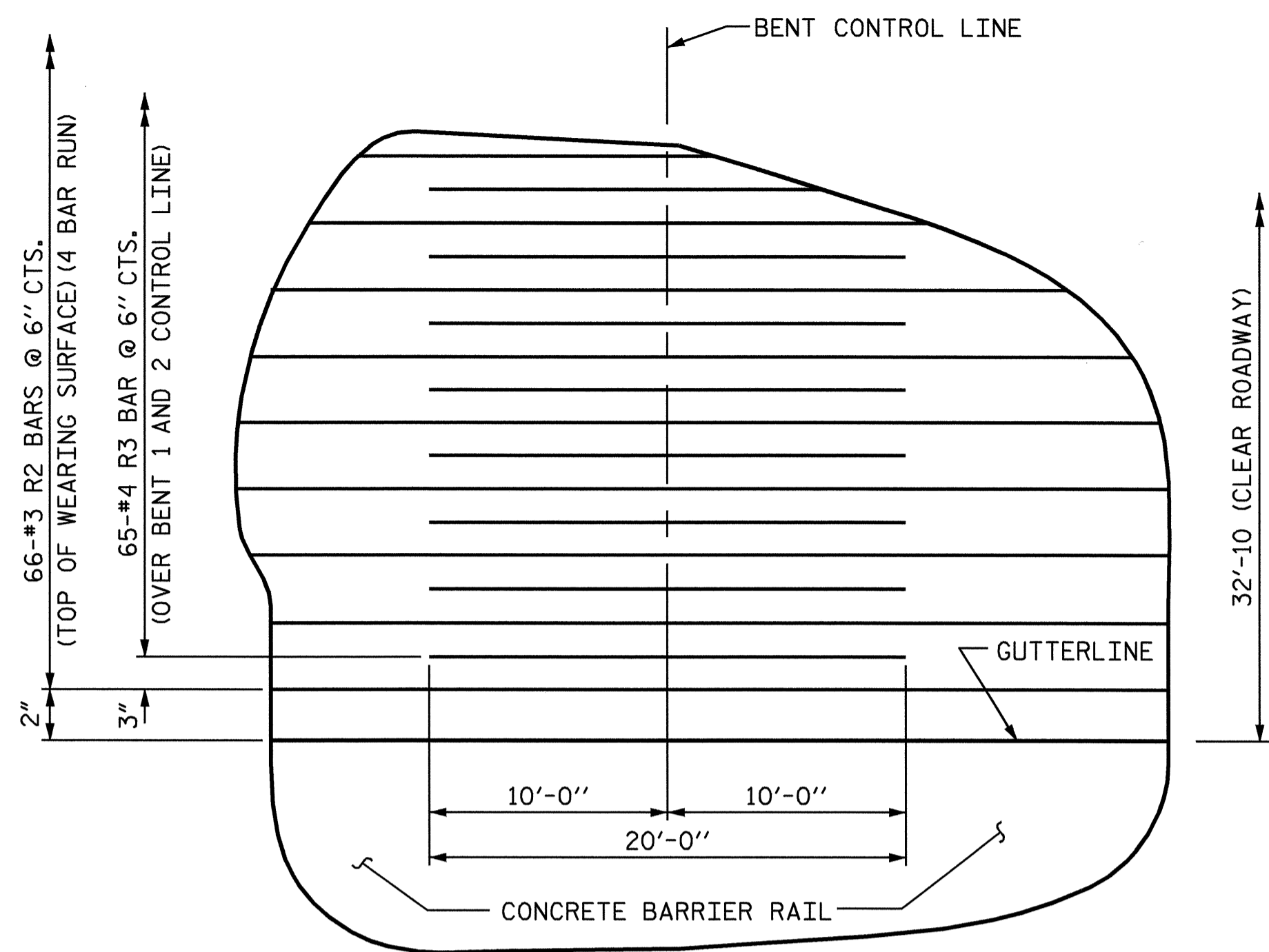


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

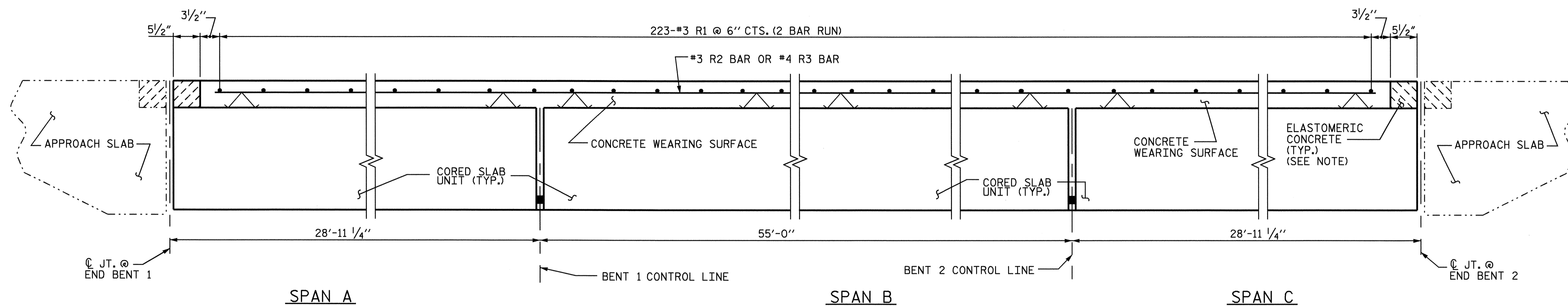
**SUPERSTRUCTURE
 PLAN OF SPAN C**

DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			23

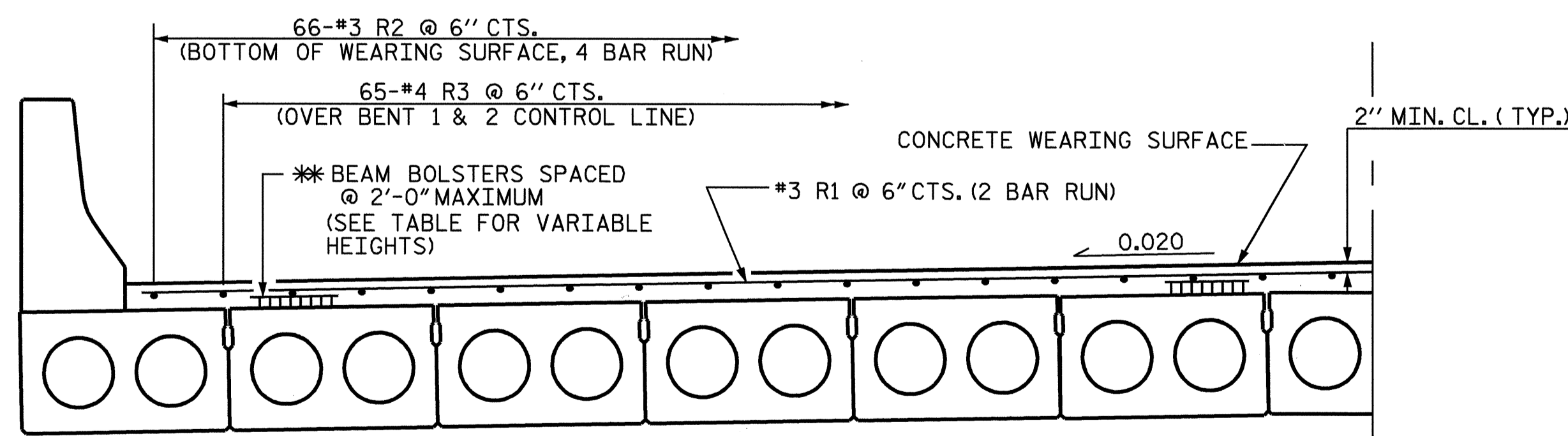


PLAN @ BENT 1 & 2 CONTROL LINE



ELEVATION OF THE CONCRETE WEARING SURFACE

FOR VARIABLE THICKNESS OF CONCRETE WEARING SURFACE, SEE TABLE ON SHEET NO. S-4



REINFORCING STEEL AND BEAM BOLSTER HEIGHTS

NOTE: BEAM AND SLAB BOLSTER HEIGHTS BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATION AND VARY BETWEEN ϕ BEARING AND MID-SPAN FOR ALL SPANS.

NOTES:

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 AND #4 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.

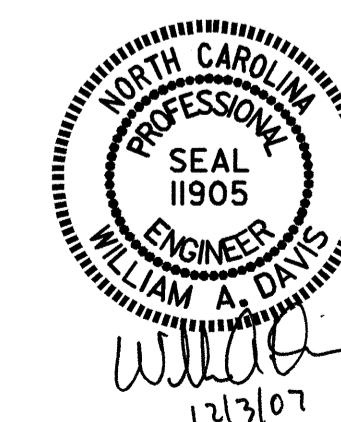
ALL REINFORCING FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED. FOR ELASTOMERIC CONCRETE, SEE "BRIDGE APPROACH SLAB DETAILS".

BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	446	#3	STR	16'-11"	2837
*R2	264	#3	STR	28'-11"	2870
*R3	130	#4	STR	20'-0"	1737
* EPOXY COATED REINF. STEEL = 7444 LBS					
CONCRETE WEARING SURFACE = 3672 SQ. FT.					

SPlice CHART	
BAR	LENGTH
#3	1'-3"

SPAN	BEAM BOLSTER HEIGHT			
	** AT ϕ BEARINGS		** AT MID-SPANS	
	GUTTERS	GRADE PT.	GUTTERS	GRADE PT.
A	2 3/4"	3/2"	2 1/2"	3/4"
B	2 3/4"	3/2"	3/4"***	1"
C	2 3/4"	3/2"	2 1/2"	3/4"

*** USING SLAB BOLSTER



PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+45.50 -L-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE WEARING SURFACE DETAILS

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

TOTAL SHEETS: 23

DRAWN BY: QT NGUYEN DATE: 6-07
 CHECKED BY: J.L. WALTON DATE: 9-07

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 4 - 1/8" 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 M111.

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 1/8" 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.)

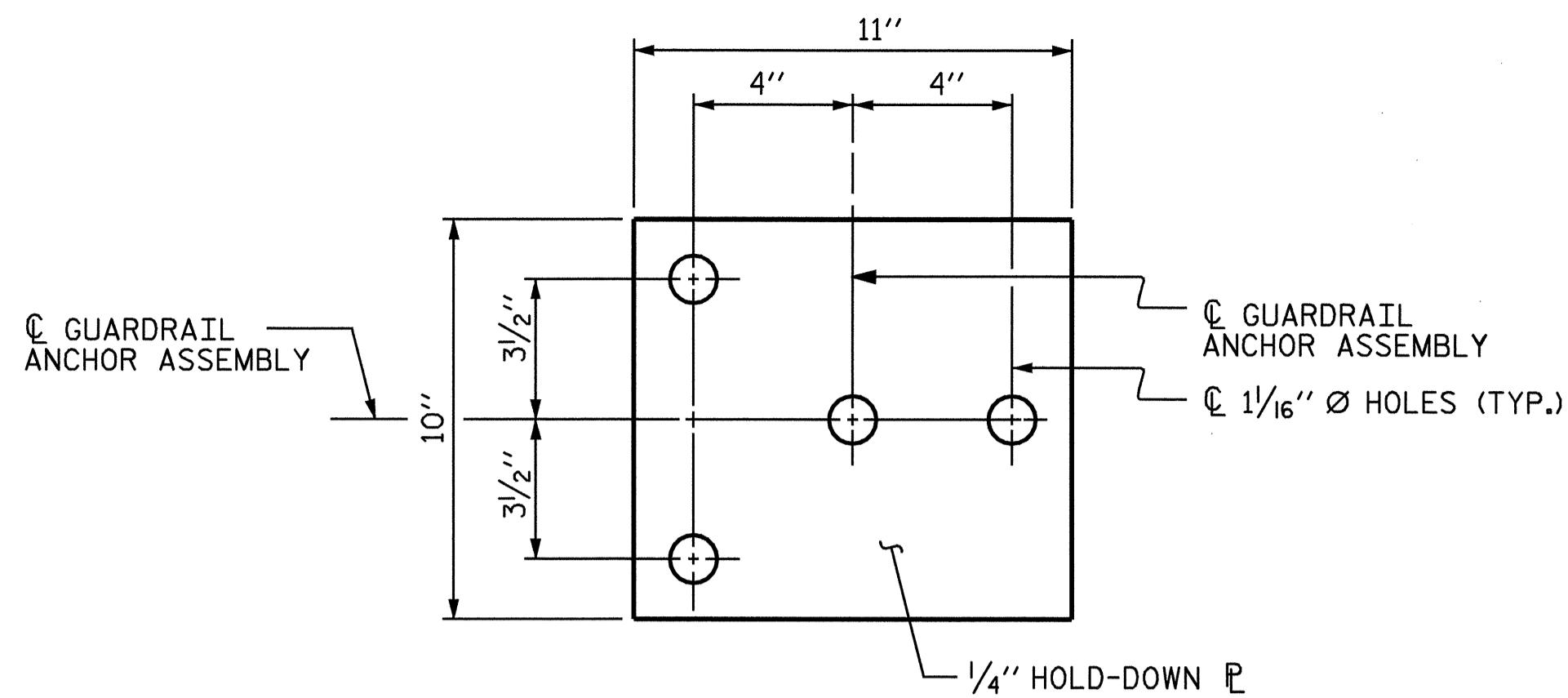
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

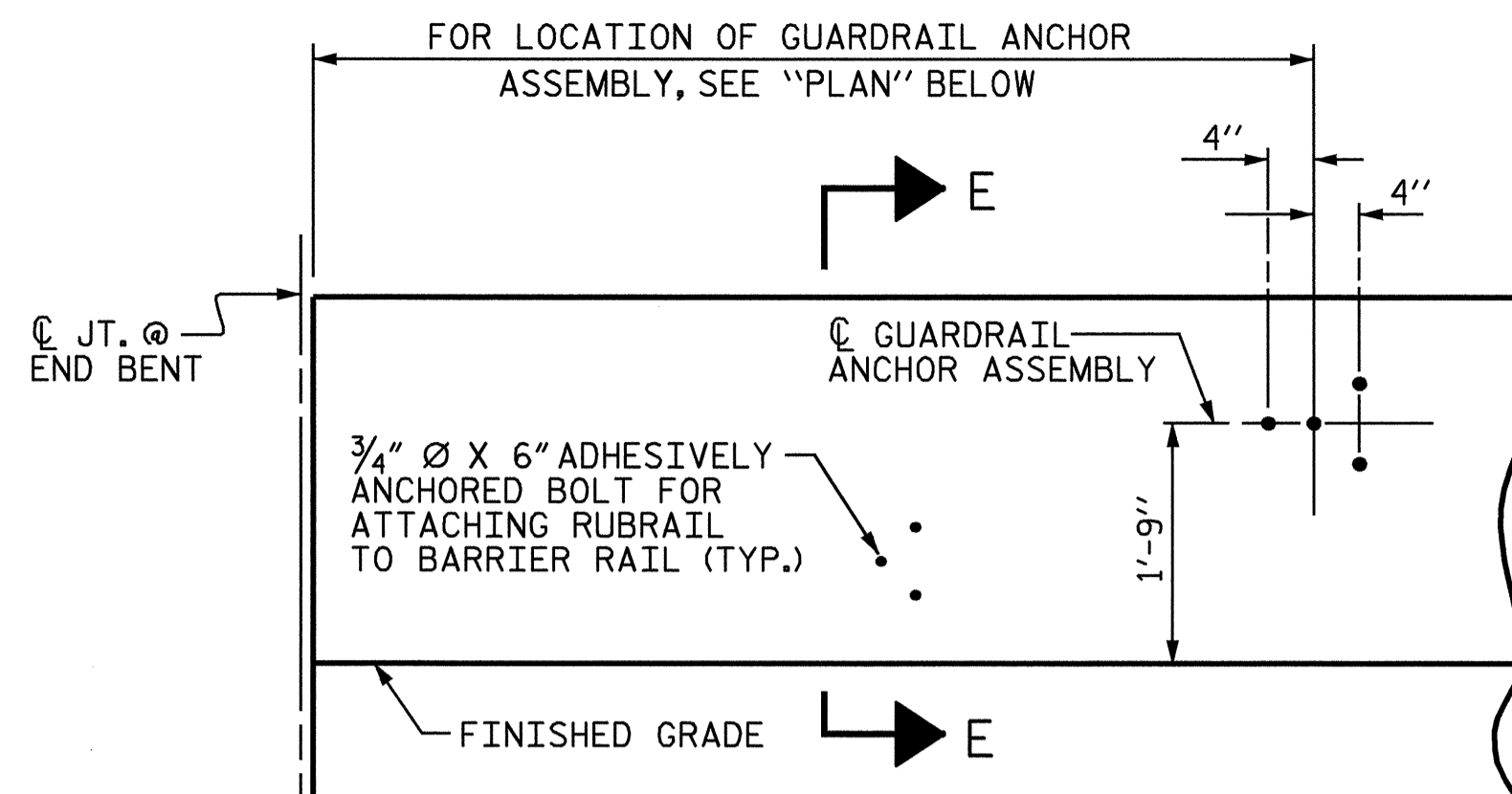
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

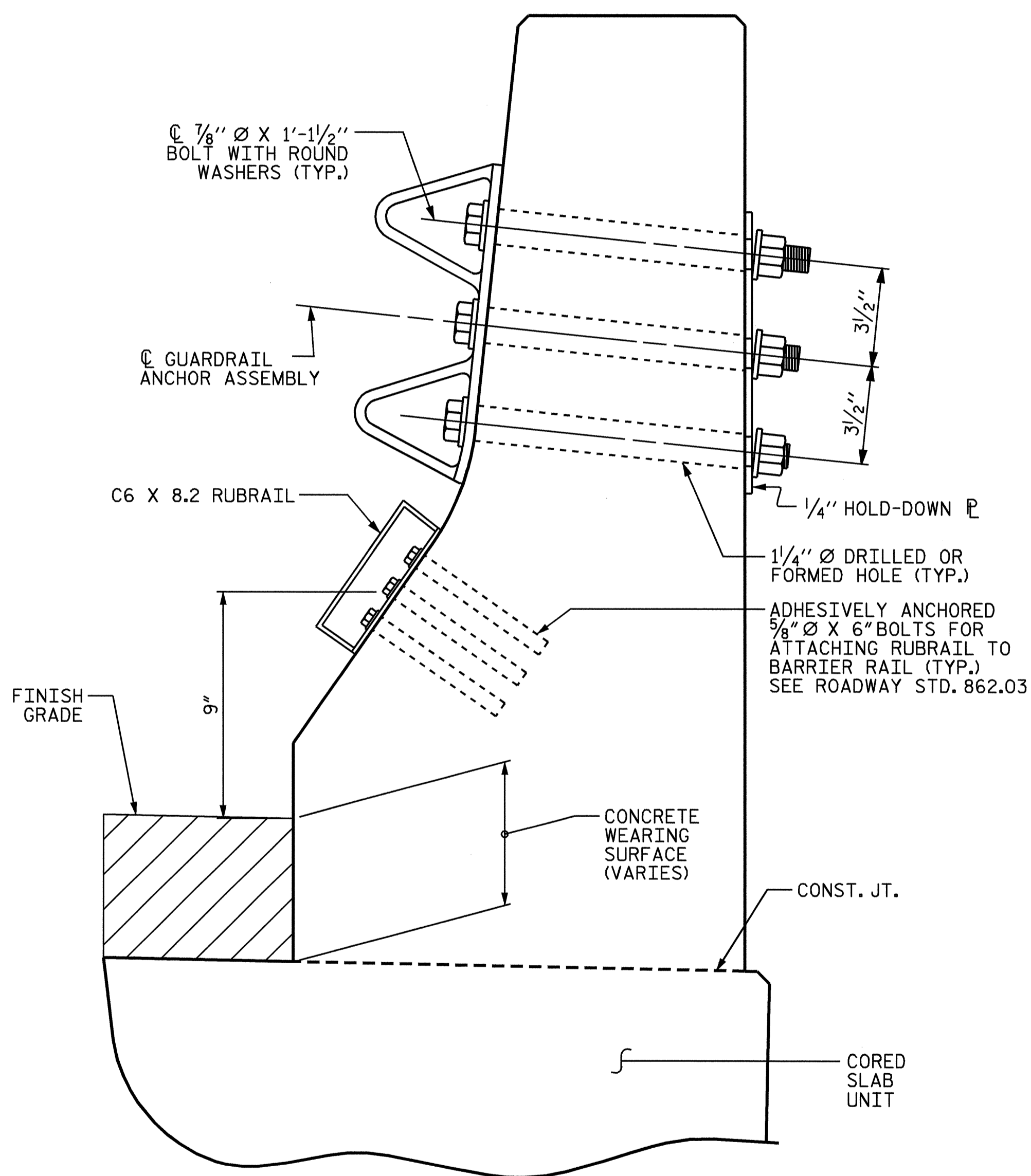


PLAN



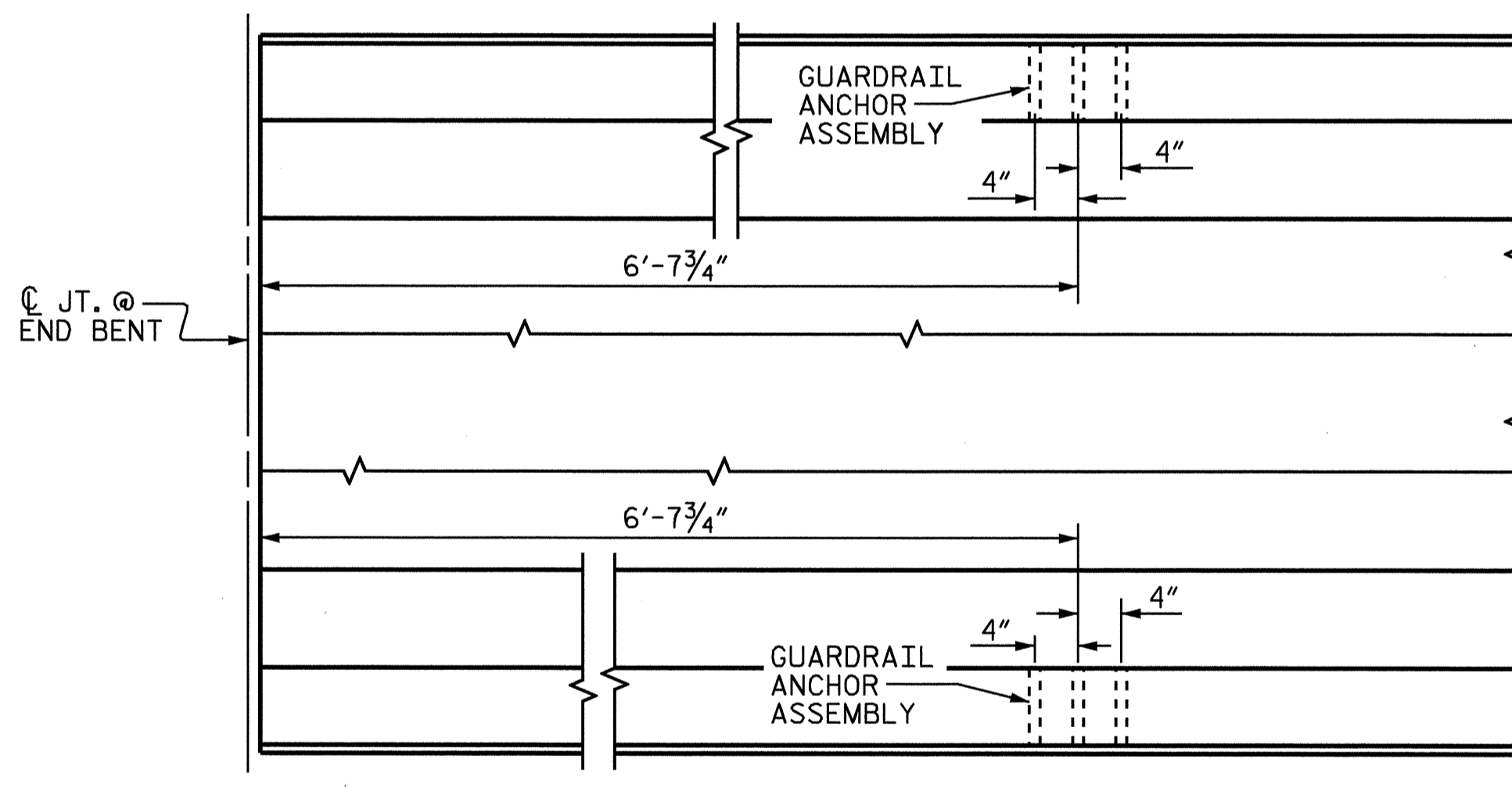
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

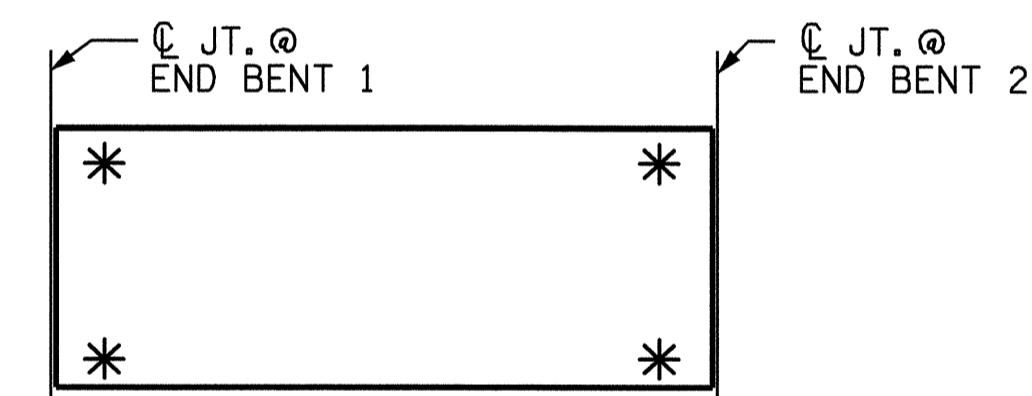
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

