

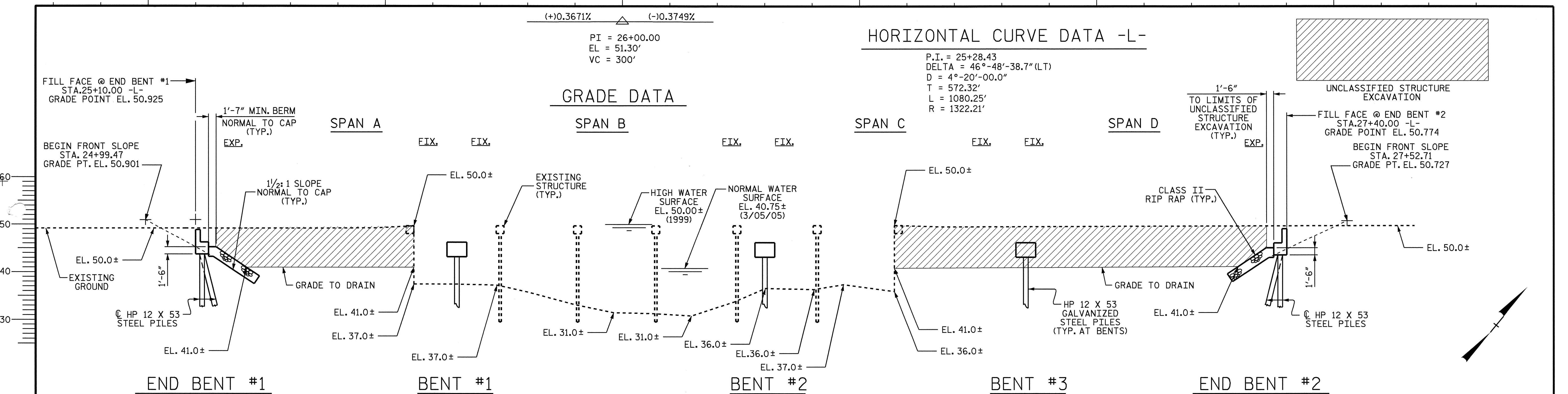
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PI = 26+00.00
 EL = 51.30'
 VC = 300'

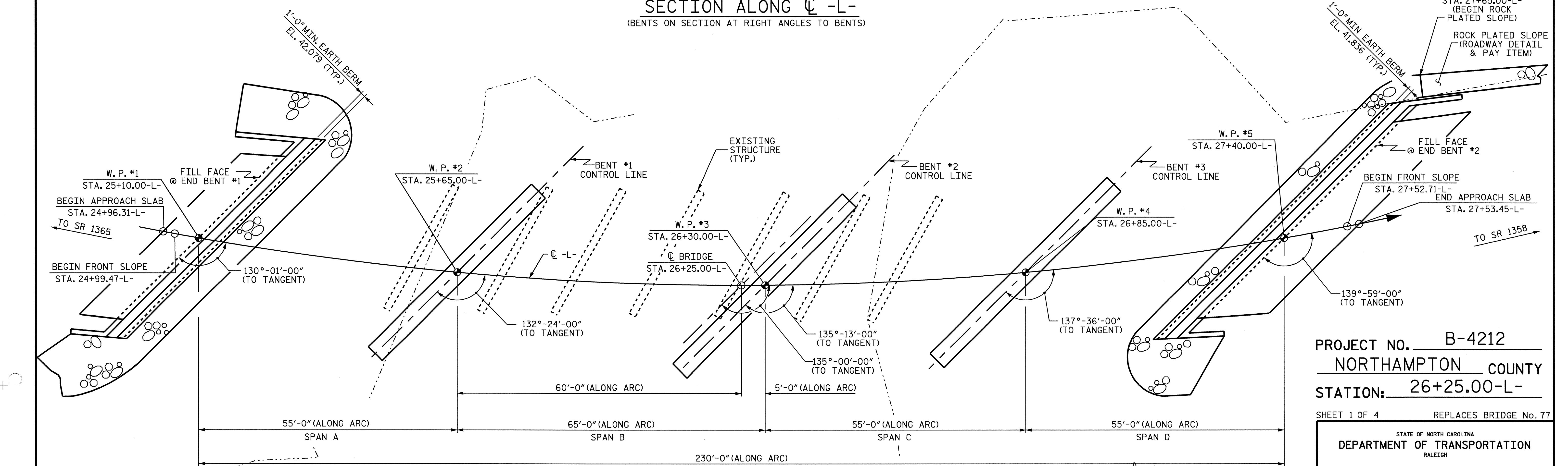
HORIZONTAL CURVE DATA -L-

P.I. = 25+28.43
 DELTA = 46°-48'-38.7" (LT)
 D = 4°-20'-00.0"
 T = 572.32'
 L = 1080.25'
 R = 1322.21'

GRADE DATA



SECTION ALONG C -L-
 (BENTS ON SECTION AT RIGHT ANGLES TO BENTS)

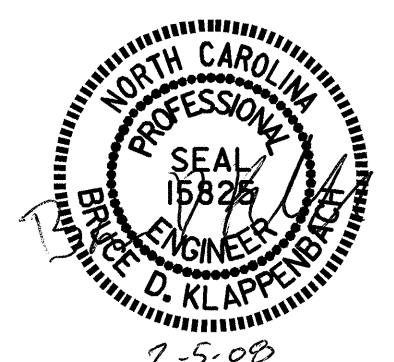
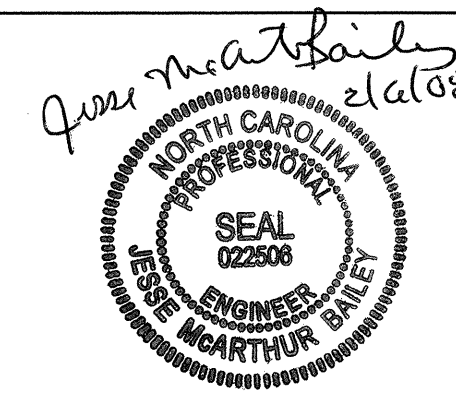


PLAN

(PILES NOT SHOWN FOR CLARITY)

DRAWN BY: H. T. BARBOUR DATE: 11-23-07
 CHECKED BY: B. D. KLAPPENBACH DATE: 12-07

01-FEB-2008 11:17
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PROJECT NO. B-4212
 NORTHAMPTON COUNTY
 STATION: 26+25.00-L-

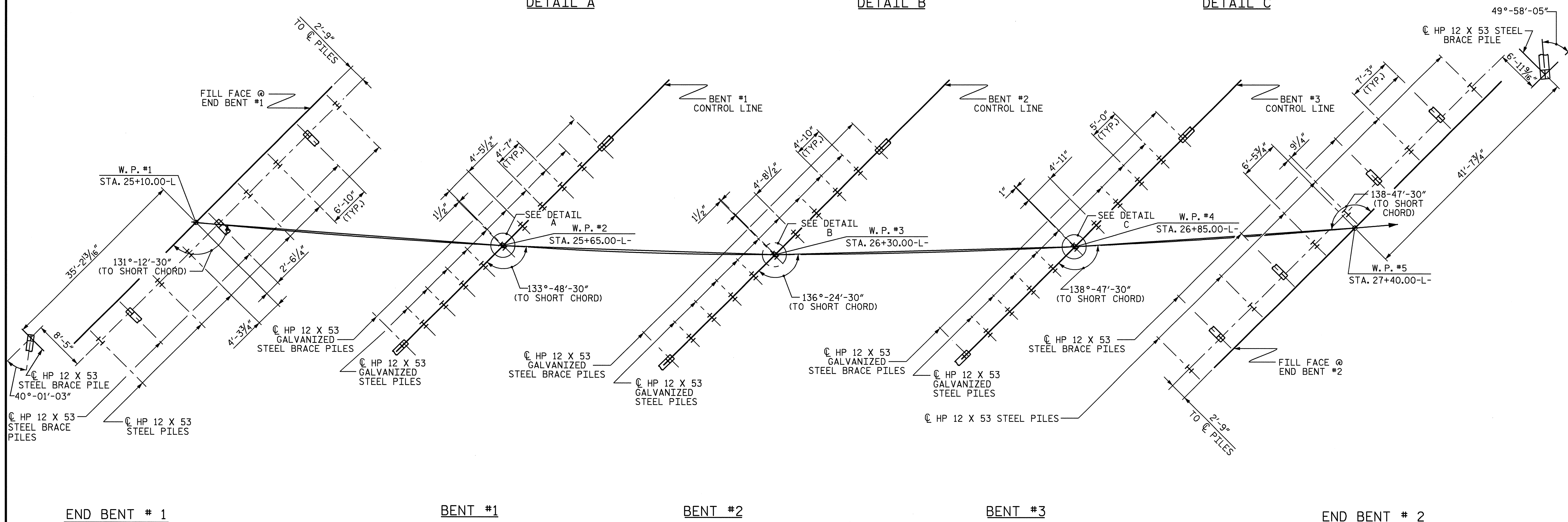
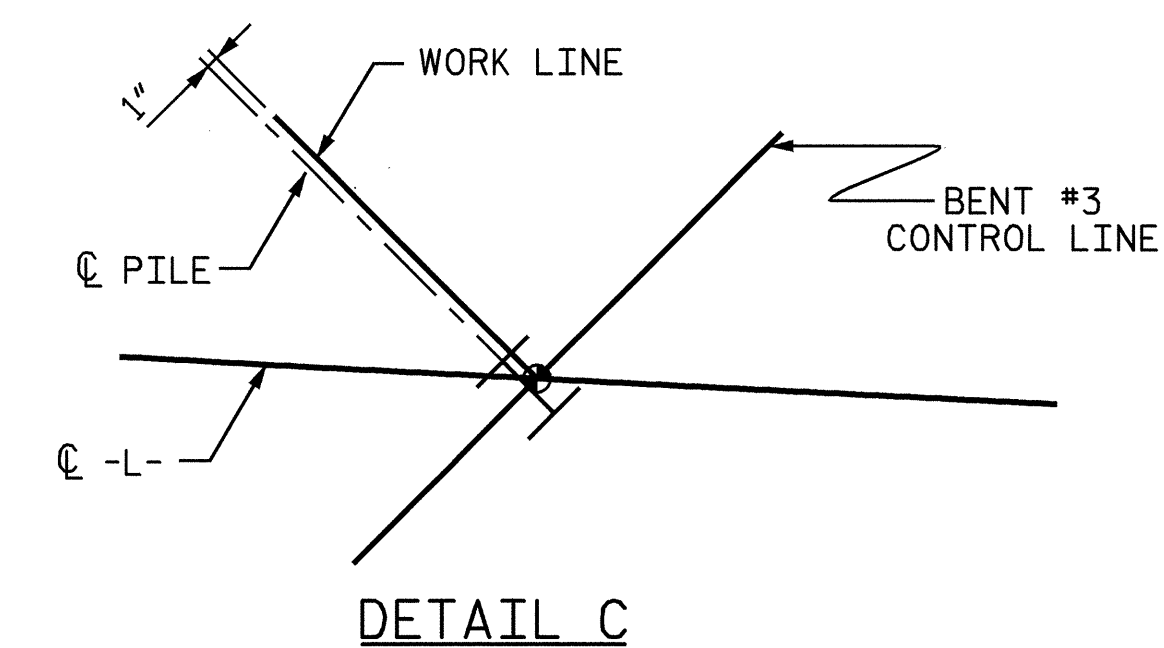
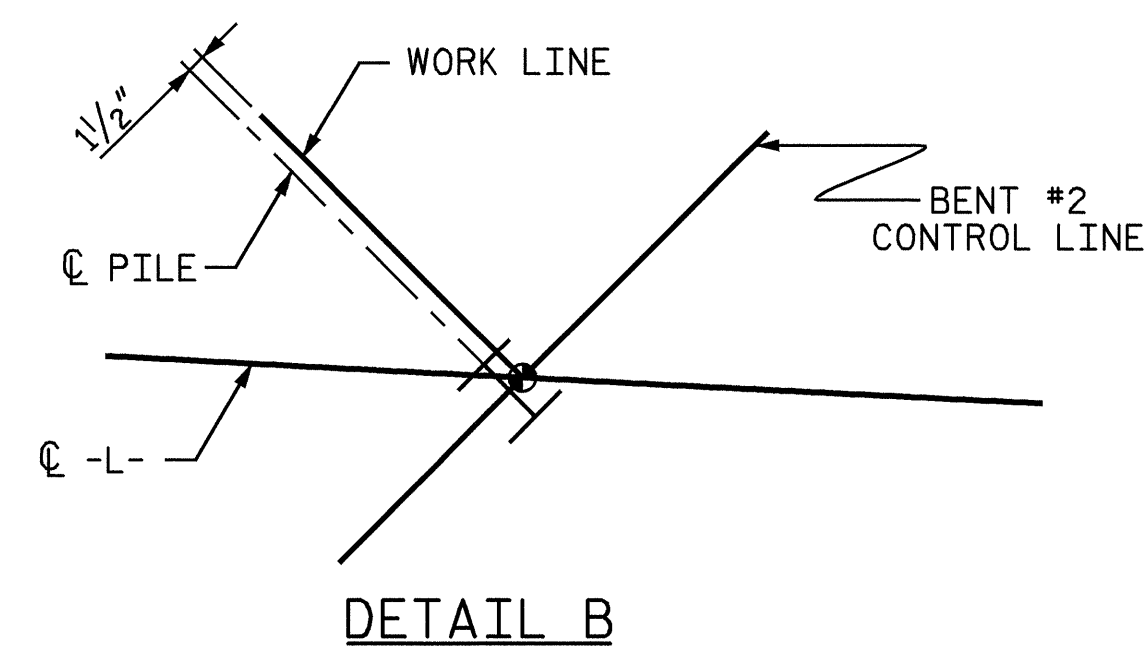
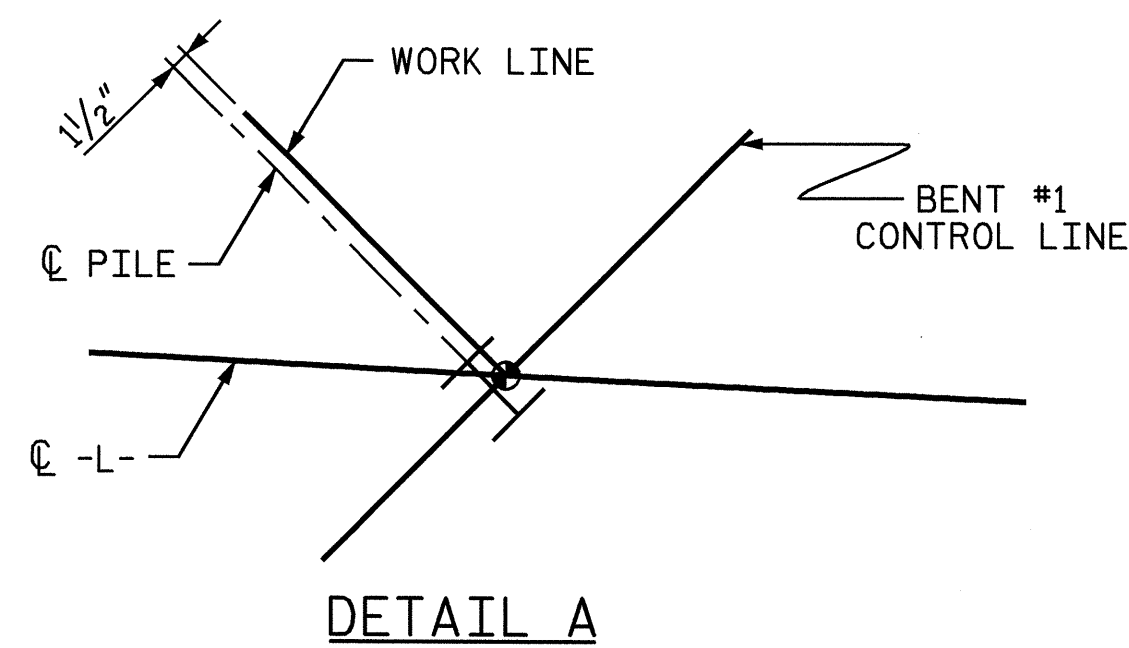
SHEET 1 OF 4 REPLACES BRIDGE No. 77

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING FOR
 BRIDGE OVER
 KIRBY'S CREEK
 ON NC 35 BETWEEN
 SR 1365 AND SR 1358

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-1
1			3			TOTAL SHEETS
2			4			45

NCB06



FOUNDATION LAYOUT PLAN

DIMENSIONS LOCATING PILES ARE TO THE PILE C.
 BRACE PILES AT END BENTS ARE BATTERED 3:12.
 BRACE PILES AT BENTS ARE BATTERED 1 1/2:12.

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00-L-

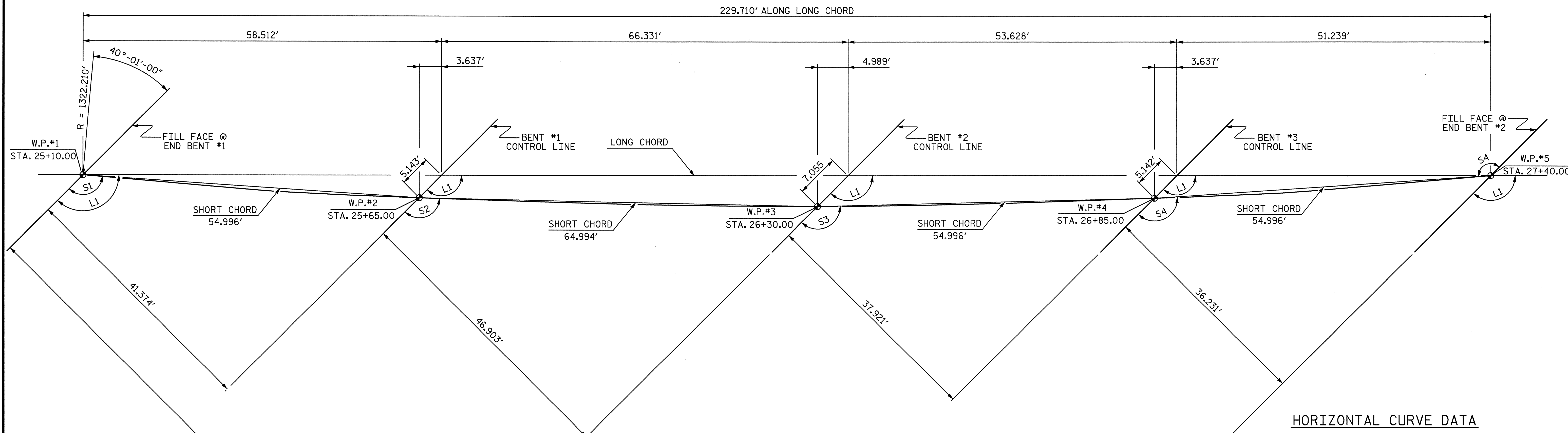
SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING FOR
 BRIDGE OVER
 KIRBY'S CREEK
 ON NC 35 BETWEEN
 SR 1365 AND SR 1358



DRAWN BY: H. T. BARBOUR DATE: 11-21-07
 CHECKED BY: B. D. KLAPPENBACH DATE: 12-07

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			45



HORIZONTAL CURVE DATA

P.I. = 25+28.43
 DELTA = 46°-48'-38.7" (LT.)
 D = 4°-20'-00"
 T = 572.320 FT.
 L = 1080.250 FT.
 R = 1322.210 FT.
 SLOPE = 0.040 FT./FT.

ANGLES			
LONG CHORD		SHORT CHORD	
L1	135° 0' 0"	S1	131° 12' 30"
		S2	133° 48' 30"
		S3	136° 24' 30"
		S4	138° 47' 30"

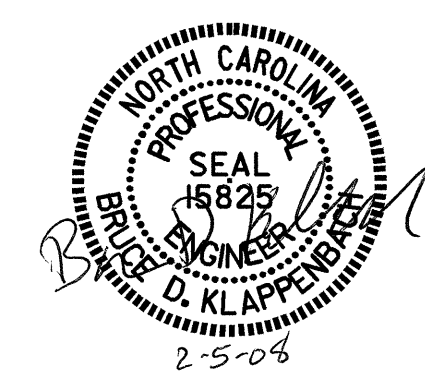
PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00-L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LONG CHORD LAYOUT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			45

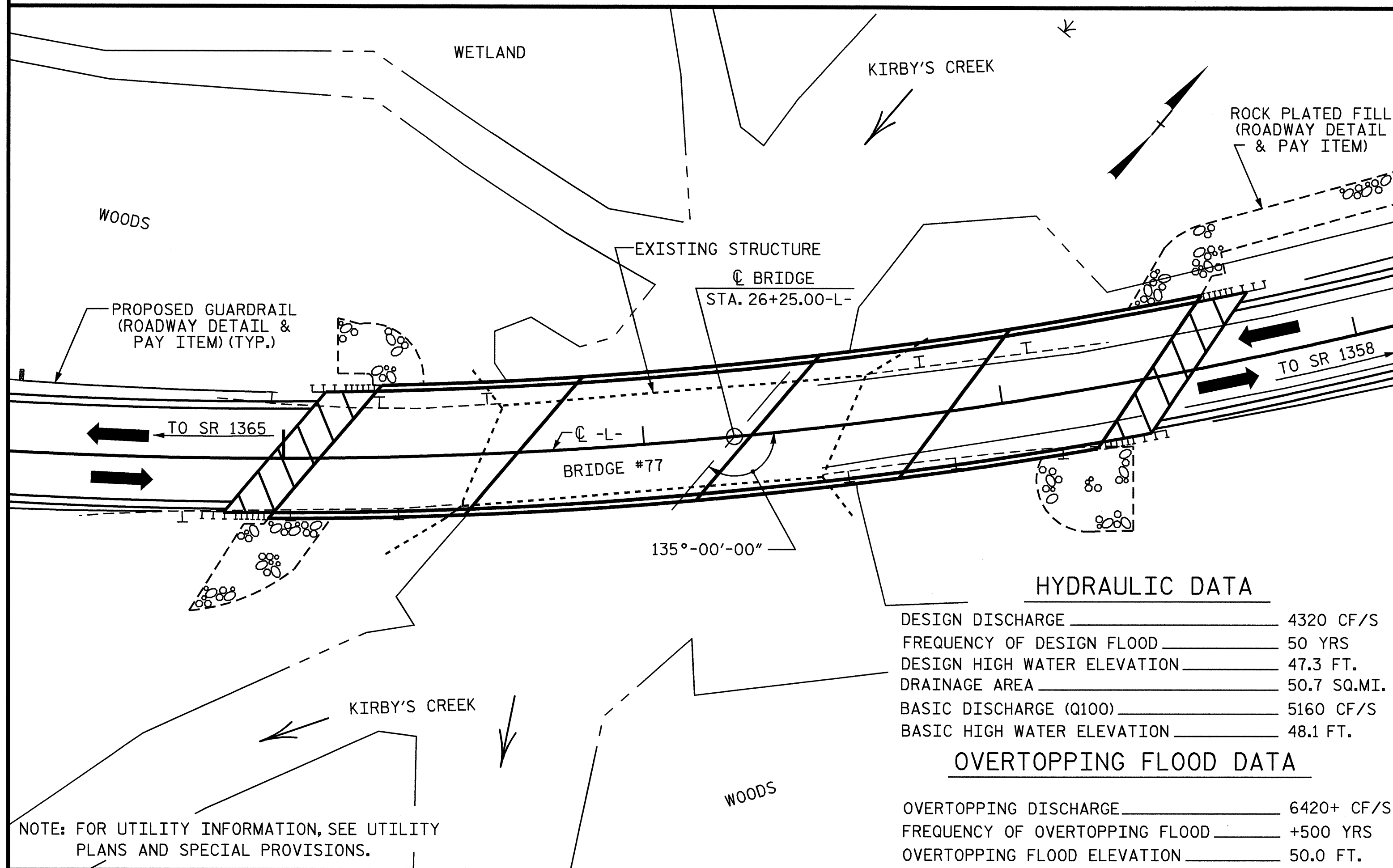


LONG CHORD LAYOUT
 ALL BENTS ARE PARALLEL

DRAWN BY : H. T. BARBOUR DATE : 11-21-07
 CHECKED BY : B. D. KLAPPENBACH DATE : 12-07

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BENCHMARK #11: STA. 23+69.00-BL- RAILROAD SPIKE IN BASE OF 30" GUM, EL. 43.93, 27.1' LT. NAVD 88



HYDRAULIC DATA

DESIGN DISCHARGE	4320 CF/S
FREQUENCY OF DESIGN FLOOD	50 YRS
DESIGN HIGH WATER ELEVATION	47.3 FT.
DRAINAGE AREA	50.7 SQ.MI.
BASIC DISCHARGE (Q100)	5160 CF/S
BASIC HIGH WATER ELEVATION	48.1 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	6420+ CF/S
FREQUENCY OF OVERTOPPING FLOOD	+500 YRS
OVERTOPPING FLOOD ELEVATION	50.0 FT.

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

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE GIRDERS HAVE BEEN DESIGNED FOR HS25.

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

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

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

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

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

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

THE EXISTING STRUCTURE CONSISTING OF 6 SPANS @ 17'-3", WITH A CLEAR ROADWAY WIDTH OF 24'-1" AND A REINFORCED CONCRETE FLOOR WITH A 2" ASPHALT WEARING SURFACE ON 18 LINES OF 6" X 14" TIMBER JOISTS SUPPORTED ON TIMBER CAPS WITH TIMBER PILES AND STEEL CRUTCH BENTS AT END BENTS #1 & #2 LOCATED AT THE PROPOSED SITE SHALL BE REMOVED. THE EXISTING STRUCTURE IS PRESENTLY POSTED. SEE SPECIAL PROVISIONS FOR REMOVAL OF EXISTING STRUCTURE AT STA. 26+25.00-L-.

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR UNCLASSIFIED STRUCTURE EXCAVATION.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE WILL BE NO WORK IN THE STREAM AT ANY TIME. THE CONSTRUCTION METHODS USED MUST PROVIDE FOR THE REMOVAL AND CONSTRUCTION WITHOUT A WORK BRIDGE, CAUSEWAY OR WORK IN THE STREAM. A CONSTRUCTION SEQUENCE PLAN MUST BE SUBMITTED TO THE ENGINEER BEFORE BEGINNING ANY WORK.

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 26+25.00-L-."

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

THE SCOUR CRITICAL ELEVATION FOR BENTS NO. 1, NO. 2 AND NO. 3 IS ELEVATION 22.0. THE SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

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

DRIVE PILES AT BENT NO. 1, NO. 2 AND NO. 3 TO A REQUIRED BEARING CAPACITY OF 110 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 BENTS NO. 1, NO. 2 AND NO. 3 IS 50 TONS PER PILE.

DRIVE PILES AT BENT NO. 1, NO. 2 AND NO. 3 TO A TIP ELEVATION NO HIGHER THAN -16 FT.

TESTING THE FIRST PRODUCTION PILE WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED. SEE PILE DRIVING ANALYZER SPECIAL PROVISION.

PILE RESTRIKES FOR L.R.F.D. IS REQUIRED. SEE PILE RESTRIKES FOR L.R.F.D. SPECIAL PROVISION.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

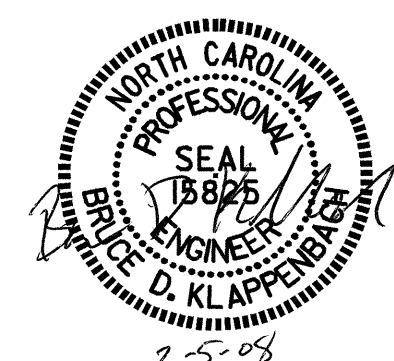
FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	PDA ASSISTANCE	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDERS	HP 12 X 53 STEEL PILES	HP 12 X 53 GALVANIZED STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS				
	LUMP SUM	EACH	EACH	CU.YDS.	SQ.FT.	SQ.FT.	CU.YDS.	LUMP SUM	LBS.	NO.	LIN.FT.	NO.	LIN.FT.	NO.	LIN.FT.	EACH	LIN.FT.	TONS	SQ.YDS.	LUMP SUM	LUMP SUM	
SUPERSTRUCTURE					8913	8359				16	884.10											
END BENT NO.1				1200.0			43.1		6486		10	850				103	115					
BENT NO.1							20.8		6659				11	825								
BENT NO.2							21.8		6954				11	880								
BENT NO.3							22.7		7257				11	935								
END BENT NO.2				2250.0			49.1		7399		11	880			102	114						
TOTAL	LUMP SUM	1	1	3450.0	8913	8359	157.5	LUMP SUM	34755	16	884.10	21	1730	33	2640	20	454.35	205	229	LUMP SUM	LUMP SUM	

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00-L-
SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**GENERAL DRAWING FOR
BRIDGE OVER
KIRBY'S CREEK
ON NC 35 BETWEEN
SR 1365 AND SR 1358**

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

TOTAL SHEETS: 45

DRAWN BY : H. T. BARBOUR DATE : 11-26-07
CHECKED BY : B. D. KLAPPENBACH DATE : 12-07

NOTES

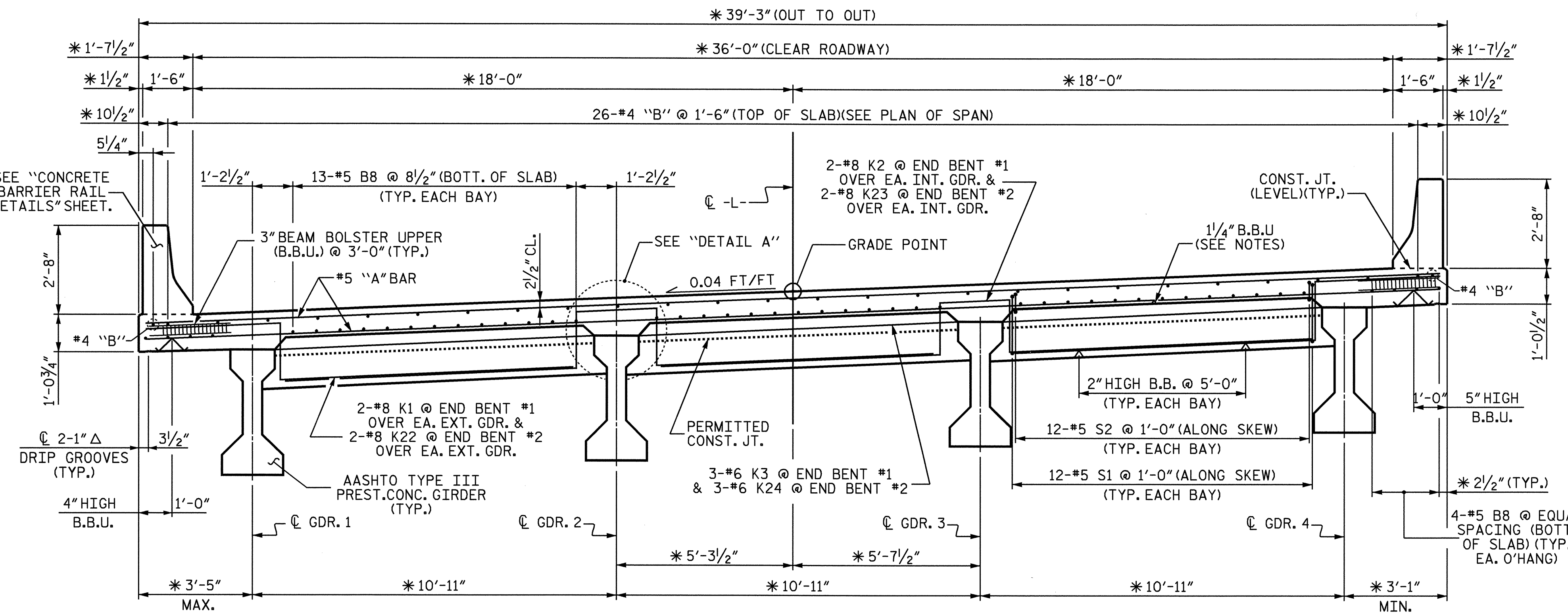
PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

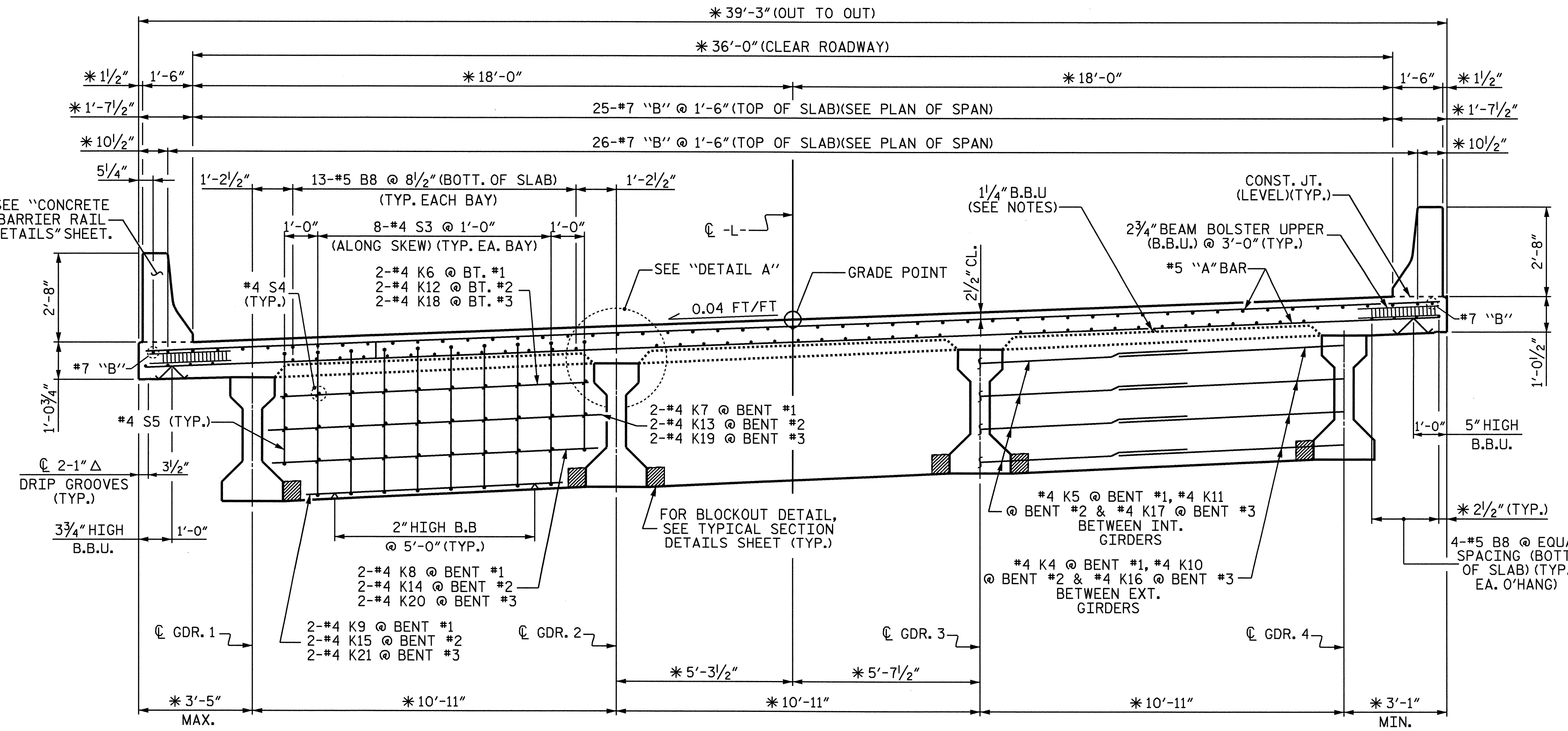
BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

#5 GI BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.



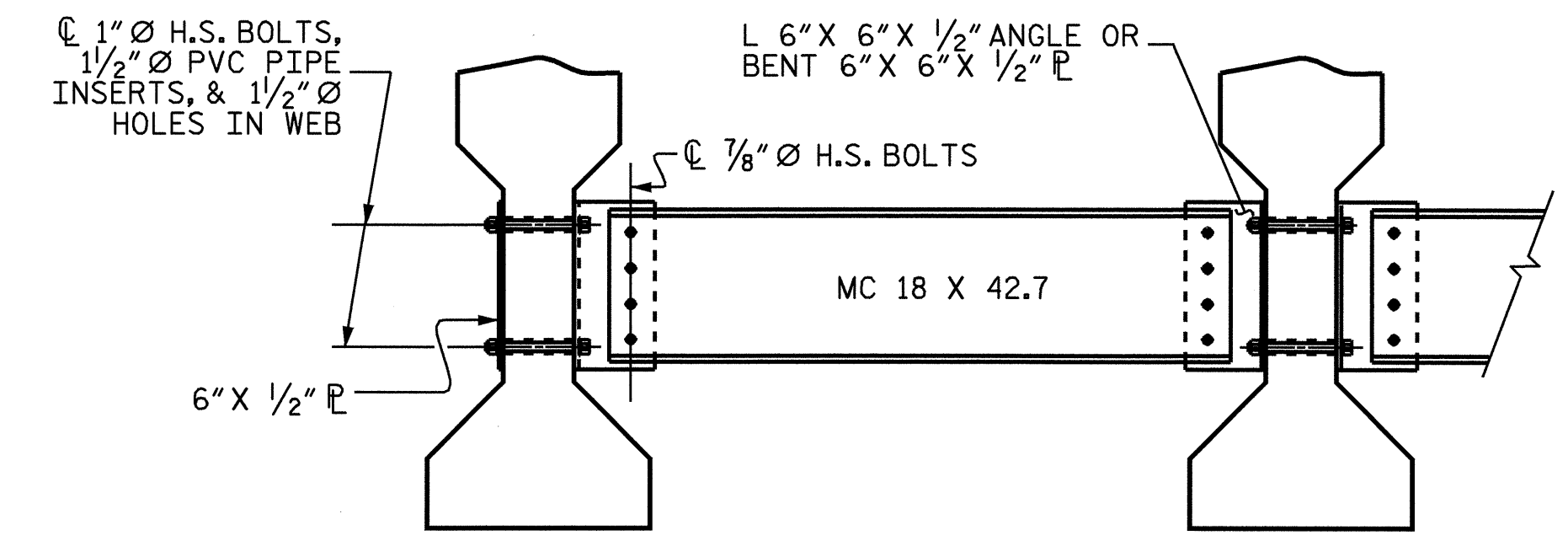
TYPICAL SECTION @ END BENT DIAPHRAGMS

*DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH -L-. GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.



TYPICAL SECTION @ BENT DIAPHRAGMS

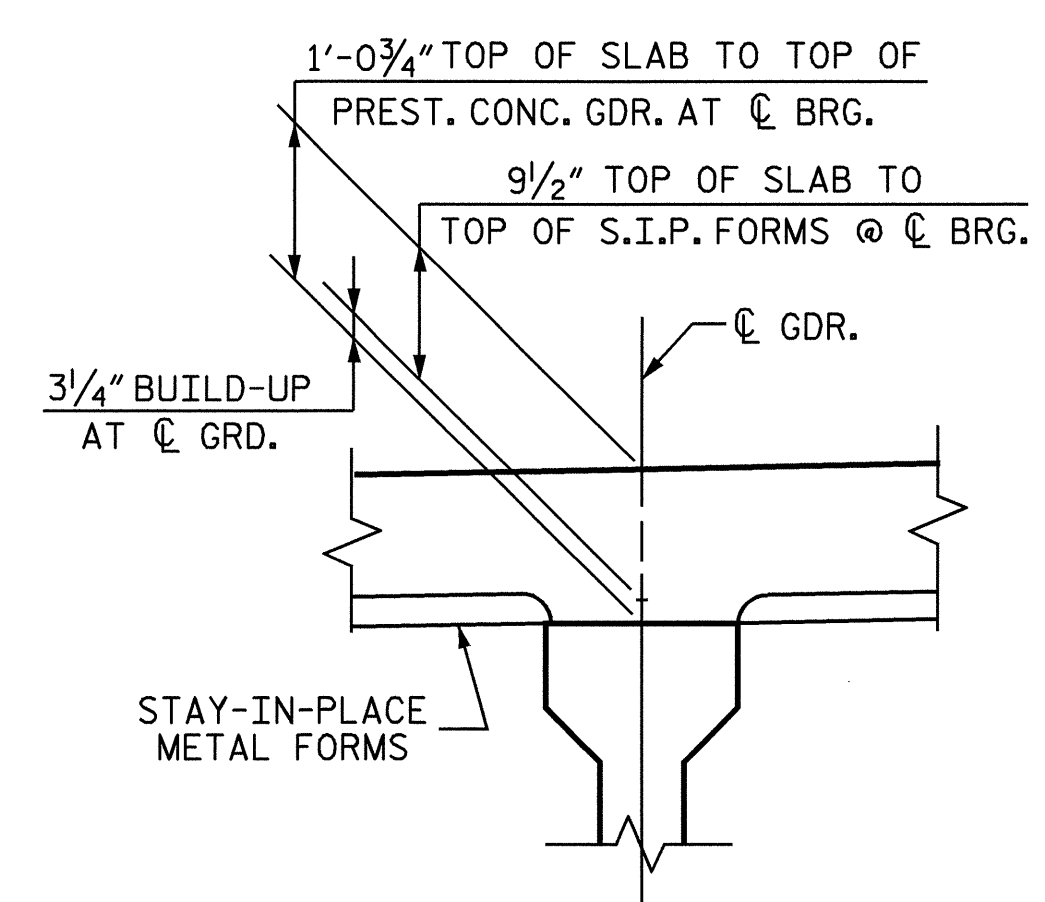
*DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH -L-. GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.



