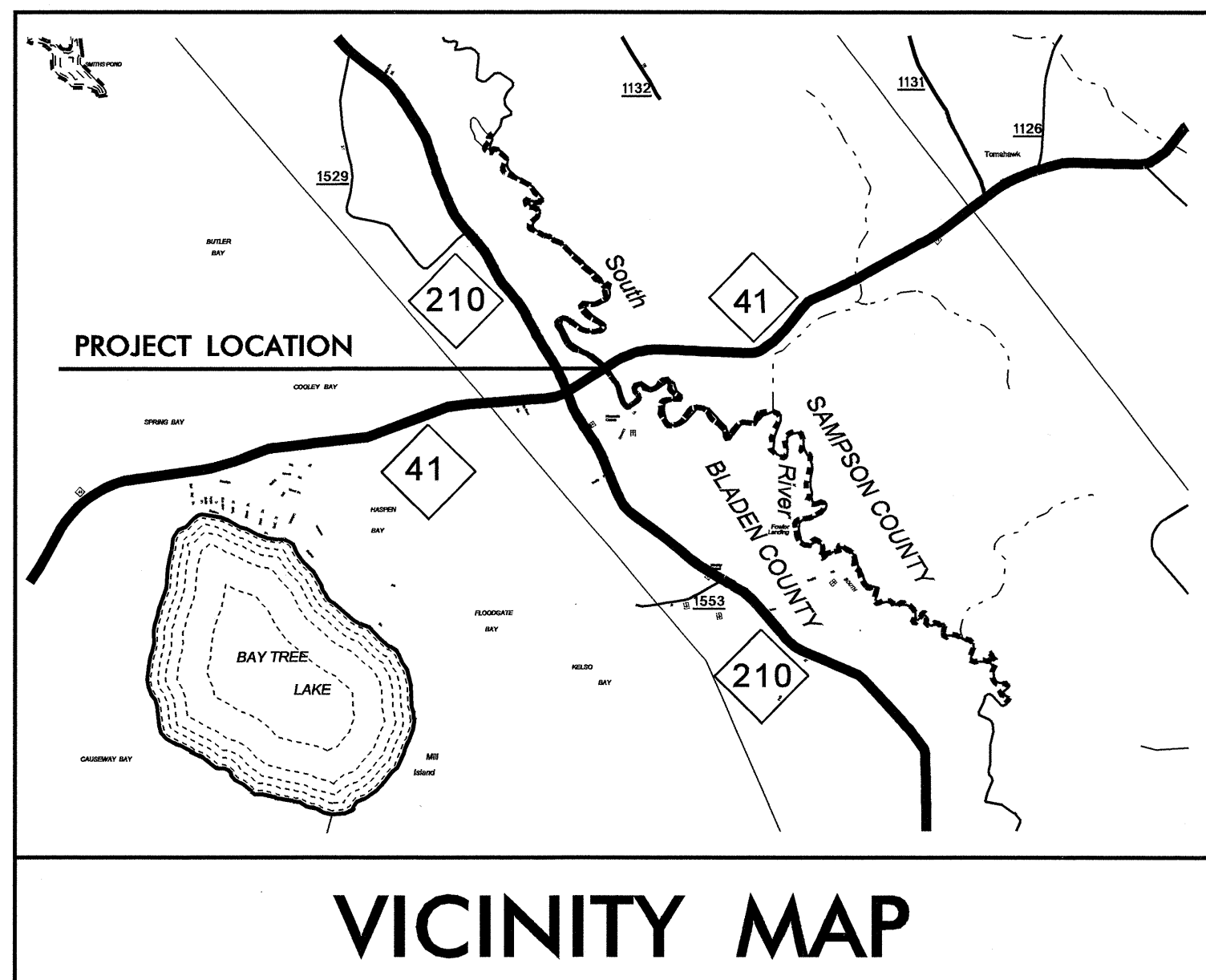


TIP PROJECT: B-3613

CONTRACT: C201252

STRUCTURE



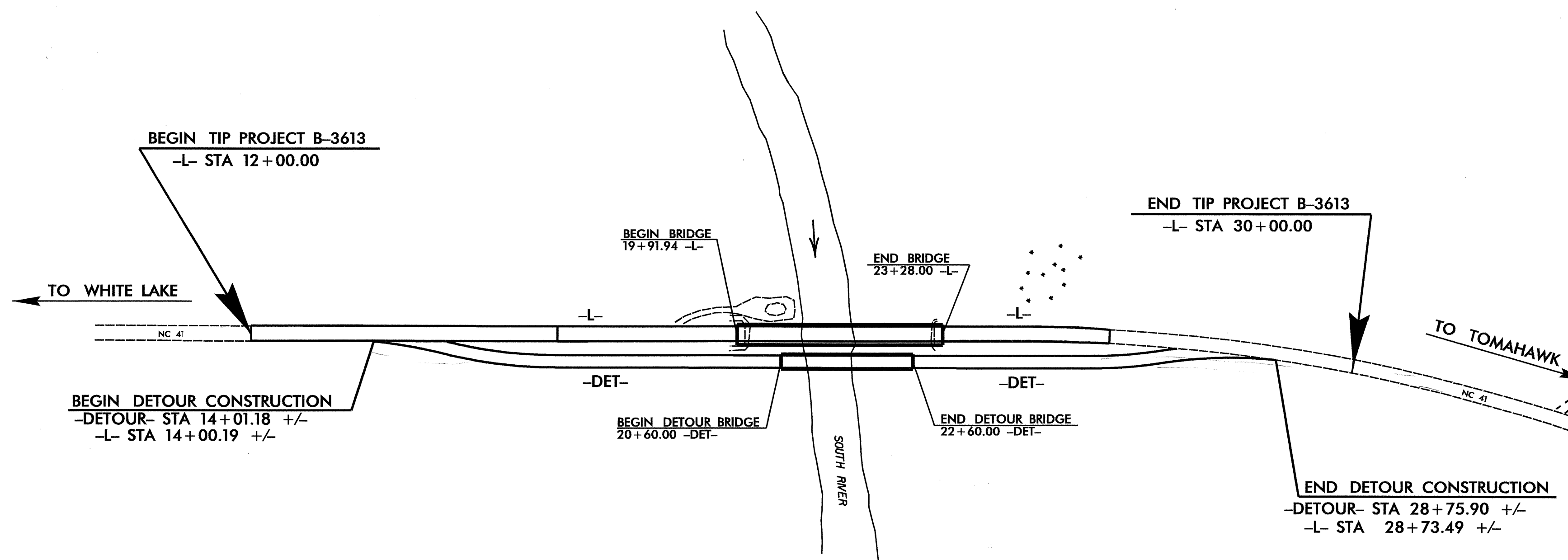
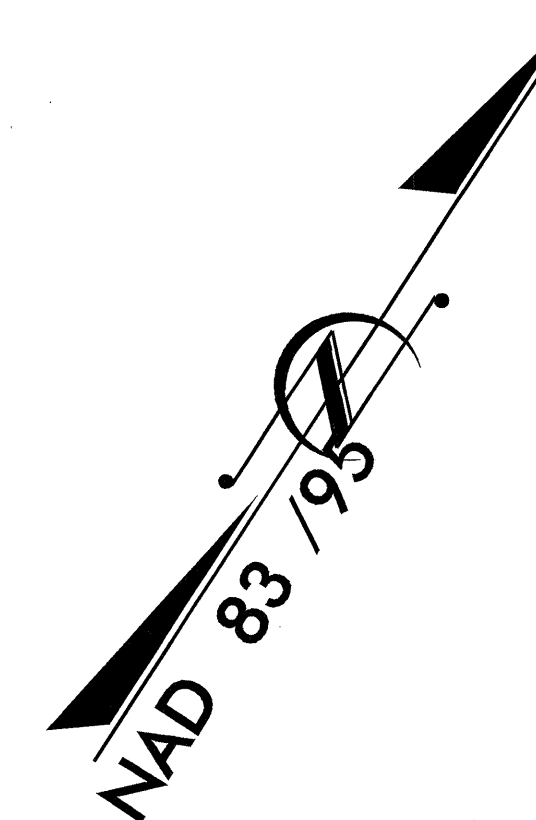
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN /SAMPSON COUNTIES

LOCATION: BRIDGE No. 44 ON NC 41 AND APPROACHES OVER THE SOUTH RIVER.

TYPE OF WORK: STRUCTURE, DRAINAGE, GRADING, PAVING AND RESURFACING.

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-3613	
WBS PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33164.1.1	BRSTP-41 (5)	PE
33164.2.2	BRSTP-41(5)	R/W & UTIL
33164.3.1	BRSTP-41(25)	CONST.



DESIGN DATA
(COLLECTOR)

ADT 2007 =	2200
ADT 2025 =	3200
DHV =	10 %
D =	60 %
T =	22 % *
V =	60 MPH
* TTST 4% +	DUAL 18%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3613 =	0.277 MI
LENGTH STRUCTURE TIP PROJECT B-3613 =	0.064 MI
TOTAL LENGTH TIP PROJECT B-3613 =	0.341 MI

2006 STANDARDS SPECIFICATION

LETTING DATE:
March 17, 2009

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

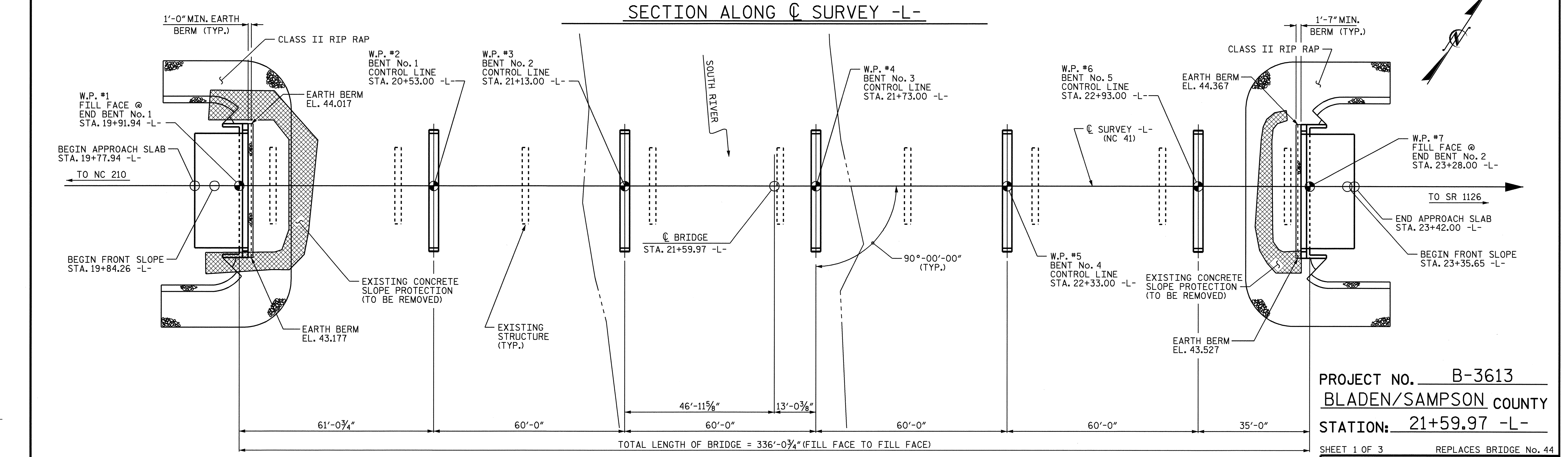
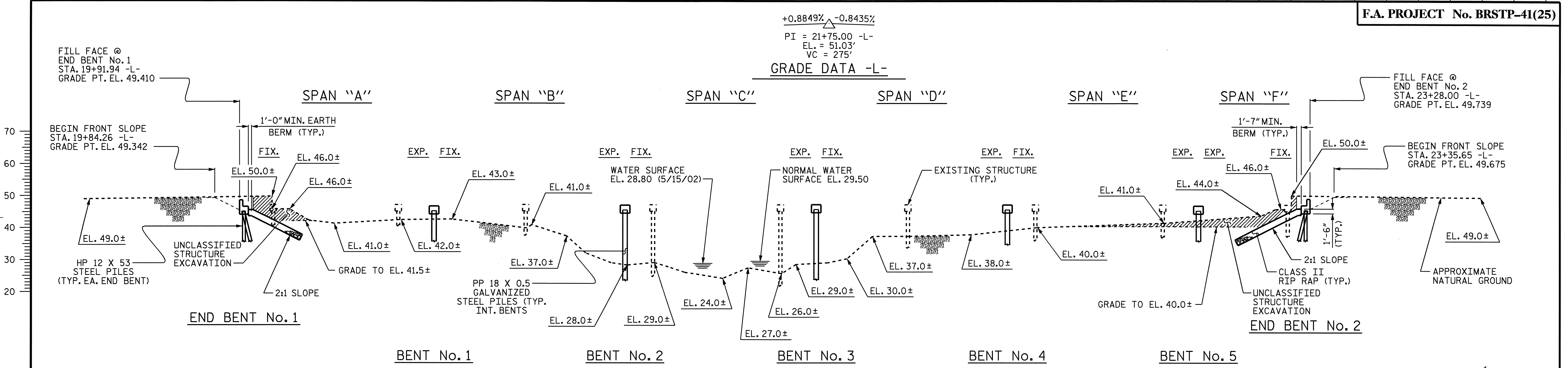
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR
DIVISION ADMINISTRATOR

DATE



HYDRAULIC DATA

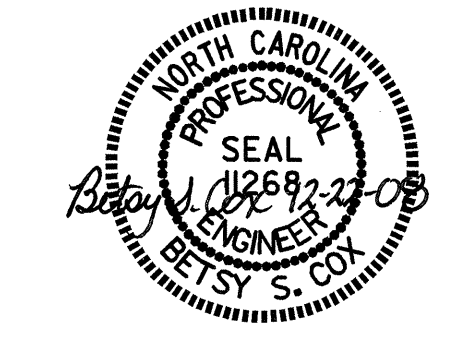
DESIGN DISCHARGE	= 12,400 CFS.
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 46.50
DRAINAGE AREA	= 435 SQ. MI.
BASIC DISCHARGE(Q100)	= 14,500 CFS.
BASIC HIGH WATER ELEVATION	= 47.90

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 11,400 CFS.
FREQUENCY OF OVERTOPPING FLOOD	= 25 YRS. +
OVERTOPPING FLOOD ELEVATION	= 46.50

PLAN
(FOR CLARITY, PILES ARE NOT SHOWN IN PLAN VIEW)

DRAWN BY : T. BANKOVICH DATE : 10-2008
 CHECKED BY : T. J. BEACH DATE : 11-2008



PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 3 REPLACES BRIDGE No. 44

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

BRIDGE OVER SOUTH RIVER
 ON NC 210 AND SR 1126

REVISIONS						SHEET NO. S-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

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 tbeach

NOTES:

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

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

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 8 SPANS, 1 AT 40'-3", 6 AT 40'-0", AND 1 AT 40'-3", REINFORCED CONCRETE DECK WITH ASPHALT WEARING SURFACE ON STEEL BEAMS AND A CLEAR ROADWAY OF 24'-0" ON REINFORCED CONCRETE CAPS WITH TIMBER PILES AT THE END BENTS AND THE INTERIOR BENTS AND LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD 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.

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.

ANY EXISTING PILES FROM PREVIOUS STRUCTURES IN THE VICINITY OF THE PROPOSED BRIDGE SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH THIS PILE REMOVAL SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 21+59.97 -L-".

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY STRUCTURE AT STATION 21+59.97 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE.

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.

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

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

FOR GROUT FOR STRUCTURE, SEE SPECIAL PROVISIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 23 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. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS

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.

DRIVE PILES AT BENT No. 1 THROUGH BENT No. 5 TO A REQUIRED BEARING CAPACITY OF 190, 190, 195, 205, & 205 TONS PER PILE, RESPECTIVELY. 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 END BENT No. 1 AND END BENT No. 2 IS 50 TONS PER PILE.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT BENT No. 1 THROUGH BENT No. 5 IS 80 TONS PER PILE.

DRIVE PILES AT BENT No. 1, BENT No. 4 AND BENT No. 5 TO A TIP ELEVATION NO HIGHER THAN 12 FEET.

DRIVE PILES AT BENT No. 2 AND BENT No. 3 TO A TIP ELEVATION NO HIGHER THAN 4 FEET.

THE SCOUR CRITICAL ELEVATION FOR BENT No. 1, BENT No. 4, AND BENT No. 5 IS ELEVATION 21 FEET. SCOUR CRITICAL ELEVATION IS USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR BENT No. 2 AND BENT No. 3 IS ELEVATION 15 FEET. SCOUR CRITICAL ELEVATION IS USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

GALVANIZE THE TOP 35' MINIMUM OF EACH PILE FOR ALL BENTS IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40,000-90,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENTS No. 1 THRU BENT No. 5. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM ARTICLE 450-5 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT EITHER BENT No. 1, BENT No. 2, BENT No. 3, BENT No. 4, OR BENT No. 5. THE ENGINEER WILL DETERMINE THE NEED FOR ADDITIONAL PDA TESTING. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

PILE RESTRIKES FOR LRFD ARE REQUIRED FOR THE FIRST PRODUCTION PILE AT EITHER BENT No. 1, BENT No. 2, BENT No. 3, BENT No. 4, OR BENT No. 5. TESTED WITH THE PILE DRIVING ANALYZER (PDA). SEE PILE RESTRIKES FOR LRFD SPECIAL PROVISION.

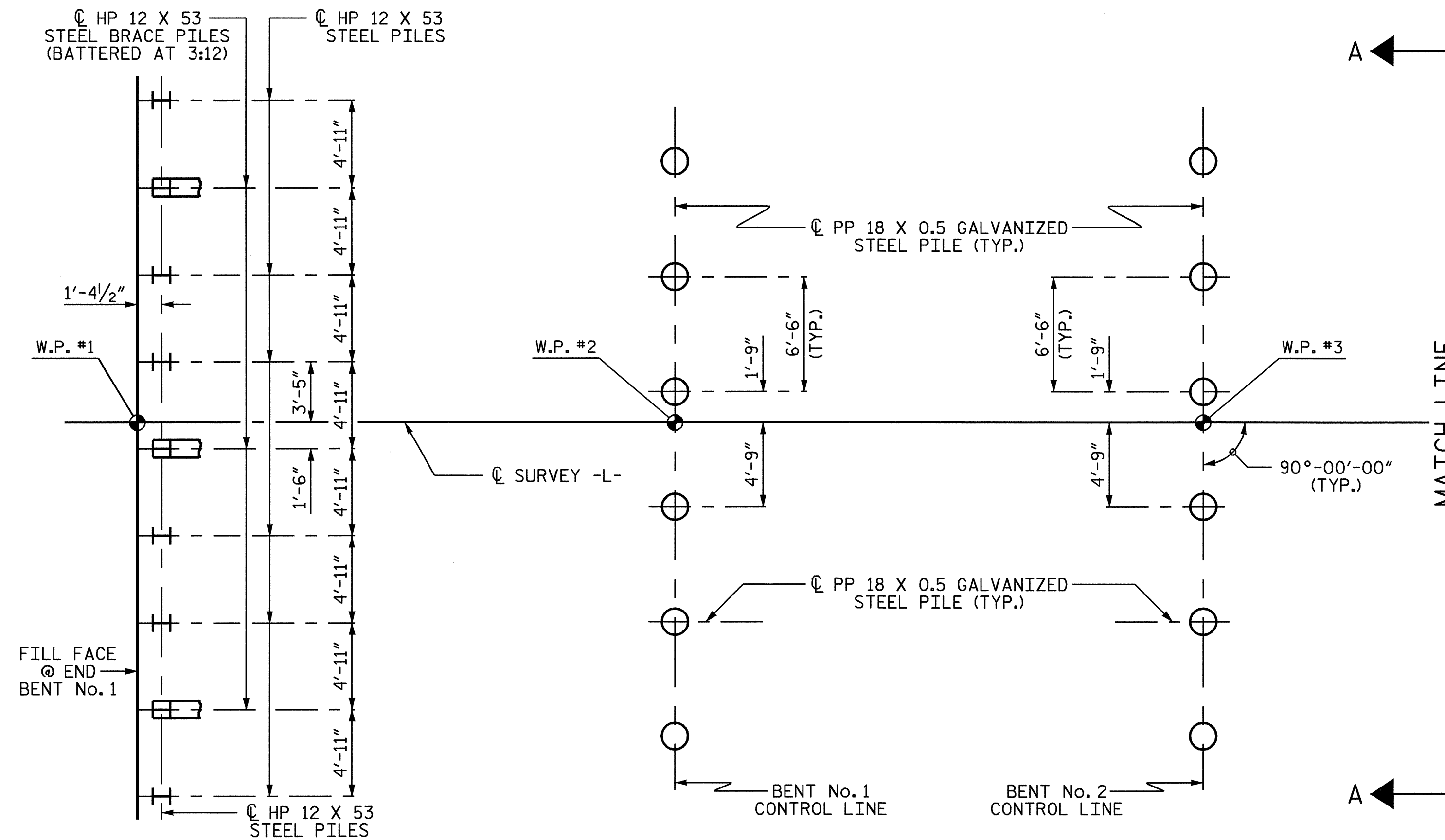
NOTES CONTINUE ON SHEET 3 OF 3.

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGE OVER SOUTH RIVER
 ON NC 41 BETWEEN
 NC 210 AND SR 1126

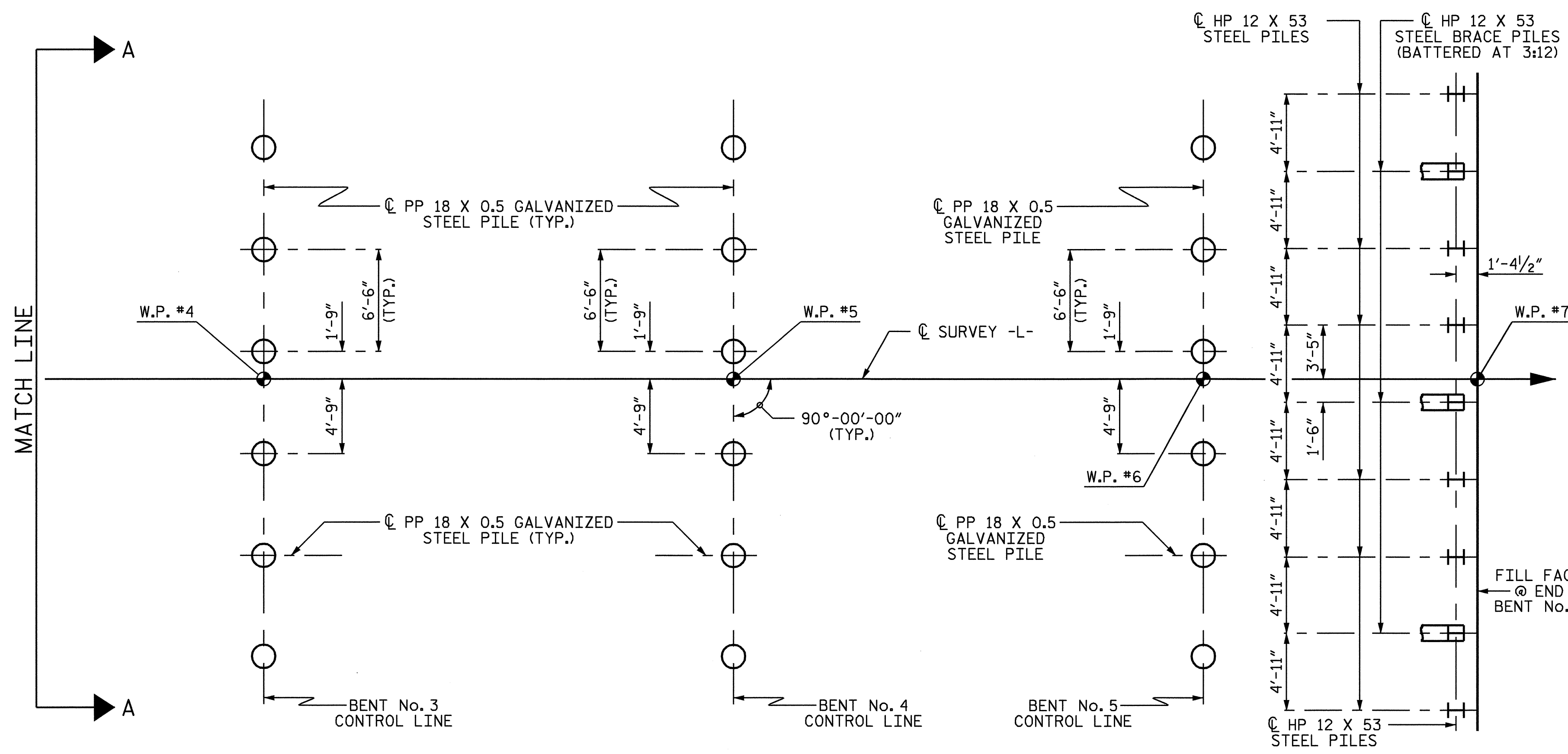
REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			



END BENT No. 1

BENT No. 1

BENT No. 2



BENT No. 3

BENT No. 4

BENT No. 5

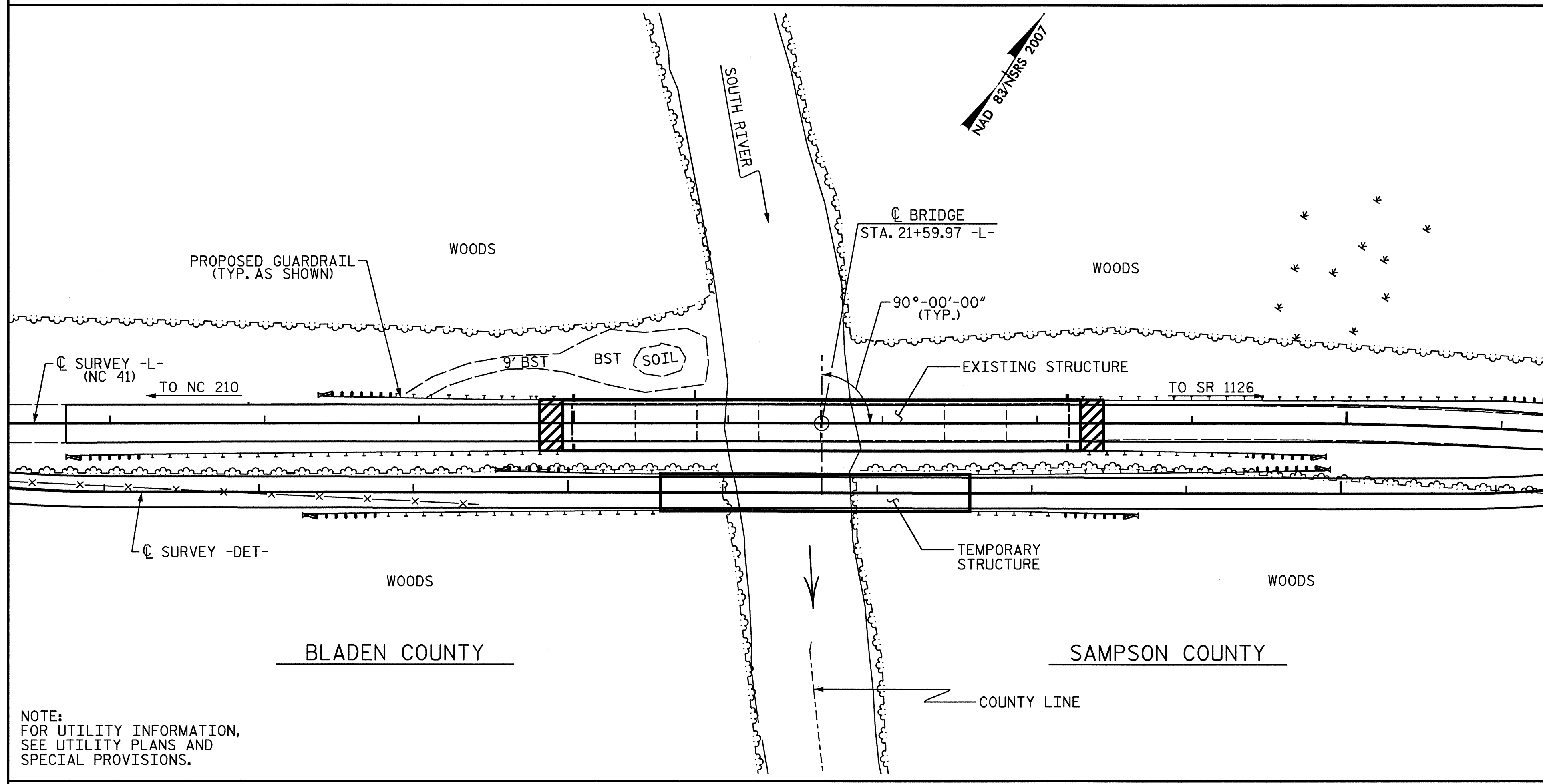
END BENT No. 2

FOUNDATION LAYOUT

DRAWN BY: T. BANKOVICH DATE: 10-2008
 CHECKED BY: T.J. BEACH DATE: 11-2008

DIMENSIONS LOCATING PILES ARE TO THE CENTERLINE OF THE PILE AT BOTTOM OF CAP

BM #80 R.R. SPIKE IN BASE OF 20" GUM TREE, 68.64' LT. OF -L- STA. 13+25.51, EL. = 43.95 NAVD 88



NOTE:
FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND
SPECIAL PROVISIONS.

LOCATION SKETCH

NOTES: CONTINUED

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.

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 21+59.97 -L-.'

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 BRIDGE RAILS ON THE TEMPORARY STRUCTURE SHALL BE DESIGNED FOR THE AASHTO LRFD TEST LEVEL 3 (TL-3) CRASH TEST CRITERIA. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURE	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		PP 18 X 0.5 GALVANIZED STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAMS		
									NO.	LIN.FT.							NO.	LIN.FT.	LUMP SUM
	LUMP SUM	LUMP SUM	EACH	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.					LIN.FT.	SQ.YDS.	SQ. YDS	LUMP SUM	NO.	LIN.FT.	
SUPERSTRUCTURE							LUMP SUM						666.38			LUMP SUM	72	3998.25	
END BENT NO. 1						16.7		2,777	9	225		4		180	200				
BENT NO. 1						11.3		2,613			6	330	3						
BENT NO. 2						11.3		2,613			6	330	3						
BENT NO. 3						11.3		2,613			6	330	3						
BENT NO. 4						11.3		2,613			6	300	3						
BENT NO. 5						11.3		2,613			6	330	3						
END BENT NO. 2						16.4		2,775	9	270		4		240	267				
TOTAL	LUMP SUM	LUMP SUM	1	2	LUMP SUM	89.6	LUMP SUM	18617	18	495	30	1,620	23	666.38	420	467	LUMP SUM	72	3998.25

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 BRIDGE OVER SOUTH RIVER
 ON NC 41 BETWEEN
 NC 210 AND SR 1126



DRAWN BY: T. BANKOVICH DATE: 10-2008
 CHECKED BY: T.J. BEACH DATE: 11-2008

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS 32
2			4			

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 GROUDED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT. THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH JOINT SEALER MATERIAL TO 1/2" ABOVE THE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT. THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

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 5500 PSI FOR SPANS A THRU SPAN E, AND 4000 PSI FOR SPAN F.

ALL REINFORCING STEEL IN BARRIER RAIL 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.

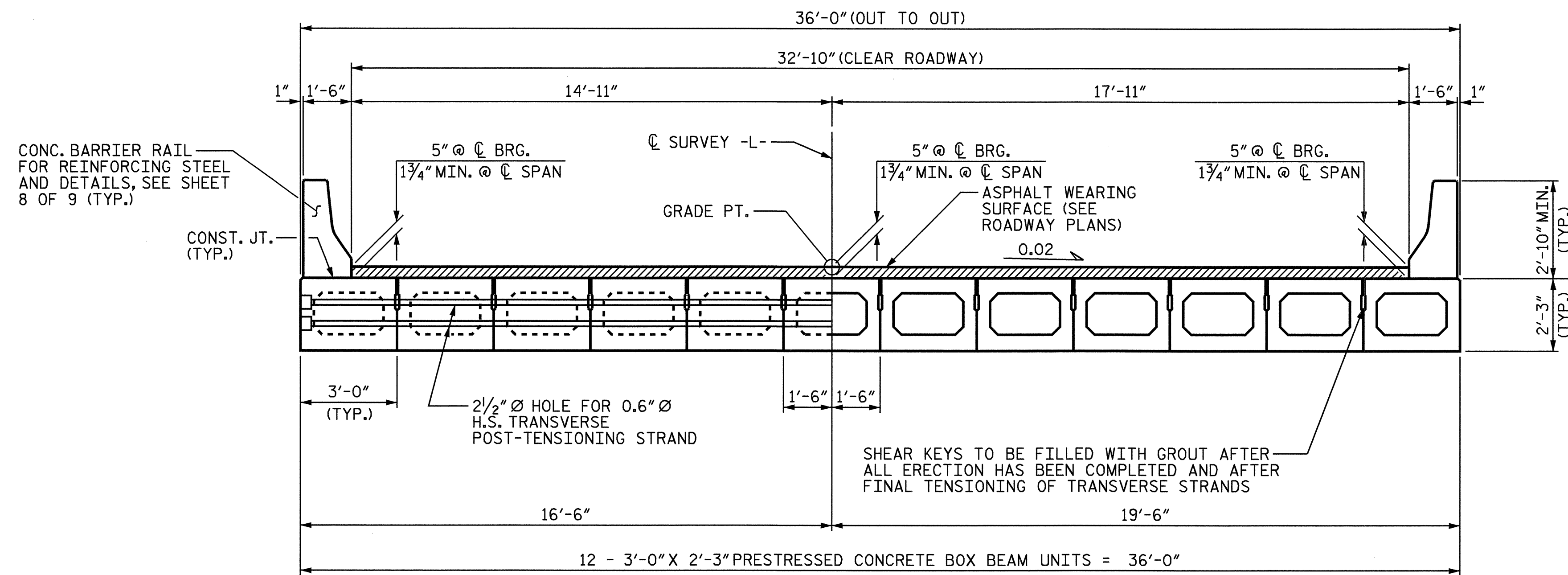
VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION 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.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

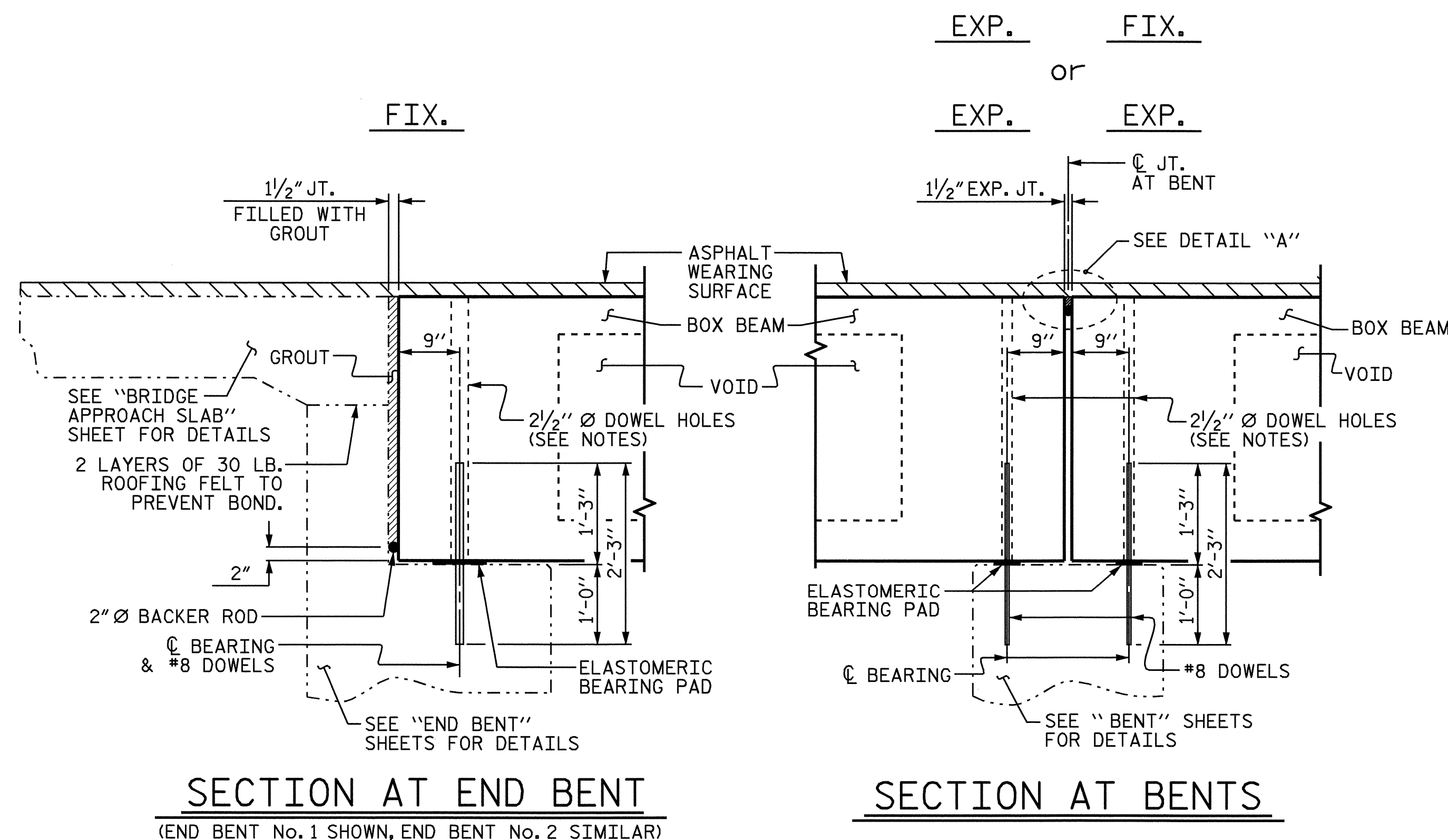
THE MINIMUM HEIGHT OF THE BARRIER RAIL IS SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.