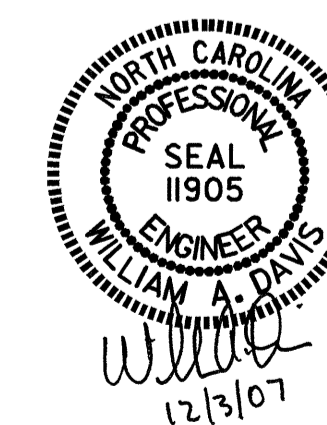


SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 6 OF 7



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 FOR BARRIER RAIL

ASSEMBLED BY : QT NGUYEN	DATE : 6-07
CHECKED BY : J.L. WALTON	DATE : 7-07
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	

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 qtnguyen

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

S-9
 TOTAL SHEETS
 23

STD. NO. GRA2

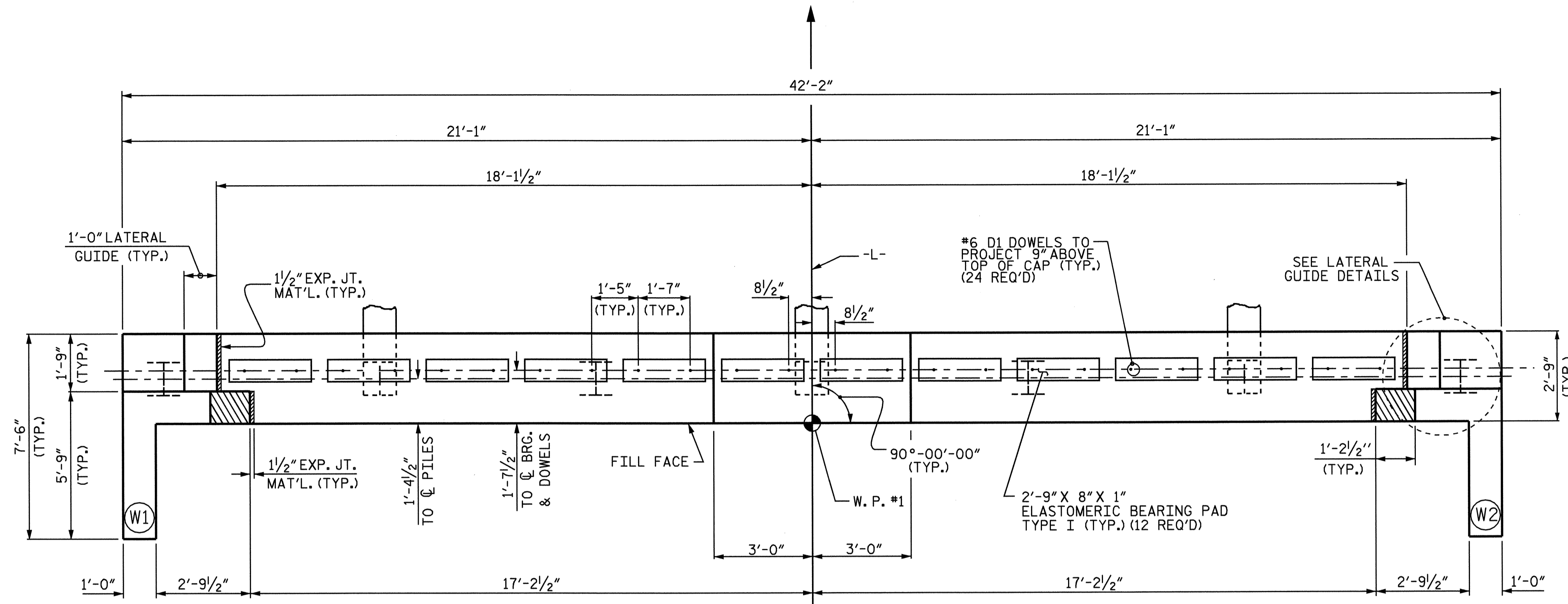
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

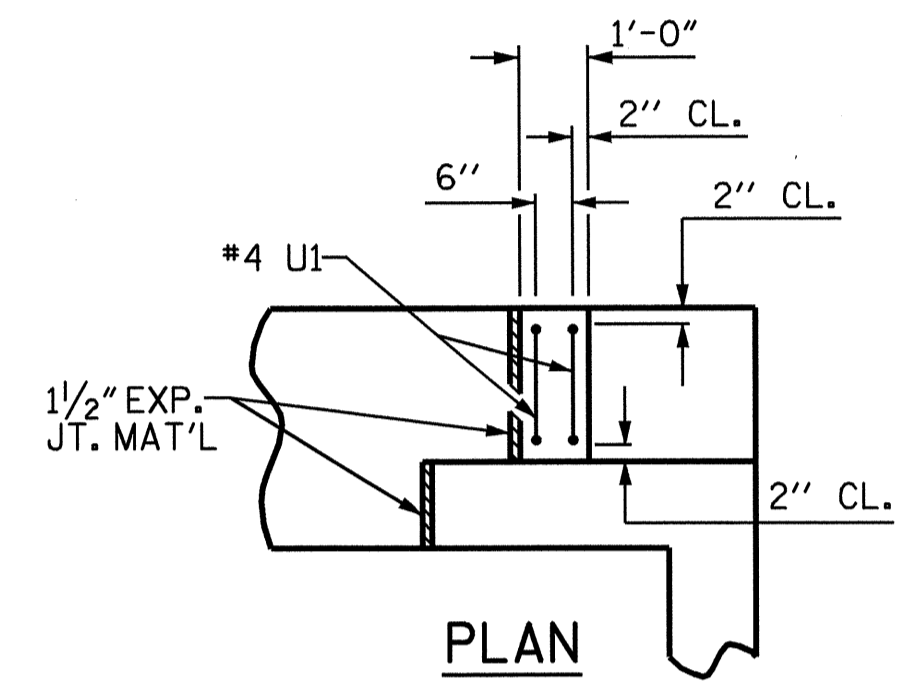
THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

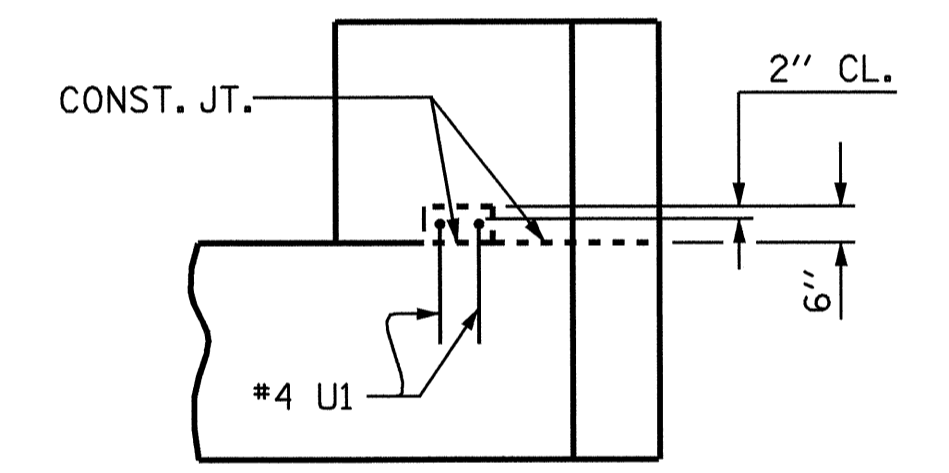
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWS AND THE BARRIER RAILS ARE CAST IF SLIP FORMING IS USED.



PLAN

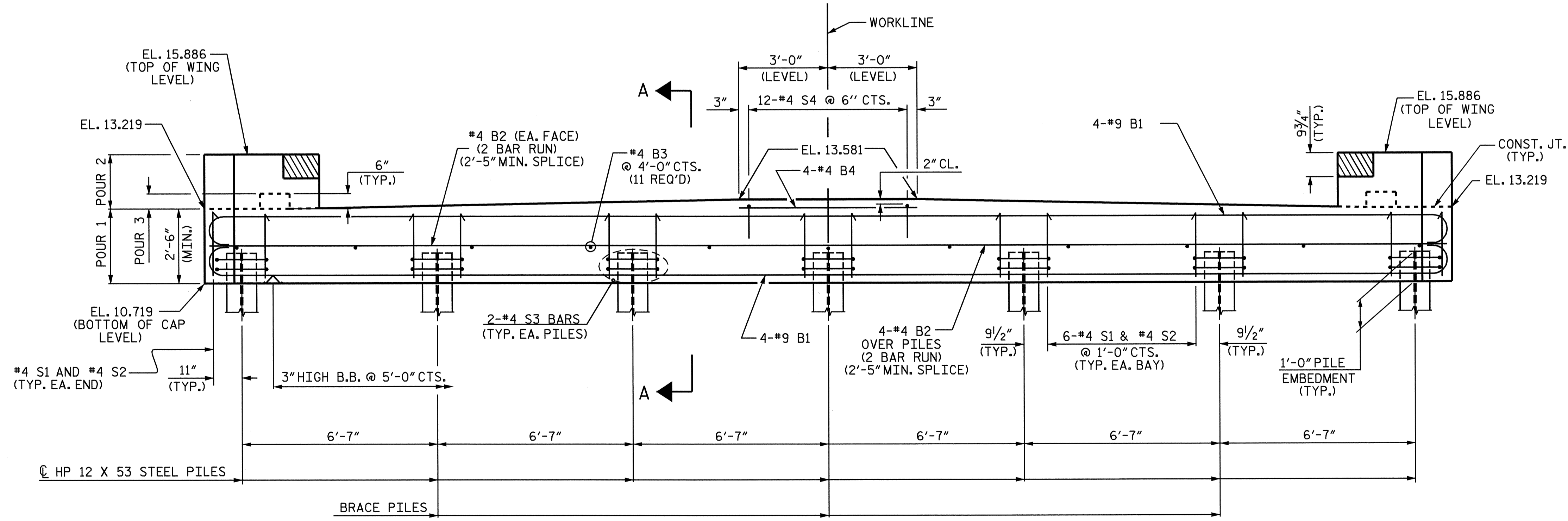


PLAN



ELEVATION

LATERAL GUIDE DETAILS
(EACH END SIMILAR)



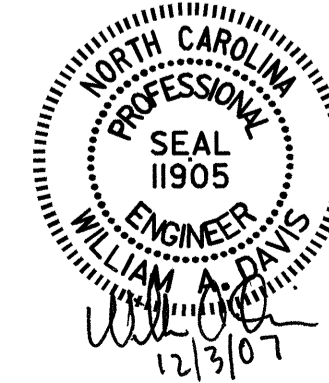
ELEVATION

(WING DETAILS NOT SHOWN IN ELEVATION VIEW)

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

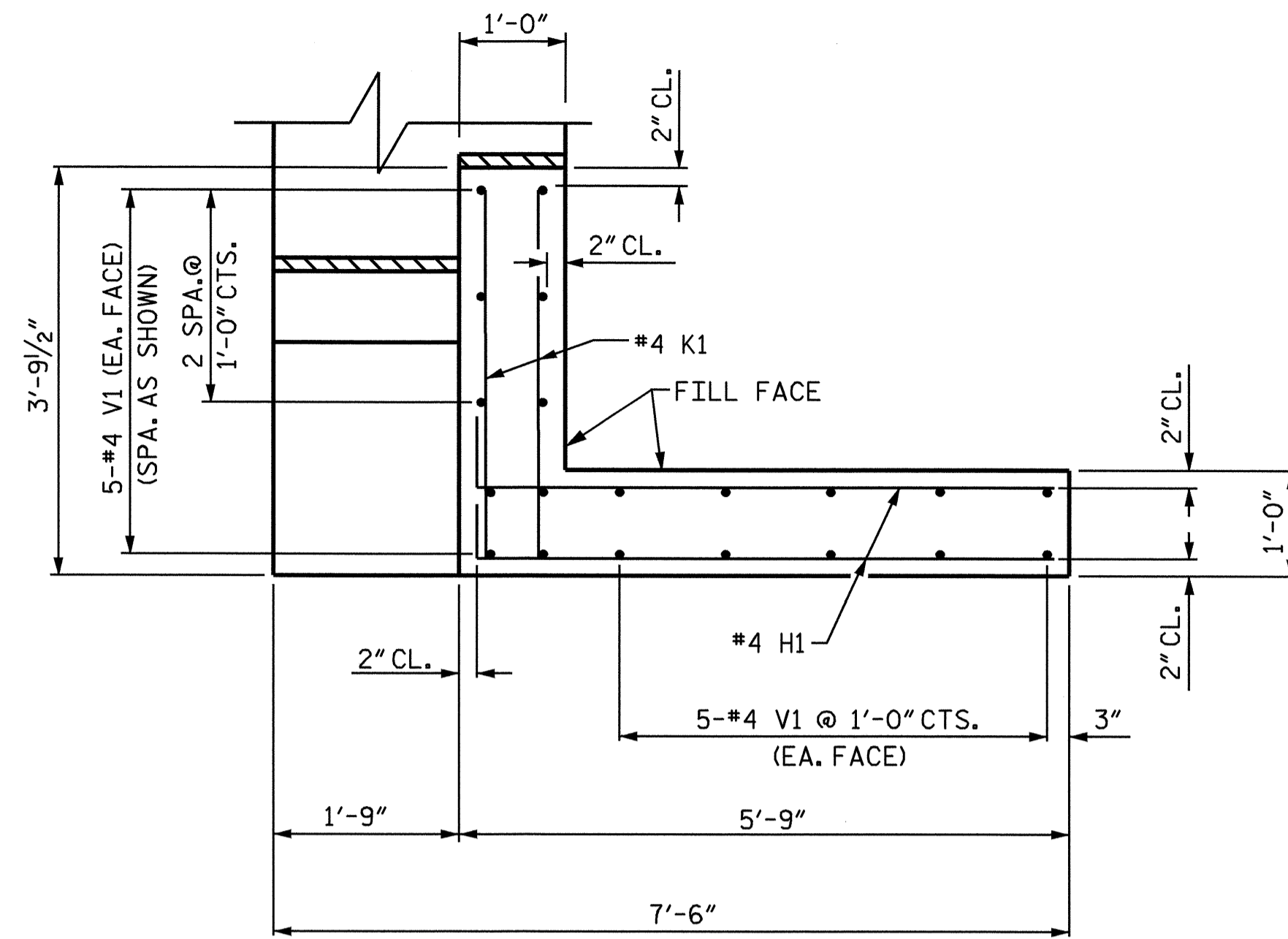
SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1

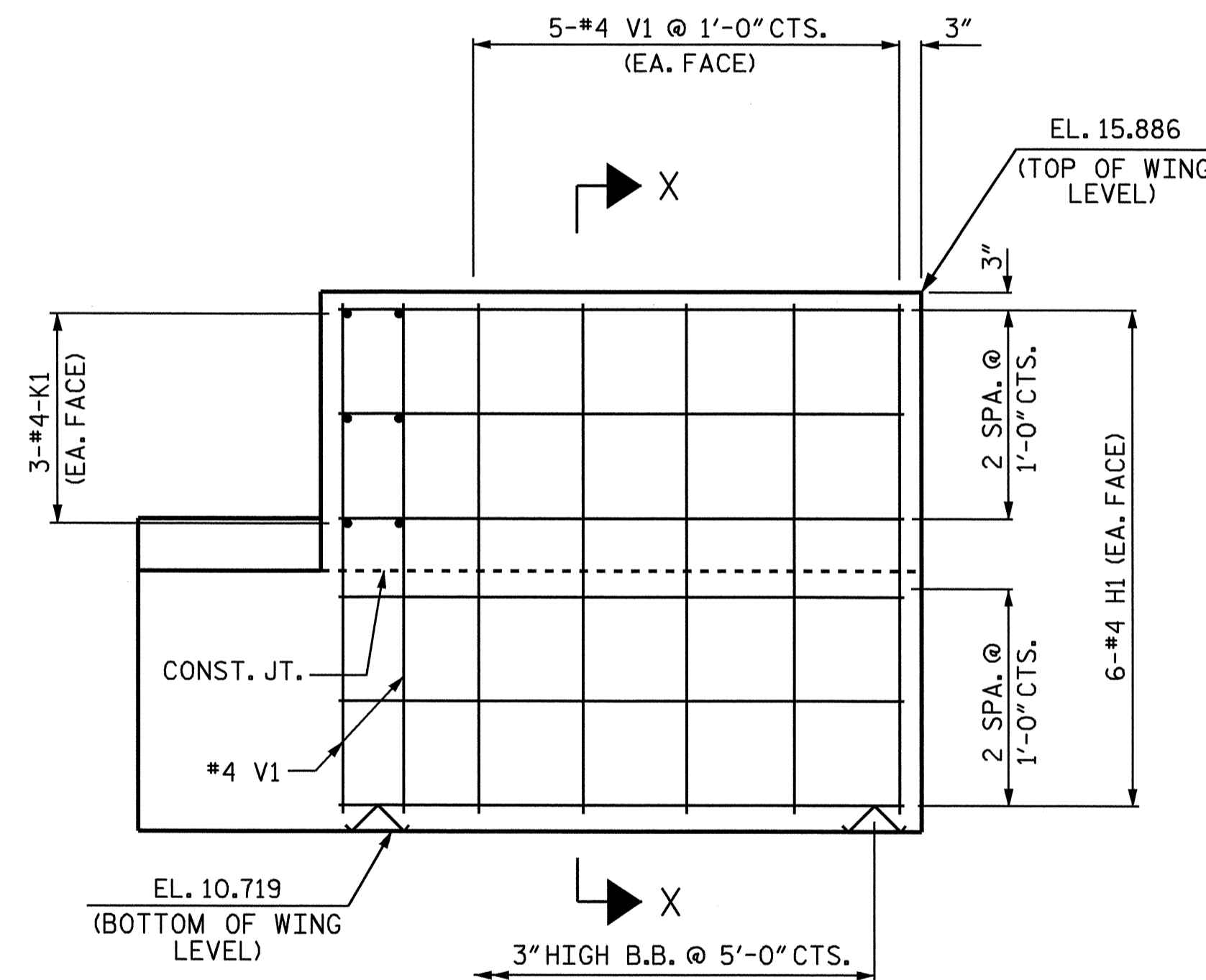


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2			4			

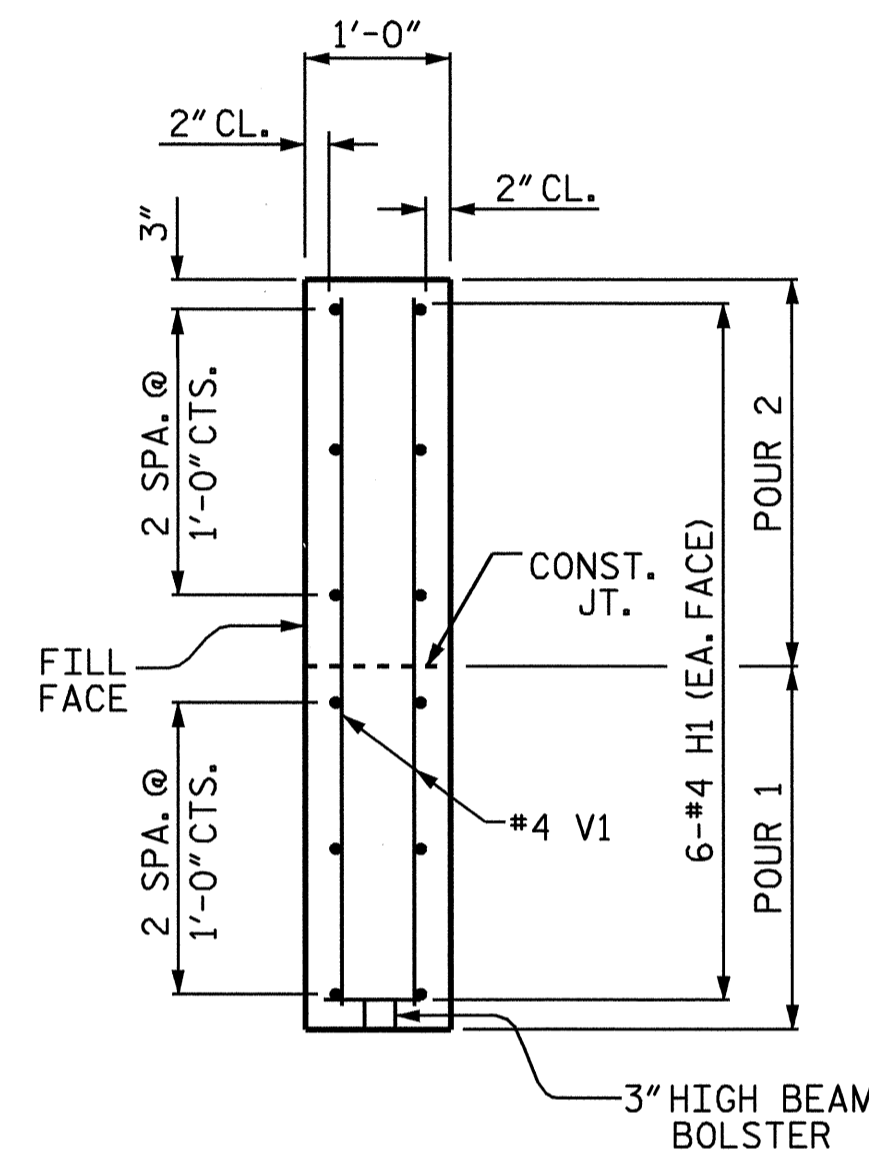
DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07