EXTERIOR GIRDER INTERIOR GIRDER

PART TYPICAL SECTION

FOR DETAILS, SEE SHEET NO. S-19



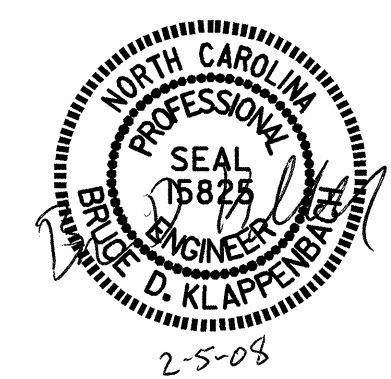
DETAIL A

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

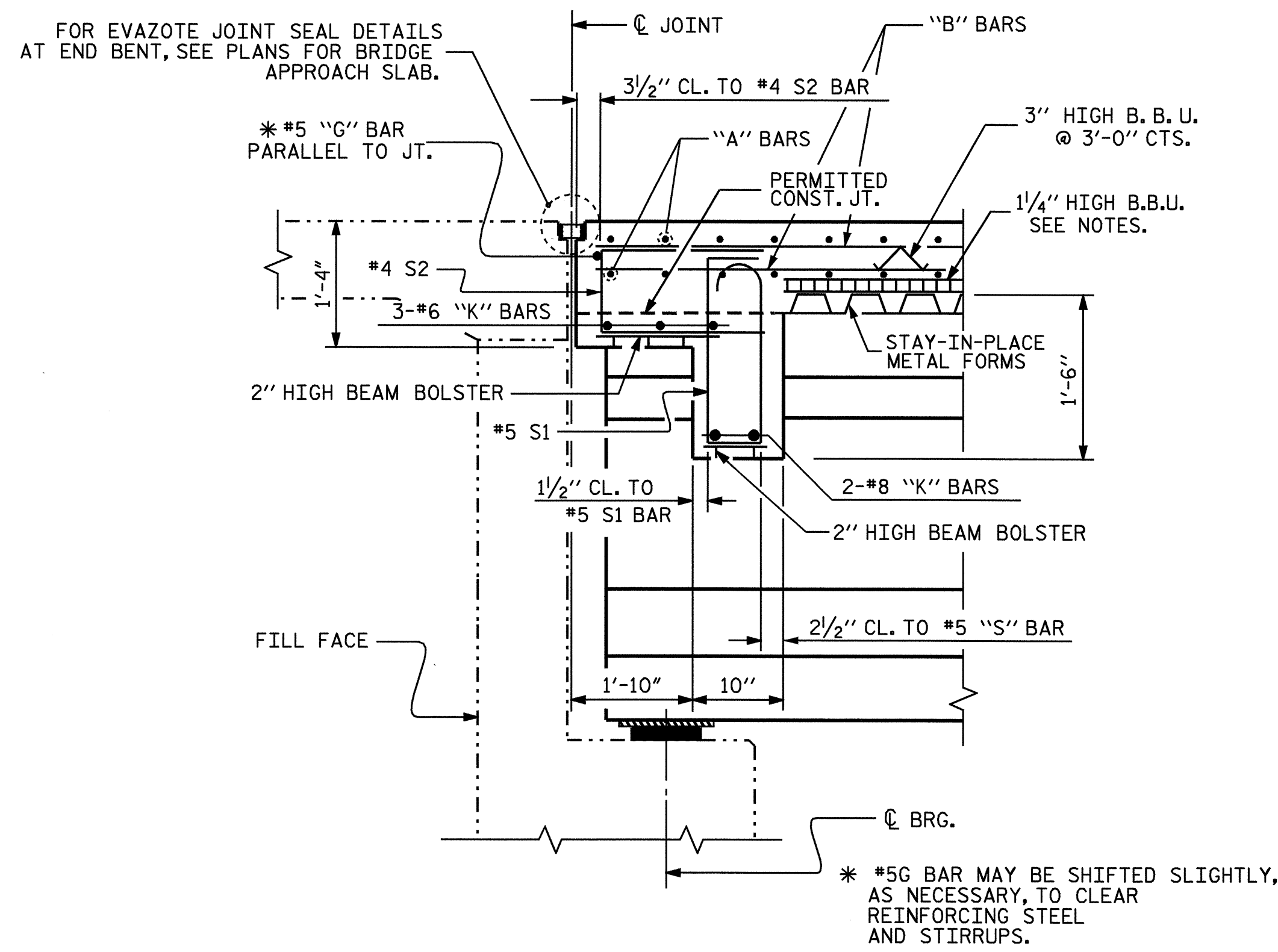
SUPERSTRUCTURE
TYPICAL SECTIONS



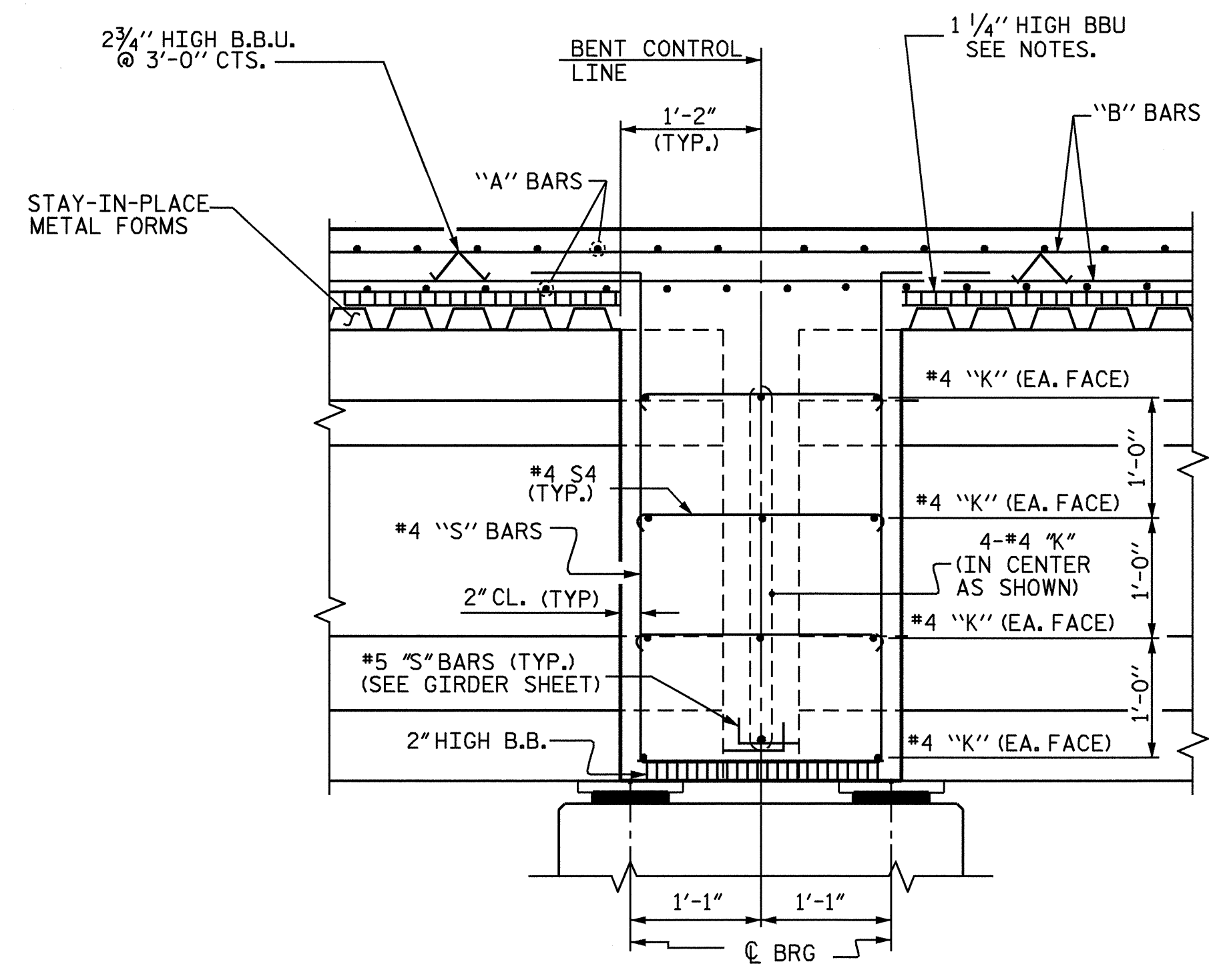
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CHECKED BY: M.G. SHAIKH DATE: 10/23/07

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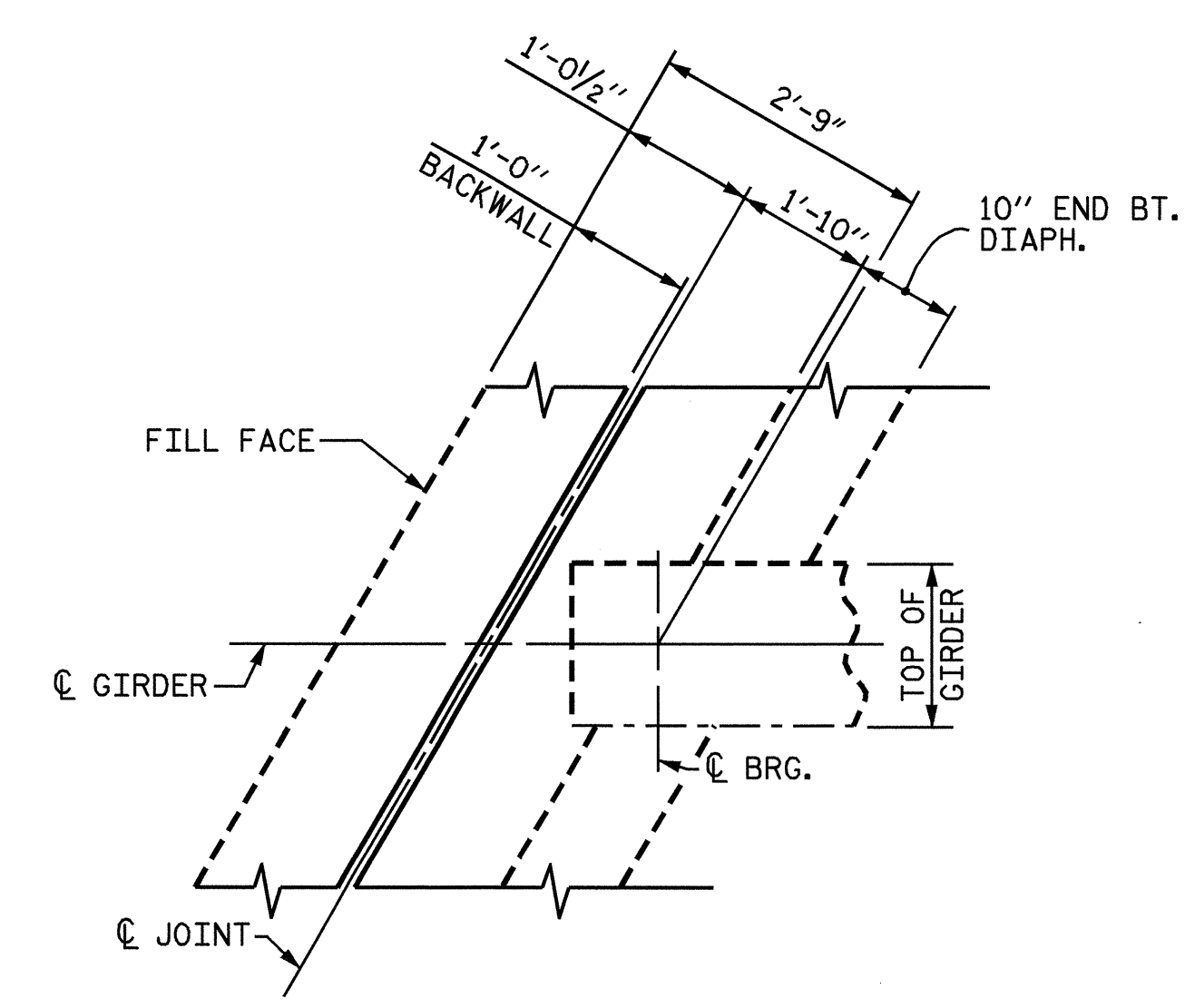
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					45



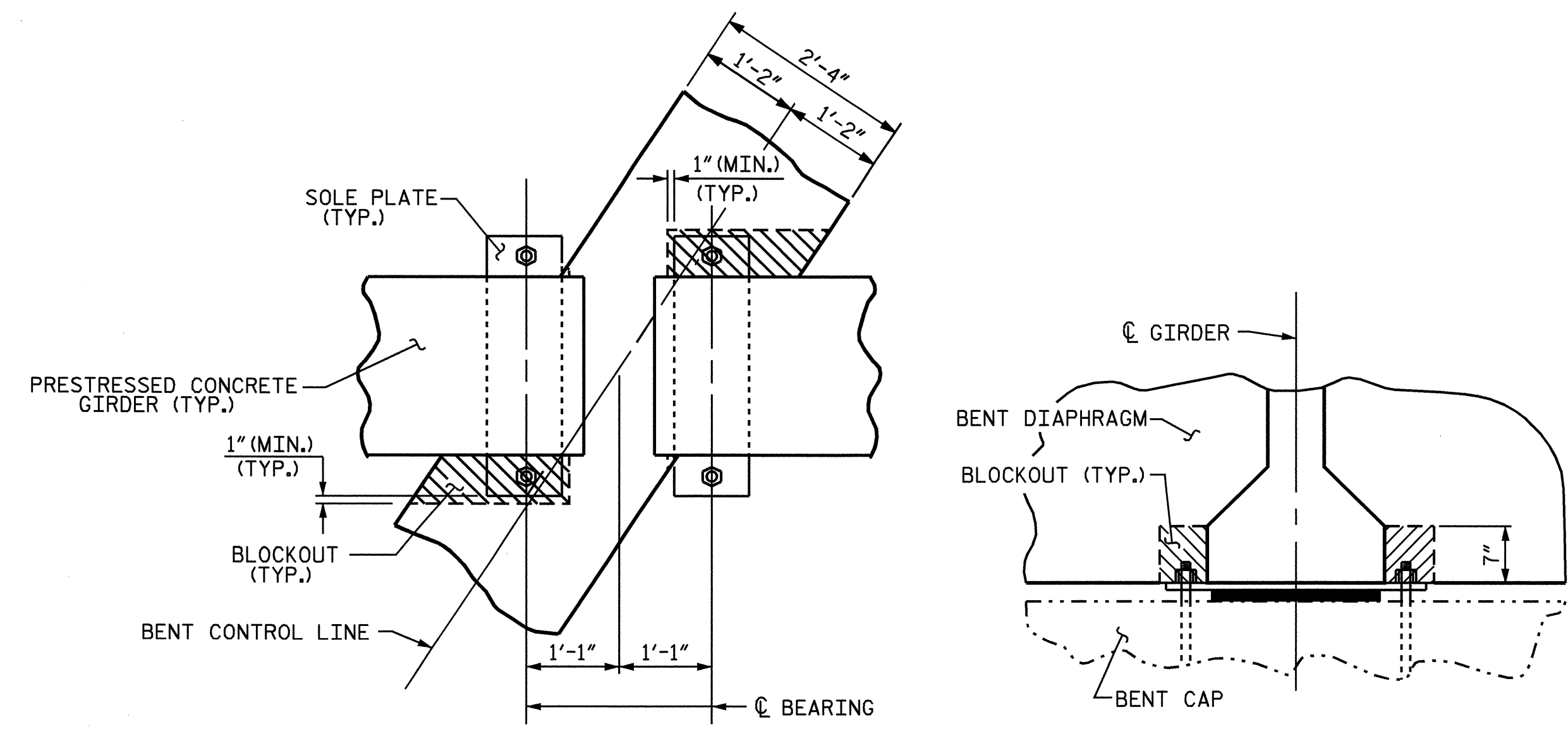
SECTION THRU END BENT DIAPHRAGM



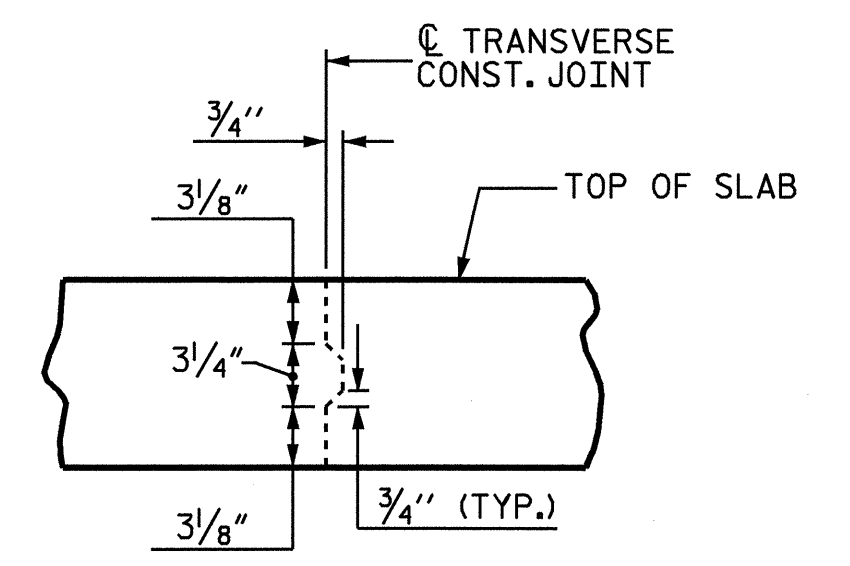
SECTION THRU CONTINUOUS BENT DIAPHRAGM



PLAN @ END BENT DIAPHRAGM



PLAN SECTION
BENT DIAPHRAGM BLOCK-OUT DETAIL

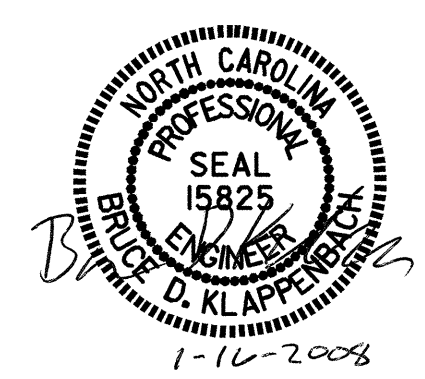


TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTIONS
 DETAILS

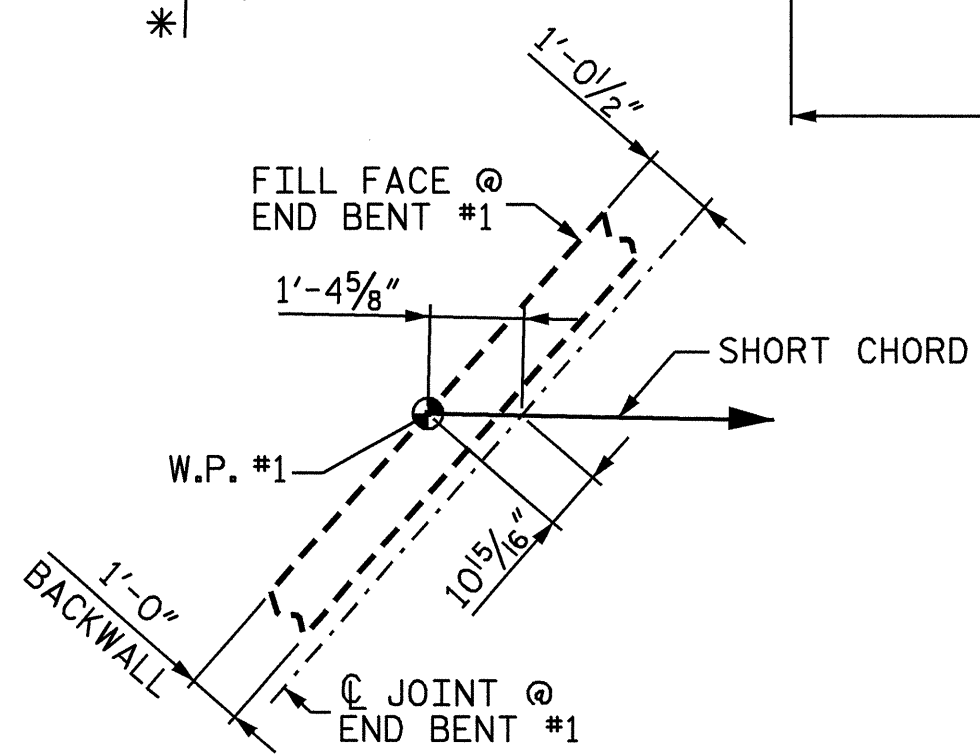
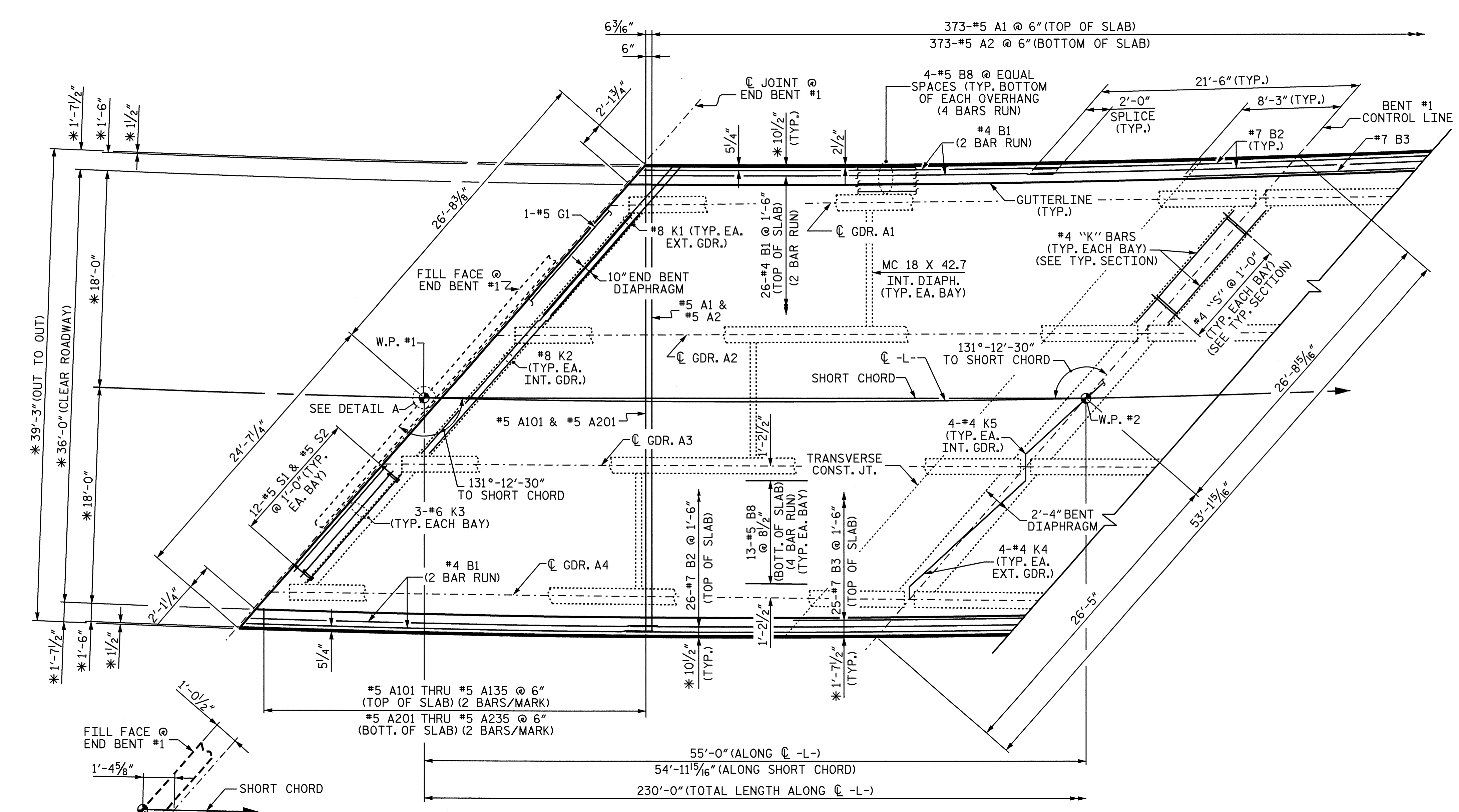


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			45

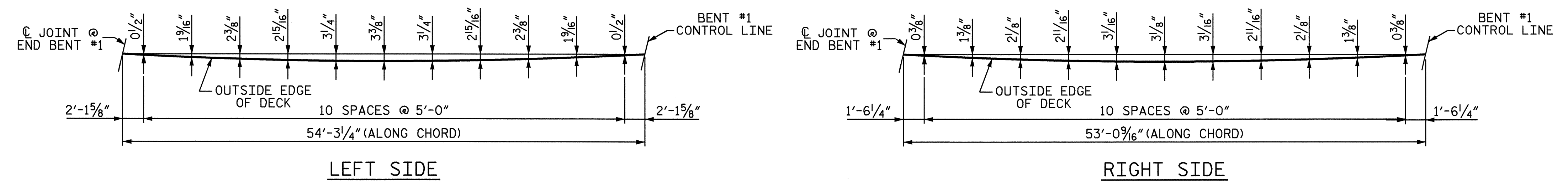
NC806



PLAN OF SPAN A

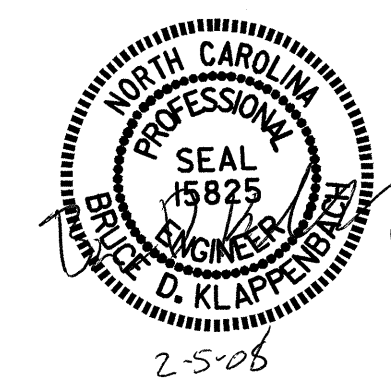
* DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH C-L. GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.

* "A" BARS ARE ALONG SHORT CHORD & PERPENDICULAR TO SHORT CHORD

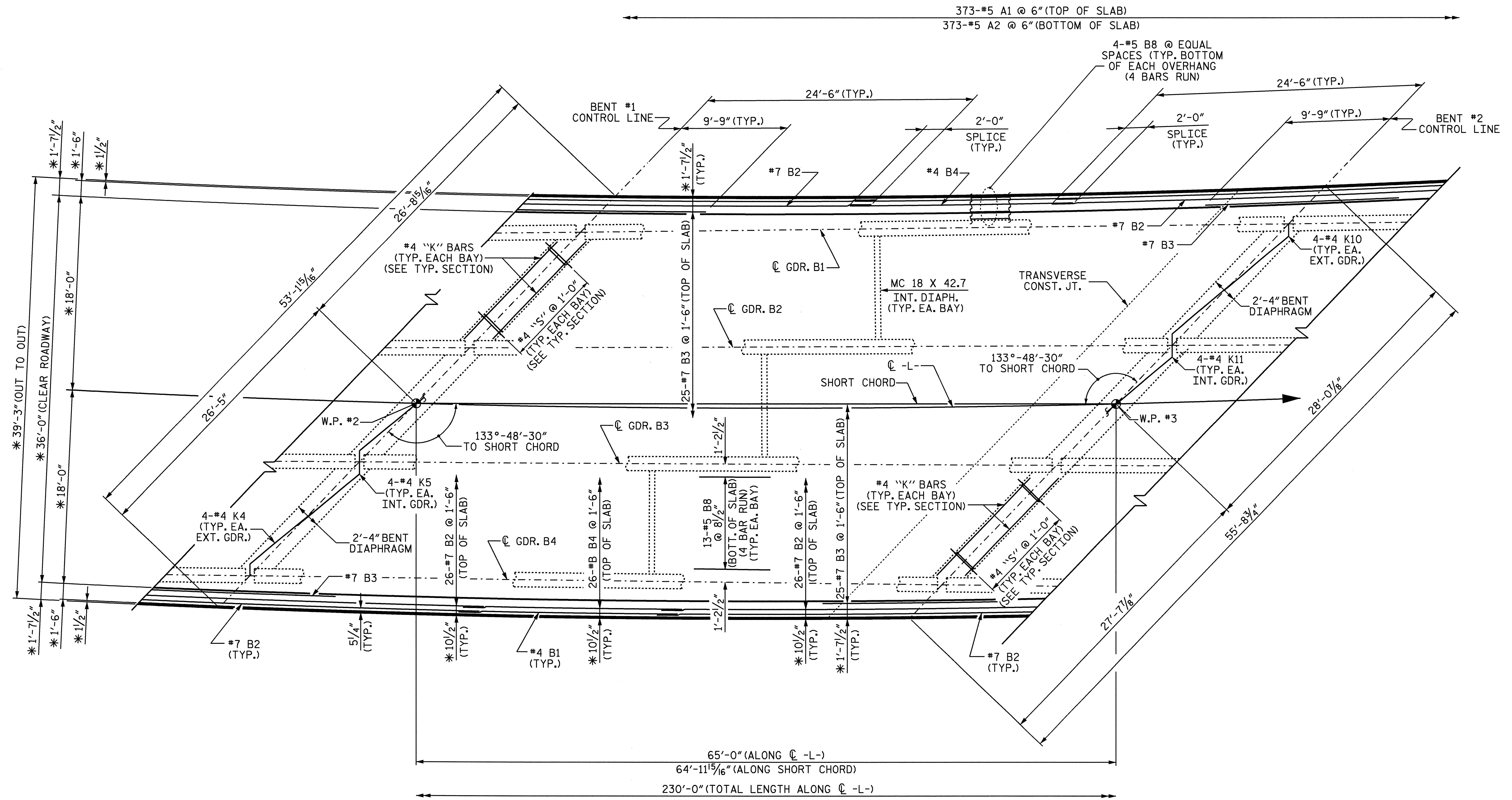


PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPAN A					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-7
					TOTAL SHEETS 45



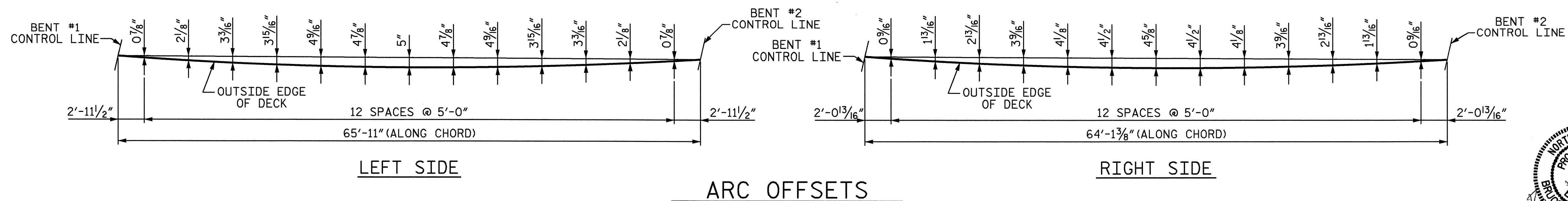
DRAWN BY : A. SORSENGINH DATE : 1/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/07



PLAN OF SPAN B

* DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH C-L .
GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.

"A" BARS ARE ALONG SHORT CHORD & PERPENDICULAR TO SHORT CHORD

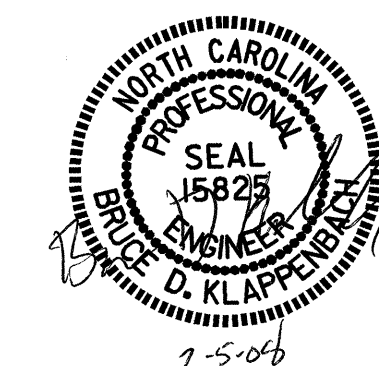


PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPAN B



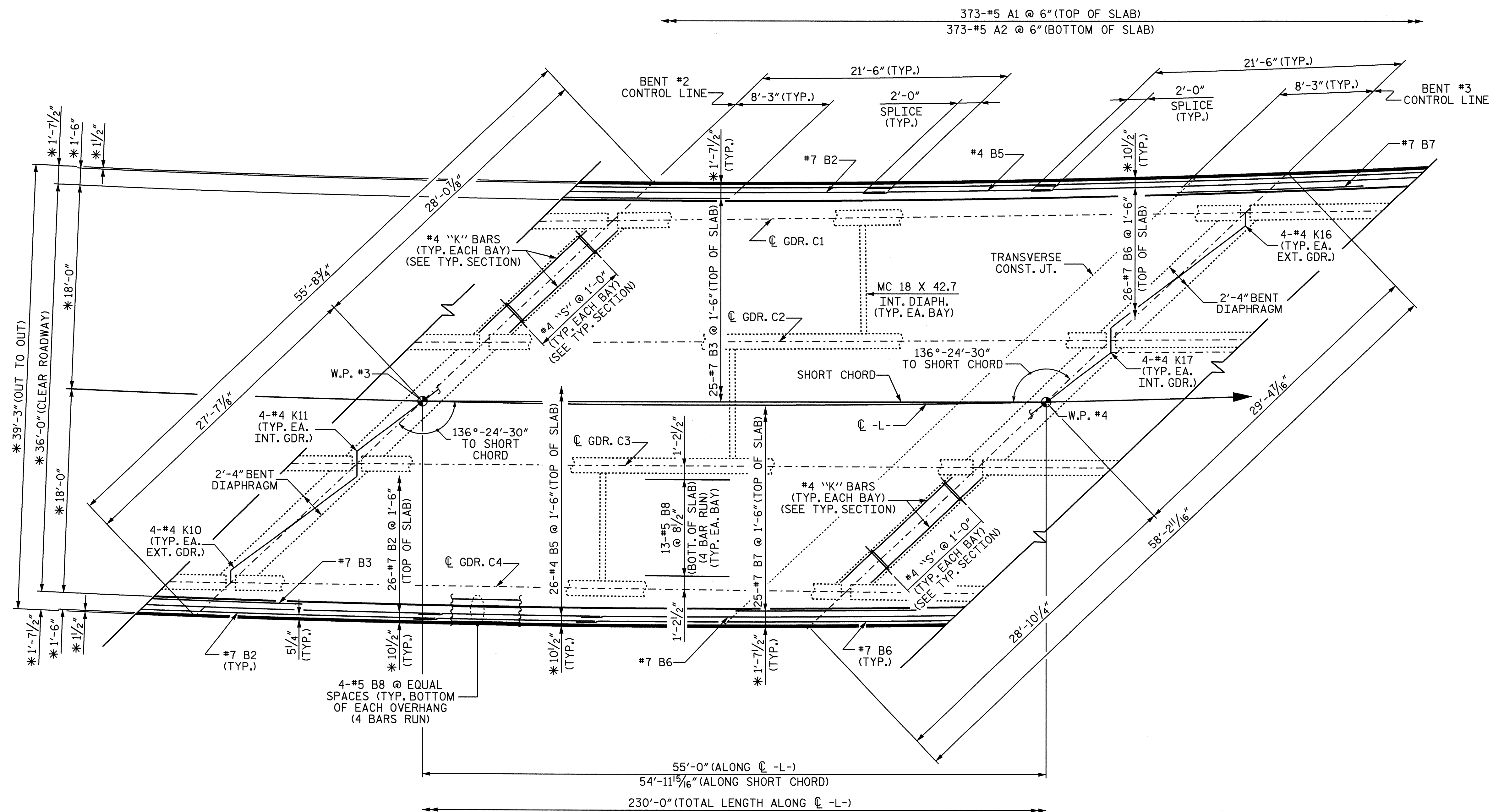
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CHECKED BY : M. G. SHAIKH DATE : 10/23/07

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asor.sen@nh

REVISIONS				SHEET NO.
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1			3	
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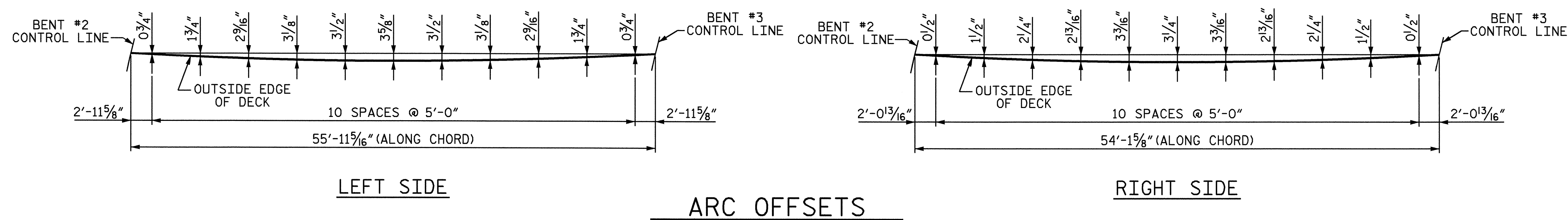
TOTAL SHEETS: 45

NC006



PLAN OF SPAN C

*DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH C-L.
 GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.
 "A" BARS ARE ALONG SHORT CHORD & PERPENDICULAR TO SHORT CHORD

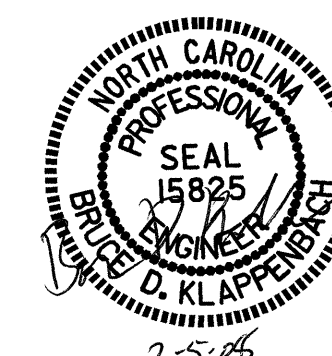


PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPAN C

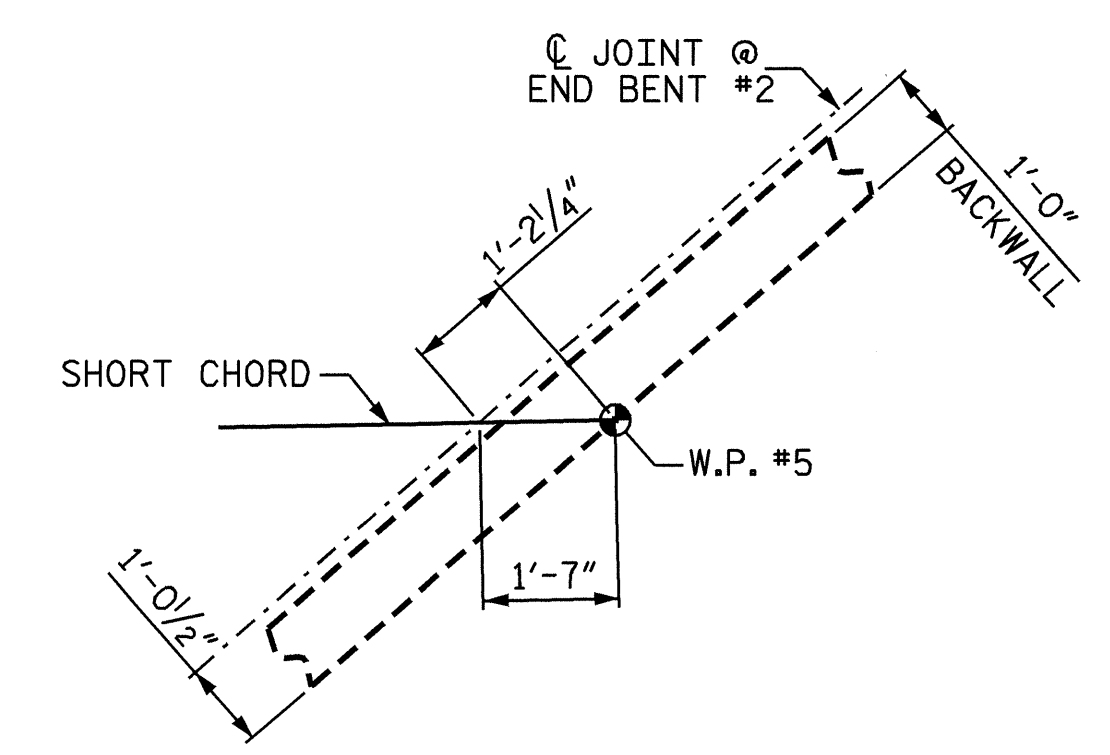
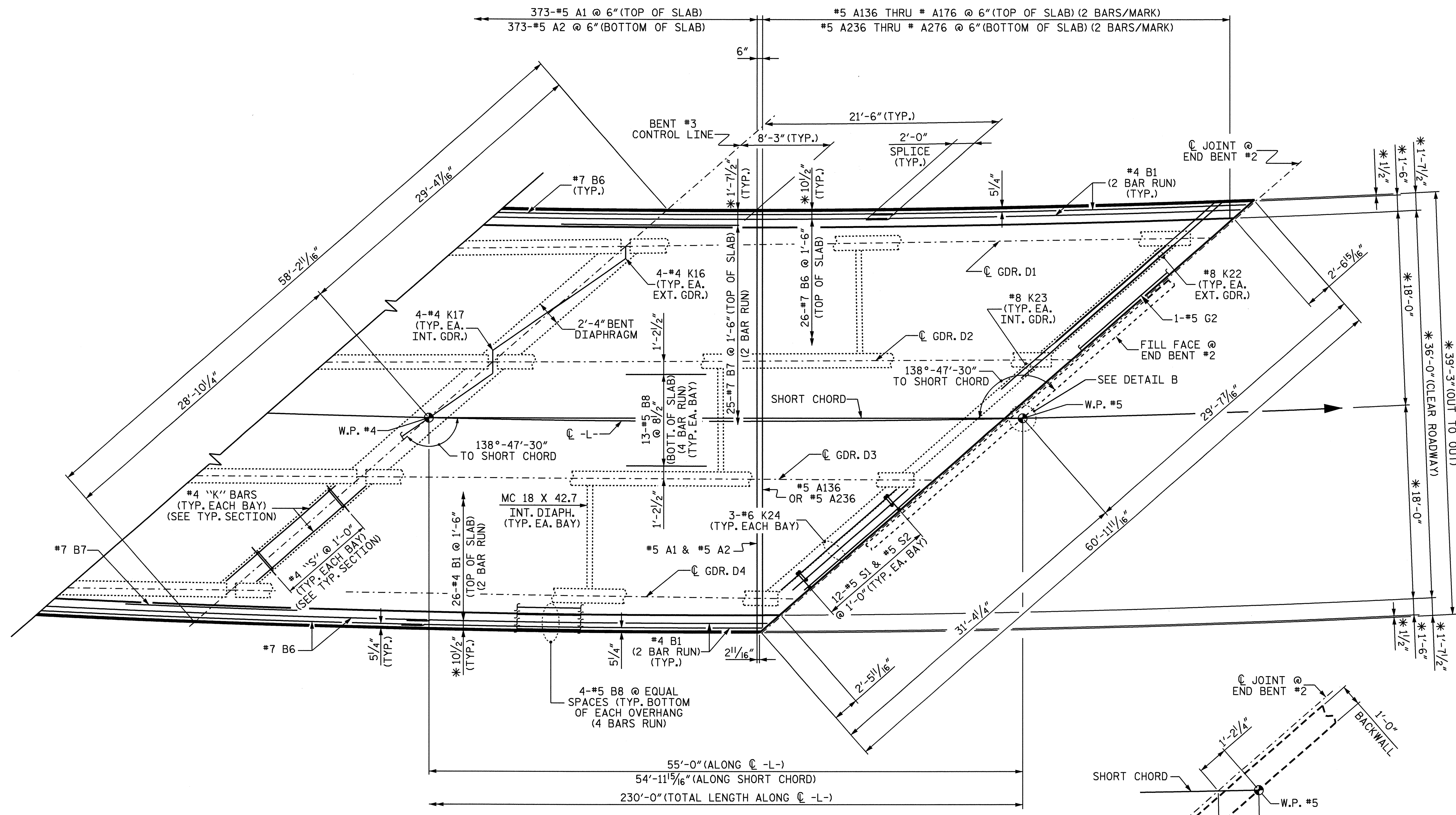


DRAWN BY : A. SORSENGINH DATE : 7/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/07

05-FEB-2008 09:12
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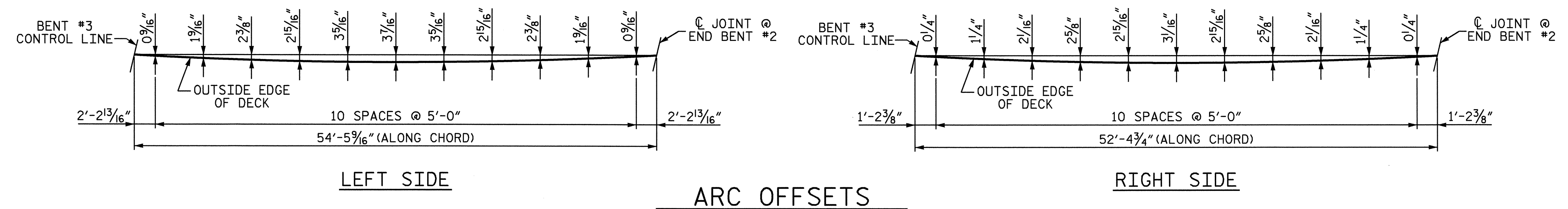
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			45