HALF SECTION @ INTERMEDIATE DIAPHRAGMS

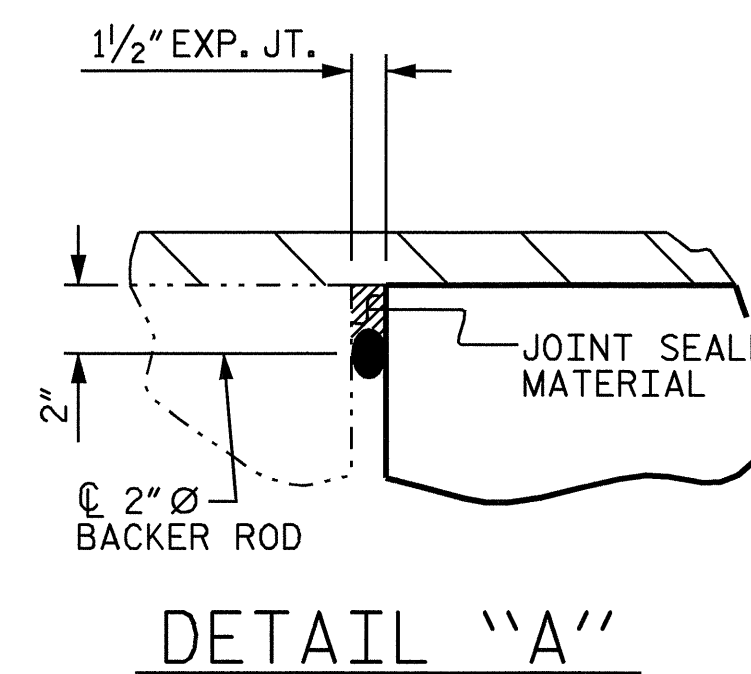
HALF SECTION @ VOIDS

TYPICAL SECTION



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

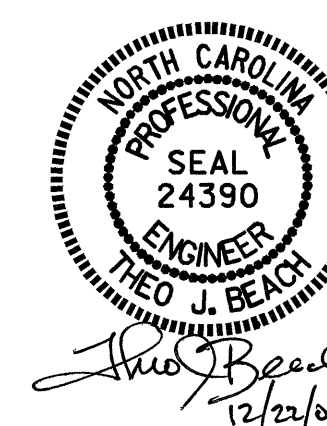
SECTION AT BENTS



DETAIL "A"

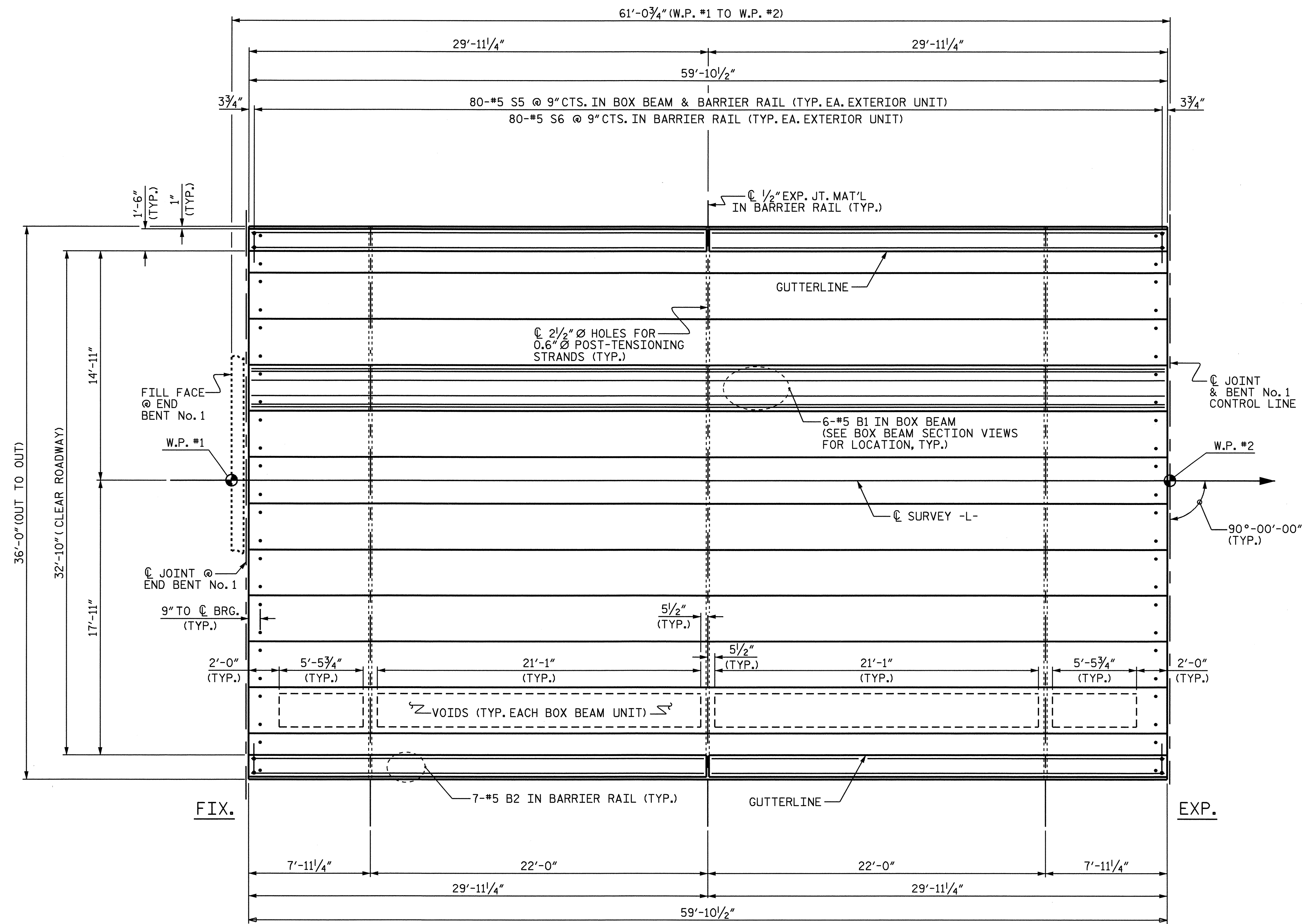
PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 9



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 32

ASSEMBLED BY : A. K. PATEL DATE :11/02/05
 CHECKED BY : S. B. WILLIAMS DATE :11/16/05



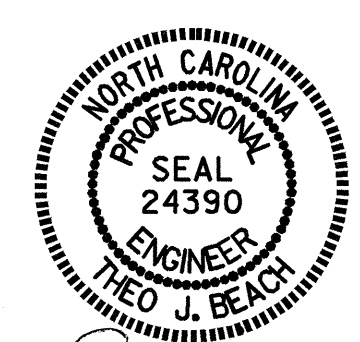
PLAN OF SPAN A

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN A

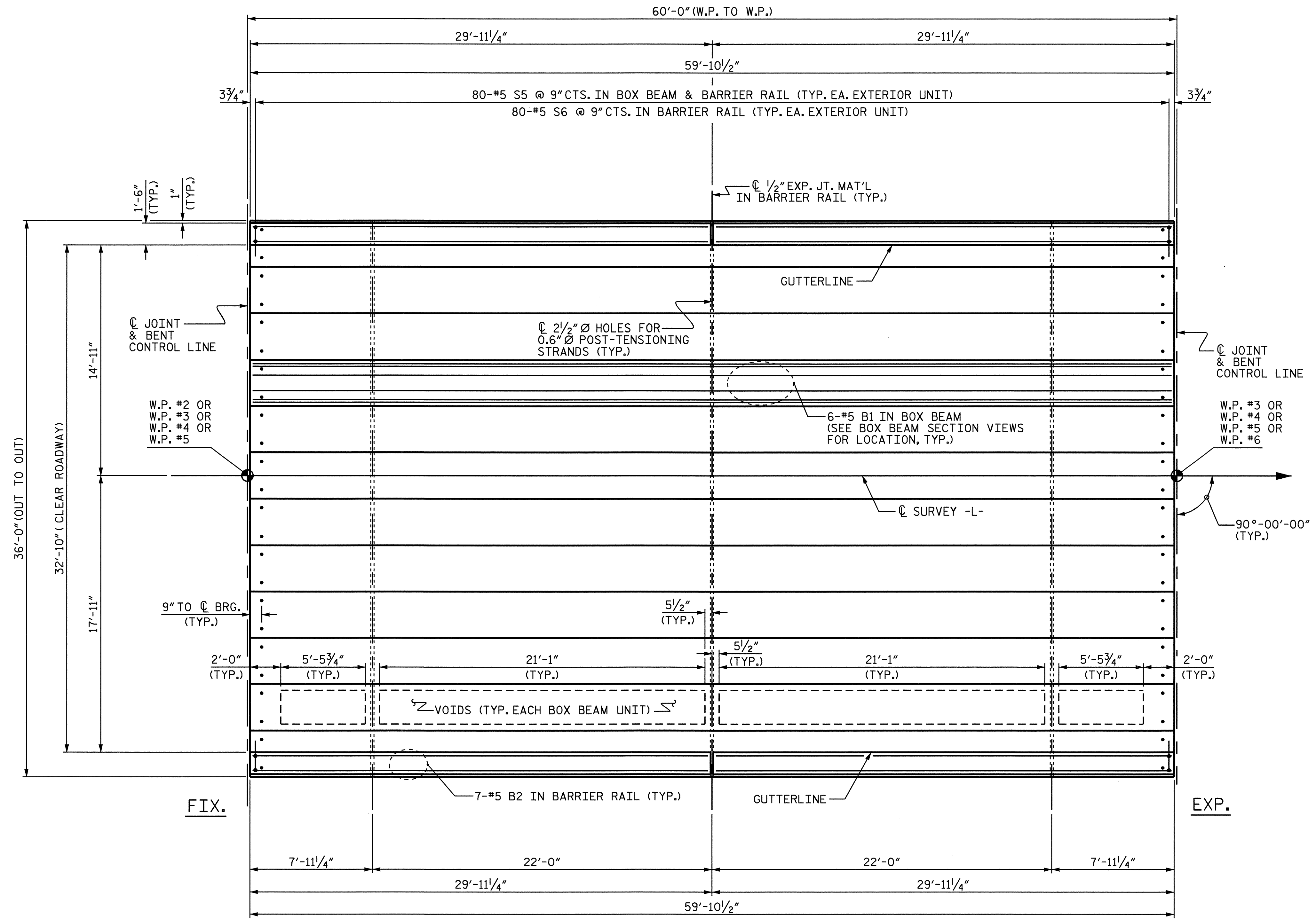


Theo J. Beach
 12/6/08

DRAWN BY: A. K. PATEL DATE: 11/02/05
 CHECKED BY: S. B. WILLIAMS DATE: 11/16/05

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			32



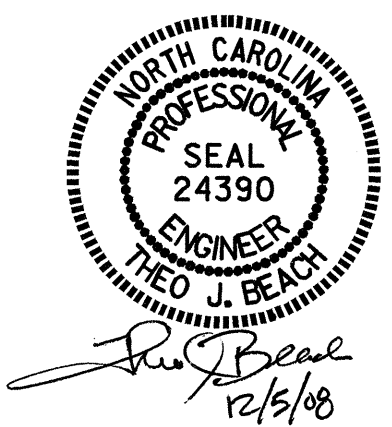
PLAN OF SPAN B, C, D OR E

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 3 OF 9

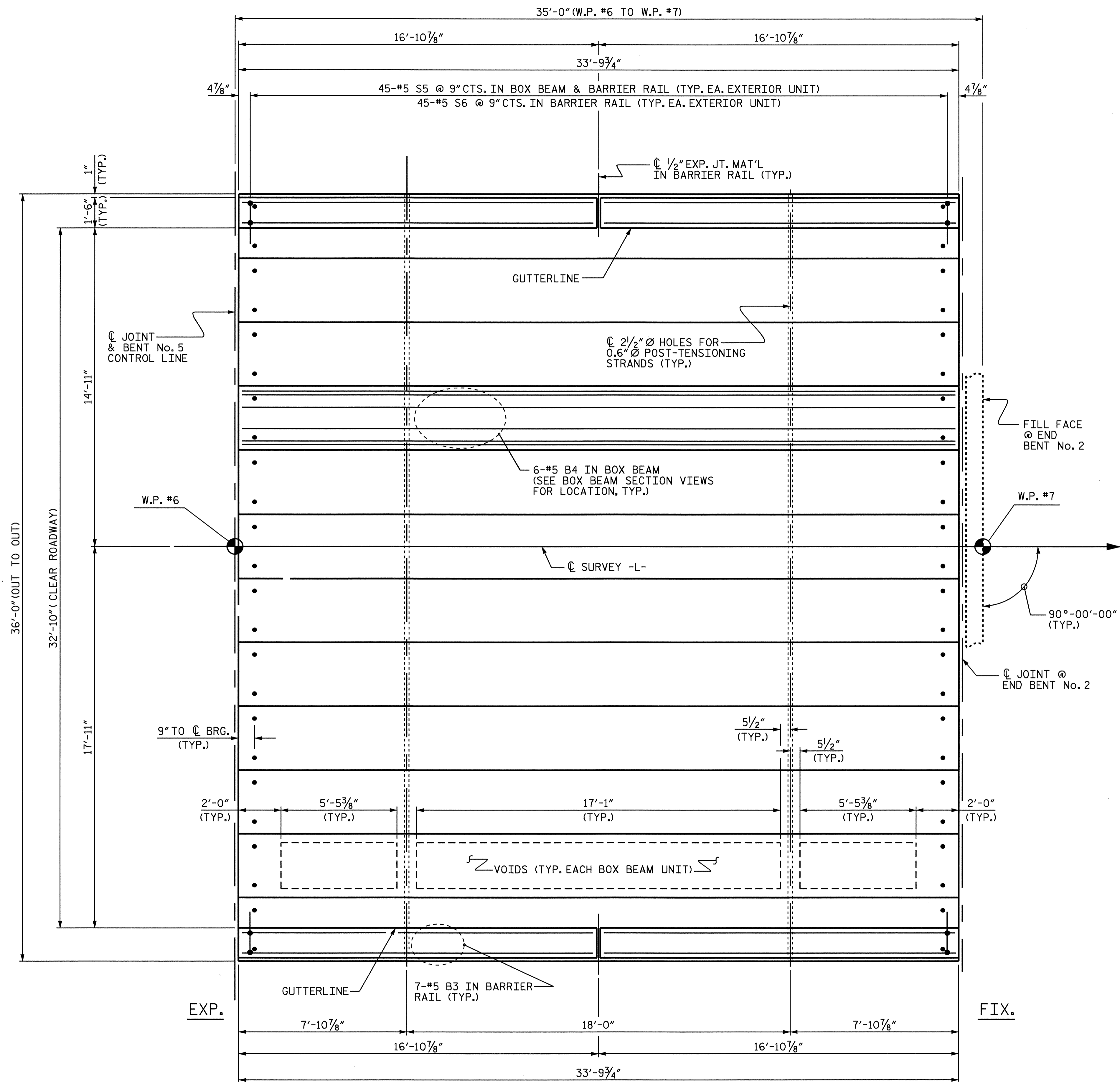
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN
 B, C, D OR E



DRAWN BY : A. K. PATEL DATE : 11/02/05
 CHECKED BY : S. B. WILLIAMS DATE : 11/16/05

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32



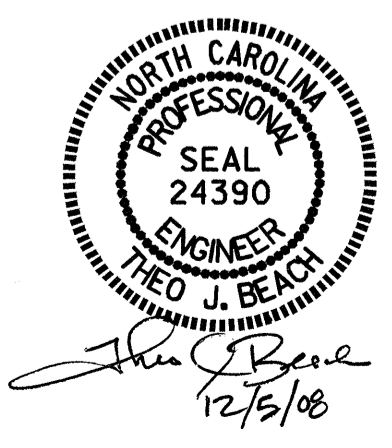
PLAN OF SPAN F

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 4 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

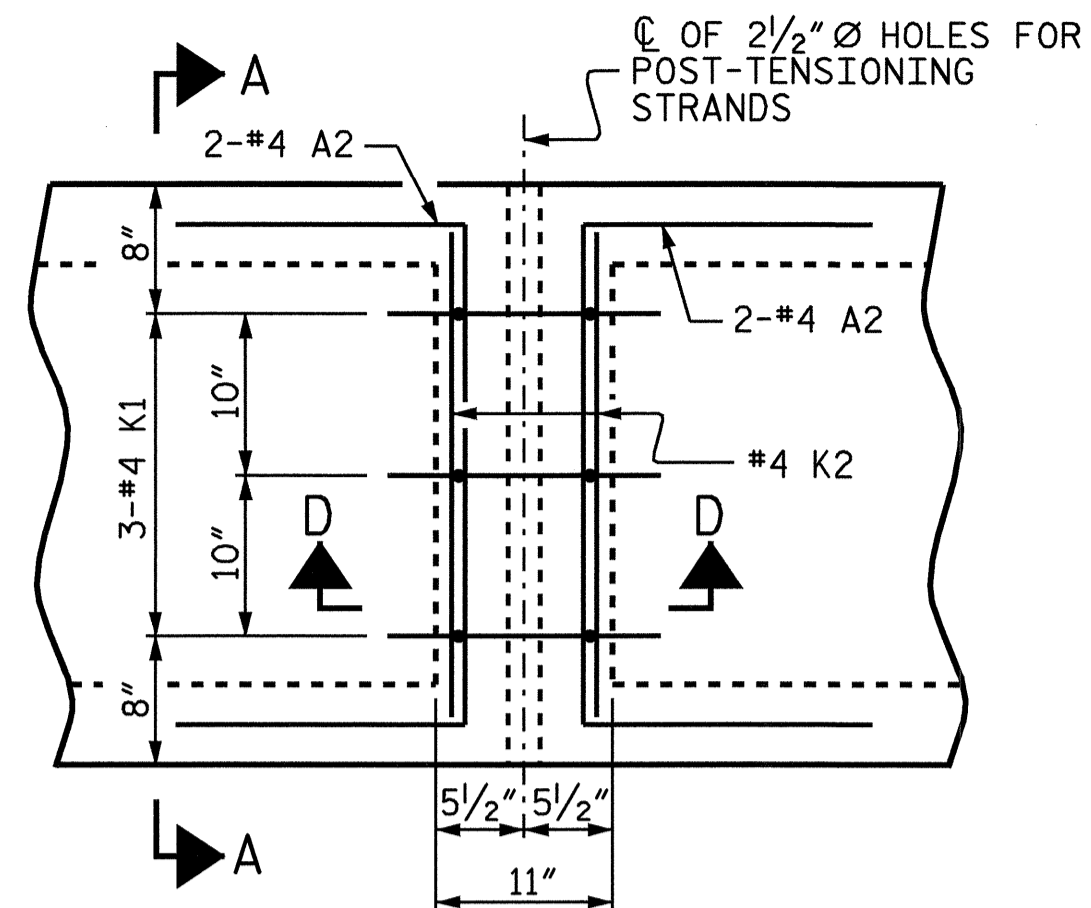
SUPERSTRUCTURE
 PLAN OF SPAN F



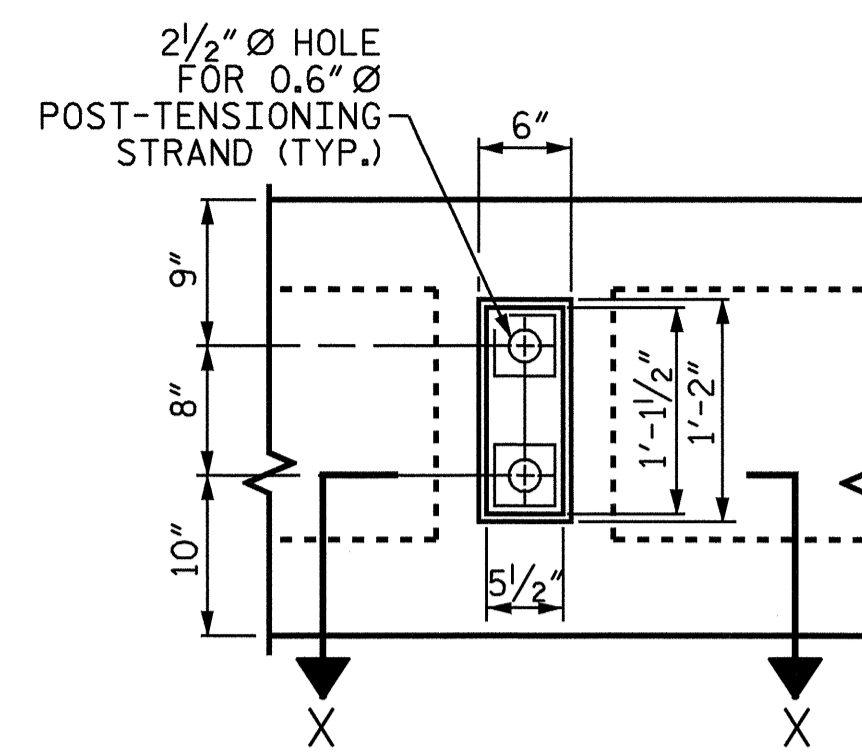
DRAWN BY : A. K. PATEL DATE : 11/02/05
 CHECKED BY : S. B. WILLIAMS DATE : 11/16/05

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL SHEETS	
2			4			32	

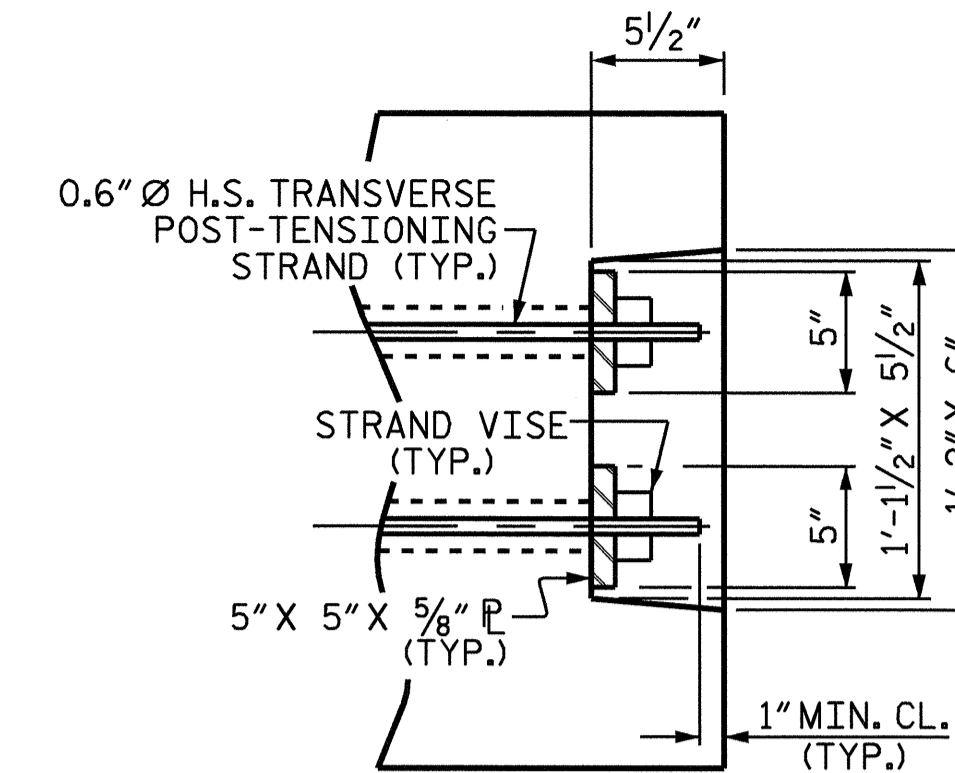
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 tbeach



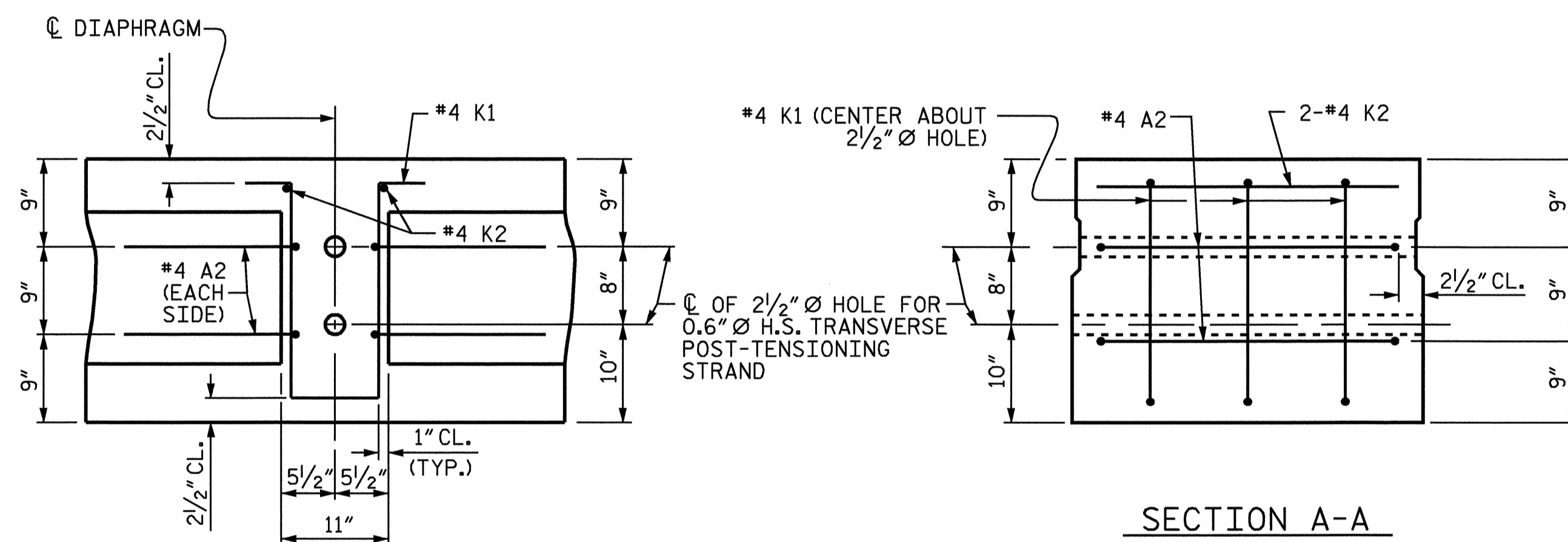
PLAN



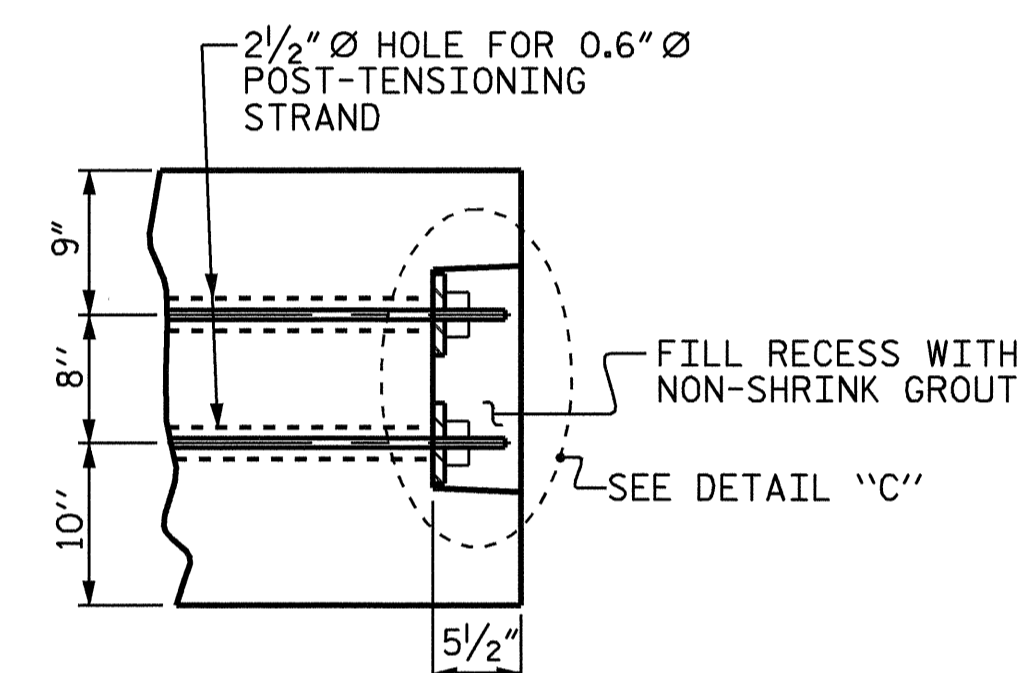
VIEW Y-Y
SHOWING ELEVATION VIEW OF GROUDED RECESS



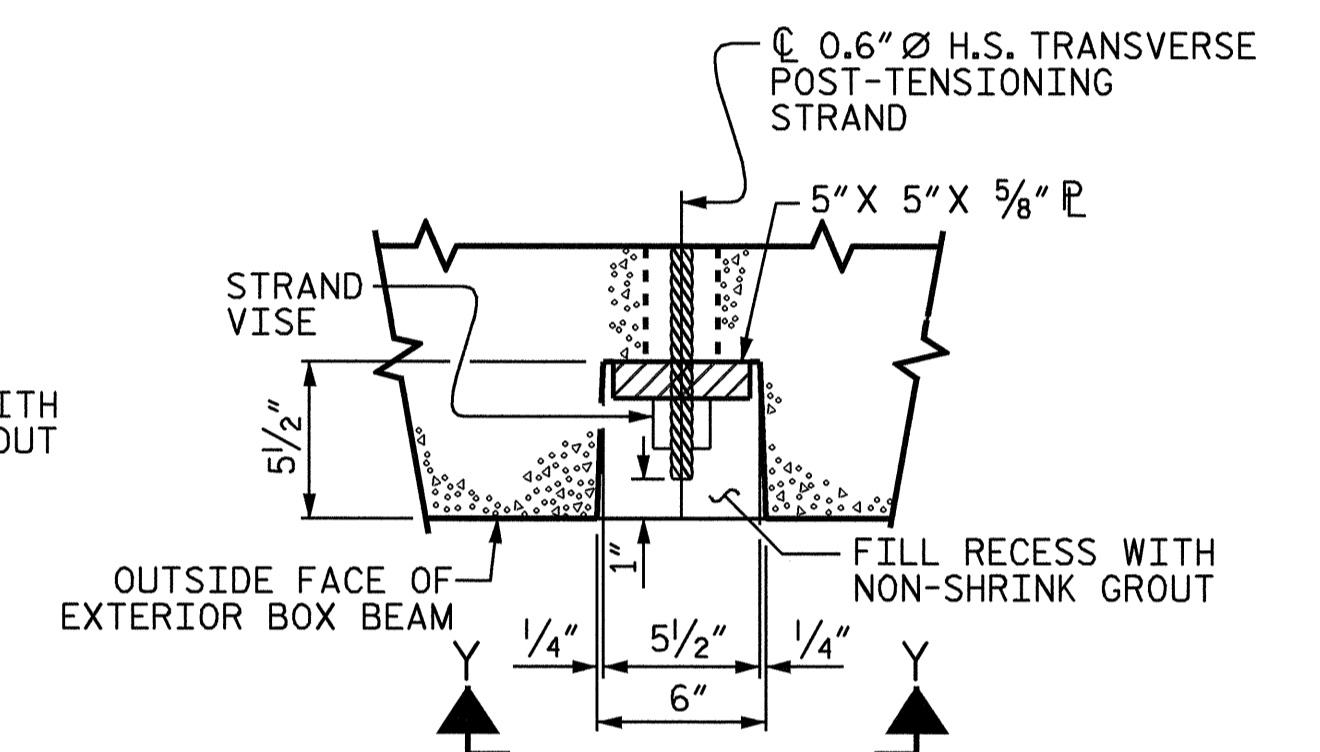
DETAIL "C"



SECTION A-A
VOIDS NOT SHOWN



PART SECTION AT RECESS



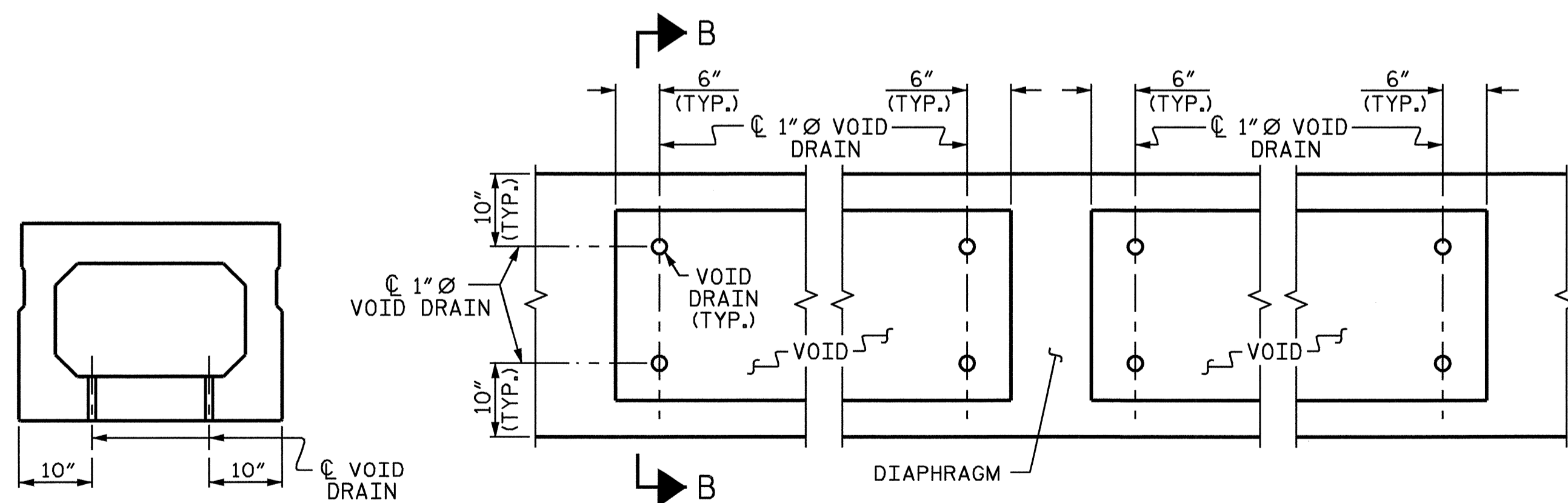
SECTION X-X
SHOWING PLAN VIEW OF GROUDED RECESS

SECTION D-D

DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.

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



SECTION B-B

PART PLAN

VOID DRAIN DETAILS

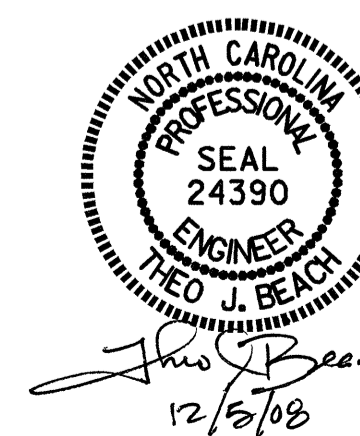
(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)

DEAD LOAD DEFLECTION AND CAMBER		
	3'-0" x 2'-3"	
	0.6" Ø L.R. STRAND	
	SPAN "A"-"E"	SPAN "F"
CAMBER (BEAM ALONE IN PLACE) ↓	3 1/2"	1 1/16"
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD ** ↓	5/16"	1/16"
FINAL CAMBER ↑	3 3/16"	5/8"

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

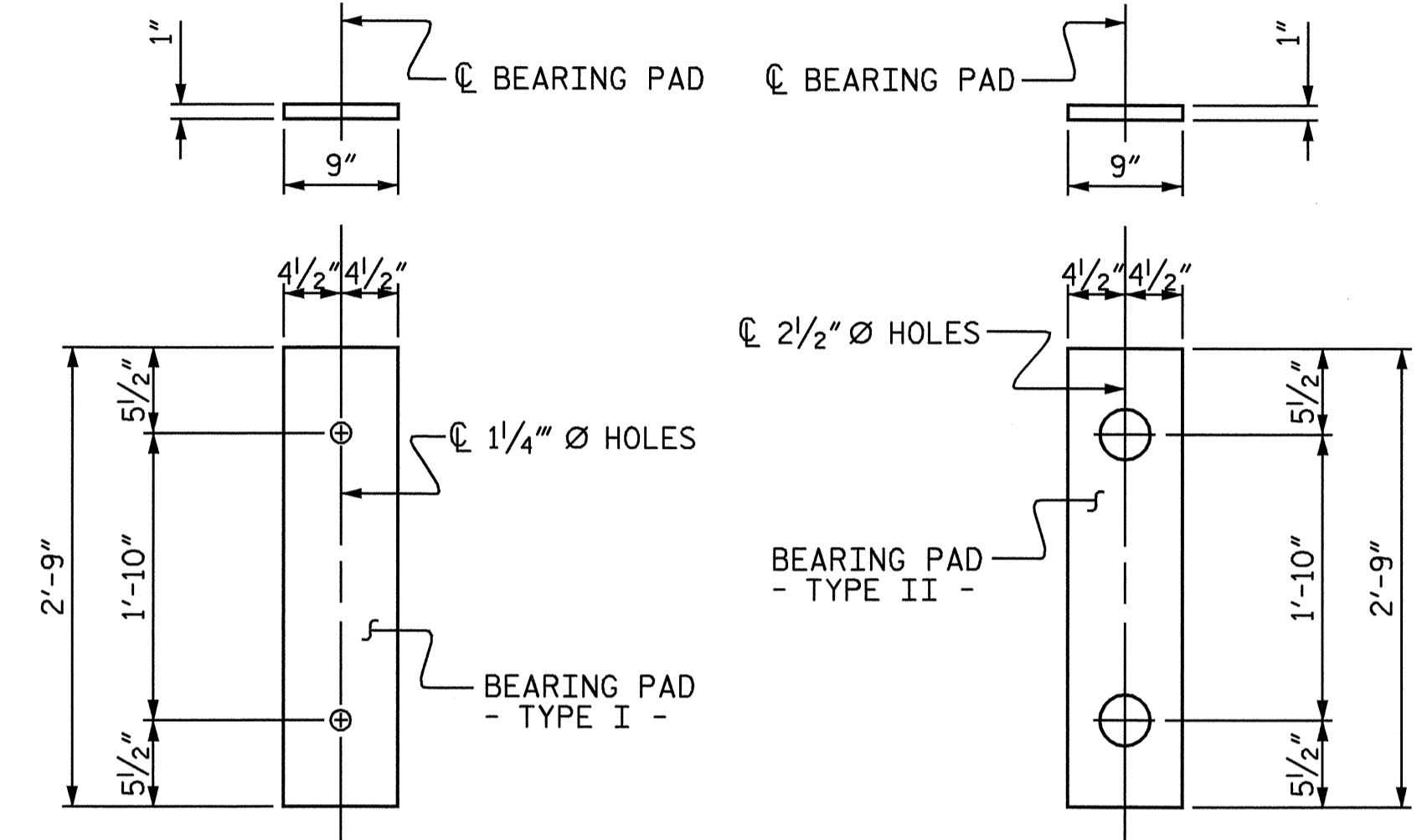
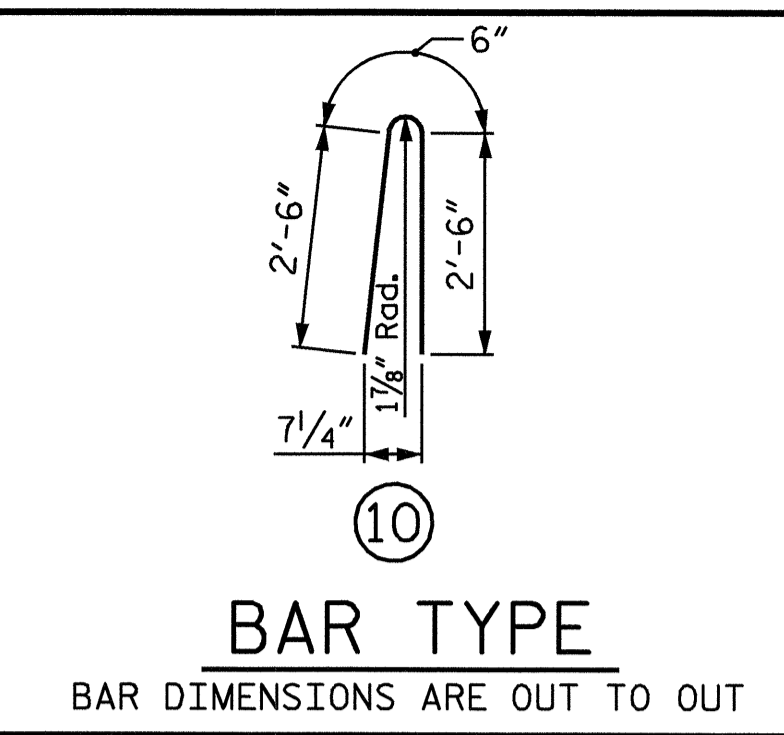
SHEET 7 OF 9



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-10
STANDARD 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT						
REVISIONS						TOTAL SHEETS 32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

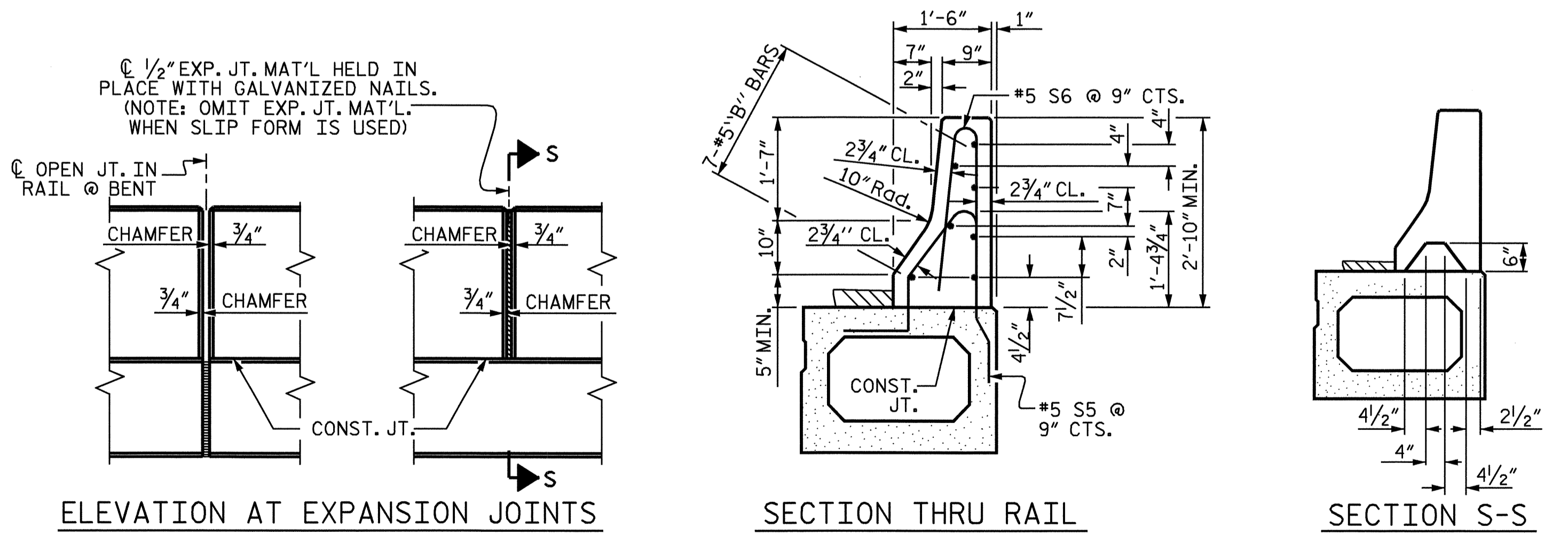
ASSEMBLED BY : A. K. PATEL	DATE : 11/02/05
CHECKED BY : S. B. WILLIAMS	DATE : 11/16/05
DRAWN BY : TLA	5/05
CHECKED BY : GM	6/05
ADDED	7/11/05

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
SPAN A THRU E			
EXTERIOR B. B.	10	59'-10 1/2"	598'-9"
INTERIOR B. B.	50	59'-10 1/2"	2993'-9"
SPAN F			
EXTERIOR B. B.	2	33'-9 3/4"	67'-7 1/2"
INTERIOR B. B.	10	33'-9 3/4"	338'-1 1/2"
TOTAL	72		3998.25'



ELASTOMERIC BEARING DETAILS
(60 DUROMETER HARDNESS REQUIRED)

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL											
BAR	BARS PER SPAN						TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	SPAN A	SPAN B	SPAN C	SPAN D	SPAN E	SPAN F					
*B2	28	28	28	28	28		140	#5	STR	29'-6"	4308
*B3						28	28	#5	STR	16'-6"	482
*S6	160	160	160	160	160	90	890	#5	10	5'-6"	5105
* EPOXY COATED REINFORCING STEEL LBS.										9895	
CLASS AA CONCRETE CU.YDS.										77.6	
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL										666.38	

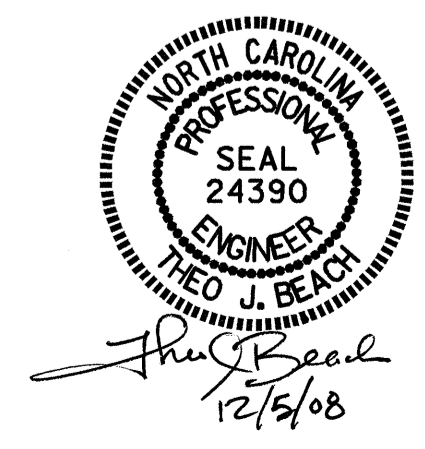


BARRIER RAIL DETAILS

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
STATION: 21+59.97 -L-

SHEET 8 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT
DETAILS



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	32
2			4				

ASSEMBLED BY : A. K. PATEL DATE :11/02/05
CHECKED BY : S. B. WILLIAMS DATE :11/17/05
DRAWN BY : TLA 5/05 ADDED 7/11/05R
CHECKED BY : GM 6/05

01-DEC-2008 08:38
r:\structures\b3613\SuperstructureDrawings\b3613.sd.bb_01.dgn
tbeach

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.)