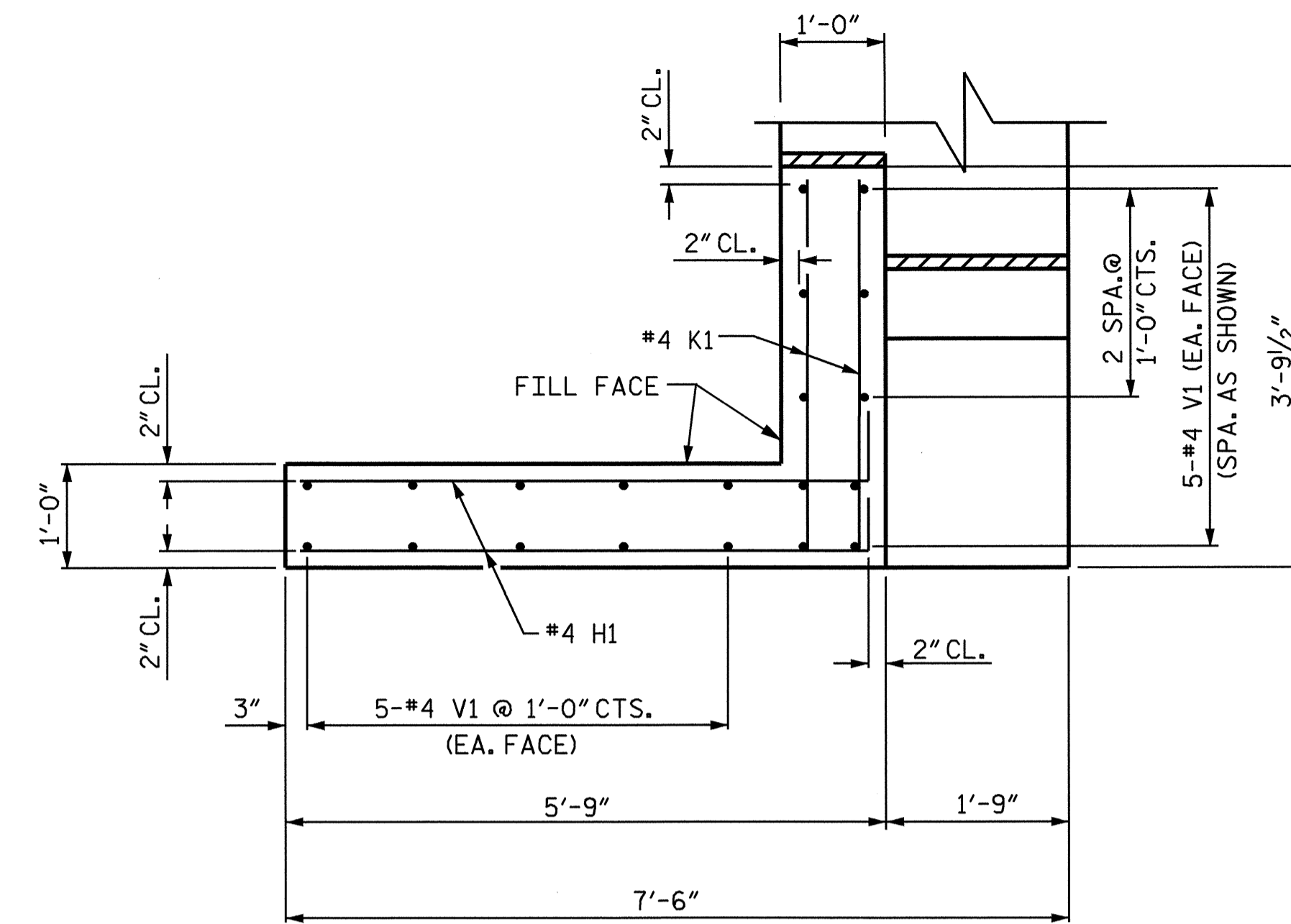
PLAN OF WING W1



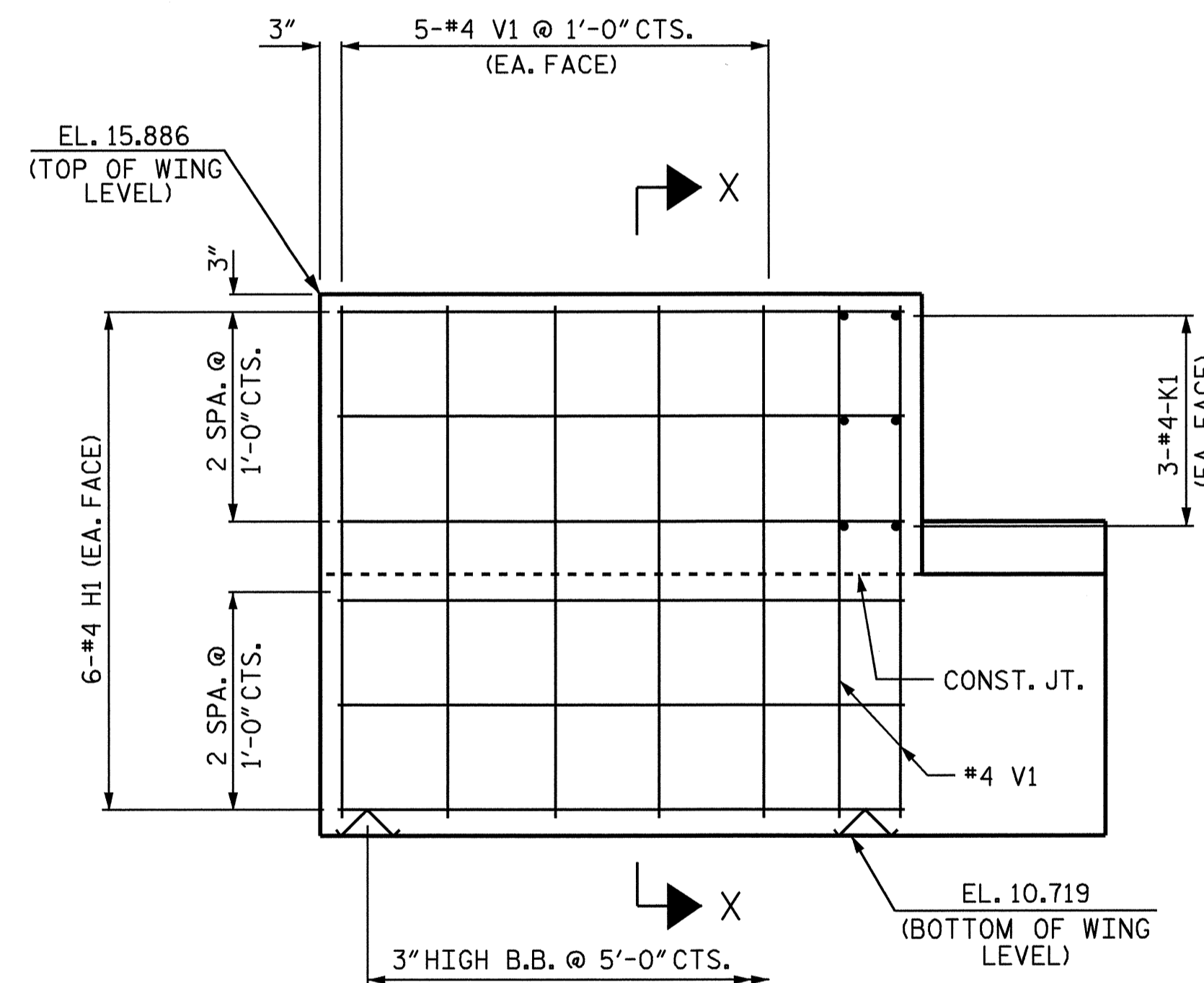
ELEVATION OF WING W1



SECTION X-X



PLAN OF WING W2



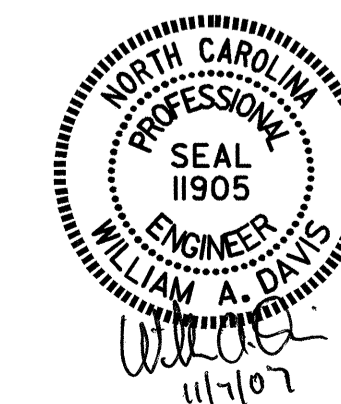
ELEVATION OF WING W2

PROJECT NO. B-4085
 CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 1



DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07

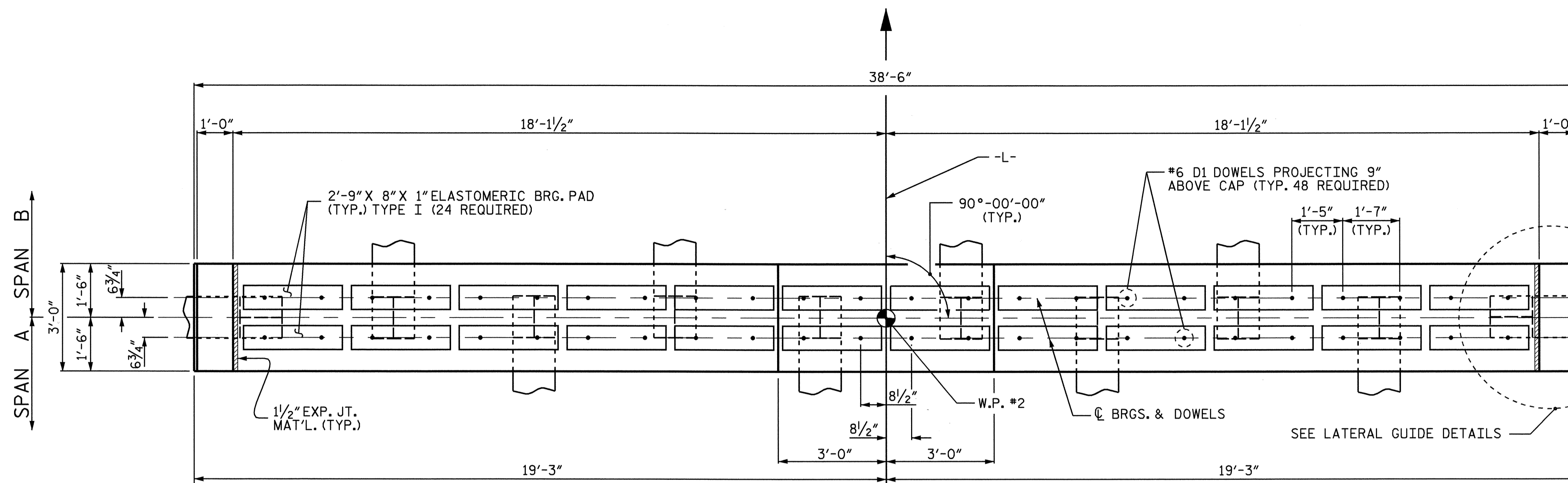
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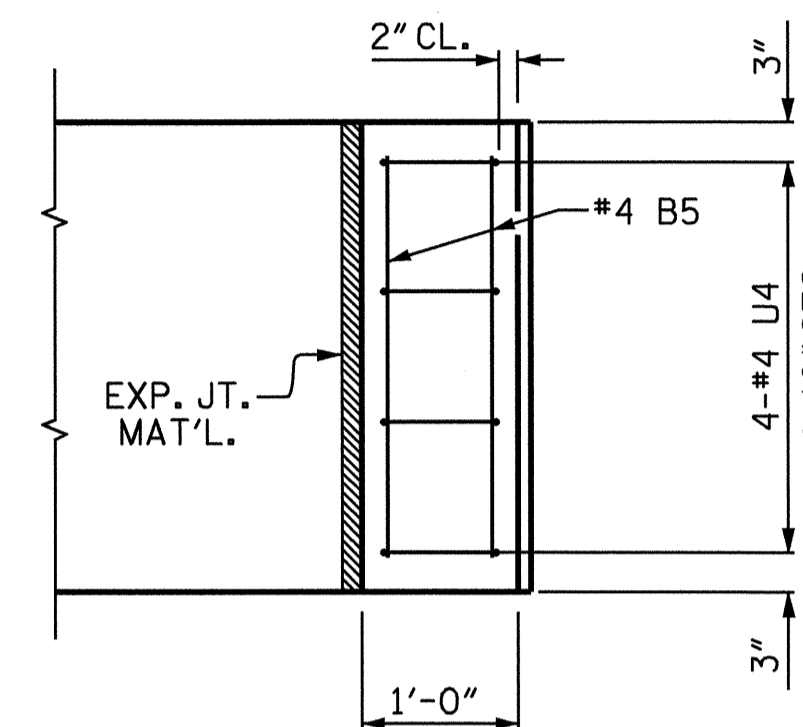
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

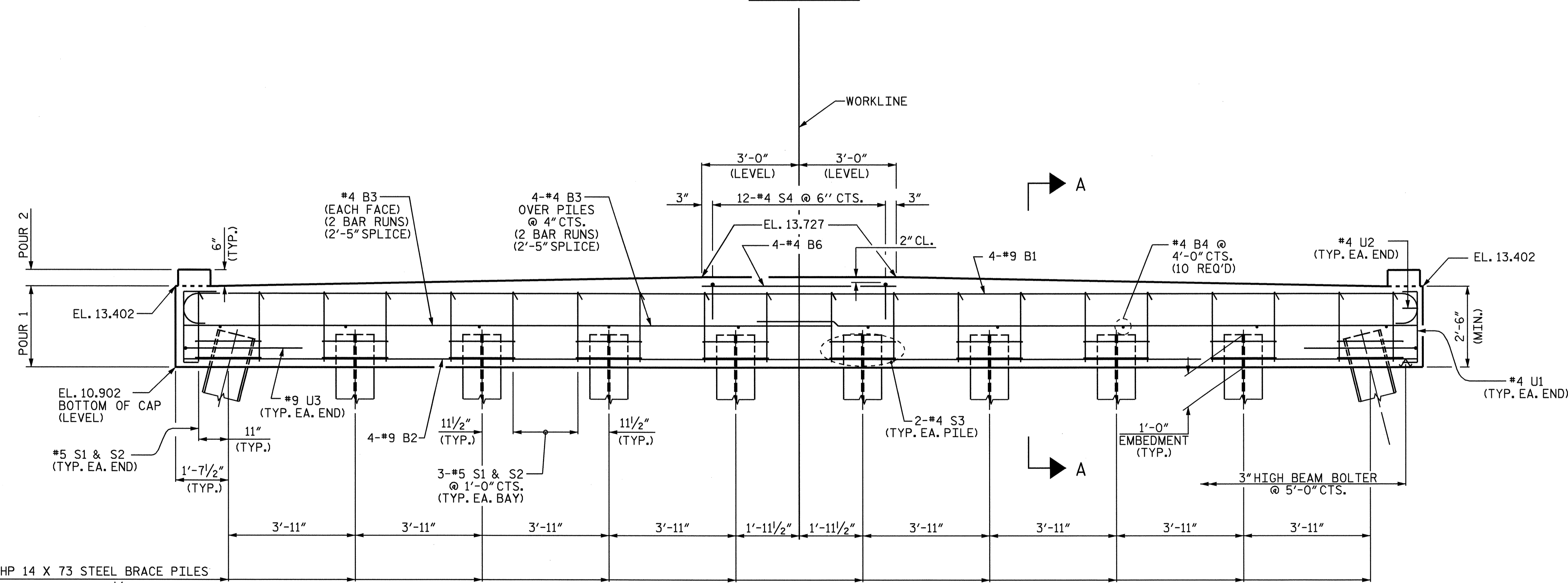
THE LATERAL GUIDES AT THE END OF THE CAP ARE NOT TO BE POURED UNTIL AFTER CORED-SLAB UNITS ARE IN PLACE.



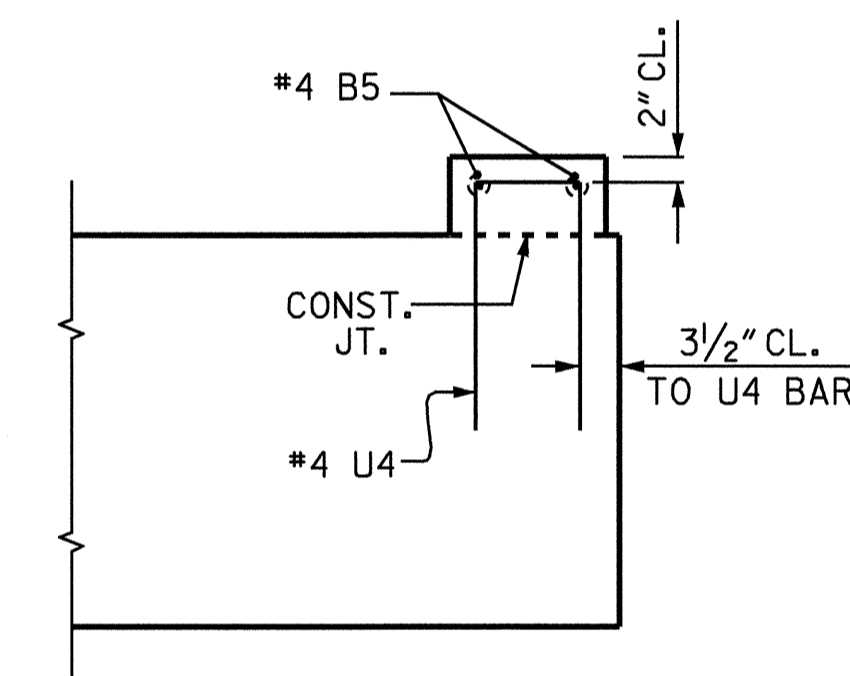
PLAN



PLAN



ELEVATION



ELEVATION

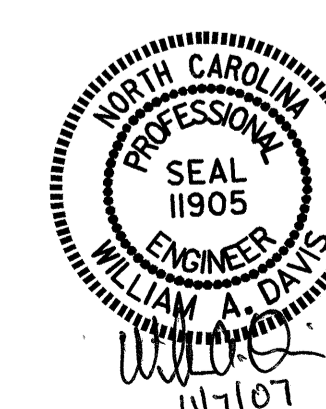
LATERAL GUIDE DETAILS
(EA. END SIMILAR)

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

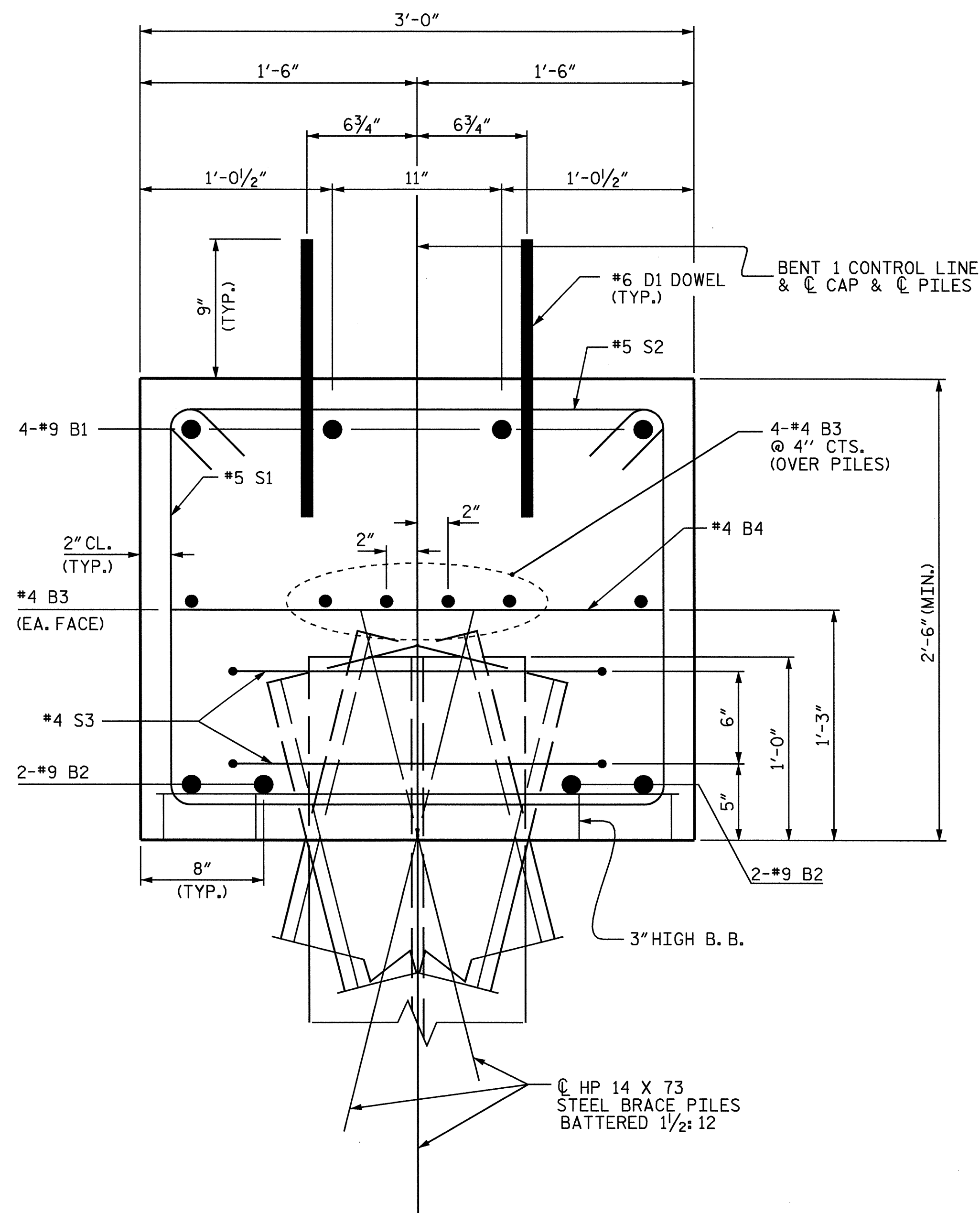
**SUBSTRUCTURE
 BENT 1**



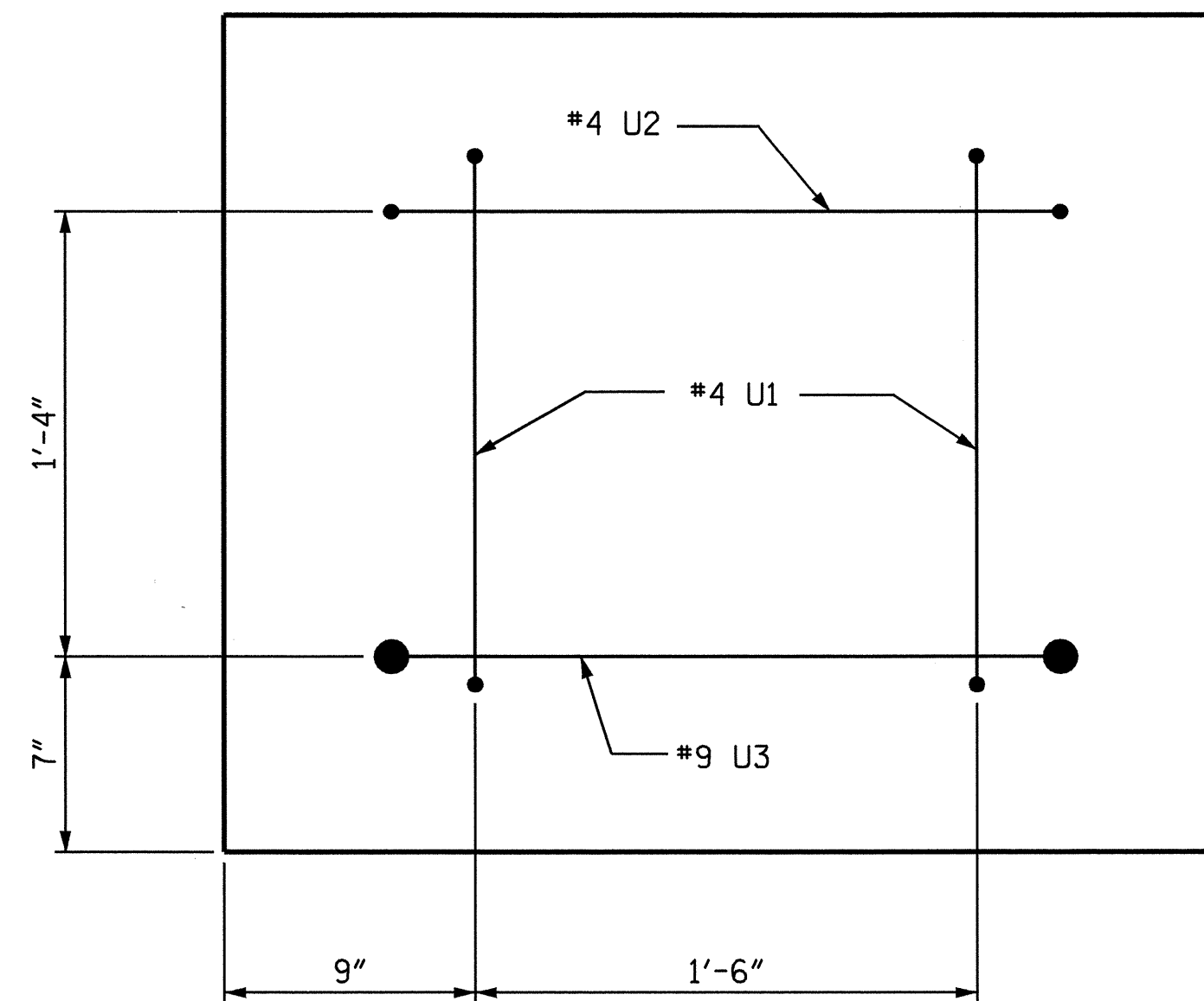
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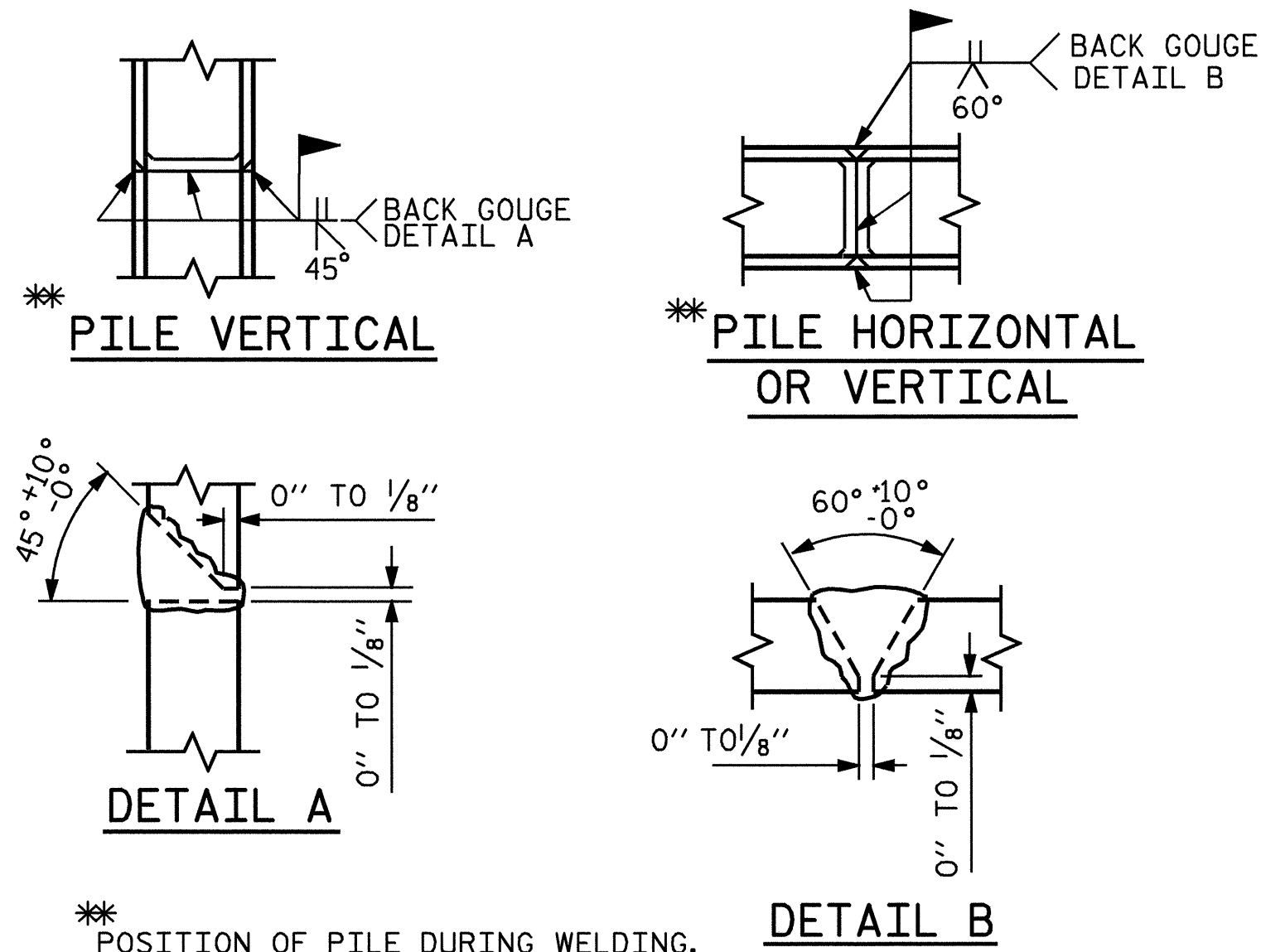