NC005



PLAN OF SPAN D

* DIMENSIONS ARE TO CIRCLES CONCENTRIC WITH C -L-
 GIRDERS ARE ON THE CHORDS OF THESE CONCENTRIC CIRCLES.
 "A" BARS ARE ALONG SHORT CHORD & PERPENDICULAR TO SHORT CHORD



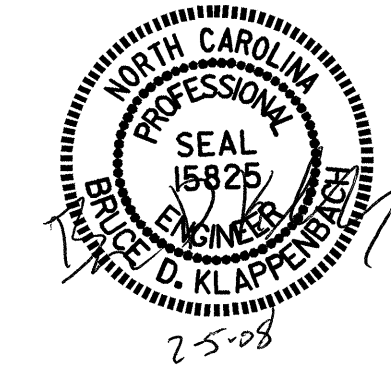
PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

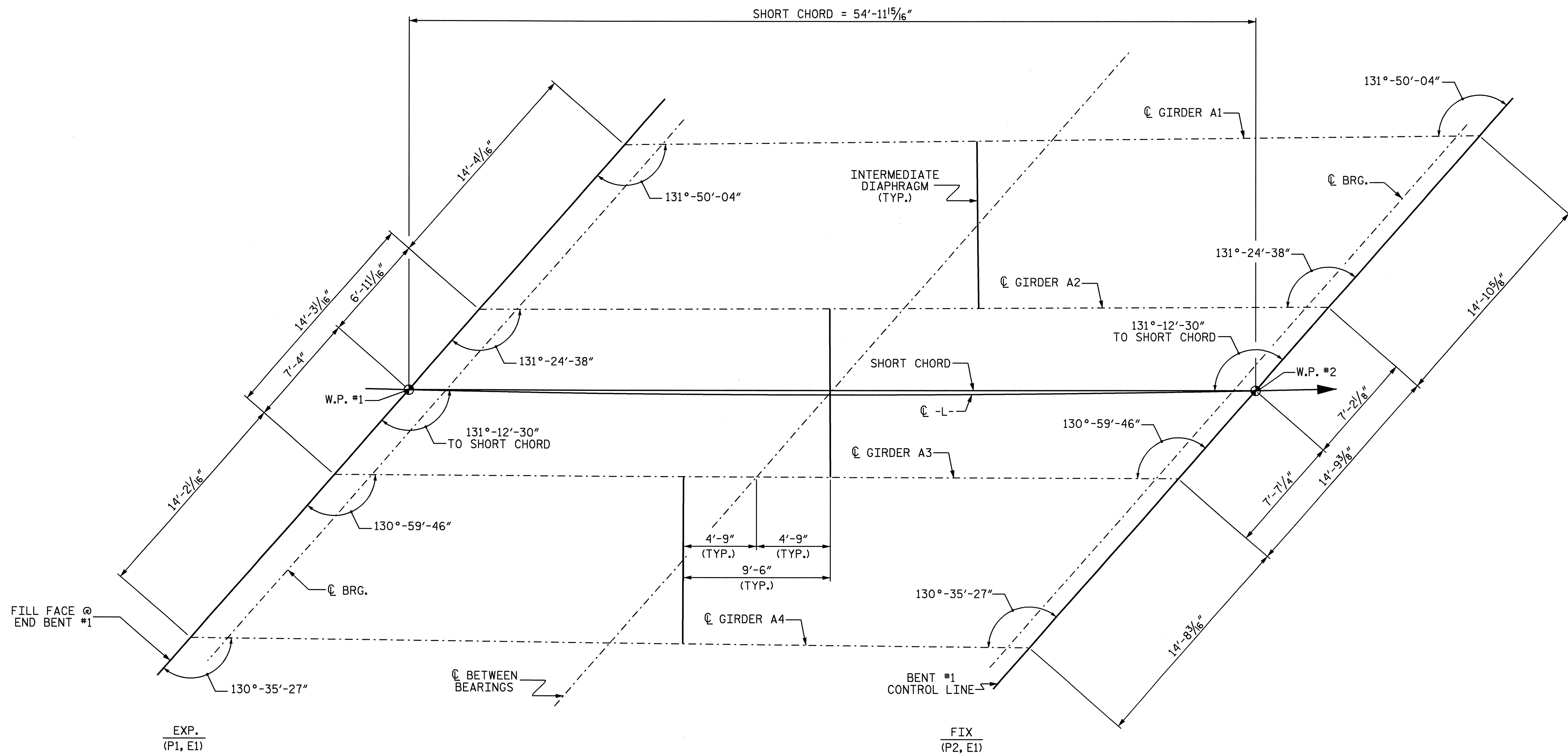
PLAN OF SPAN D

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	
				S-10
				TOTAL SHEETS 45



DRAWN BY : A. SORSENGINH DATE : 7/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/07

05-FEB-2008 09:12
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 dsor-senginh



FRAMING PLAN SPAN A

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 FRAMING PLAN
 SPAN A**

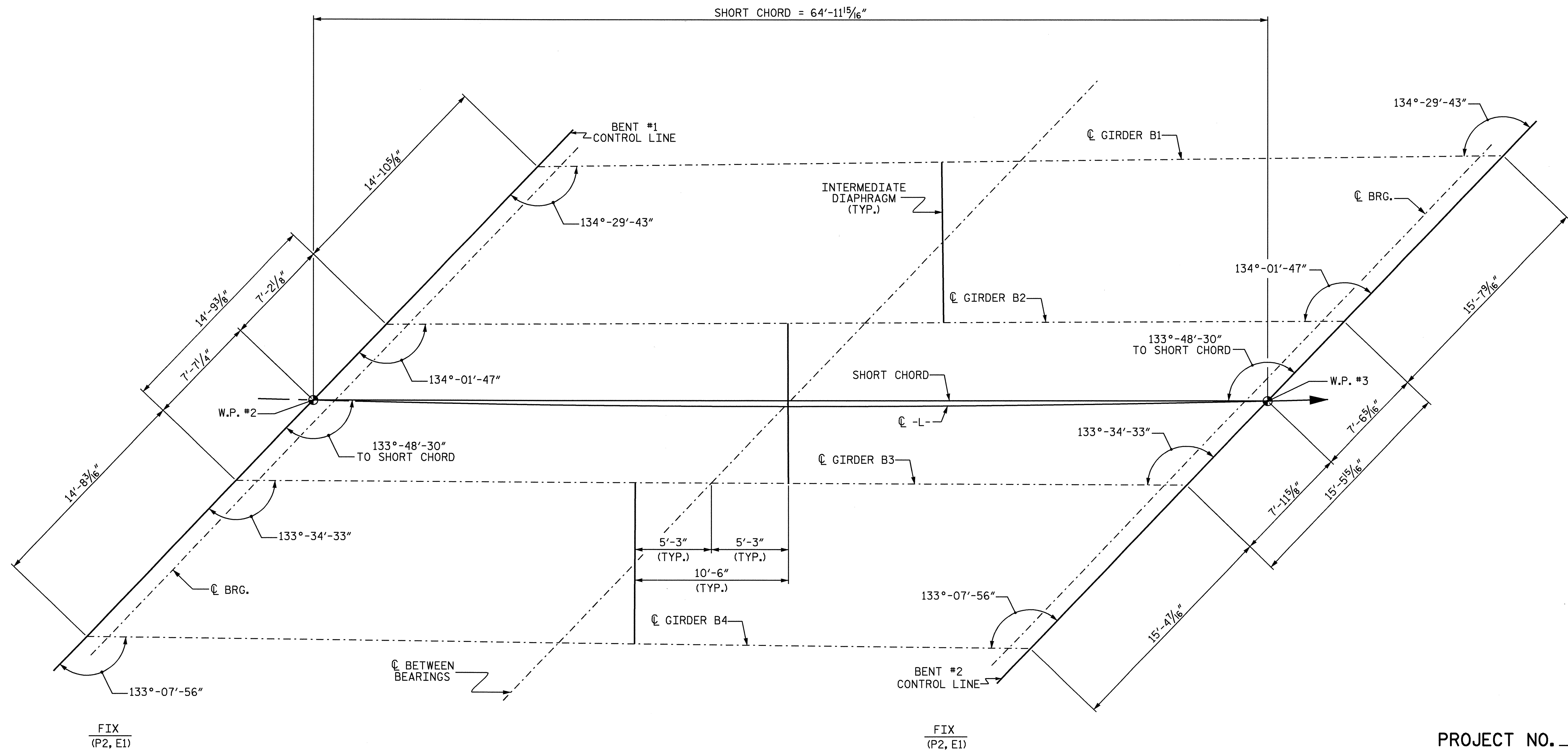


DRAWN BY : A. SORSENGINH DATE : 4/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/04

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			45

NC006



DRAWN BY : A. SORSENGINH DATE : 4/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/04

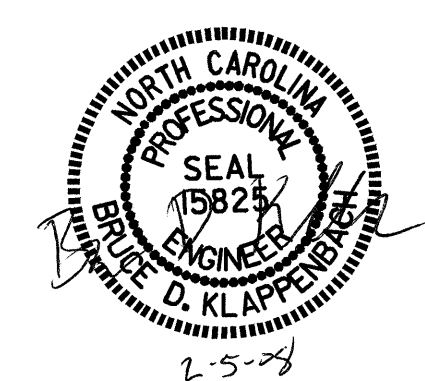
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PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 2 OF 4

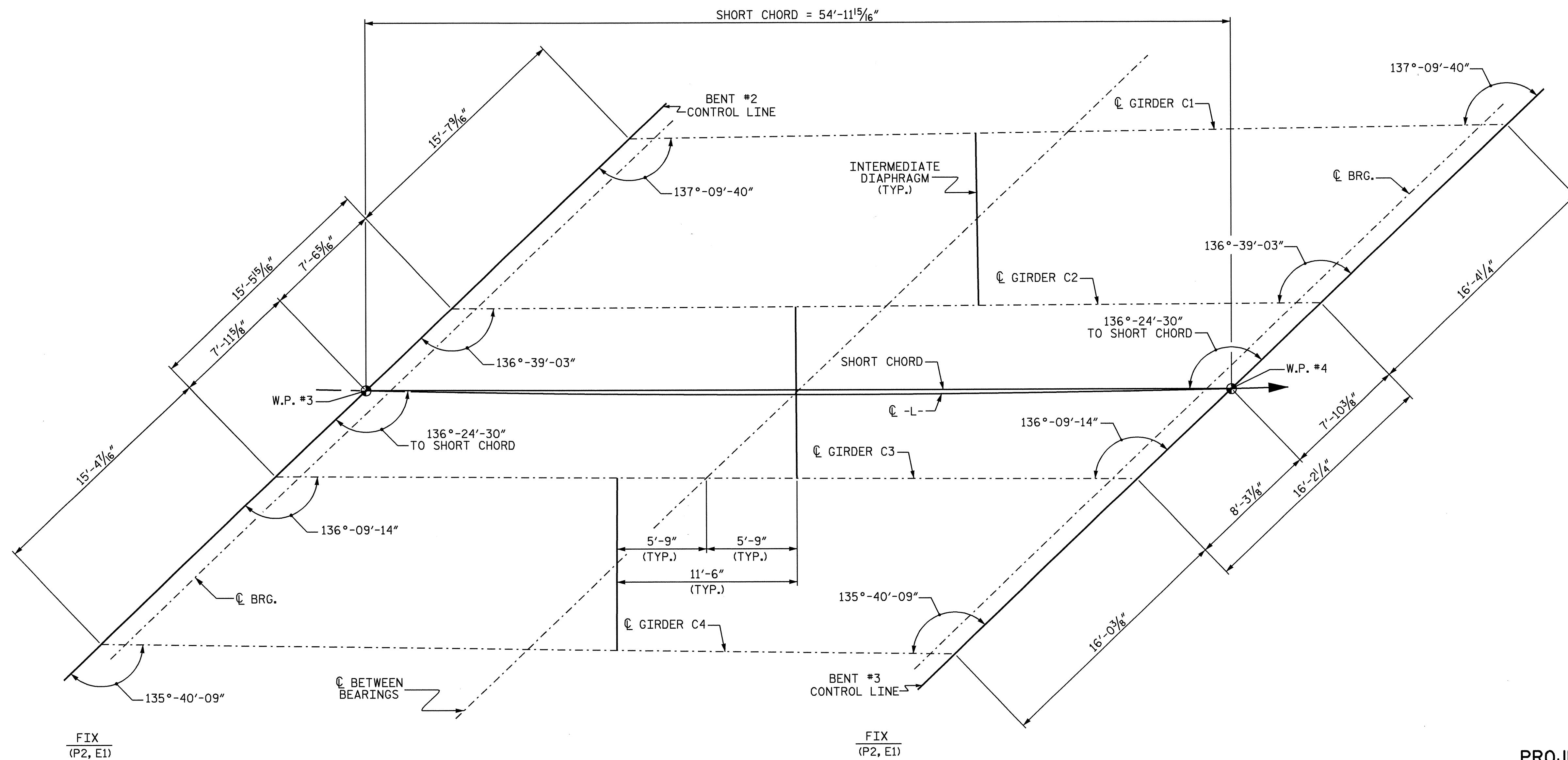
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 FRAMING PLAN
 SPAN B**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			45

NC006



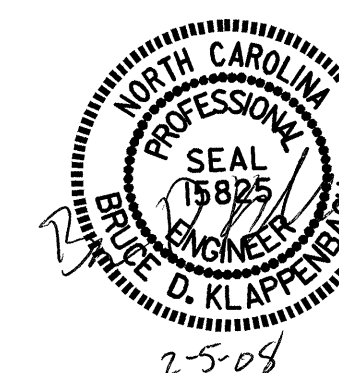
FRAMING PLAN SPAN C

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN
 SPAN C

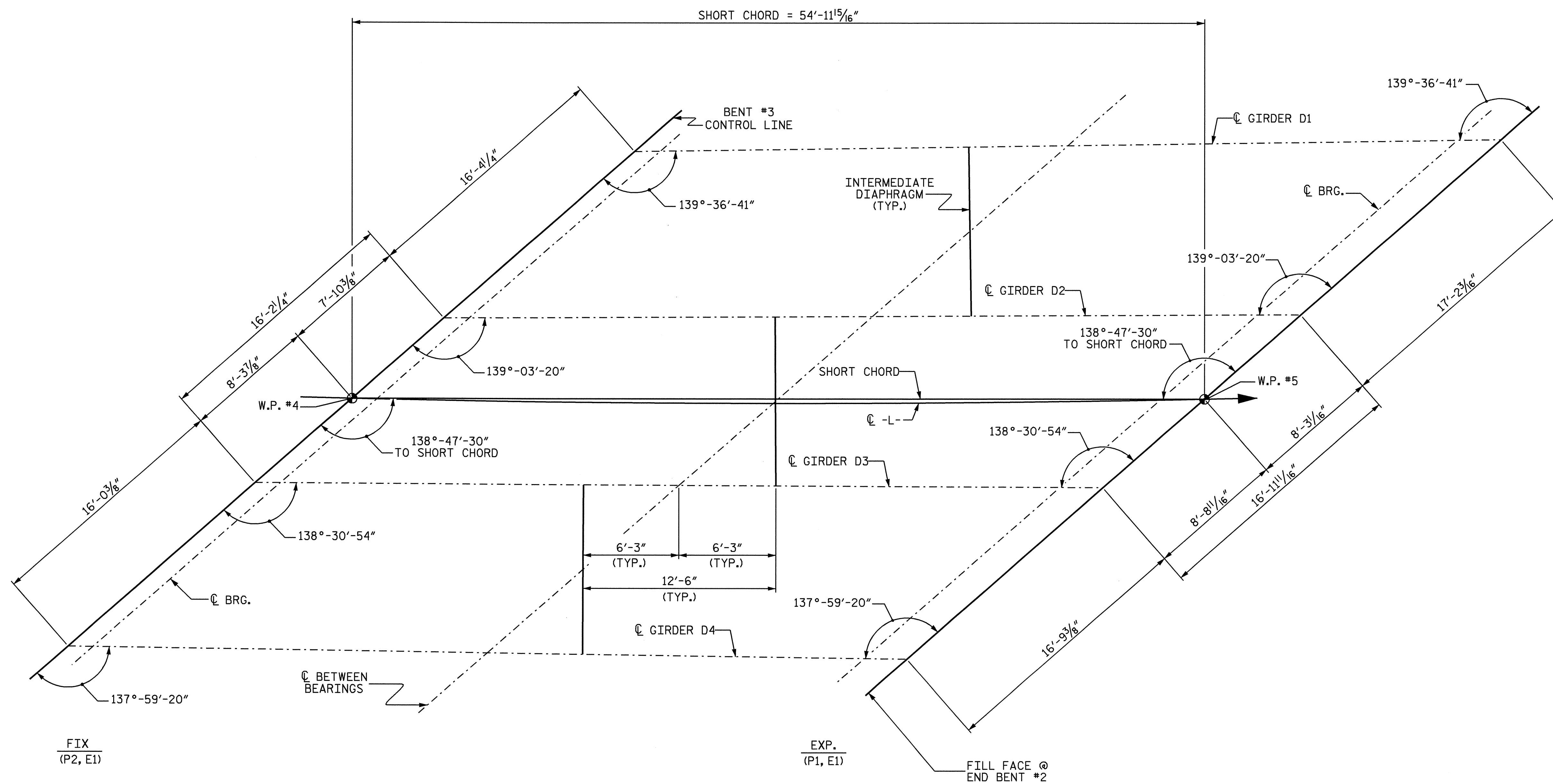


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			45

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 CHECKED BY : M. G. SHAIKH DATE : 10/23/04

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NC005



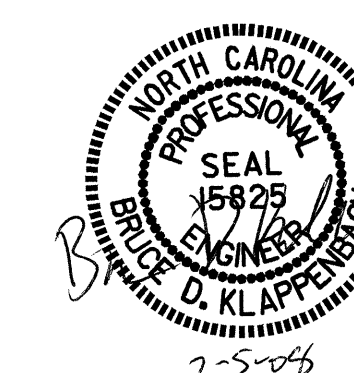
FRAMING PLAN SPAN D

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN
 SPAN D

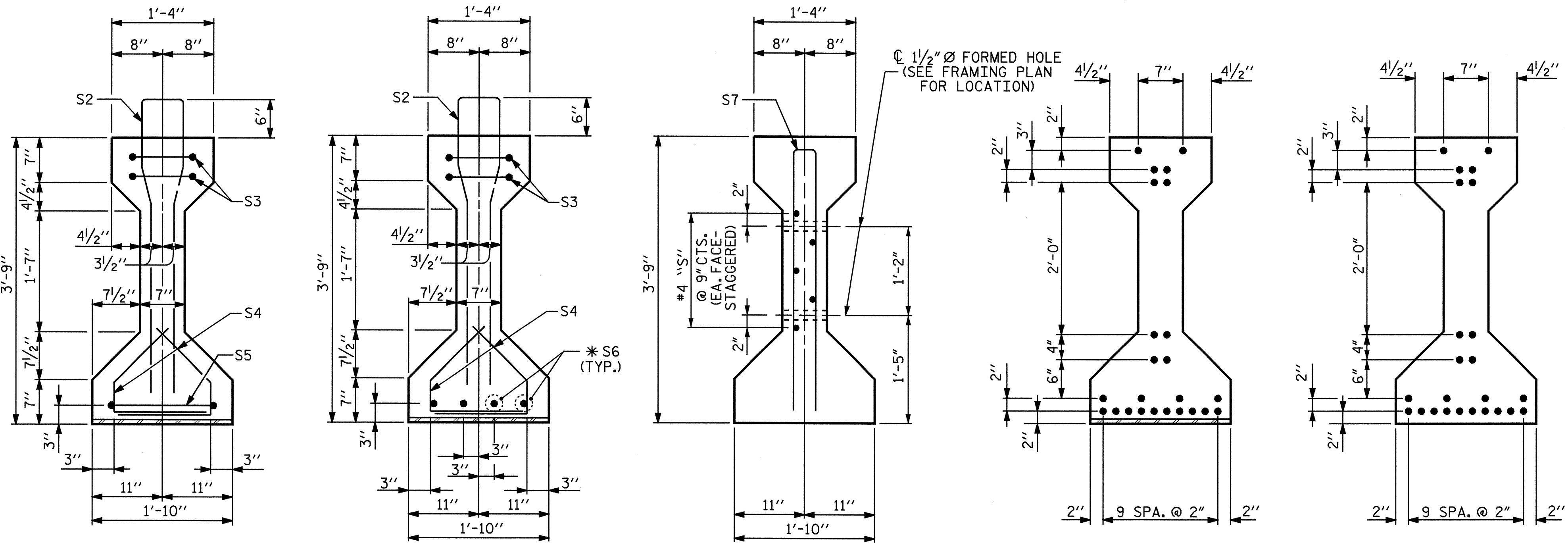


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			45

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 CHECKED BY : M. G. SHAIKH DATE : 10/23/04

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NC006

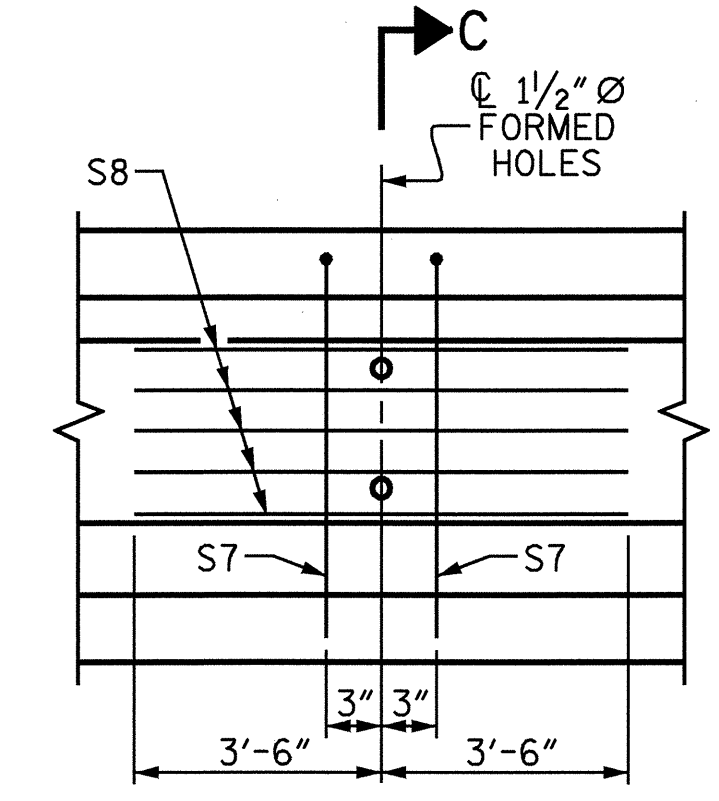


SECTION A-A

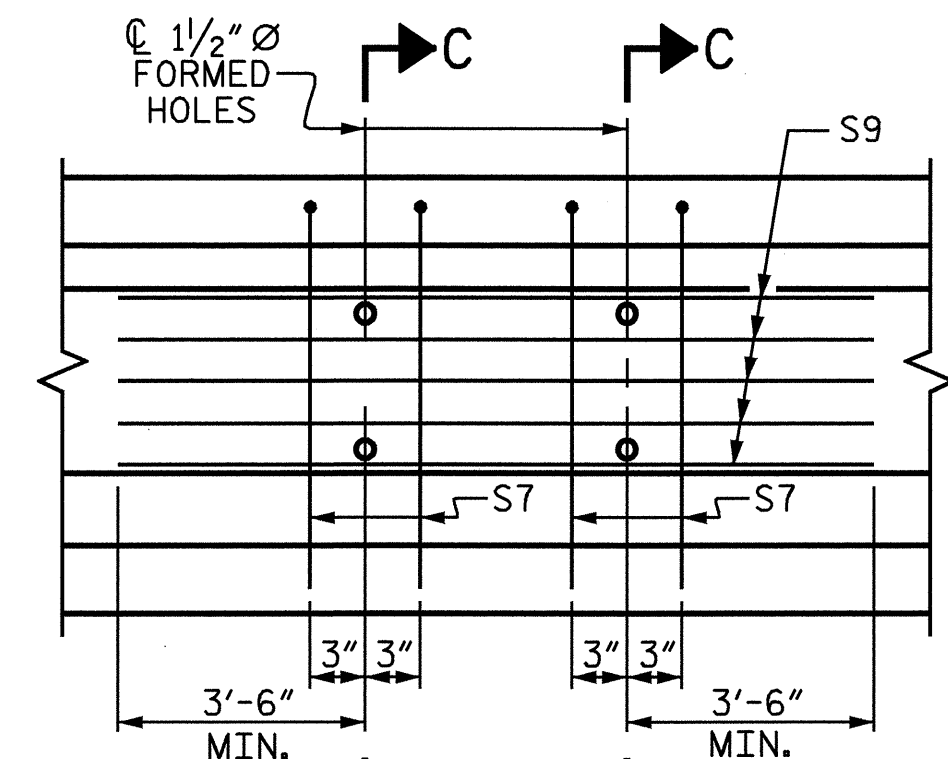
SECTION B-B

SECTION C-C

AT END OF GIRDER AT C OF GIRDER
0.60" Ø LOW RELAXATION STRAND LAYOUT

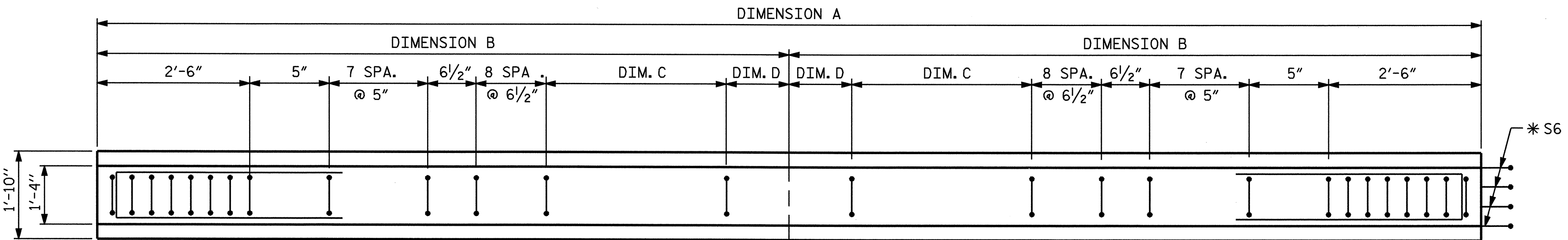


PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 & 4 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES

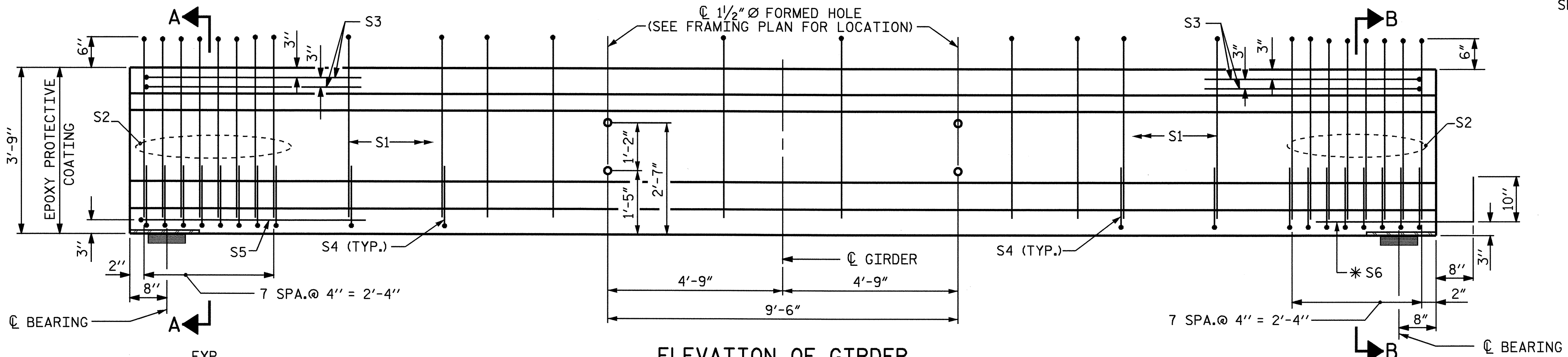


PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 2 & 3 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES

	GIRDER DIMENSIONS			
	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D
GIRDER #1	52'-1 1/8"	26'-0 9/16"	13 SPA @ 1'-1 3/4"	5 5/16"
GIRDER #2	51'-9"	25'-10 1/2"	13 SPA @ 1'-1 3/4"	3 1/4"
GIRDER #3	51'-5 1/8"	25'-8 9/16"	13 SPA @ 1'-1 1/2"	4 9/16"
GIRDER #4	51'-1 3/8"	25'-6 1/16"	13 SPA @ 1'-1 1/2"	2 1/16"



PLAN OF GIRDER



ELEVATION OF GIRDER

(LOCATION OF HOLES ARE FOR INTERIOR GIRDER ONLY, FOR EXTERIOR GIRDER SEE FRAMING PLAN. SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS.)

0.60" Ø L. R. GRADE 270 STRANDS

AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

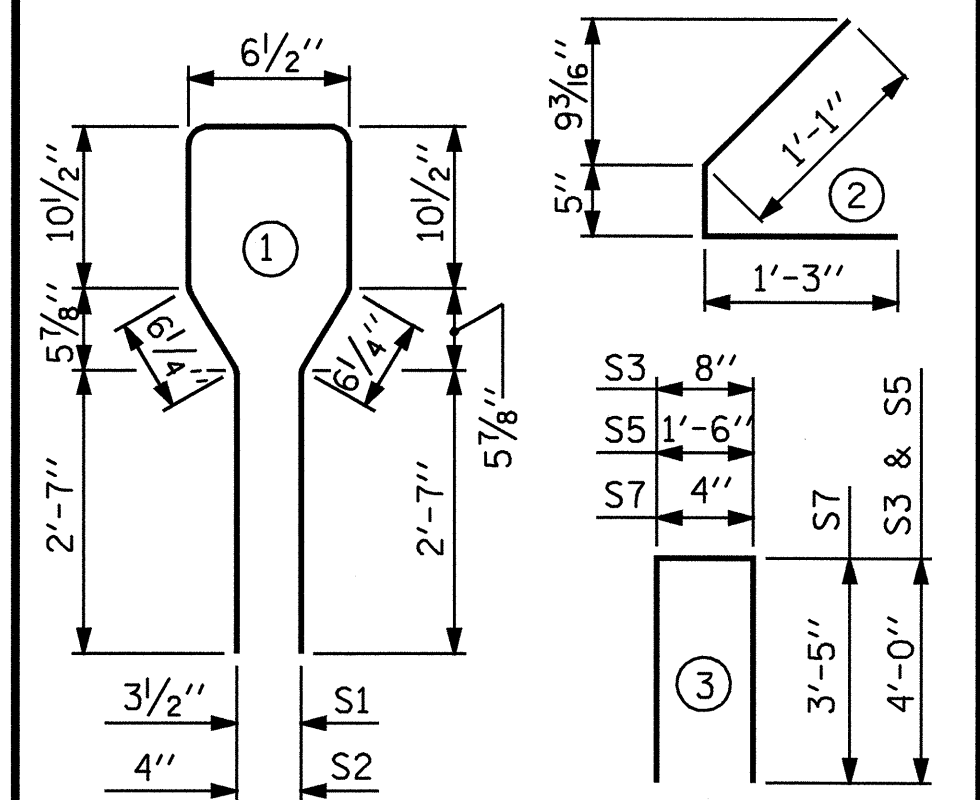
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
S1	60	#4	1	8'-6"	341	
S2	16	#6	1	8'-6"	204	
S3	4	#4	3	8'-8"	23	
S4	64	#4	2	2'-9"	118	
S5	1	#4	3	9'-6"	6	
*S6	4	#5	STR	3'-8"	15	
EXTERIOR GDR.	S7	2	#5	3	7'-2"	15
INTERIOR GDR.	S7	4	#5	3	7'-2"	30
EXTERIOR GDR.	S8	5	#4	STR	7'-0"	23
INTERIOR GDR.	S9	5	#4	STR	16'-6"	55

* NOTE: S6 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	6,100 PSI CONCRETE	0.60" Ø L.R. STRANDS
	LB.	C.Y.	No.
GIRDER 1	745	7.5	24
GIRDER 2	792	7.4	24
GIRDER 3	792	7.4	24
GIRDER 4	745	7.4	24

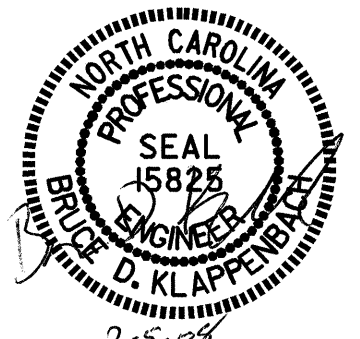
GIRDERS REQUIRED

SPAN A	NUMBER	LENGTH
GIRDER 1	1	52'-1 1/8"
GIRDER 2	1	51'-9"
GIRDER 3	1	51'-5 1/8"
GIRDER 4	1	51'-1 3/8"
TOTAL LENGTH		206'-4 5/8"

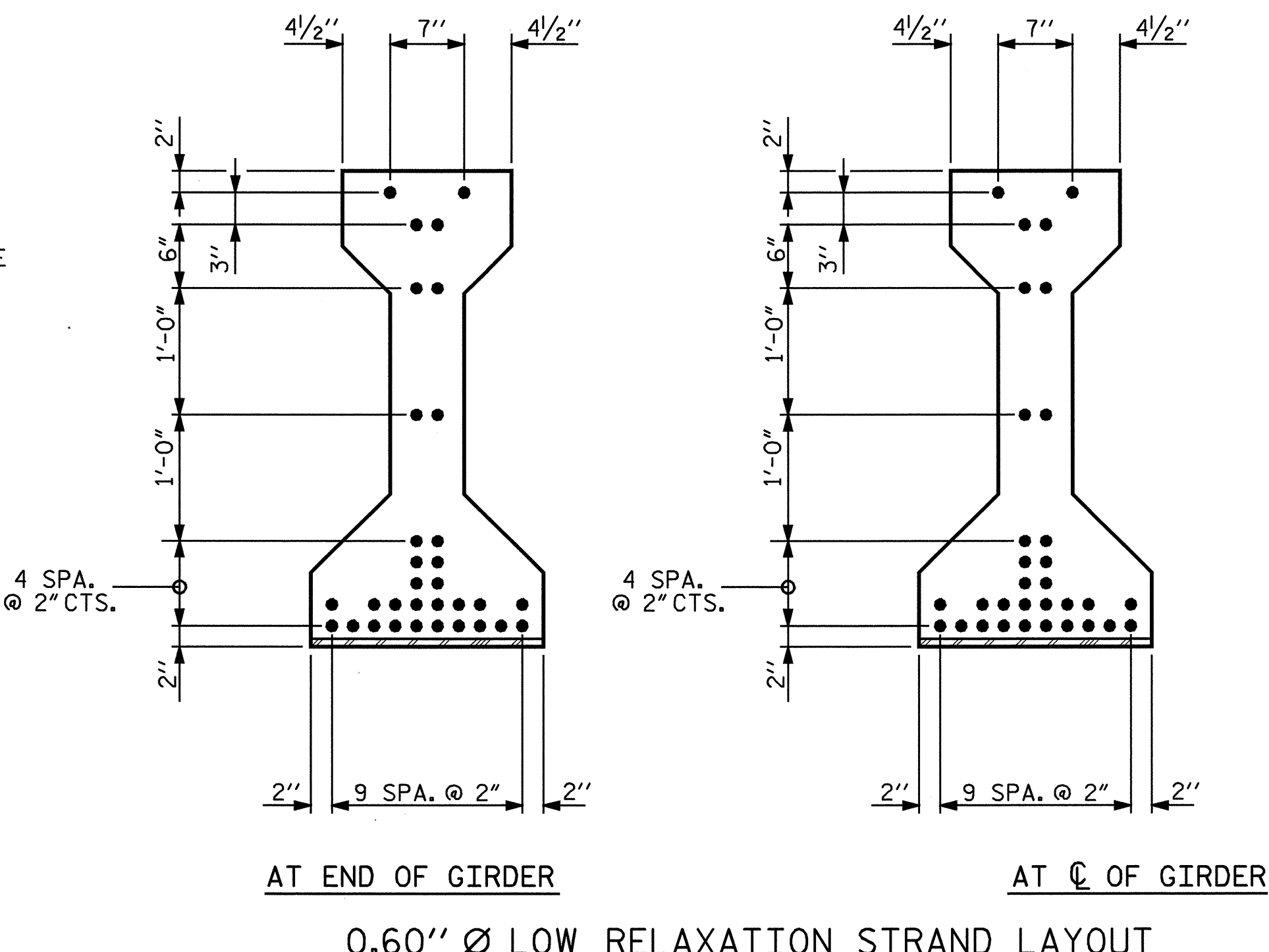
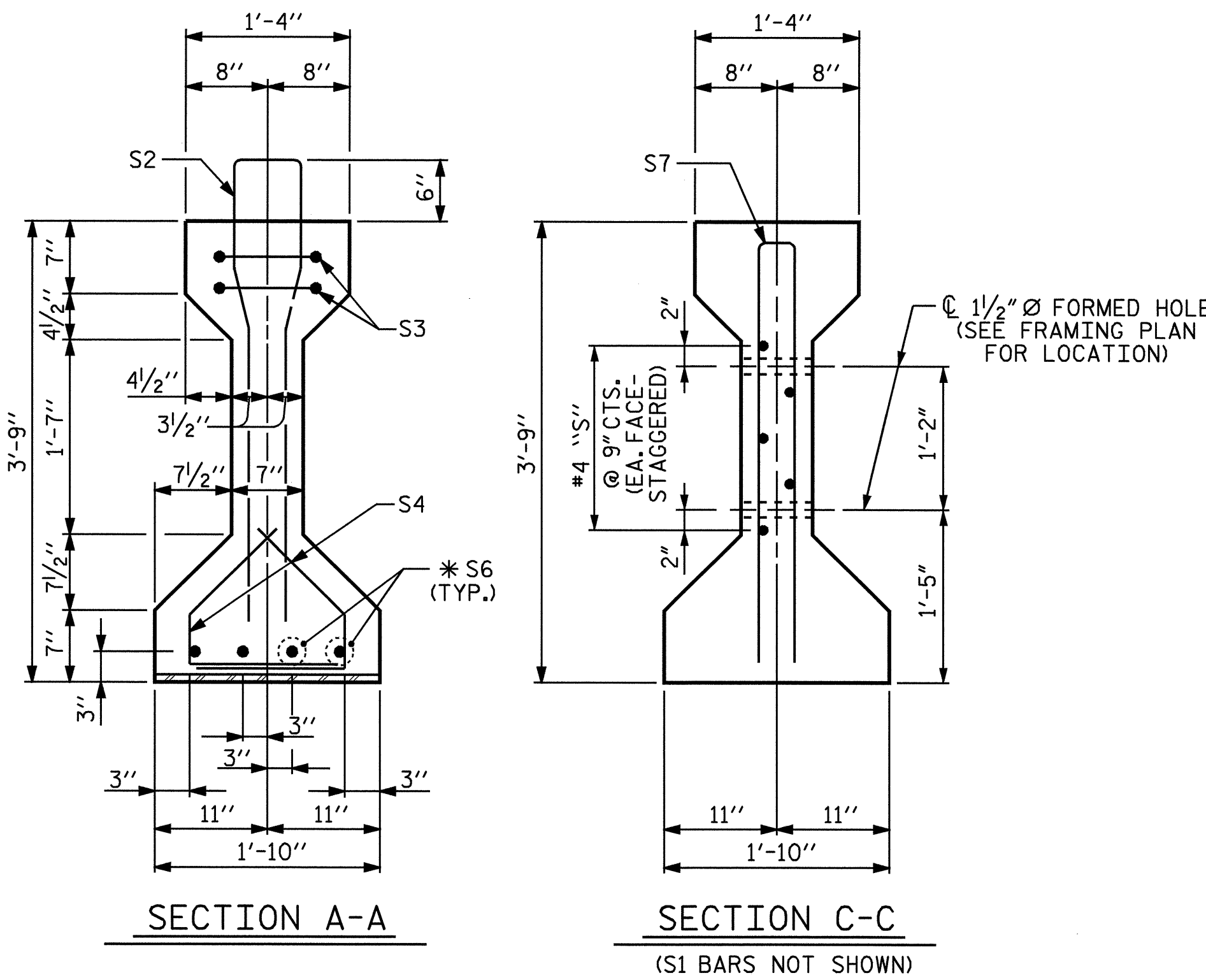
PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 1 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN A

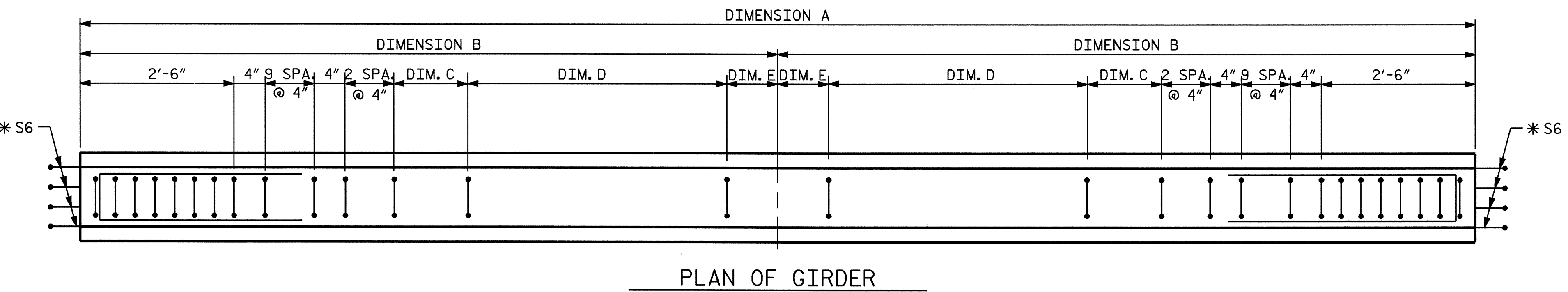


ASSEMBLED BY : A. SORSENGINH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06 TLA/GM