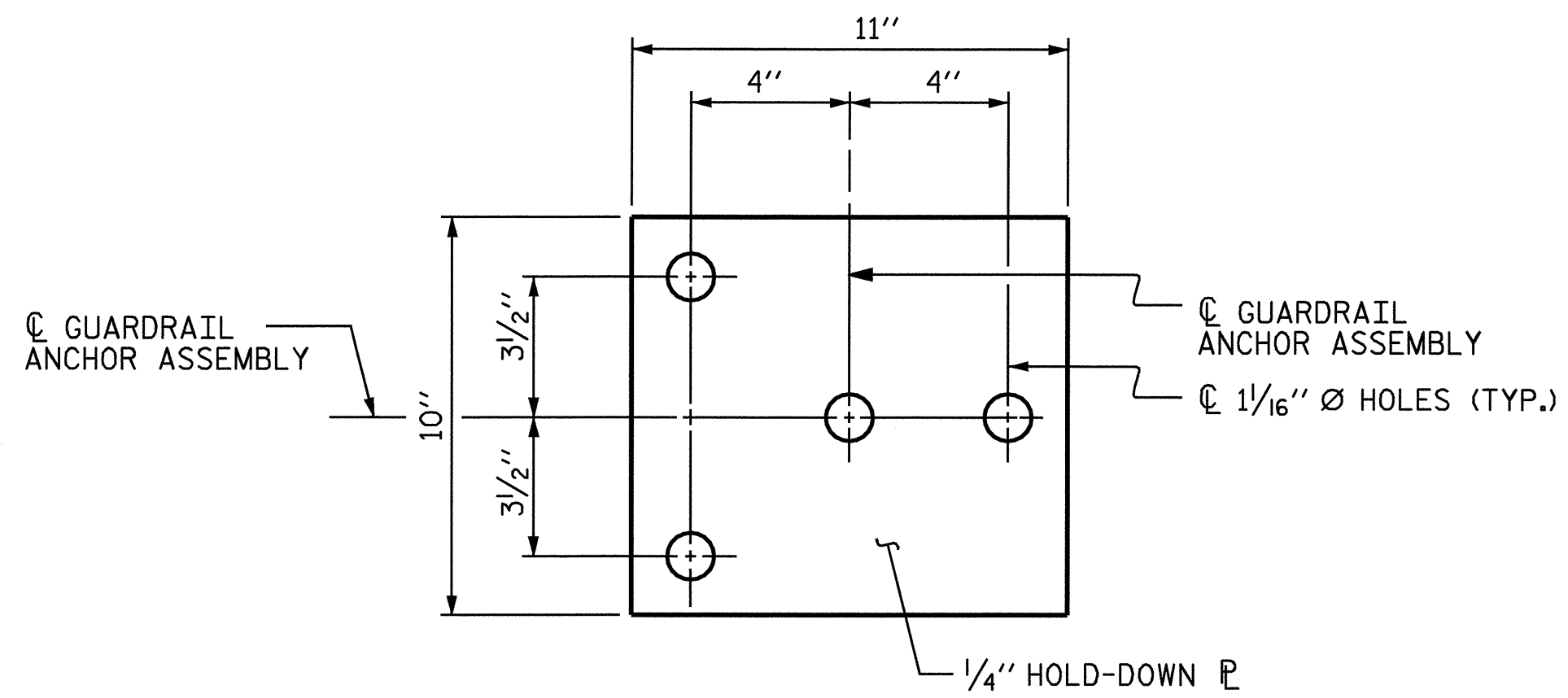
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

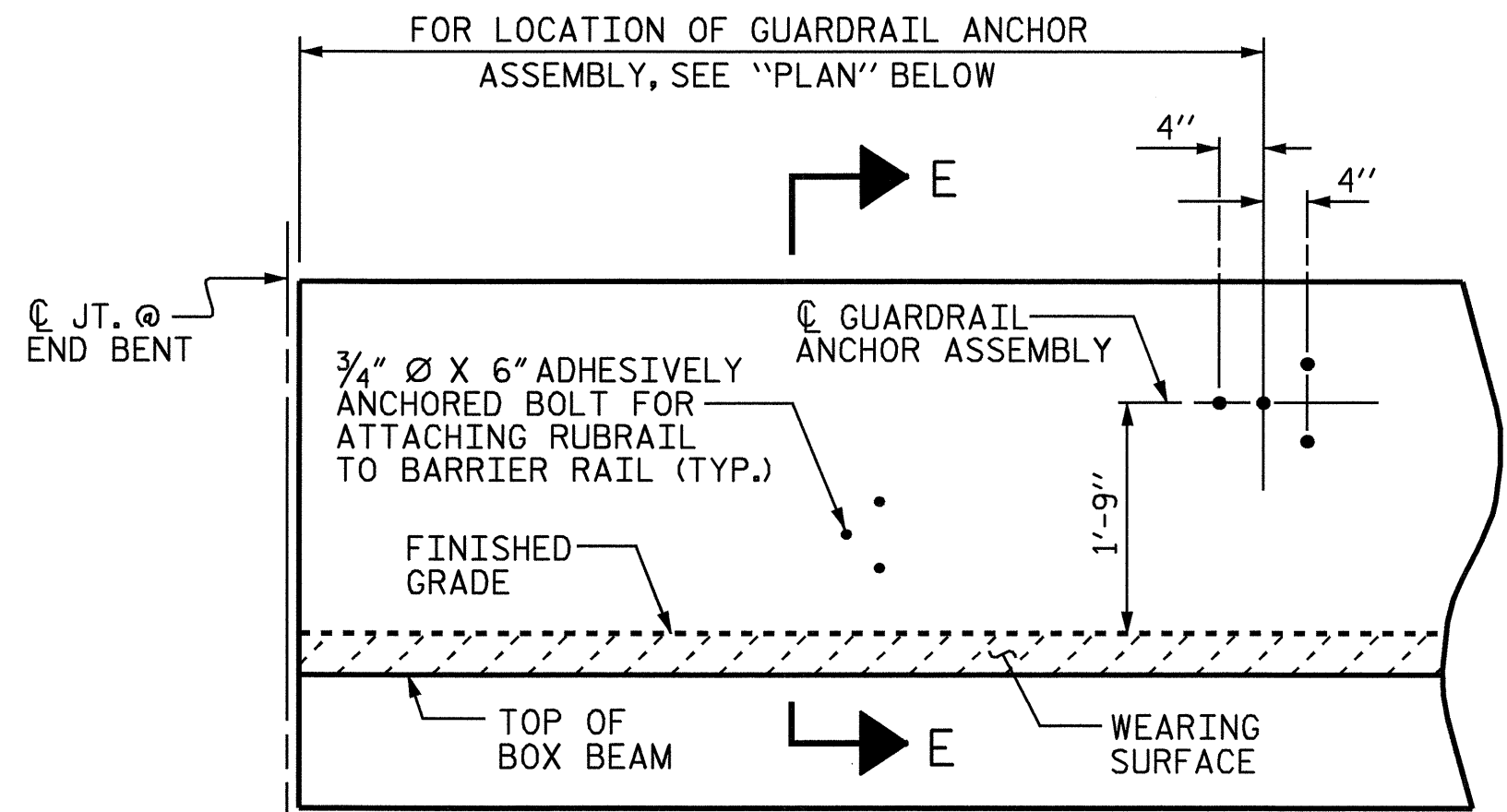
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1/4" 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.

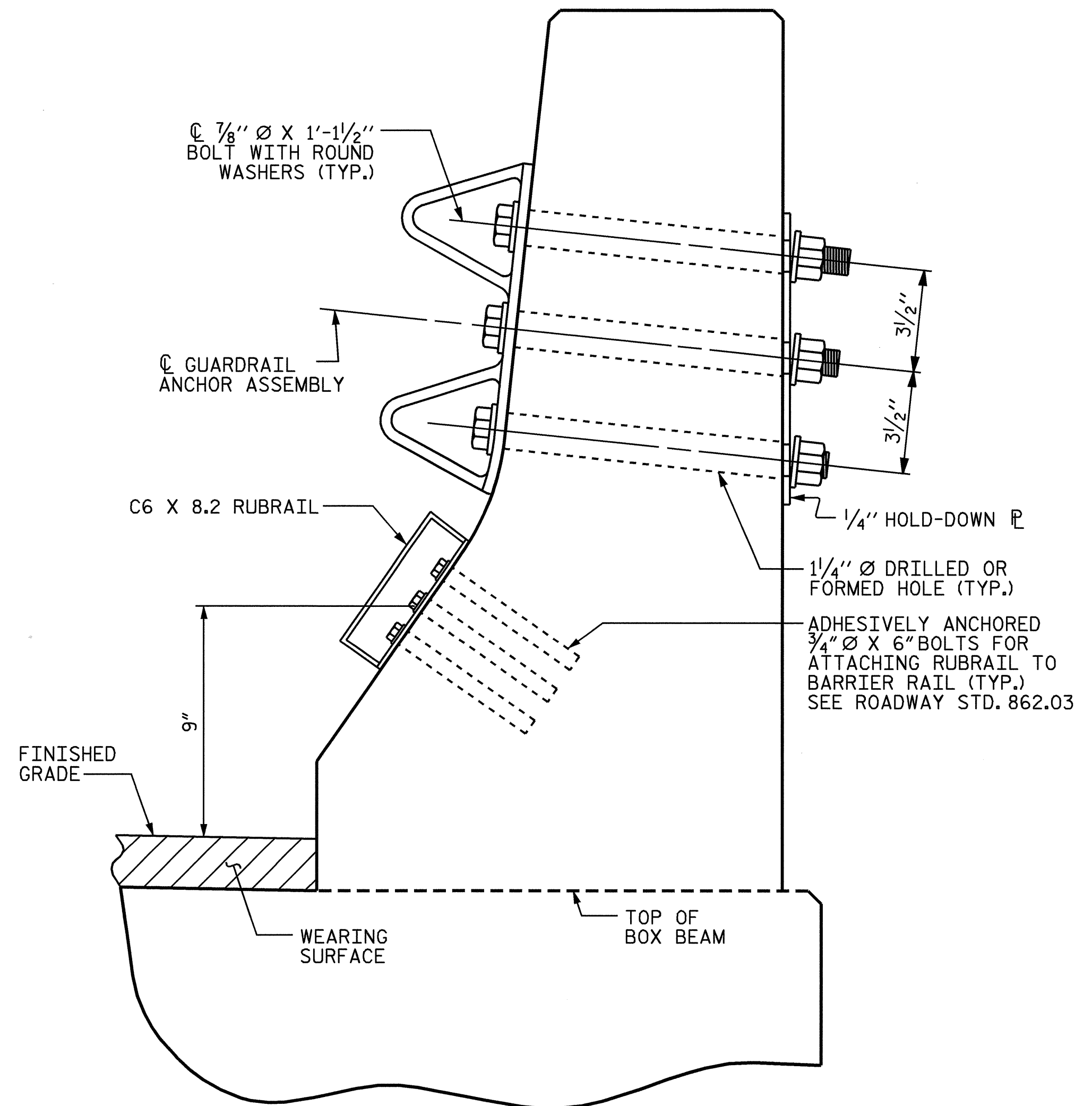


PLAN



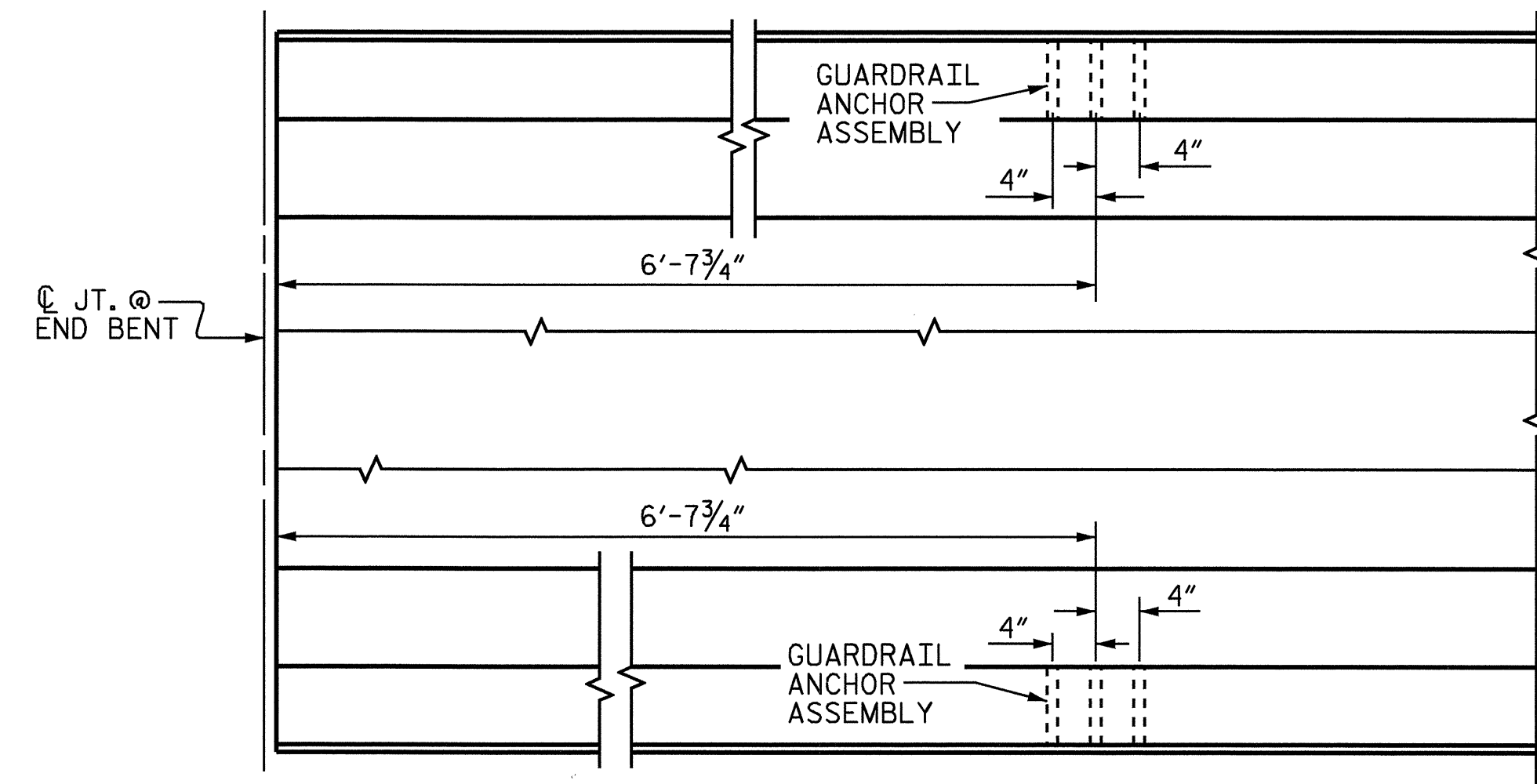
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

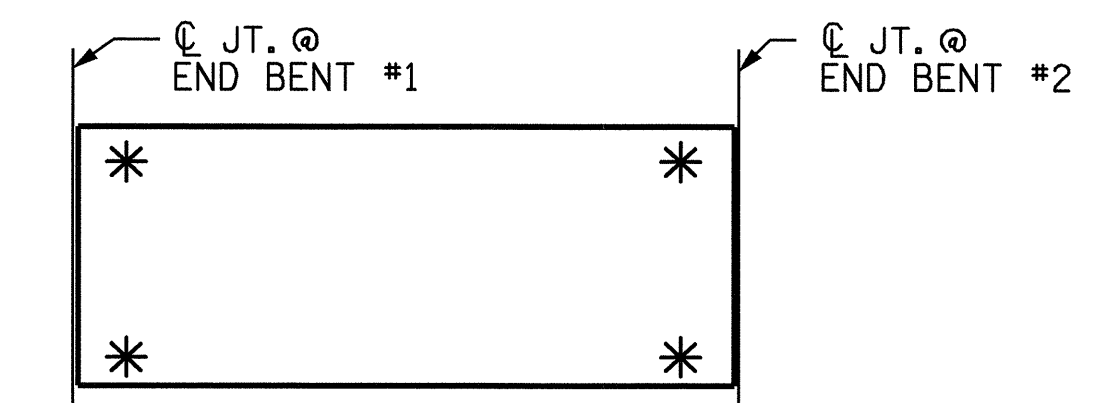
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



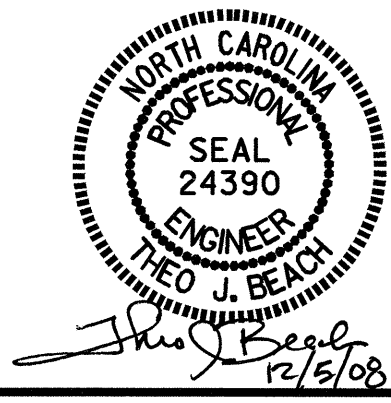
SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

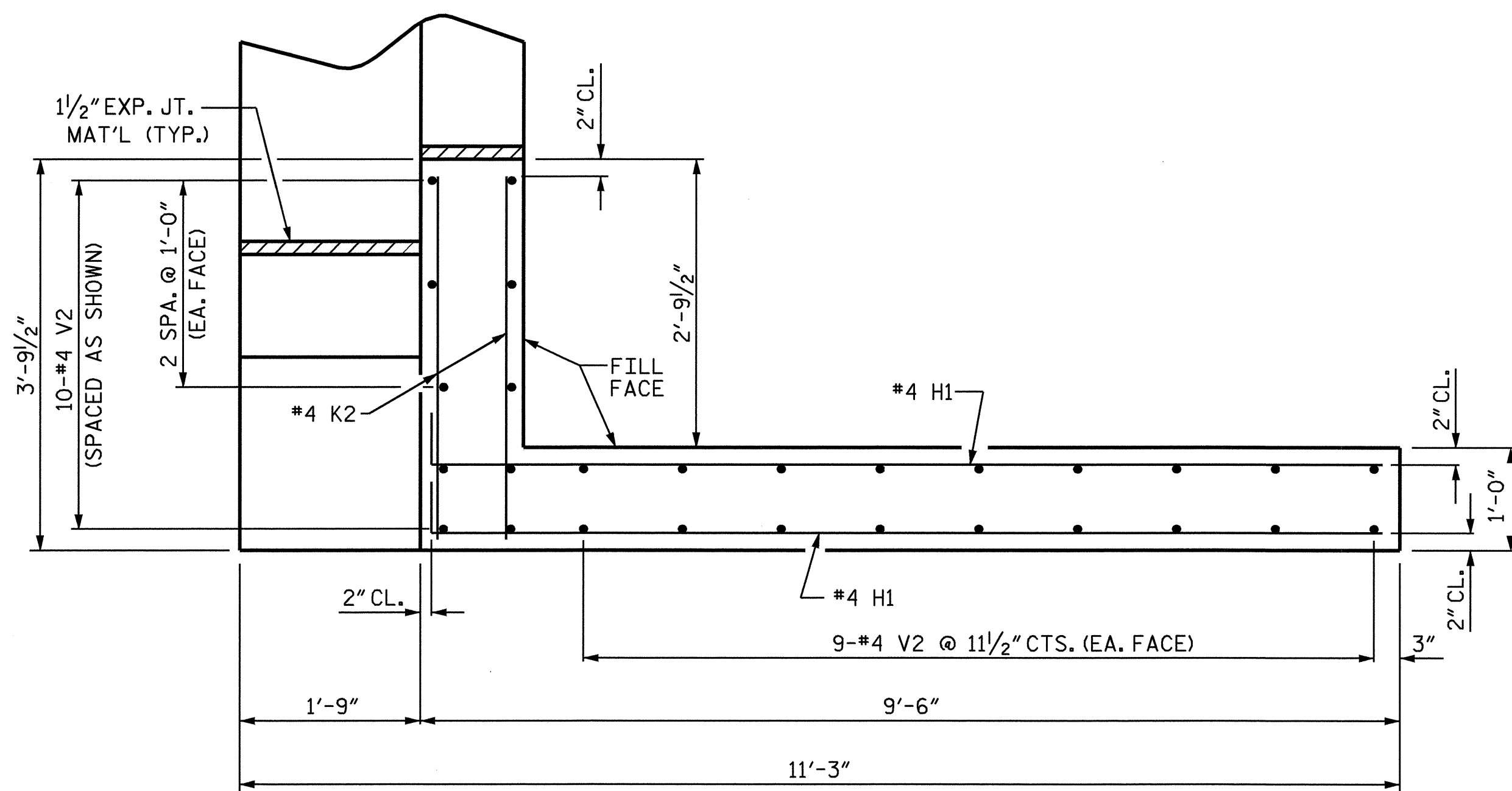
SHEET 9 OF 9

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

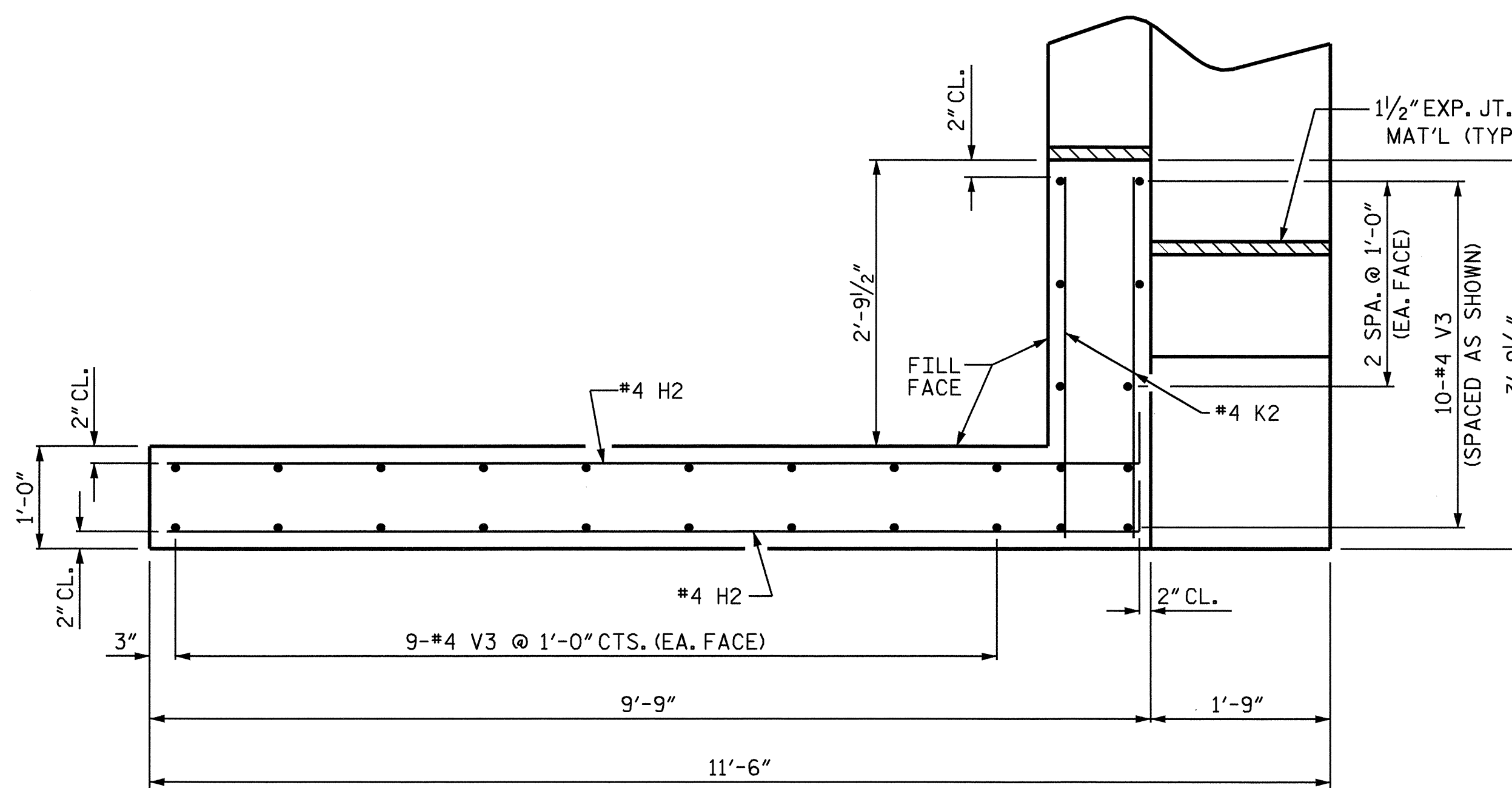


REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

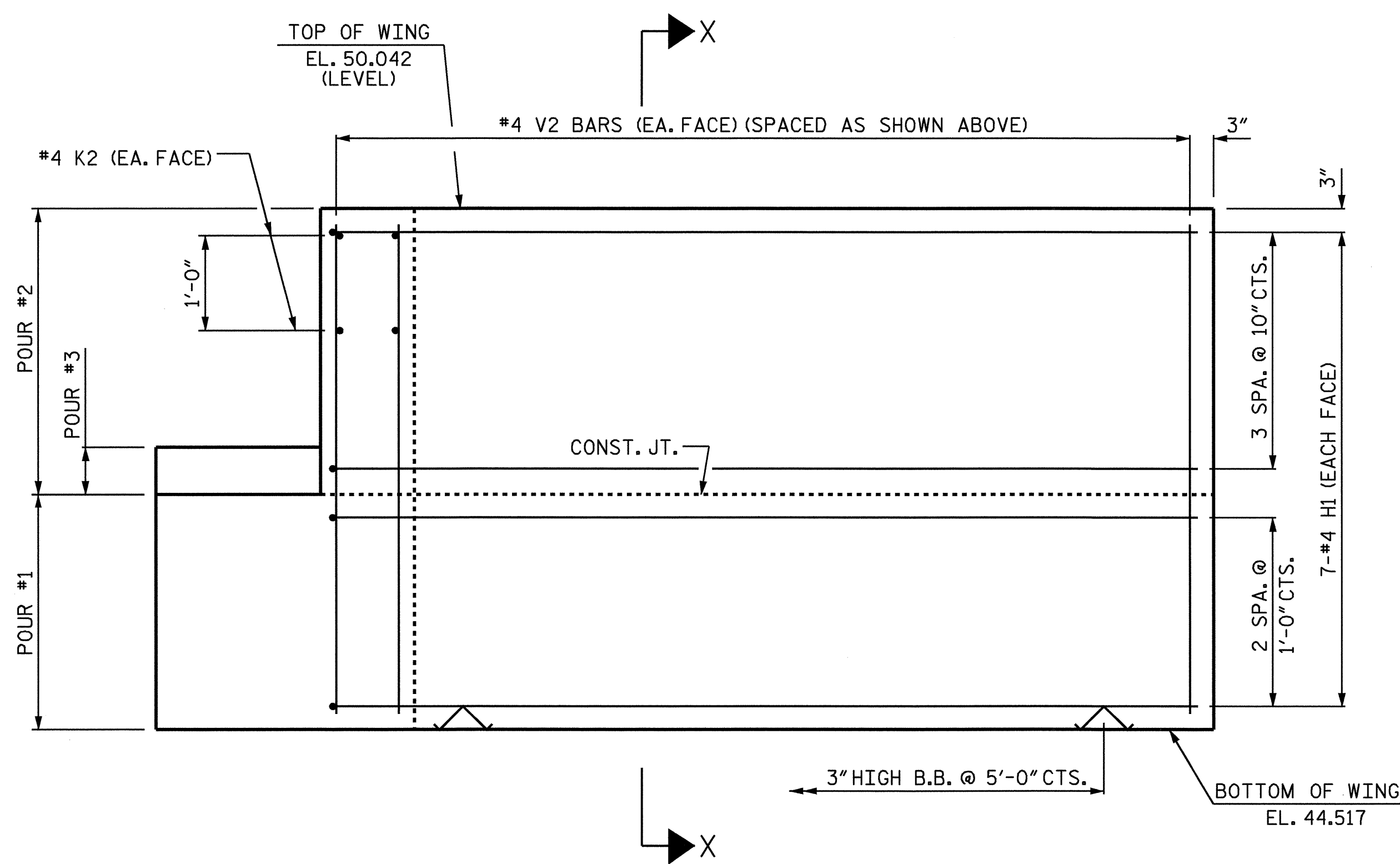
ASSEMBLED BY : T. BANKOVICH	DATE : 11-2008
CHECKED BY : T.J. BEACH	DATE : 11-2008
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	



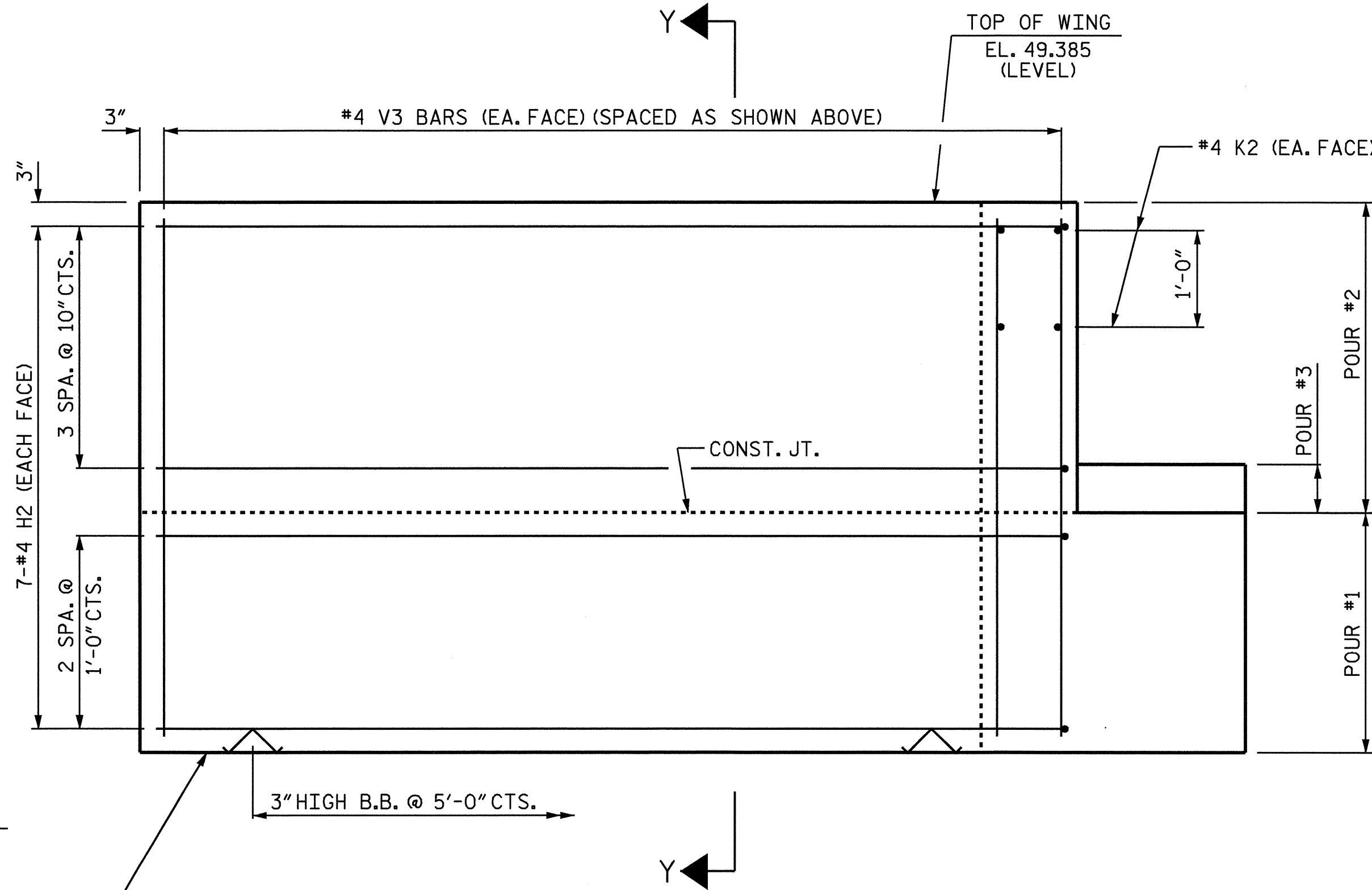
PLAN OF WING (W1)



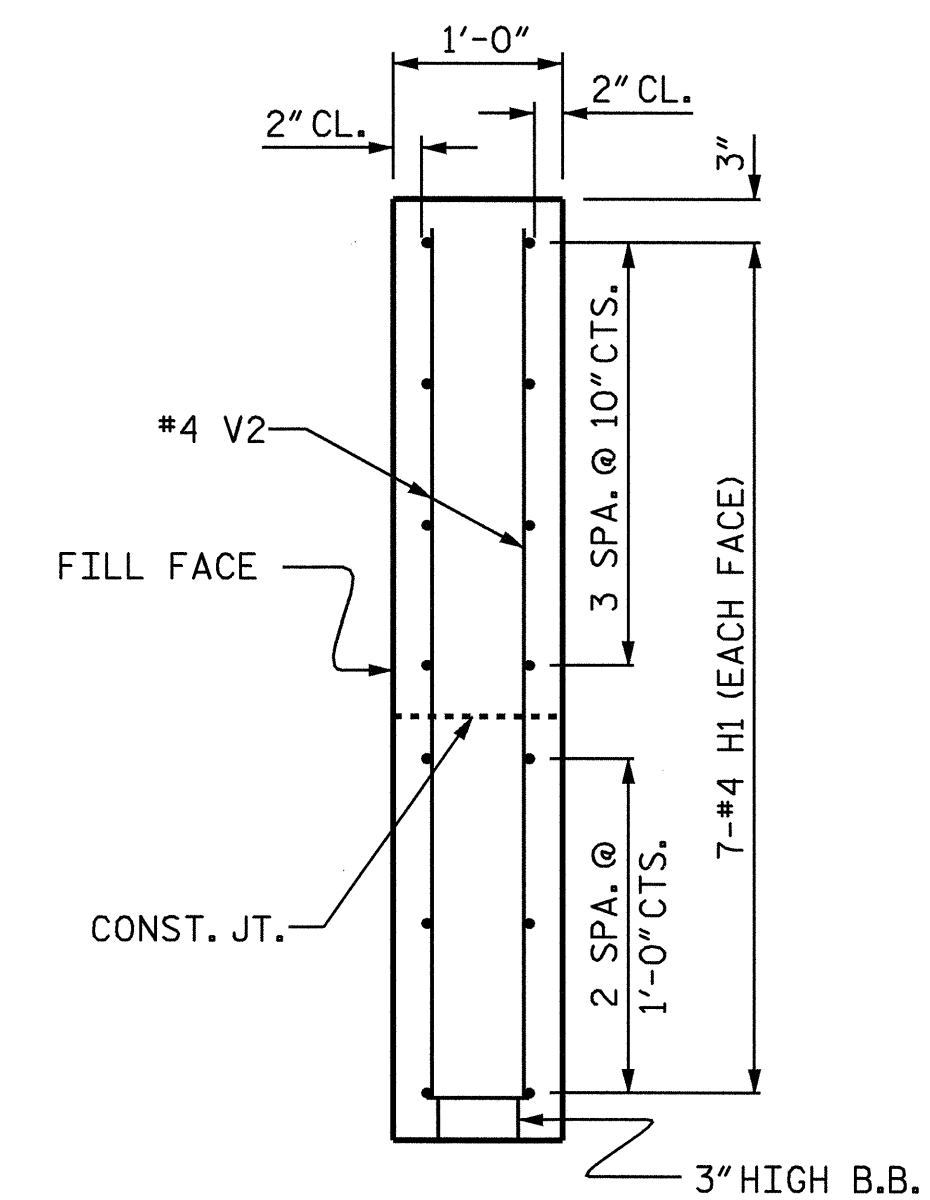
PLAN OF WING (W2)



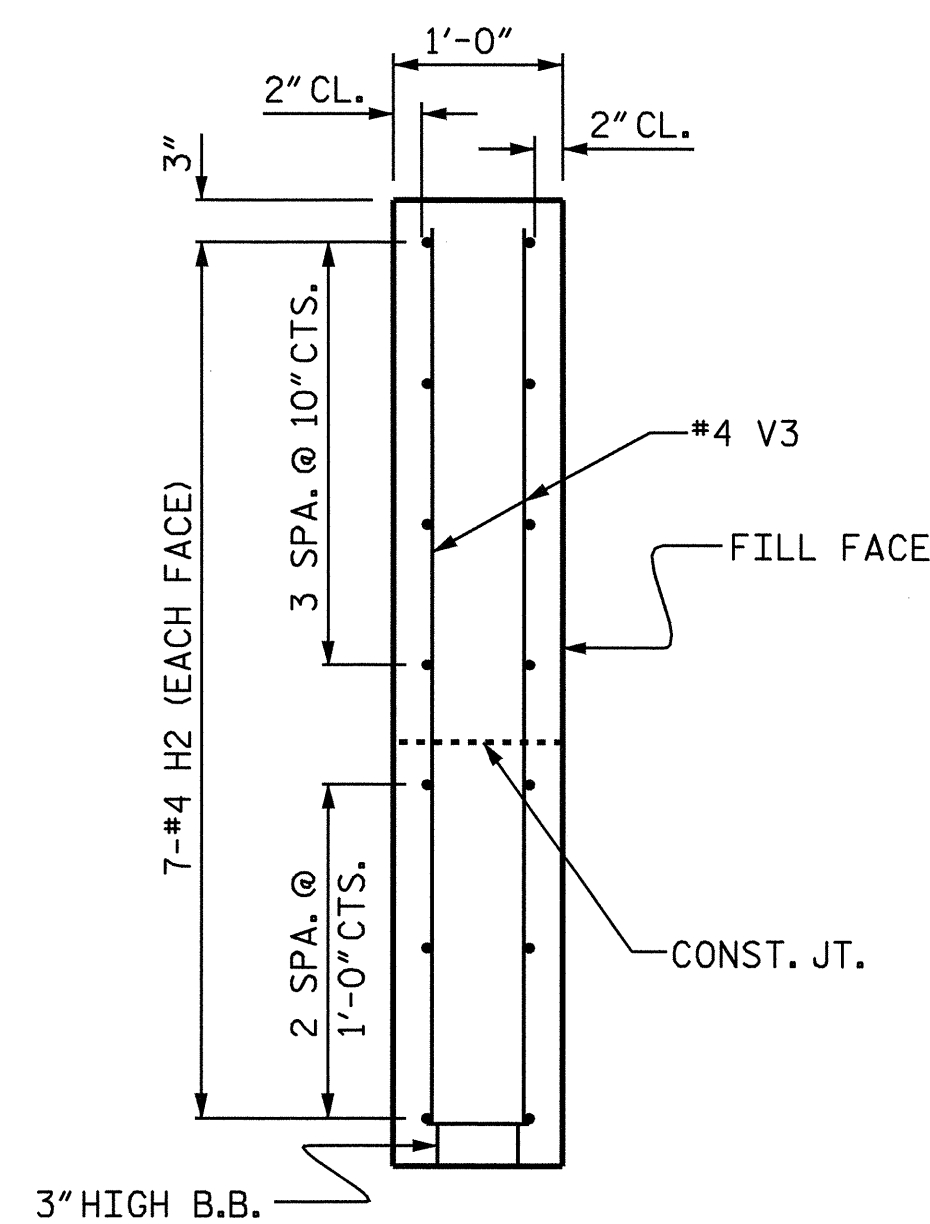
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