SECTION A-A

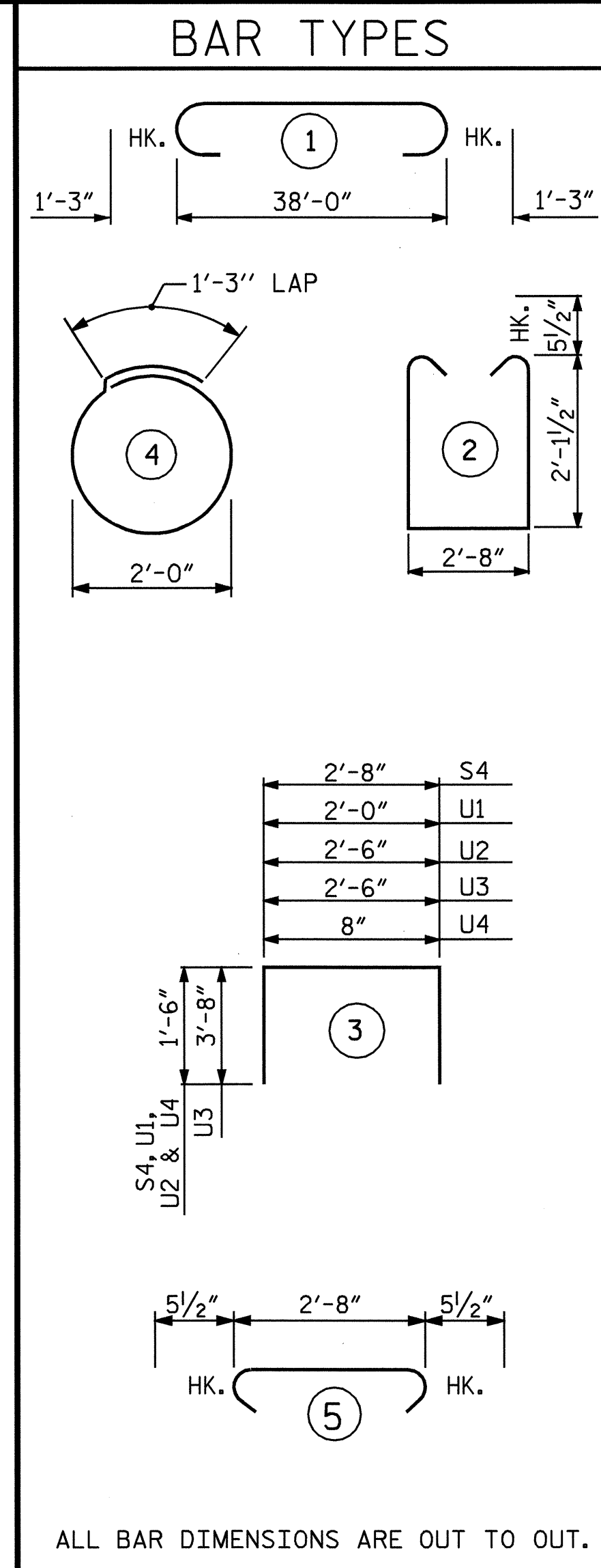


END OF CAP

(TYP. EA. END)



PILE SPLICE DETAILS



BAR TYPES

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9		40'-6"	551
B2	4	#9	STR	38'-2"	519
B3	12	#4	STR	20'-4"	163
B4	10	#4	STR	2'-8"	18
B5	4	#4	STR	2'-6"	7
B6	4	#4	STR	6'-0"	16
D1	48	#6	STR	1'-6"	108
S1	29	#5	2	7'-10"	237
S2	29	#5	5	3'-7"	108
S3	20	#4	4	7'-7"	101
S4	12	#4	3	5'-8"	45
U1	4	#4	3	5'-0"	13
U2	2	#4	3	5'-6"	7
U3	2	#9	3	9'-10"	67
U4	8	#4	3	3'-8"	20
REINFORCING STEEL				LBS.	1980
CLASS A CONCRETE					
POUR 1 - CAP				11.5	C.Y.
POUR 2 - LATERAL GUIDES				0.1	C.Y.
TOTAL CLASS A CONCRETE				11.6	C.Y.
HP 14 x 73 STEEL PILES					
NO.	10		LIN. FT.	250	
STEEL PILE POINTS				EA.	10

PROJECT NO. B-4085
 CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			23

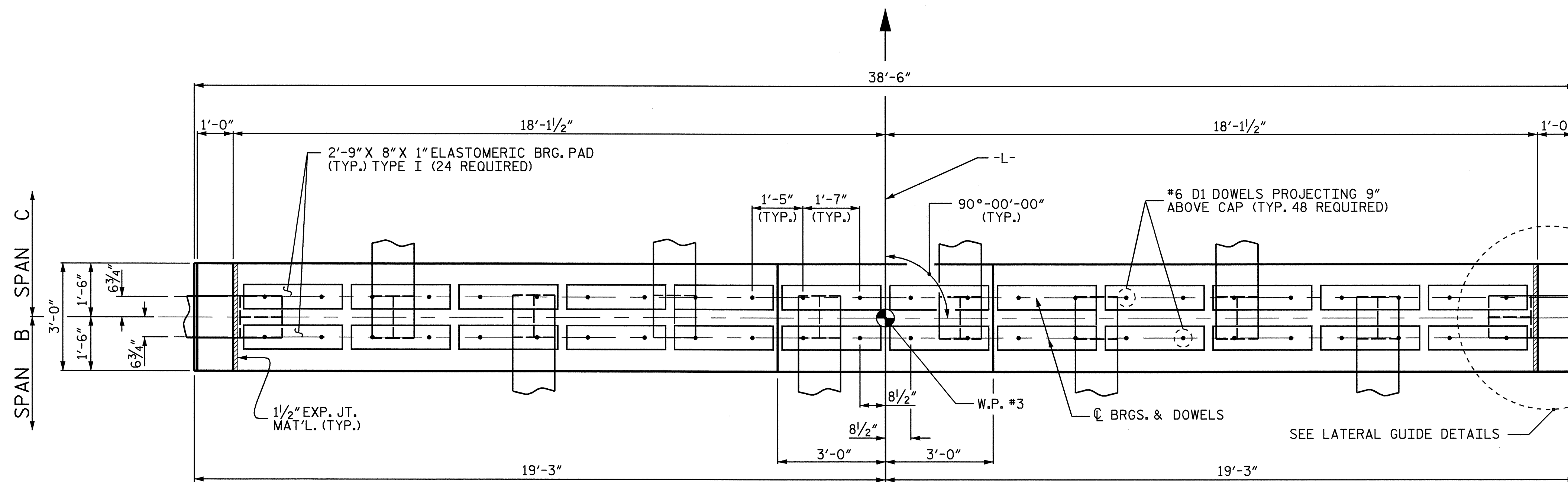


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 CHECKED BY: J.L. WALTON DATE: 9/07

NOTES

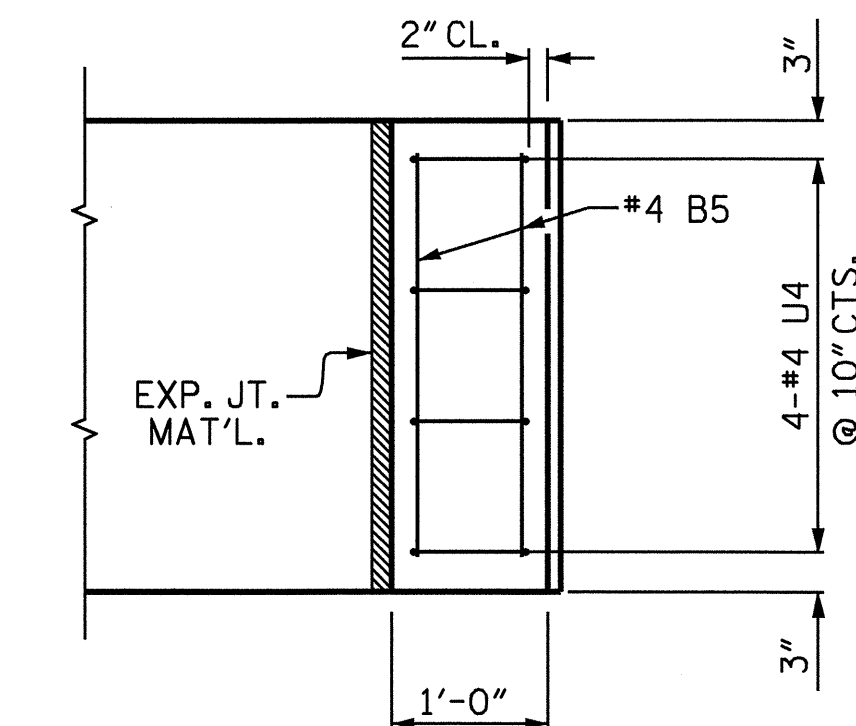
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDES AT THE END OF THE CAP ARE NOT TO BE POURED UNTIL AFTER CORED-SLAB UNITS ARE IN PLACE.

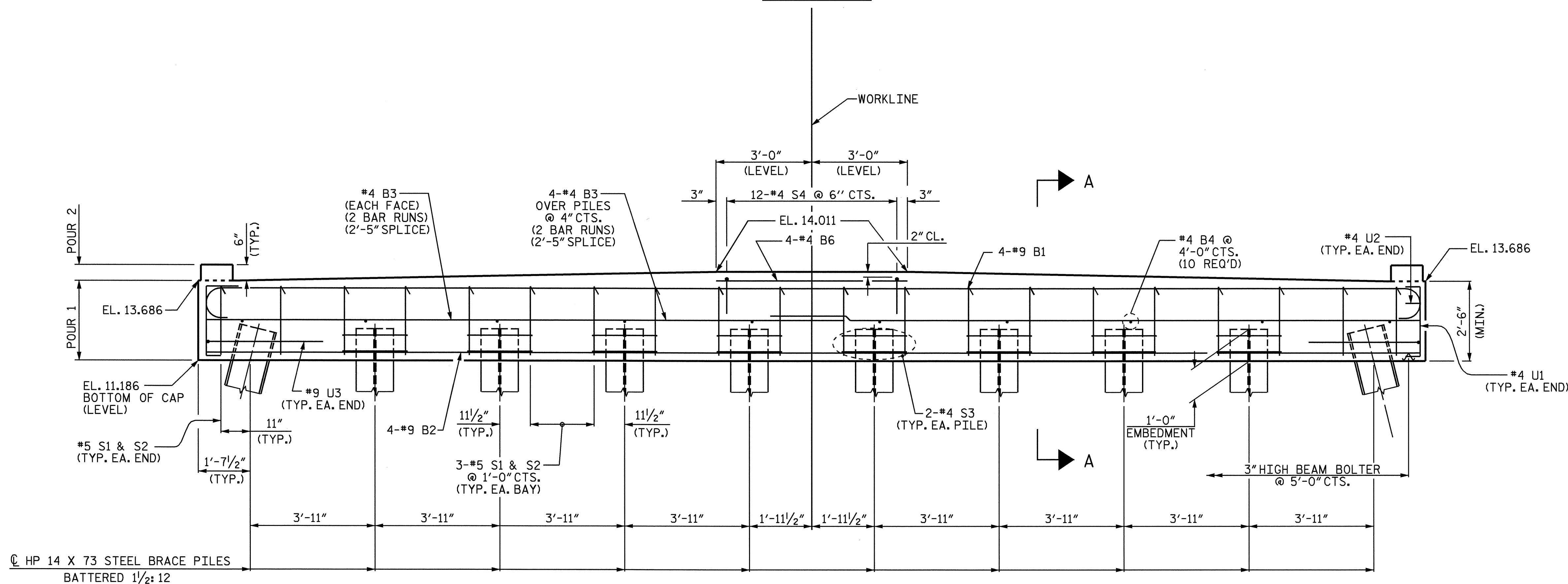


PLAN

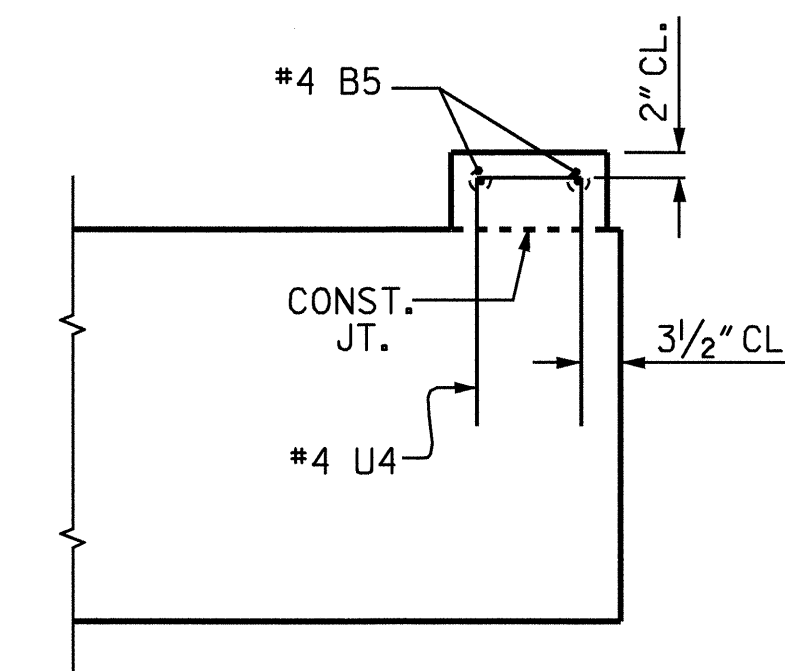
BENT 2 CONTROL LINE & CL CAP & CL PILES



PLAN



ELEVATION

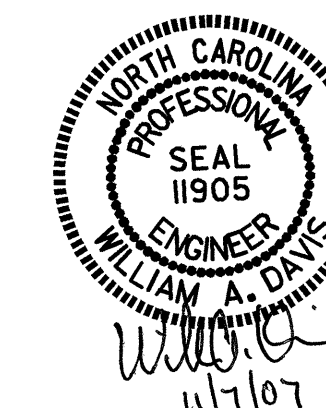


ELEVATION

LATERAL GUIDE DETAILS
(EA. END SIMILAR)

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 1 OF 2

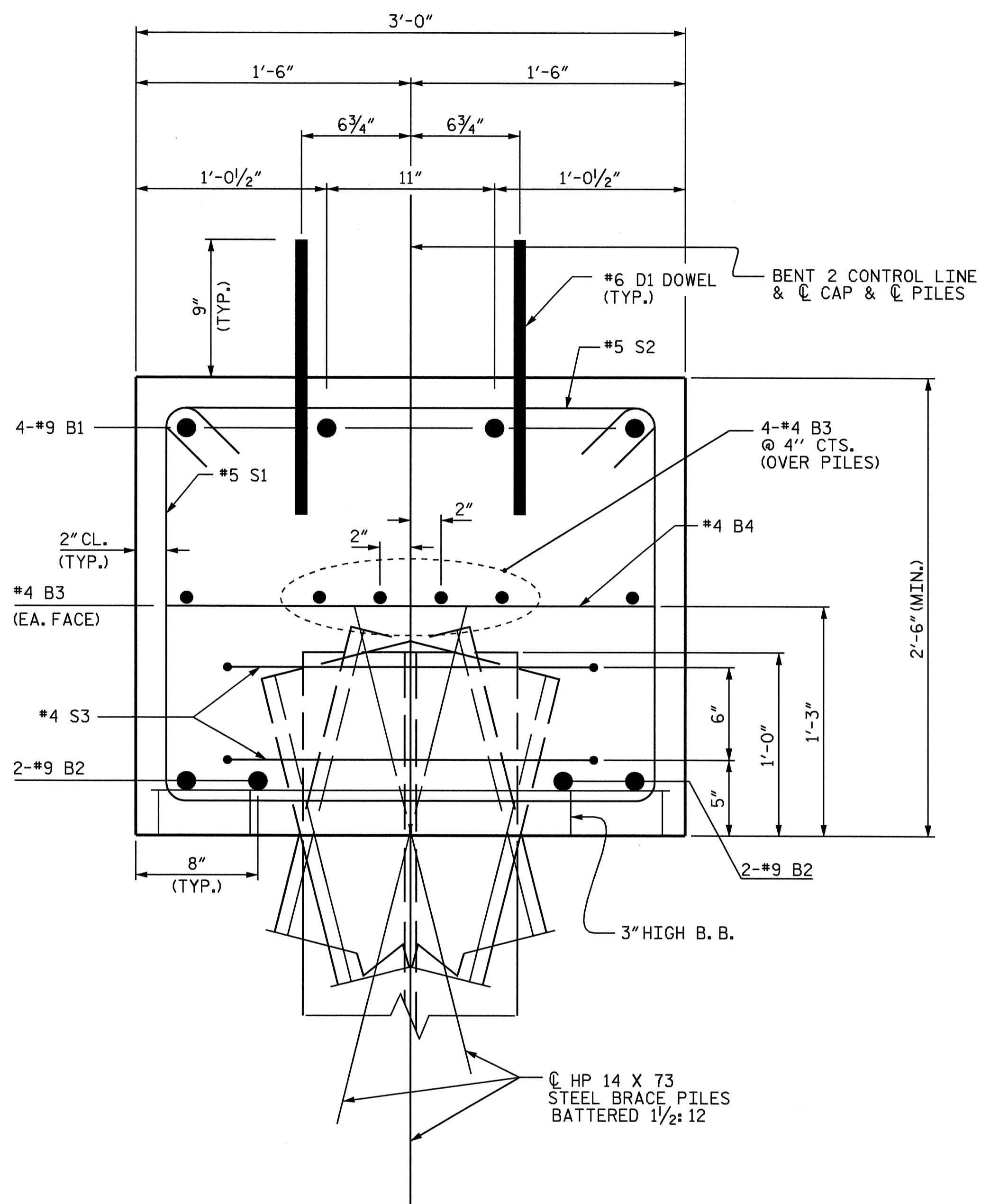


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

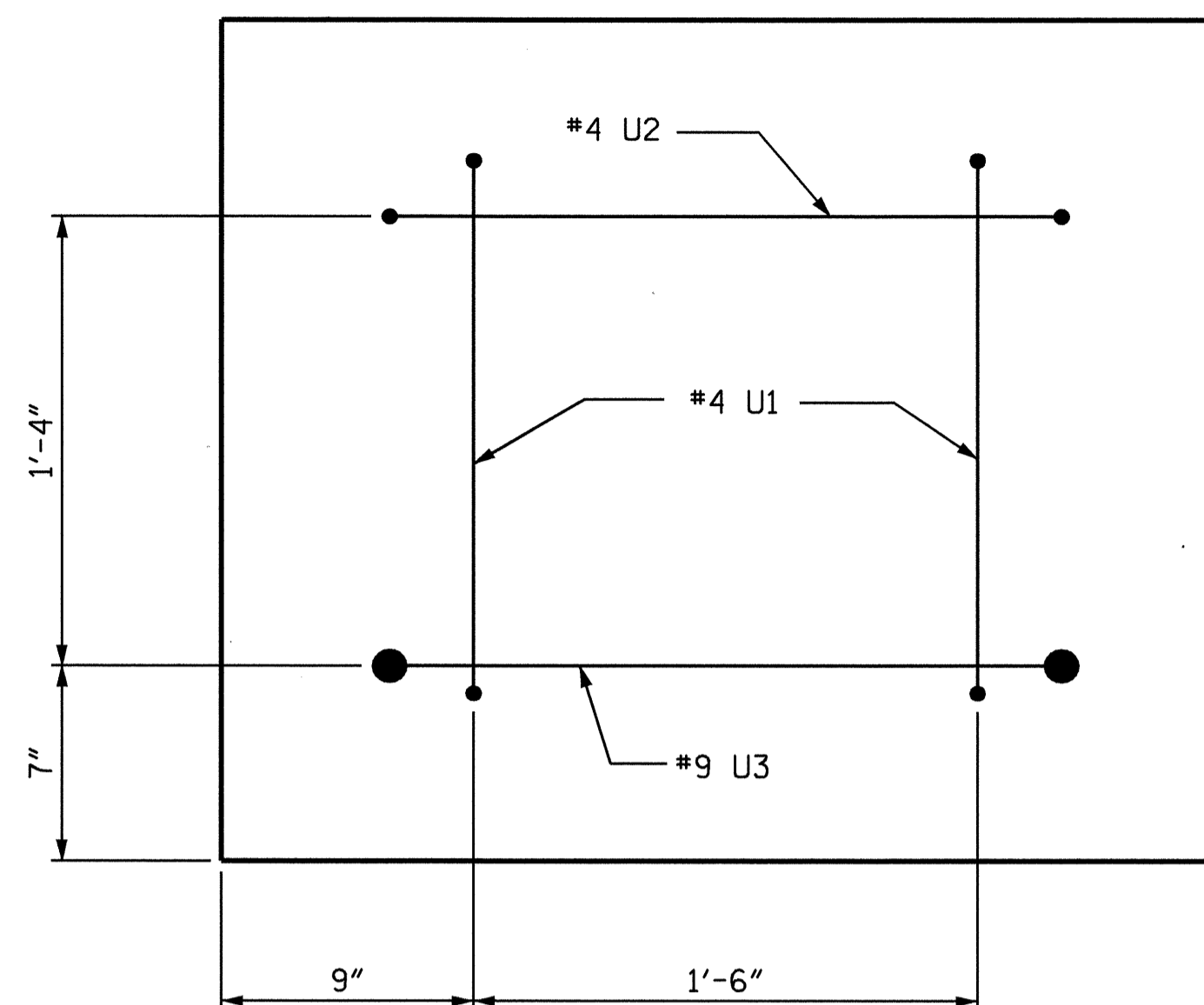
**SUBSTRUCTURE
 BENT 2**

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2			4			23

DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07

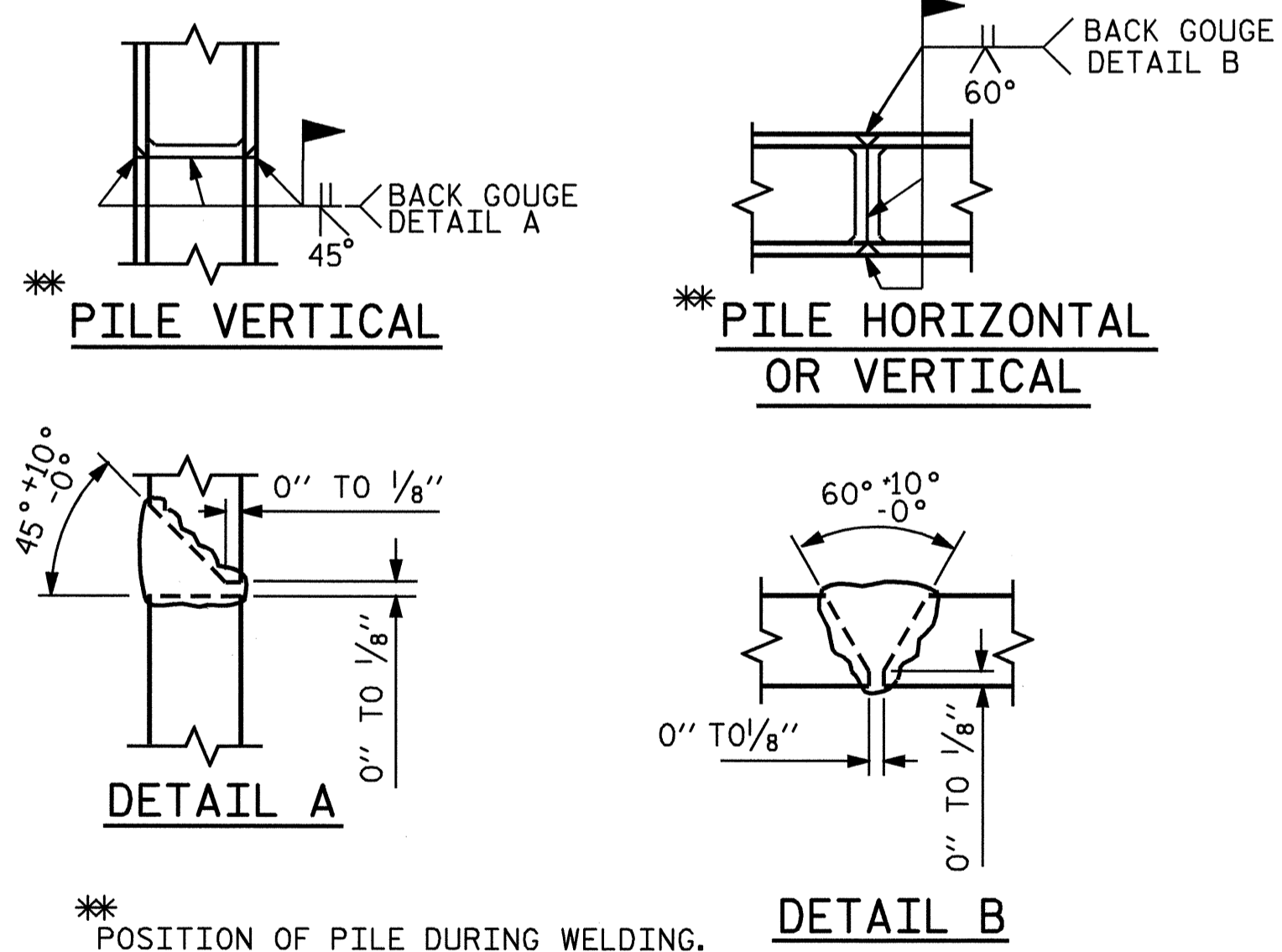


SECTION A-A



END OF CAP

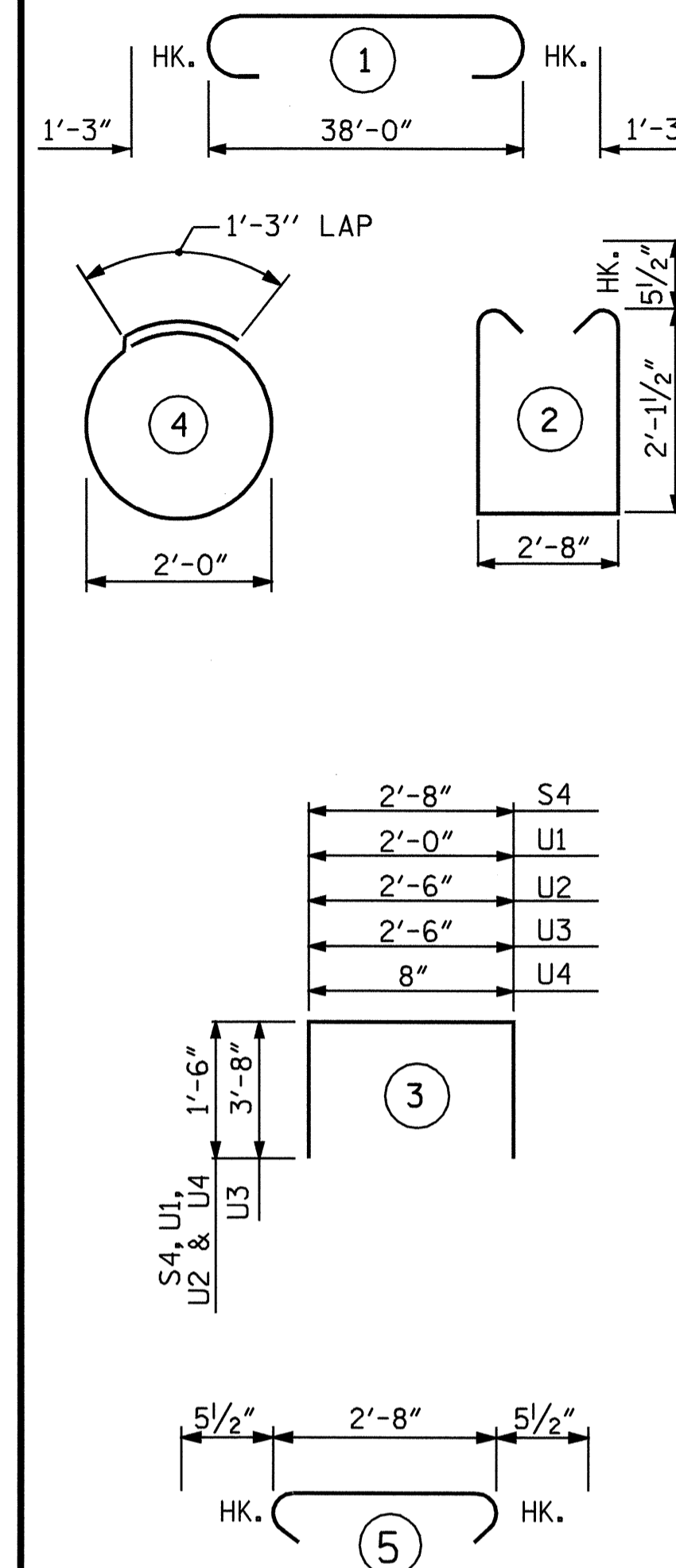
(TYP. EA. END)