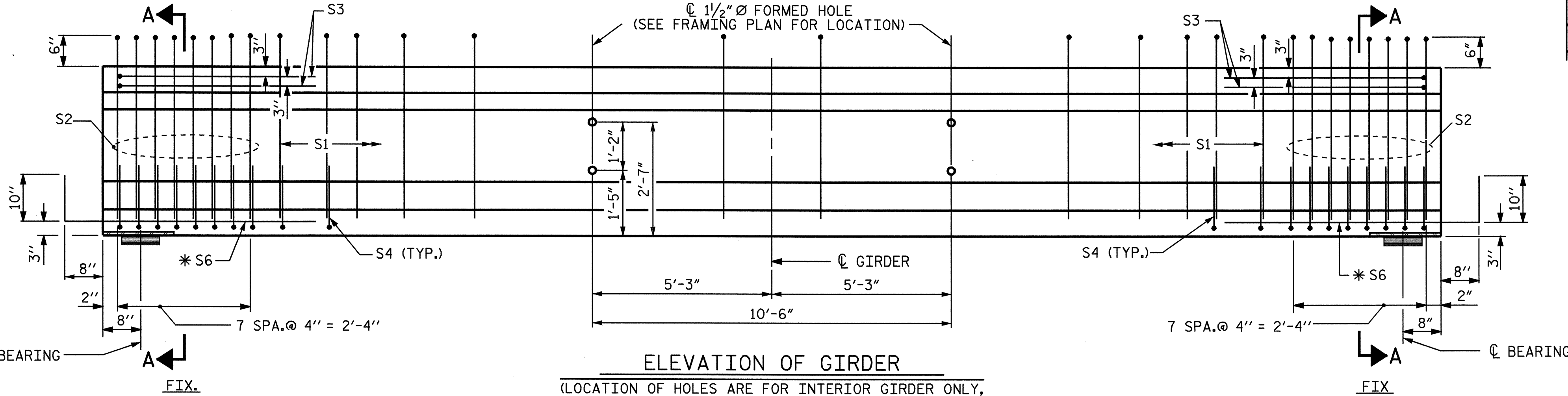


0.60" Ø LOW RELAXATION STRAND LAYOUT

	GIRDER DIMENSIONS				
	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
GIRDER #1	64'-11 1/8"	32'-5 5/16"	11 SPA @ 7"	20 SPA @ 11 1/4"	5 9/16"
GIRDER #2	64'-4 7/8"	32'-2 7/16"	11 SPA @ 7"	20 SPA @ 11 1/8"	4 5/16"
GIRDER #3	63'-10 7/8"	31'-11 1/16"	11 SPA @ 7"	20 SPA @ 11 1/16"	3 3/16"
GIRDER #4	63'-5 1/4"	31'-8 5/8"	10 SPA @ 7"	21 SPA @ 10 3/4"	2 7/8"

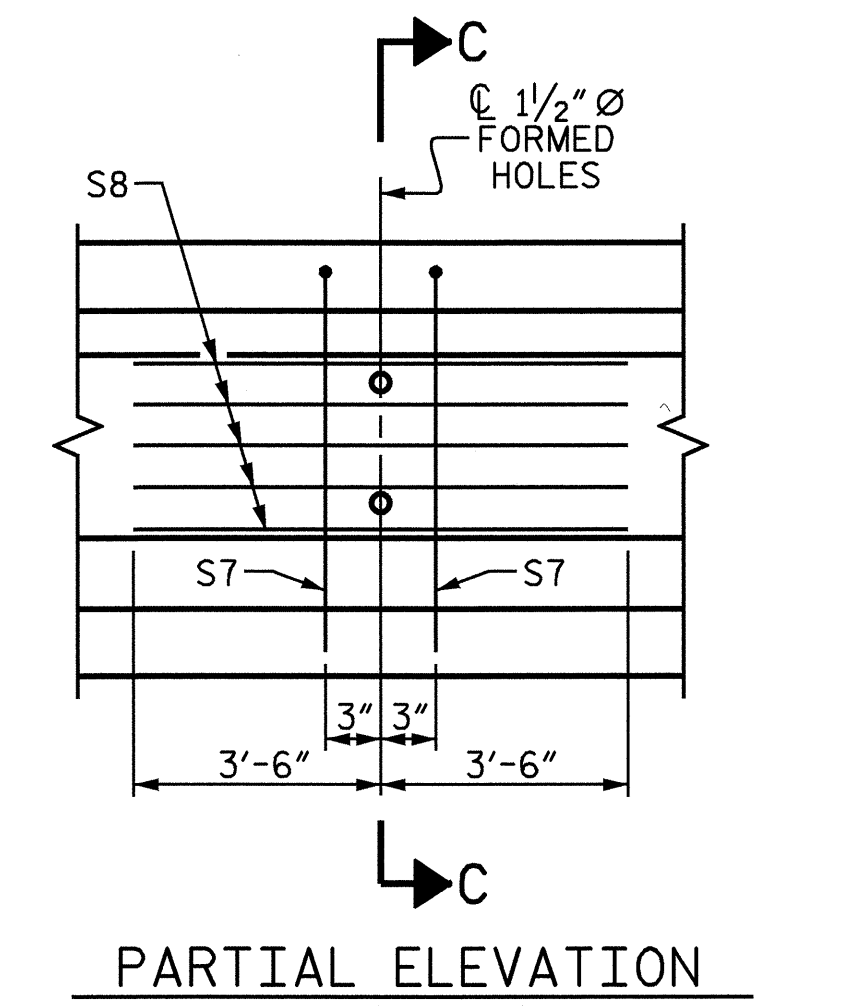


PLAN OF GIRDER

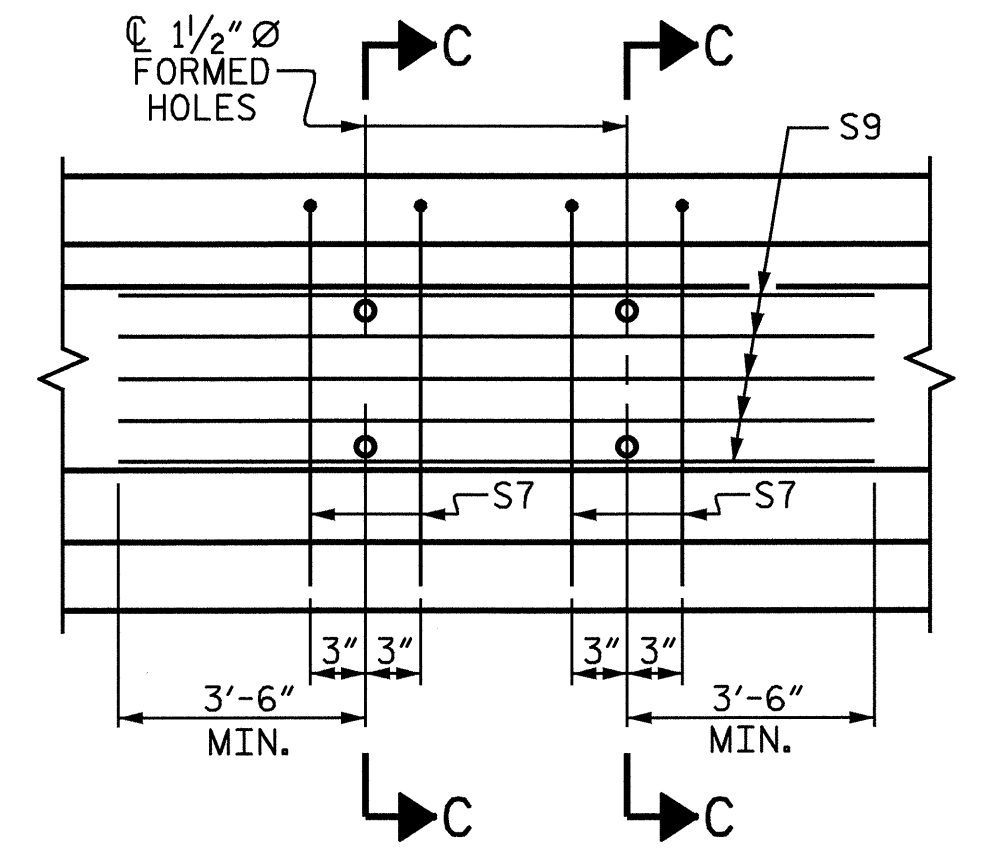


ELEVATION OF GIRDER

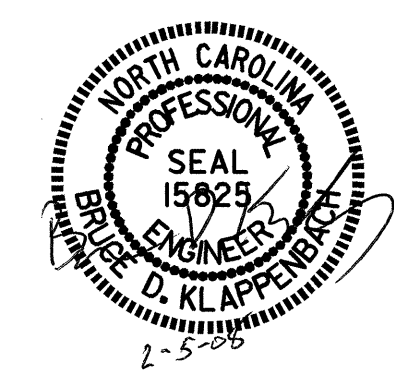
(LOCATION OF HOLES ARE FOR INTERIOR GIRDER ONLY, FOR EXTERIOR GIRDER SEE FRAMING PLAN. SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS.)



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 & 4 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 2 & 3 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES

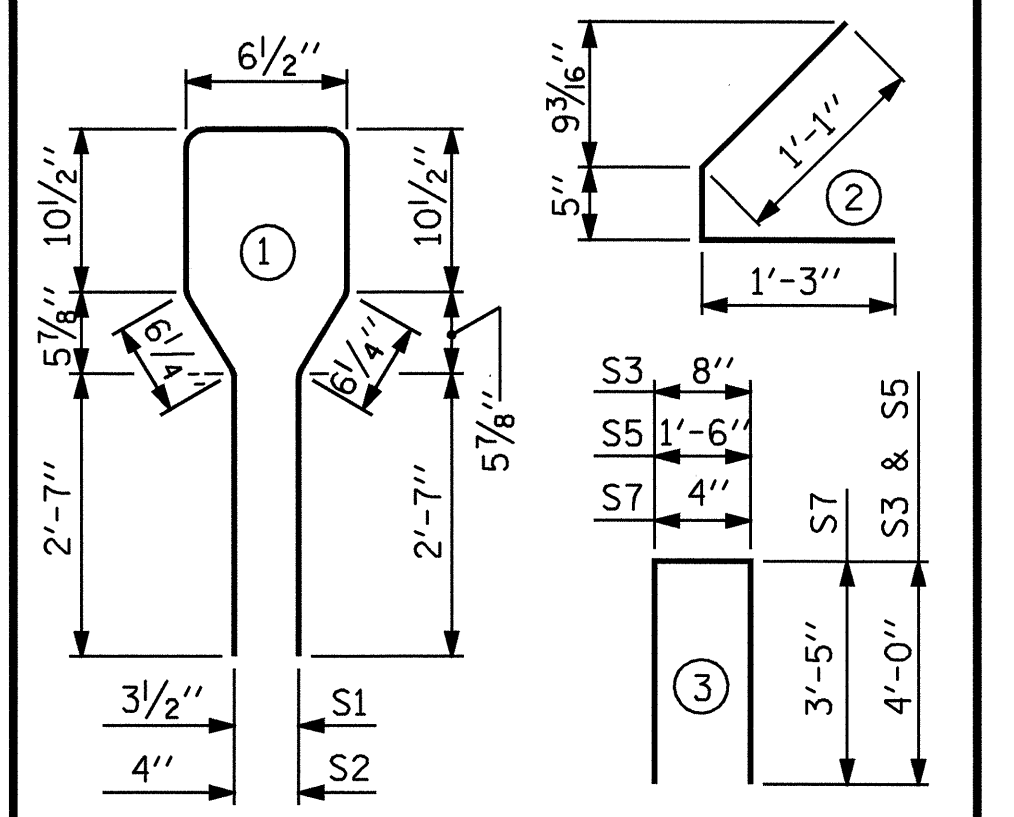


0.60" Ø L. R. GRADE 270 STRANDS		
AREA (SQ. INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER						
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
S1	88	#4	1	8'-6"	500	
S2	16	#6	1	8'-6"	204	
S3	4	#4	3	8'-8"	23	
S4	72	#4	2	2'-9"	132	
*S6	8	#5	STR	3'-8"	31	
EXTERIOR GDR.	S7	2	#5	3	7'-2"	15
INTERIOR GDR.	S7	4	#5	3	7'-2"	30
EXTERIOR GDR.	S8	5	#4	STR	7'-0"	23
INTERIOR GDR.	S9	5	#4	STR	17'-6"	58

* NOTE: S6 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES
ALL BAR DIMENSIONS ARE OUT-TO-OUT



	QUANTITIES FOR ONE GIRDER		
	REINFORCING STEEL (LB.)	8,300 PSI CONCRETE (C.Y.)	0.60" Ø L.R. STRANDS (No.)
GIRDER 1	928	9.3	32
GIRDER 2	978	9.3	32
GIRDER 3	978	9.2	32
GIRDER 4	928	9.1	32

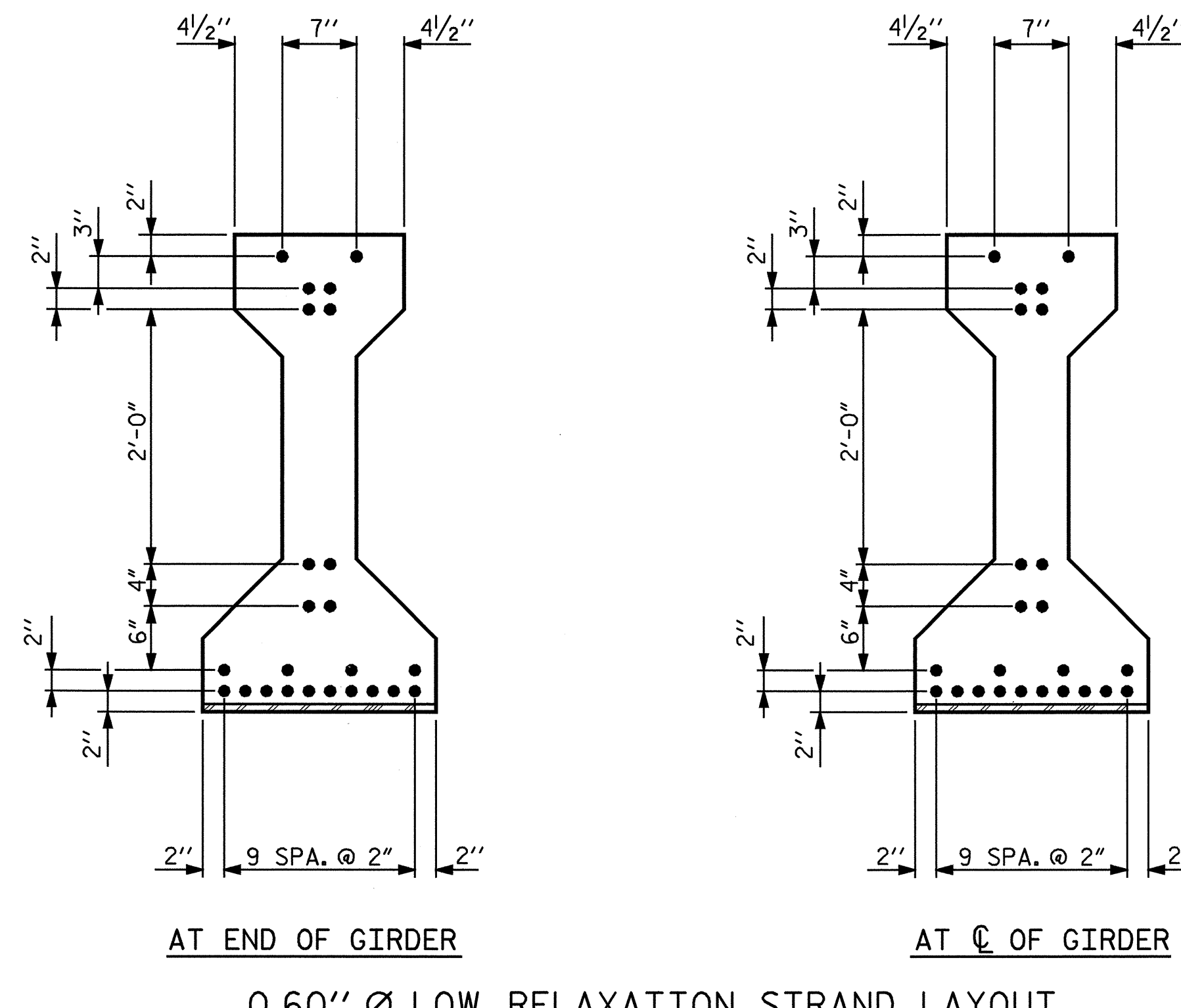
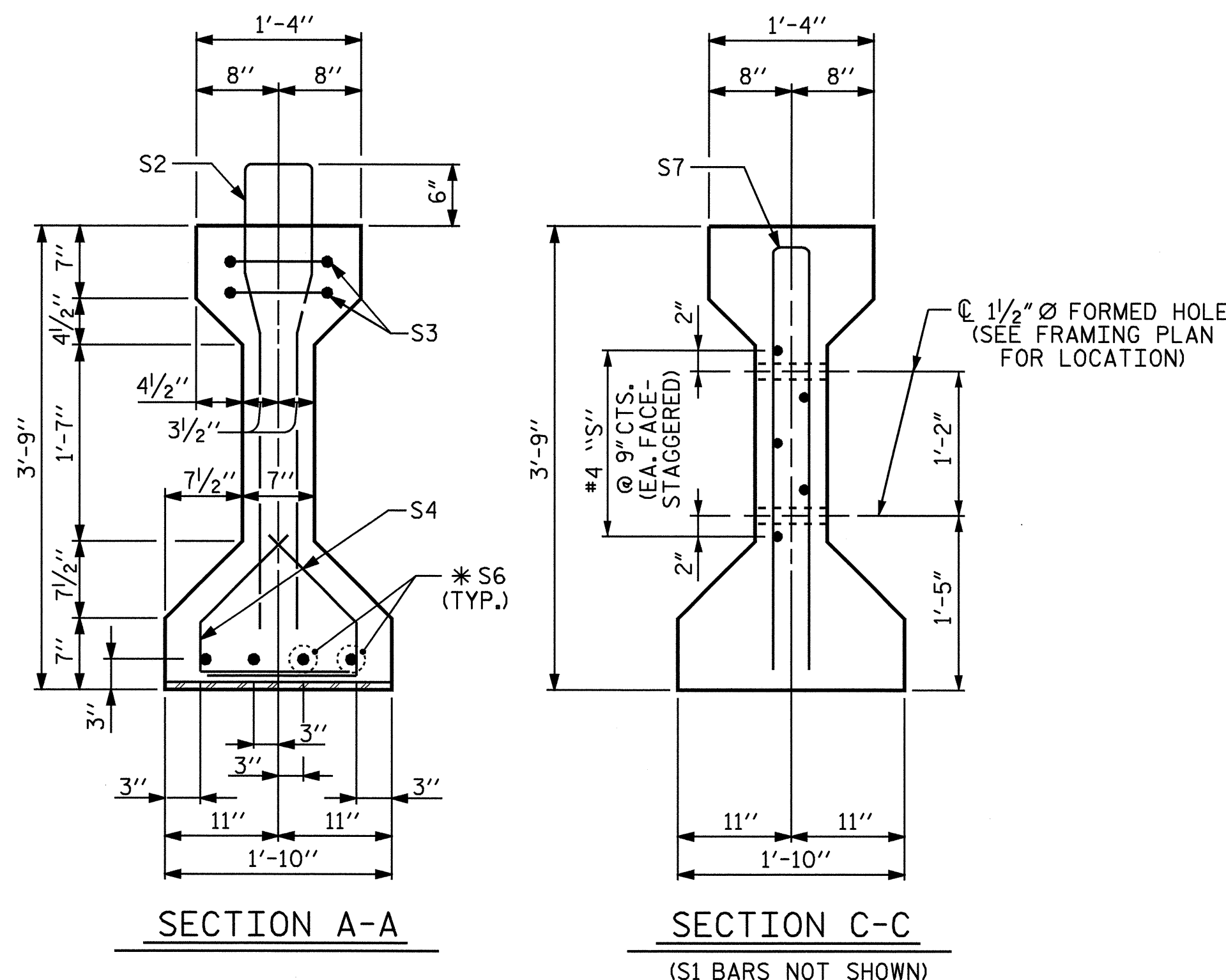
GIRDERS REQUIRED		
SPAN B	NUMBER	LENGTH
GIRDER 1	1	64'-11 1/8"
GIRDER 2	1	64'-4 7/8"
GIRDER 3	1	63'-10 7/8"
GIRDER 4	1	63'-5 1/4"
TOTAL LENGTH		256'-8 1/8"

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

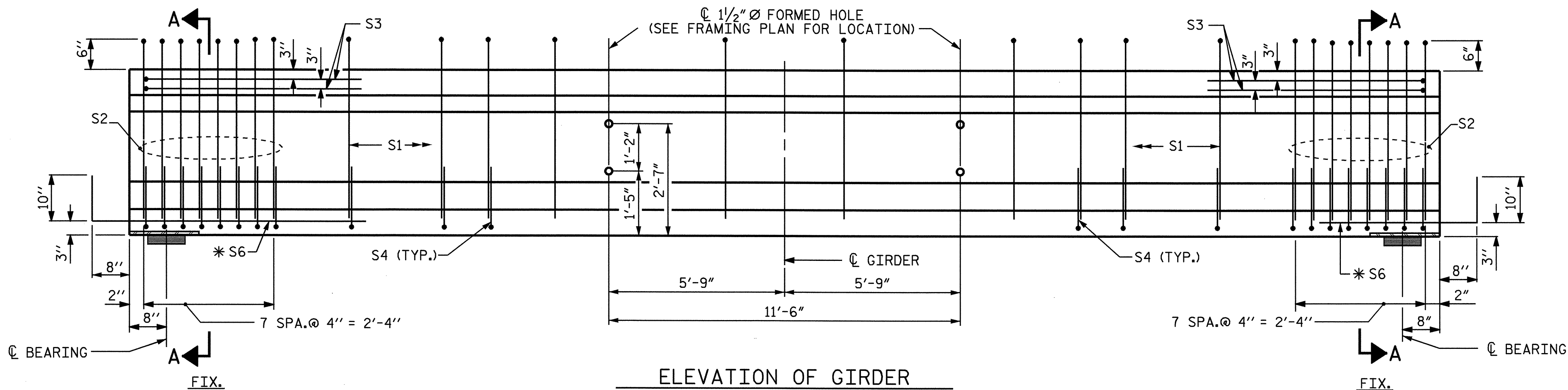
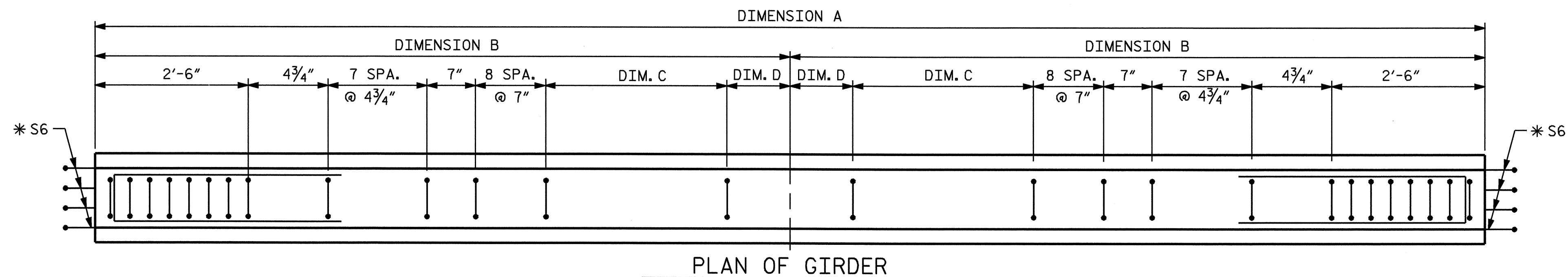
SHEET 2 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN B

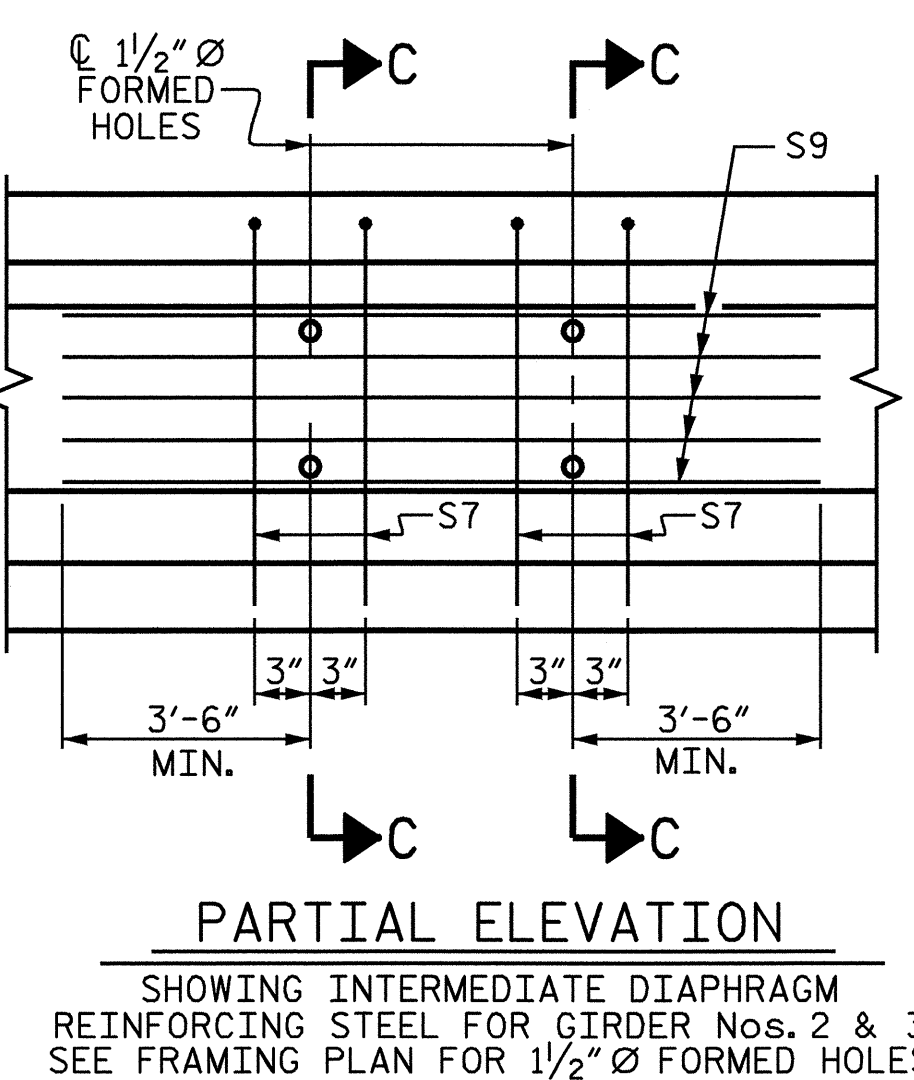
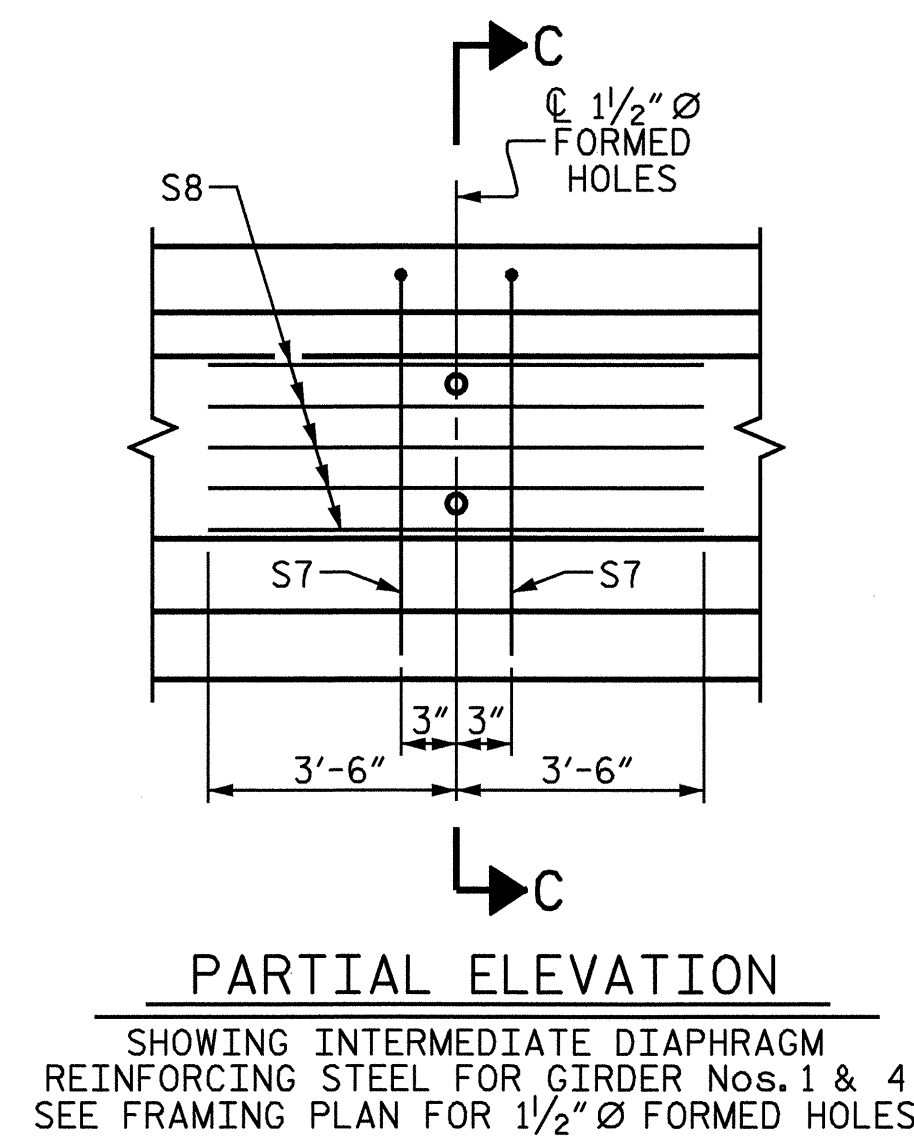
ASSEMBLED BY : A. SORSENGINH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00 RWW/LES
	REV. 5/1/06 TLA/GM



	GIRDER DIMENSIONS			
	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D
GIRDER #1	54'-11 1/4"	27'-5 5/8"	15 SPA @ 1'-1"	3 5/8"
GIRDER #2	54'-5"	27'-2 1/2"	15 SPA @ 1'-0 3/4"	4 1/4"
GIRDER #3	53'-10 7/8"	26'-11 7/16"	15 SPA @ 1'-0 1/2"	4 5/16"
GIRDER #4	53'-5 1/4"	26'-8 5/8"	15 SPA @ 1'-0 1/4"	5 7/8"



(LOCATION OF HOLES ARE FOR INTERIOR GIRDER ONLY, FOR EXTERIOR GIRDER SEE FRAMING PLAN, SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS.)



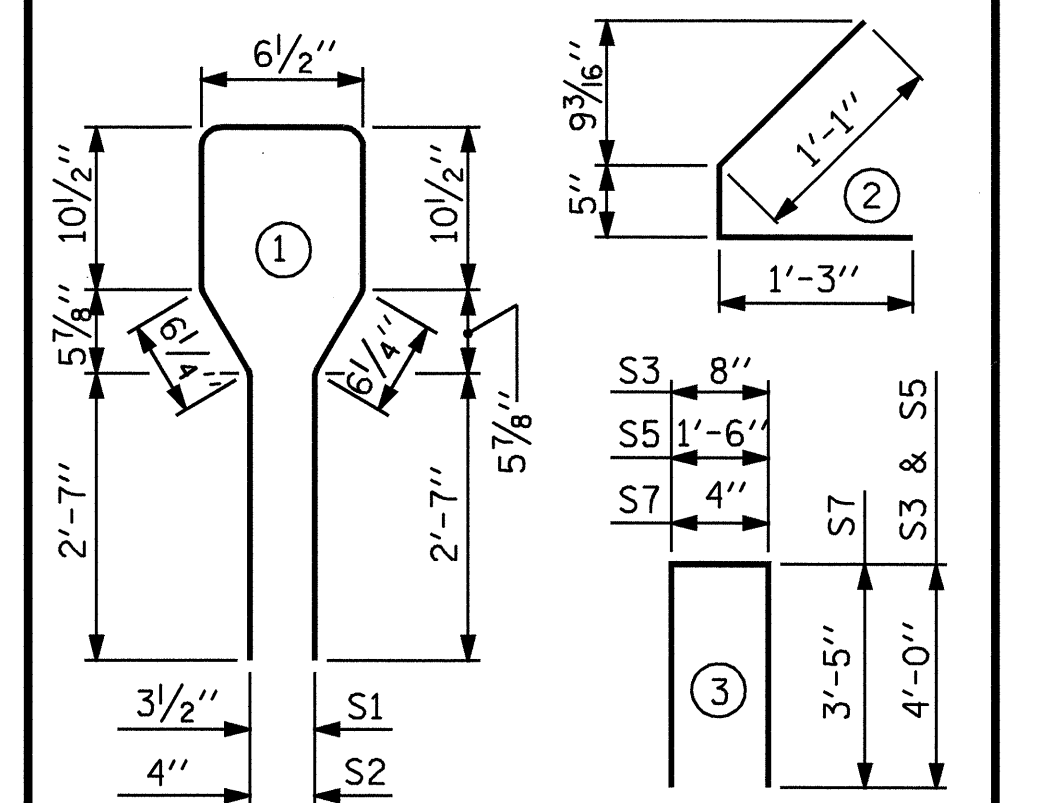
0.60" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER						
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
S1	64	#4	1	8'-6"	363	
S2	16	#6	1	8'-6"	204	
S3	4	#4	3	8'-8"	23	
S4	68	#4	2	2'-9"	125	
*S6	8	#5	STR	3'-8"	31	
EXTERIOR GDR.	S7	2	#5	3	7'-2"	15
INTERIOR GDR.	S7	4	#5	3	7'-2"	30
EXTERIOR GDR.	S8	5	#4	STR	7'-0"	23
INTERIOR GDR.	S9	5	#4	STR	18'-6"	62

* NOTE: S6 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	6,100 PSI CONCRETE	0.60" Ø L.R. STRANDS
	LB.	C.Y.	No.
GIRDER 1	784	7.9	24
GIRDER 2	838	7.8	24
GIRDER 3	838	7.8	24
GIRDER 4	784	7.7	24

GIRDERS REQUIRED

SPAN C	NUMBER	LENGTH
GIRDER 1	1	54'-11 1/4"
GIRDER 2	1	54'-5"
GIRDER 3	1	53'-10 7/8"
GIRDER 4	1	53'-5 1/4"
TOTAL LENGTH		216'-8 3/8"

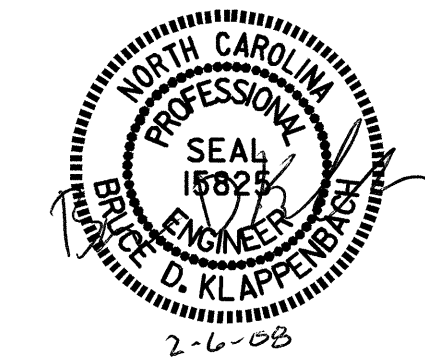
PROJECT NO. B-4212
 NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 3 OF 7

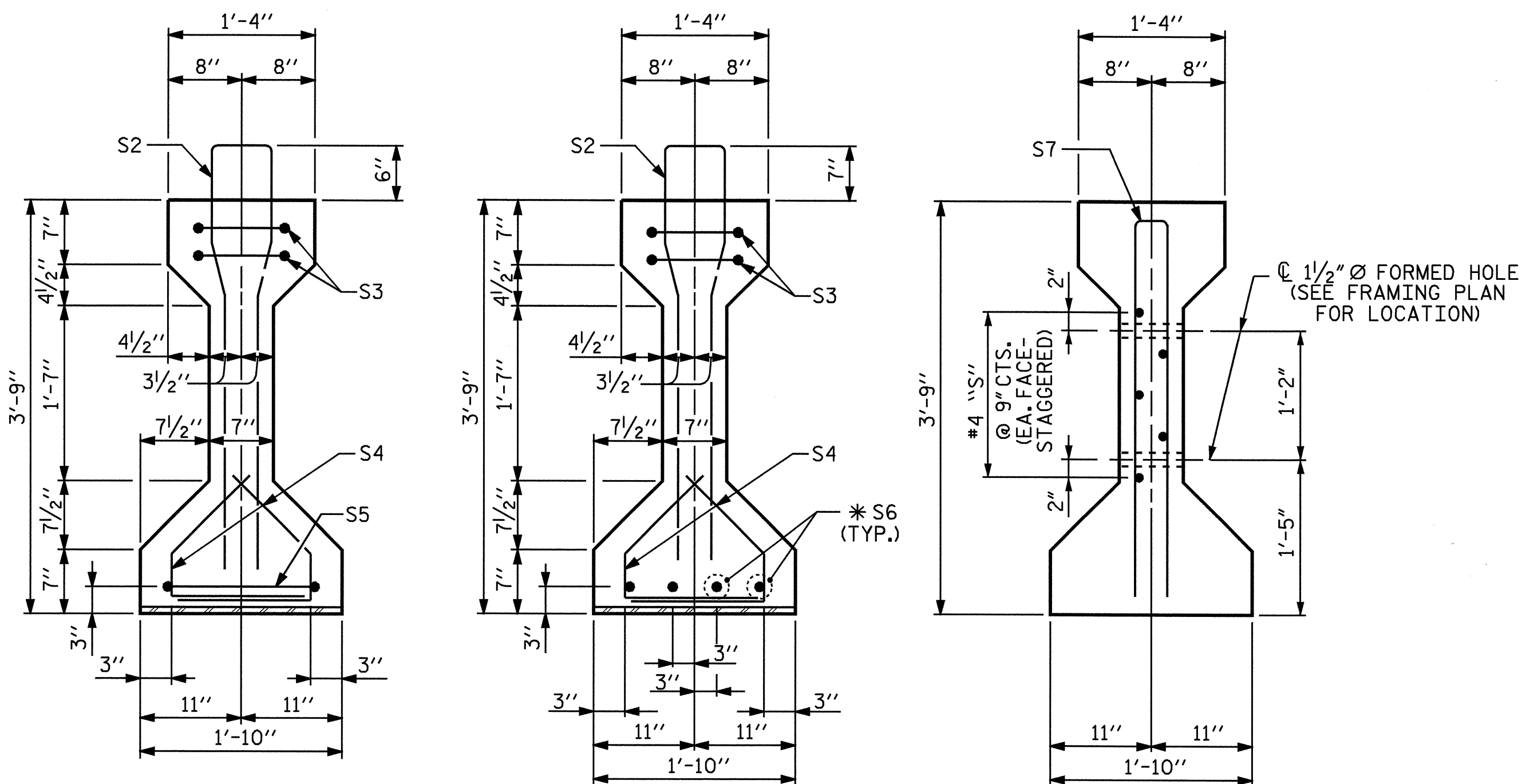
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

AASHTO TYPE III
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			45



ASSEMBLED BY: A. SORSENGINH	DATE: 7/25/07
CHECKED BY: M. G. SHAIKH	DATE: 10/23/07
DRAWN BY: ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY: GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06 TLA/GM



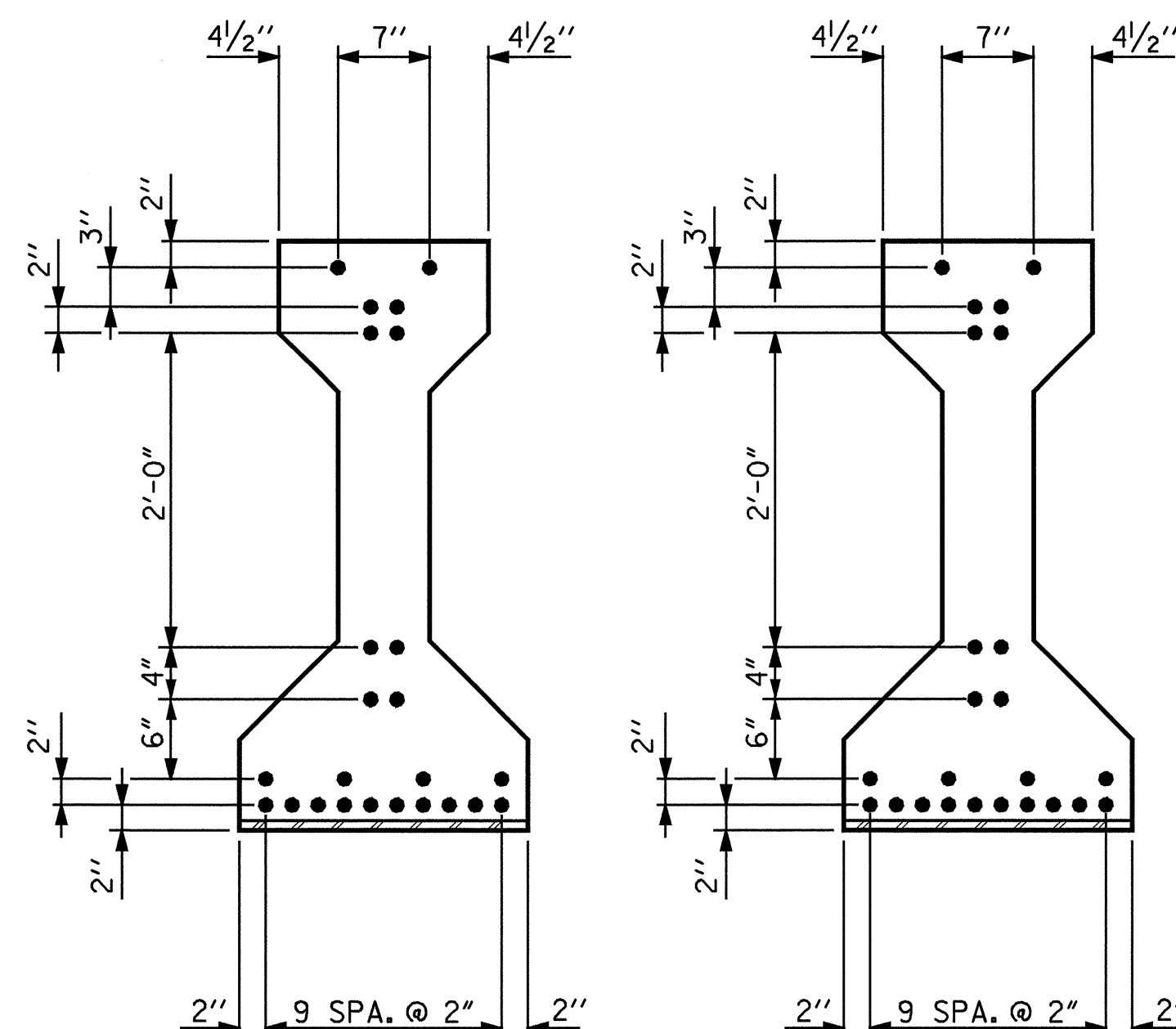
SECTION A-A

SECTION B-B

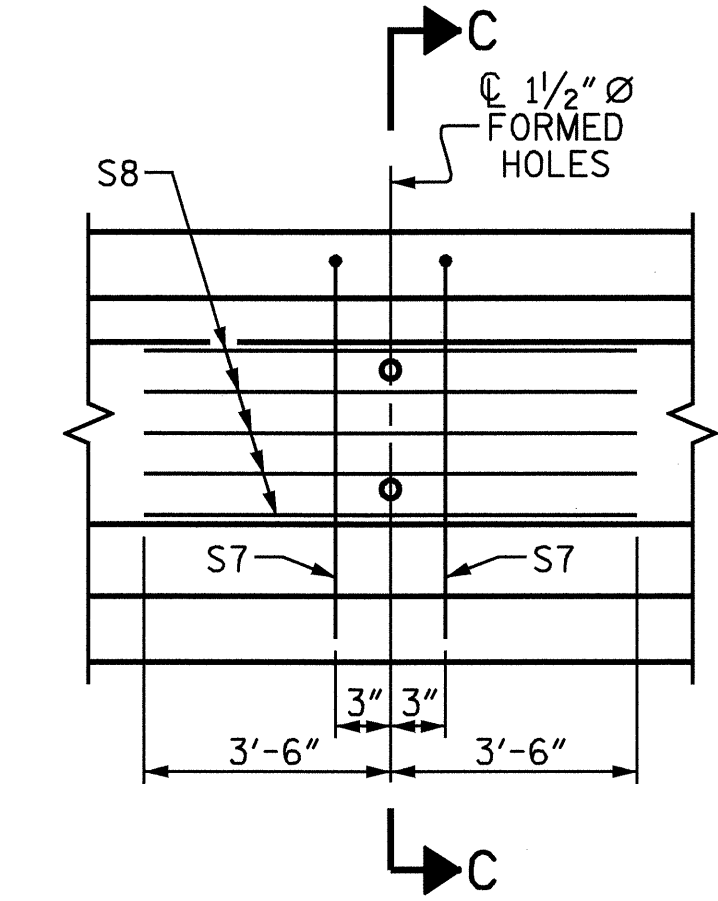
SECTION C-C

(S1 BARS NOT SHOWN)