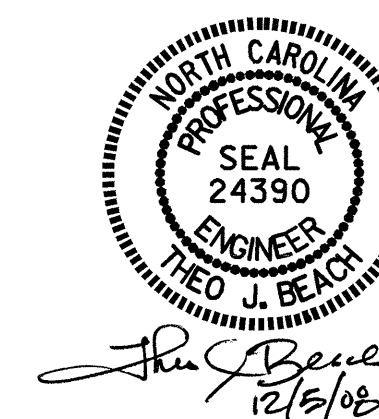
SECTION Y-Y

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

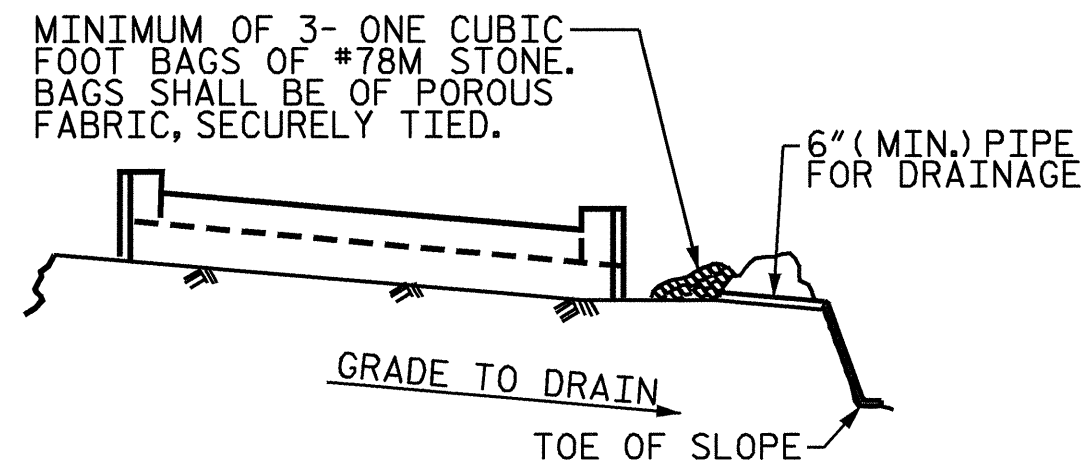
SUBSTRUCTURE
 END BENT No. 1



DRAWN BY : A.K. PATEL/MLB DATE : 04-07-06
 CHECKED BY : S. B. WILLIAMS DATE : 04-02-08

01-DEC-2008 08:23
 r:\structure\es\b3613\substructure\drawings\b3613.sd.e*dgn
 tbeach

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14	
1			3			TOTAL SHEETS	
2			4			32	

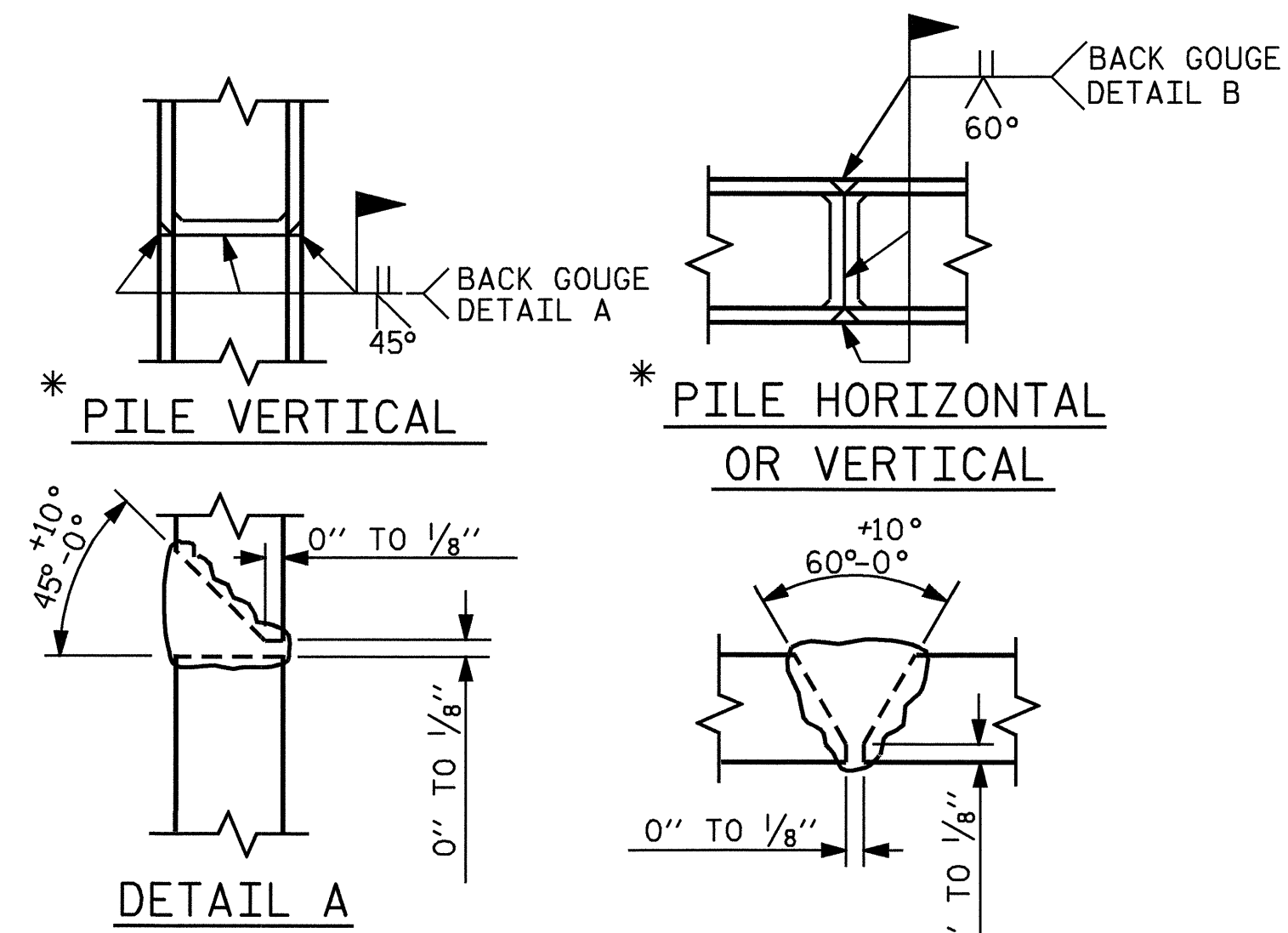


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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



* POSITION OF PILE DURING WELDING.

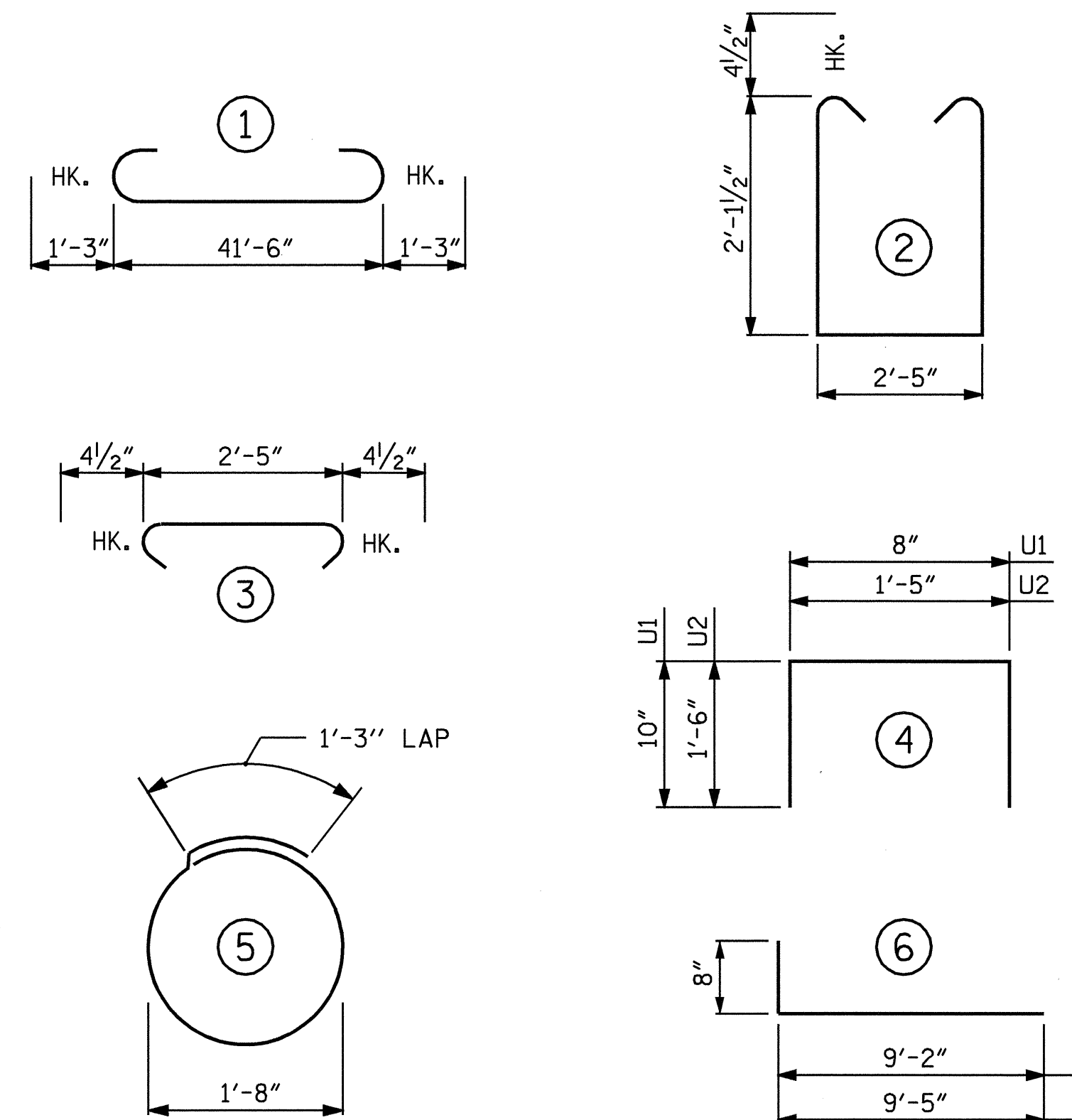
PILE VERTICAL

PILE HORIZONTAL OR VERTICAL

DETAIL A

DETAIL B

PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT No. 1

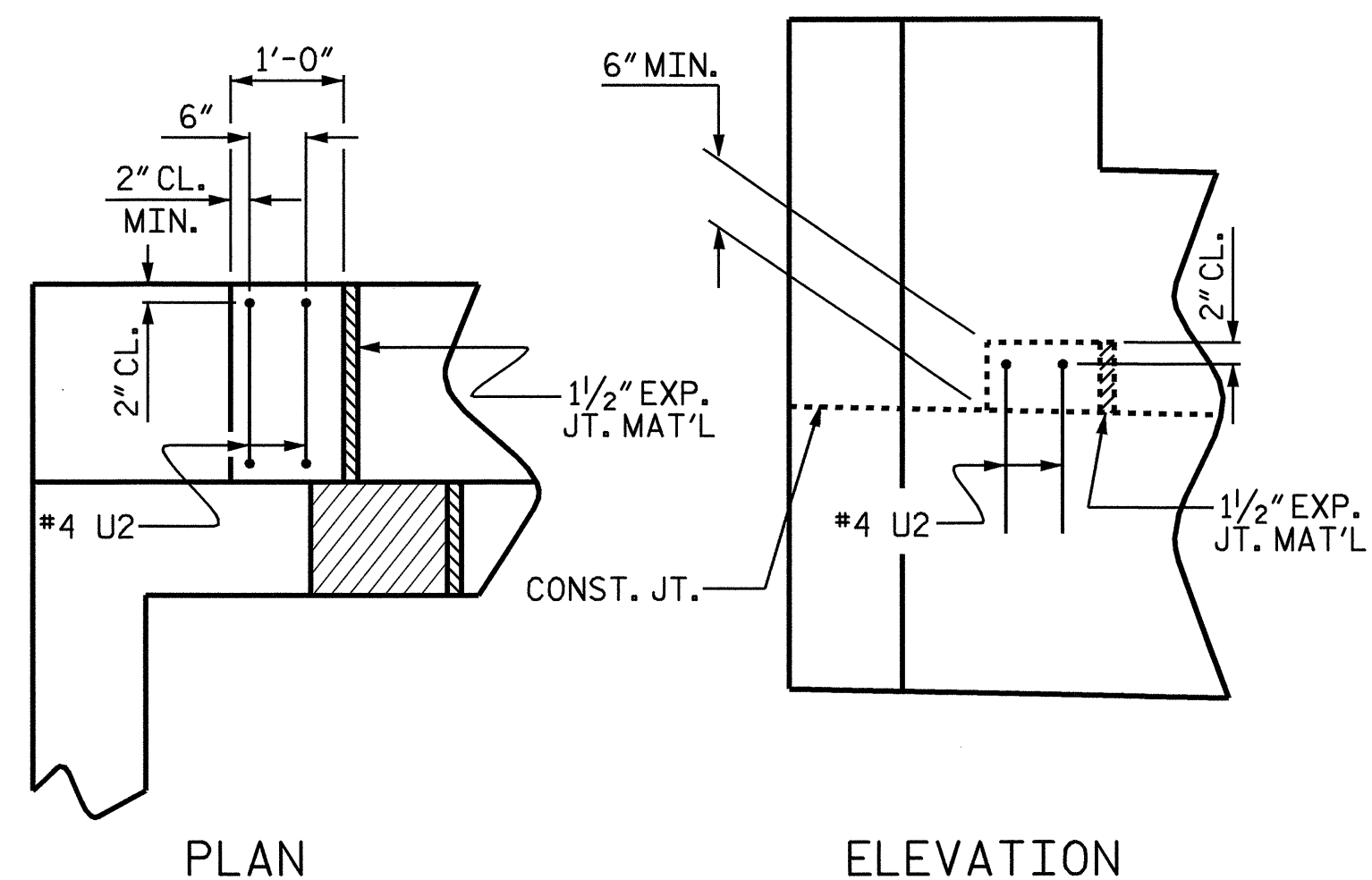
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	44'-0"	1197
B2	16	#4	STR	22'-1"	236
B3	11	#4	STR	2'-5"	18
D1	24	#8	STR	2'-3"	144
H1	14	#4	6	9'-10"	92
H2	14	#4	6	10'-1"	94
K1	8	#4	STR	22'-1"	118
K2	8	#4	STR	3'-5"	18
S1	42	#4	2	7'-5"	208
S2	42	#4	3	3'-2"	89
S3	18	#4	5	6'-6"	78
U1	35	#4	4	2'-4"	55
U2	4	#4	4	4'-5"	12
V1	70	#5	STR	3'-1"	225
V2	28	#4	STR	5'-1"	95
V3	28	#4	STR	5'-3"	98

REINFORCING STEEL 2777 LBS.

CLASS A CONCRETE BREAKDOWN

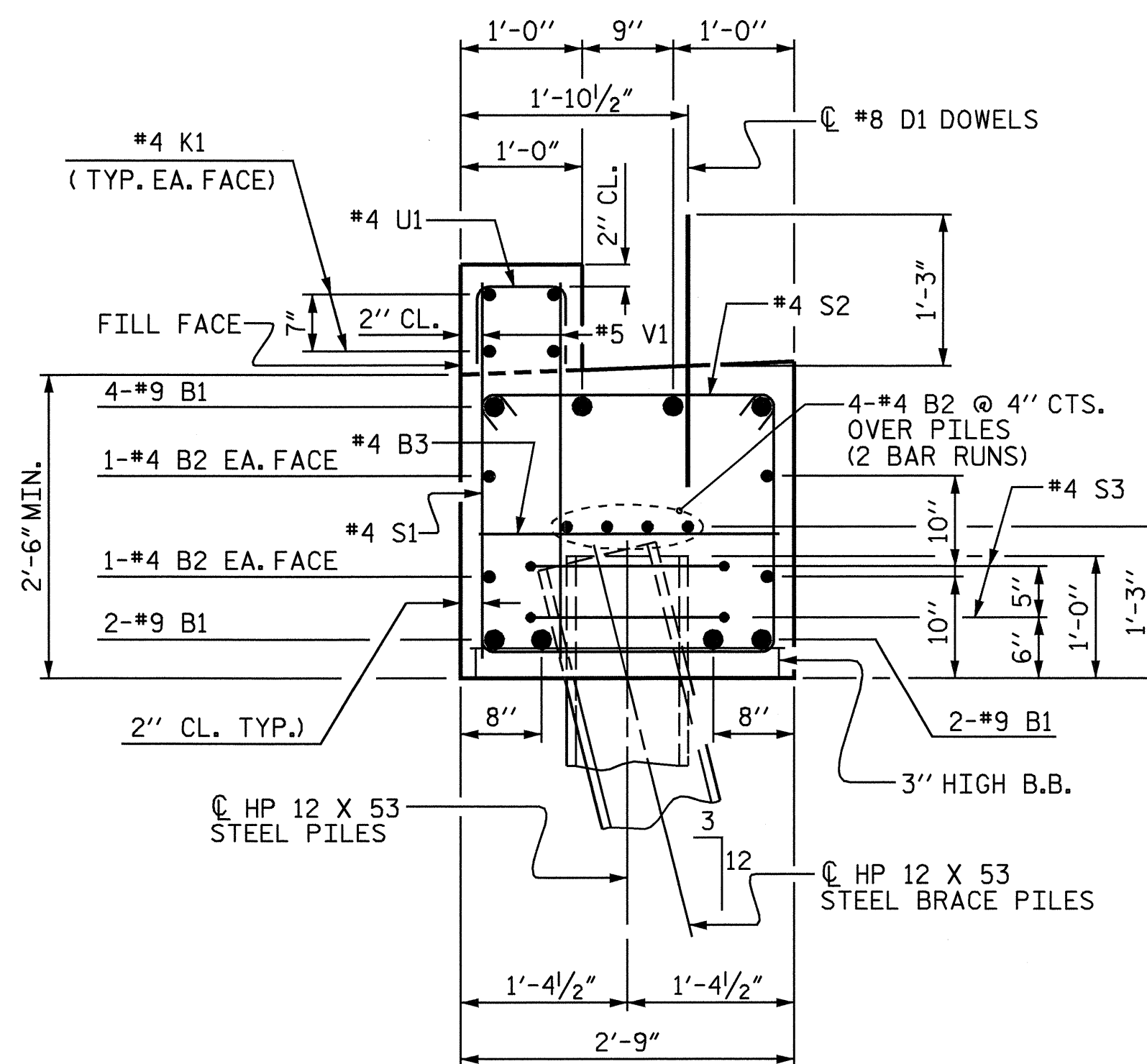
POUR #1	CAP & LOWER PART OF WINGS	12.4 C.Y.
POUR #2	UPPER PART OF WINGS & BACKWALL	4.2 C.Y.
POUR #3	LATERAL GUIDES	0.1 C.Y.
TOTAL CLASS A CONCRETE		16.7 C.Y.

HP 12 X 53 STEEL PILES
NO: 9 LIN. FT. = 225



LATERAL GUIDE DETAIL

(LEFT LATERAL GUIDE SHOWN, RIGHT LATERAL GUIDE SIMILAR)



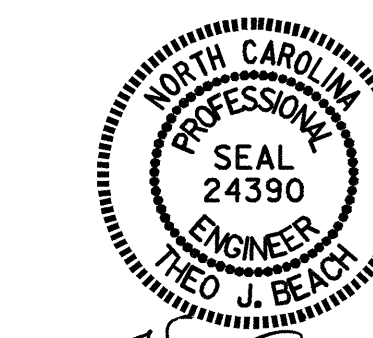
SECTION A-A

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
STATION: 21+59.97 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1



Theo J. Beach
12/5/08

DRAWN BY: A. K. PATEL/MLB DATE: 04-07-06
CHECKED BY: S. B. WILLIAMS DATE: 04-13-06

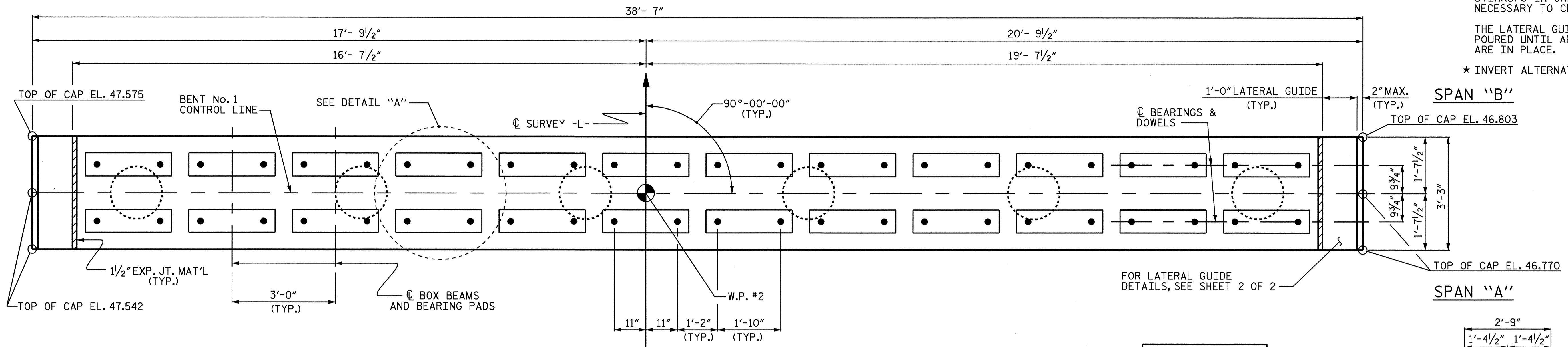
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15	
1			3			TOTAL SHEETS	
2			4			32	

NOTES

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

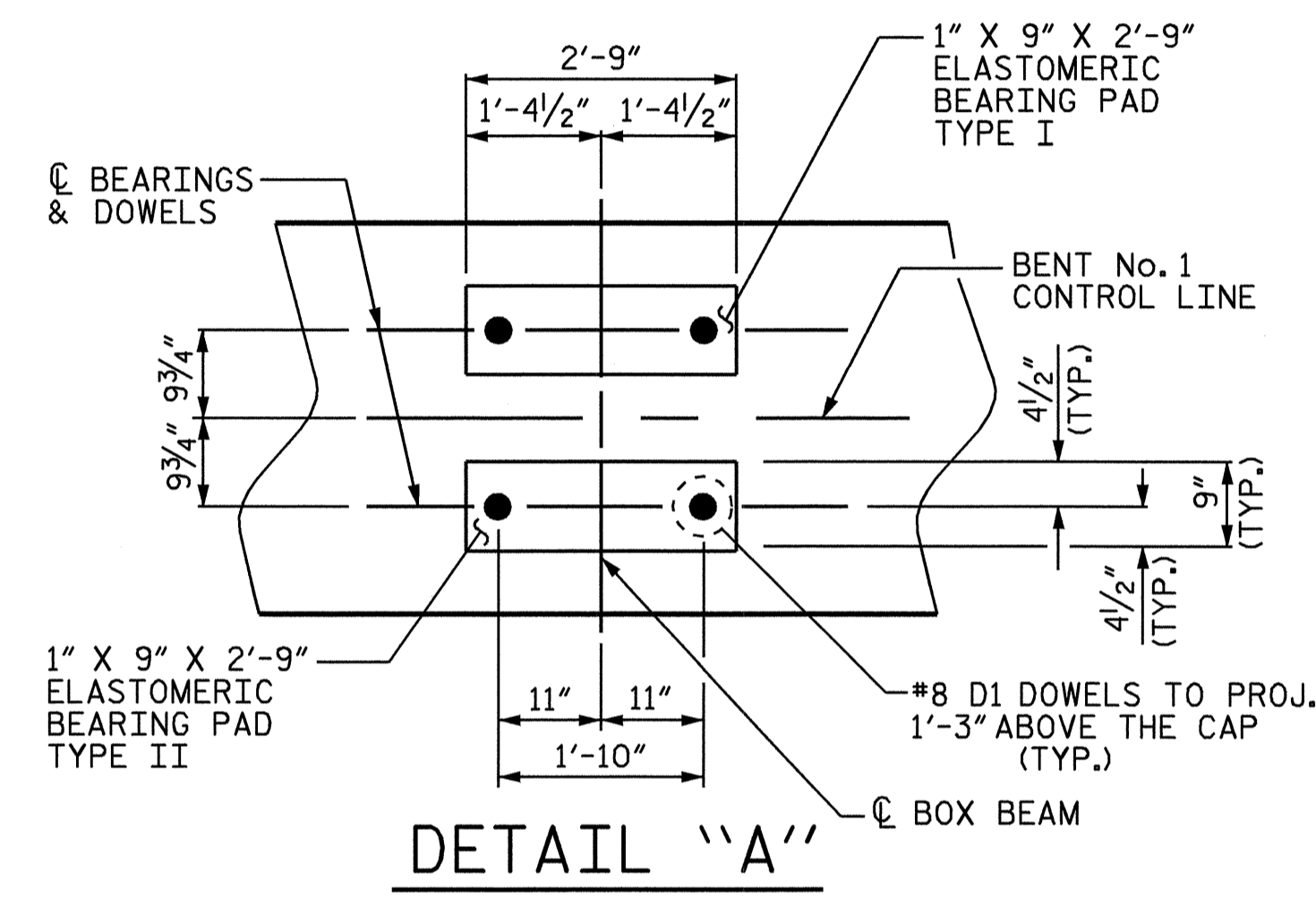
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE BOX BEAMS ARE IN PLACE.

* INVERT ALTERNATE STIRRUPS AS SHOWN.

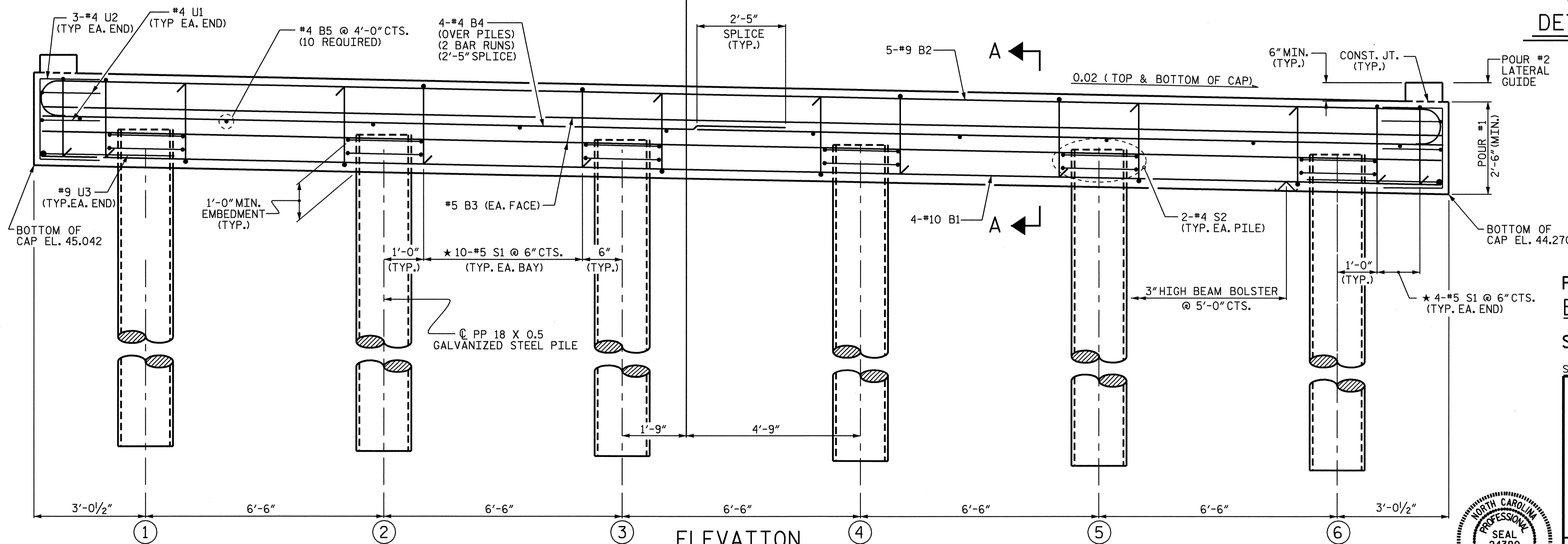


PLAN

TOP OF PILE ELEVATIONS	
1	45.996
2	45.866
3	45.736
4	45.606
5	45.476
6	45.346



DETAIL "A"



ELEVATION

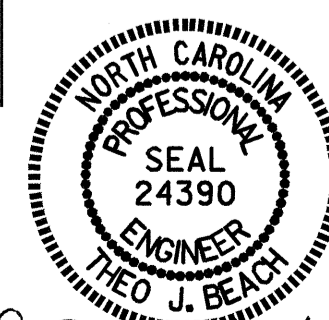
FOR REINFORCING STEEL IN PIPE PILES, SEE "PP 18 X 0.5 GALVANIZED STEEL PILE" DETAIL SHEET.

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 2

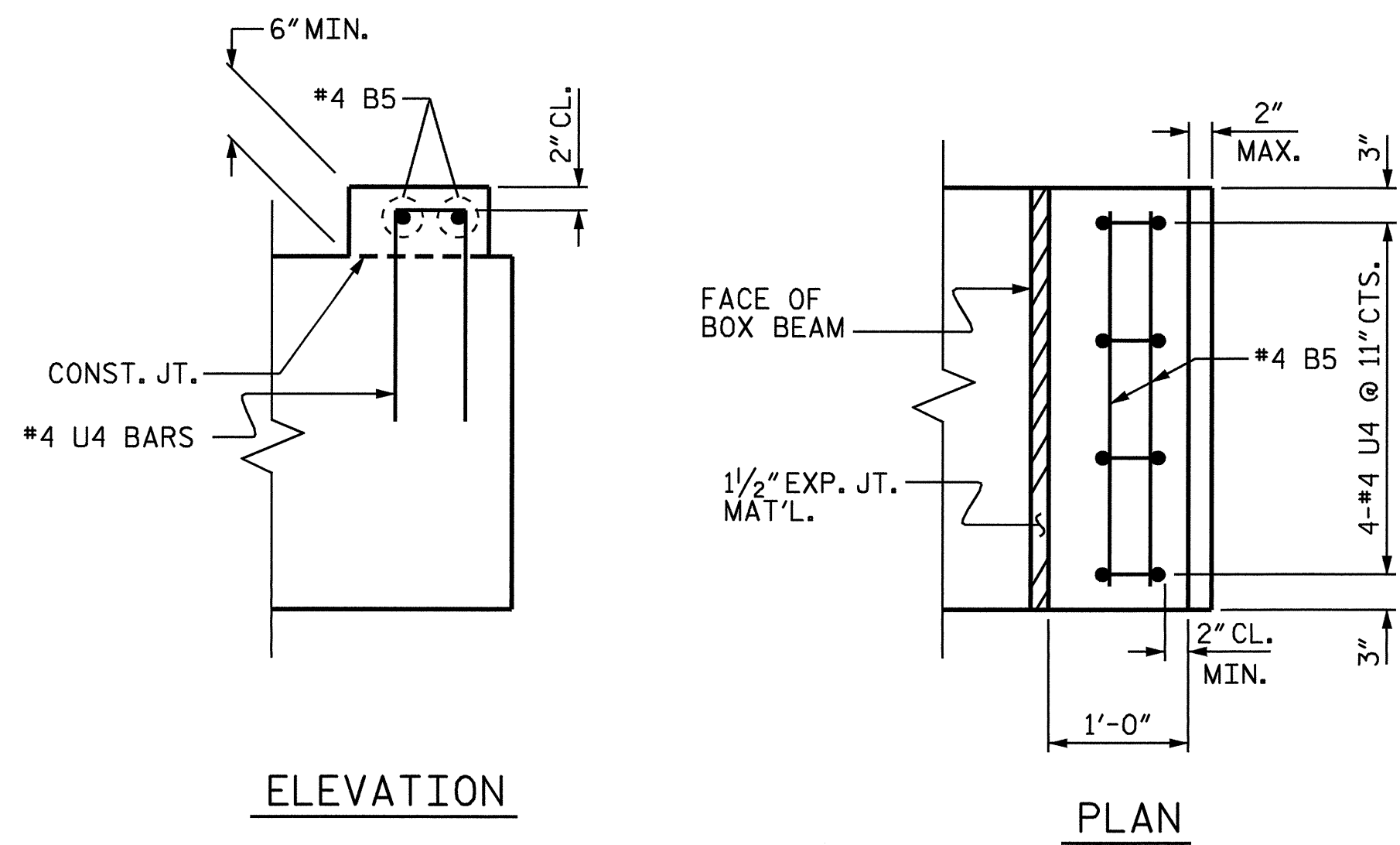
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 1

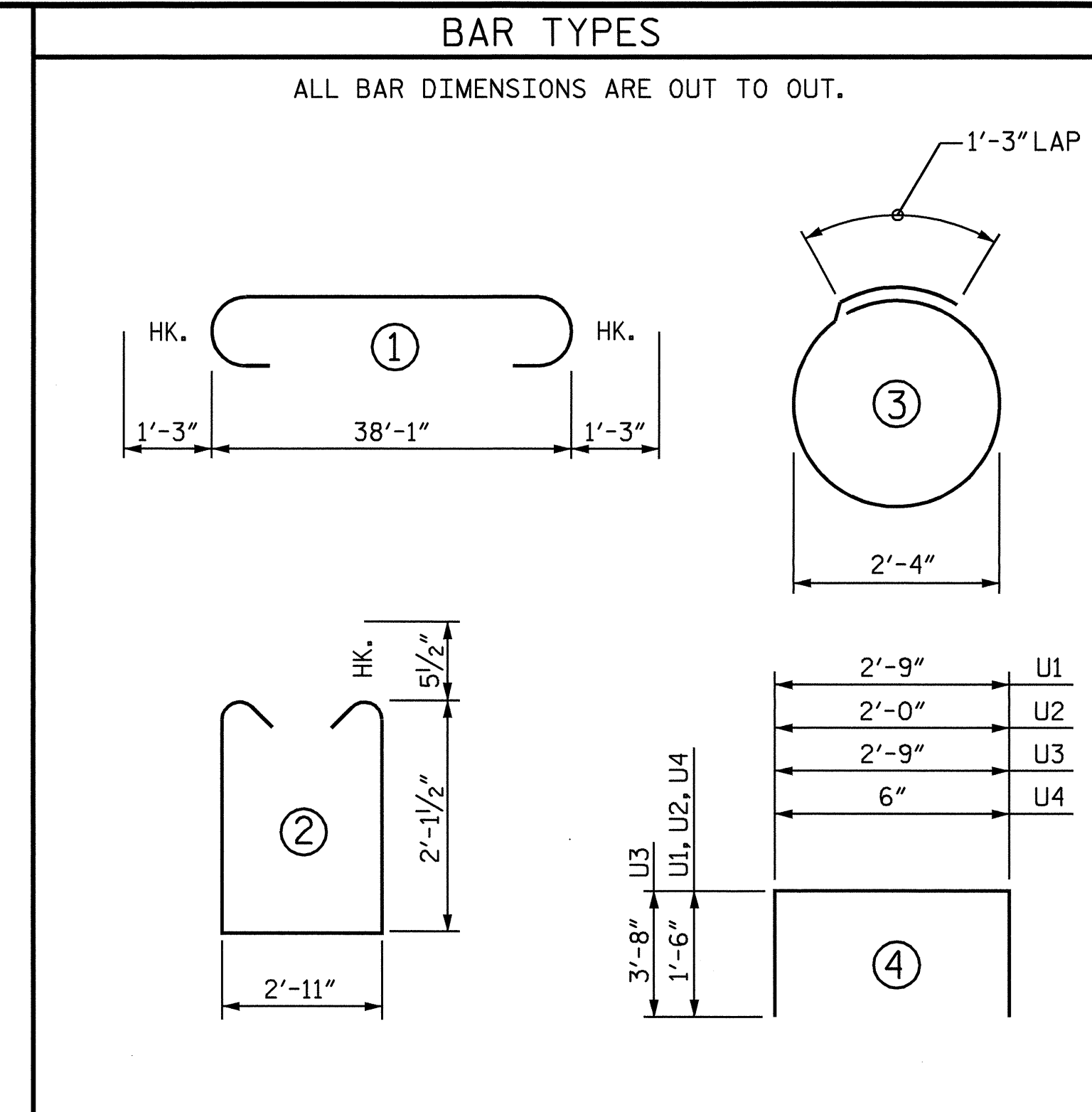


REVISIONS						SHEET NO. S-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

DRAWN BY: S.B. WILLIAMS DATE: 11-08
 CHECKED BY: A.K. PATEL/TJB DATE: 11-08



ELEVATION
PLAN
LATERAL GUIDE DETAIL
(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT No. 1

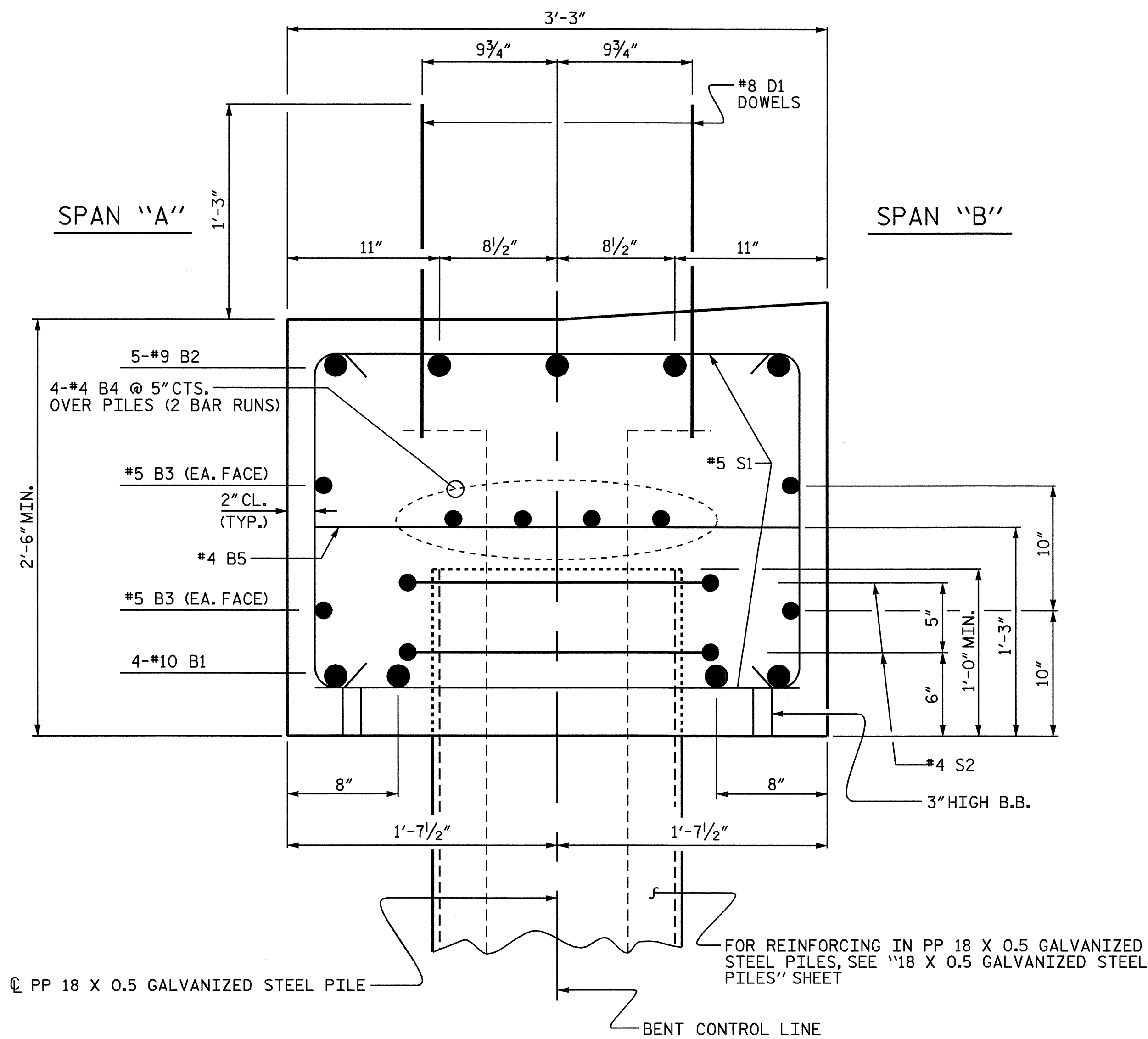
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	4	#5	STR	38'-3"	160
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
D1	48	#8	STR	2'-3"	288
S1	58	#5	2	8'-1"	489
S2	12	#4	3	8'-7"	69
U1	4	#4	4	5'-9"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19

REINFORCING STEEL 2613 LBS

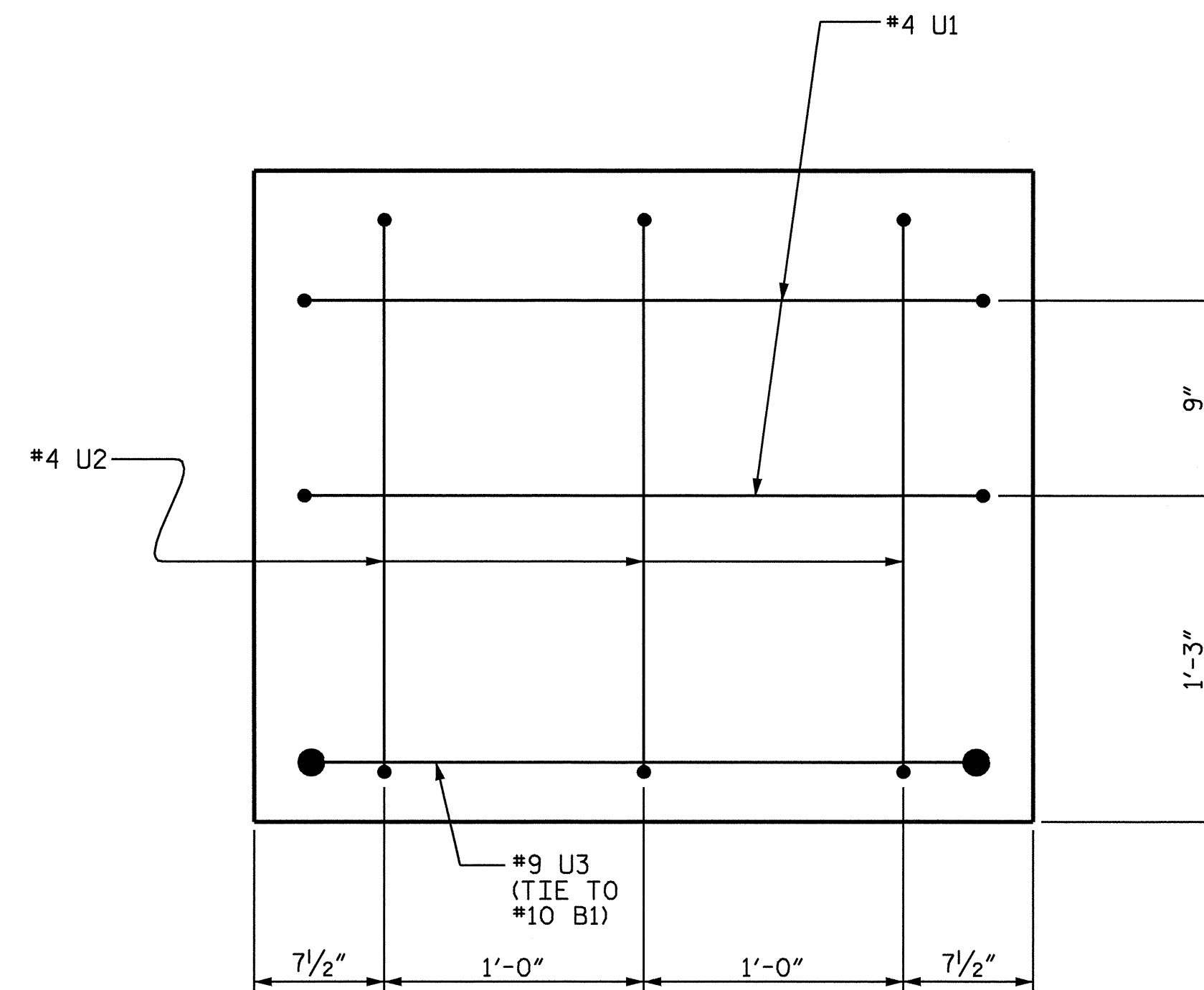
CLASS A CONCRETE BREAKDOWN
POUR #1 (CAP) 11.2 C.Y.
POUR #2 (LATERAL GUIDE) 0.1 C.Y.
TOTAL CLASS A CONCRETE 11.3 C.Y.