PILE SPLICE DETAILS

** POSITION OF PILE DURING WELDING.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	1	40'-6"	551
B2	4	#9	STR	38'-2"	519
B3	12	#4	STR	20'-4"	163
B4	10	#4	STR	2'-8"	18
B5	4	#4	STR	2'-6"	7
B6	4	#4	STR	6'-0"	16
D1	48	#6	STR	1'-6"	108
S1	29	#5	2	7'-10"	237
S2	29	#5	5	3'-7"	108
S3	20	#4	4	7'-7"	101
S4	12	#4	3	5'-8"	45
U1	4	#4	3	5'-0"	13
U2	2	#4	3	5'-6"	7
U3	2	#9	3	9'-10"	67
U4	8	#4	3	3'-8"	20

REINFORCING STEEL LBS. 1980

CLASS A CONCRETE

POUR 1 - CAP 11.5 C.Y.

POUR 2 - LATERAL GUIDES 0.1 C.Y.

TOTAL CLASS A CONCRETE 11.6 C.Y.

HP 14 x 73 STEEL PILES

NO. 10 LIN. FT. 250

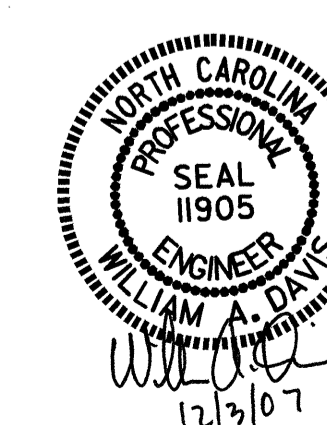
STEEL PILE POINTS EA. 10

PROJECT NO. B-4085
 CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 2



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

S-17
 TOTAL SHEETS
 23

DRAWN BY: QT NGUYEN DATE: 6/07
 CHECKED BY: J.L. WALTON DATE: 9/07

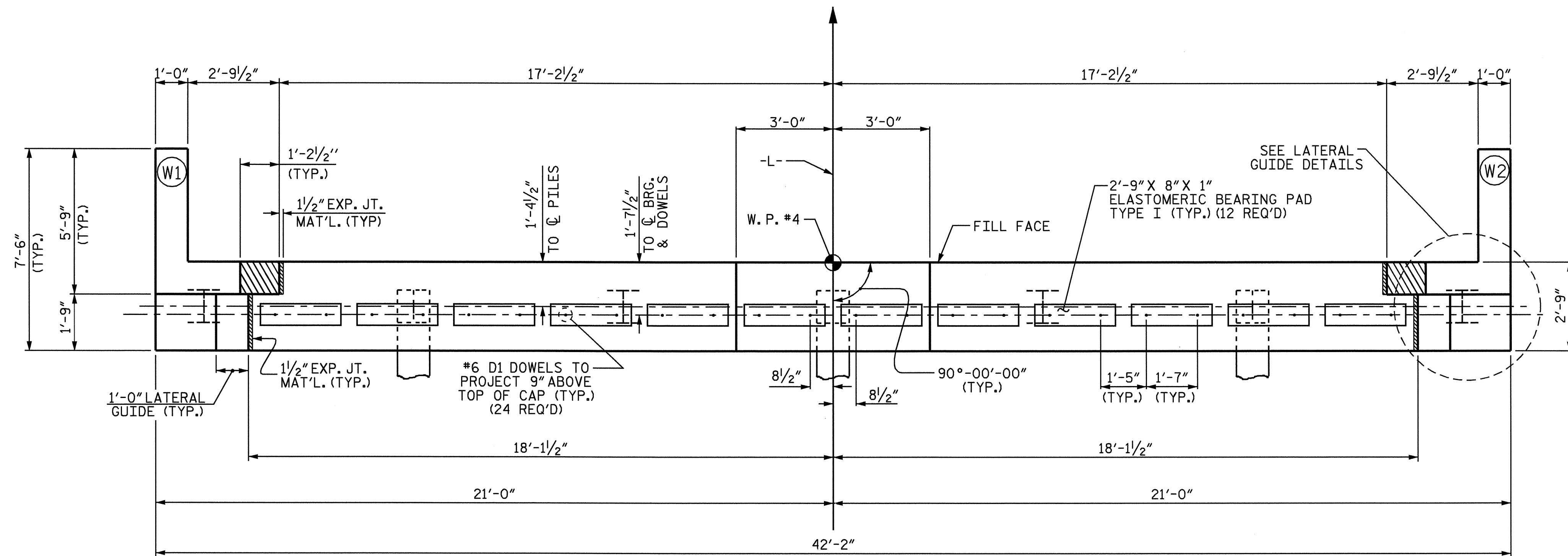
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

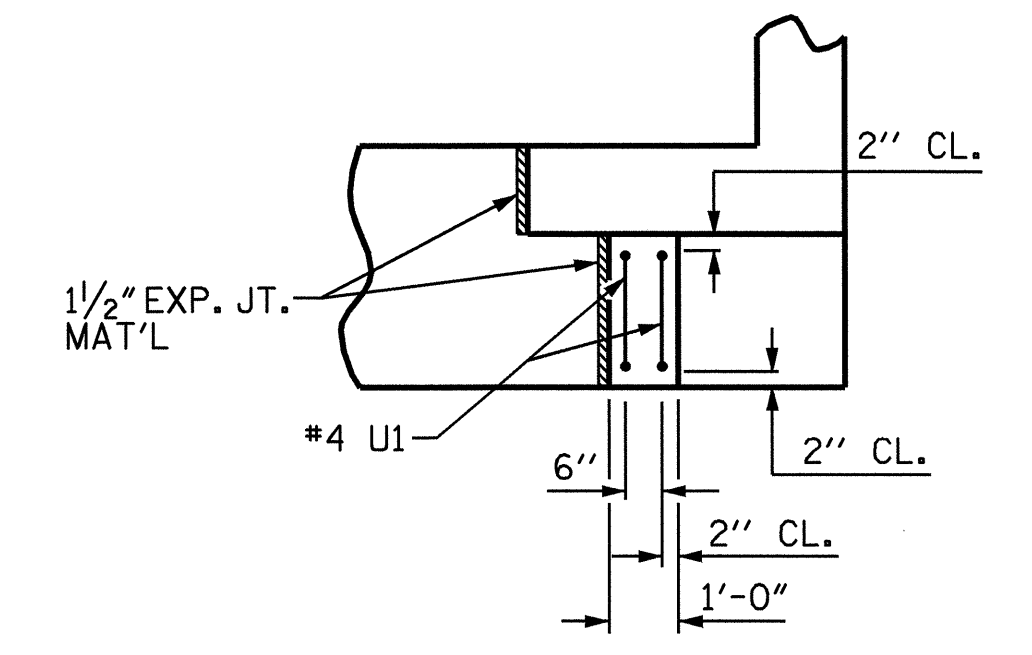
THE LATERAL GUIDE AT EACH END OF CAP IS NOT TO BE POURED UNTIL AFTER CORED SLAB UNITS ARE IN PLACE.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

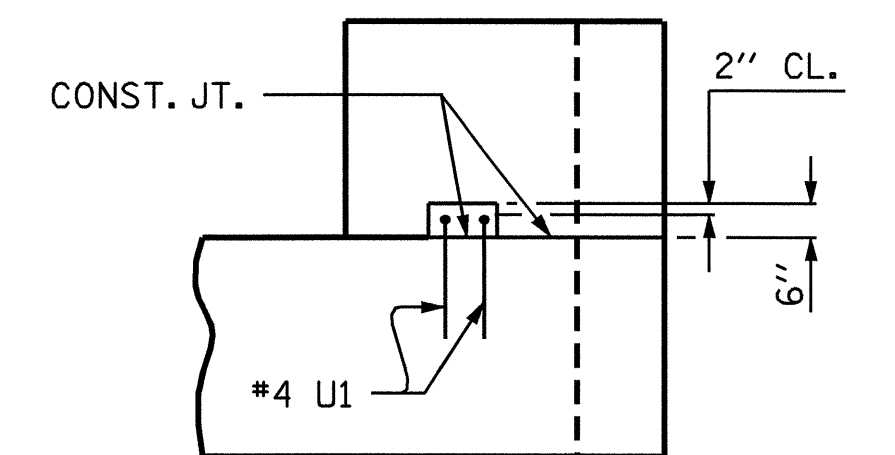
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE JOINT BETWEEN THE DECK AND THE APPROACH SLAB HAS BEEN SAWED AND THE BARRIER RAILS ARE CAST IF SLIP FORMING IS USED.



PLAN

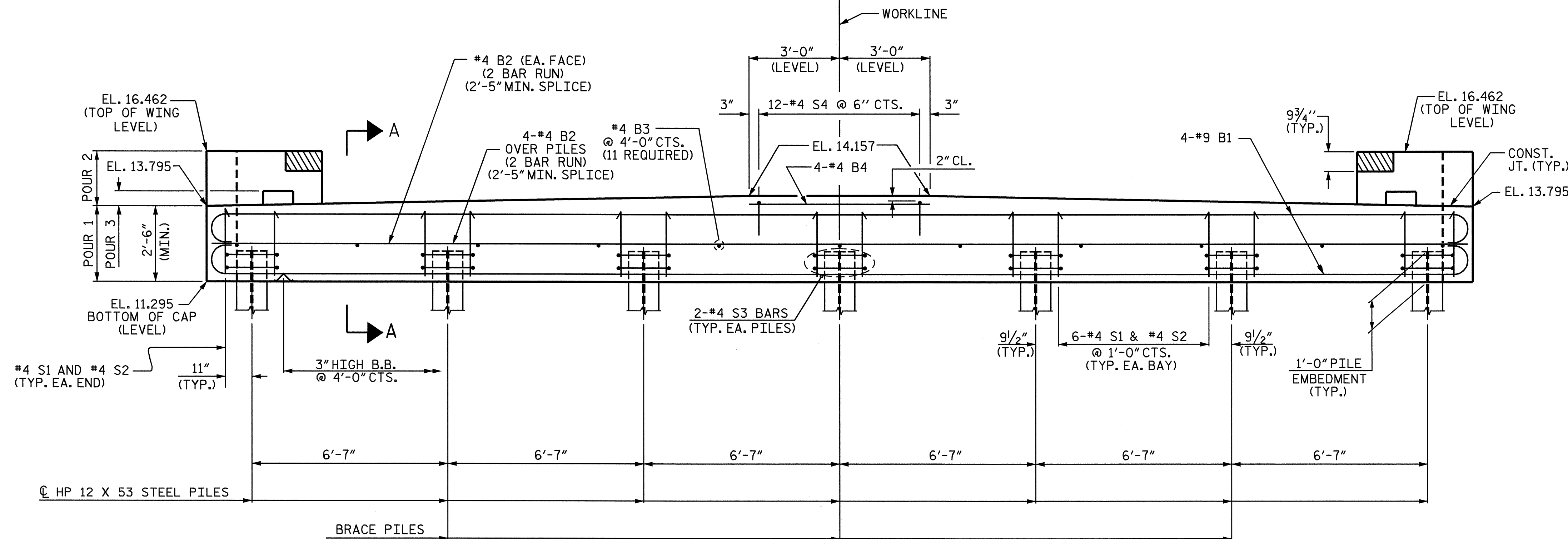


PLAN



ELEVATION

LATERAL GUIDE DETAILS
(EACH END SIMILAR)



ELEVATION

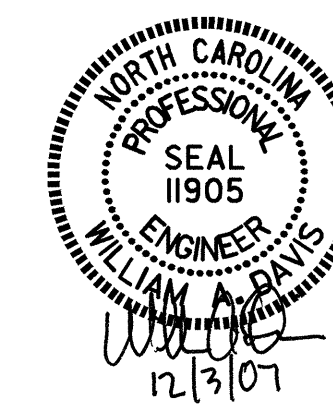
(WING DETAILS NOT SHOWN IN ELEVATION VIEW)

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

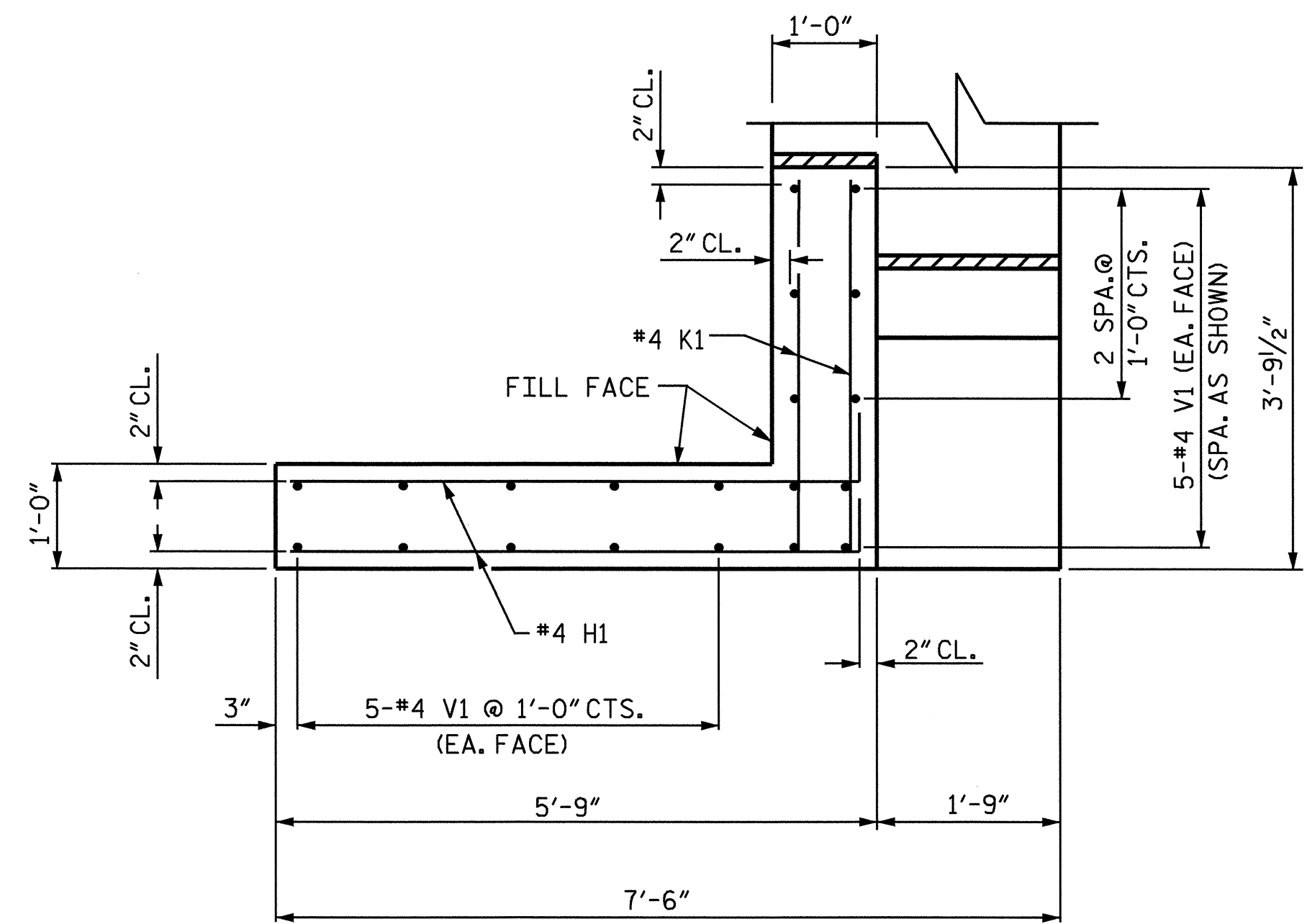


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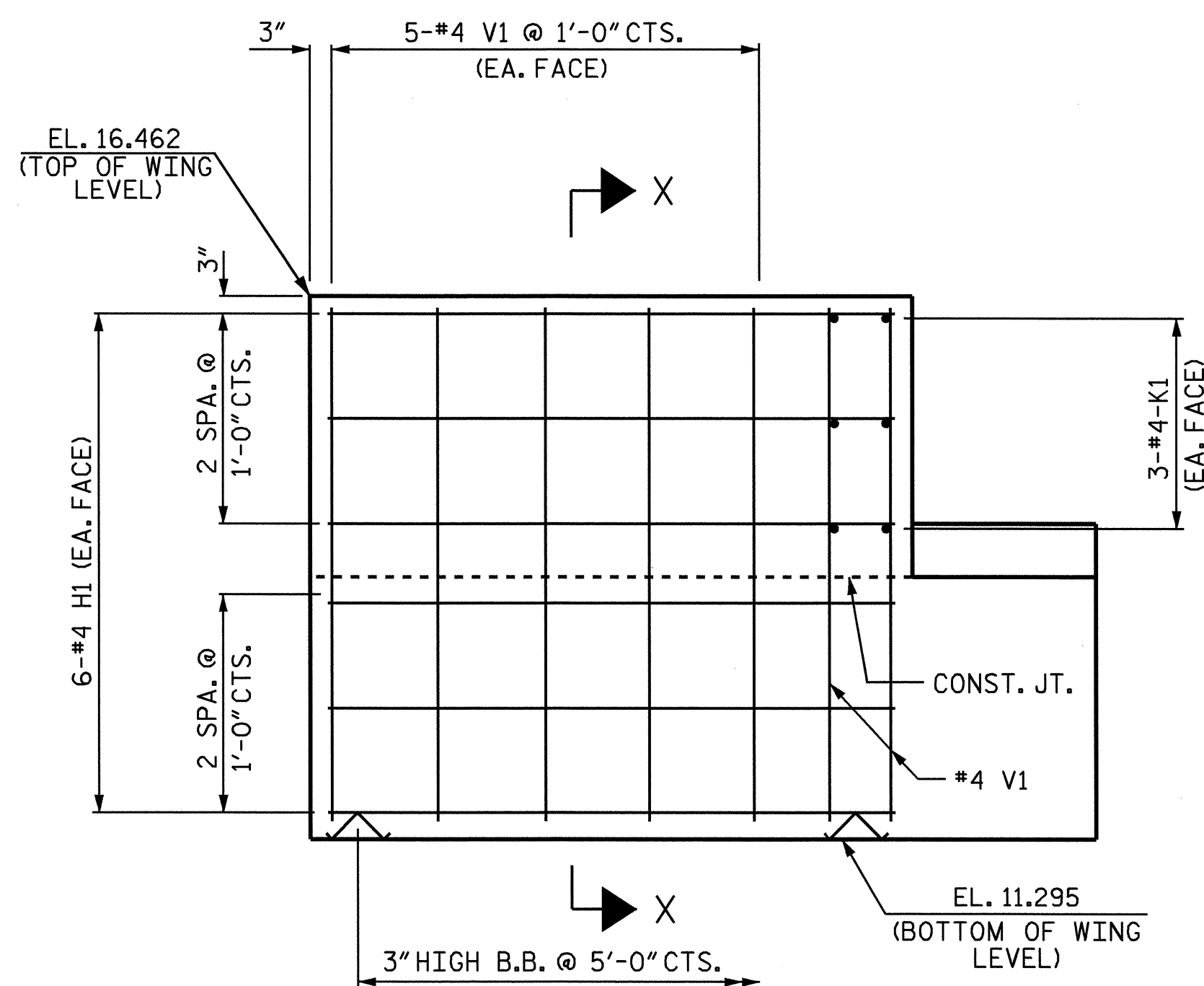
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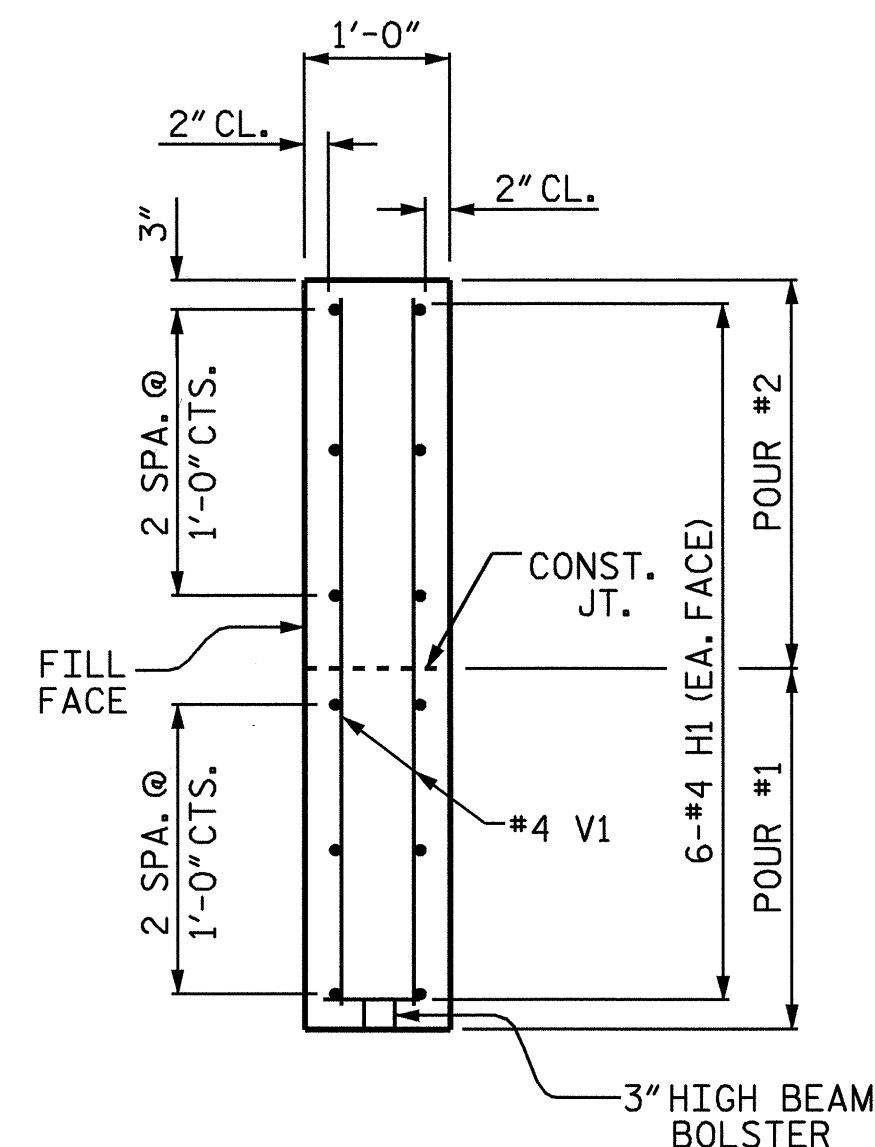
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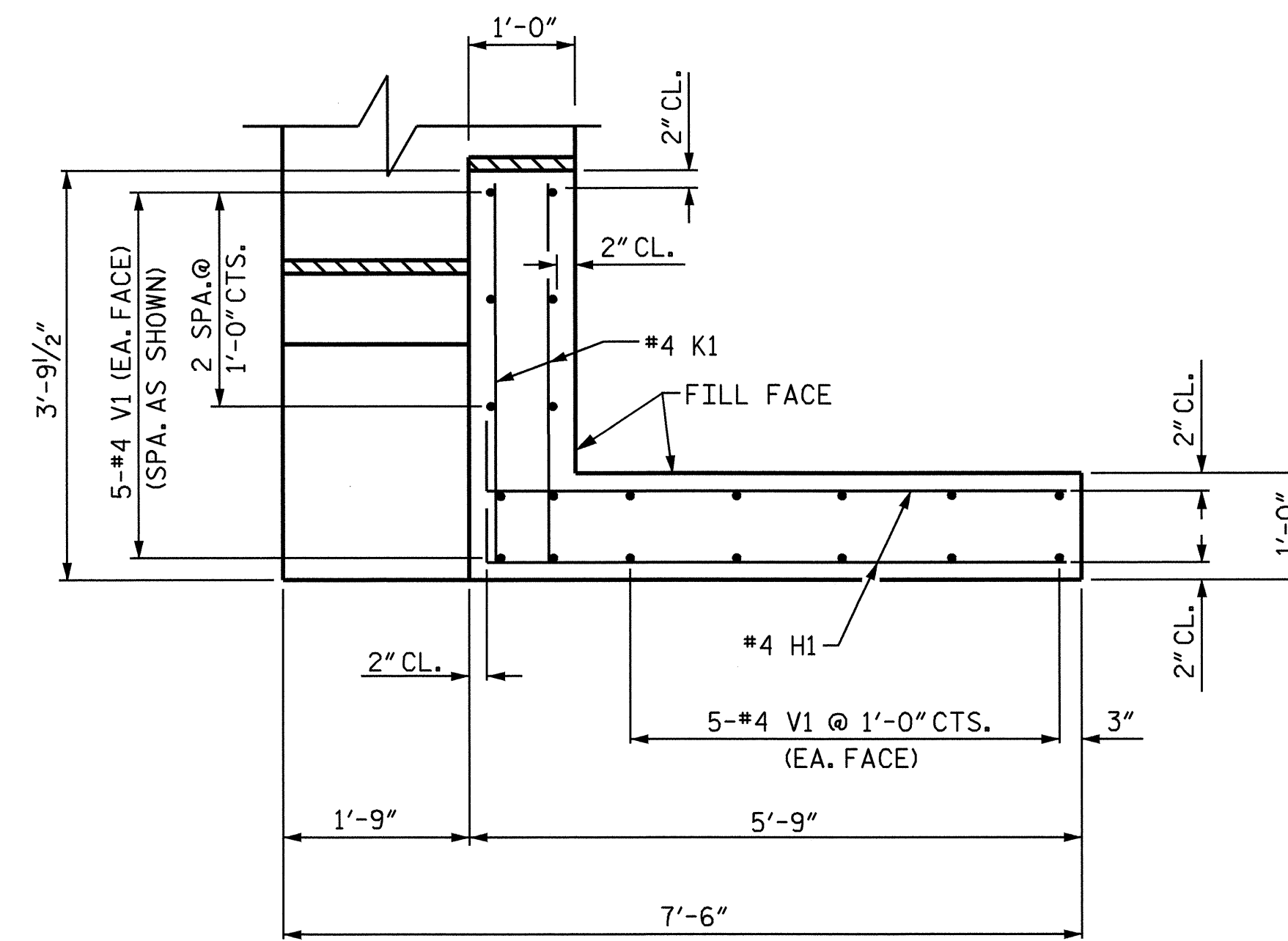
PLAN OF WING W2