	GIRDER DIMENSIONS			
	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D
GIRDER #1	51'-11 1/8"	25'-11 3/16"	13 SPA @ 1'-1 3/4"	4 5/16"
GIRDER #2	51'-4 1/8"	25'-8 1/16"	13 SPA @ 1'-1 5/8"	2 7/16"
GIRDER #3	50'-9 1/2"	25'-4 3/4"	13 SPA @ 1'-1 1/8"	5 5/8"
GIRDER #4	50'-3 3/8"	25'-1 1/16"	13 SPA @ 1'-1"	4 3/16"

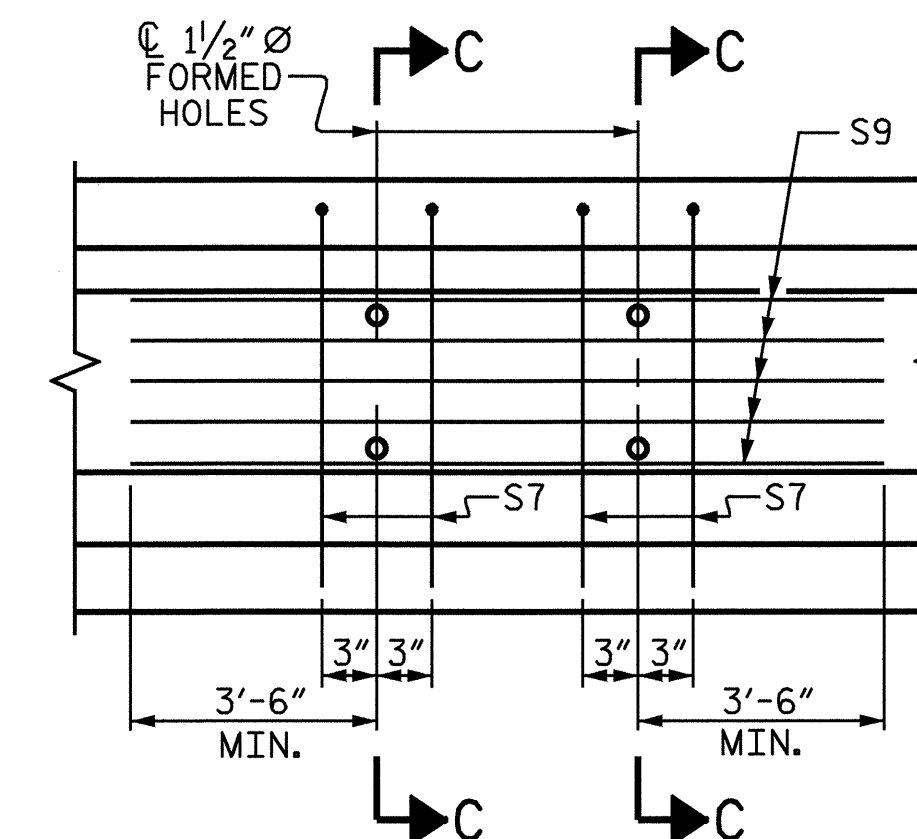


AT END OF GIRDER
AT C OF GIRDER
0.60" Ø LOW RELAXATION STRAND LAYOUT



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 & 4 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES



PARTIAL ELEVATION

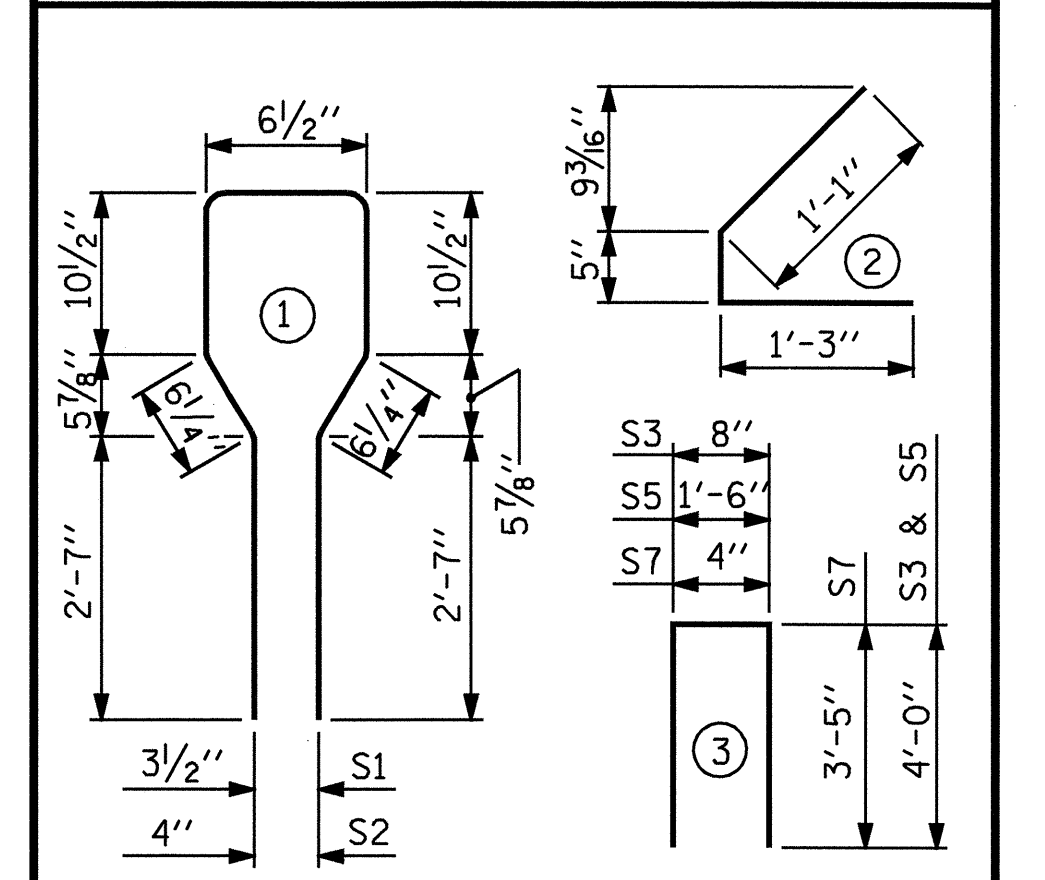
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 2 & 3 SEE FRAMING PLAN FOR 1/2" Ø FORMED HOLES

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

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	60	#4	1	8'-6"	341
S2	16	#6	1	8'-6"	204
S3	4	#4	3	8'-8"	23
S4	64	#4	2	2'-9"	118
S5	1	#4	3	9'-6"	6
*S6	4	#5	STR	3'-8"	15
S7	2	#5	3	7'-2"	15
S7	4	#5	3	7'-2"	30
S8	5	#4	STR	7'-0"	23
S9	5	#4	STR	19'-6"	65

* NOTE: S6 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES
ALL BAR DIMENSIONS ARE OUT-TO-OUT



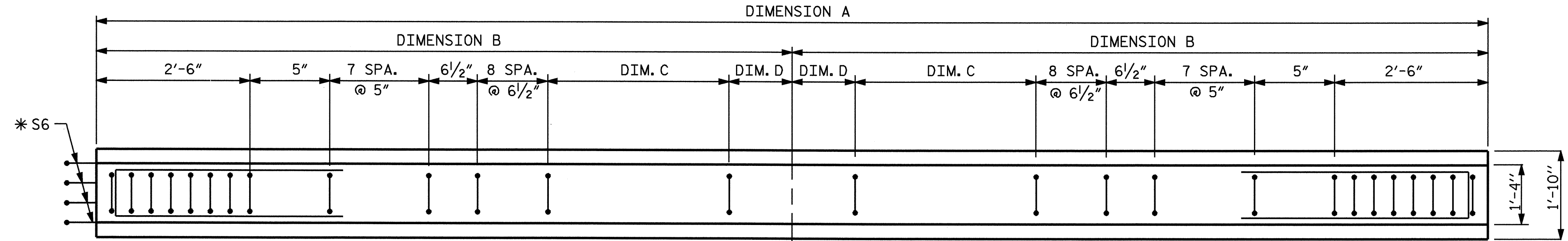
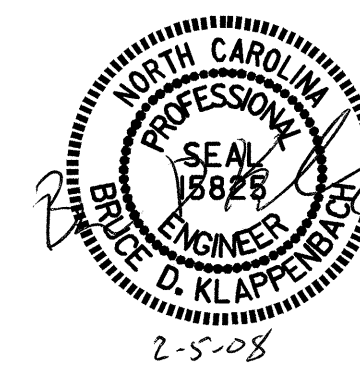
QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL LB.	6,100 PSI CONCRETE C.Y.	0.60" Ø L.R. STRANDS No.
GIRDER 1	745	7.5	24
GIRDER 2	802	7.4	24
GIRDER 3	802	7.3	24
GIRDER 4	745	7.2	24

GIRDERS REQUIRED		
SPAN D	NUMBER	LENGTH
GIRDER 1	1	51'-11 1/8"
GIRDER 2	1	51'-4 1/8"
GIRDER 3	1	50'-9 1/2"
GIRDER 4	1	50'-3 3/8"
TOTAL LENGTH		204'-4 1/8"

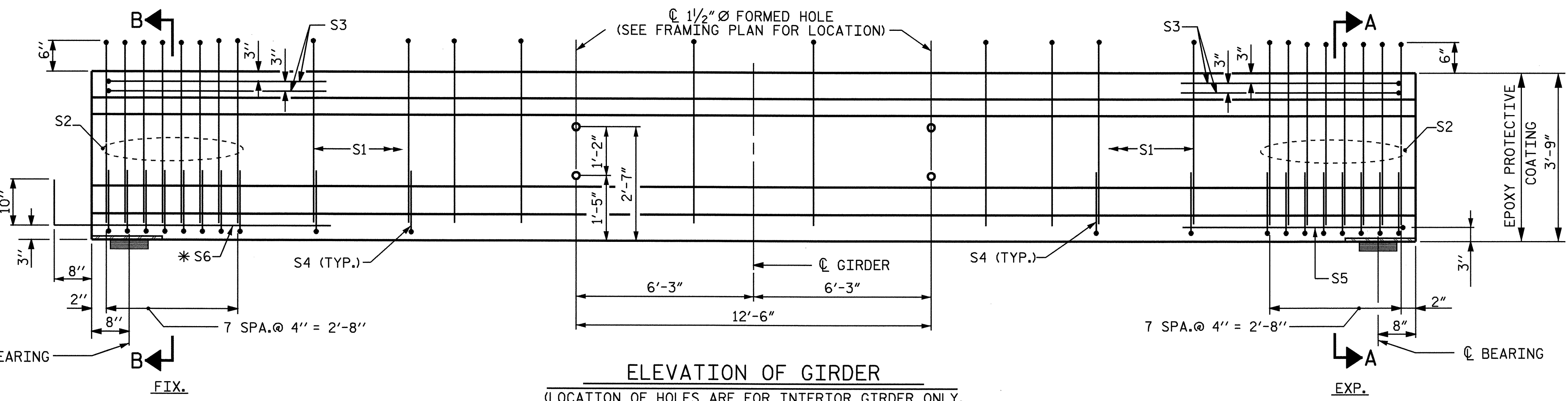
PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 4 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN D



PLAN OF GIRDER



ELEVATION OF GIRDER

(LOCATION OF HOLES ARE FOR INTERIOR GIRDER ONLY, FOR EXTERIOR GIRDER SEE FRAMING PLAN. SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS.)

ASSEMBLED BY : A. SORSENGIH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : ELR 8/91	REV. 7/17/98 RWW/LES
CHECKED BY : GRP 8/91	REV. 10/17/00R RWW/LES
	REV. 5/1/06 TLA/GM

STRUCTURAL STEEL NOTES

ALL INTERMEDIATE DIAPHRAGM STEEL, CONNECTOR PLATES AND PLATE WASHERS SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE AASHTO M164 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

TENSION ON THE AASHTO M164 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE CHANNELS, ANGLES, WASHERS, PLATE WASHERS, AND DIRECT TENSION INDICATORS SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY AN 8 MIL THICK 99.99 PERCENT ZINC (W-Zn-1) THERMAL SPRAYED COATING WITH A 0.5 MIL THICK SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE THERMAL SPRAYED COATINGS SPECIAL PROVISIONS AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

USE A MINIMUM 7/16" THICK PLATE WASHER WITH STANDARD HOLES UNDER EACH BOLT HEAD AND NUT. THE PLATE WASHERS SHALL HAVE SUFFICIENT SIZE TO COVER THE HOLES AFTER INSTALLATION. DIRECT TENSION INDICATORS ARE TO BE USED IN CONJUNCTION WITH THE PLATE WASHERS.

PROVIDE SUFFICIENT LENGTH OF ALL BOLTS TO ACCOMMODATE WASHERS, DIRECT TENSION INDICATORS, THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

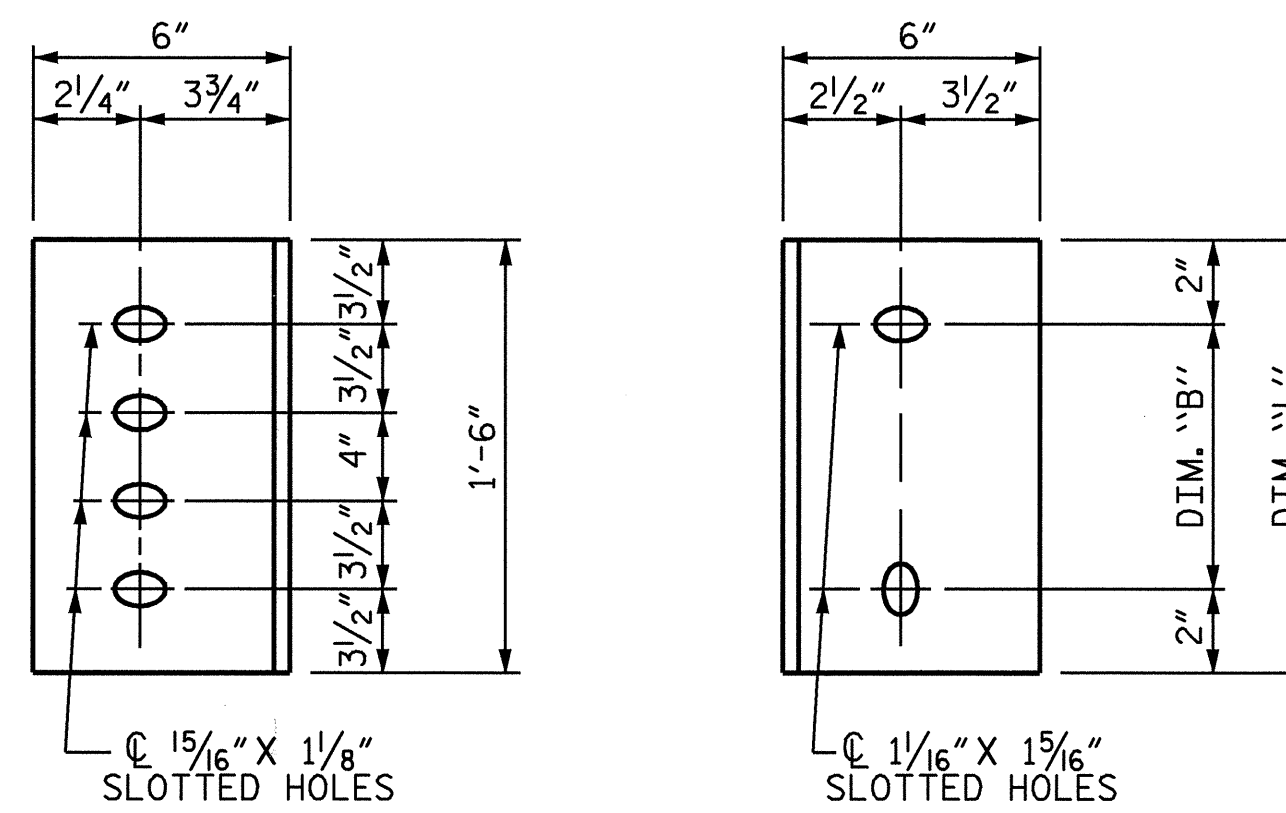
CONTRACTOR SHALL SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED. ALL AASHTO M164 H.S. BOLTS SHALL BE FULLY TIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
III	MC 18 x 42.7	1'-5"	1'-2"	1'-6"



DIAPHRAGM FACE (TYPE III OR TYPE IV GDR.)
WEB FACE
CONNECTOR PLATE DETAILS

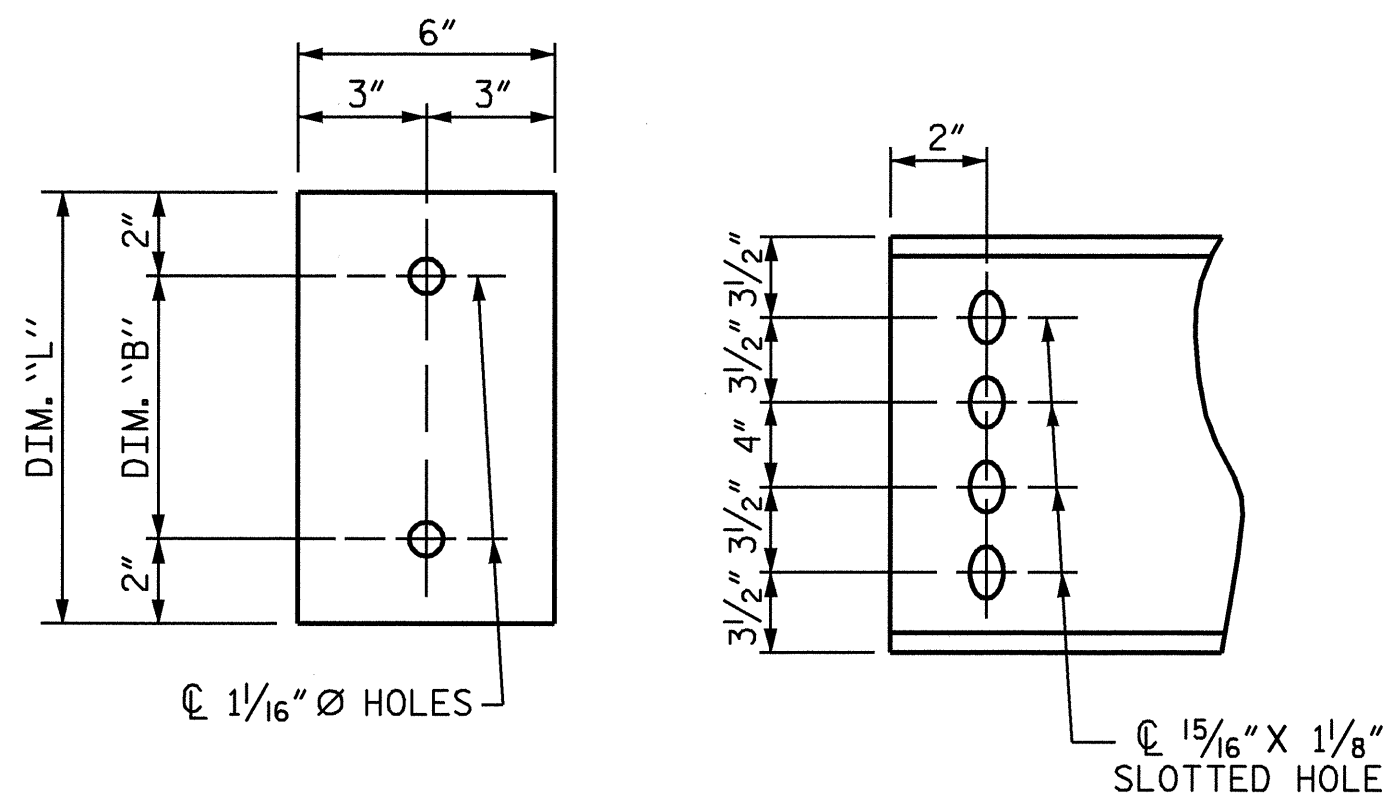
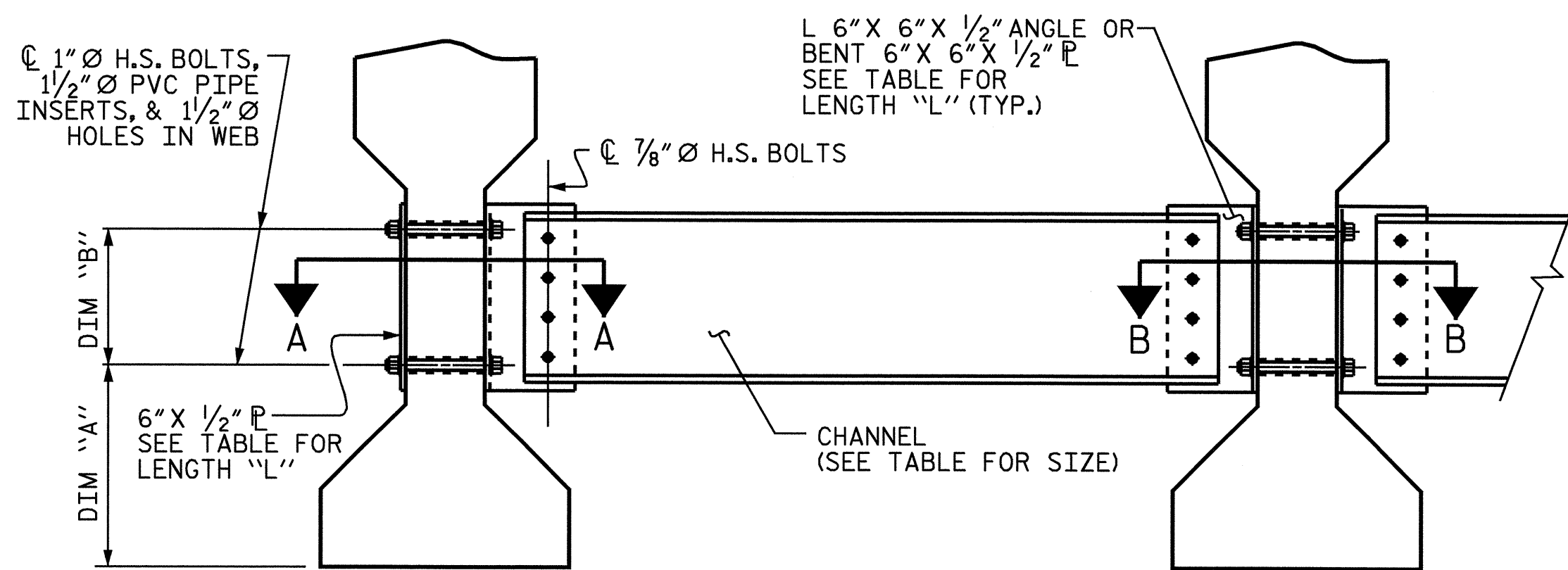
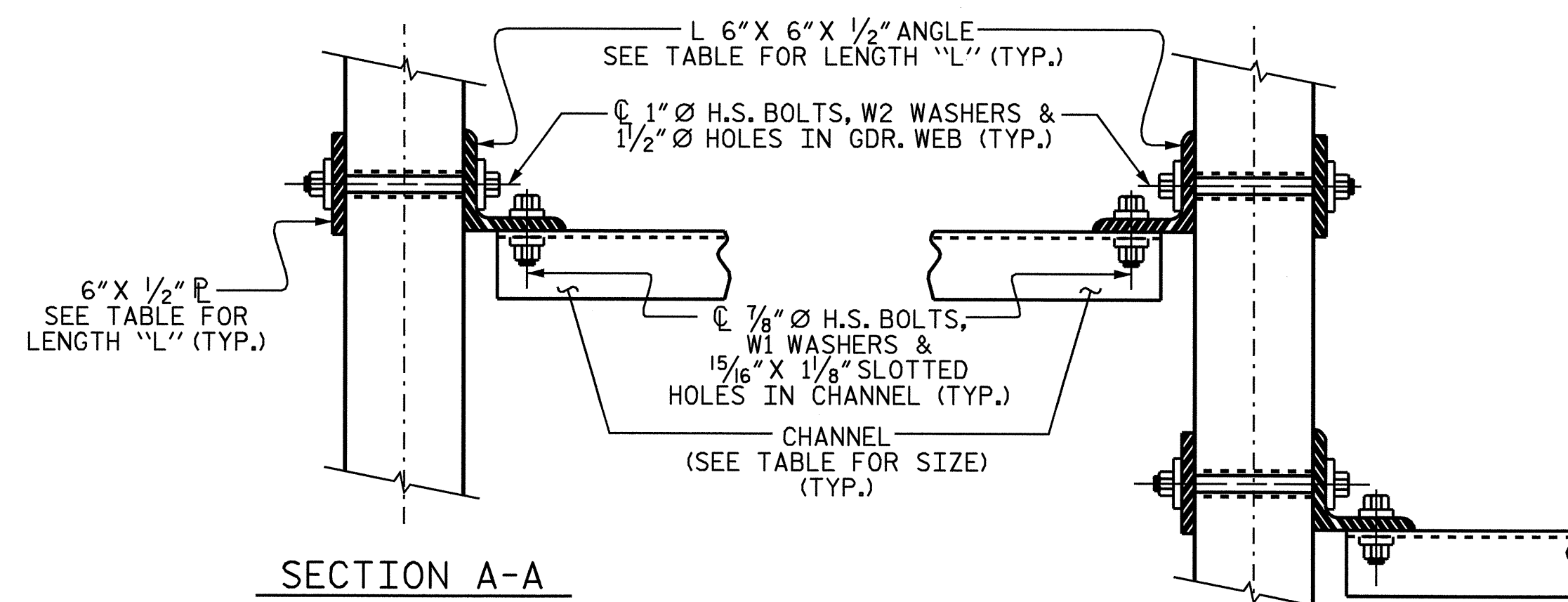


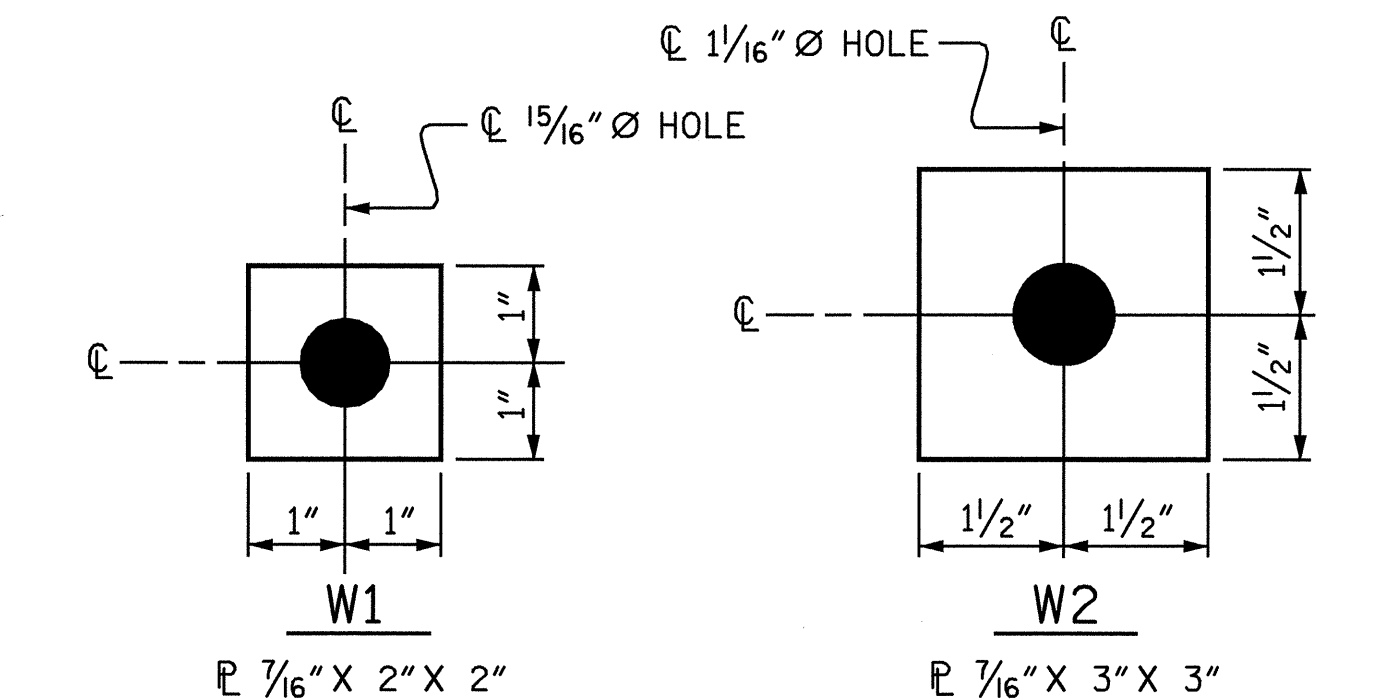
PLATE DETAILS CHANNEL END



EXTERIOR GIRDER INTERIOR GIRDER
PART SECTION AT INTERMEDIATE DIAPHRAGM



SECTION A-A SECTION B-B
CONNECTION DETAILS



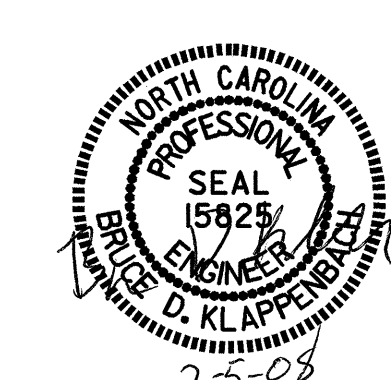
USE WITH 7/8" HVY. HEX NUTS & DIRECT TENSION INDICATOR WASHERS AT DIAPHRAGM CHANNEL TO CONNECTOR PLATE CONNECTIONS
USE WITH 1" HVY. HEX NUTS & DIRECT TENSION INDICATOR WASHERS AT CONNECTOR PLATE TO GIRDER CONNECTIONS

WASHER DETAILS

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
INTERMEDIATE
STEEL DIAPHRAGMS
FOR TYPE III
PRESTRESSED CONCRETE
GIRDERS



ASSEMBLED BY : A. SORSENGIH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : TLA 6/05	ADDED 10/21/05
CHECKED BY : VC 6/05	REV. 5/1/06R KMM/GM

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	5-19
1			3		TOTAL SHEETS
2			4		45

DEAD LOAD DEFLECTION TABLE FOR SPAN A																																	
0.6" LOW RELAXATION	GIRDER 1											GIRDER 2 & 3									GIRDER 4												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.0	0.026	0.050	0.068	0.080	0.084	0.080	0.068	0.050	0.026	0.0	0.0	0.026	0.049	0.068	0.079	0.083	0.079	0.068	0.049	0.026	0.0	0.0	0.026	0.049	0.067	0.078	0.082	0.078	0.067	0.049	0.026	0.0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.0	0.010	0.019	0.027	0.031	0.033	0.031	0.027	0.019	0.010	0.0	0.0	0.012	0.023	0.032	0.037	0.039	0.037	0.032	0.023	0.012	0.0	0.0	0.010	0.018	0.025	0.029	0.031	0.029	0.025	0.018	0.010	0.0
FINAL CAMBER	↑ 0.0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0.0	0.0	3/16"	5/16"	7/16"	1/2"	1/2"	1/2"	7/16"	5/16"	3/16"	0.0	0.0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0.0

DEAD LOAD DEFLECTION TABLE FOR SPAN B																																	
0.6" LOW RELAXATION	GIRDER 1											GIRDER 2 & 3									GIRDER 4												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.0	0.059	0.111	0.152	0.178	0.187	0.178	0.152	0.111	0.059	0.0	0.0	0.058	0.110	0.150	0.176	0.185	0.176	0.150	0.110	0.058	0.0	0.0	0.057	0.108	0.147	0.172	0.181	0.172	0.147	0.108	0.057	0.0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.0	0.022	0.041	0.056	0.065	0.069	0.065	0.056	0.041	0.022	0.0	0.0	0.025	0.048	0.066	0.077	0.081	0.077	0.066	0.048	0.025	0.0	0.0	0.020	0.038	0.053	0.062	0.065	0.062	0.053	0.038	0.020	0.0
FINAL CAMBER	↑ 0.0	7/16"	13/16"	1 1/8"	1 3/8"	1 7/16"	1 3/8"	1 1/8"	13/16"	7/16"	0.0	0.0	3/8"	3/4"	1"	1 3/16"	1 1/4"	1 3/16"	1"	3/4"	3/8"	0.0	0.0	7/16"	13/16"	1 1/8"	1 5/16"	1 3/8"	1 5/16"	1 1/8"	13/16"	7/16"	0.0

DEAD LOAD DEFLECTION TABLE FOR SPAN C																																	
0.6" LOW RELAXATION	GIRDER 1											GIRDER 2 & 3									GIRDER 4												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.0	0.028	0.053	0.072	0.085	0.089	0.085	0.072	0.053	0.028	0.0	0.0	0.027	0.052	0.071	0.083	0.087	0.083	0.071	0.052	0.027	0.0	0.0	0.027	0.051	0.070	0.082	0.086	0.082	0.070	0.051	0.027	0.0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.0	0.013	0.024	0.033	0.039	0.041	0.039	0.033	0.024	0.013	0.0	0.0	0.014	0.027	0.037	0.044	0.046	0.044	0.037	0.027	0.014	0.0	0.0	0.012	0.022	0.030	0.035	0.037	0.035	0.030	0.022	0.012	0.0
FINAL CAMBER	↑ 0.0	3/16"	3/8"	7/16"	9/16"	9/16"	9/16"	7/16"	3/8"	3/16"	0.0	0.0	1/8"	5/16"	7/16"	1/2"	1/2"	1/2"	7/16"	5/16"	1/8"	0.0	0.0	3/16"	3/8"	1/2"	9/16"	9/16"	9/16"	1/2"	3/8"	3/16"	0.0

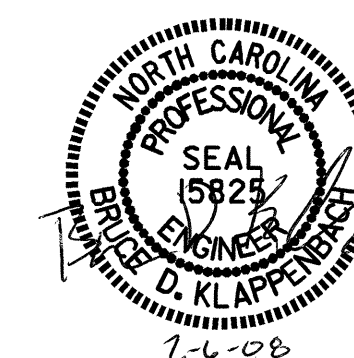
DEAD LOAD DEFLECTION TABLE FOR SPAN D																																	
0.6" LOW RELAXATION	GIRDER 1											GIRDER 2 & 3									GIRDER 4												
TENTH POINTS	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.0	0.026	0.050	0.068	0.080	0.084	0.080	0.068	0.050	0.026	0.0	0.0	0.026	0.049	0.067	0.078	0.082	0.078	0.067	0.049	0.026	0.0	0.0	0.025	0.048	0.065	0.076	0.080	0.076	0.065	0.048	0.025	0.0
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.0	0.010	0.019	0.026	0.031	0.032	0.031	0.026	0.019	0.010	0.0	0.0	0.012	0.022	0.031	0.036	0.038	0.036	0.031	0.022	0.012	0.0	0.0	0.009	0.017	0.024	0.028	0.029	0.028	0.024	0.017	0.009	0.0
FINAL CAMBER	↑ 0.0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0.0	0.0	3/16"	5/16"	7/16"	1/2"	9/16"	1/2"	7/16"	5/16"	3/16"	0.0	0.0	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0.0

* INCLUDES FUTURE WEARING SURFACE

ALL VALUES ARE SHOWN IN DECIMAL FEET, EXCEPT "FINAL CAMBER" WHICH IS SHOWN IN INCHES.

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 6 OF 7



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE DEAD LOAD DEFLECTIONS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					45

DRAWN BY : A. SORSENGINH DATE : 7/25/07
 CHECKED BY : M. G. SHAIKH DATE : 10/23/07

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 SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

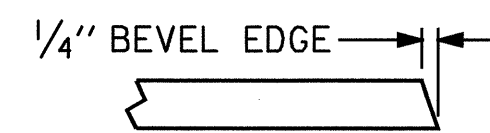
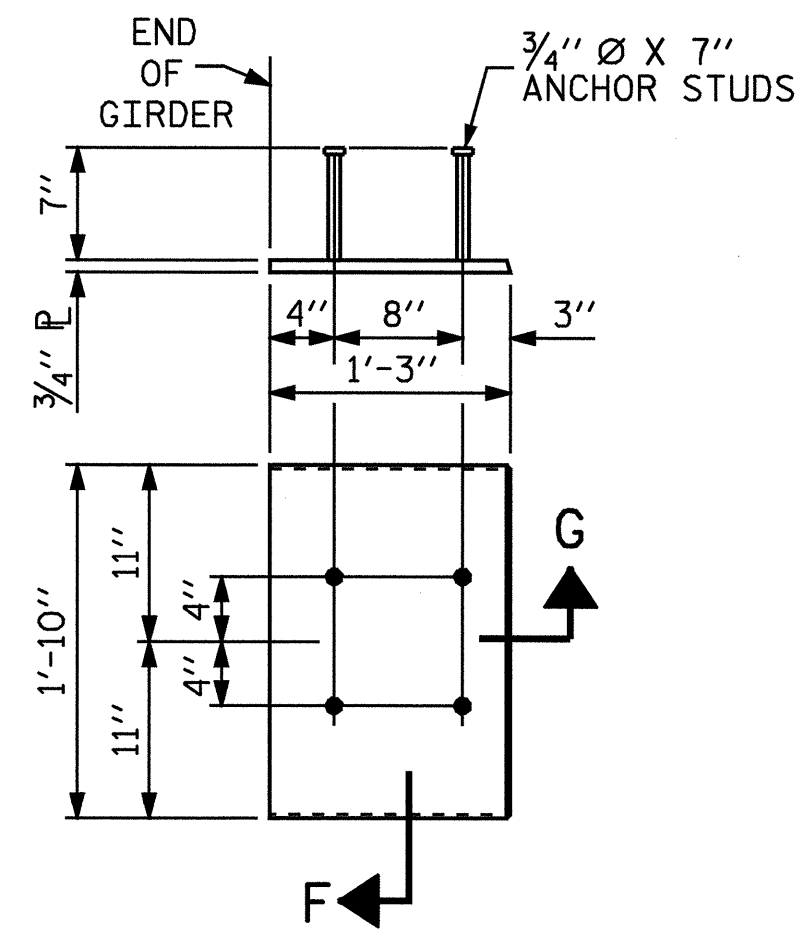
AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4,700 PSI FOR SPANS A, C AND D, AND 6800 PSI FOR SPAN B.

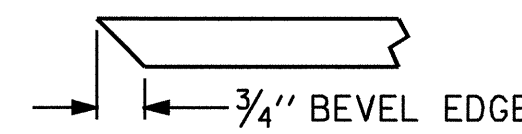
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

FOR CRACK REPAIR OF PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.