PP 18 X 0.5 GALVANIZED STEEL PILES
NO. 6 LIN. FT. 330.0

THE CONCRETE DISPLACED BY THE PP 18 X 0.5 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS A CONCRETE FOR THE BENT CAP.



SECTION A-A



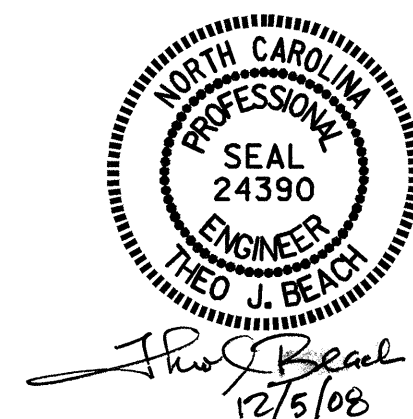
END OF CAP VIEW

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
STATION: 21+59.97 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1



DRAWN BY: S. B. WILLIAMS DATE: 11/08
CHECKED BY: A. K. PATEL/TJB DATE: 11/08

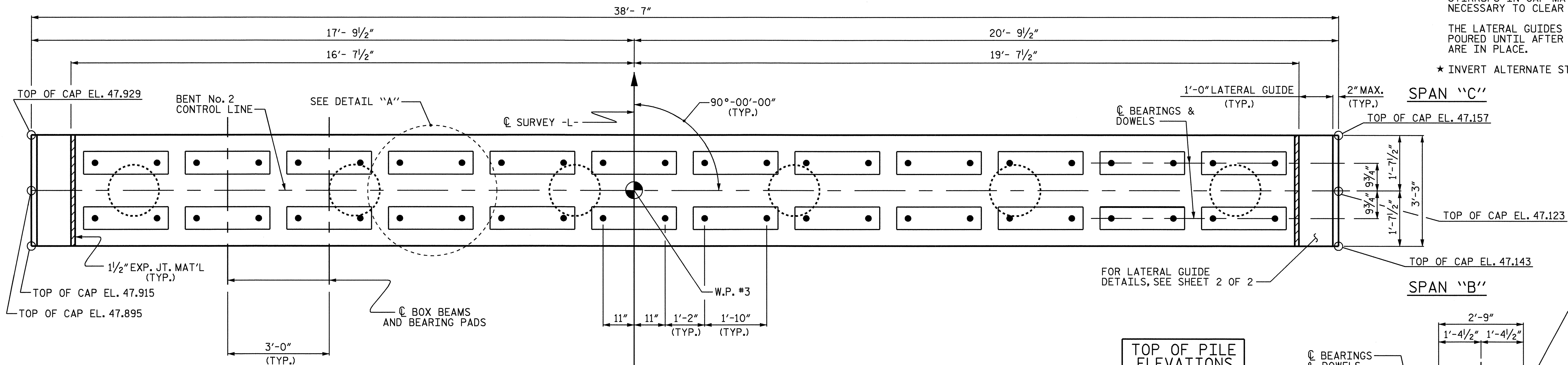
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			32

NOTES

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

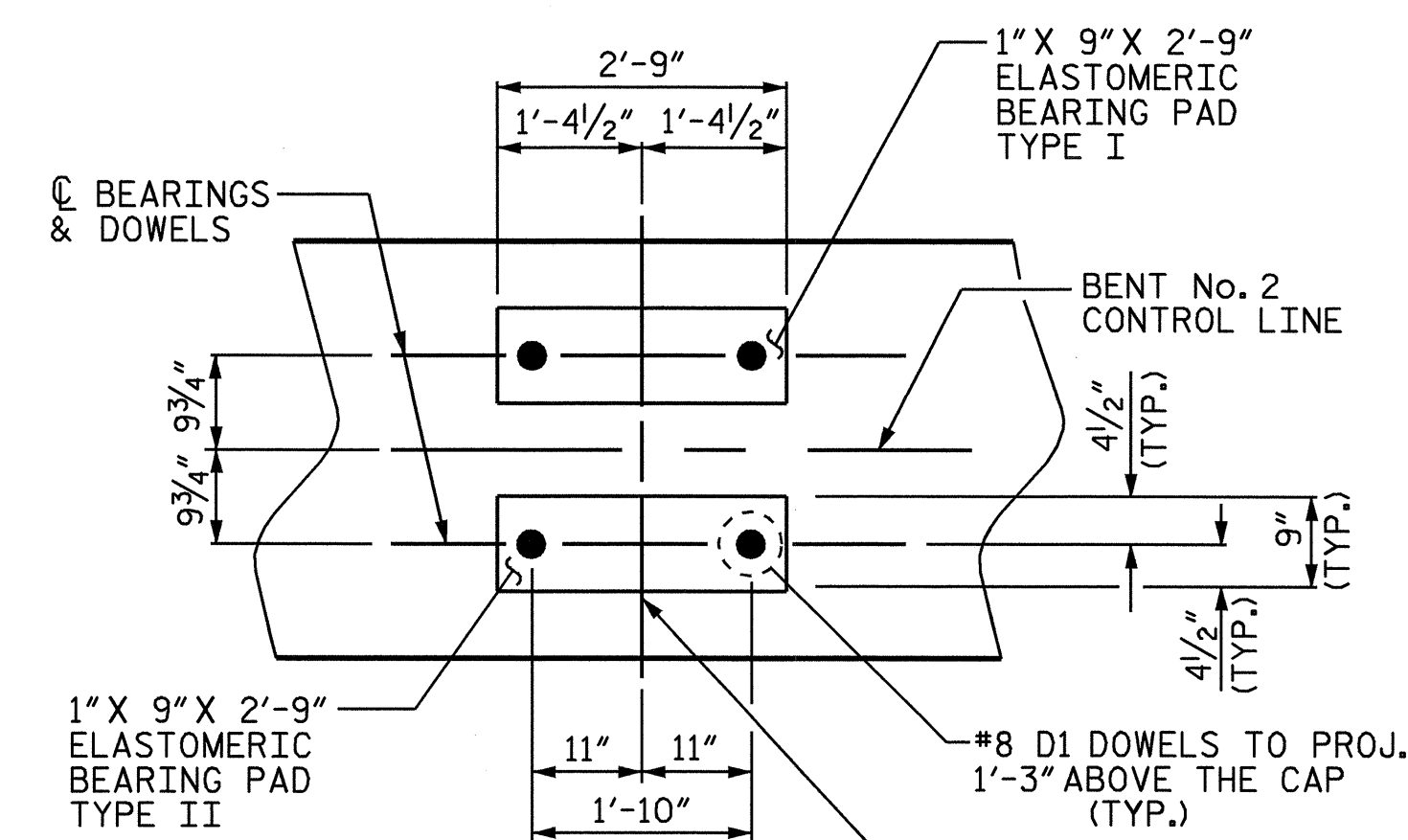
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE BOX BEAMS ARE IN PLACE.

* INVERT ALTERNATE STIRRUPS AS SHOWN.

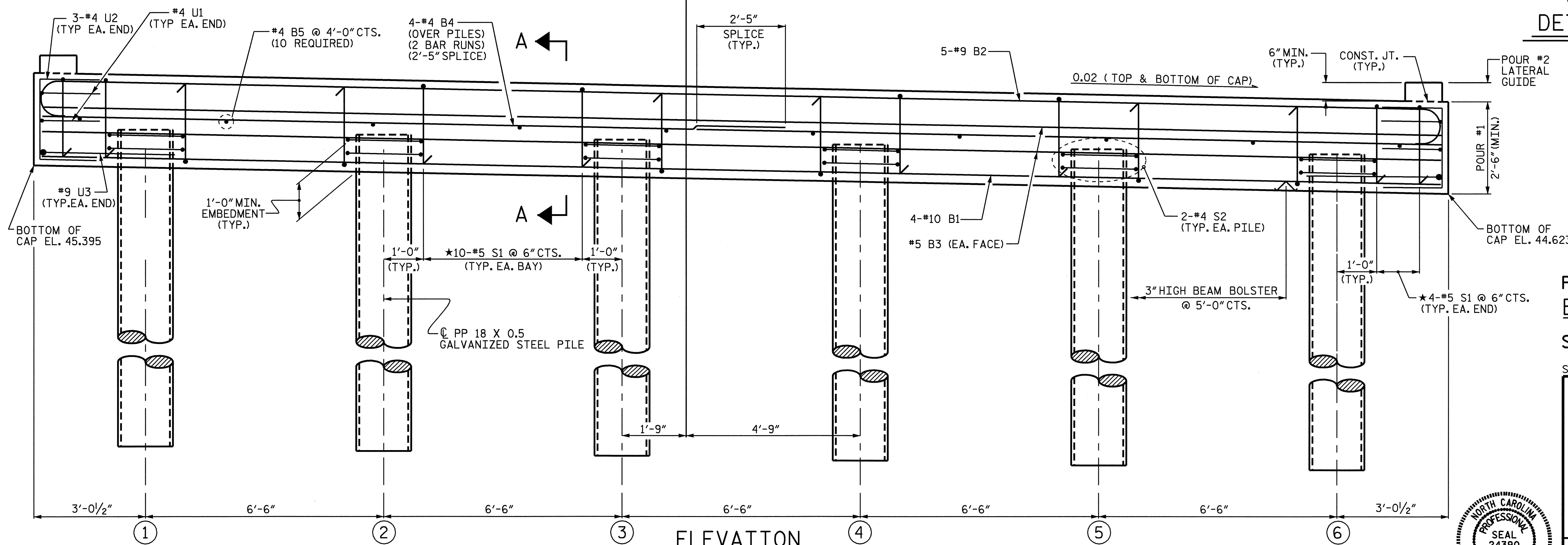


PLAN

TOP OF PILE ELEVATIONS	
1	46.349
2	46.219
3	46.089
4	45.959
5	45.829
6	45.699



DETAIL "A"



ELEVATION

FOR REINFORCING STEEL IN PIPE PILES, SEE "PP 18 X 0.5 GALVANIZED STEEL PILE" DETAIL SHEET.

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 2

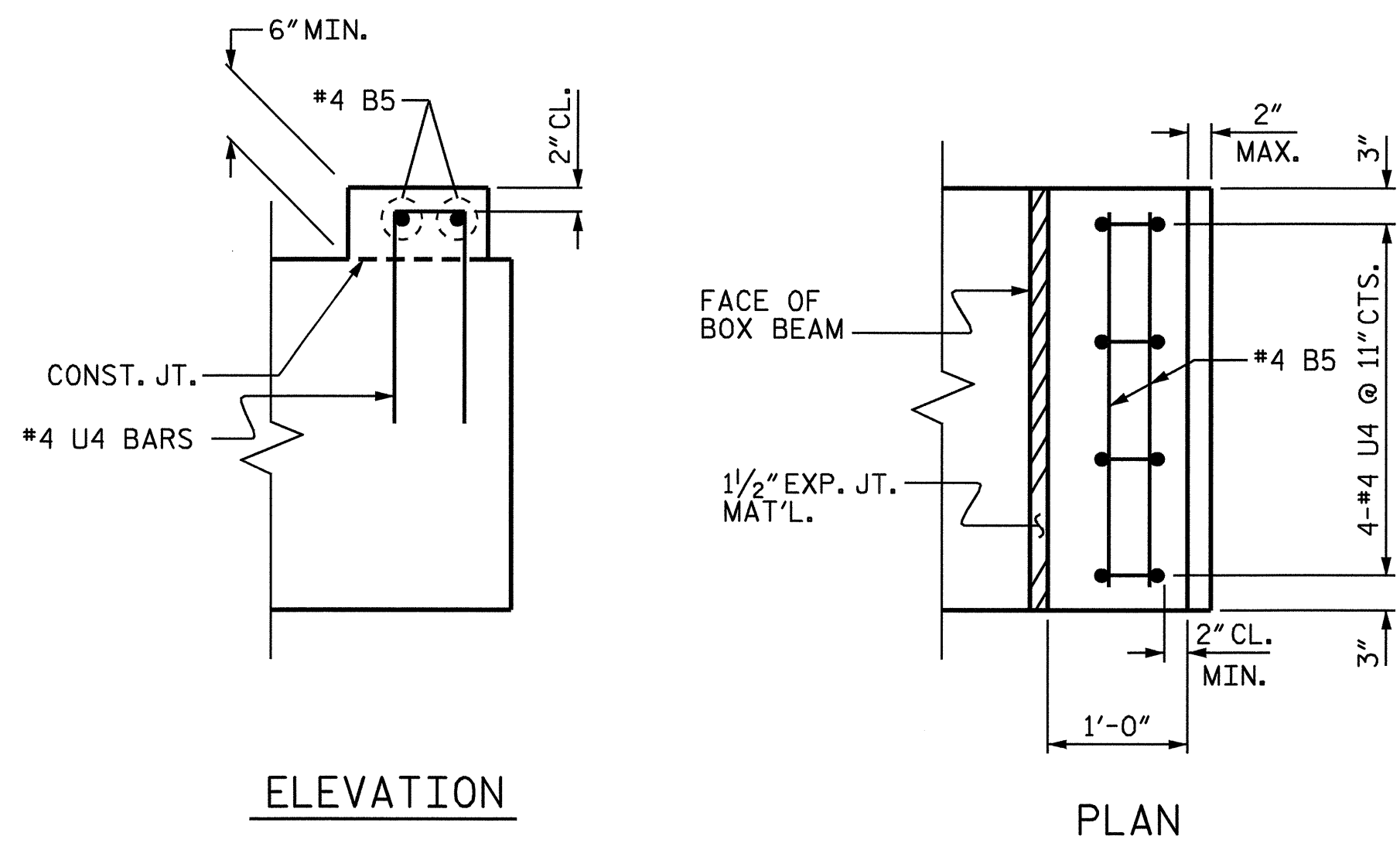
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2

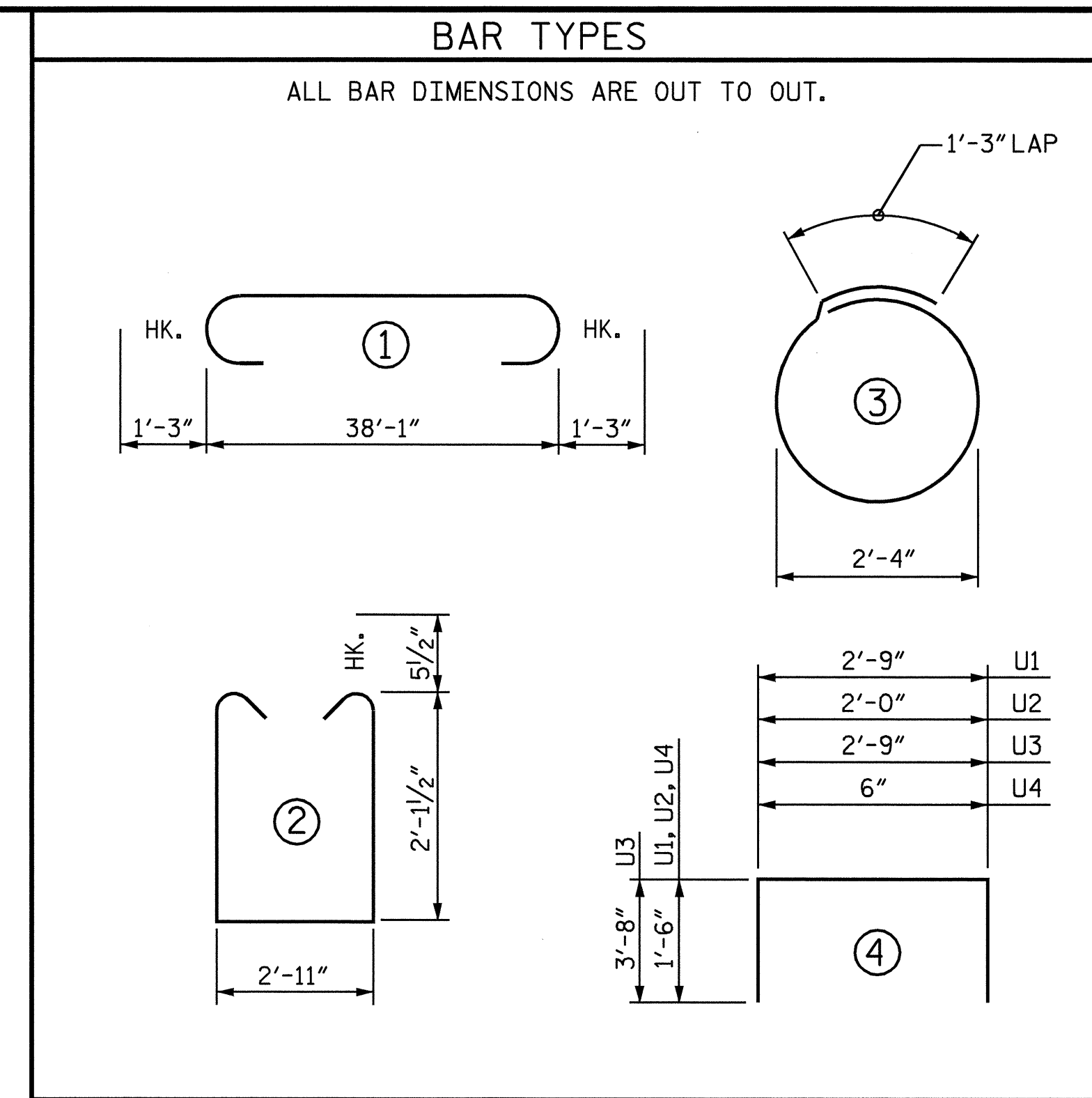
REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			



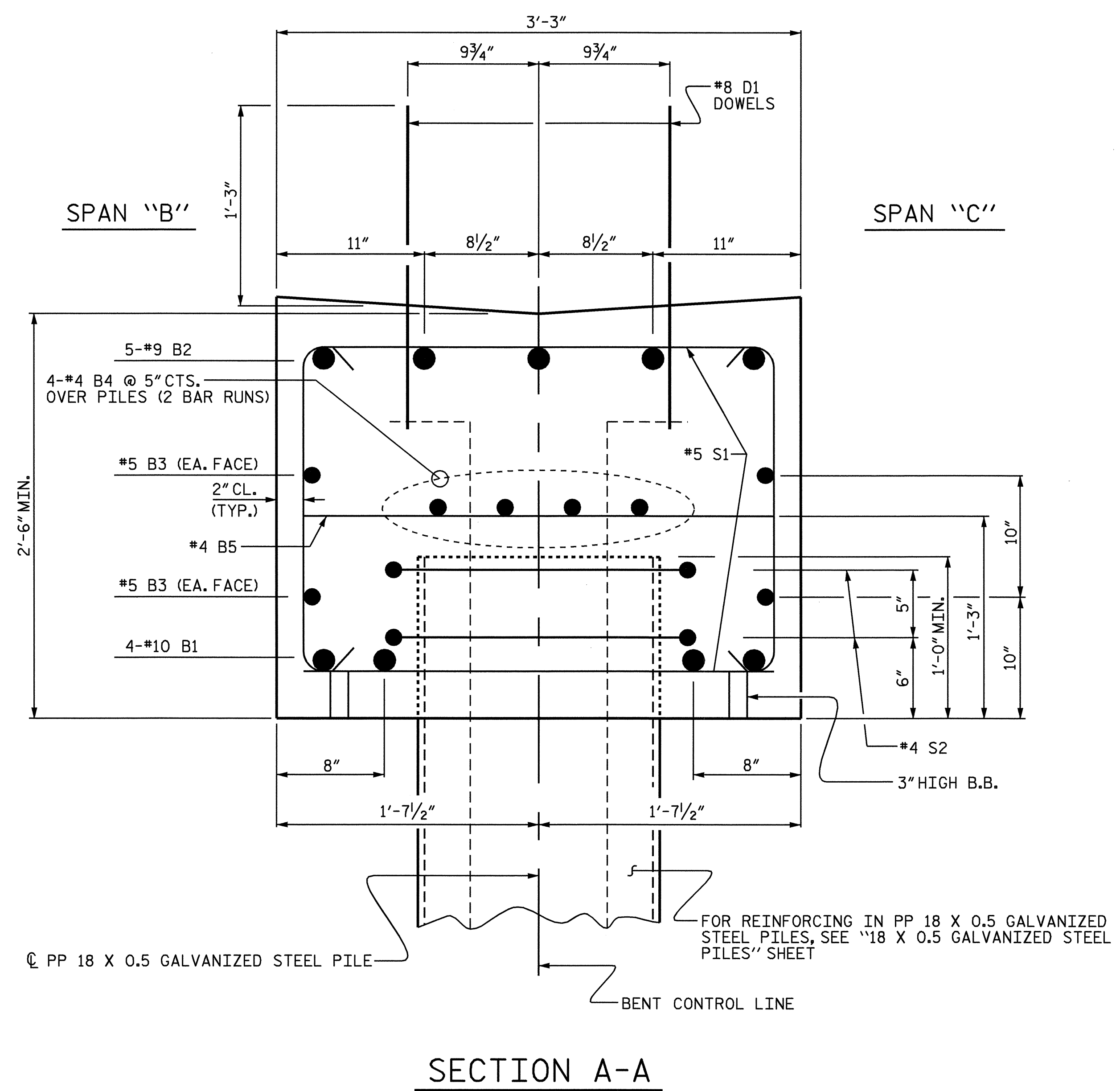
DRAWN BY: S.B. WILLIAMS DATE: 11-08
 CHECKED BY: A.K. PATEL/TJB DATE: 11-08



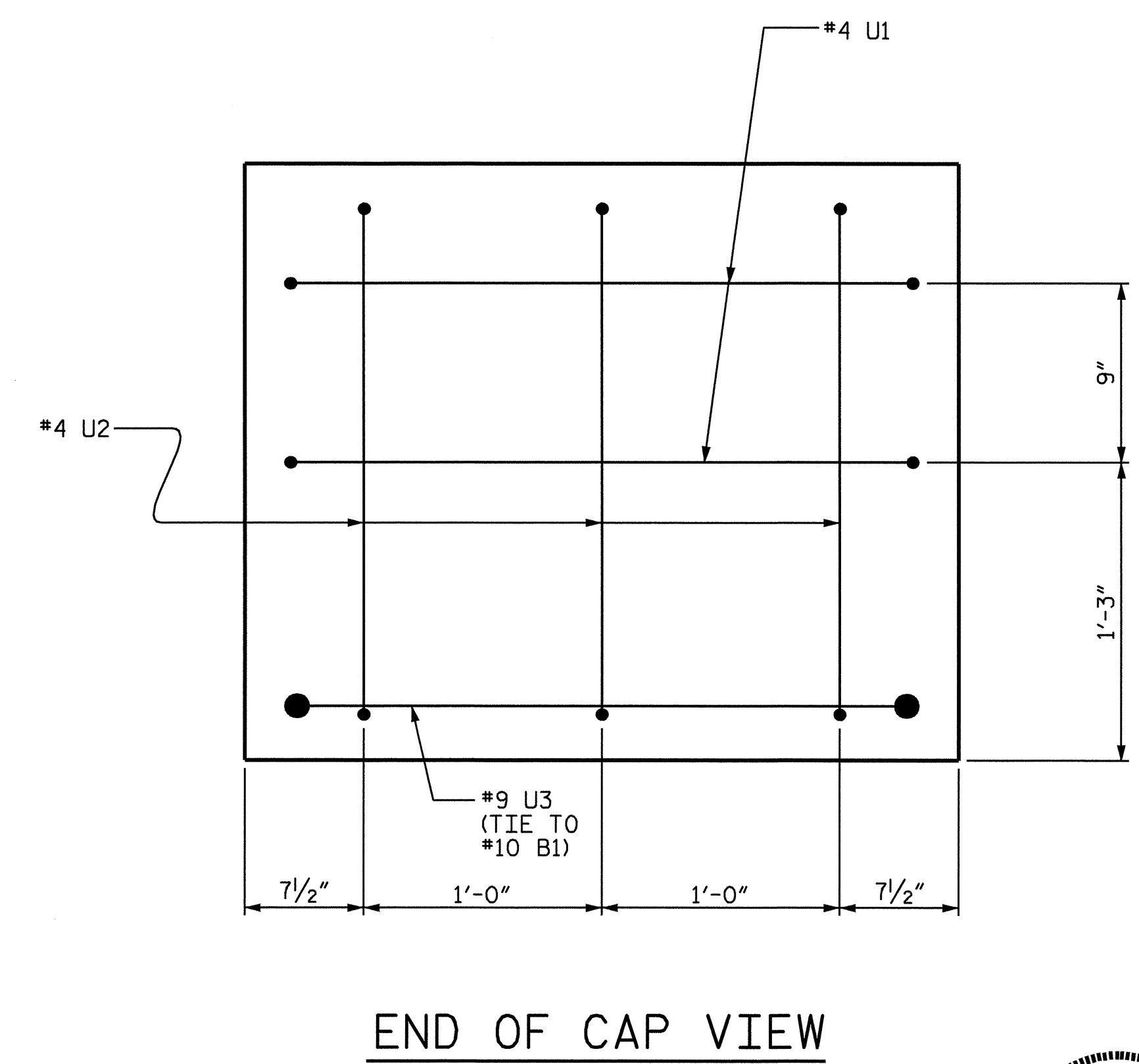
ELEVATION
PLAN
LATERAL GUIDE DETAIL
(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



BILL OF MATERIAL					
BENT No. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	4	#5	STR	38'-3"	160
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
D1	48	#8	STR	2'-3"	288
S1	58	#5	2	8'-1"	489
S2	12	#4	3	8'-7"	69
U1	4	#4	4	5'-9"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL					2613 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #1 (CAP)					11.2 C.Y.
POUR #2 (LATERAL GUIDE)					0.1 C.Y.
TOTAL CLASS A CONCRETE					11.3 C.Y.
PP 18 X 0.5 GALVANIZED STEEL PILES					
NO. 6					LIN. FT. 330.0
THE CONCRETE DISPLACED BY THE PP 18 X 0.5 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS A CONCRETE FOR THE BENT CAP.					



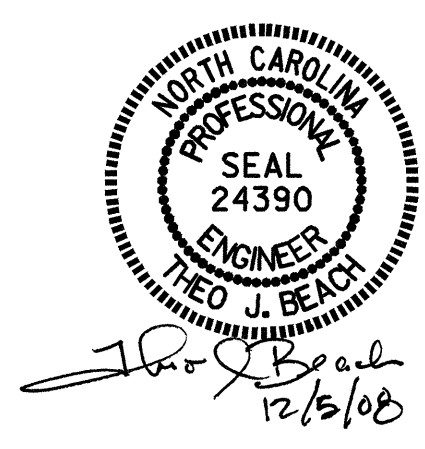
SECTION A-A



END OF CAP VIEW

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-19
TOTAL SHEETS					32



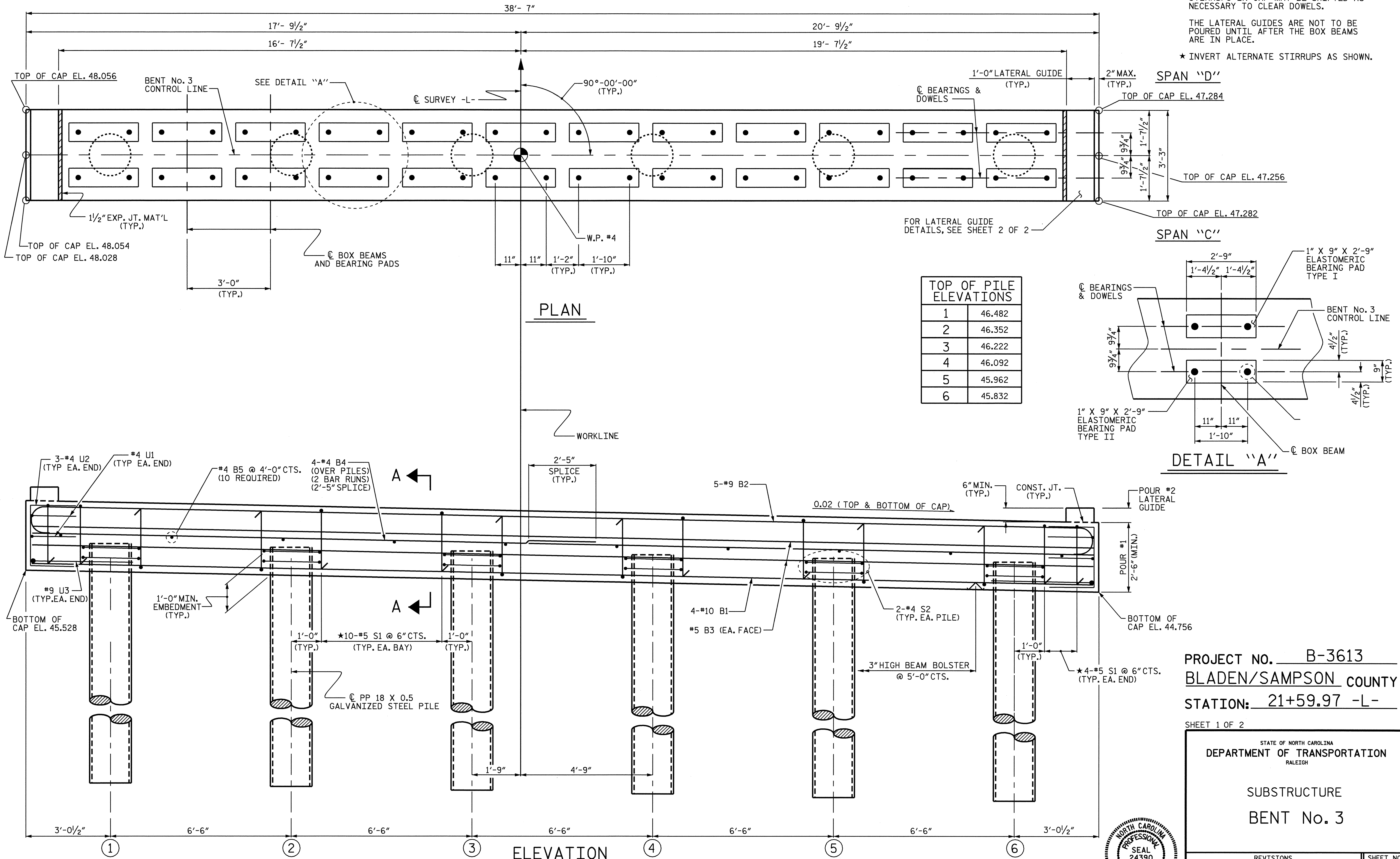
DRAWN BY: S. B. WILLIAMS DATE: 11/08
 CHECKED BY: A. K. PATEL/TJB DATE: 11/08

NOTES

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

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE BOX BEAMS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS AS SHOWN.



TOP OF PILE ELEVATIONS	
1	46.482
2	46.352
3	46.222
4	46.092
5	45.962
6	45.832

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

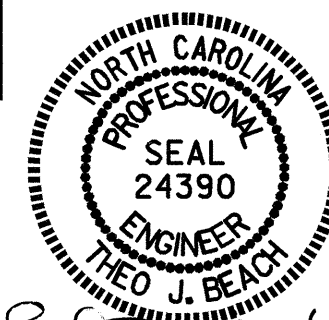
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 3

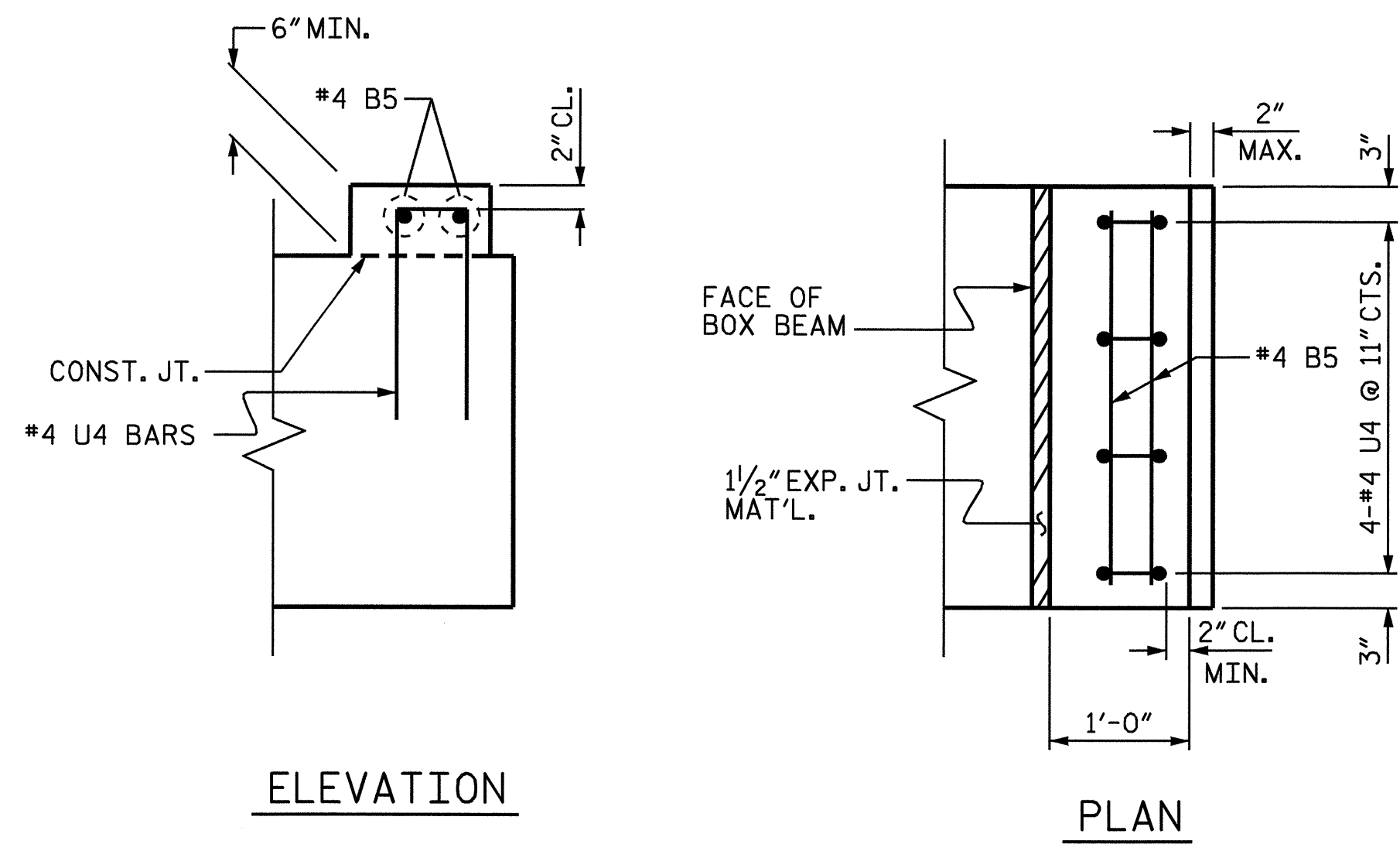
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-20
 TOTAL SHEETS 32



DRAWN BY: S.B. WILLIAMS DATE: 11-08
 CHECKED BY: A.K. PATEL/TJB DATE: 11-08

FOR REINFORCING STEEL IN PIPE PILES,
 SEE "PP 18 X 0.5 GALVANIZED STEEL PILE" DETAIL SHEET.