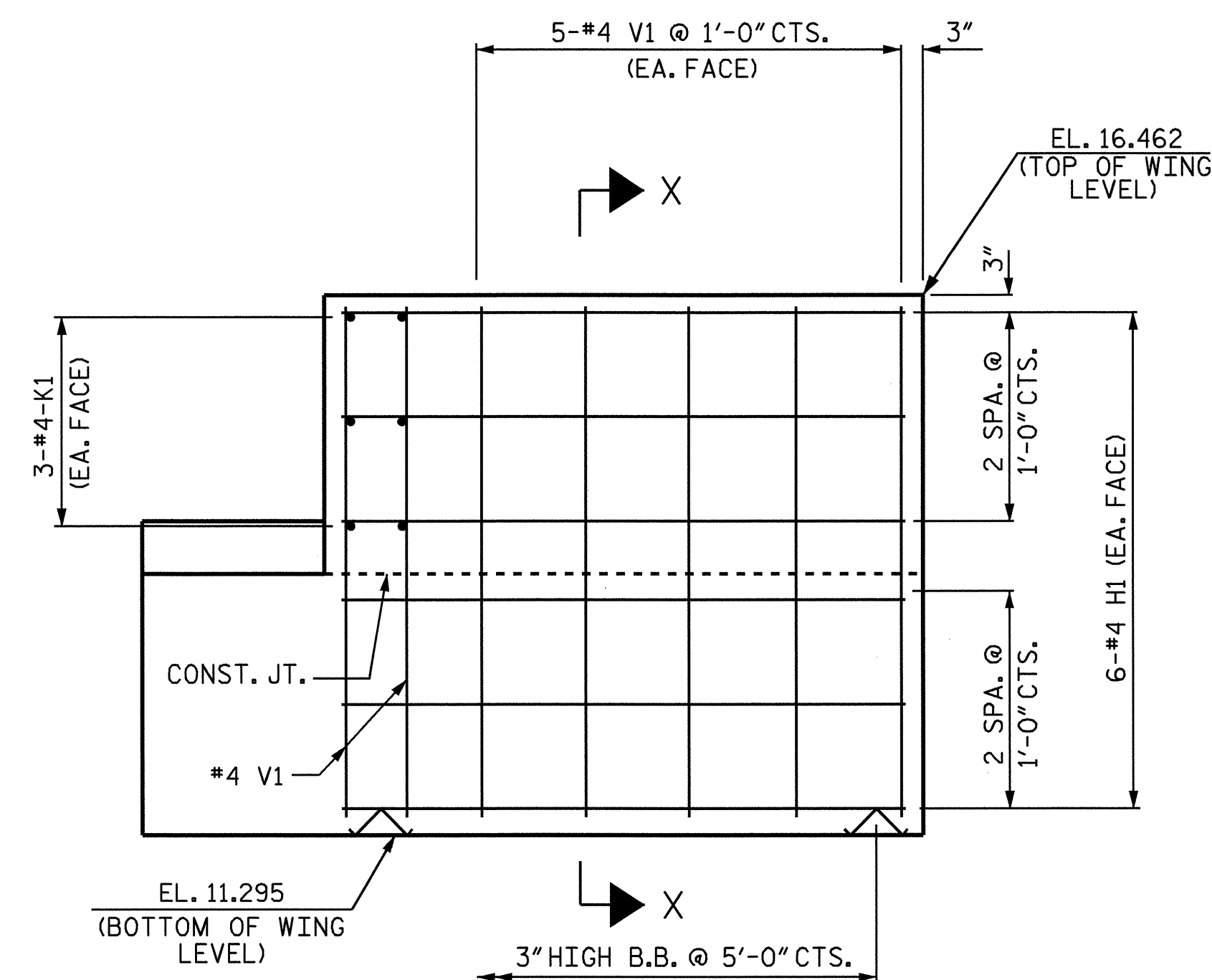
ELEVATION OF WING W2



SECTION X-X



PLAN OF WING W1



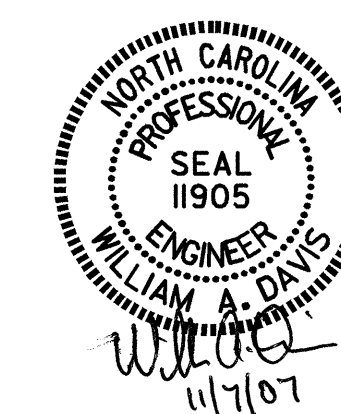
ELEVATION OF WING W1

PROJECT NO. B-4085
CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 2 OF 3

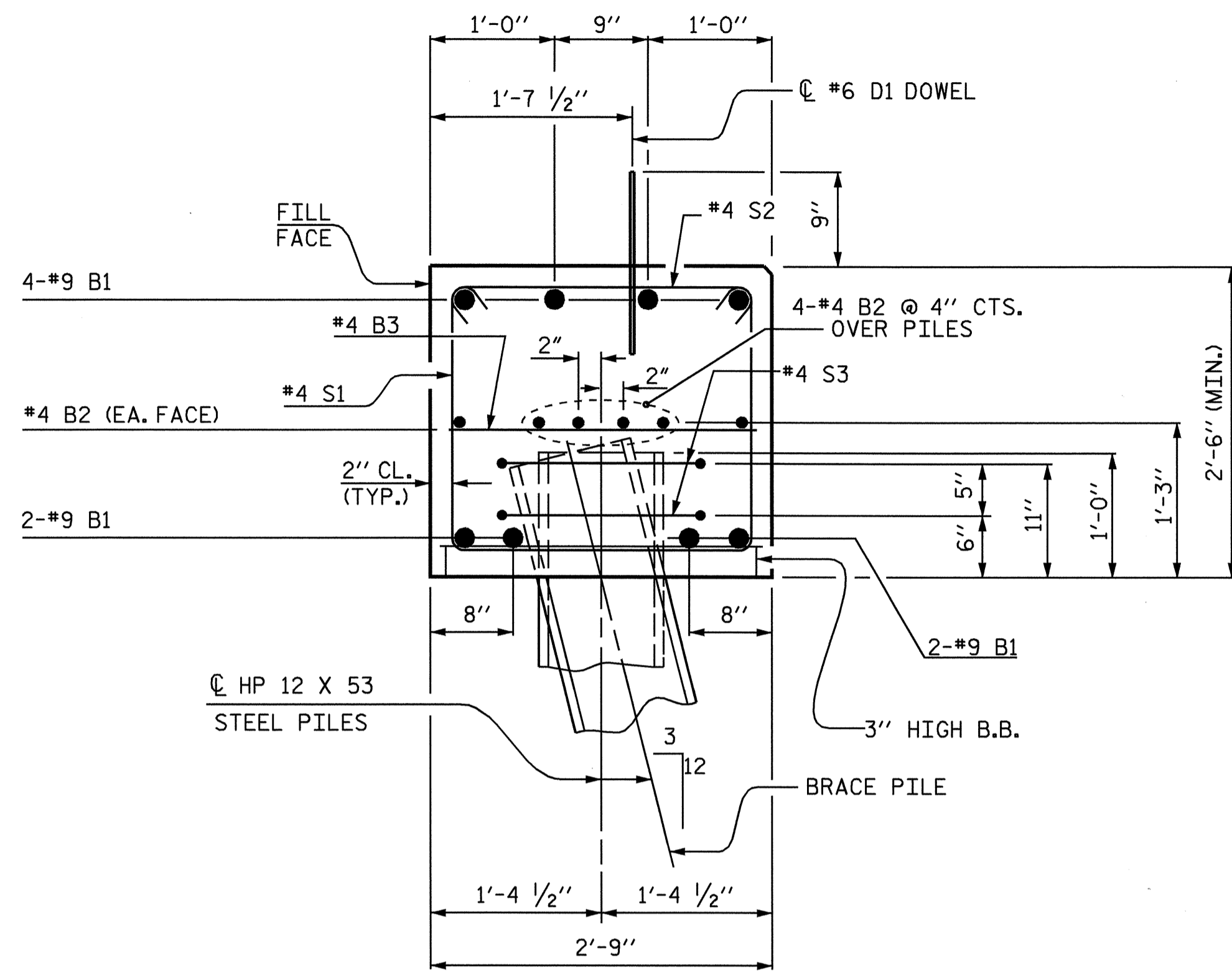
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

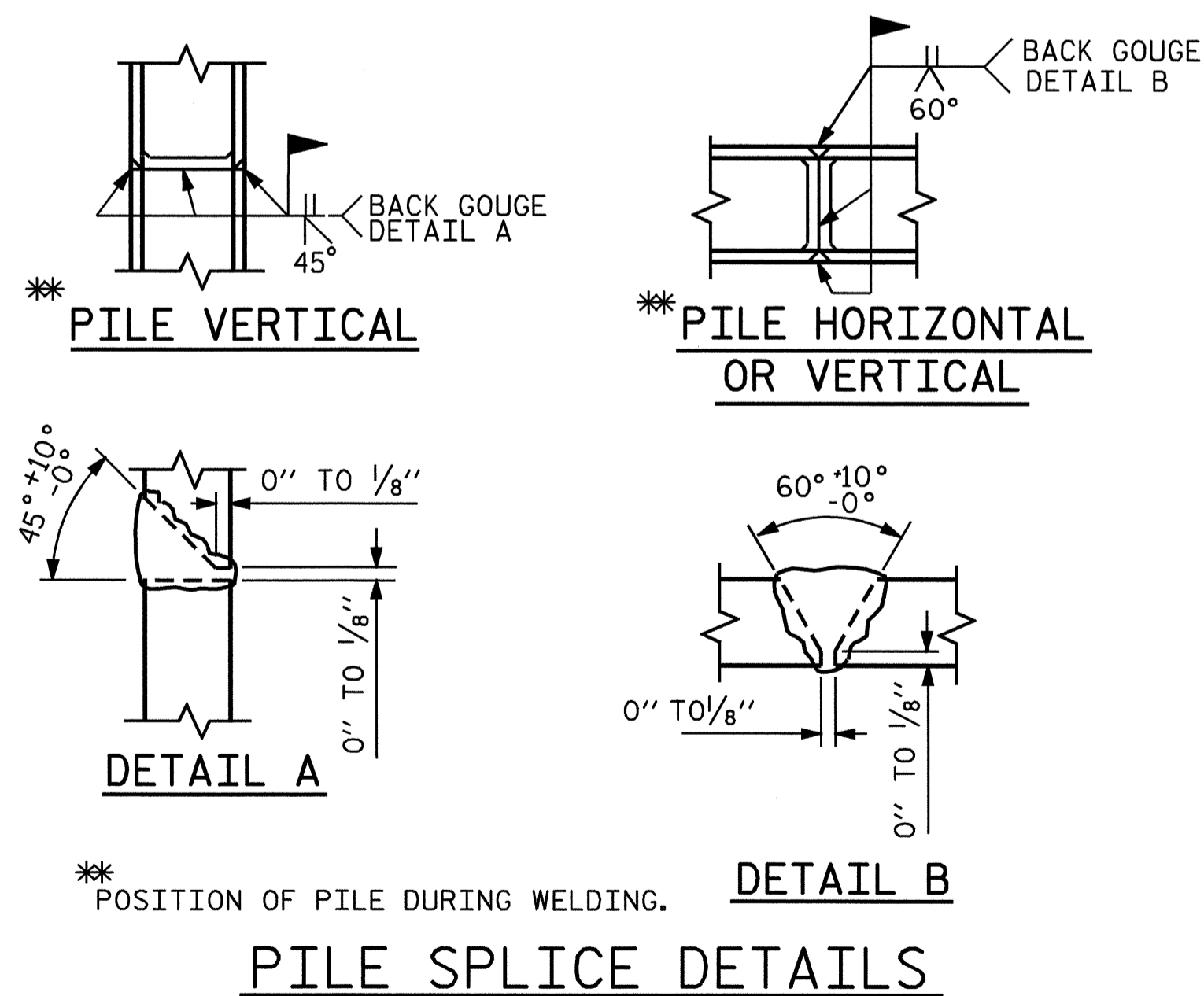


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 CHECKED BY : J.L. WALTON DATE : 9/07

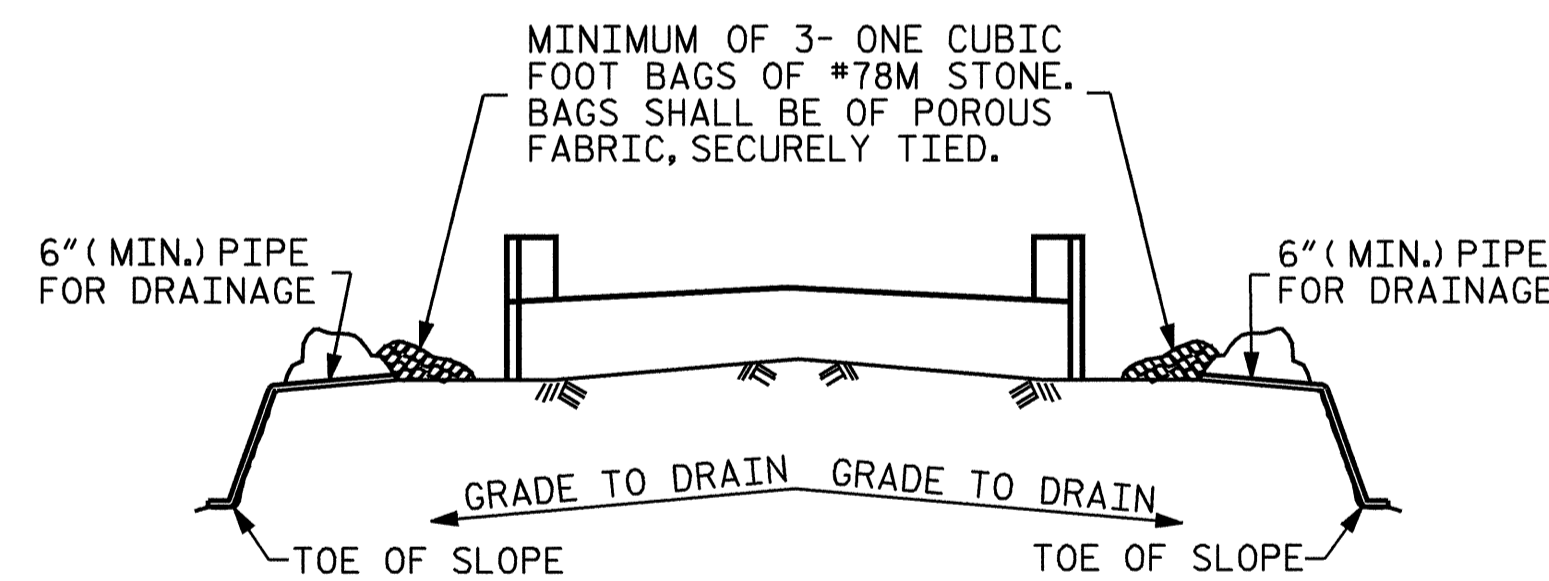
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-19	
1			3			TOTAL SHEETS	
2			4			23	



SECTION A-A



PILE SPLICE DETAILS

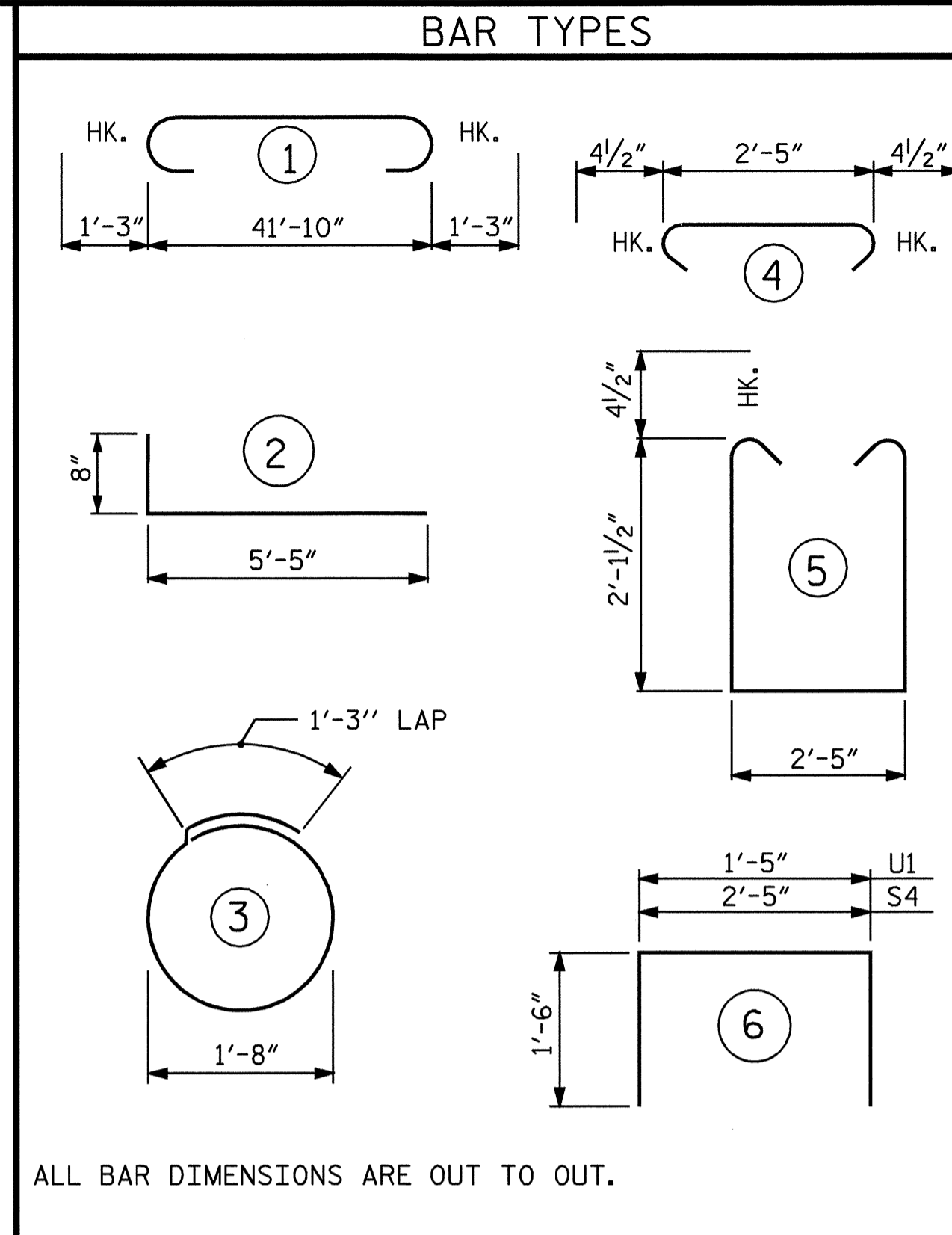


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		44'-4"	1206
B2	12	#4	STR	22'-2"	178
B3	11	#4	STR	2'-5"	18
B4	4	#4	STR	6'-0"	16
D1	24	#6	STR	1'-6"	54
H1	24	#4		6'-1"	98
K1	12	#4	STR	3'-6"	28
S1	38	#4		7'-5"	188
S2	38	#4		3'-2"	80
S3	14	#4		6'-6"	61
S4	12	#4		5'-5"	43
U1	4	#4		4'-5"	12
V1	40	#4	STR	4'-10"	129

REINFORCING STEEL LBS. 2111

CLASS A CONCRETE BREAKDOWN

POUR	DESCRIPTION	C.Y.	WEIGHT
POUR 1	(CAP & LOWER WINGS)	12.5	
POUR 2	(UPPER WINGS)	1.7	
POUR 3	(LATERAL GUIDES)	0.1	
TOTAL		14.3	

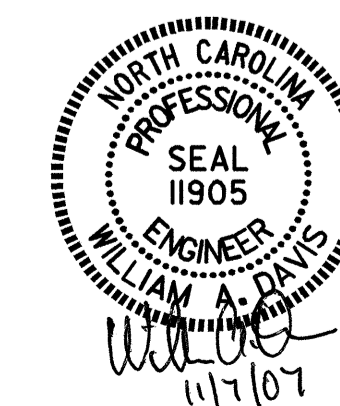
HP 12 X 53 STEEL PILES LIN. FT. = 175
NUMBER = 7