SECTION "G"



SECTION "F"

(SEE NOTES)

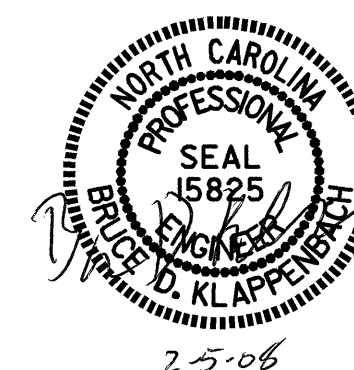
**EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE III GIRDER**
(2 REQ'D PER GIRDER)

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 7 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS



ASSEMBLED BY : A. SORSENGINH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : ELR 11/91	REV. 10/17/00 RWW/LES
CHECKED BY : GRP 11/91	REV. 7/10/01RR LES/RDR
	REV. 5/11/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			45

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

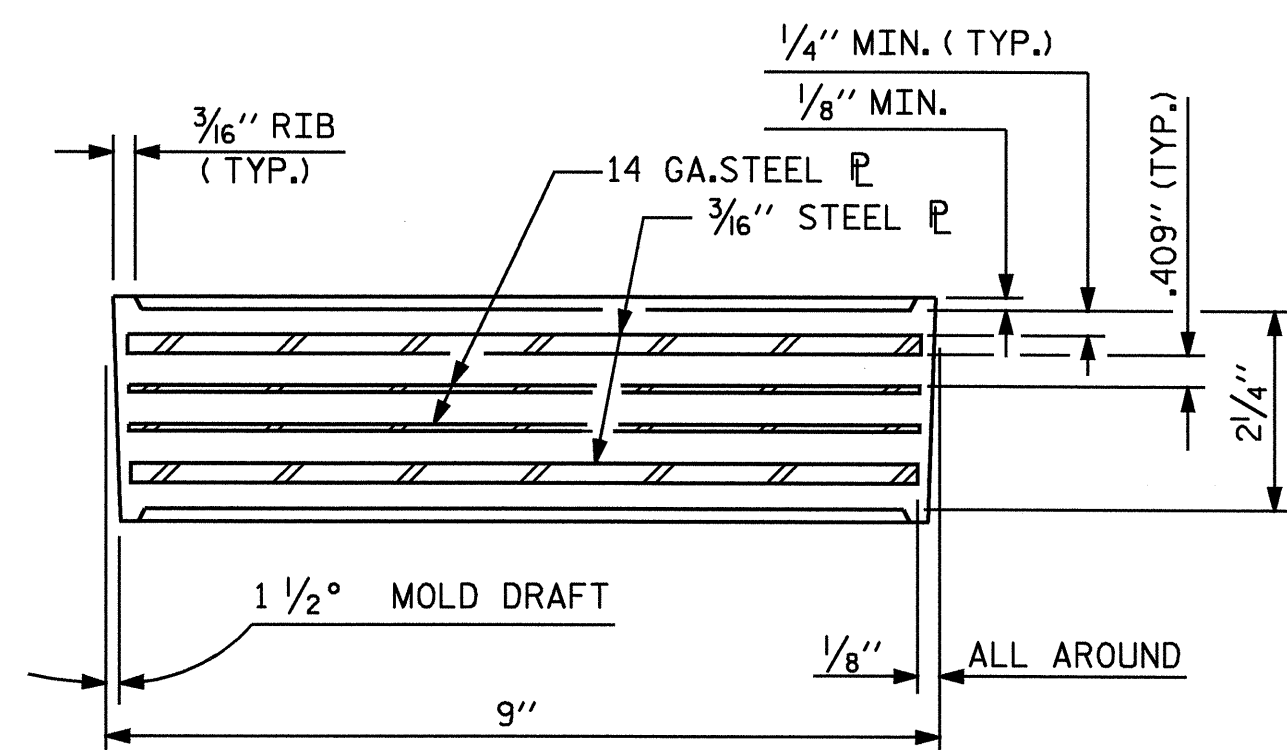
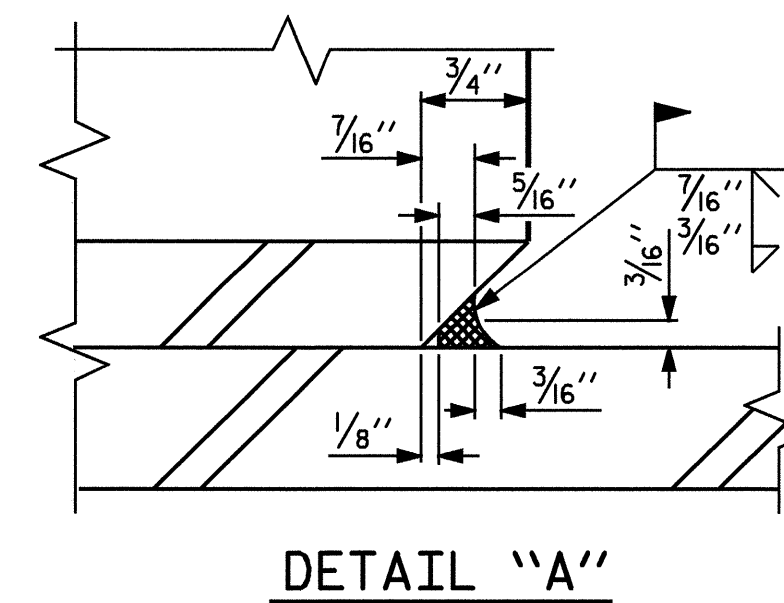
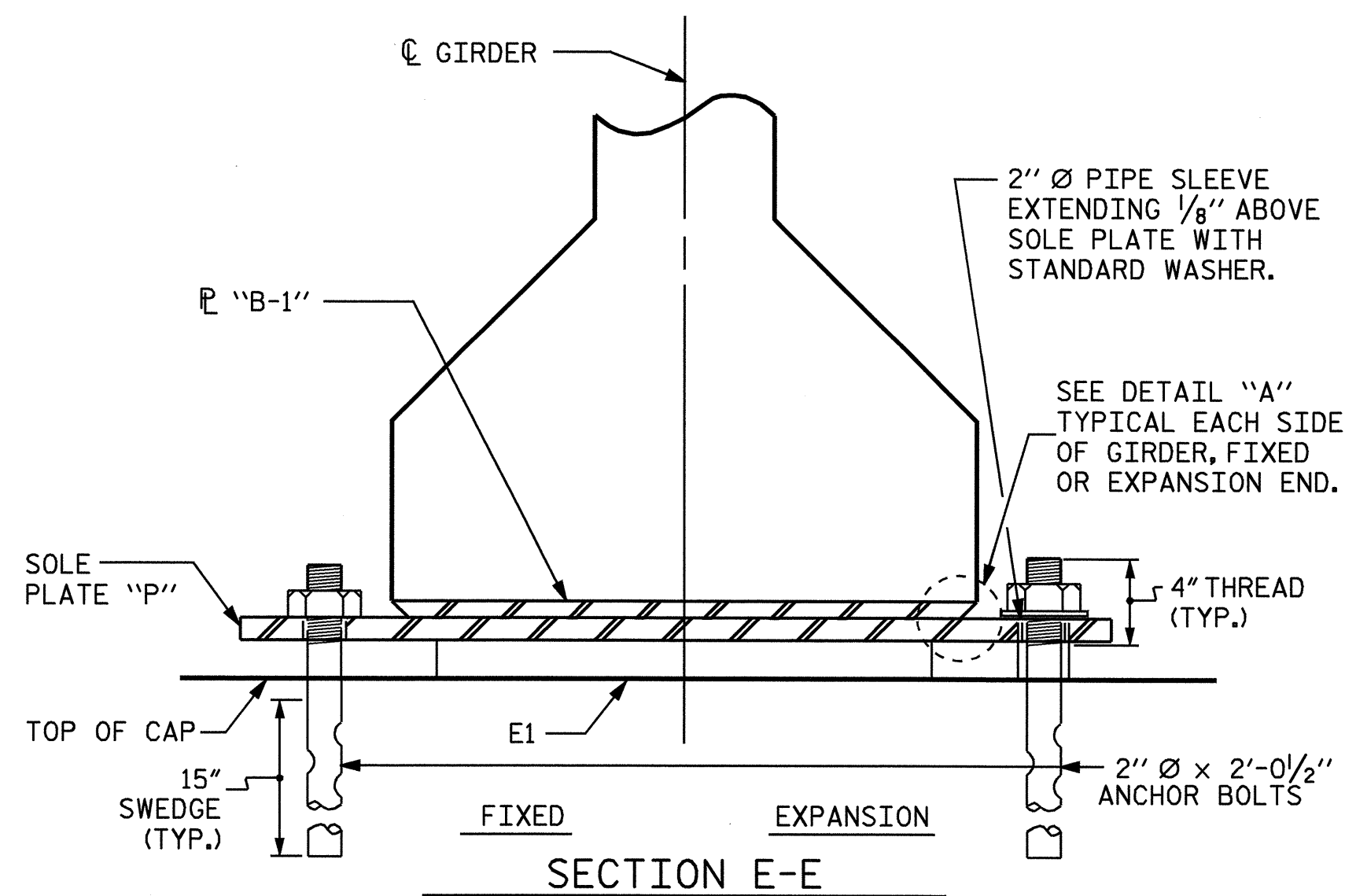
PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

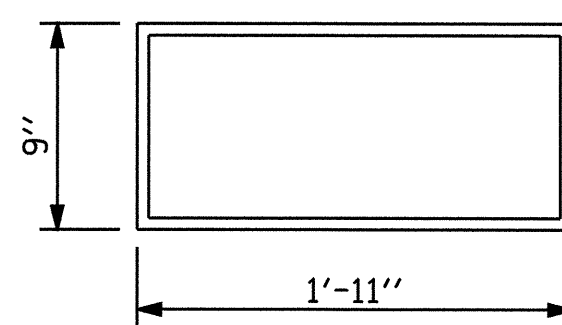
SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



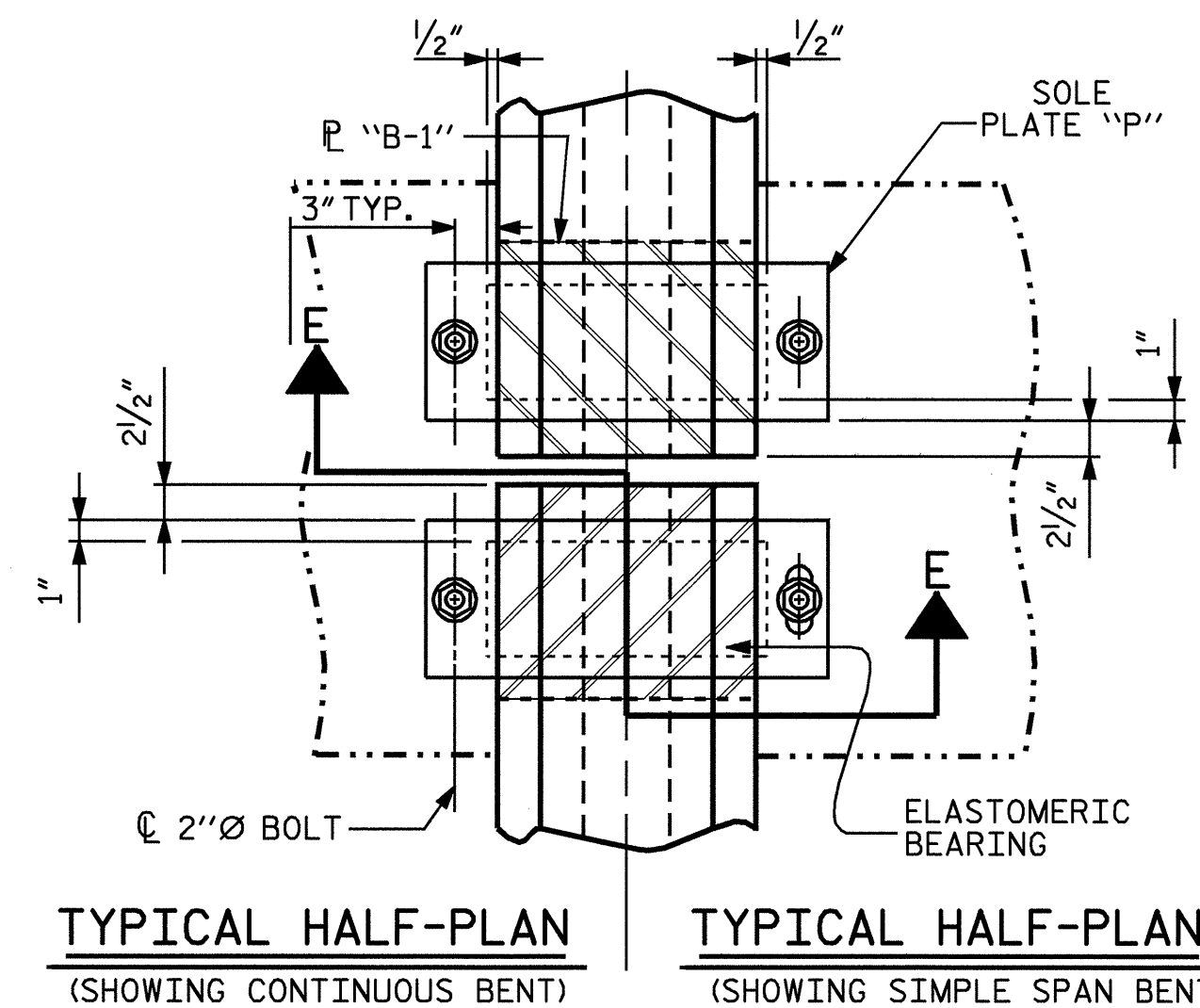
TYPICAL SECTION OF ELASTOMERIC BEARINGS



E1 (32 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING

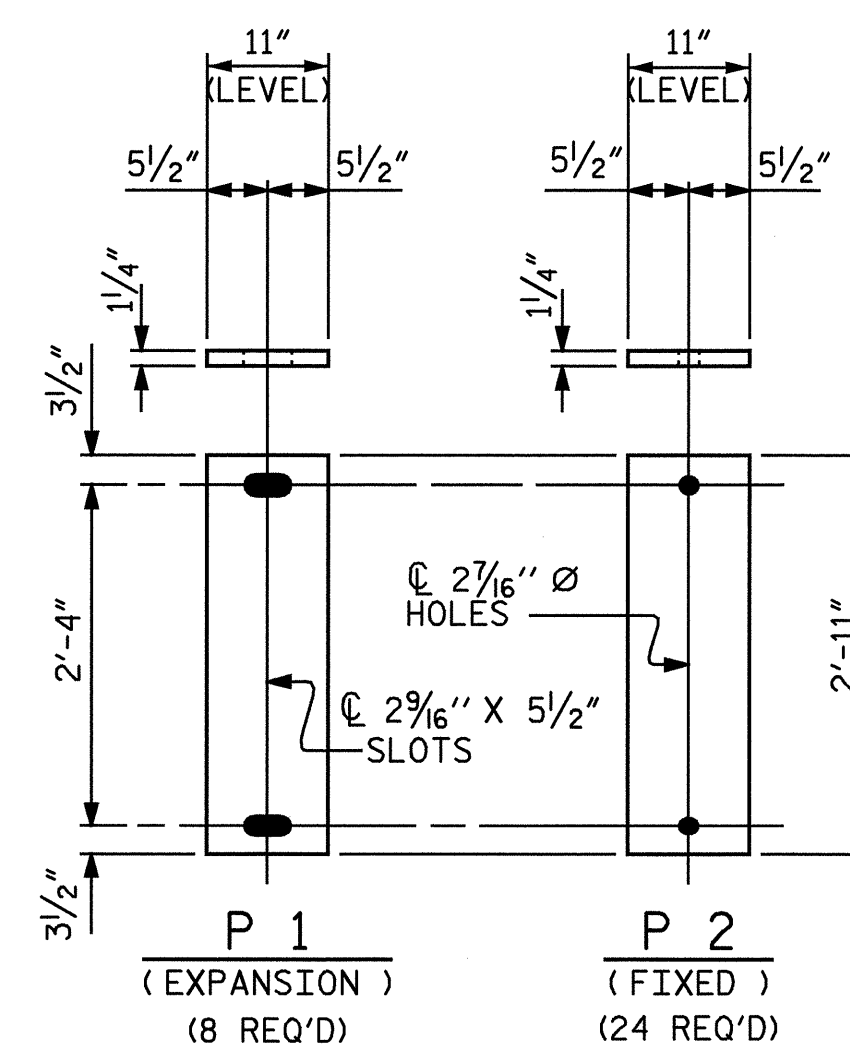
TYPE V

USE FOR ALL SPANS IN BRIDGE
(50 DUROMETER)



TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT)
TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)

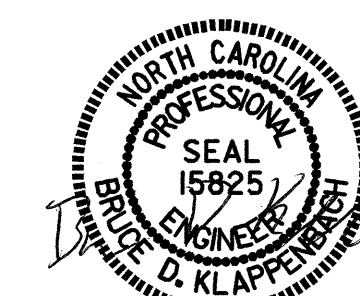
— LOAD RATINGS —	
45" PCG -TYPE V	MAX.D.L.+L.L. 180 K



SOLE PLATE DETAILS ("P")

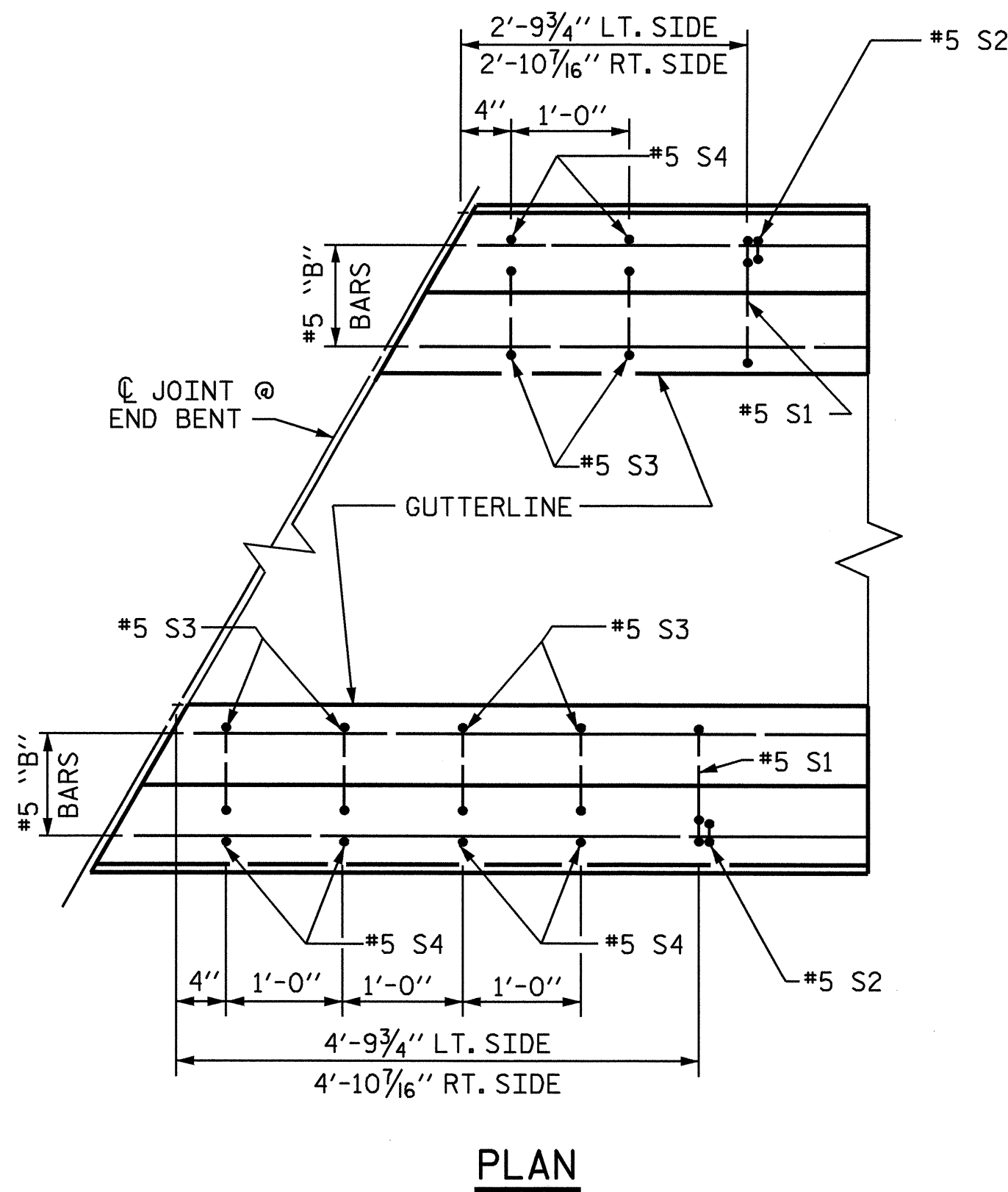
PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ELASTOMERIC BEARING
DETAILS
PRESTRESSED CONCRETE GIRDER
SUPERSTRUCTURE

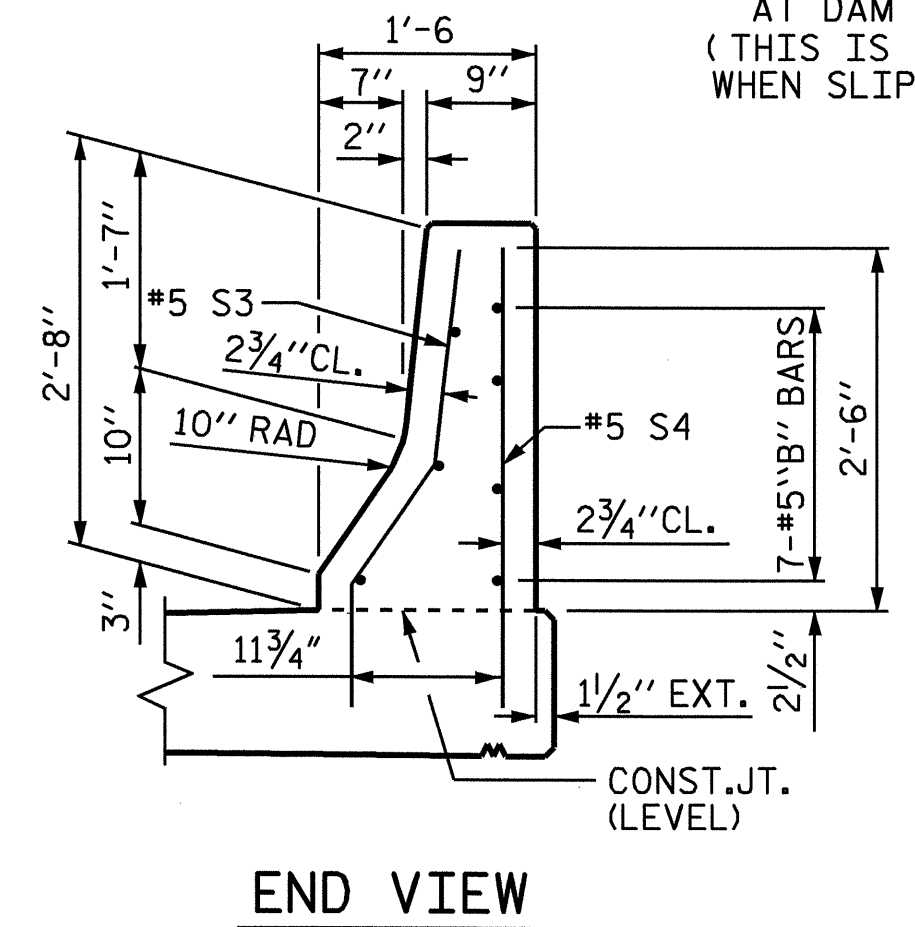


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			45

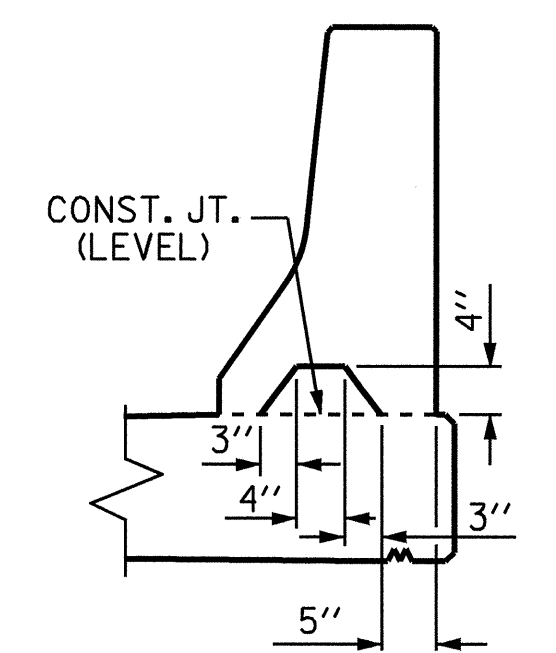
ASSEMBLED BY :	A. SORSENGINH	DATE :	7/25/07
CHECKED BY :	M. G. SHAIKH	DATE :	10/23/07
DRAWN BY :	WJH 8/89	REV. 10/17/00	RWW/LES
CHECKED BY :	CRK 8/89	REV. 7/10/01	RWW/LES
		REV. 5/1/06	TLA/GM



PLAN

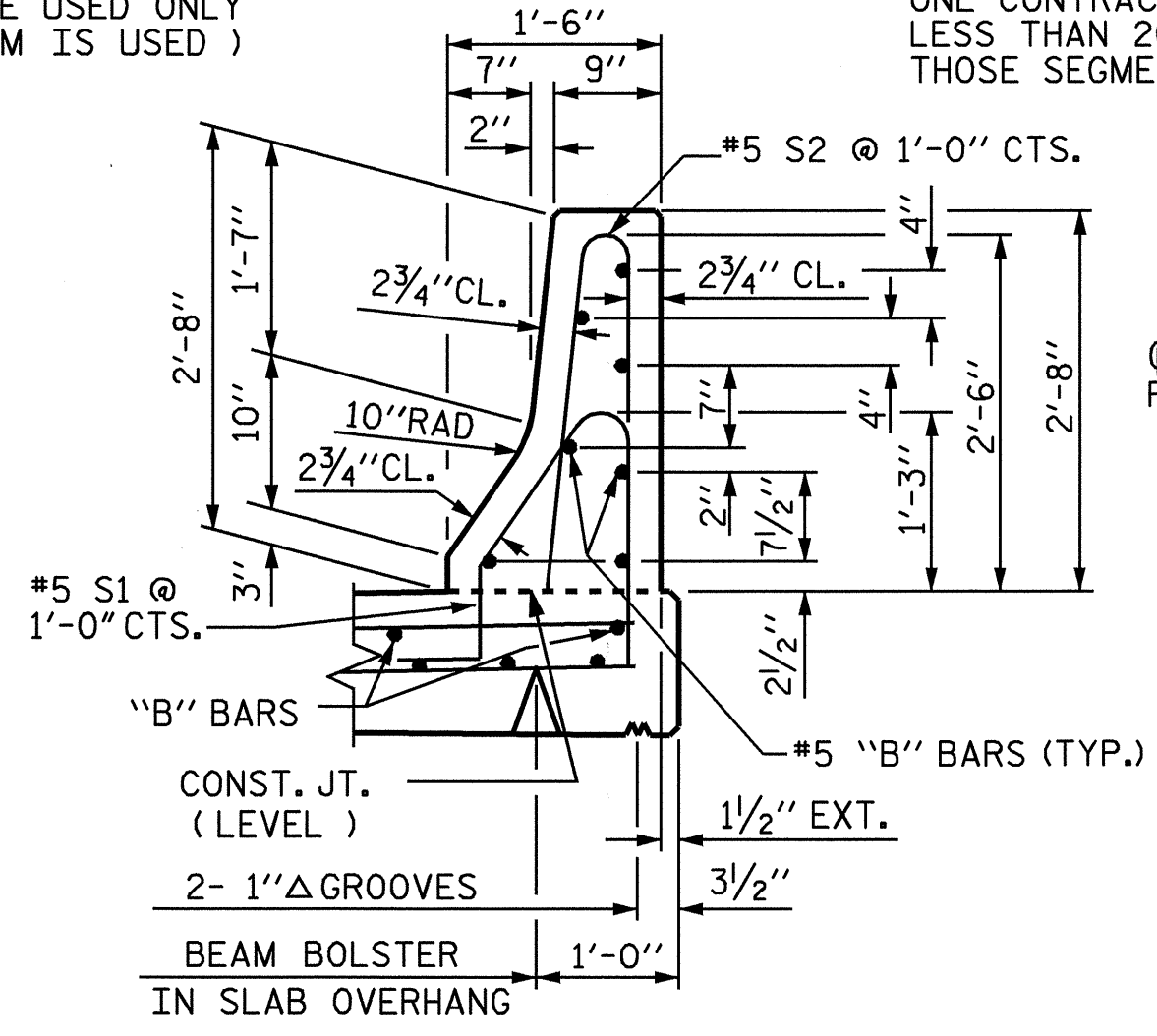


END VIEW

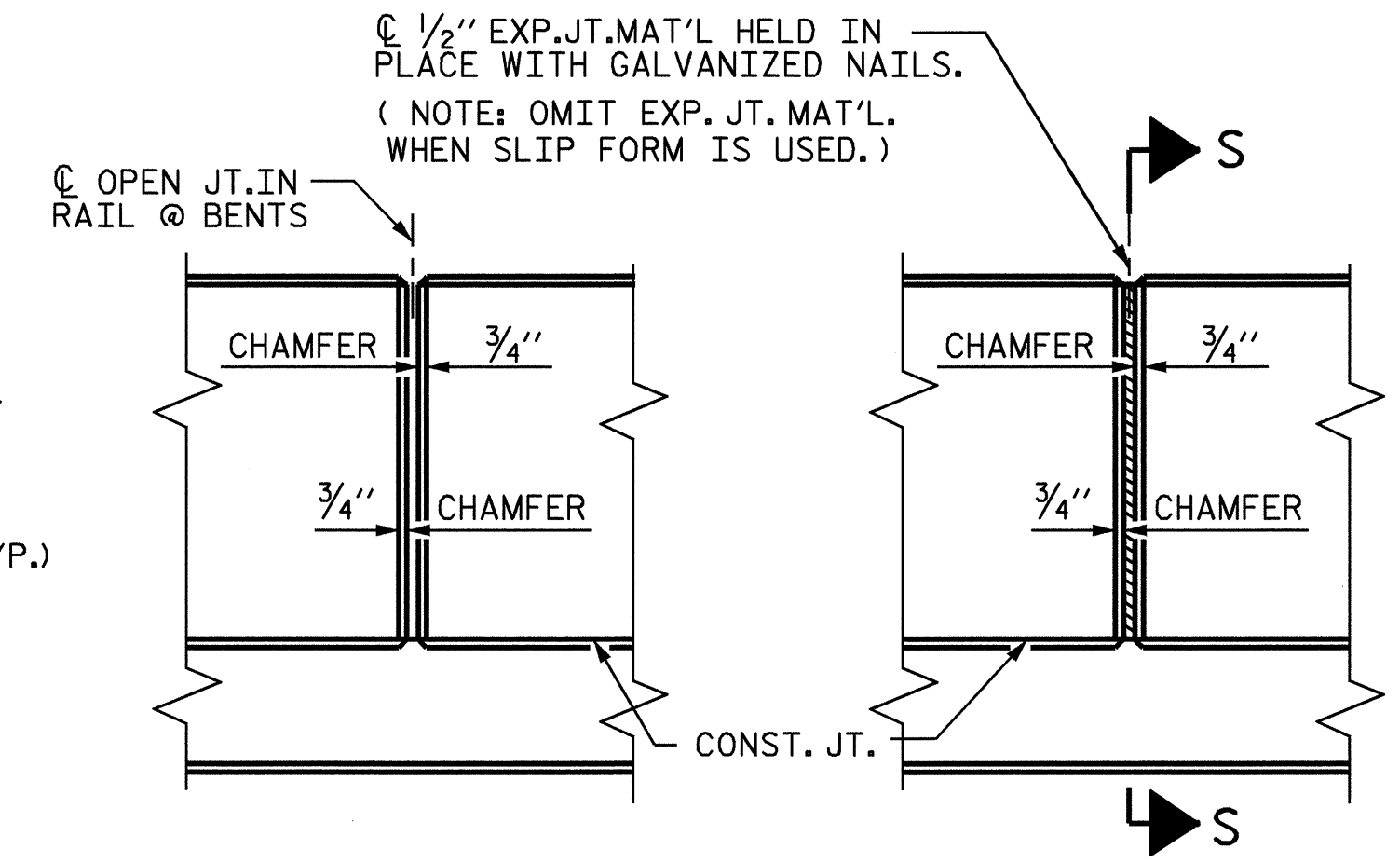


SECTION S-S

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



SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS

NOTES

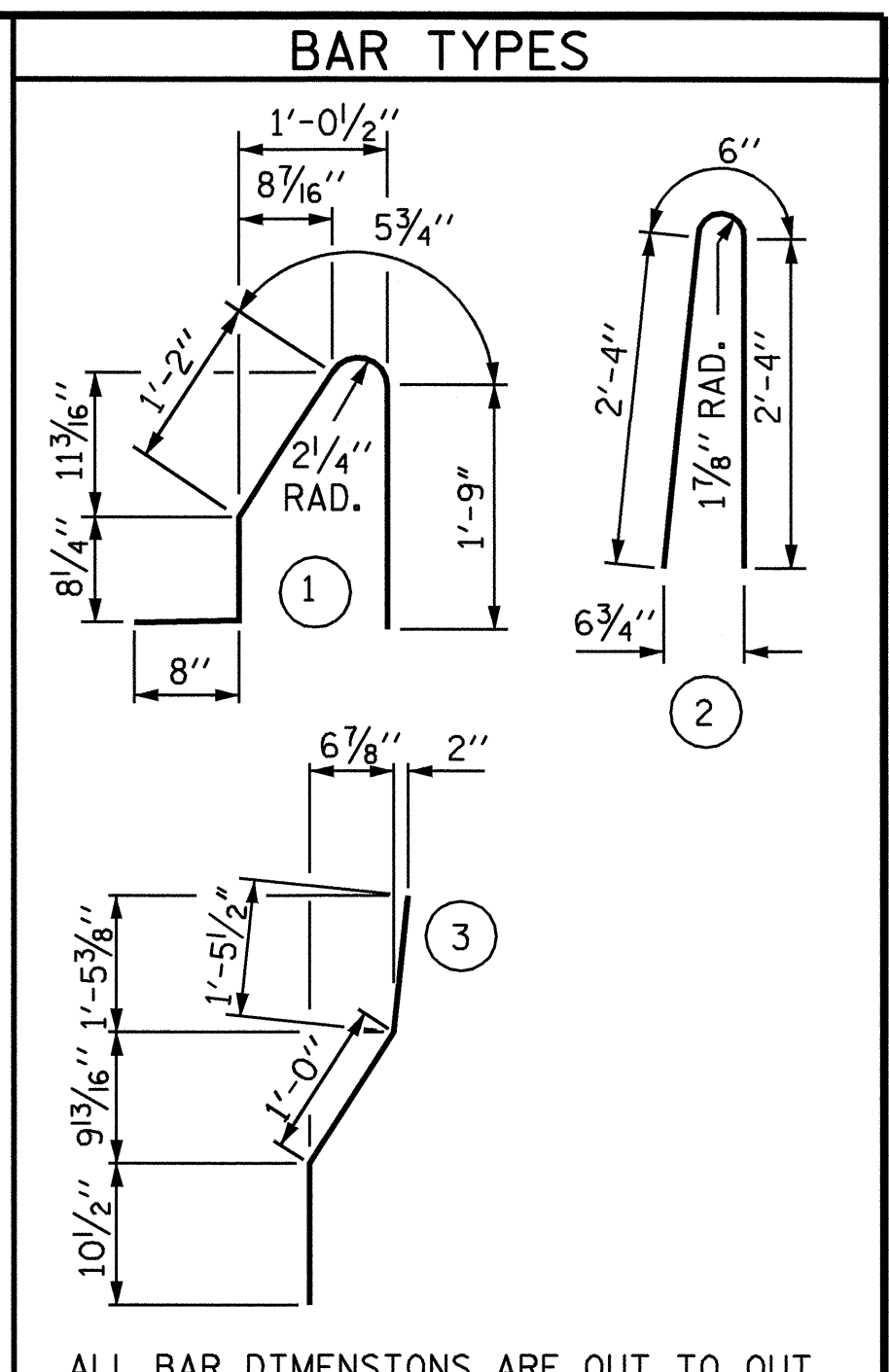
THE BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

WHEN EVAZOTE JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWS PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 AND #5 S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 AND #5 S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

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. THE 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.



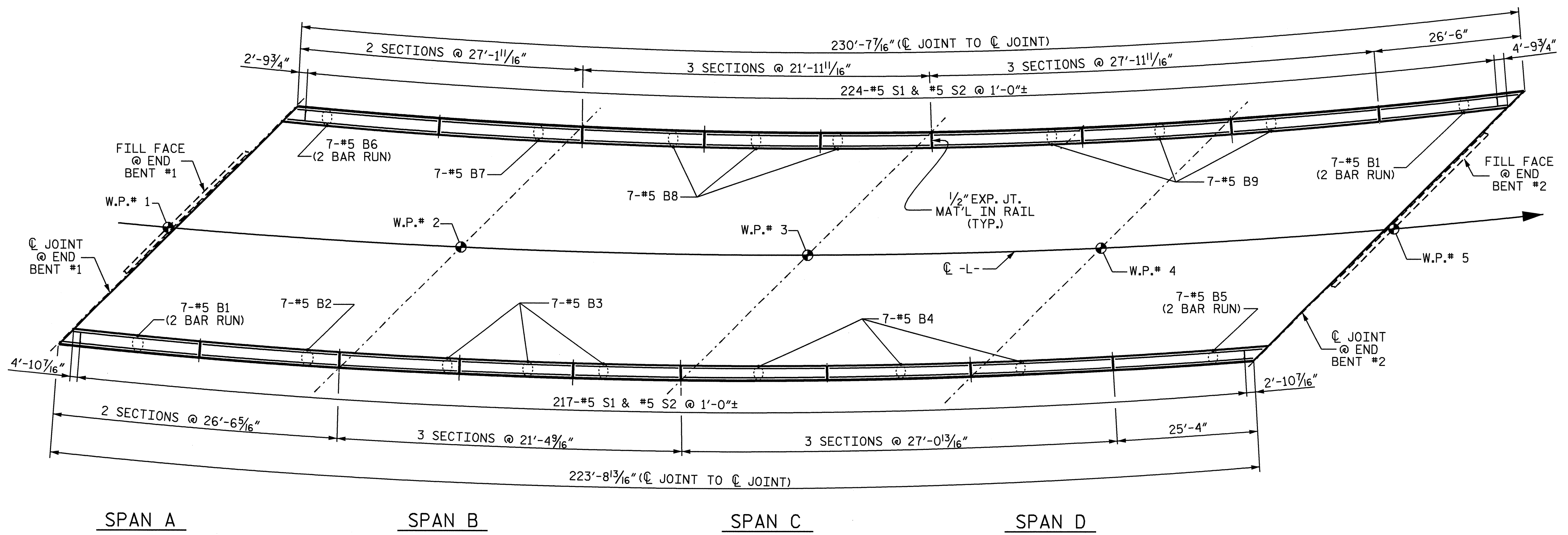
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* S1	441	#5	1	4'-9"	2185
* S2	441	#5	2	5'-2"	2376
* S3	12	#5	3	3'-4"	42
* S4	12	#5	STR	3'-2"	40
* B1	28	#5	STR	14'-1"	411
* B2	7	#5	STR	26'-2"	191
* B3	21	#5	STR	21'-0"	460
* B4	21	#5	STR	26'-7"	582
* B5	14	#5	STR	14'-5"	211
* B6	14	#5	STR	15'-3"	223
* B7	7	#5	STR	26'-9"	195
* B8	21	#5	STR	21'-7"	473
* B9	21	#5	STR	27'-7"	604

* EPOXY COATED
REINFORCING STEEL 7993 LBS.
CLASS AA CONCRETE 45.5 CU. YDS.
CONCRETE BARRIER RAIL 454.35 LIN. FT.

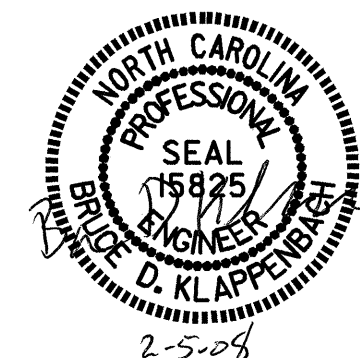


PLAN

PROJECT NO. B-4212
NOTRTHAMPTON COUNTY
STATION: 26+25.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
CONCRETE
BARRIER RAIL

ASSEMBLED BY : A. SORSENGIH DATE : 7/25/07
CHECKED BY : M. G. SHAIKH DATE : 10/23/07
DRAWN BY : ARB 5/87 REV. 10/17/00 RWW/LES
CHECKED BY : SJD 9/87 REV. 5/7/03R RWW/JTE
REV. 5/1/06 TLA/GM



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

TOTAL SHEETS 45

STD. NO. CBR1

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.)