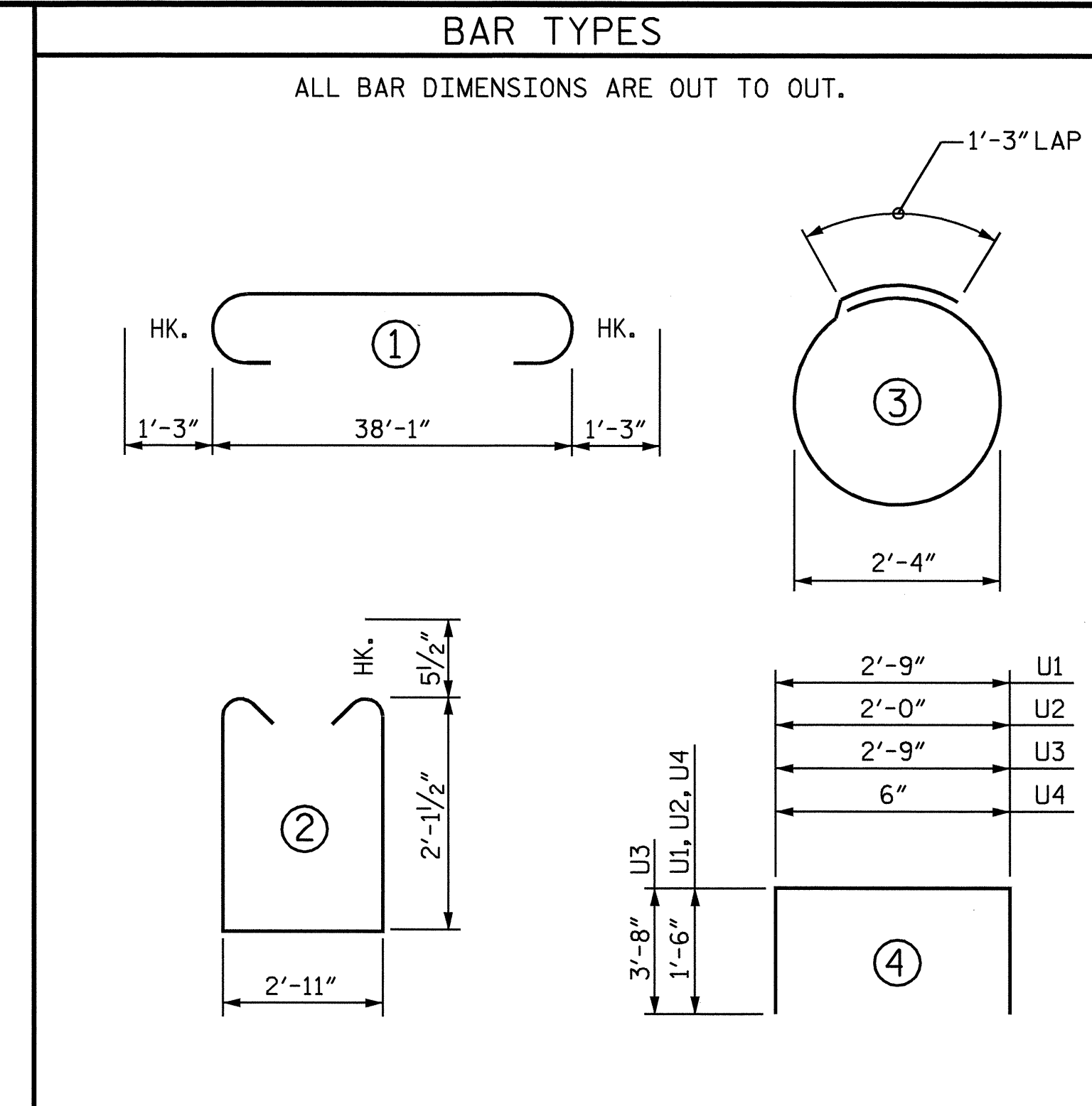


ELEVATION

PLAN

LATERAL GUIDE DETAIL

(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT No. 3

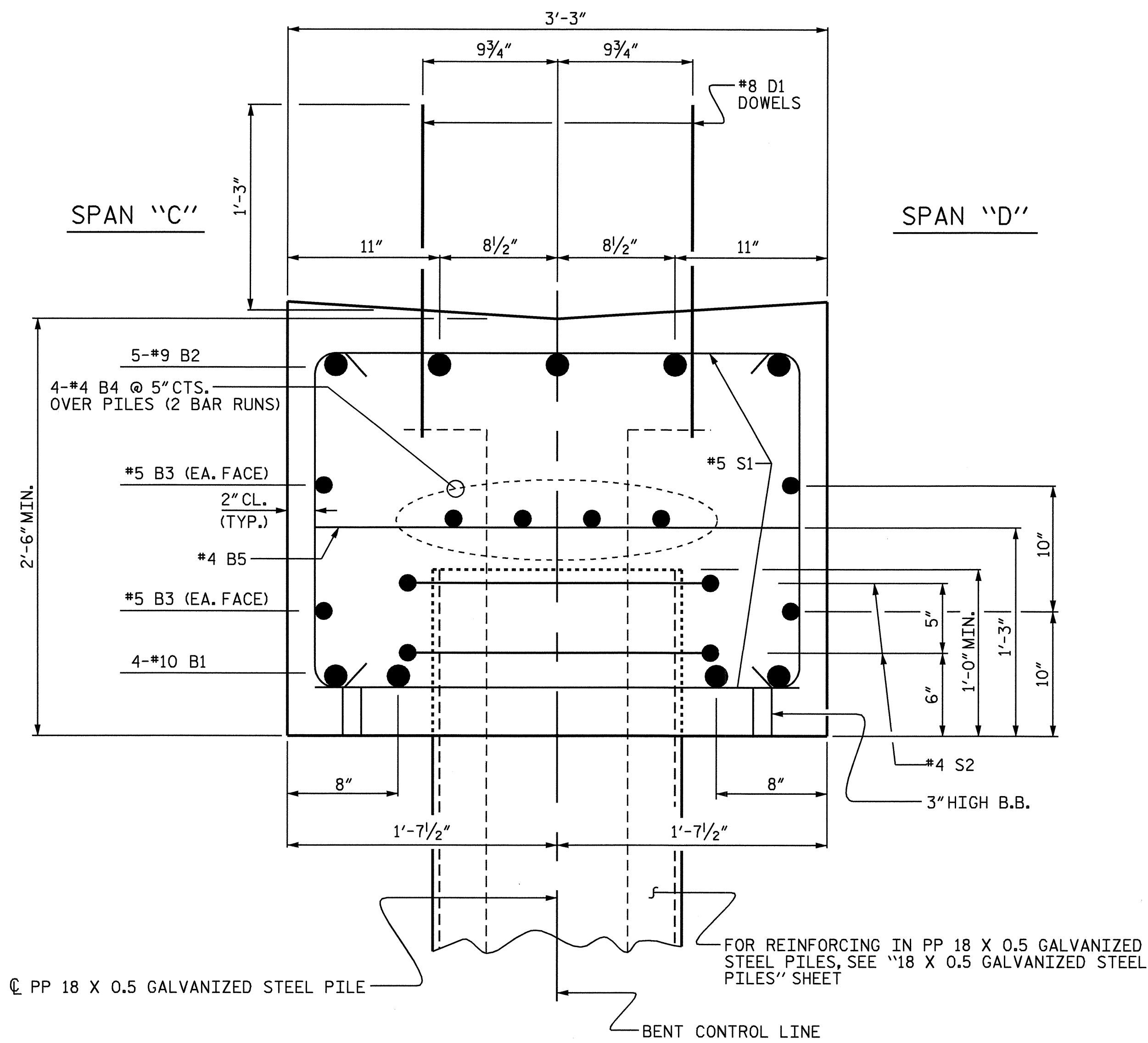
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	4	#5	STR	38'-3"	160
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
D1	48	#8	STR	2'-3"	288
S1	58	#5	2	8'-1"	489
S2	12	#4	3	8'-7"	69
U1	4	#4	4	5'-9"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19

REINFORCING STEEL 2613 LBS

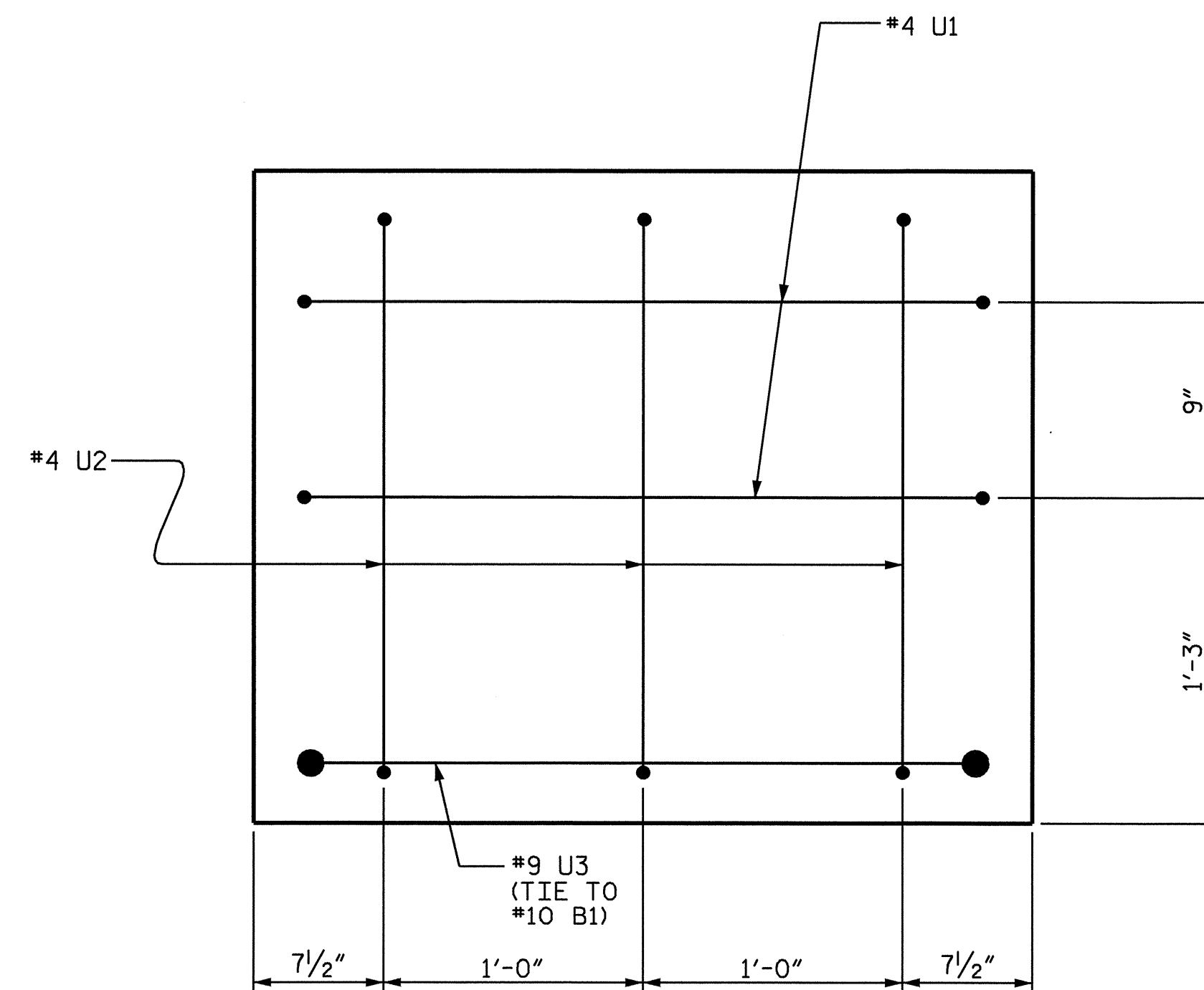
CLASS A CONCRETE BREAKDOWN
 POUR #1 (CAP) 11.2 C.Y.
 POUR #2 (LATERAL GUIDE) 0.1 C.Y.
 TOTAL CLASS A CONCRETE 11.3 C.Y.

PP 18 X 0.5 GALVANIZED STEEL PILES
 NO. 6 LIN. FT. 330.0

THE CONCRETE DISPLACED BY THE PP 18 X 0.5 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS A CONCRETE FOR THE BENT CAP.



SECTION A-A



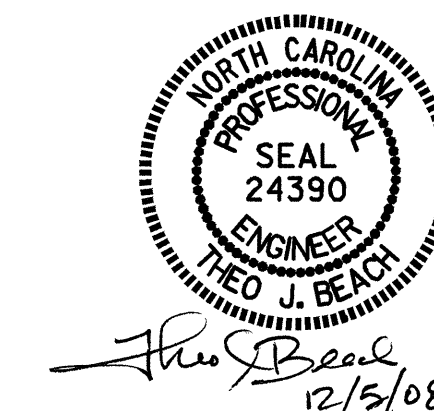
END OF CAP VIEW

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 3



REVISIONS						SHEET NO. S-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

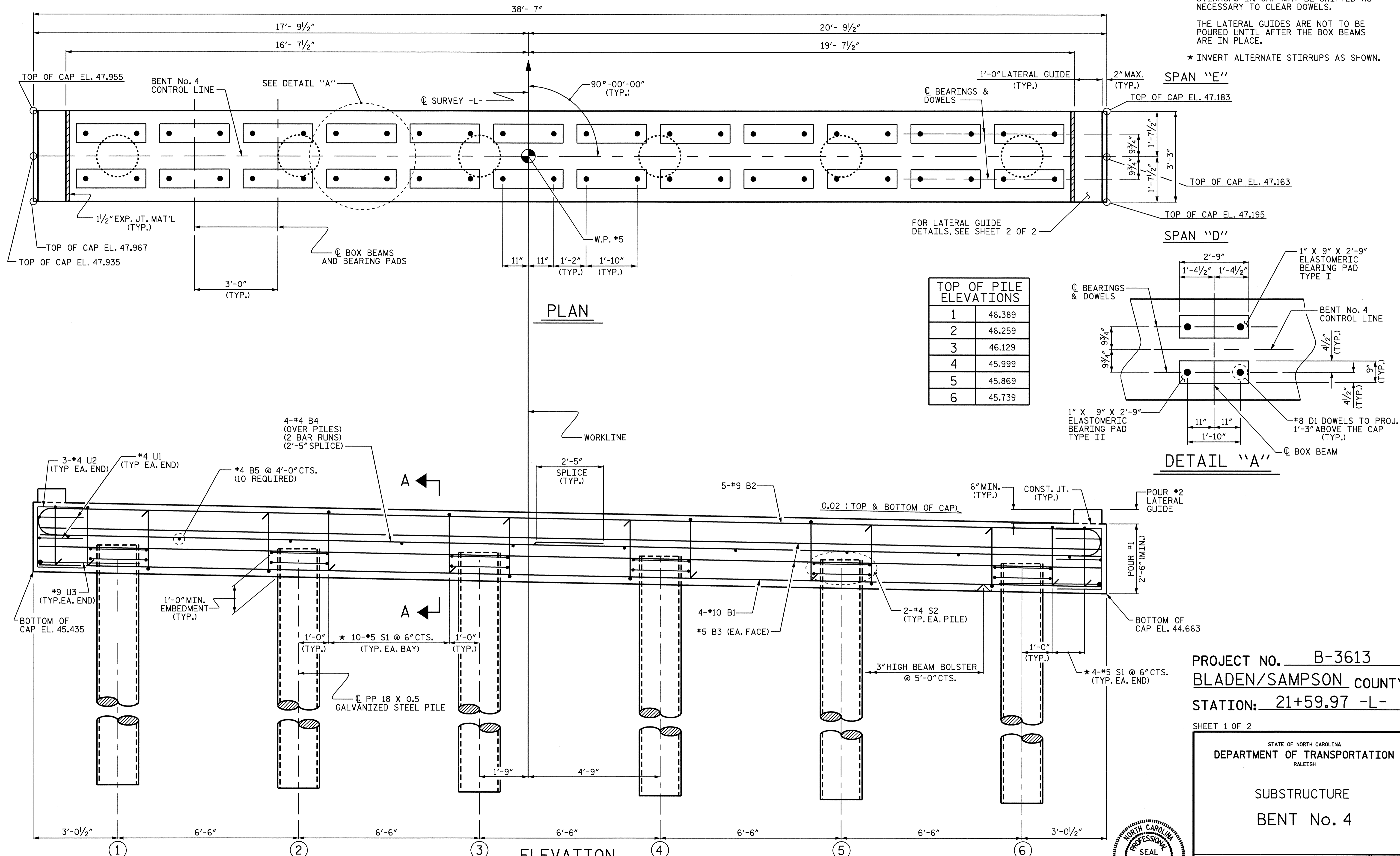
DRAWN BY: S. B. WILLIAMS DATE: 11/08
 CHECKED BY: A. K. PATEL/TJB DATE: 11/08

NOTES

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

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE BOX BEAMS ARE IN PLACE.

* INVERT ALTERNATE STIRRUPS AS SHOWN.



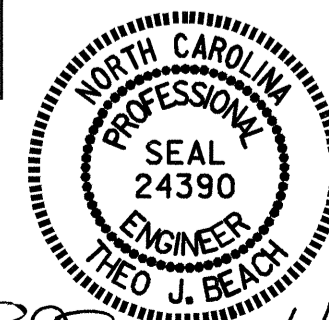
TOP OF PILE ELEVATIONS	
1	46.389
2	46.259
3	46.129
4	45.999
5	45.869
6	45.739

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

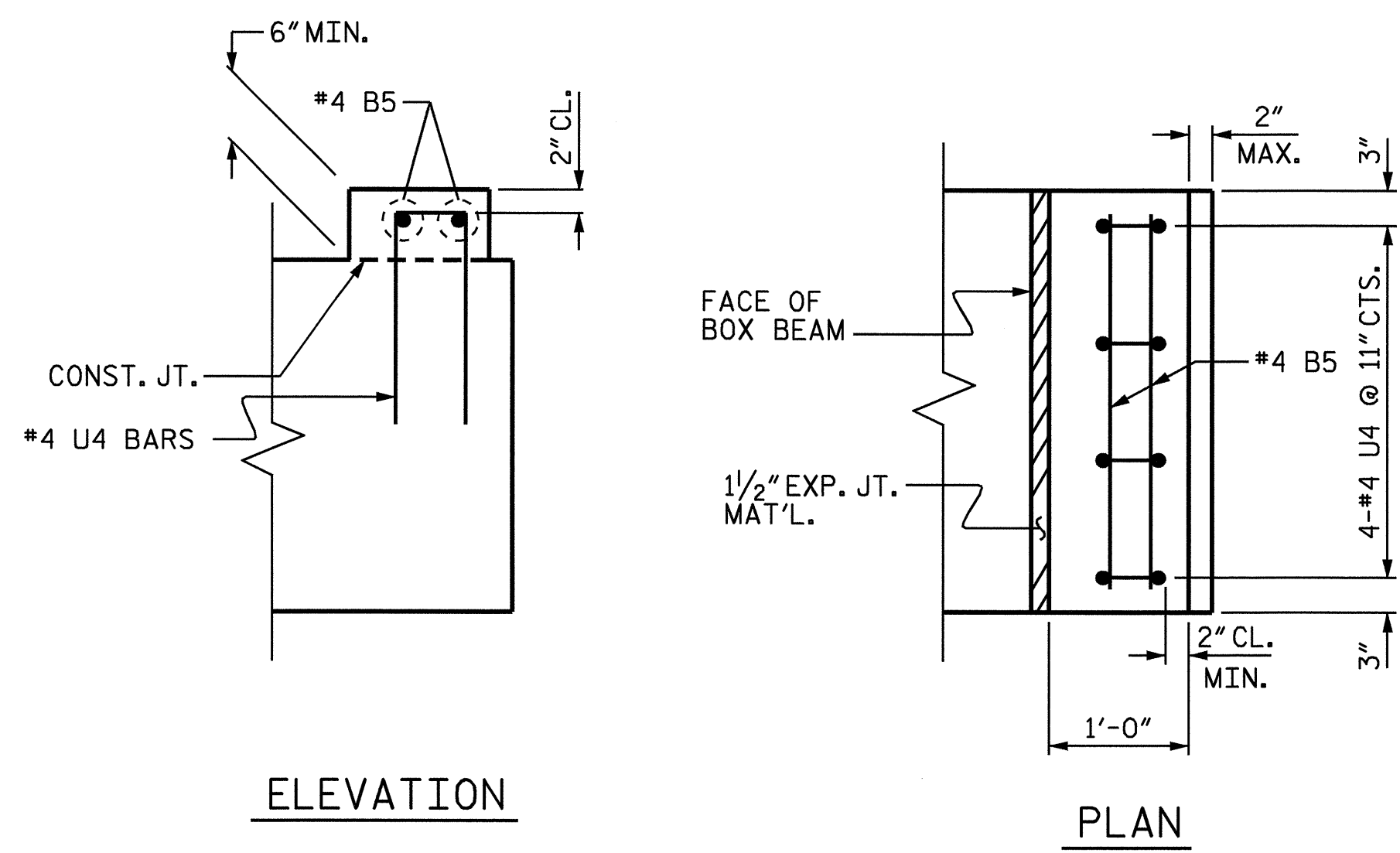
SUBSTRUCTURE
 BENT No. 4



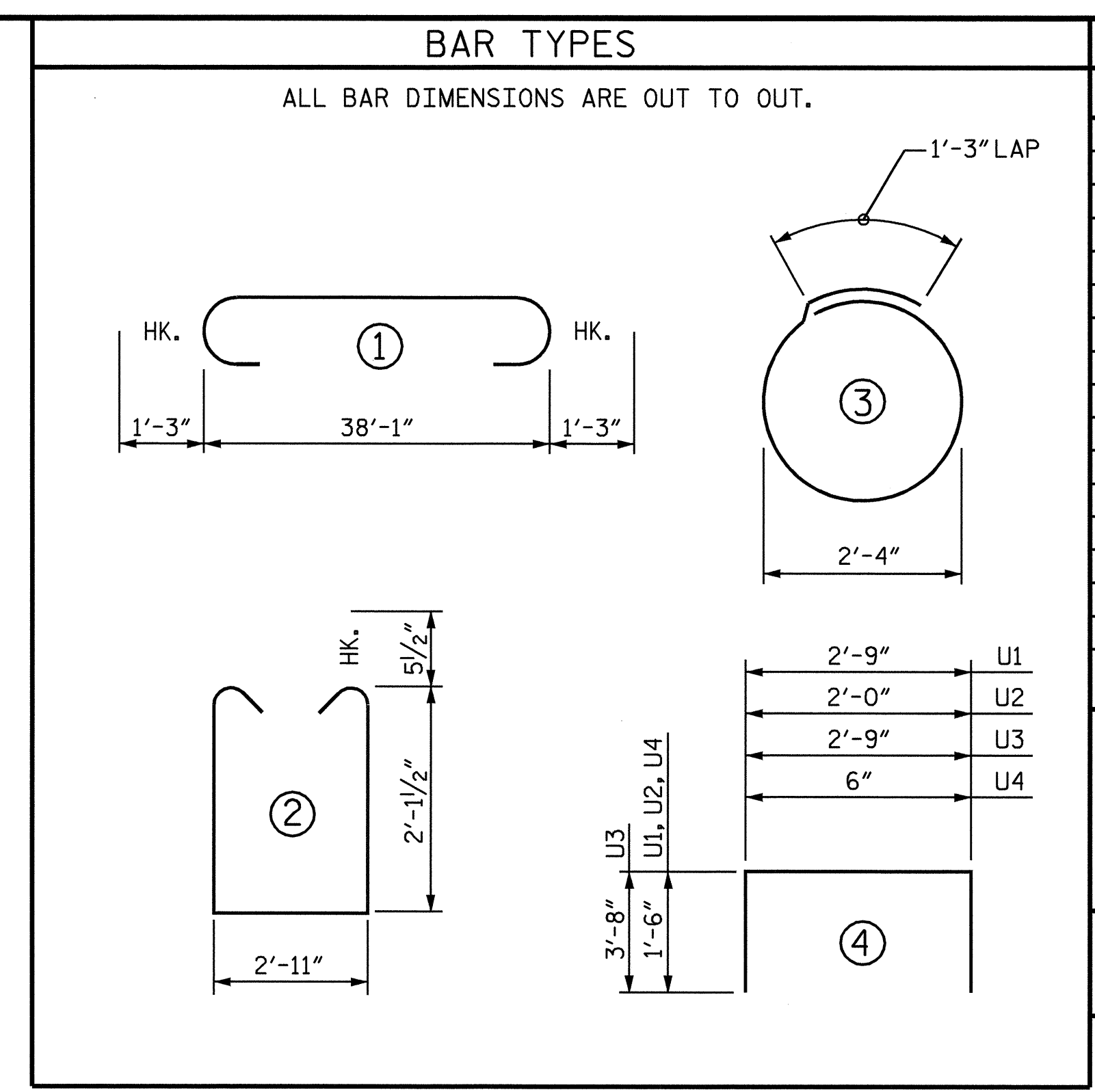
REVISIONS						SHEET NO. S-22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

DRAWN BY: S.B. WILLIAMS DATE: 11-08
 CHECKED BY: A.K. PATEL/TJB DATE: 11-08

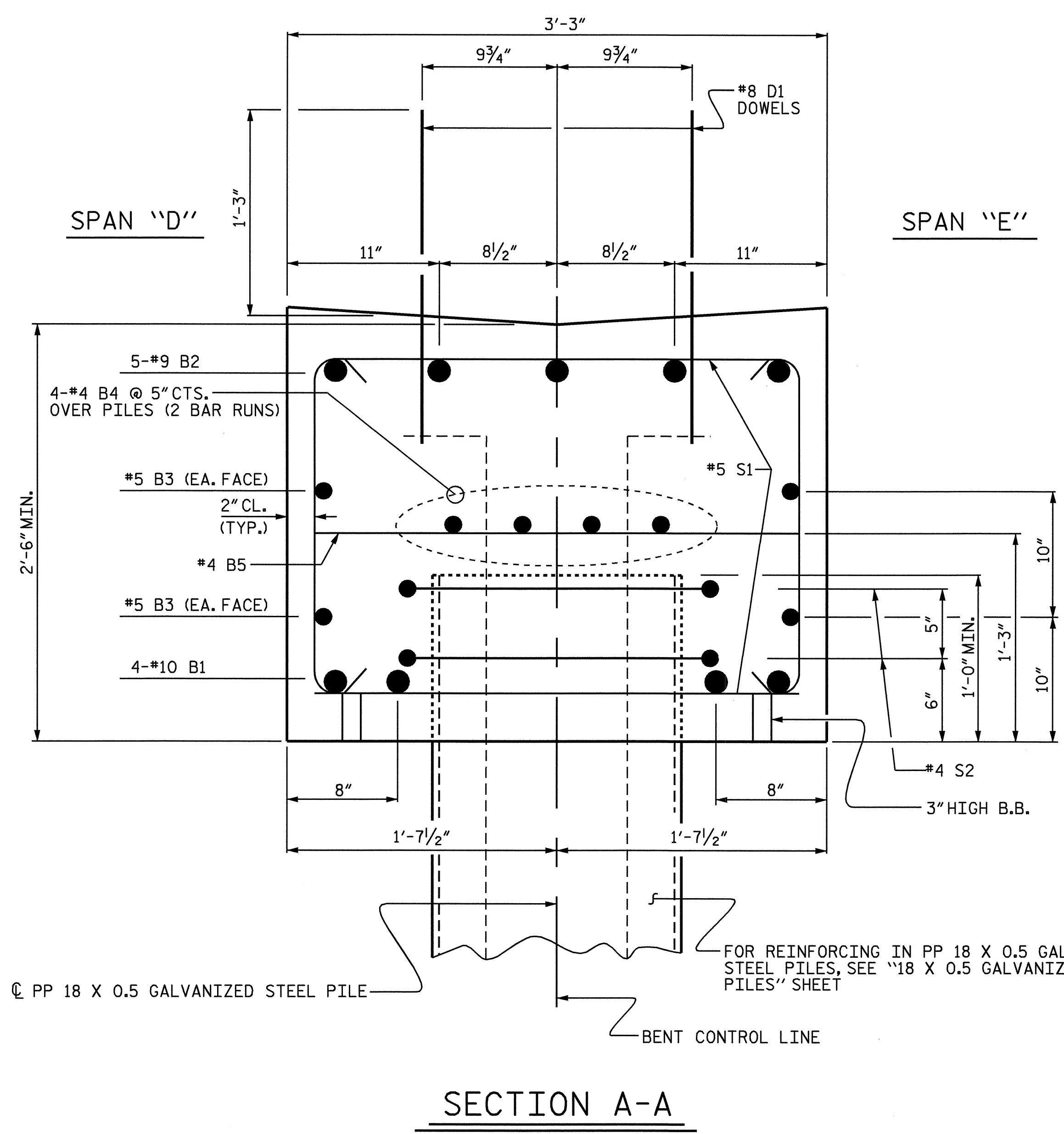
FOR REINFORCING STEEL IN PIPE PILES,
 SEE "PP 18 X 0.5 GALVANIZED STEEL PILE" DETAIL SHEET.



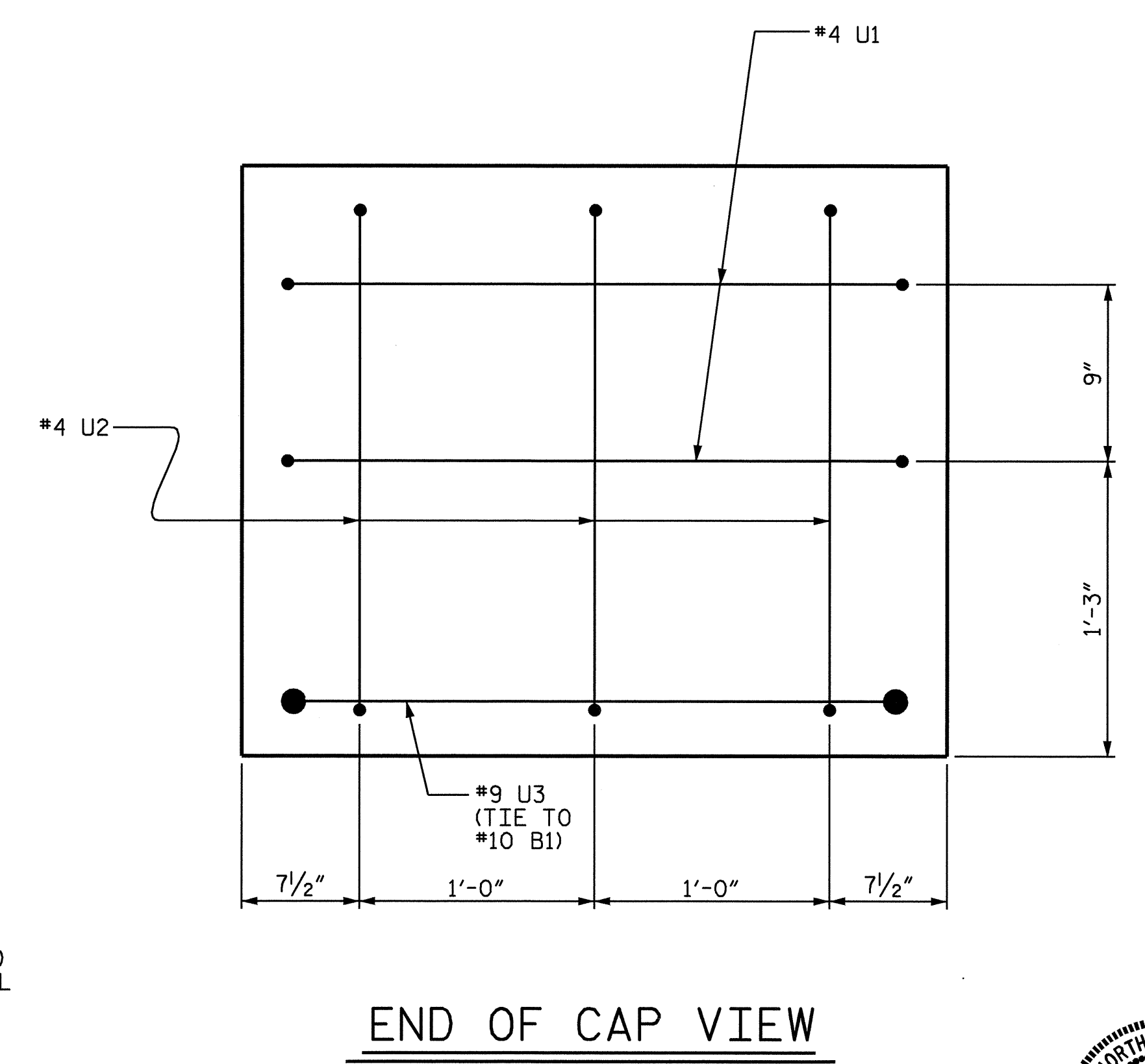
ELEVATION
PLAN
LATERAL GUIDE DETAIL
(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



BILL OF MATERIAL					
BENT No. 4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	4	#5	STR	38'-3"	160
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
D1	48	#8	STR	2'-3"	288
S1	58	#5	2	8'-1"	489
S2	12	#4	3	8'-7"	69
U1	4	#4	4	5'-9"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL					2613 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #1 (CAP)				11.2 C.Y.	
POUR #2 (LATERAL GUIDE)				0.1 C.Y.	
TOTAL CLASS A CONCRETE				11.3 C.Y.	
PP 18 X 0.5 GALVANIZED STEEL PILES					
NO. 6				300.0	LIN. FT.
THE CONCRETE DISPLACED BY THE PP 18 X 0.5 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS A CONCRETE FOR THE BENT CAP.					



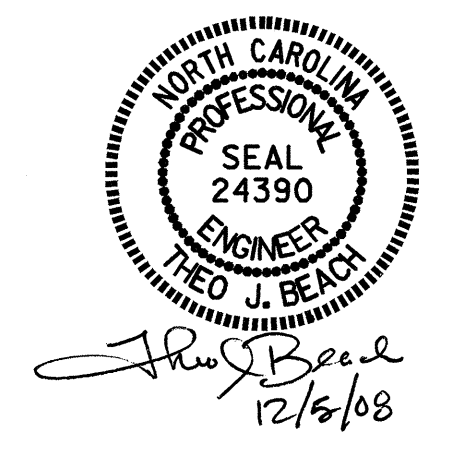
SECTION A-A



END OF CAP VIEW

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SUBSTRUCTURE					
BENT No. 4					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-23
TOTAL SHEETS					32



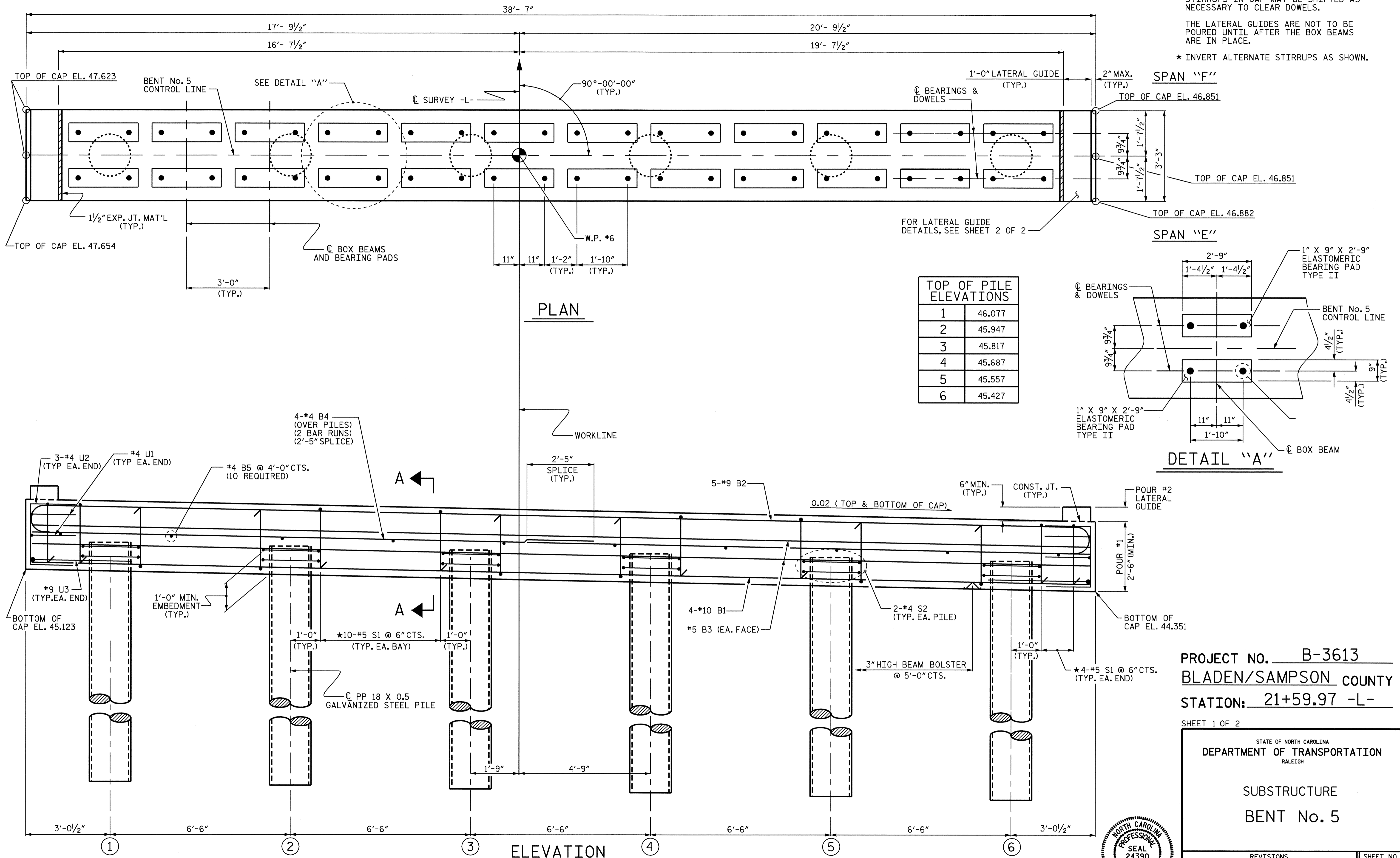
DRAWN BY: S. B. WILLIAMS DATE: 11/08
 CHECKED BY: A. K. PATEL/TJB DATE: 11/08

NOTES

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

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE BOX BEAMS ARE IN PLACE.

* INVERT ALTERNATE STIRRUPS AS SHOWN.