PROJECT NO. B-4085
CRAVEN COUNTY
STATION: 12+42.50 -L-

SHEET 3 OF 3

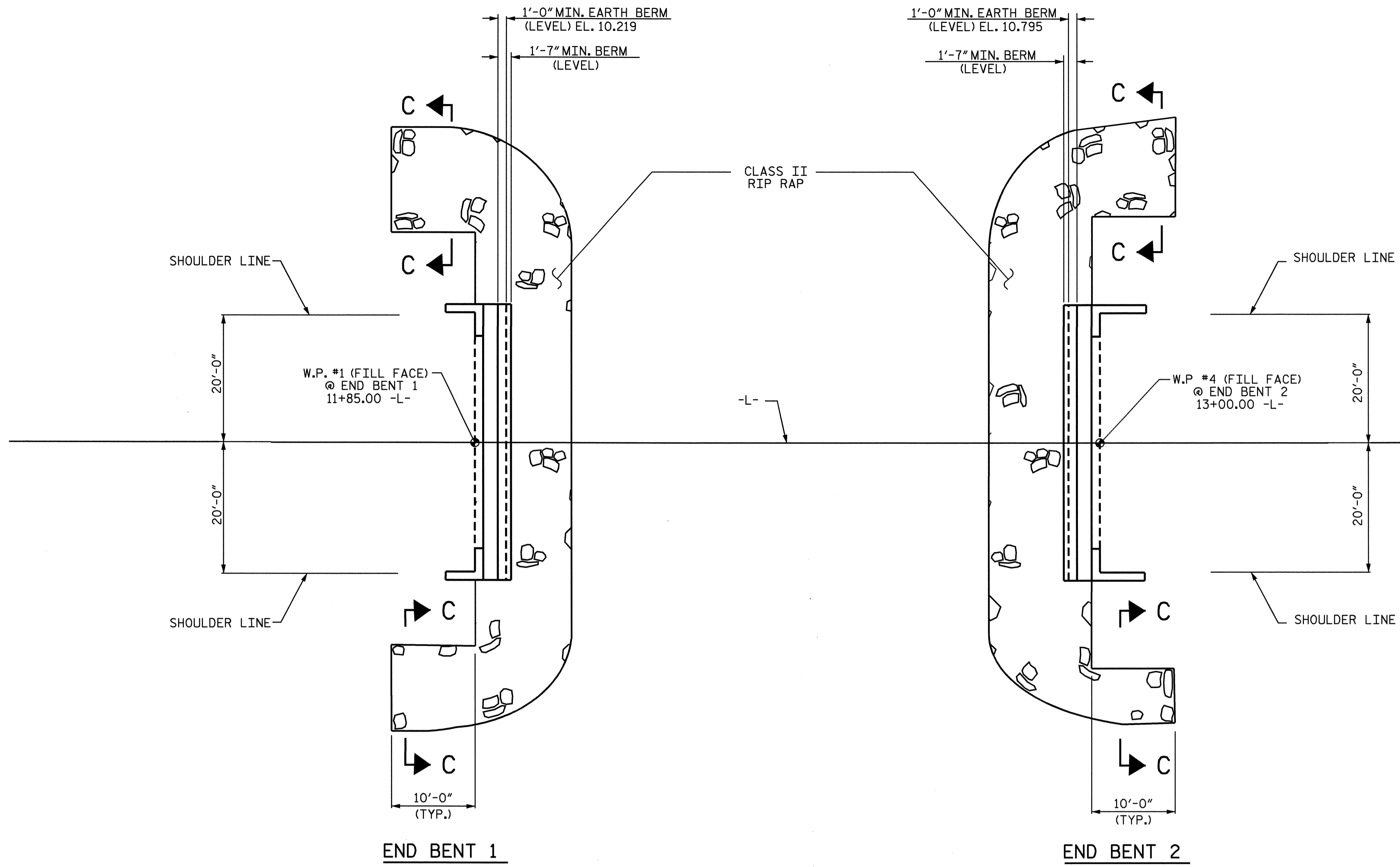
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2



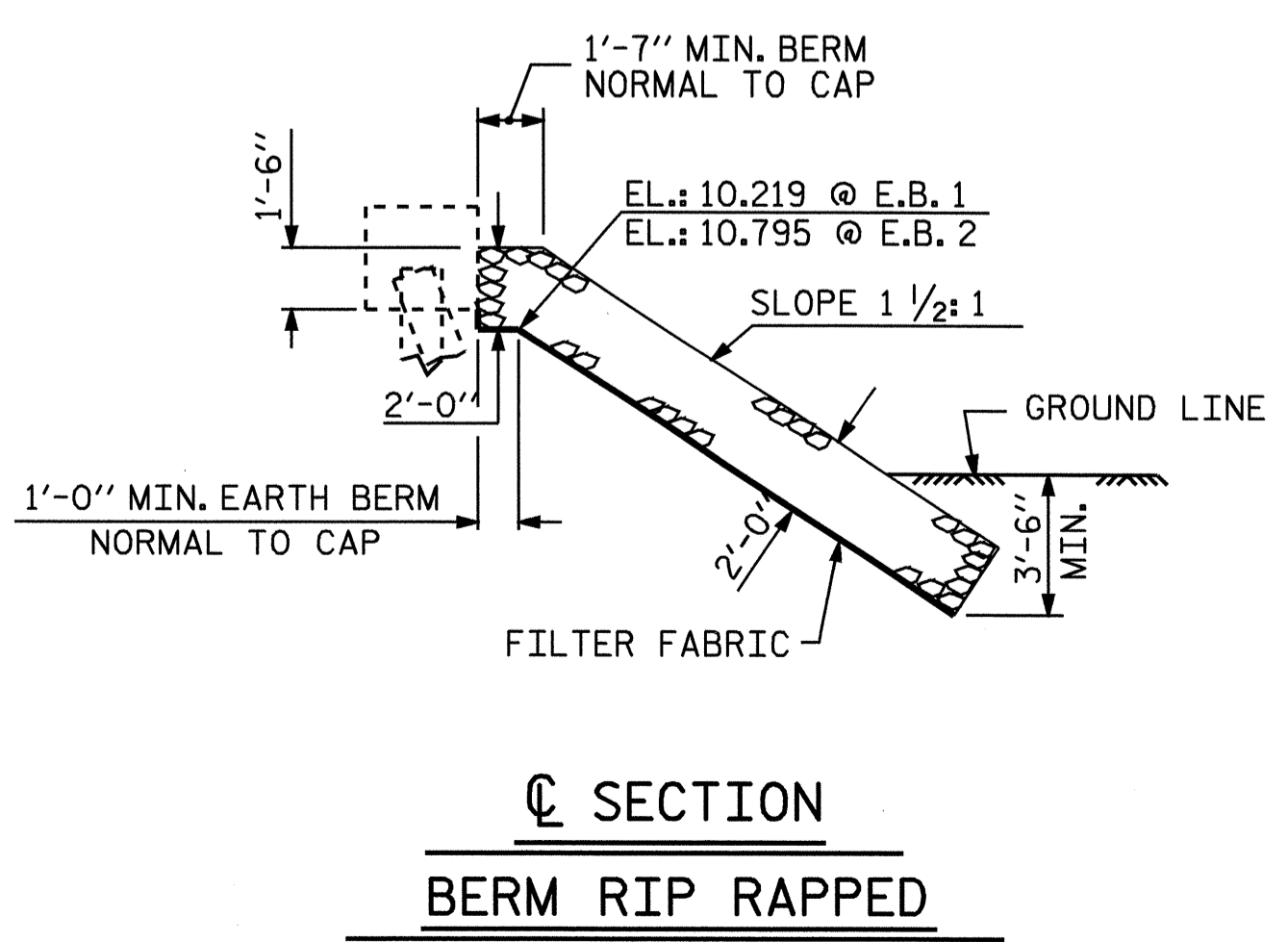
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			23

DRAWN BY: QT NGUYEN DATE: 6/07
CHECKED BY: J.L. WALTON DATE: 9/07

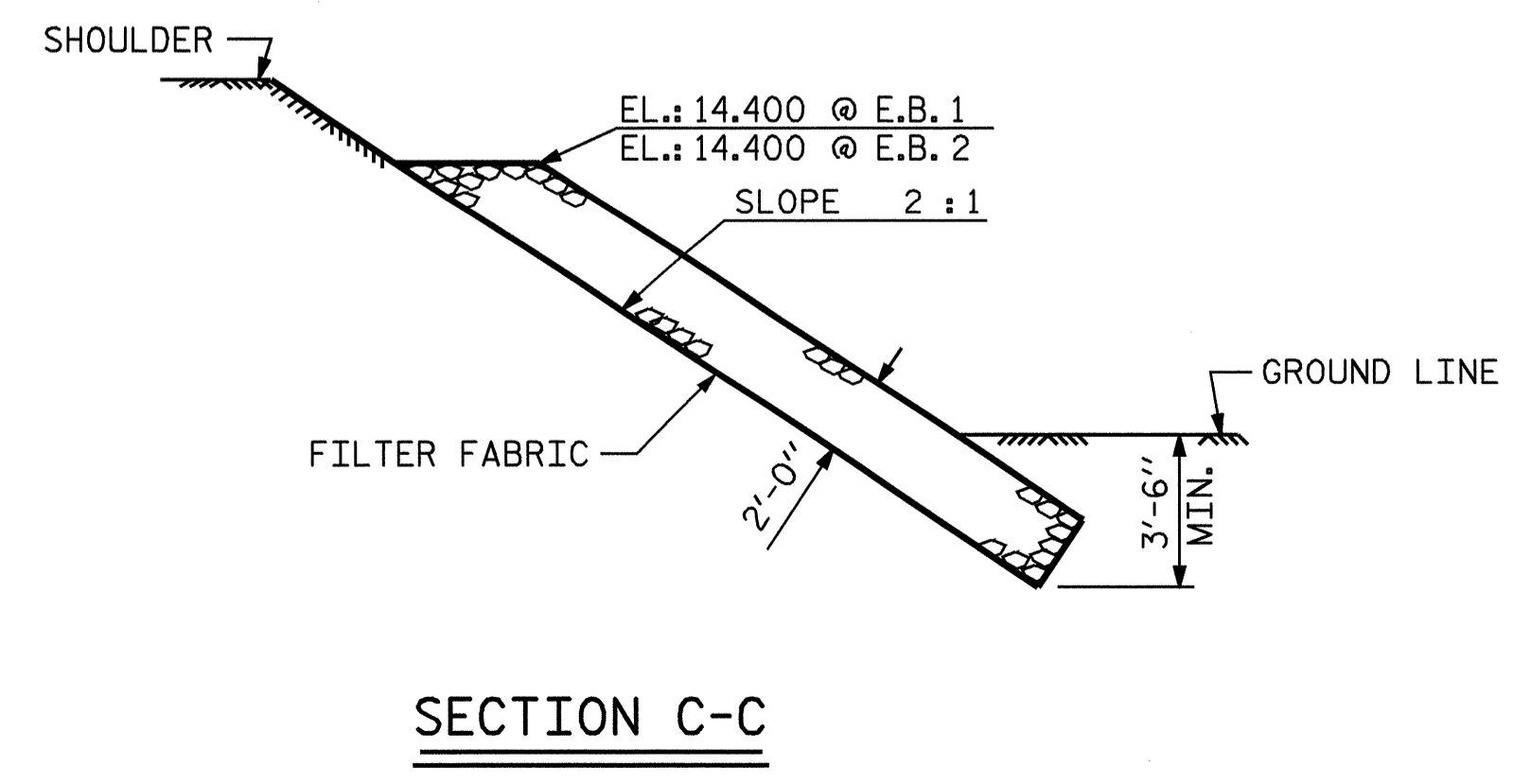


ESTIMATED QUANTITIES		
BRIDGE @ STA.: 12+42.50 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	188	209
END BENT 2	185	206

PLAN



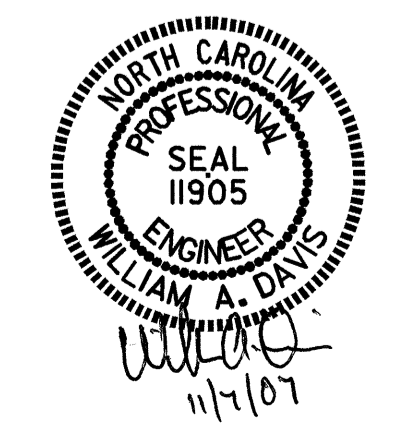
C SECTION
BERM RIP RAPPED



SECTION C-C

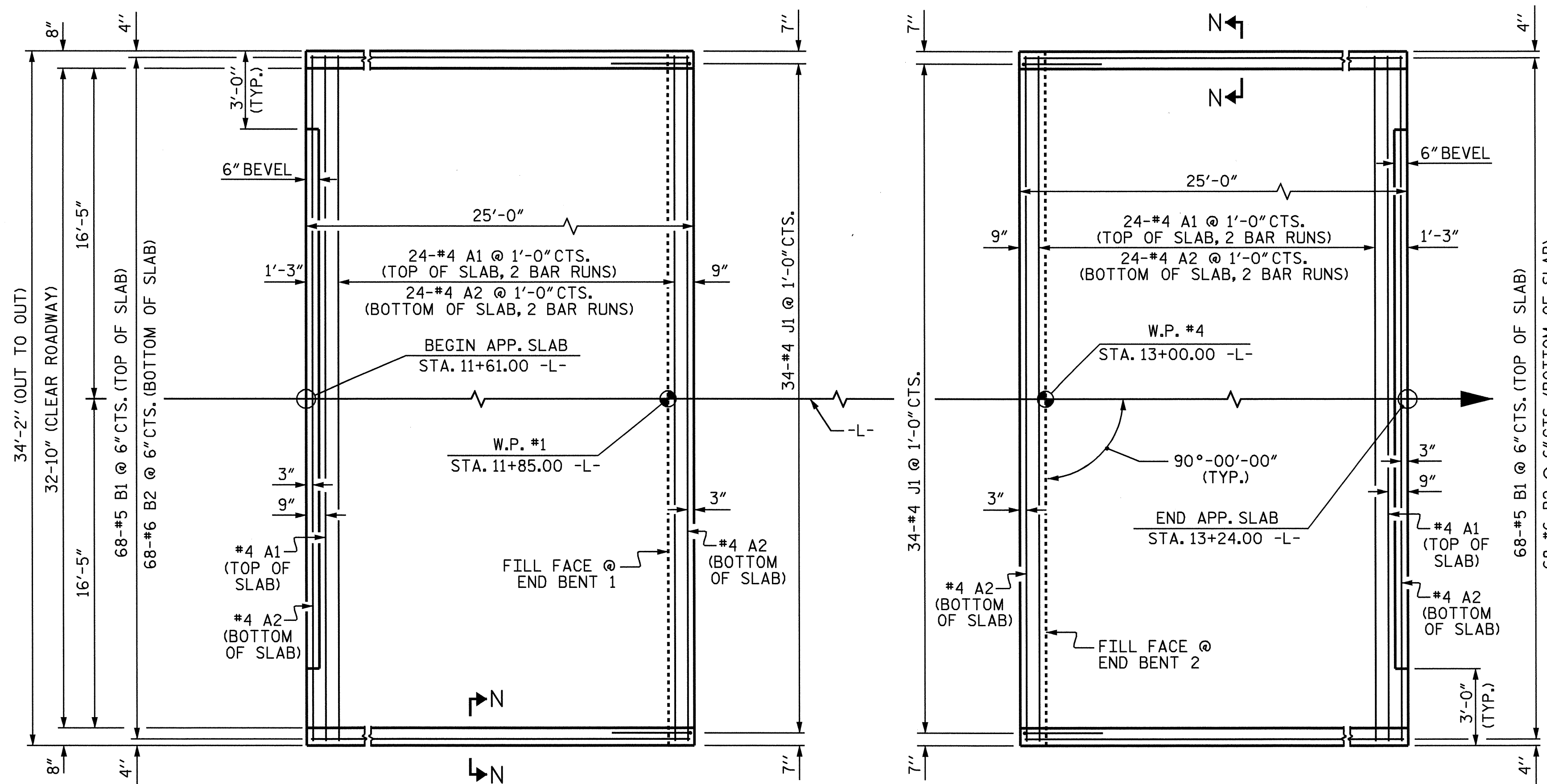
PROJECT NO. B-4085
CRAVEN COUNTY
STATION: 12+42.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RIP RAP DETAILS



ASSEMBLED BY : OT NGUYEN	DATE : 6/07
CHECKED BY : P.K. NEWTON	DATE : 9/07
DRAWN BY : FCJ 2/88	REV. 8/16/99 RWW/LES
CHECKED BY : ARB 8/88	REV. 10/17/00 RWW/LES
	REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			23



PLAN @ END BENT 1

PLAN @ END BENT 2

PLAN OF APPROACH SLAB

(DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLAB)

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 CORED SLAB UNIT" SHEETS.

FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

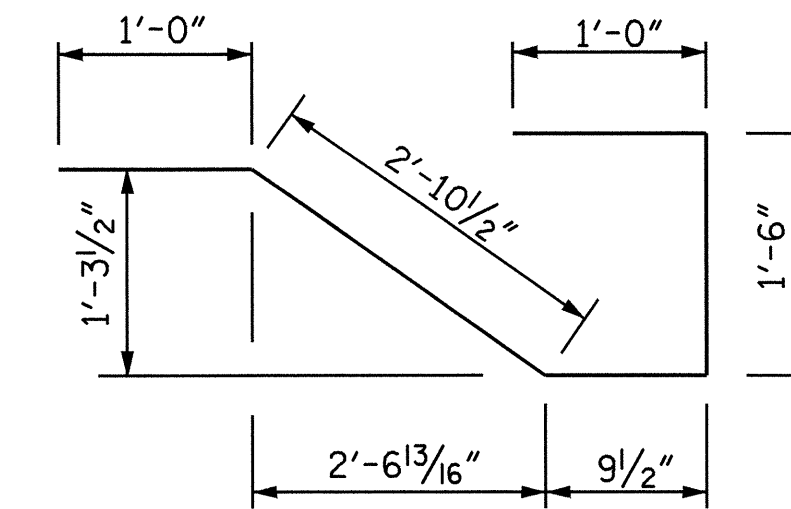
APPROACH SLABS SHALL BE POURED AFTER CONCRETE WEARING SURFACE IS POURED.

THE JOINT SHALL BE SAWS AFTER THE CASTING OF THE BARRIER.

BILL OF MATERIAL

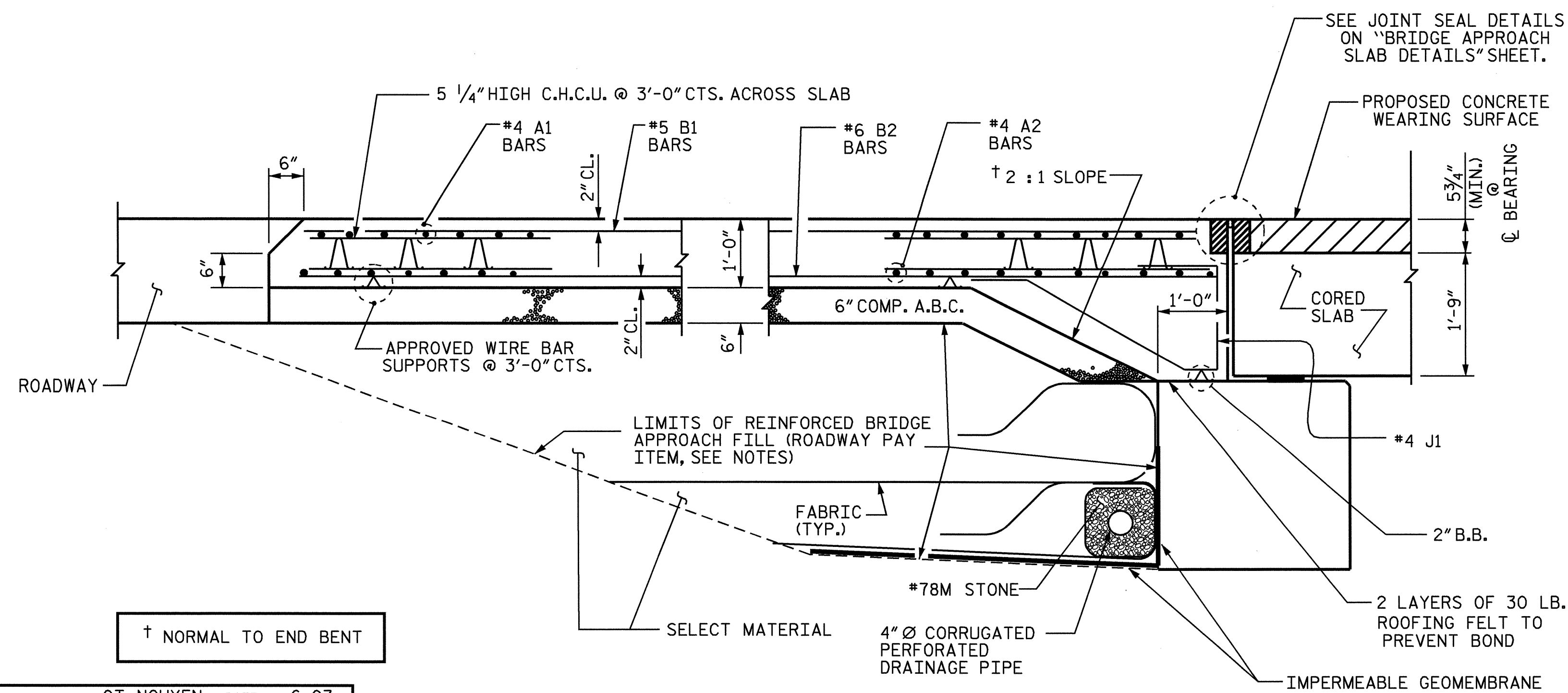
FOR ONE APPROACH SLAB (2 REQ'D)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	17'-11"	598
A2	52	#4	STR	17'-11"	622
*B1	68	#5	STR	24'-2"	1690
B2	68	#6	STR	24'-8"	2519
J1	34	#4	1	7'-2"	163
REINFORCING STEEL				LBS.	3304
*EPOXY COATED REINFORCING STEEL				LBS.	2288
CLASS AA CONCRETE				C. Y.	34.8

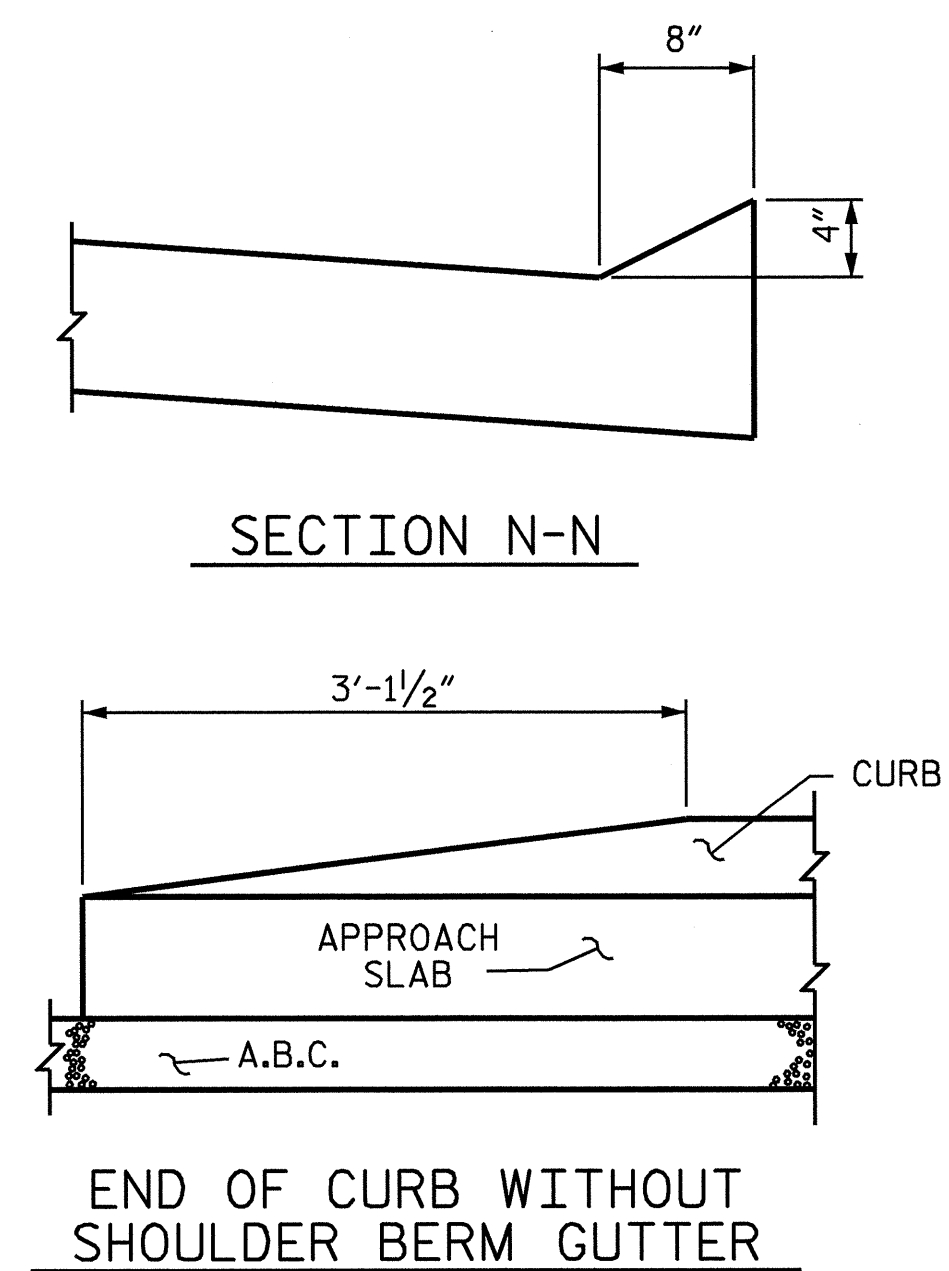


SPLICE CHART

#4 A1	2'-0"
#4 A2	1'-9"