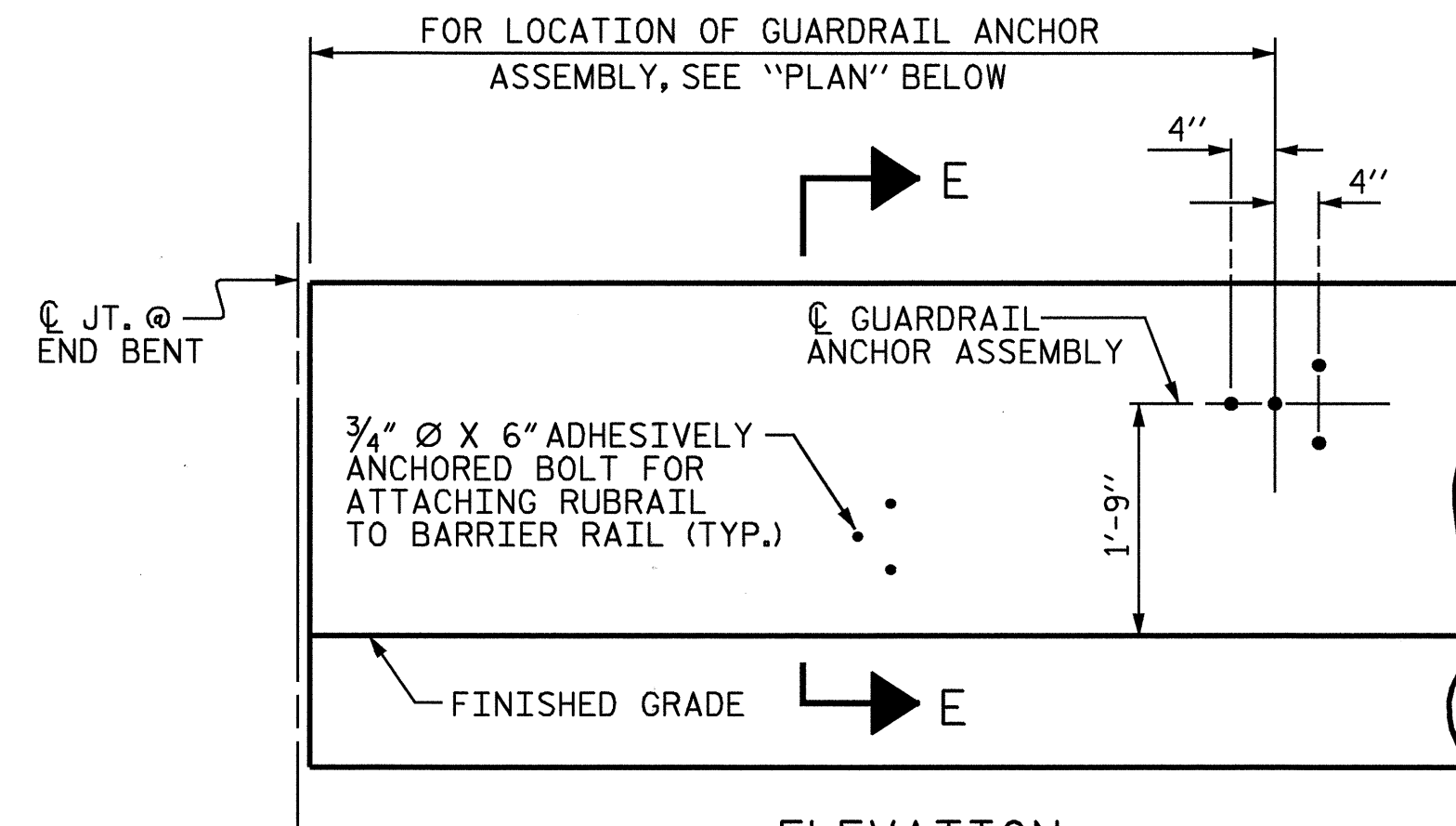
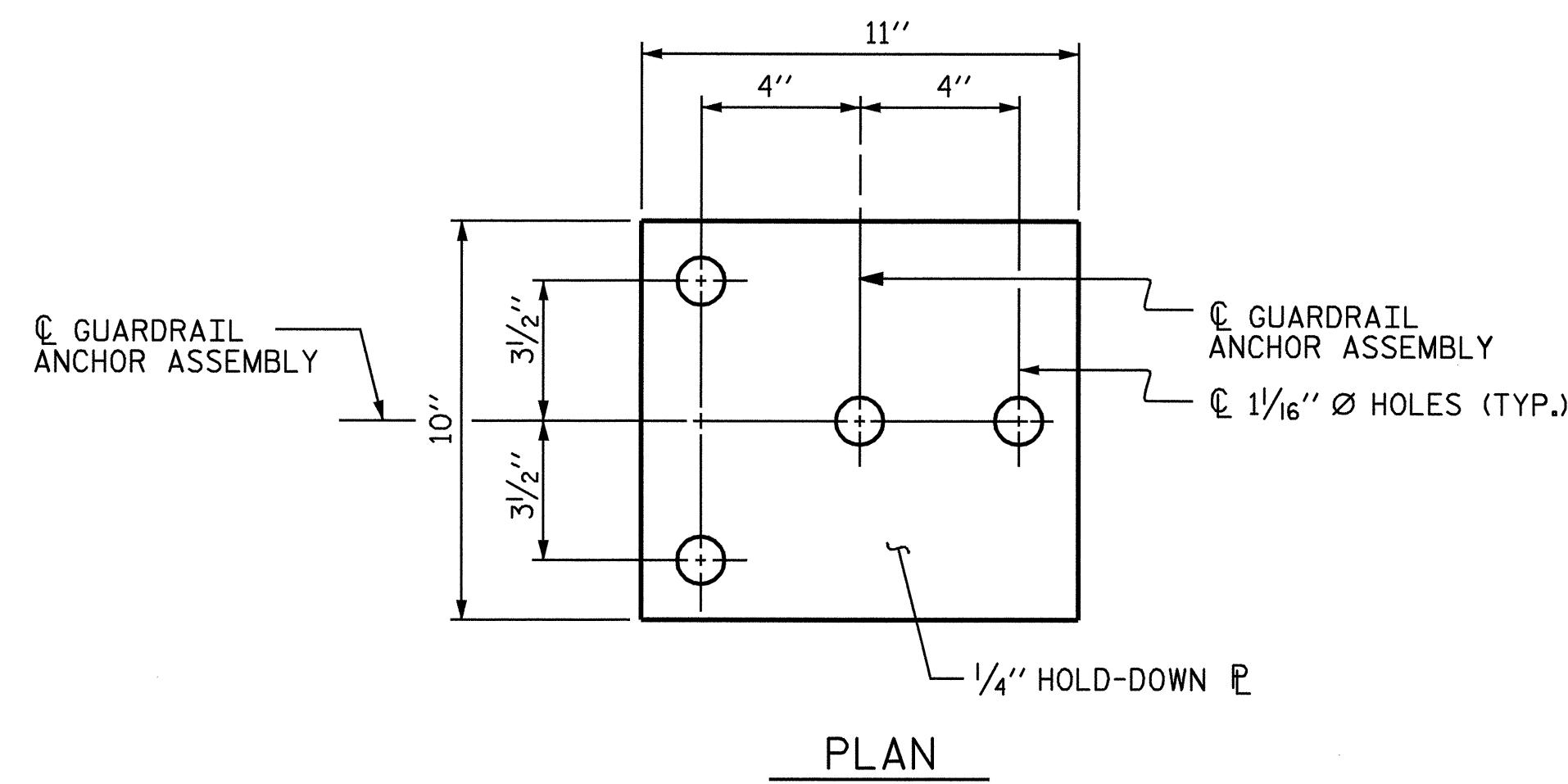
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

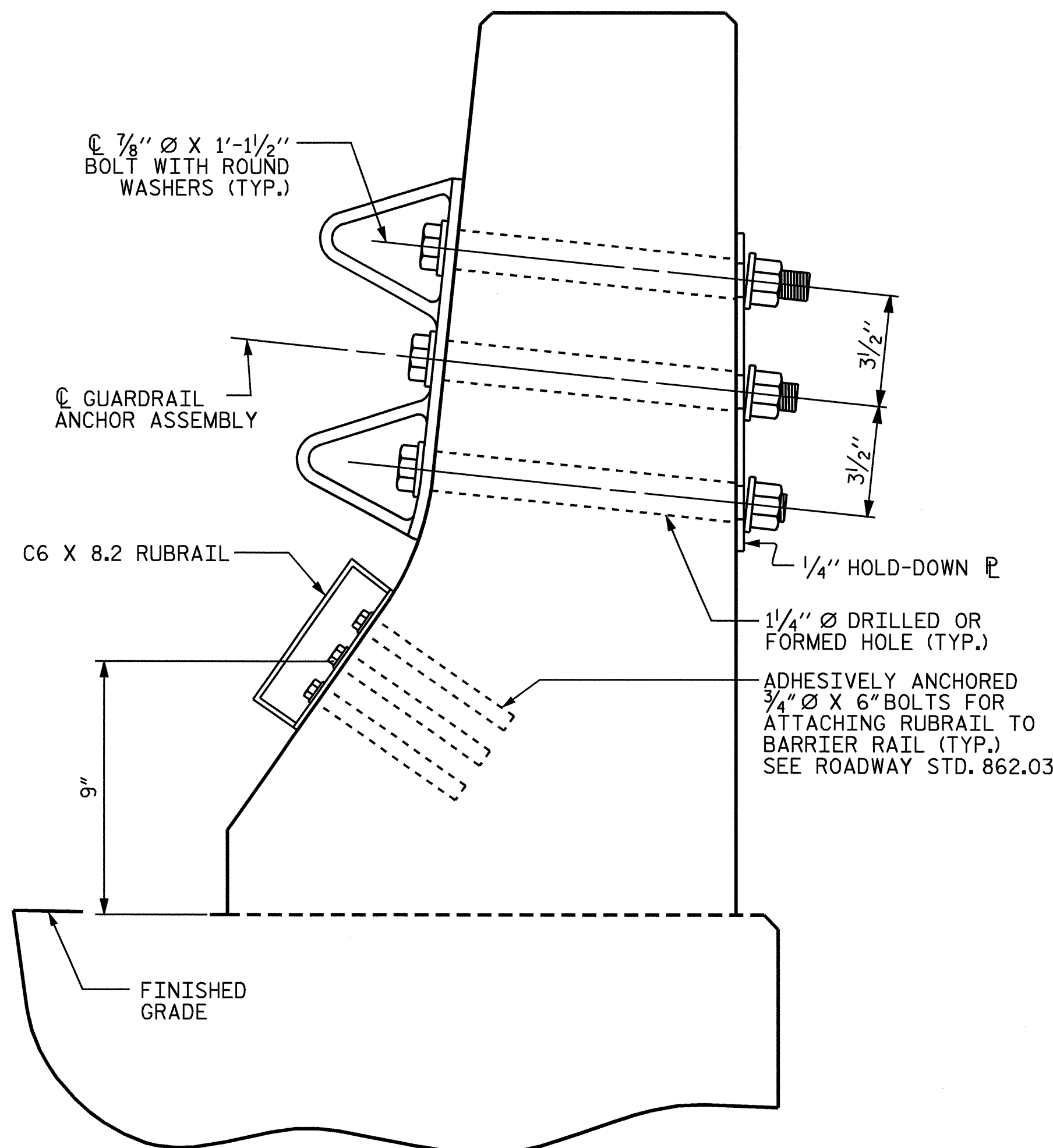
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

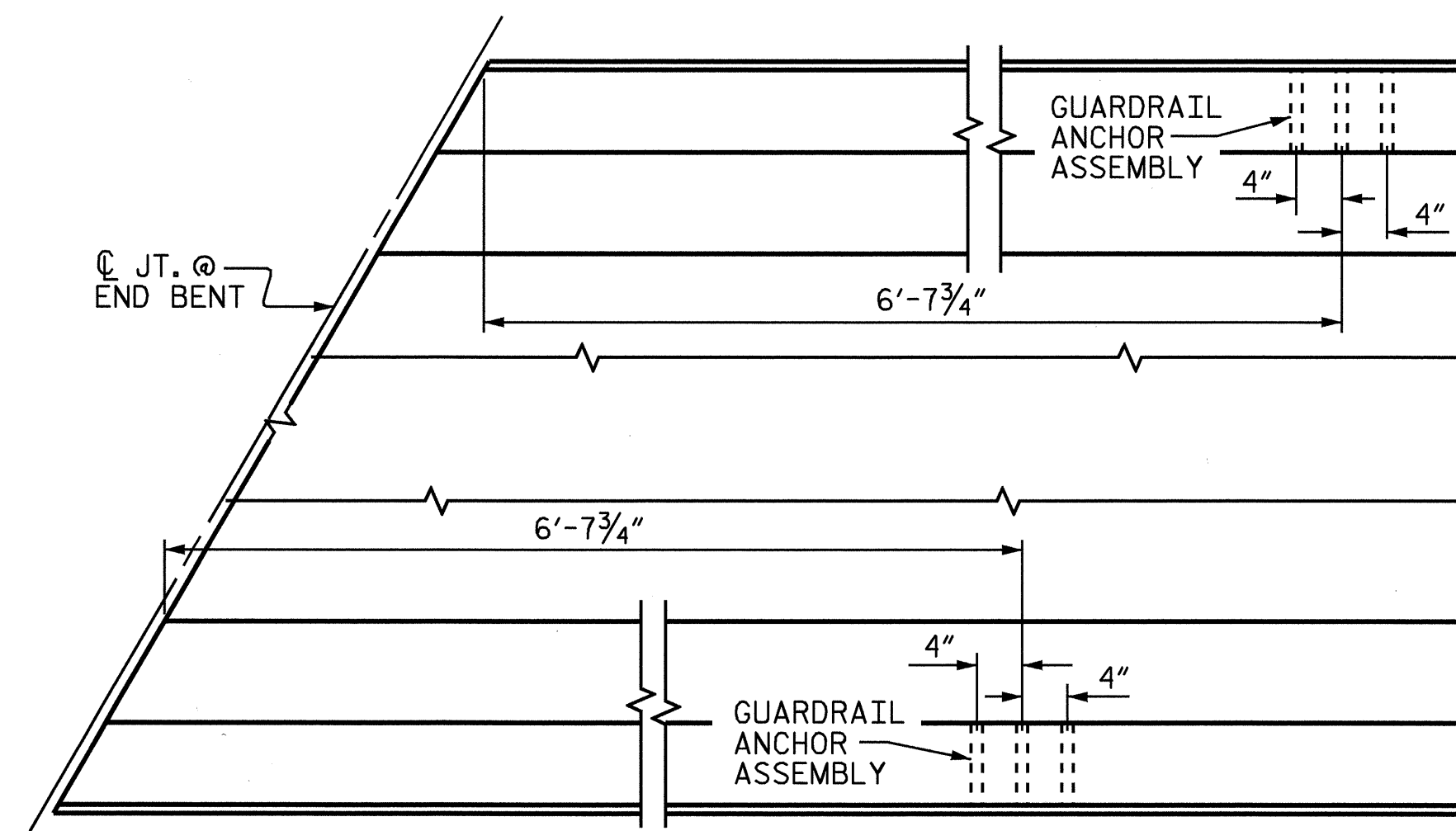
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS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



FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03

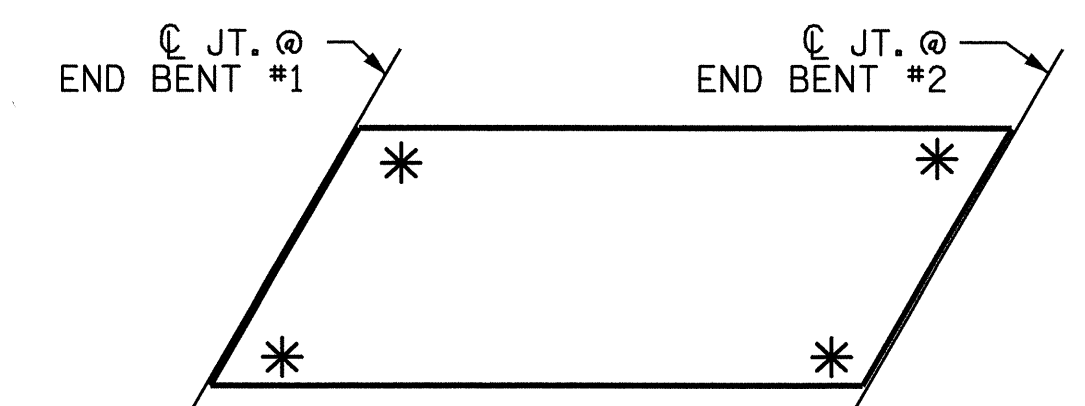


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

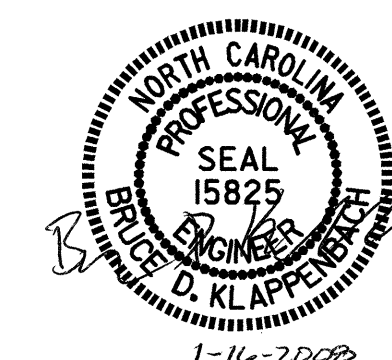
END BENT #1 SHOWN, END BENT #2 SIMILAR.



* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4212
 NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

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

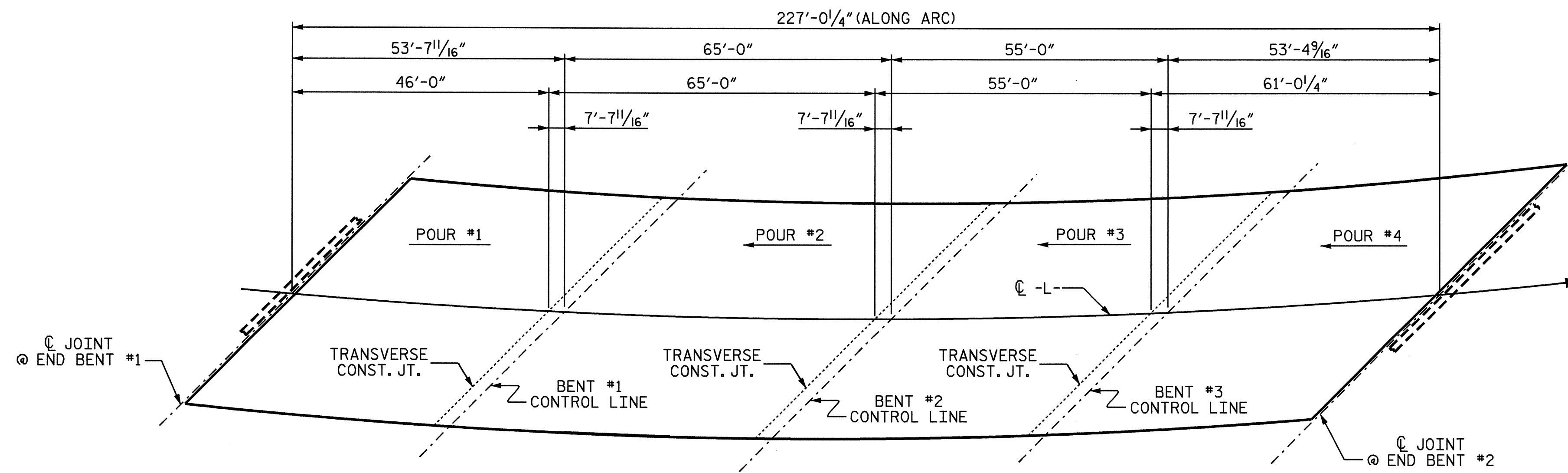


ASSEMBLED BY : A. SORSENGINH	DATE : 7/25/07
CHECKED BY : M. G. SHAIKH	DATE : 10/23/07
DRAWN BY : TLA 5/06	ADDED 5/1/06R KMM/GM
CHECKED BY : GM 5/06	

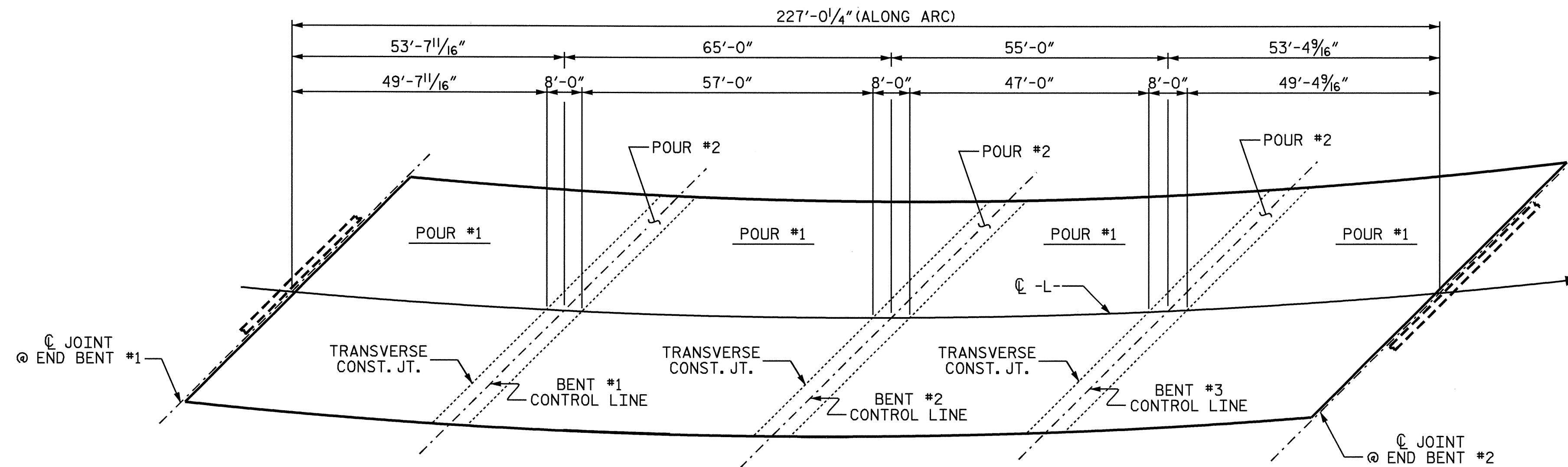
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REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 45

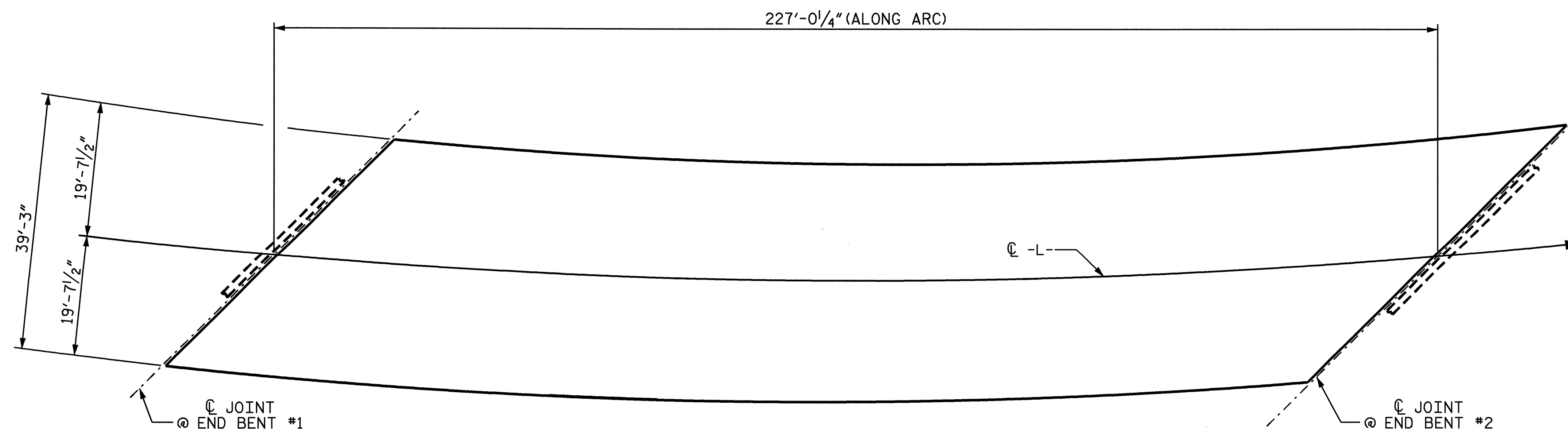


POURING SEQUENCE



OPTIONAL POURING SEQUENCE

POUR #2 CAN NOT BE STARTED UNTIL BOTH ADJACENT #1 POURS REACH A MINIMUM OF 3000 PSI.



LAYOUT FOR COMPUTING AREA
REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 8,913 SQ. FT.)

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BILL OF MATERIAL



DRAWN BY : A. SORSENGINH DATE : 7/26/07
CHECKED BY : M. G. SHAIKH DATE : 10/23/07

05-FEB-2008 09:16
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			45

NCBDS

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

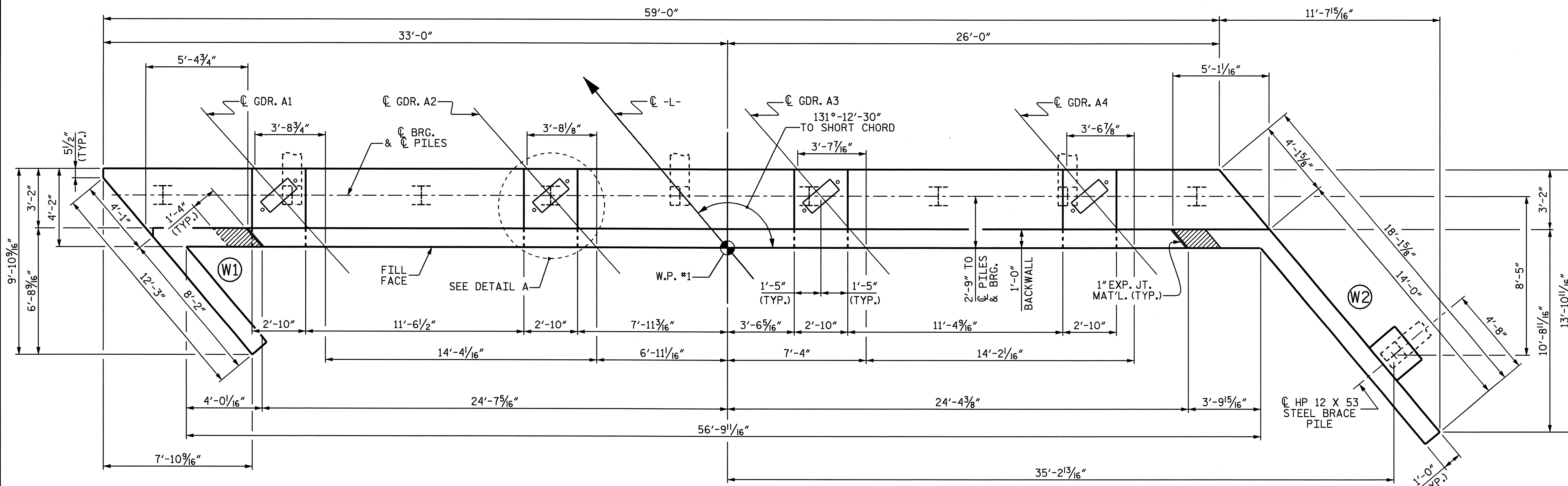
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

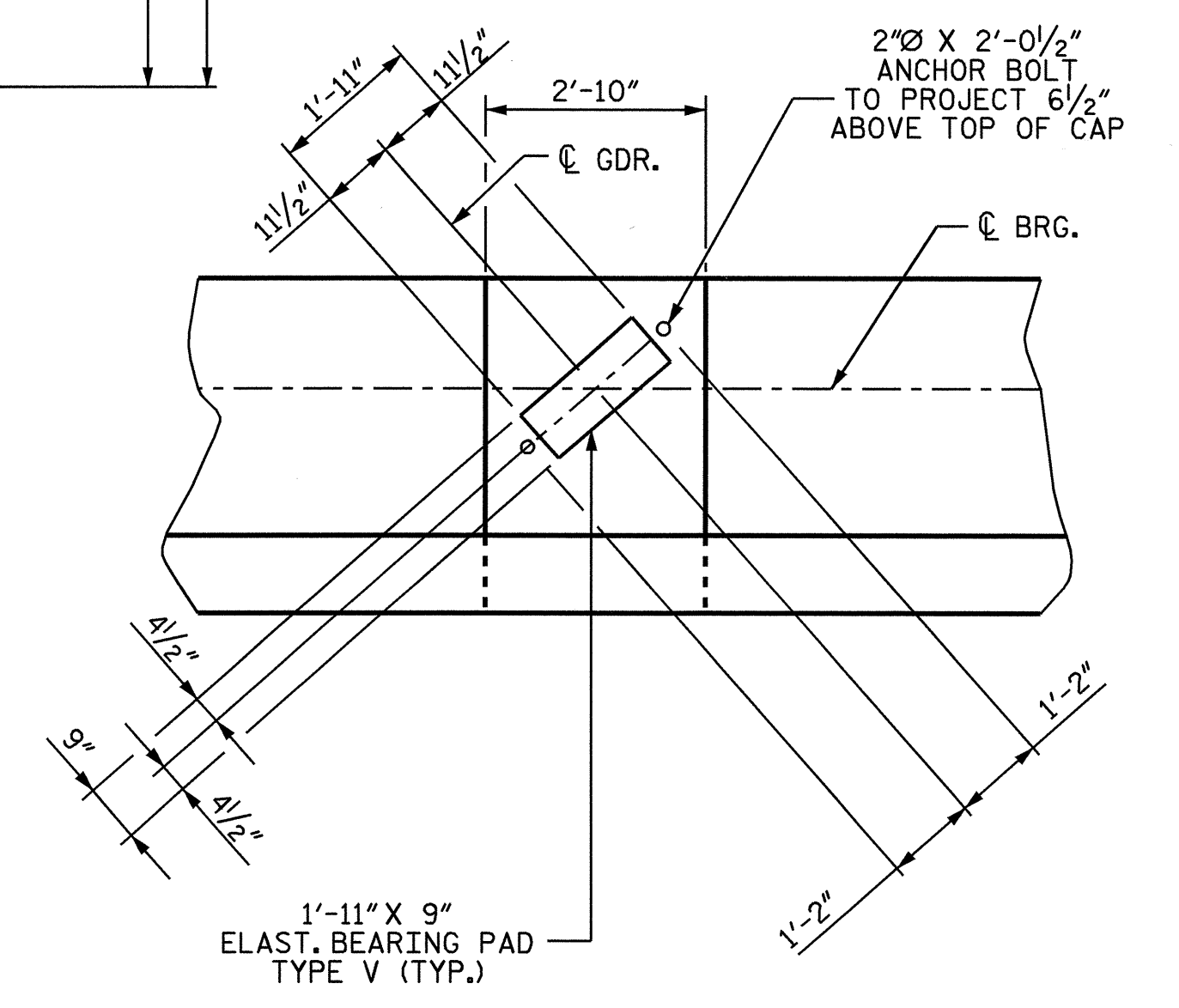
THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

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 RAIL ARE CAST IF SLIP FORMING IS USED.

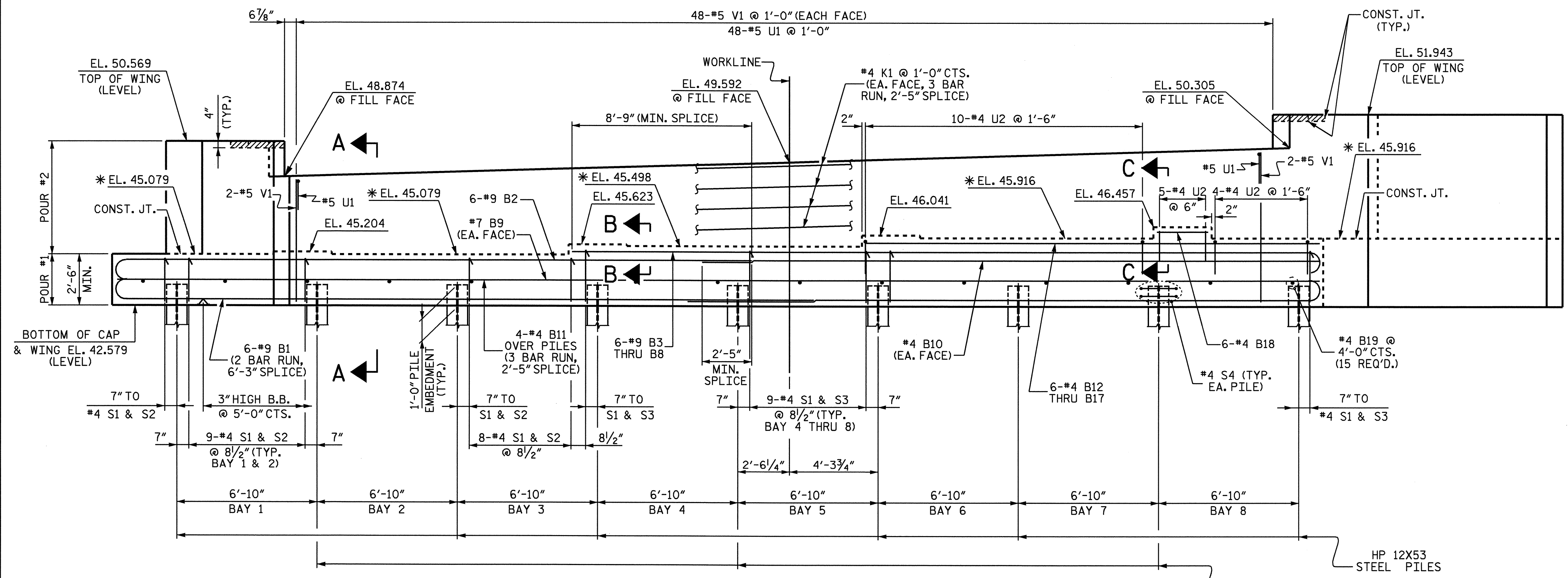


PLAN



DETAIL A

(DIMENSIONS TYP. EA. BRG.)



ELEVATION

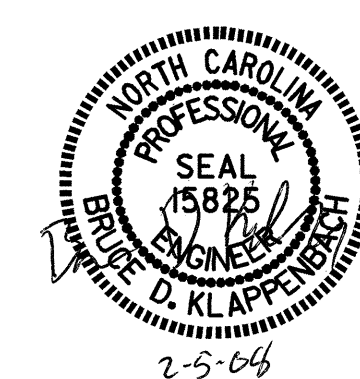
PILES IN WING NOT SHOW FOR CLARITY

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

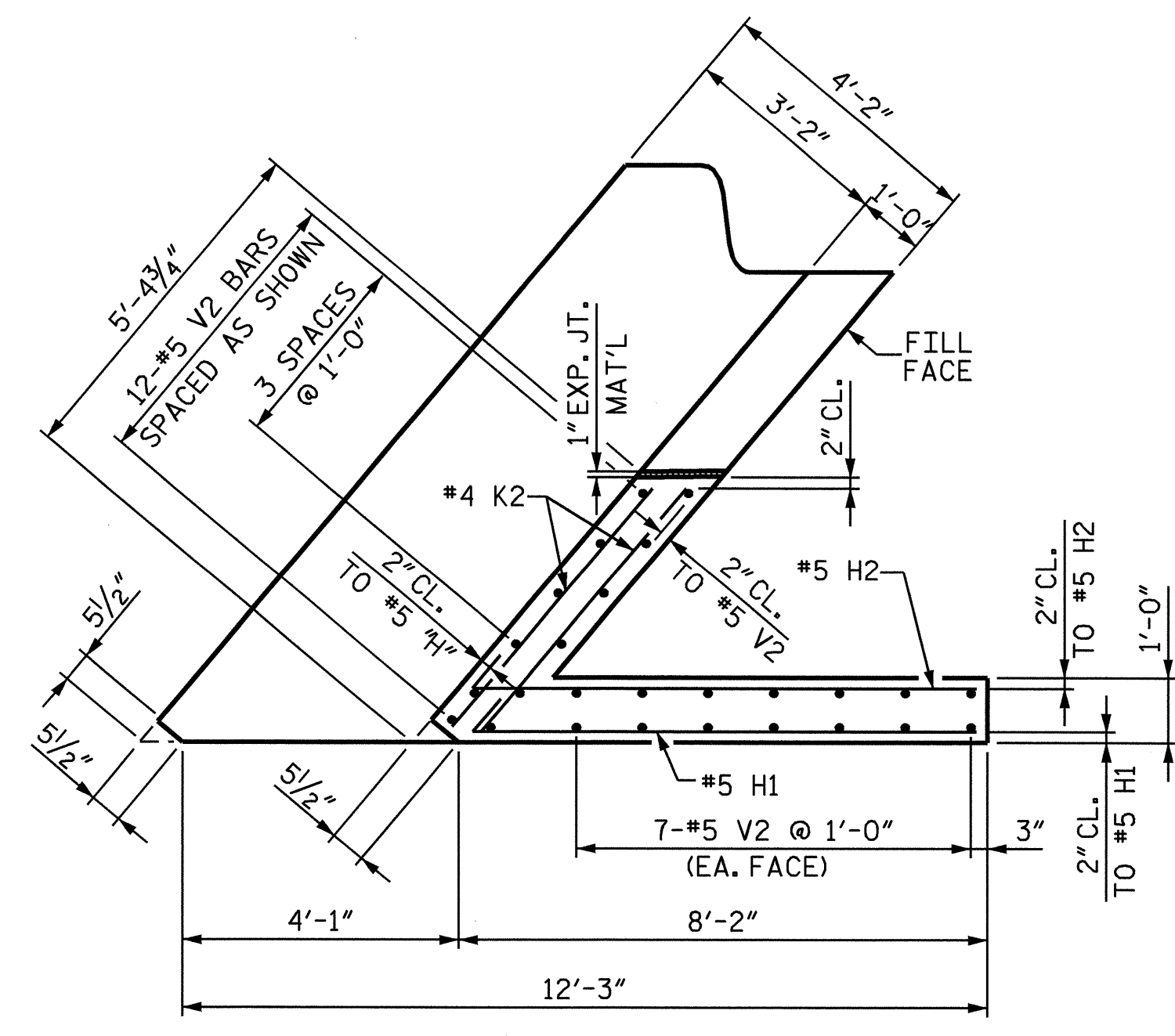
**SUBSTRUCTURE
 END BENT #1**



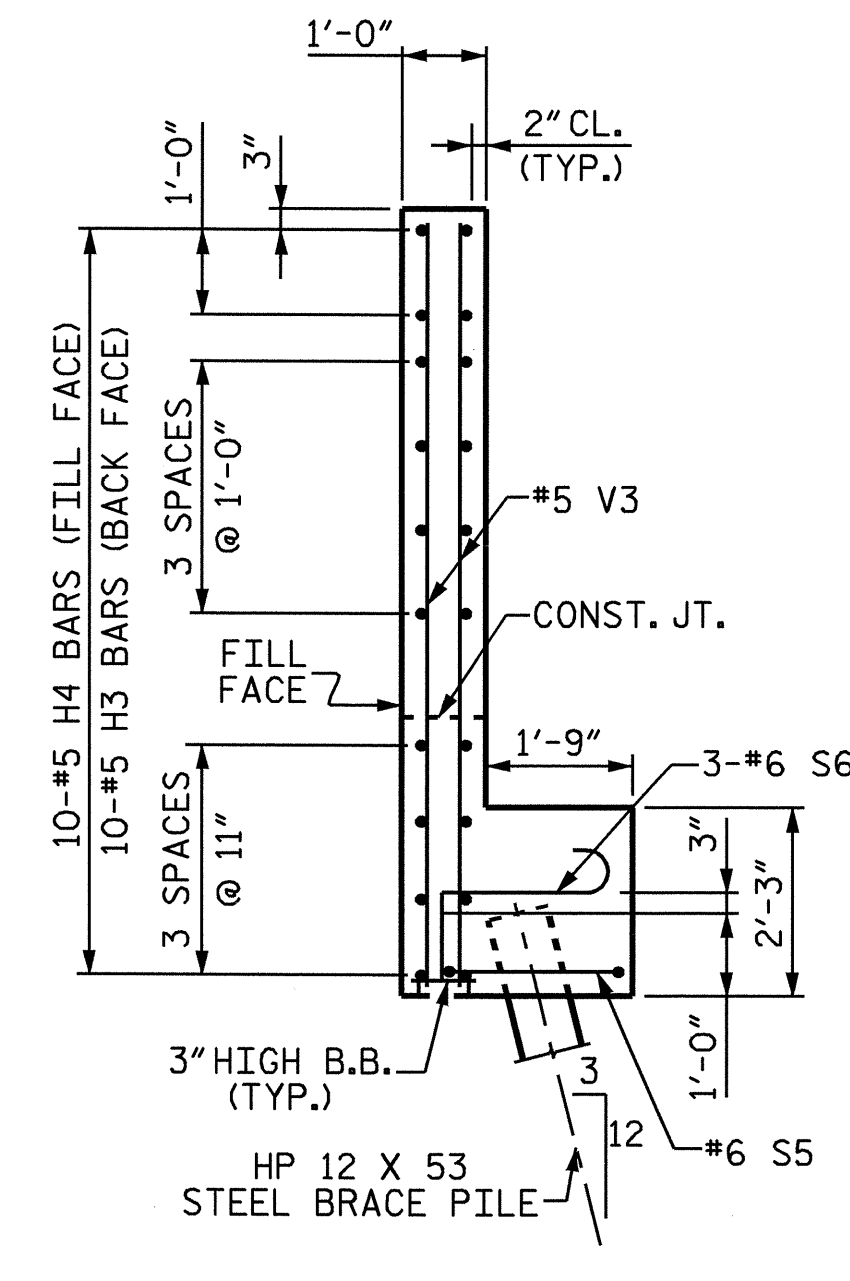
DRAWN BY: A. SORSENGINH DATE: 7/20/07
 CHECKED BY: C.R. YARBROUGH DATE: 10/12/07

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

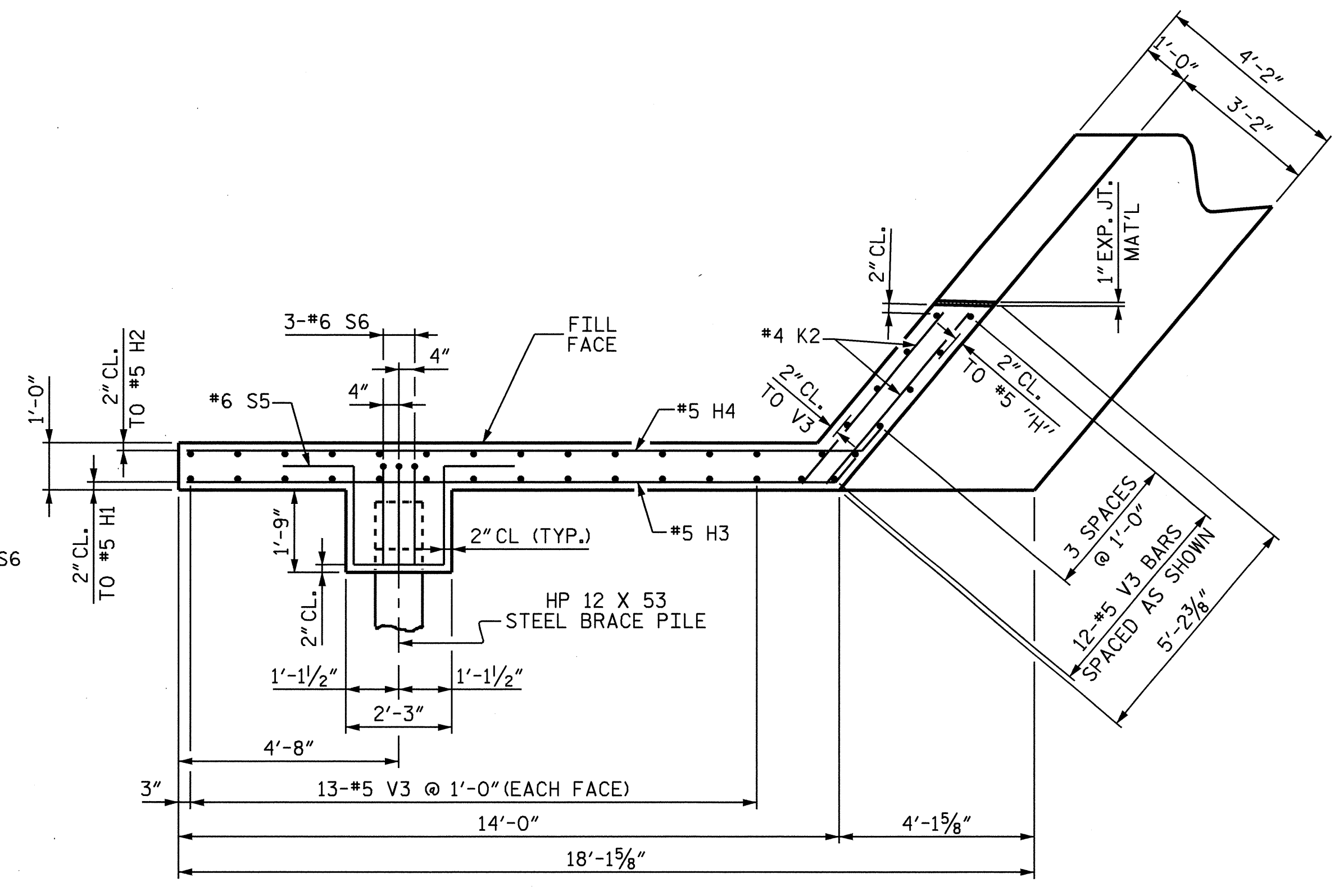
TOTAL SHEETS: 45



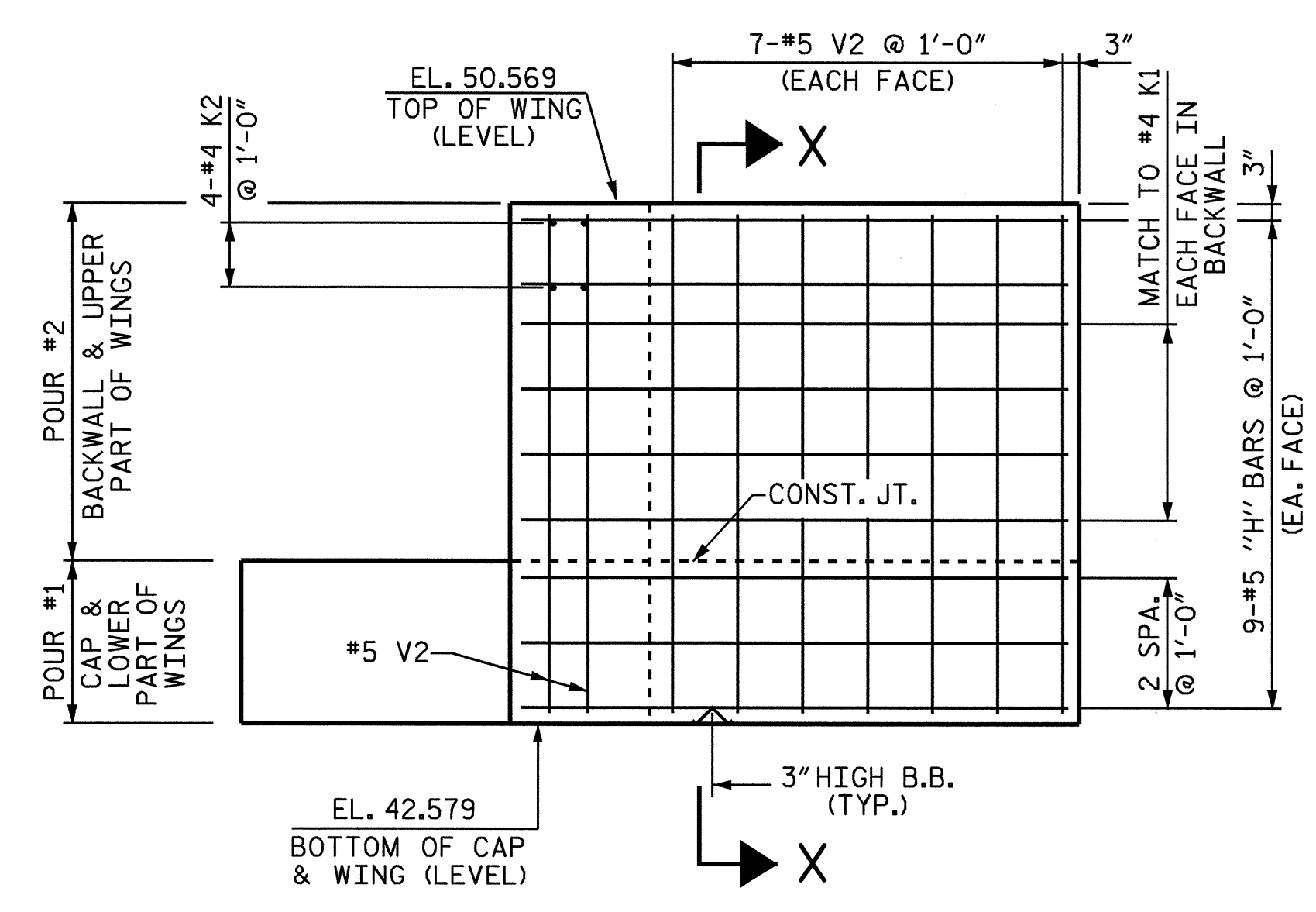
PLAN OF LEFT WING (W1)