TOP OF PILE ELEVATIONS	
1	46.077
2	45.947
3	45.817
4	45.687
5	45.557
6	45.427

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 5

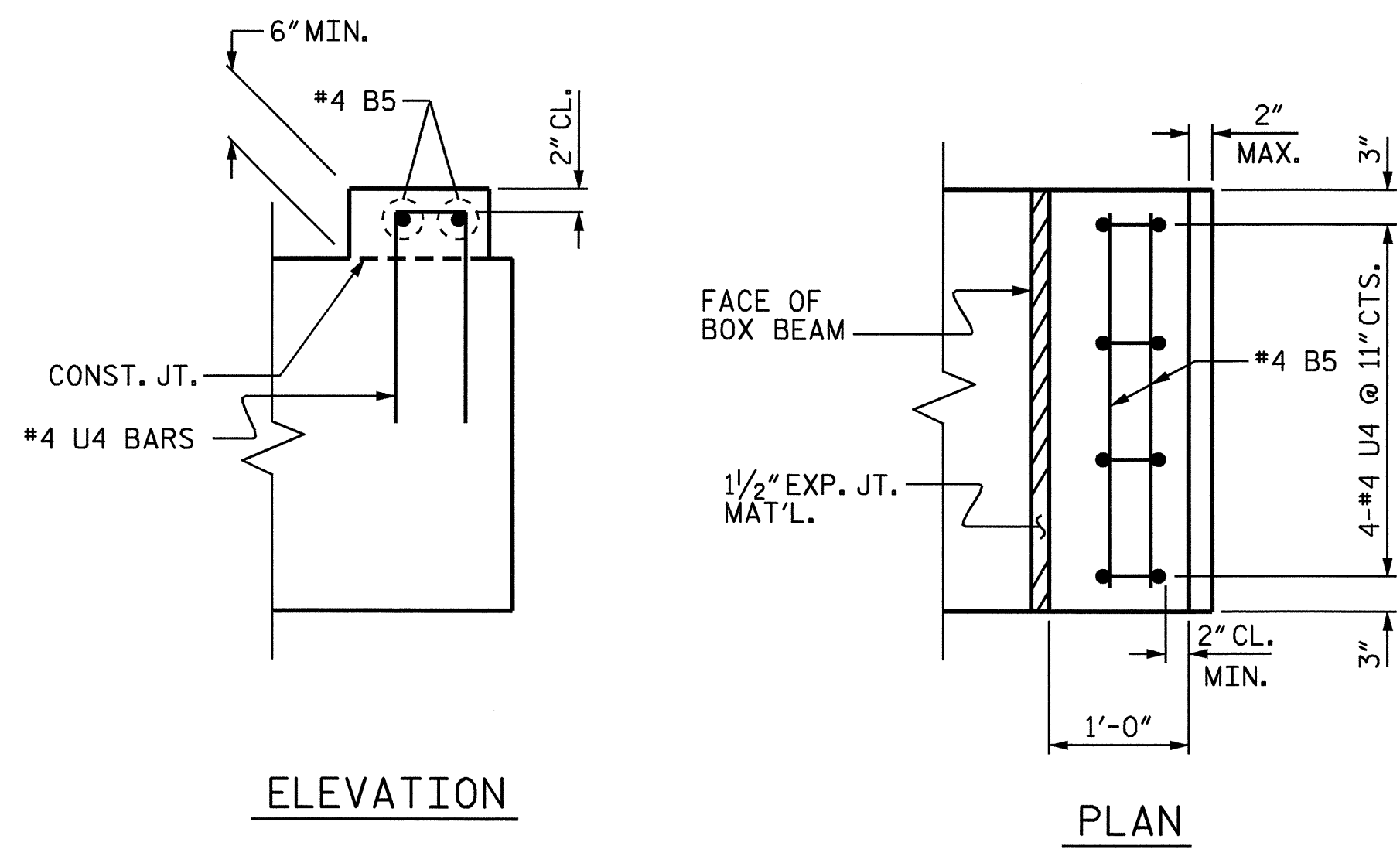
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-24
 TOTAL SHEETS 32

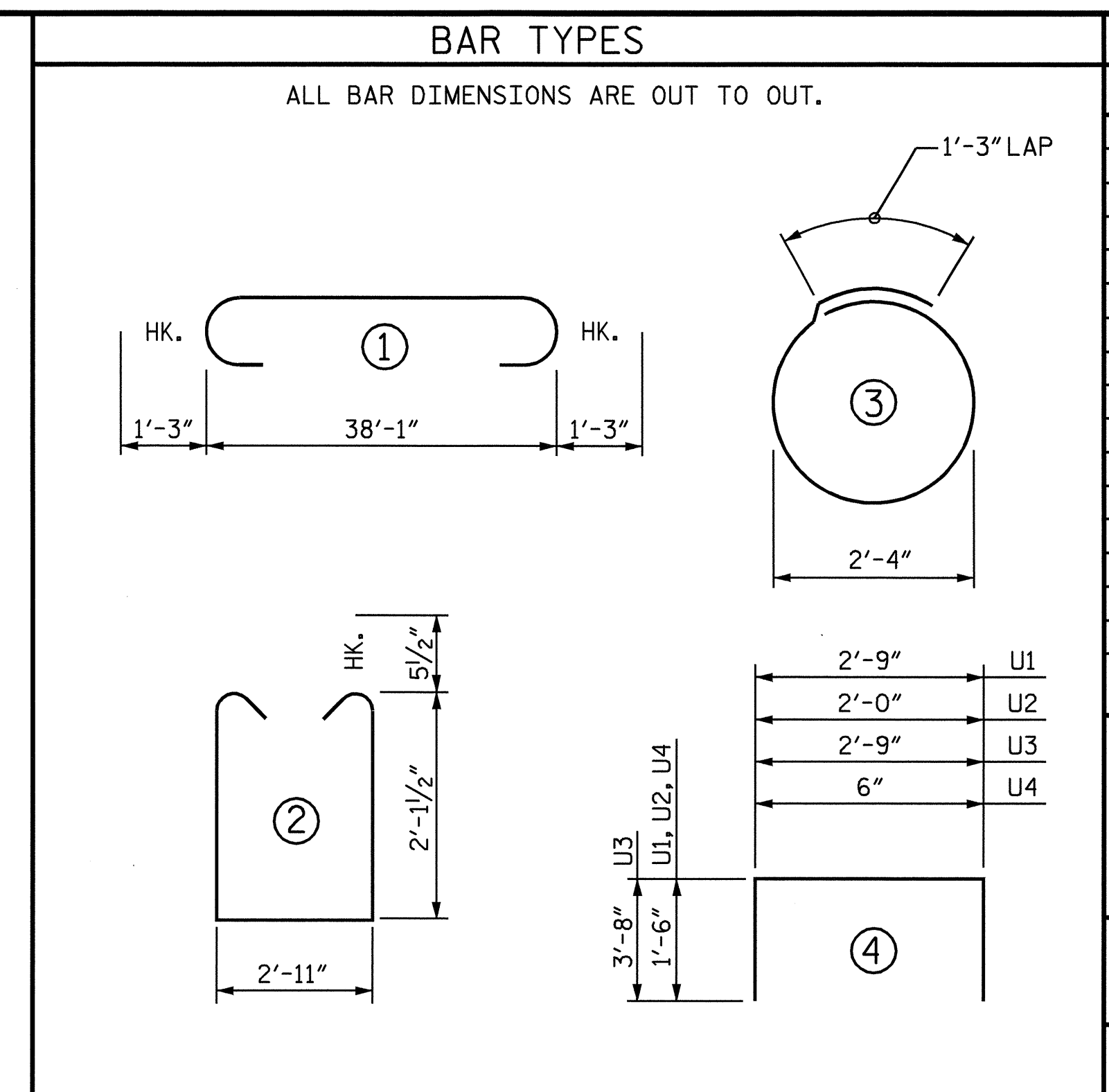


DRAWN BY: S.B. WILLIAMS DATE: 11-08
 CHECKED BY: A.K. PATEL/TJB DATE: 11-08

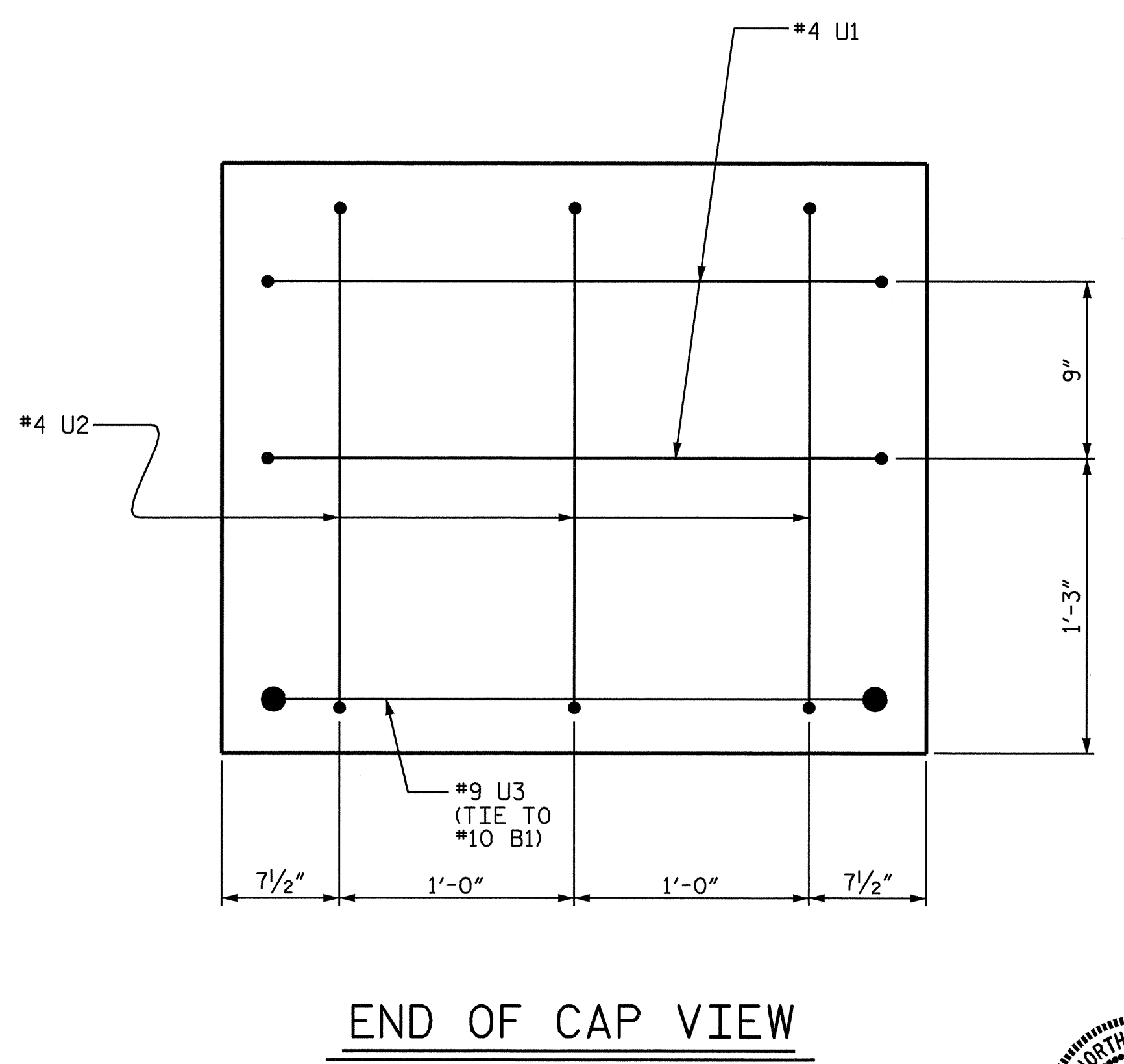
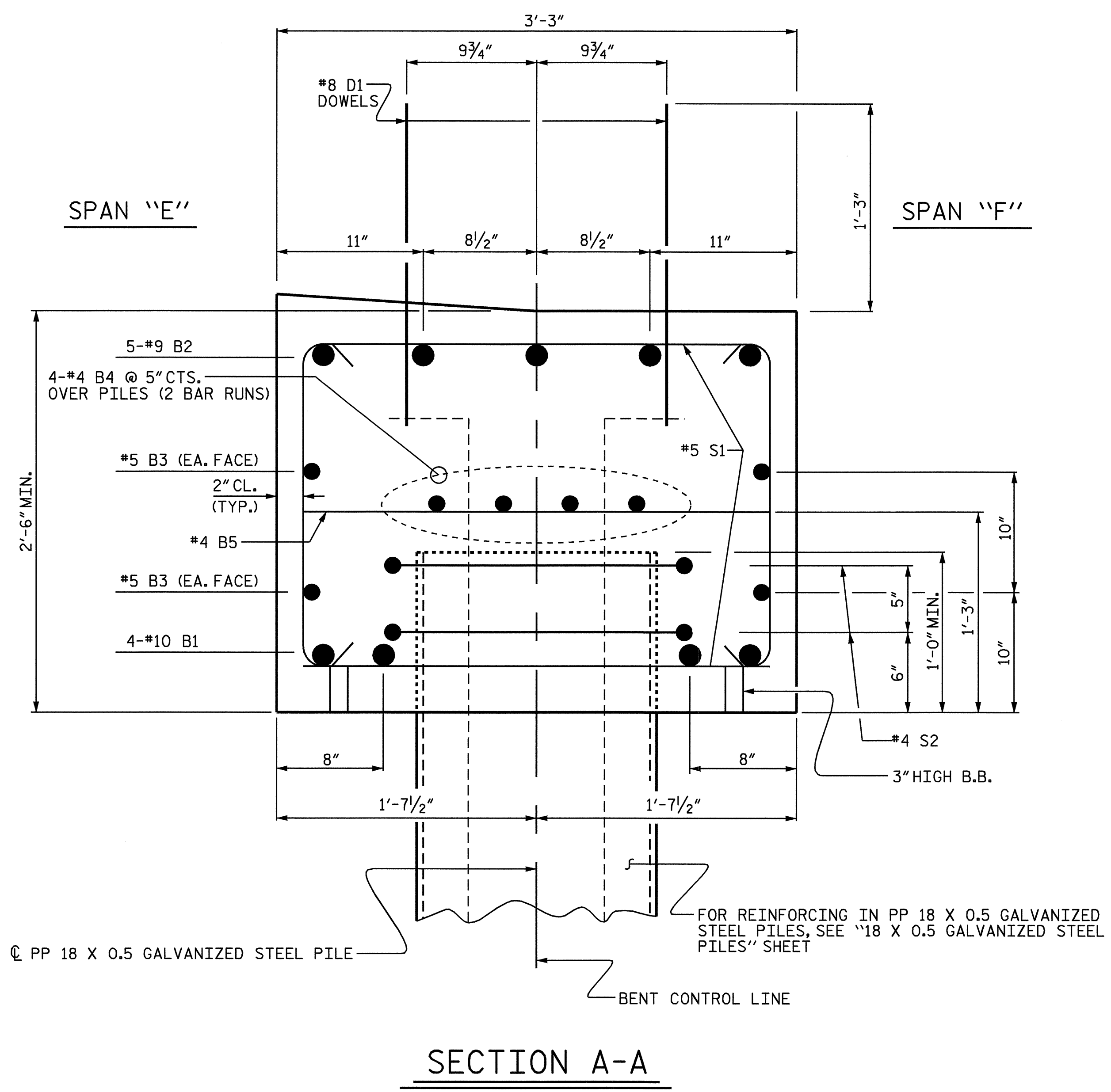
FOR REINFORCING STEEL IN PIPE PILES,
 SEE "PP 18 X 0.5 GALVANIZED STEEL PILE" DETAIL SHEET.



LATERAL GUIDE DETAIL
(RIGHT LATERAL GUIDE SHOWN, LEFT SIDE SIMILAR)



BILL OF MATERIAL					
BENT No. 5					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	STR	38'-3"	658
B2	5	#9	1	40'-7"	690
B3	4	#5	STR	38'-3"	160
B4	8	#4	STR	20'-4"	109
B5	14	#4	STR	2'-11"	27
D1	48	#8	STR	2'-3"	288
S1	58	#5	2	8'-1"	489
S2	12	#4	3	8'-7"	69
U1	4	#4	4	5'-9"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL					2613 LBS
CLASS A CONCRETE BREAKDOWN					
POUR #1 (CAP)				11.2 C.Y.	
POUR #2 (LATERAL GUIDE)				0.1 C.Y.	
TOTAL CLASS A CONCRETE				11.3 C.Y.	
PP 18 X 0.5 GALVANIZED STEEL PILES					
NO. 6				LIN. FT. 330.0	
THE CONCRETE DISPLACED BY THE PP 18 X 0.5 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE QUANTITY OF CLASS A CONCRETE FOR THE BENT CAP.					



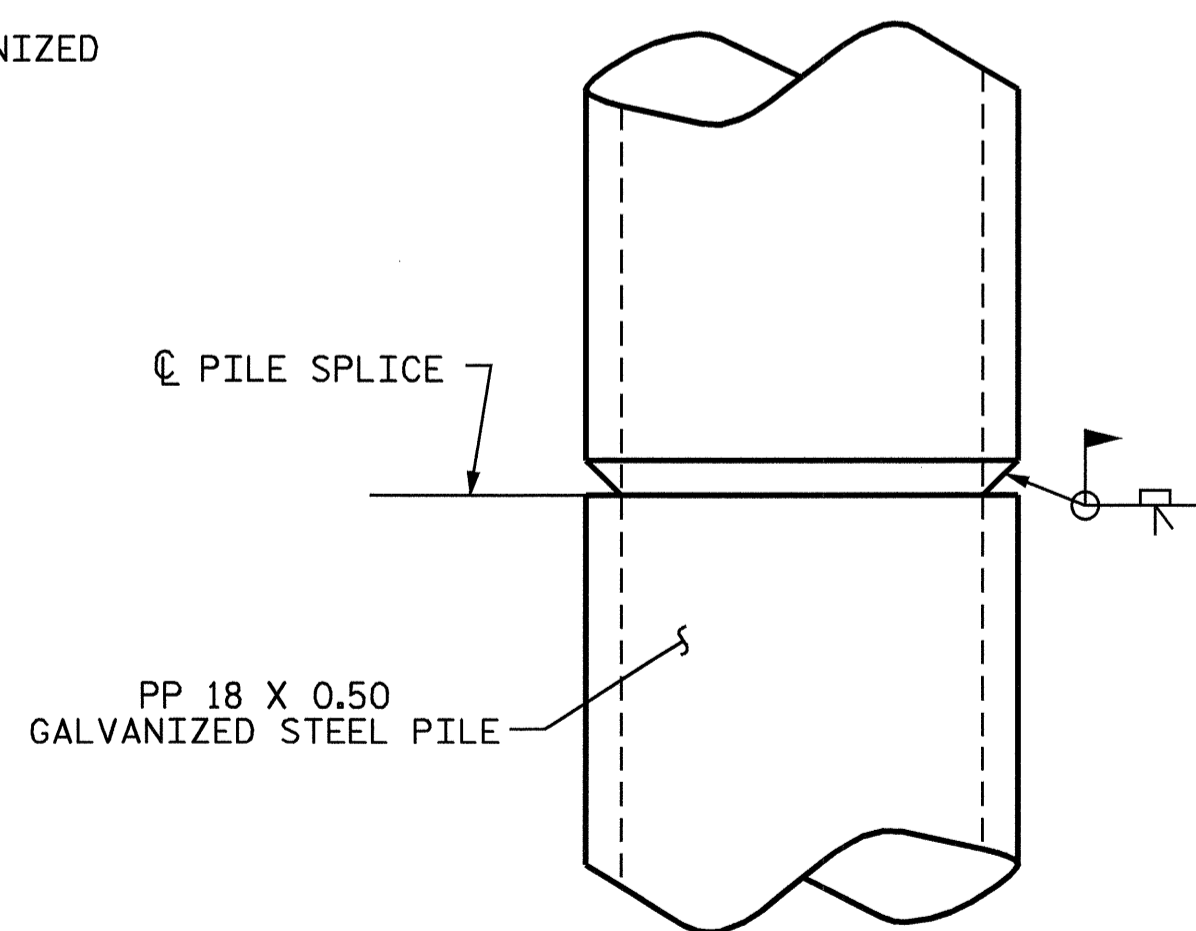
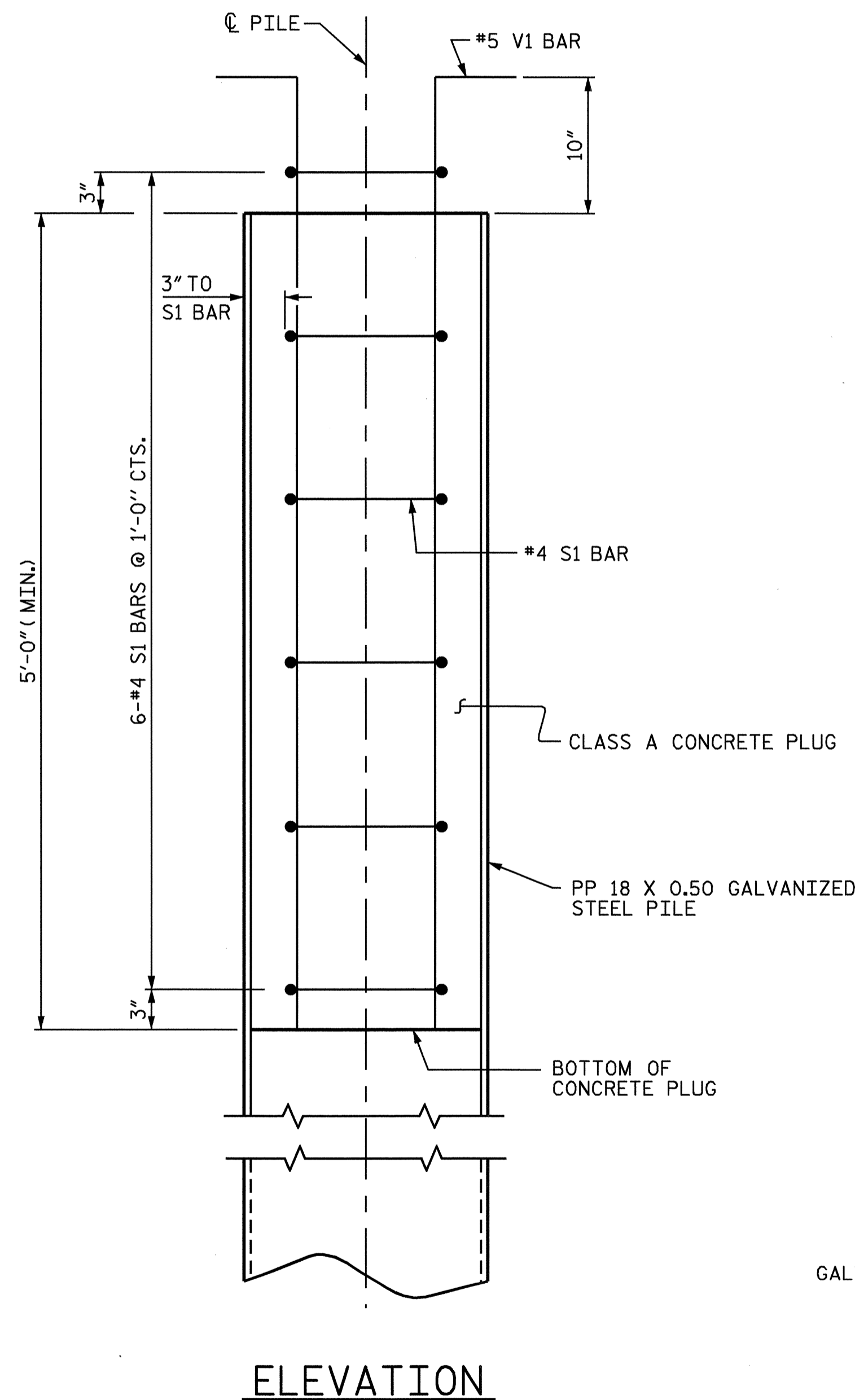
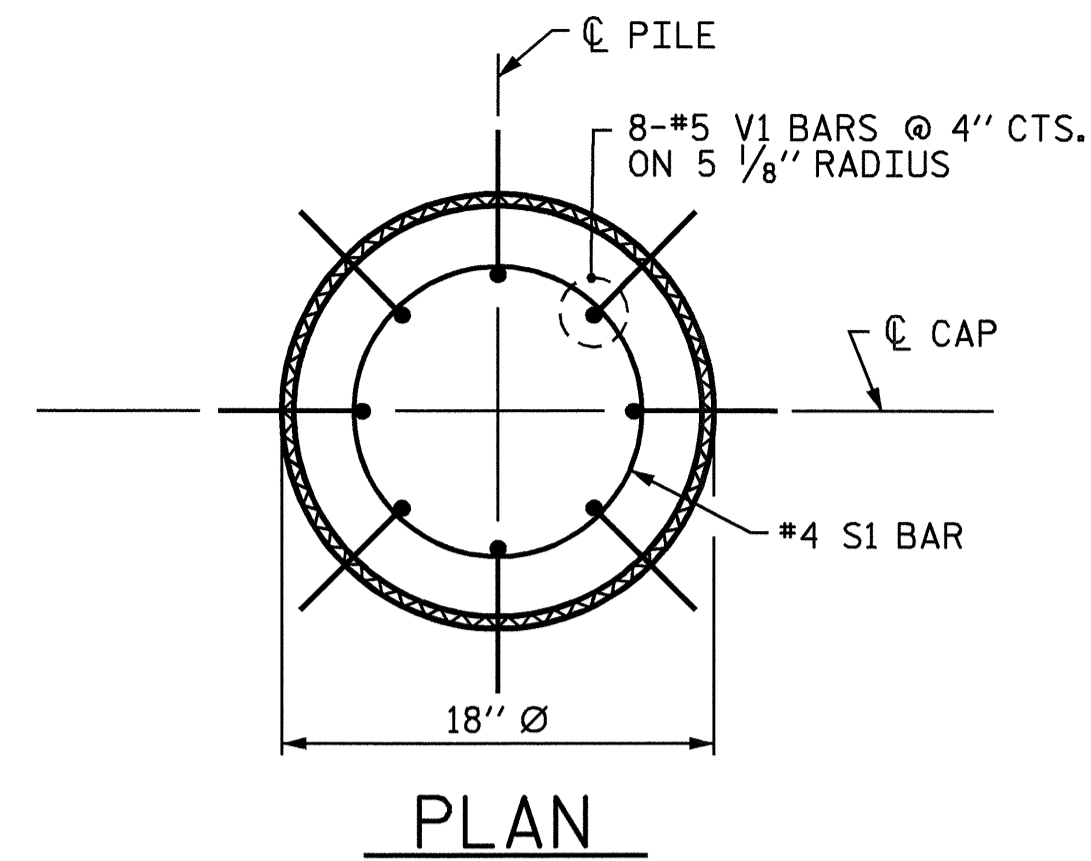
PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT No. 5

THEO J. BELCH
 NORTH CAROLINA
 PROFESSIONAL
 SEAL
 24390
 ENGINEER
 12/3/08

DRAWN BY: S. B. WILLIAMS DATE: 11/08
 CHECKED BY: A. K. PATEL/TJB DATE: 11/08

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-25
1			3			TOTAL SHEETS
2			4			32



PP 18 X 0.50 GALVANIZED STEEL PILE
(OPEN END)

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE TOP 35' MINIMUM OF EACH PILE FOR ALL BENTS IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

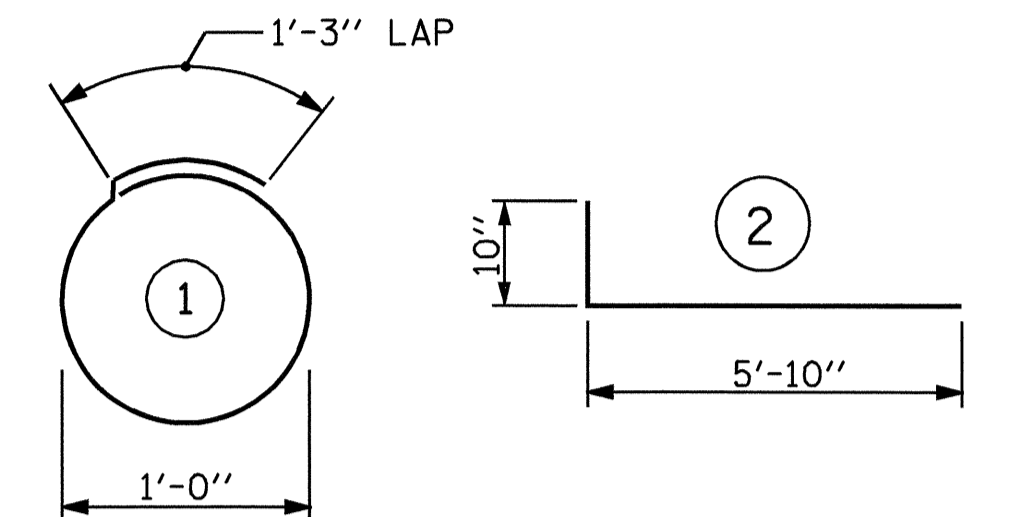
THE REINFORCING STEEL AND CLASS A CONCRETE AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 18 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 18 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	4'-5"	18
V1	8	#5	2	6'-8"	56
REINFORCING STEEL =				74	lbs

CLASS A CONCRETE
5'-0" MINIMUM PLUG 0.3 CY

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
STATION: 21+59.97 -L-

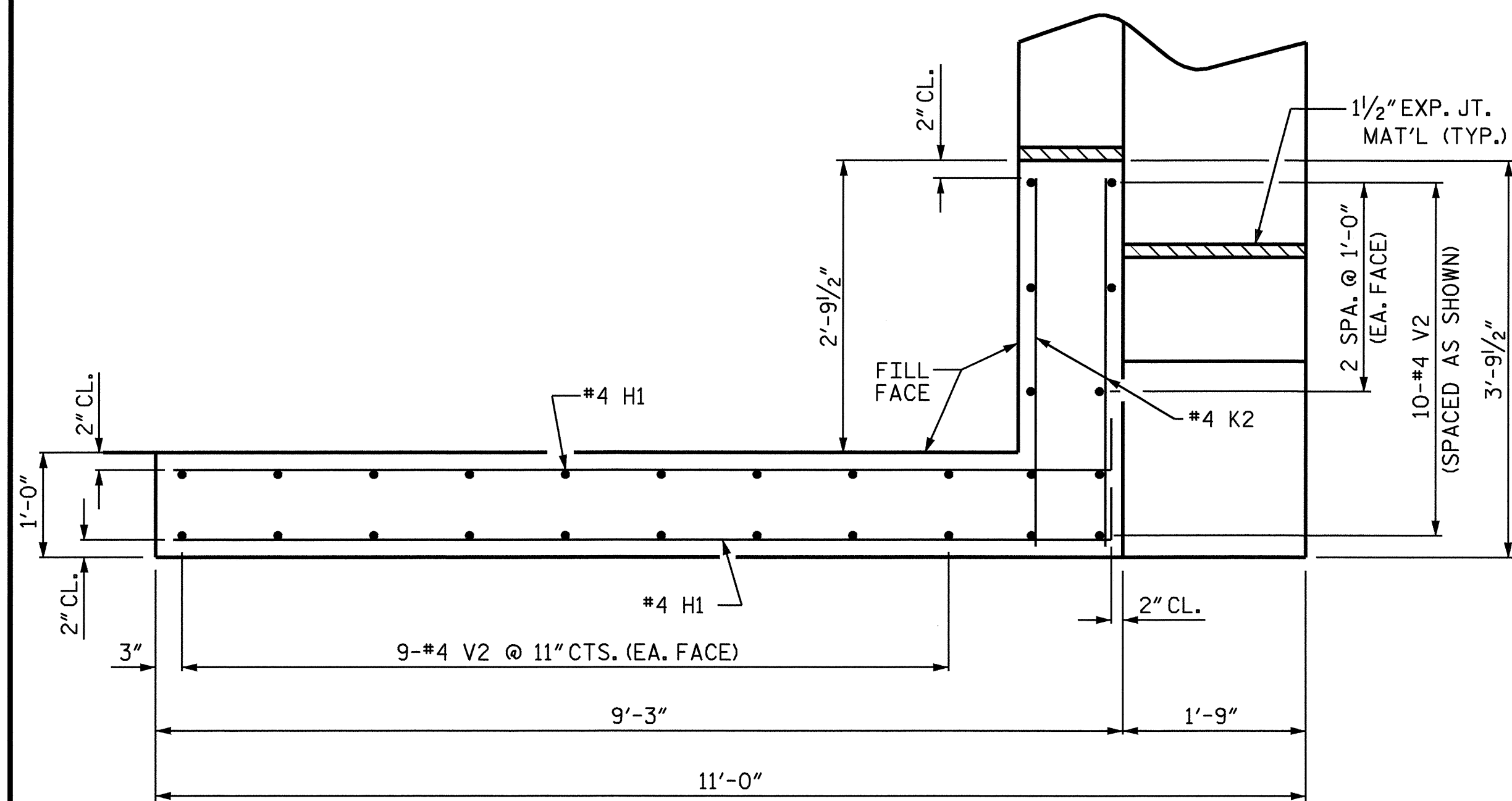
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
PP 18 X 0.50
GALVANIZED STEEL PILE



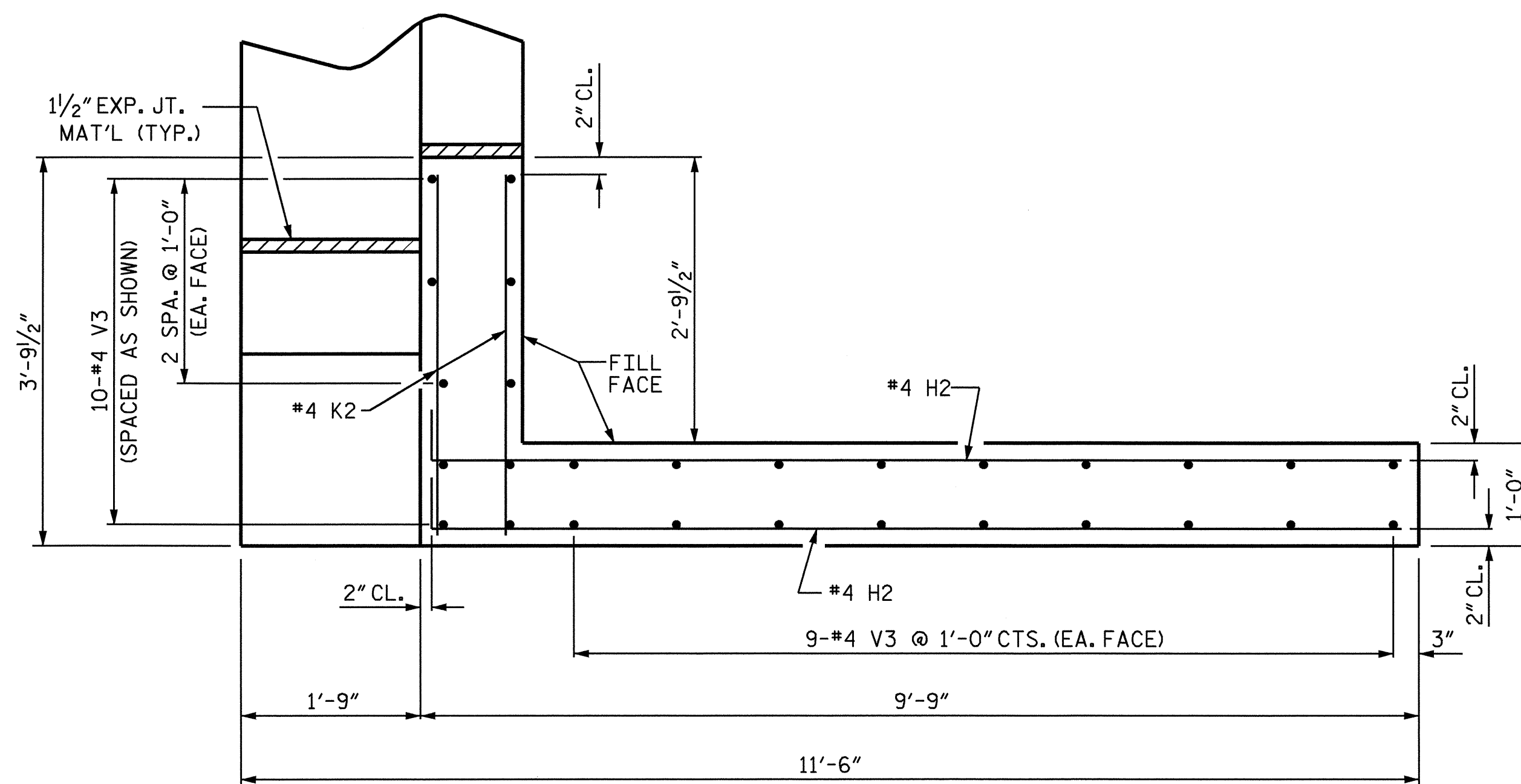
Theo J. Beach
12/22/08

ASSEMBLED BY : S.B. WILLIAMS	DATE : 11-08
CHECKED BY : A.K. PATEL/TJB	DATE : 11-08
DRAWN BY : RWW 1/01	REV. 7/10/01 RWW/LES
CHECKED BY : LES 1/01	REV. 5/7/03 RWW/JTE
	REV. 10/1/05 LBG/TLA

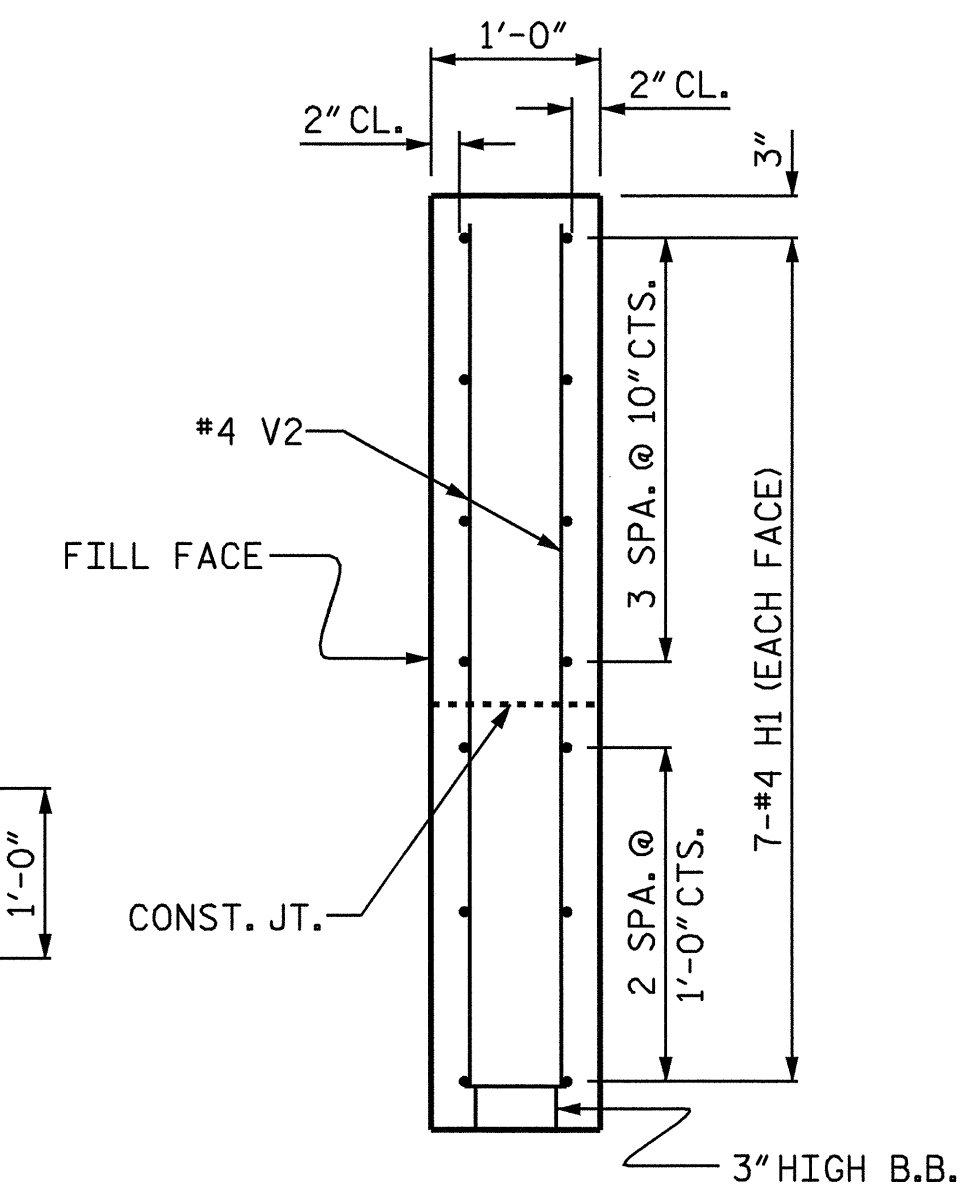
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			32



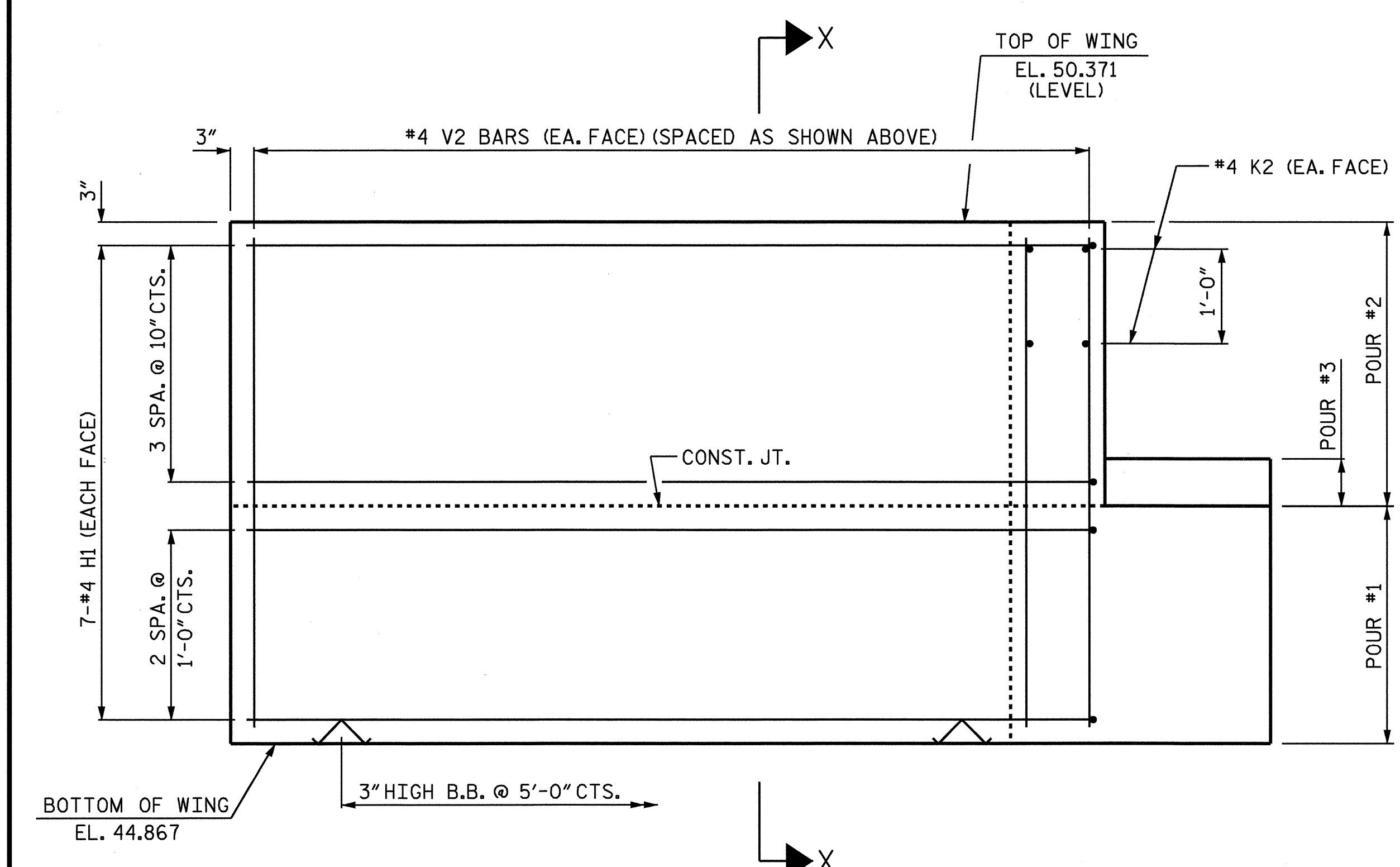
PLAN OF WING (W1)