SECTION THRU SLAB



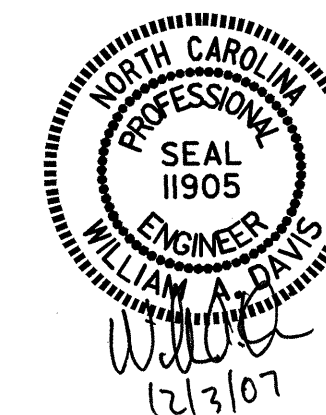
CURB DETAILS

PROJECT NO. B-4085
 CRAVEN COUNTY
 STATION: 12+42.50 -L-

SHEET 1 OF 2

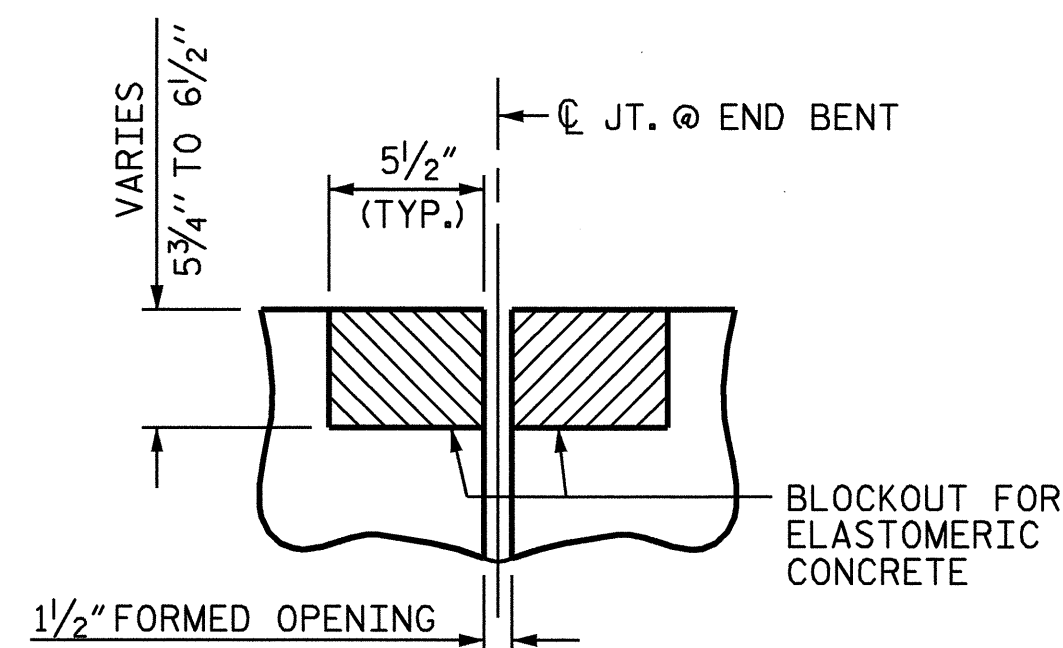
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 CORED SLAB

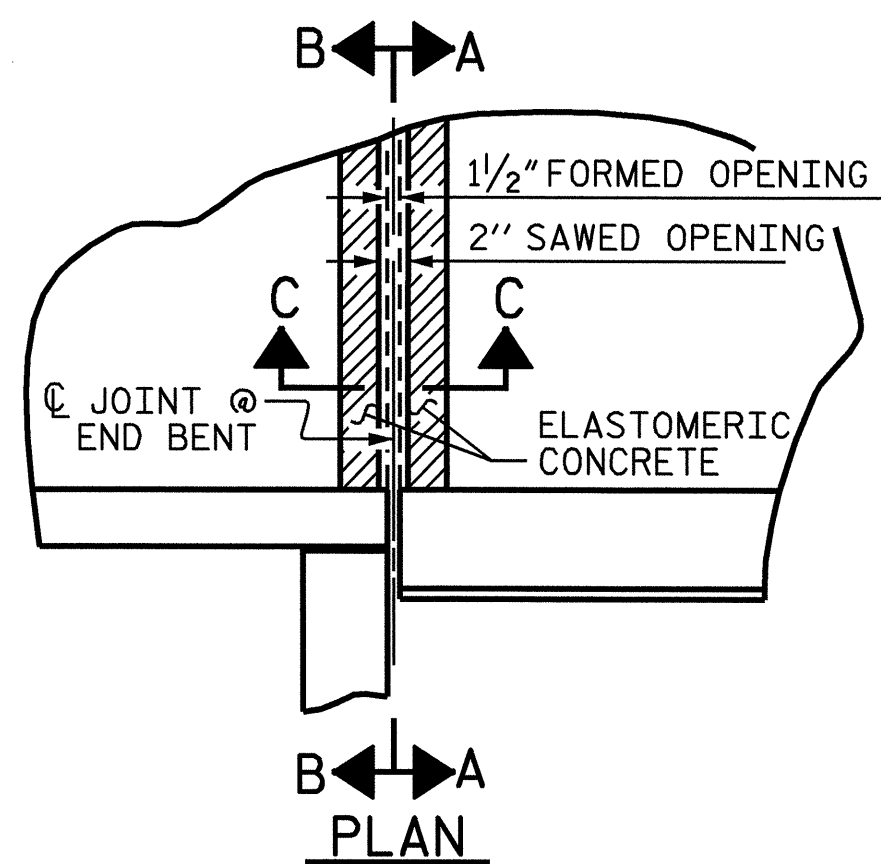


ASSEMBLED BY :	QT NGUYEN	DATE :	6-07
CHECKED BY :	J.L. WALTON	DATE :	9-07
DRAWN BY :	FCJ	REV. 7/10/01	LES/RDR
CHECKED BY :	EGA	REV. 5/7/03R	RWW/JTE
		REV. 5/1/06R	KMM/GM

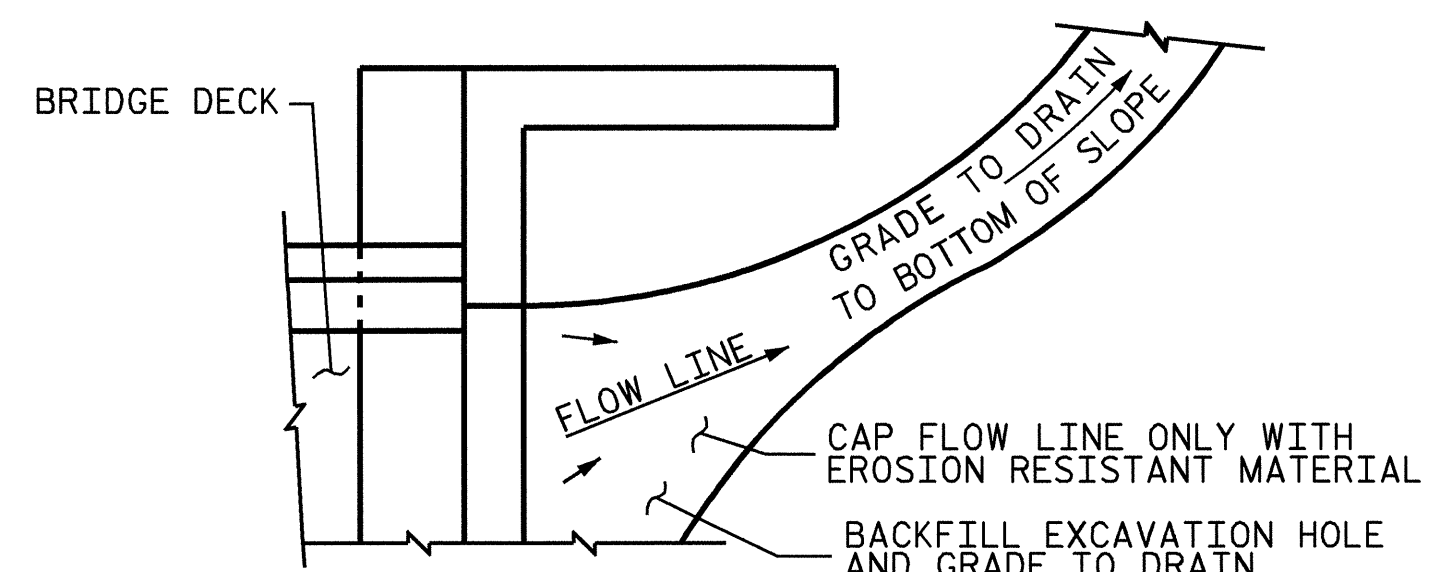
REVISIONS						SHEET NO. S-22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 23
2			4			



SECTION C-C
EAVAZOTE JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)

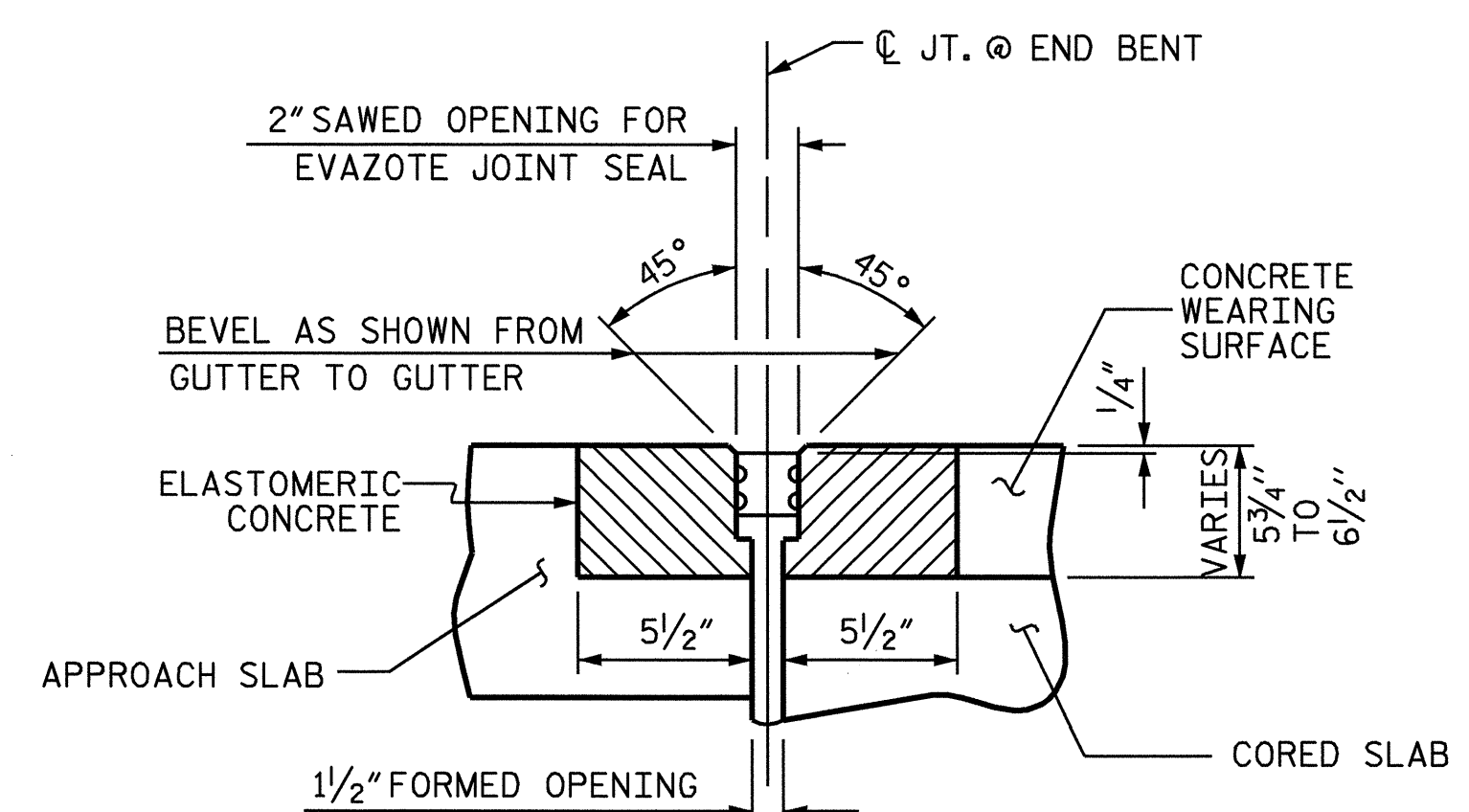


PLAN

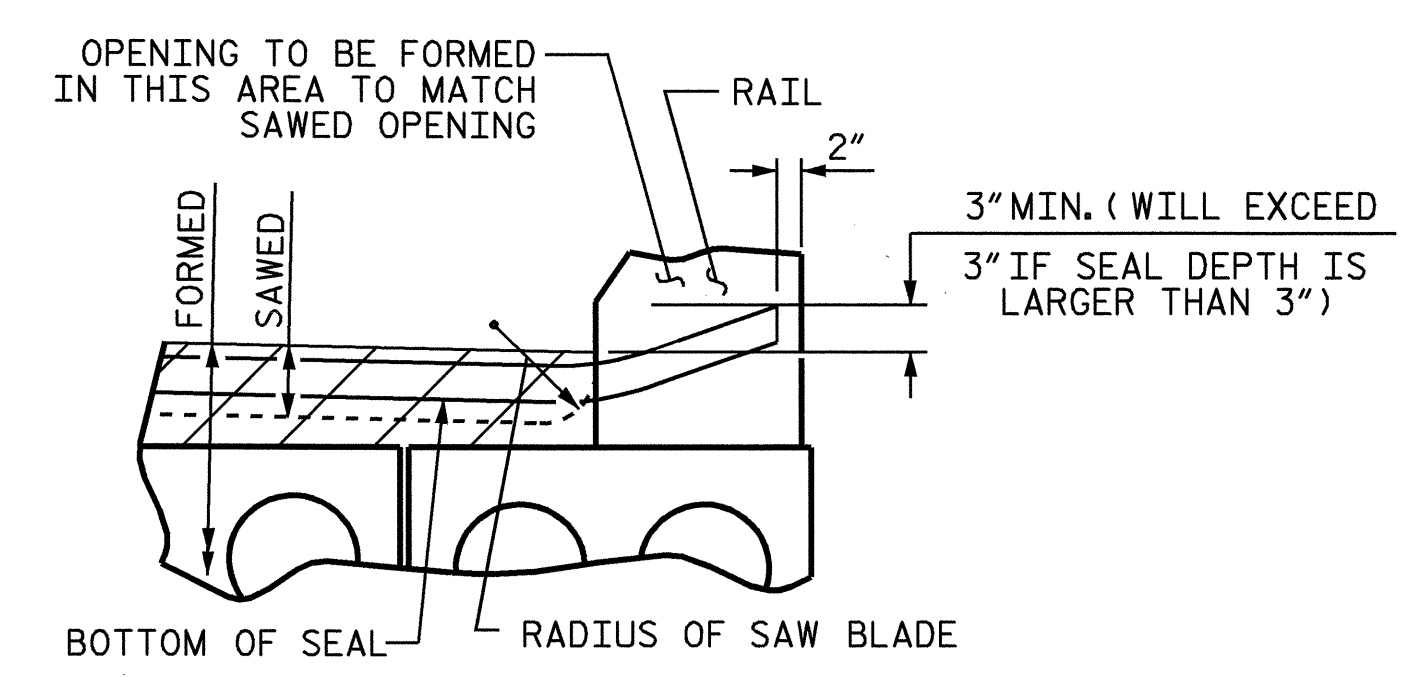


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

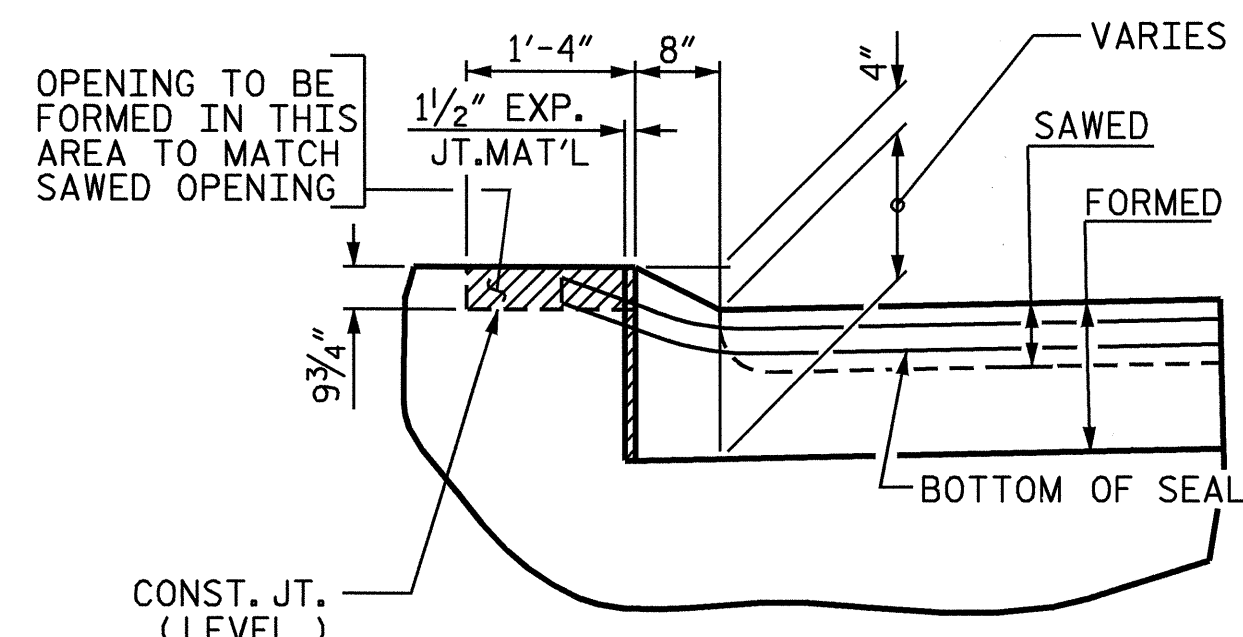
TEMPORARY DRAINAGE DETAIL



SECTION C-C
EAVAZOTE JOINT SEAL
(FIXED)

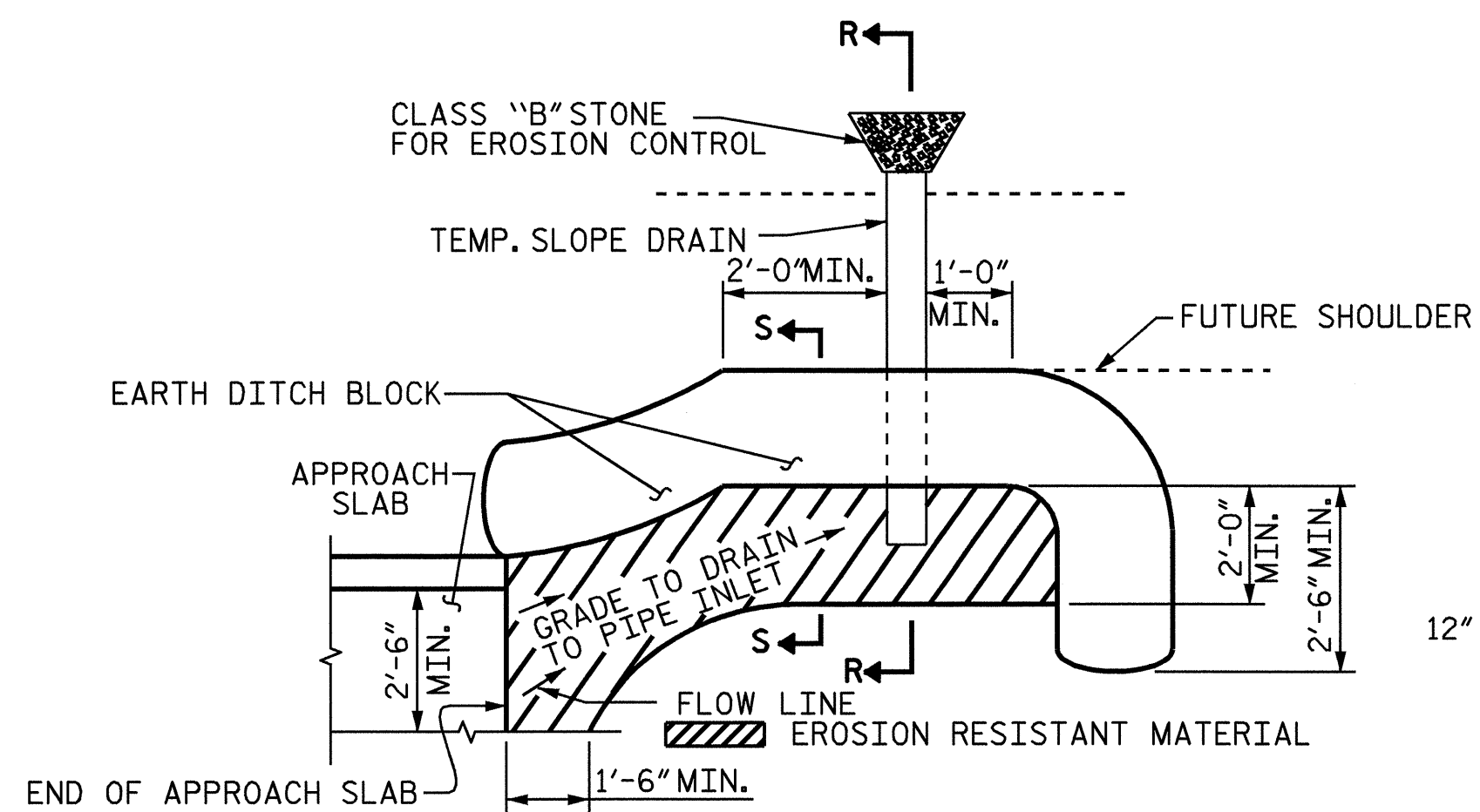


SECTION A-A



SECTION B-B

JOINT SEAL DETAILS @ END BENT

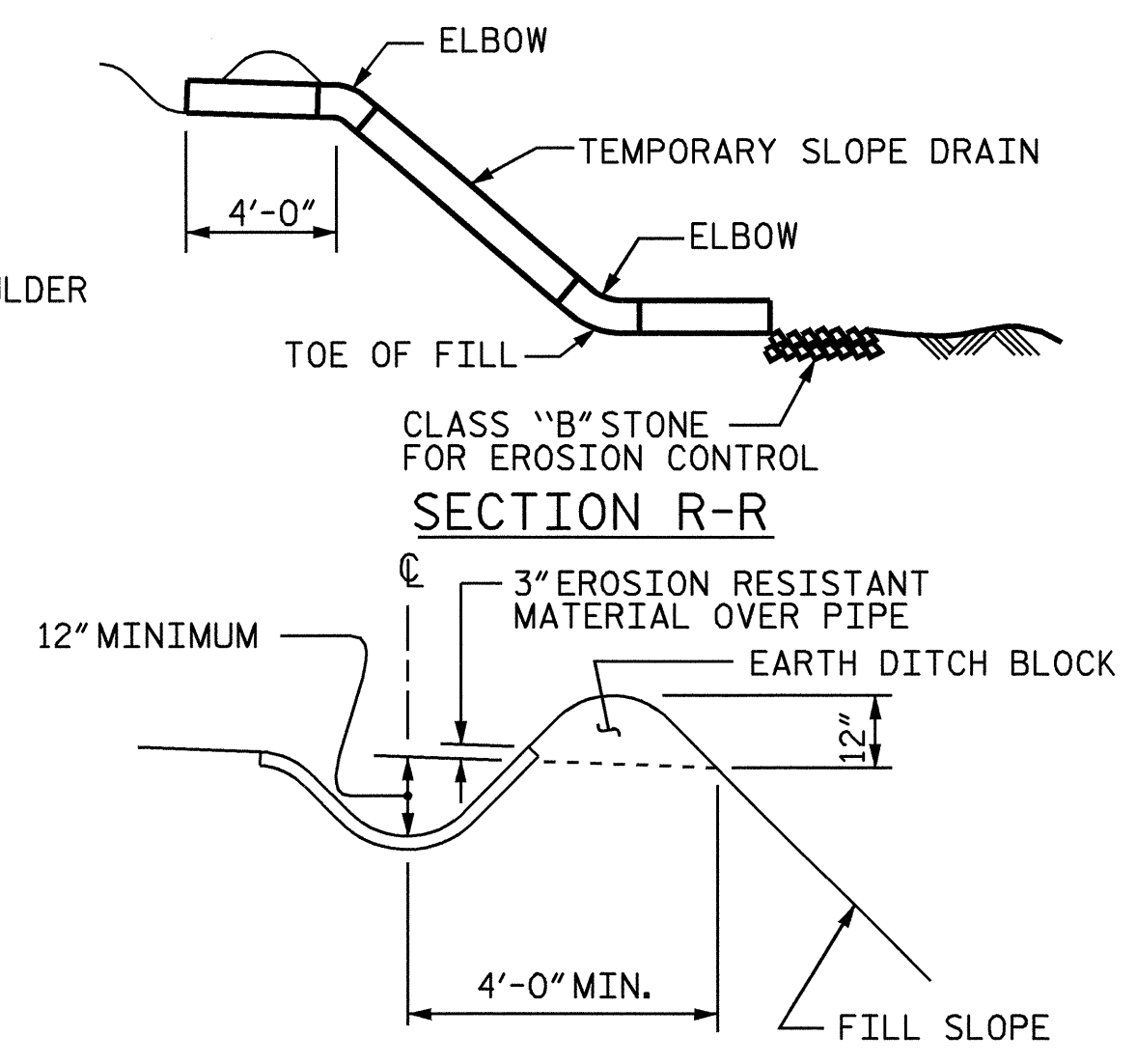


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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.

PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION R-R

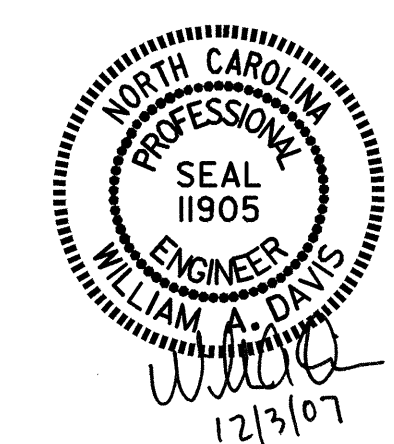
SECTION S-S

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	14.6
2	14.6
TOTAL	29.2

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. B-4085
CRAVEN COUNTY
STATION: 12+42.50 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BRIDGE APPROACH
SLAB DETAILS**

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

ASSEMBLED BY: QT NGUYEN DATE: 6/07
CHECKED BY: J.L. WALTON DATE: 9/07
DRAWN BY: LES 8/01 REV. 5/7/03R RWW/JTE
CHECKED BY: RDR 8/01 REV. 5/1/06 TLA/GM

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. FINIS 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