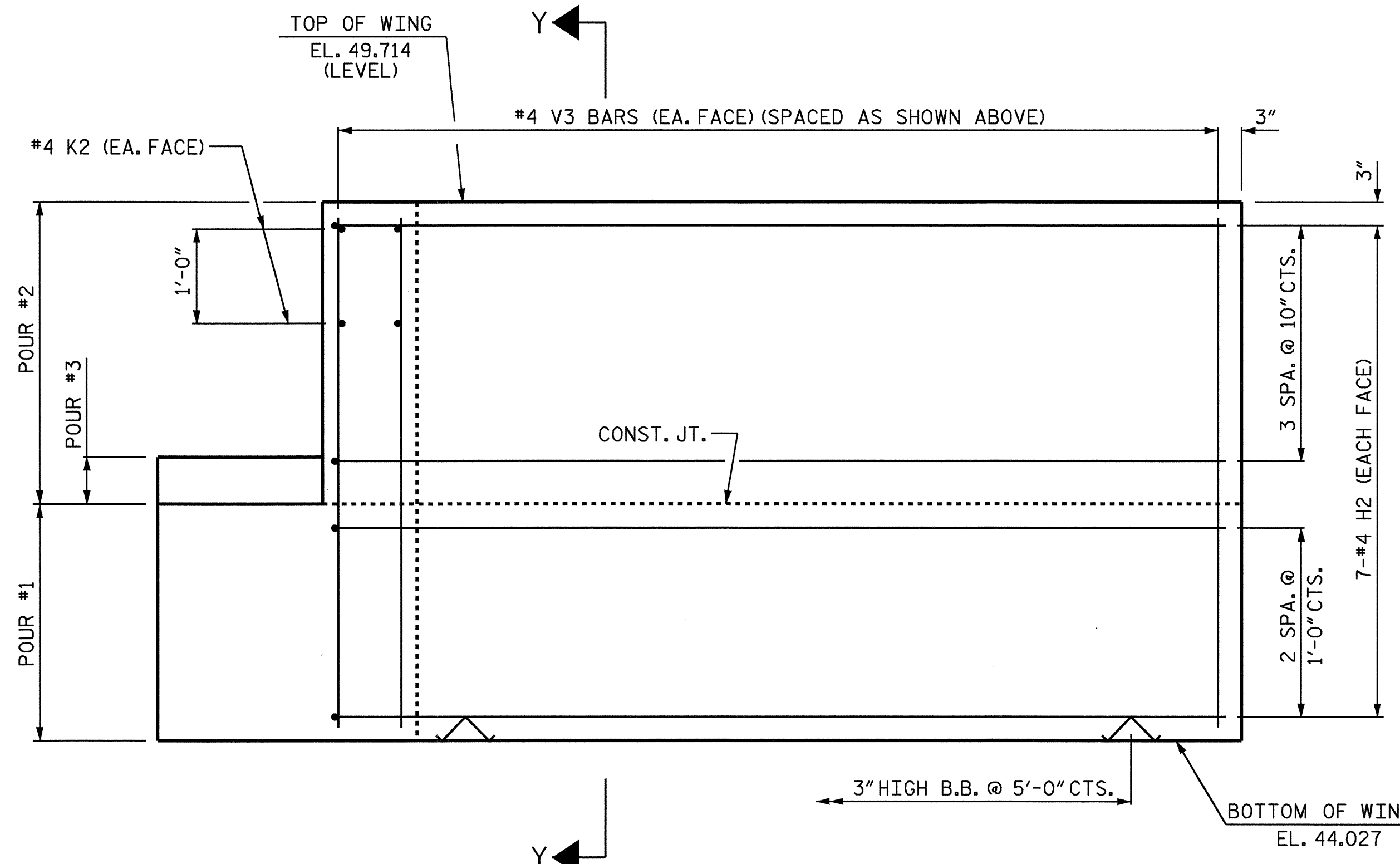
PLAN OF WING (W2)



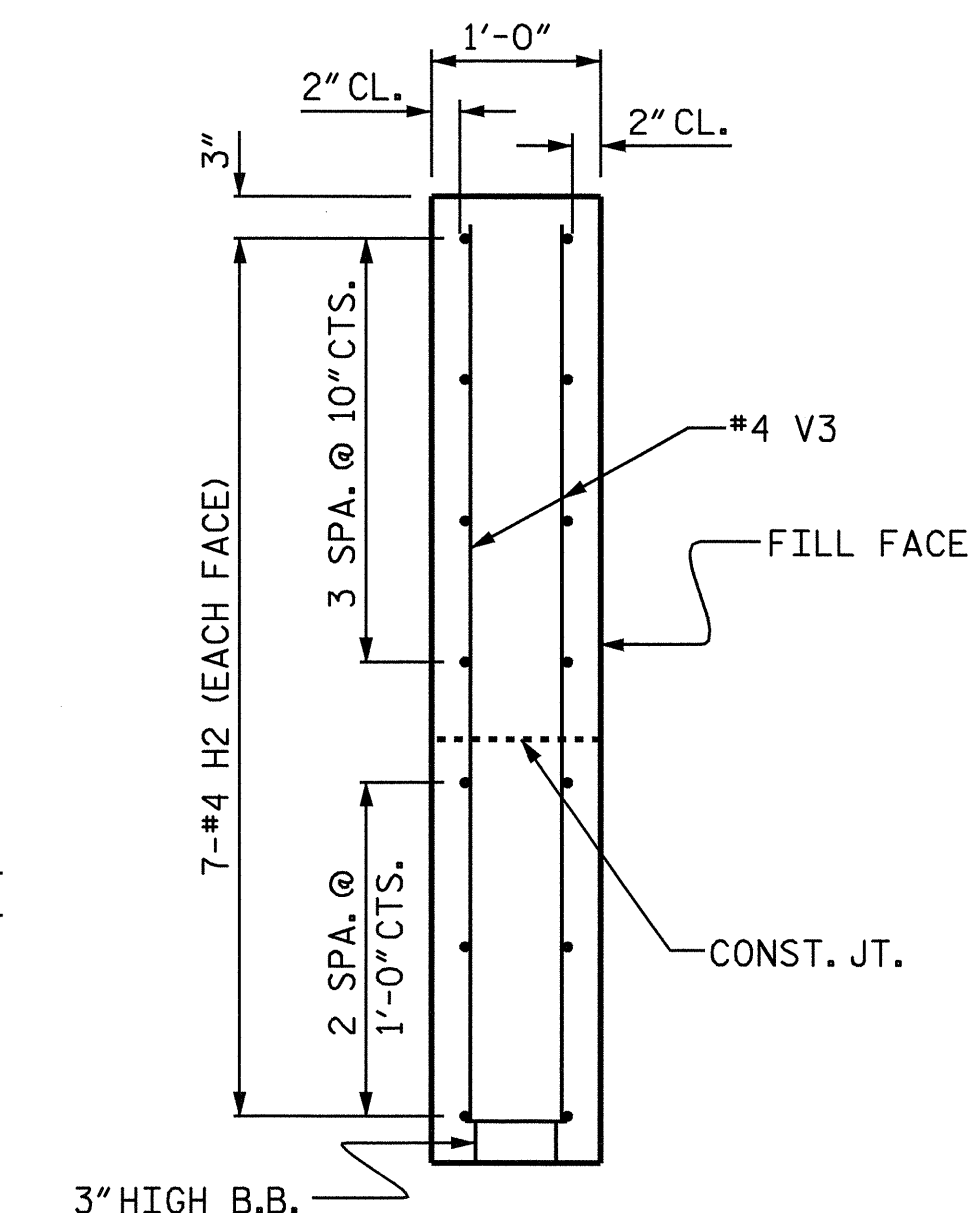
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



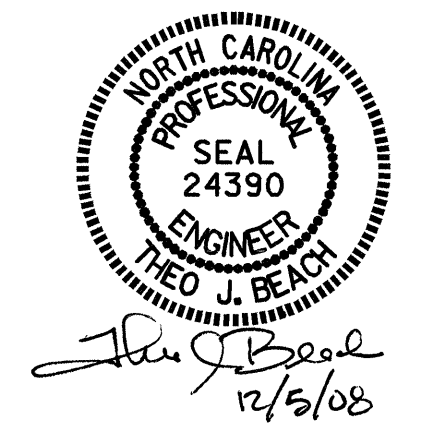
SECTION Y-Y

PROJECT NO. B-3613
 BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 3

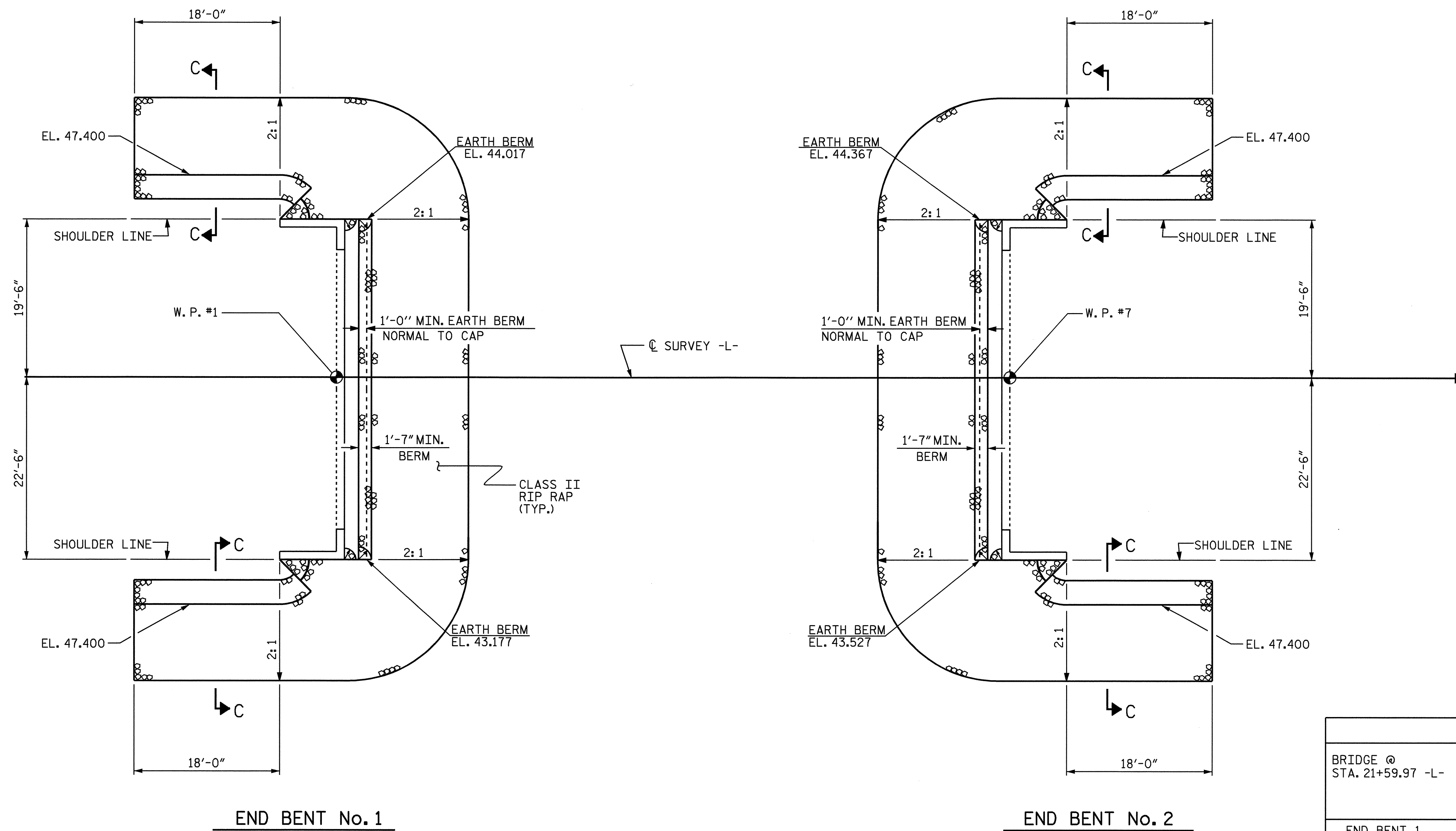
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 2



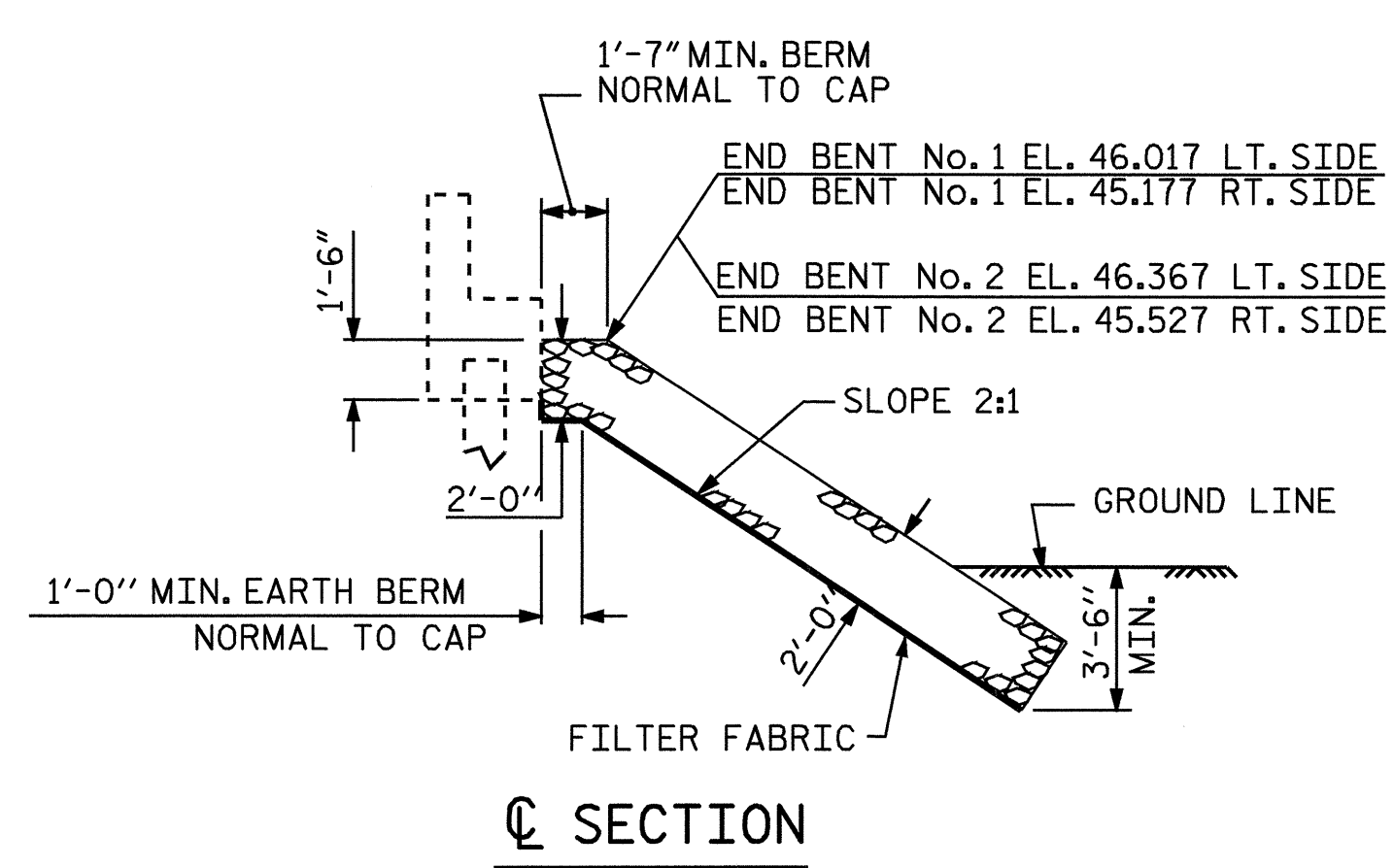
DRAWN BY: A.K. PATEL/MLB DATE: 04-07-06
 CHECKED BY: S.B. WILLIAMS DATE: 04-02-08

REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

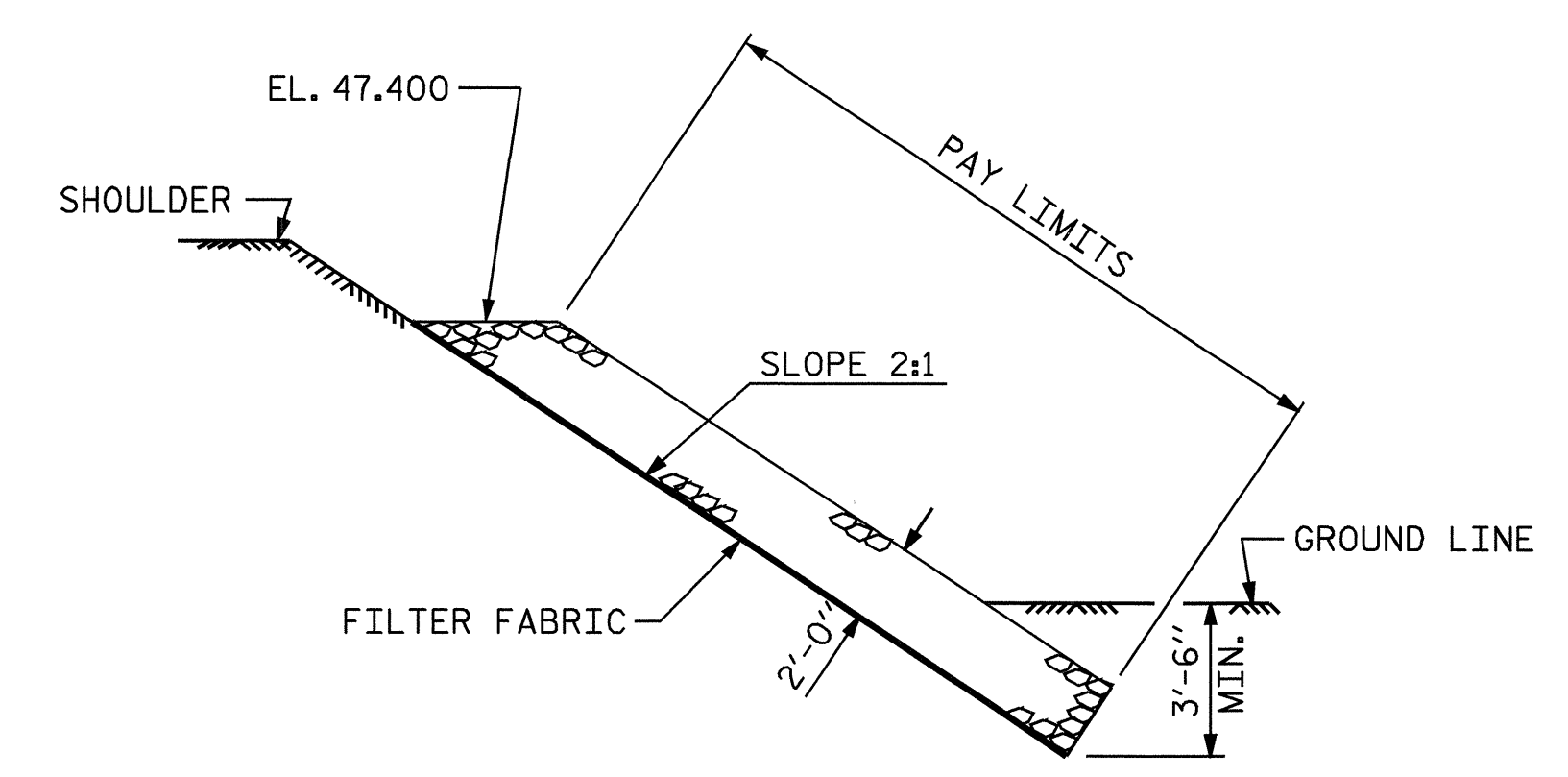


ESTIMATED QUANTITIES		
BRIDGE @ STA. 21+59.97 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	180	200
END BENT 2	240	267

PLAN OF RIP RAP



SECTION BERM RIP RAPPED



SECTION C-C

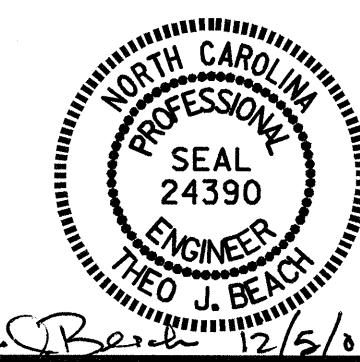
PROJECT NO. B-3613
SAMPSON/BLADEN COUNTY
 STATION: 21+59.97 -L-

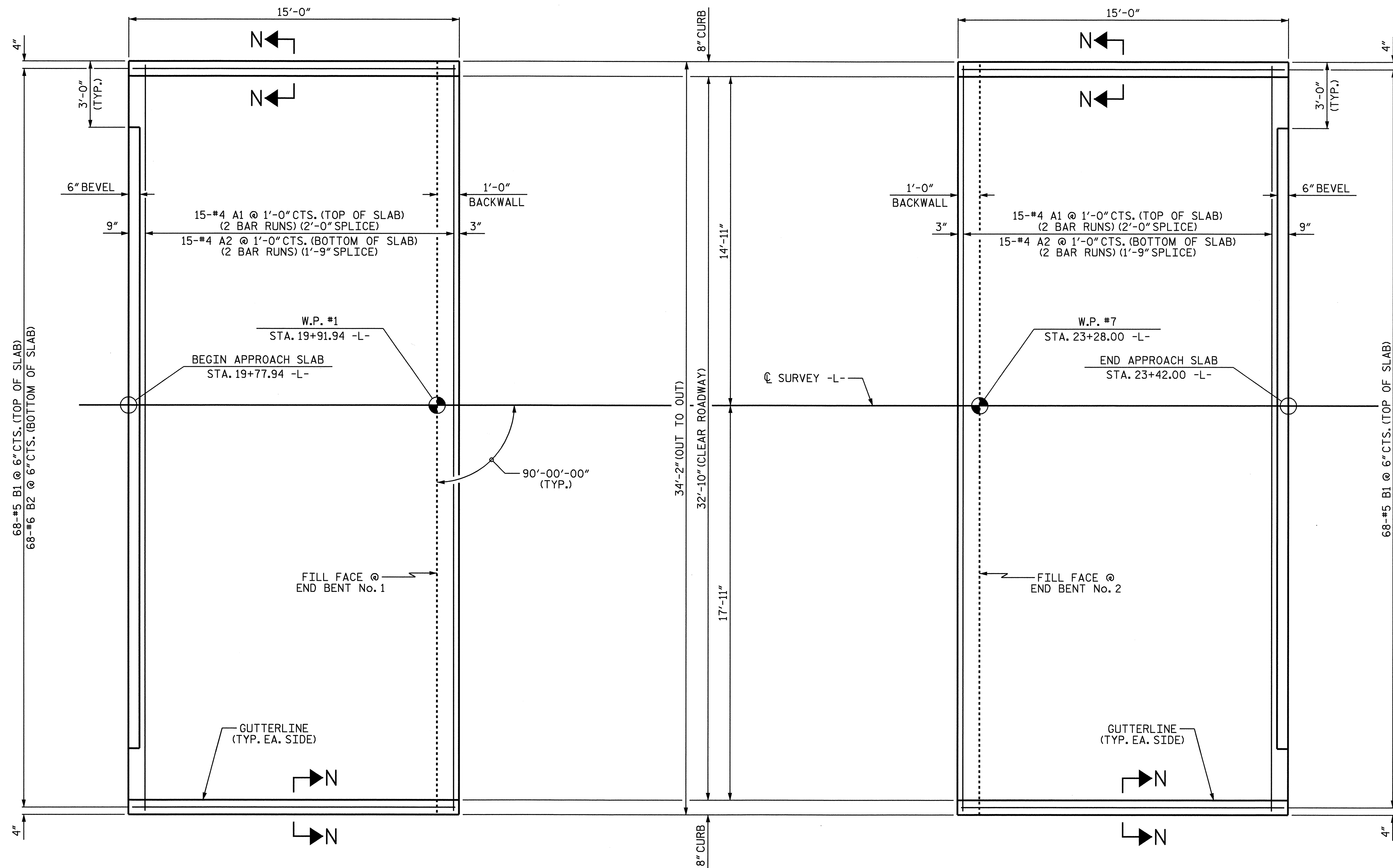
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : R. G. EMERSON DATE : 06/06
 CHECKED BY : S. B. WILLIAMS DATE : 07/06
 DRAWN BY : FCJ 2/88 REV. 7/17/98 REK/RWW
 CHECKED BY : ARB 8/88 REV. 8/16/99 RWW/LES
 REV. 10/17/00 RWW/LES

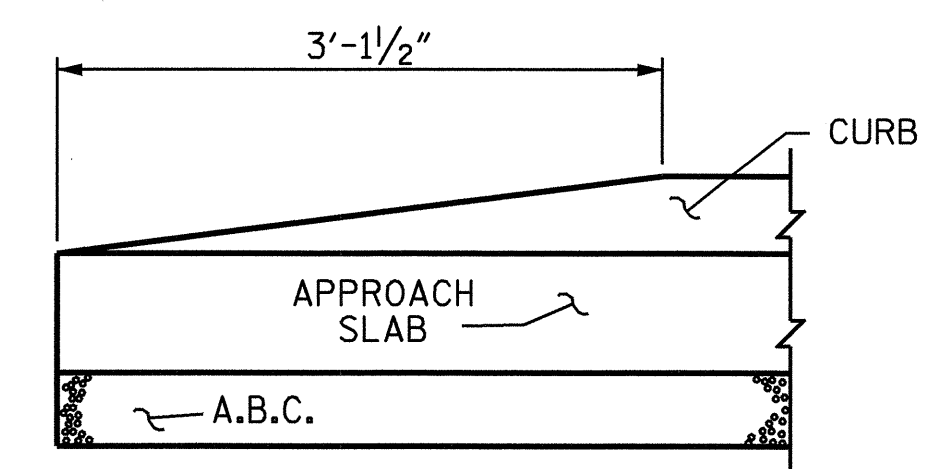
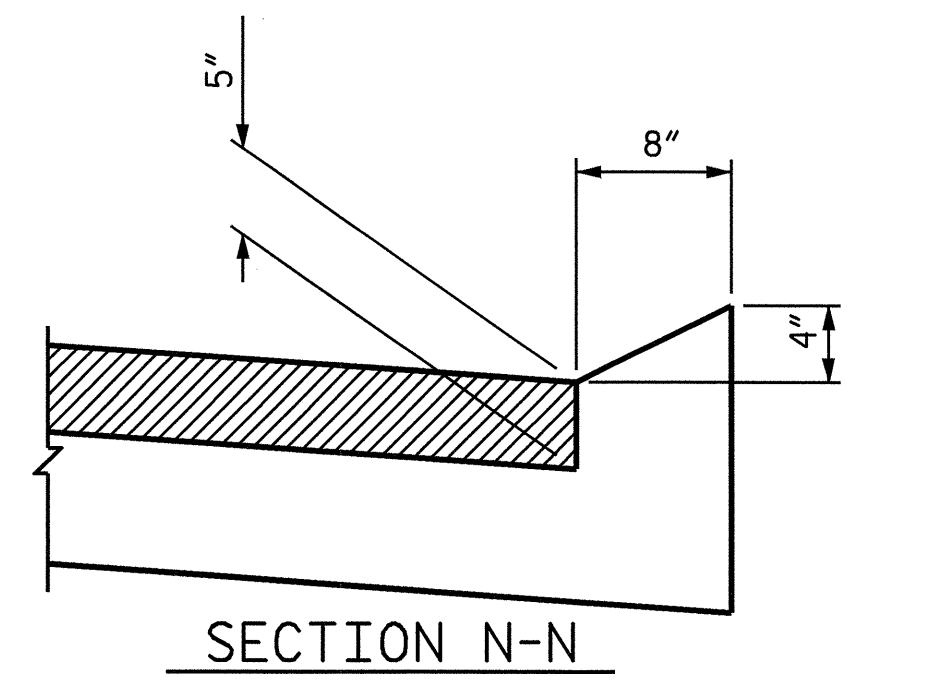




PLAN AT END BENT No. 1

PLAN AT END BENT No. 2

PLAN OF APPROACH SLABS



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

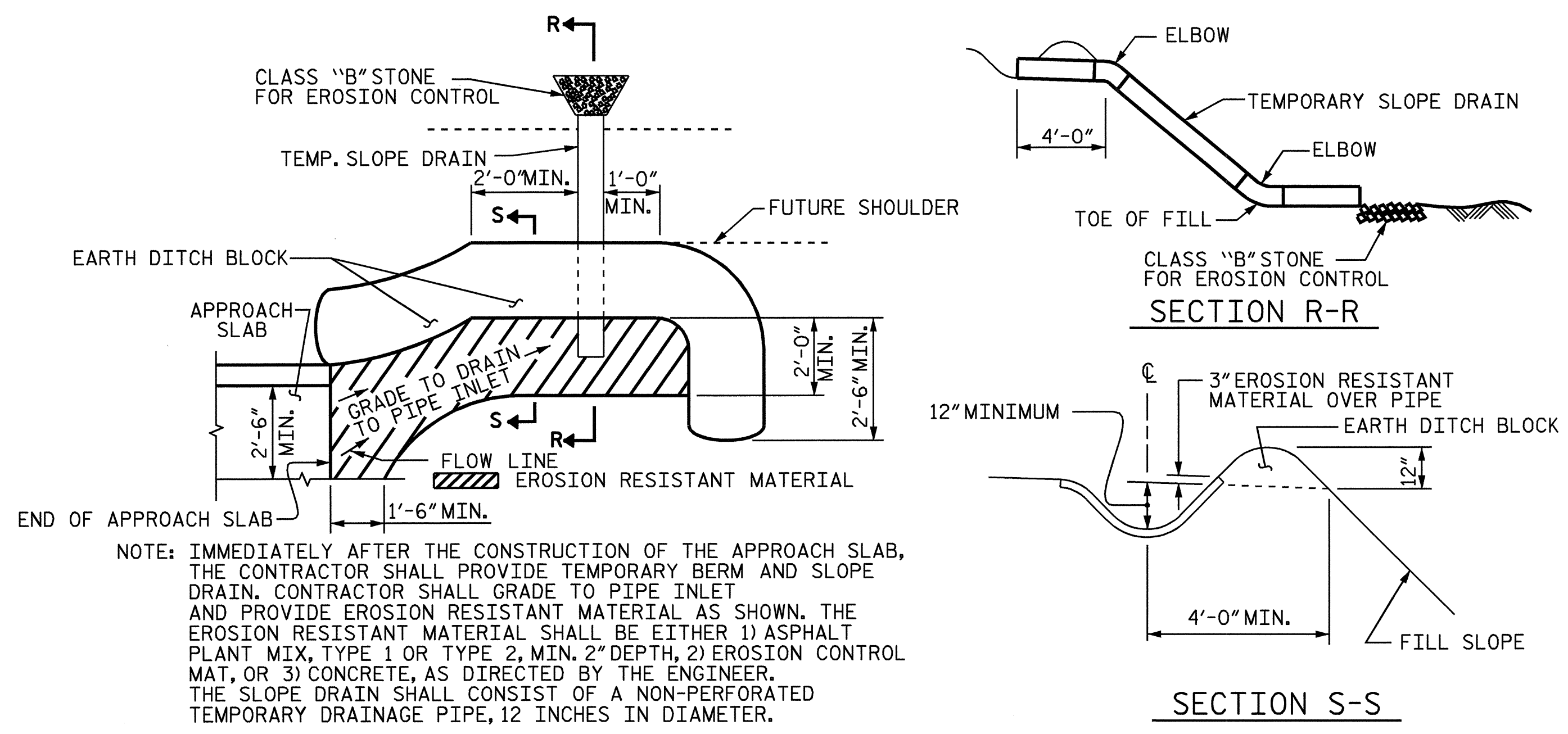
BRIDGE APPROACH
 SLAB FOR PRESTRESSED
 CONCRETE BOX BEAM



Theodor J. Beach
 12/5/08

DRAWN BY : T. BANKOVICH DATE : 10-2008
 CHECKED BY : T. J. BEACH DATE : 10-2008

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31	
1			3			TOTAL SHEETS	
2			4			32	



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
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

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.

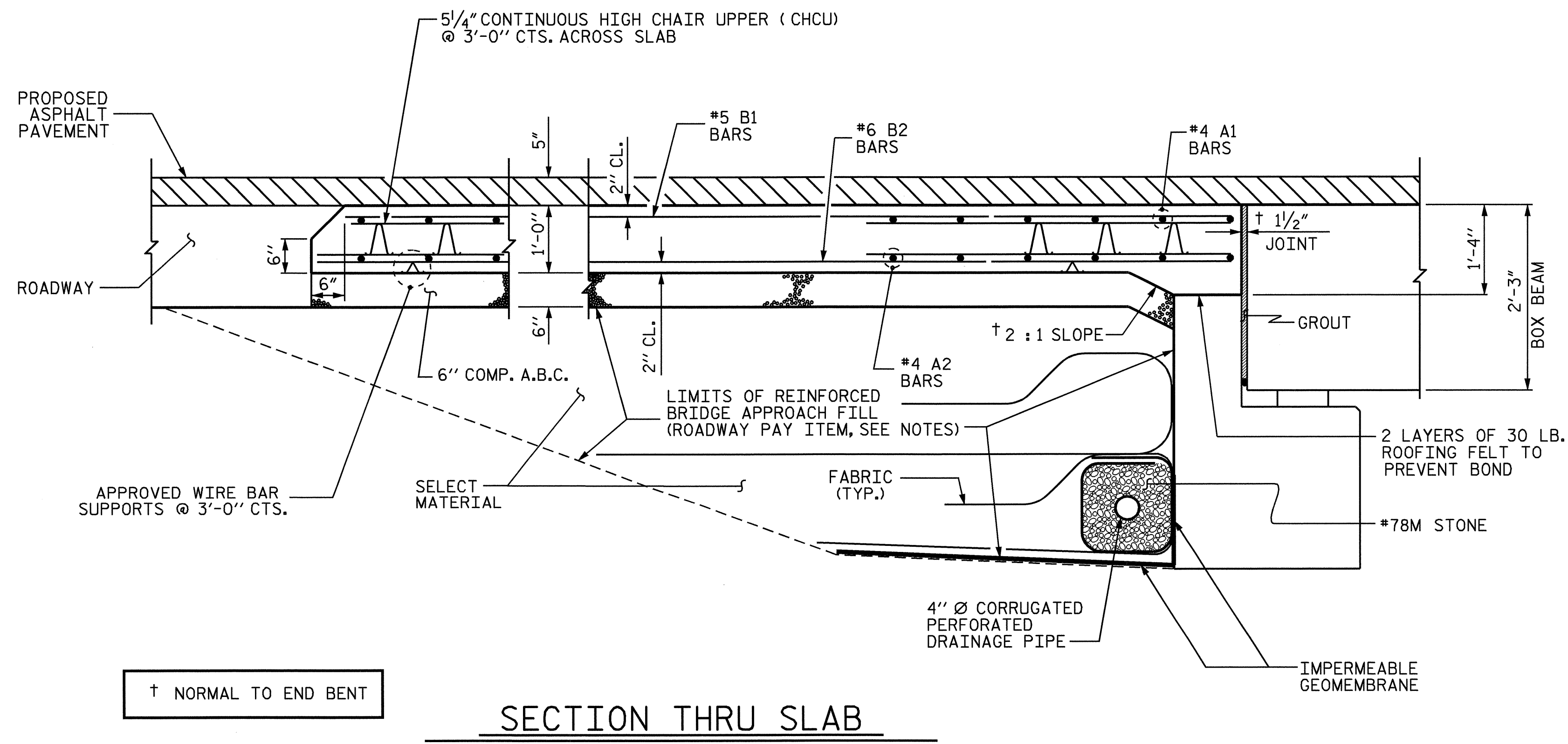
THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER 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.

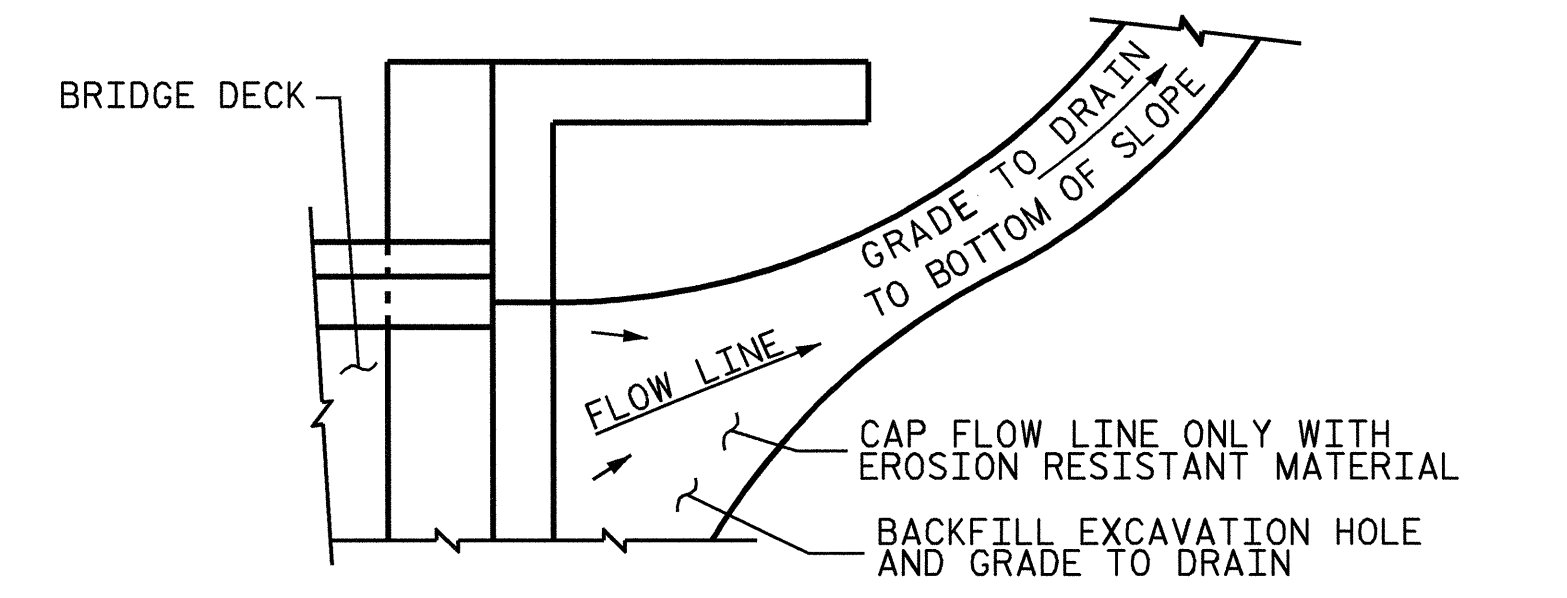
APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	30	#4	STR	17'-11"	359	
A2	30	#4	STR	17'-10"	357	
* B1	68	#5	STR	14'-2"	1005	
B2	68	#6	STR	14'-8"	1498	
REINFORCING STEEL					1855 LBS.	
* EPOXY COATED REINFORCING STEEL					1364 LBS.	
CLASS AA CONCRETE					19.9 C.Y.	
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	30	#4	STR	17'-11"	359	
A2	30	#4	STR	17'-10"	357	
* B1	68	#5	STR	14'-2"	1005	
B2	68	#6	STR	14'-8"	1498	
REINFORCING STEEL					1855 LBS.	
* EPOXY COATED REINFORCING STEEL					1364 LBS.	
CLASS AA CONCRETE					19.9 C.Y.	



† NORMAL TO END BENT

SECTION THRU SLAB



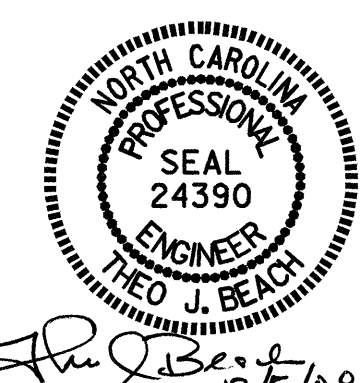
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-3613
BLADEN/SAMPSON COUNTY
 STATION: 21+59.97 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR PRESTRESSED CONCRETE
 BOX BEAM



REVISIONS						SHEET NO. S-32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 32
2			4			

ASSEMBLED BY : T. BANKOVICH	DATE : 10-2008
CHECKED BY : T.J. BEACH	DATE : 10-2008
DRAWN BY : FCJ 6/87	REV. 7/10/01 LES/RDR
CHECKED BY : EGA 6/87	REV. 5/7/03R RWM/JTE
	REV. 5/1/06R KMM/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 2006 "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; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

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. 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.

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