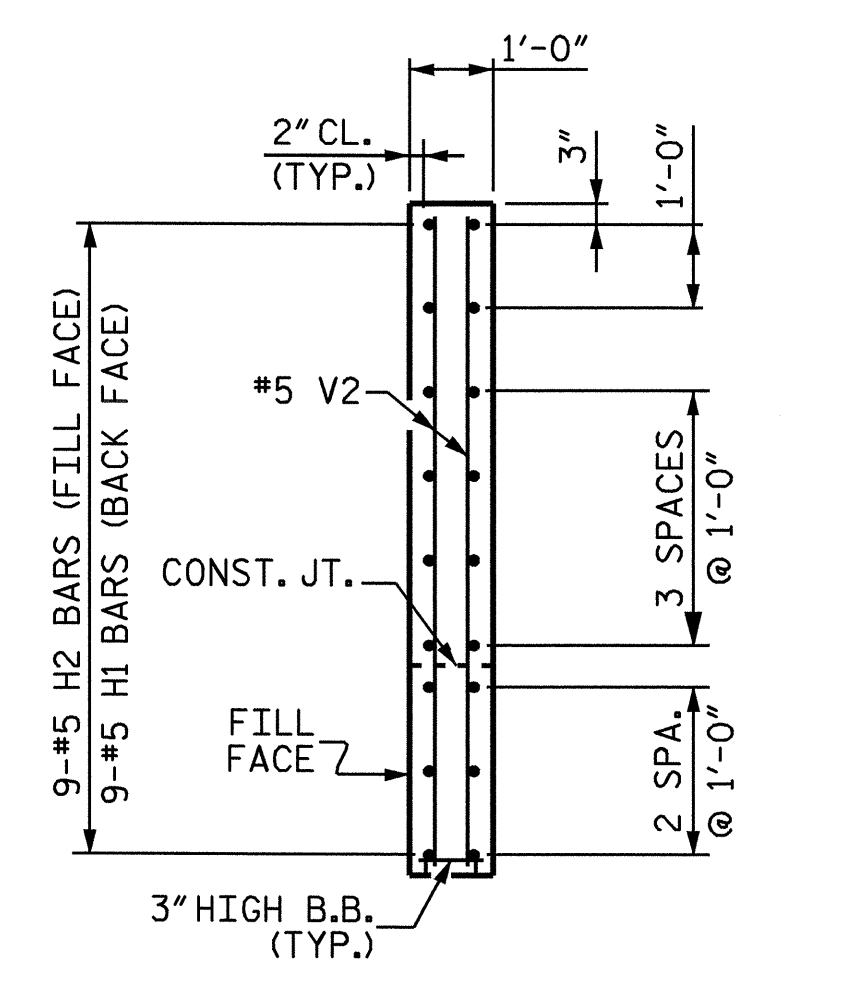
SECTION Y-Y



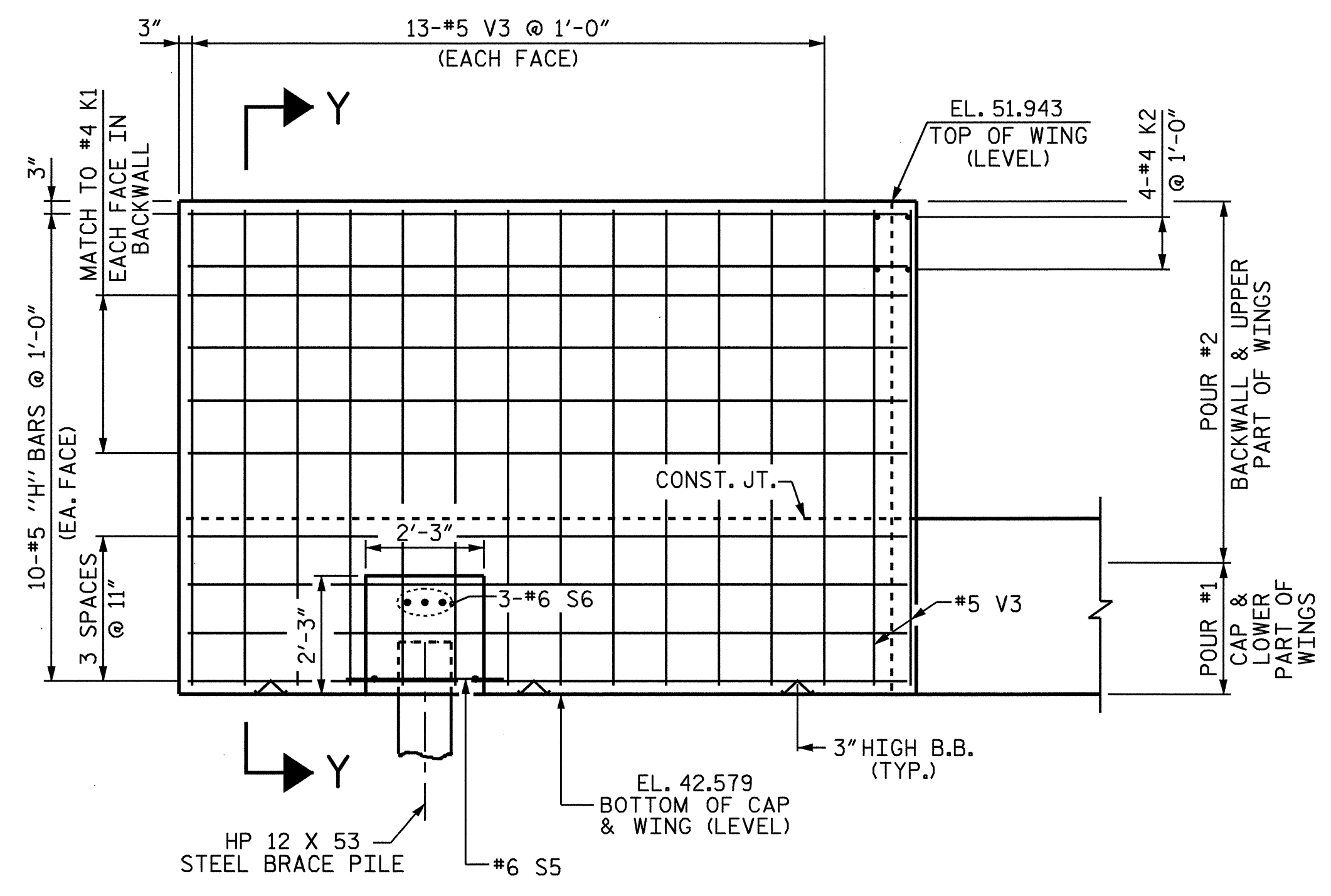
PLAN OF RIGHT WING (W2)



ELEVATION OF LEFT WING (W1)



SECTION X-X



ELEVATION OF RIGHT WING (W2)

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-
 SHEET 2 OF 3

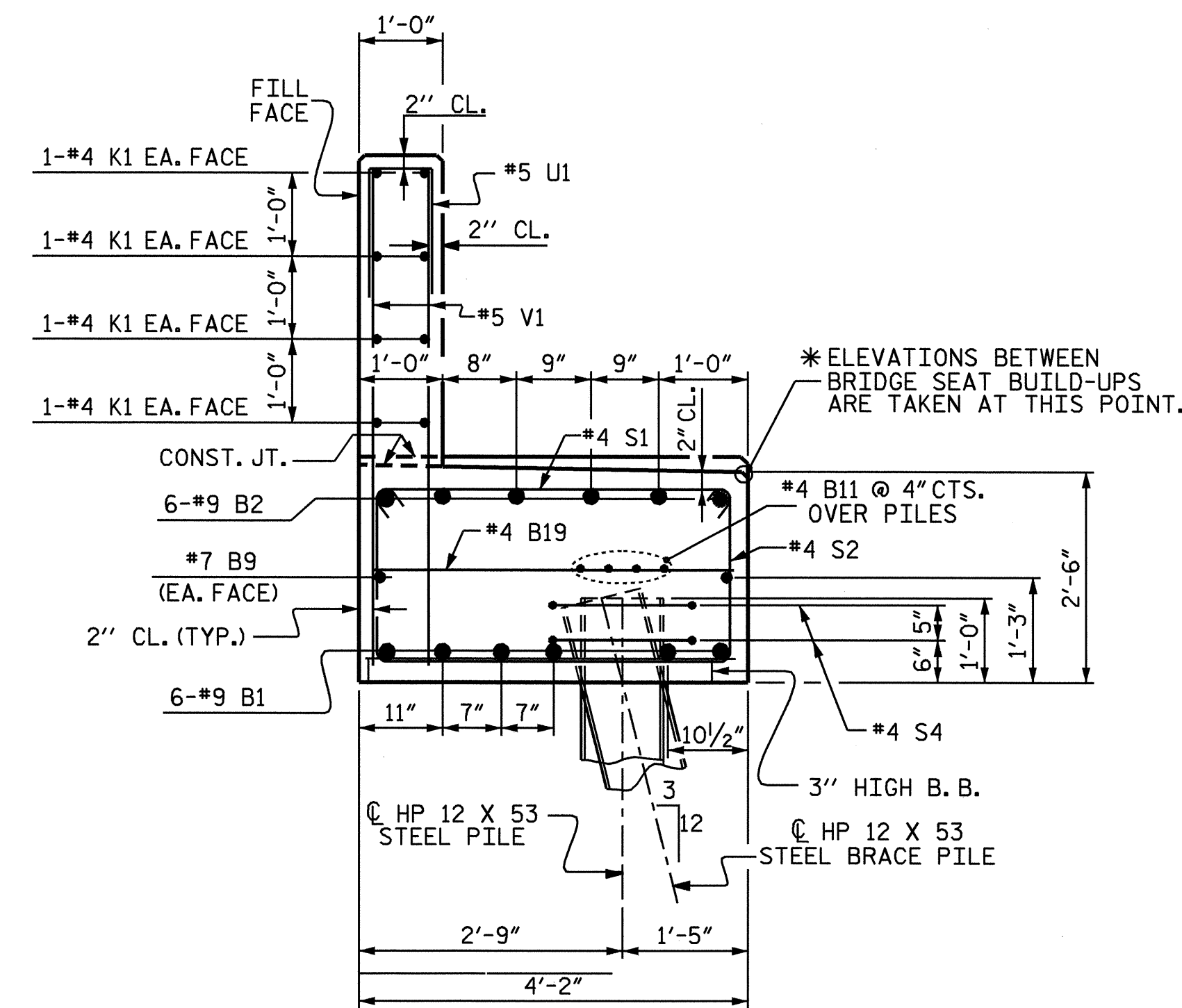
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #1

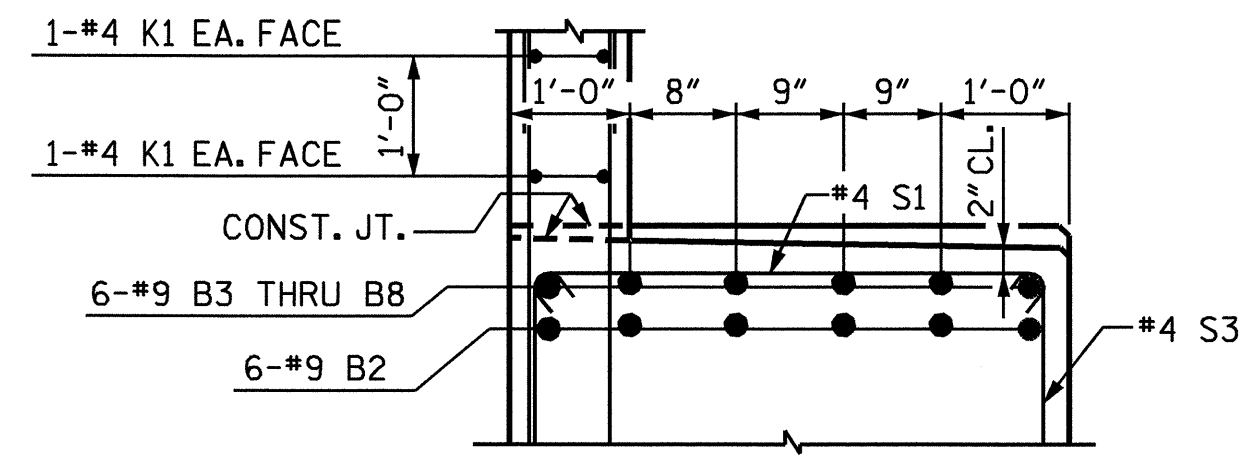


DRAWN BY: A. SORSENGINH DATE: 7/20/07
 CHECKED BY: C.R. YARBROUGH DATE: 10/12/07

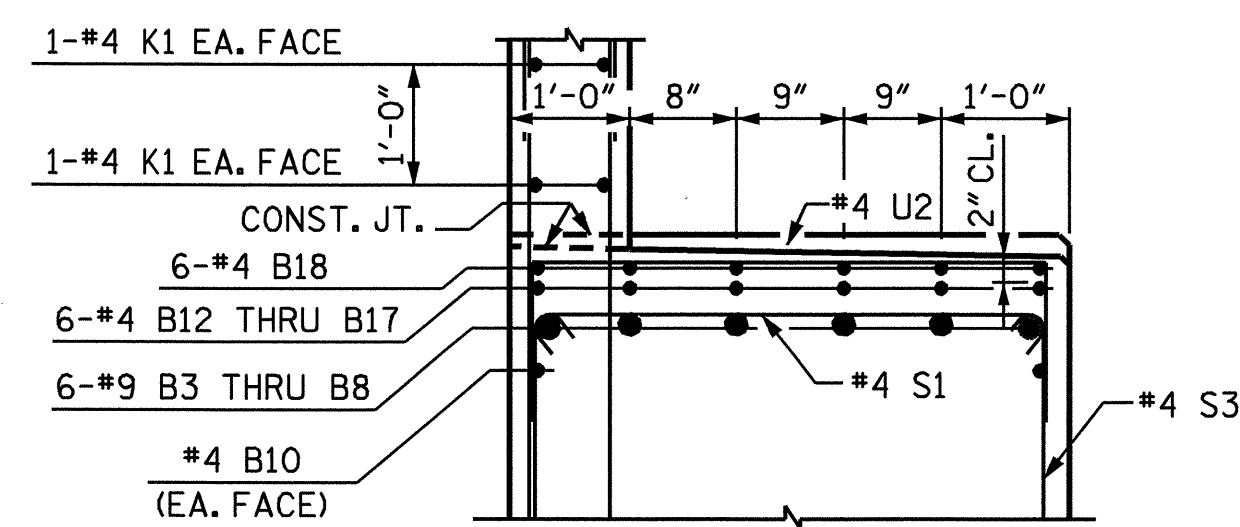
REVISIONS						SHEET NO. S-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			



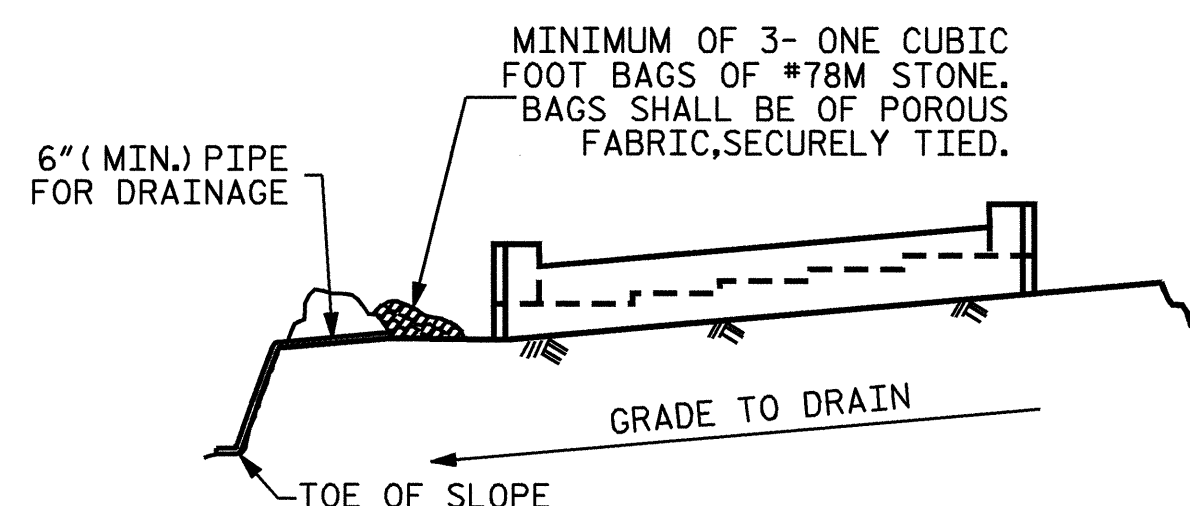
SECTION A-A
(SEE SHEET 1 OF 3)



SECTION B-B
(SEE SHEET 1 OF 3)



SECTION C-C
(SEE SHEET 1 OF 3)



MINIMUM OF 3- ONE CUBIC FOOT BAGS OF #78M STONE. BAGS SHALL BE OF POROUS FABRIC, SECURELY TIED.

6" (MIN.) PIPE FOR DRAINAGE

GRADE TO DRAIN

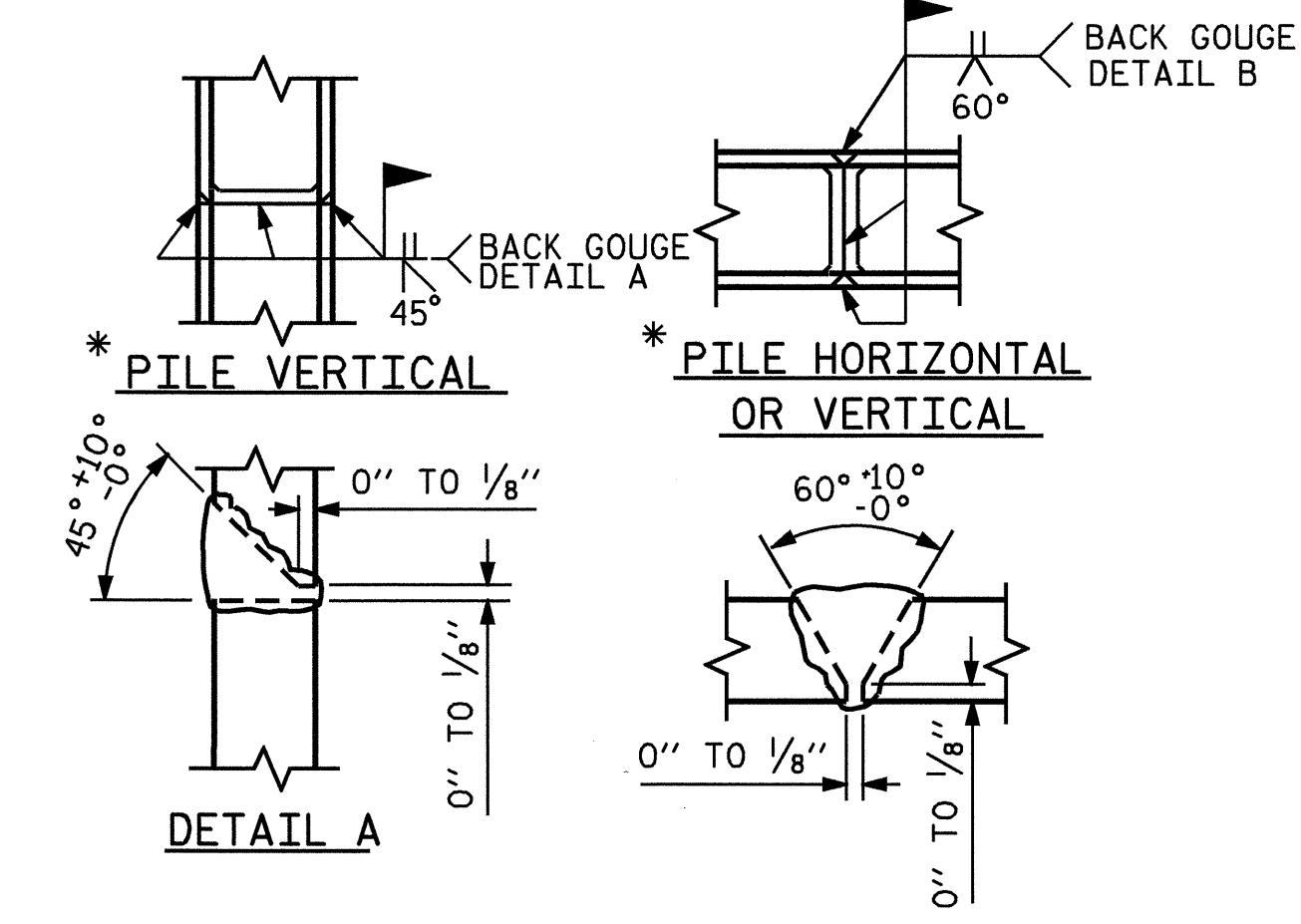
TOE OF SLOPE

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.

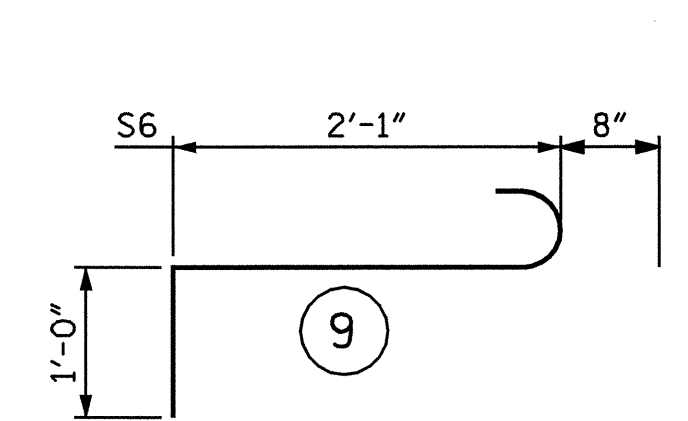
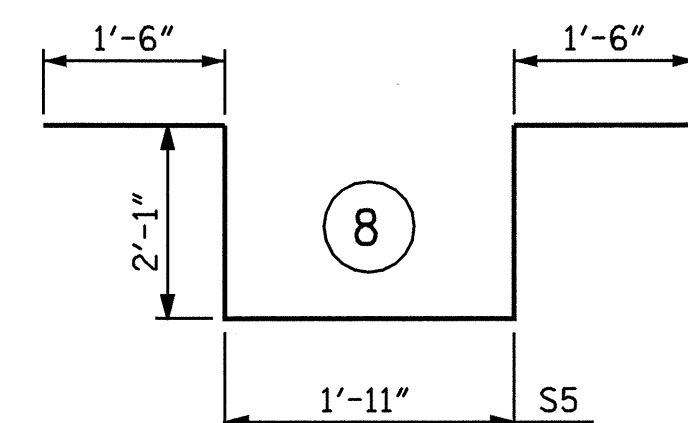
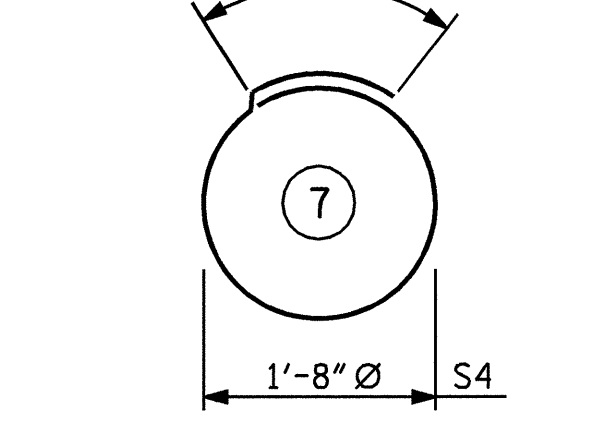
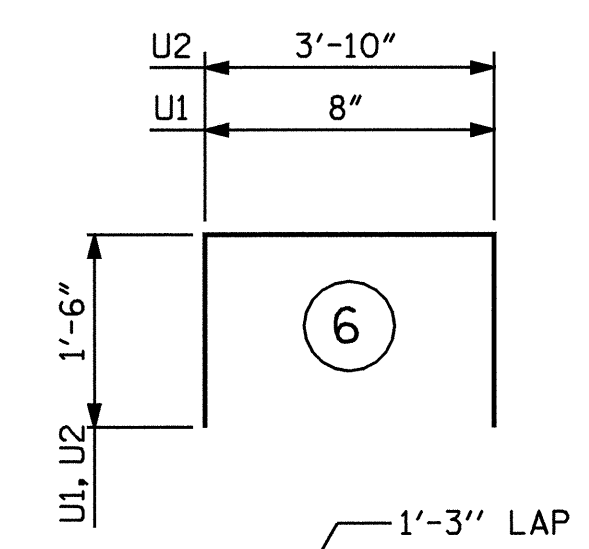
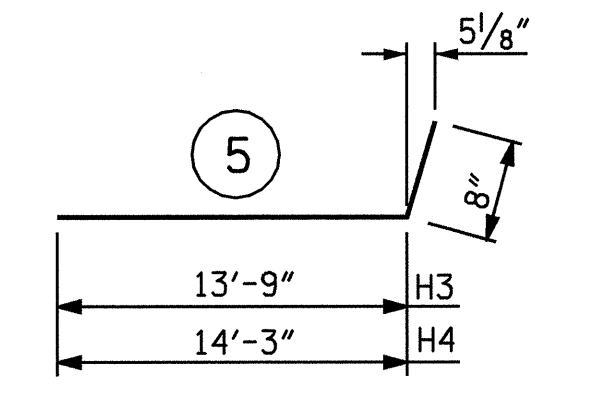
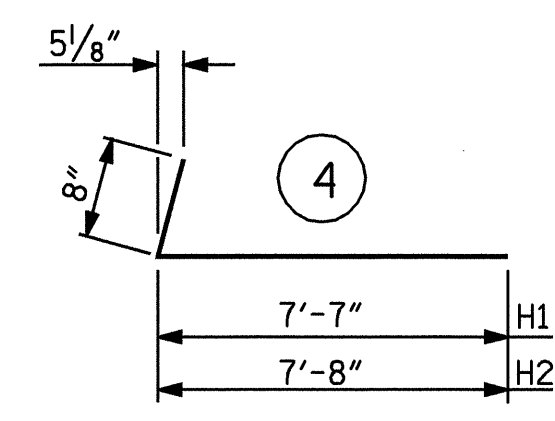
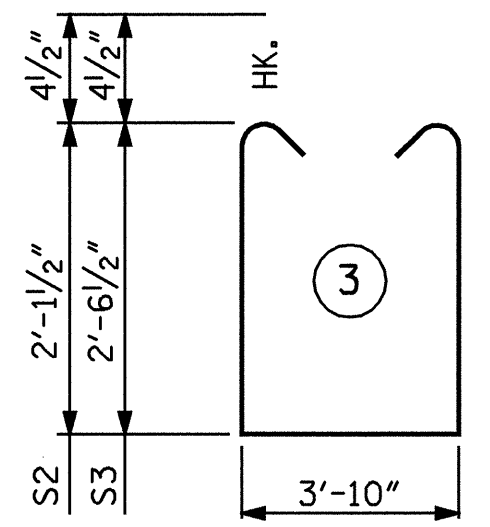
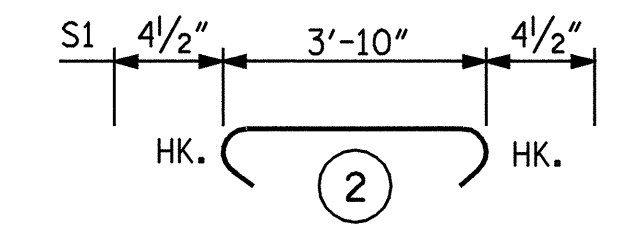
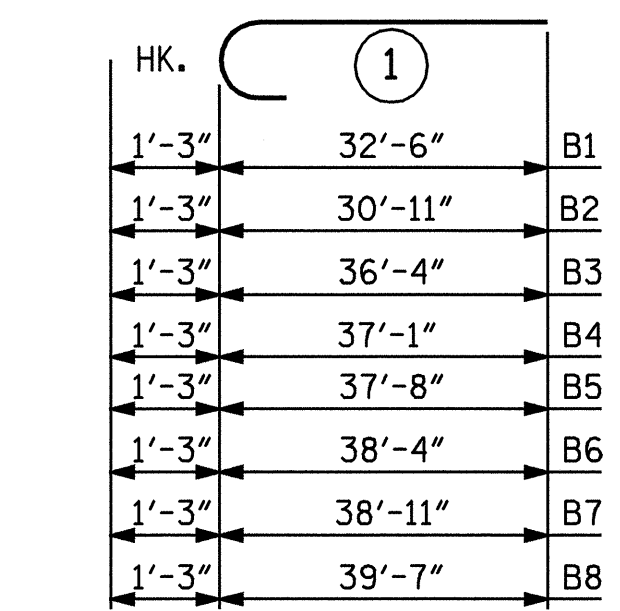
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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



PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

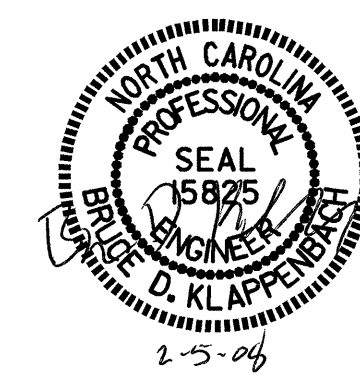
BILL OF MATERIAL

END BENT #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	9	1	33'-9"	1377
B2	6	9	1	32'-2"	656
B3	1	9	1	37'-7"	128
B4	1	9	1	38'-4"	130
B5	1	9	1	38'-11"	132
B6	1	9	1	39'-7"	135
B7	1	9	1	40'-2"	137
B8	1	9	1	40'-10"	139
B9	2	7	STR	58'-8"	240
B10	2	4	STR	30'-5"	41
B11	12	4	STR	21'-3"	170
B12	1	4	STR	22'-2"	15
B13	1	4	STR	22'-11"	15
B14	1	4	STR	23'-6"	16
B15	1	4	STR	24'-2"	16
B16	1	4	STR	24'-9"	17
B17	1	4	STR	25'-5"	17
B18	6	4	STR	2'-6"	10
B19	15	4	STR	3'-10"	38
H1	9	5	4	8'-3"	77
H2	9	5	4	8'-4"	78
H3	10	5	5	14'-5"	150
H4	10	5	5	14'-11"	156
K1	24	4	STR	21'-3"	341
K2	10	4	STR	4'-8"	31
S1	74	4	2	4'-7"	227
S2	27	4	3	8'-10"	159
S3	47	4	3	9'-8"	303
S4	18	4	7	6'-6"	78
S5	1	6	8	9'-1"	14
S6	3	6	9	3'-9"	17
U1	48	5	6	3'-8"	184
U2	19	4	6	6'-10"	87
V1	96	5	STR	5'-11"	592
V2	26	5	STR	7'-7"	206
V3	38	5	STR	9'-0"	357
REINFORCING STEEL					LBS 6,486
CLASS A CONCRETE BREAKDOWN					
POUR #1					
CAP & LOWER PART OF WINGS					29.2 CU. YDS.
POUR #2					
BACKWALL & UPPER PART OF WINGS					13.9 CU. YDS.
CLASS A CONCRETE TOTAL					43.1 CU. YDS.
HP 12 x 53 STEEL PILES					
NO. 10					LIN. FT. 850

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #1**

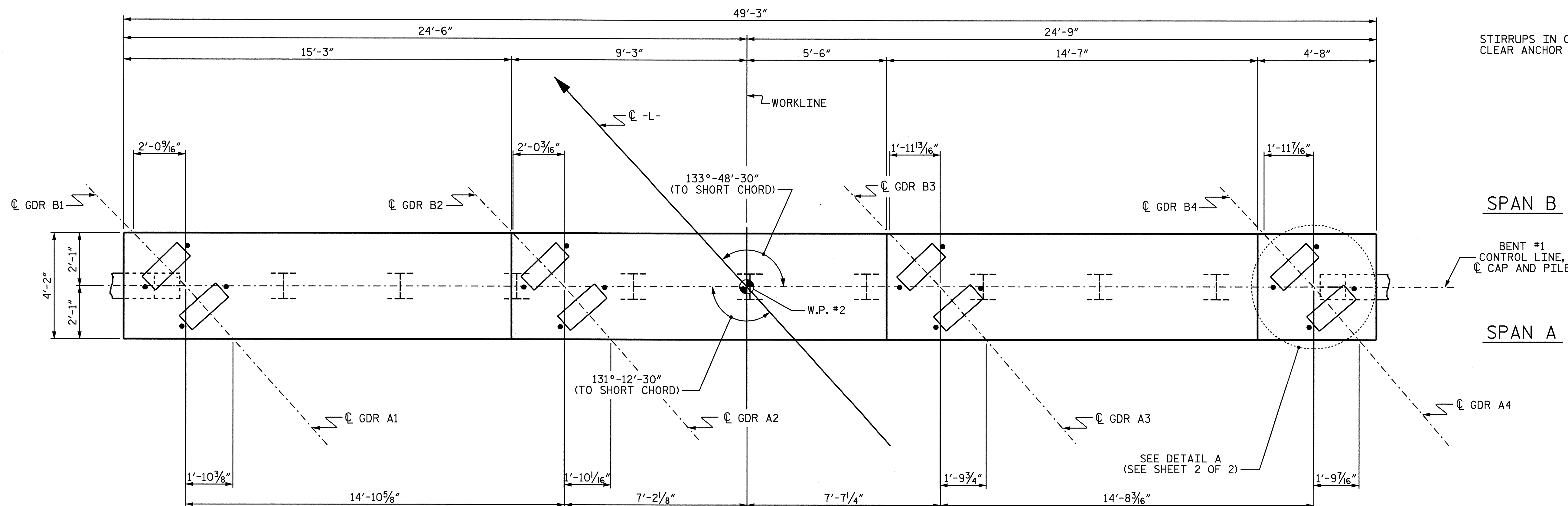


REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 45

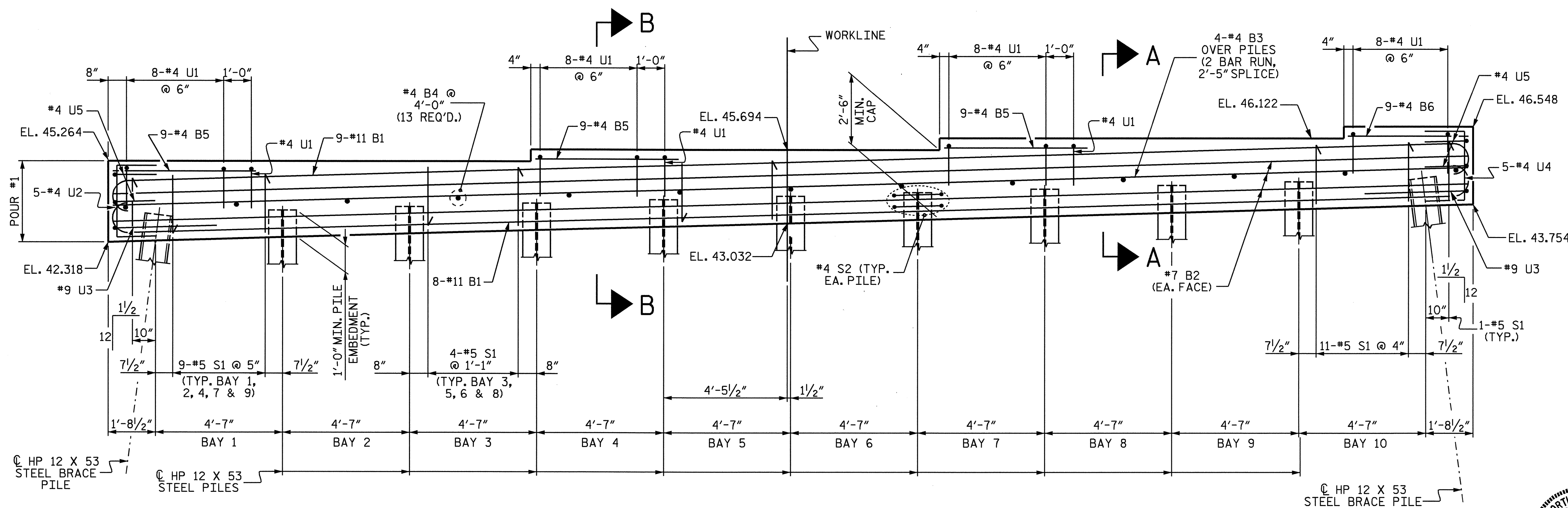
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.



PLAN

TOP OF PILE ELEVATIONS FOR BENT #1	
PILE	ELEVATION
1	43.382
2	43.516
3	43.650
4	43.783
5	43.917
6	44.051
7	44.184
8	44.318
9	44.452
10	44.585
11	44.719



ELEVATION

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT #1

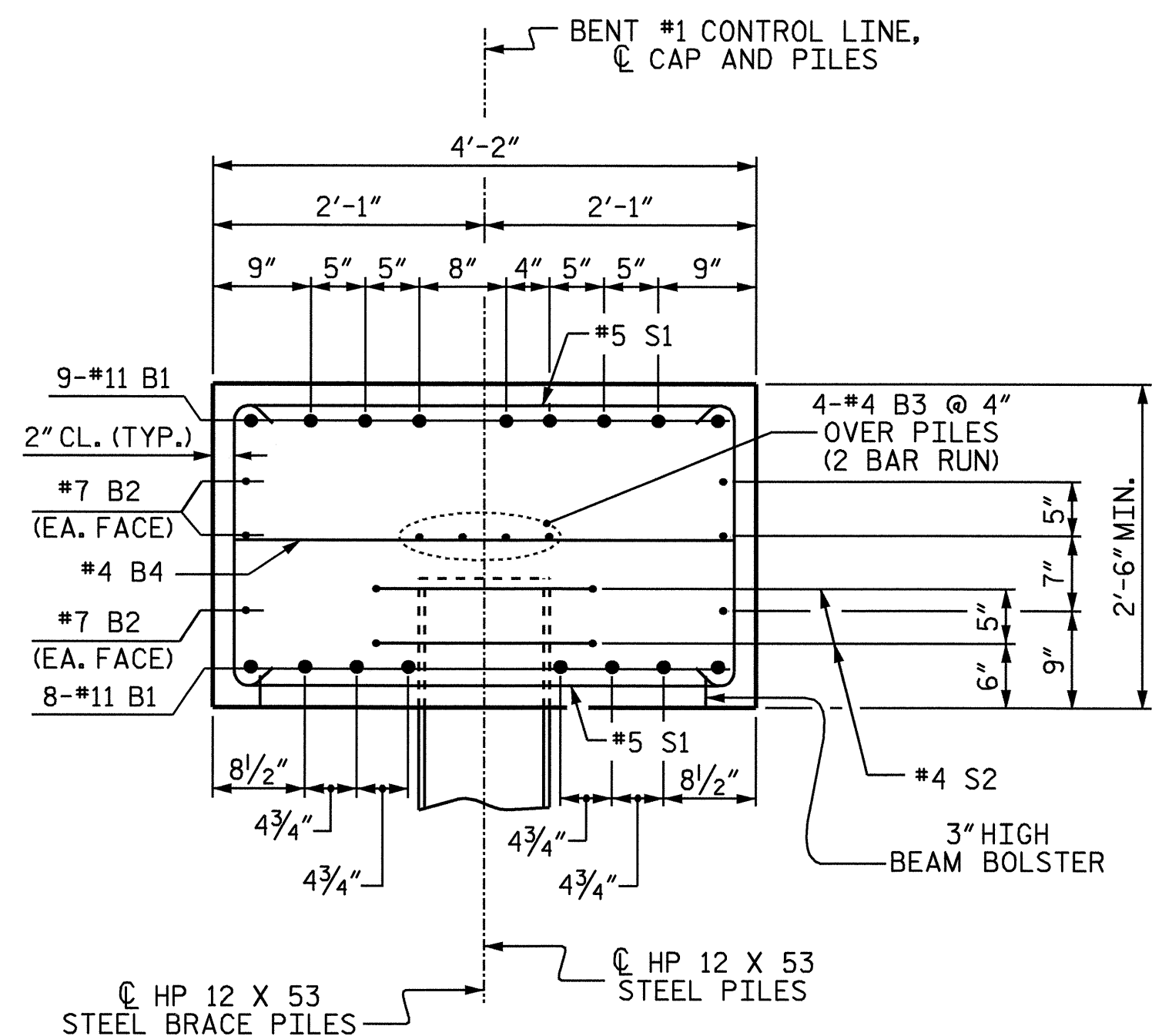


REVISIONS

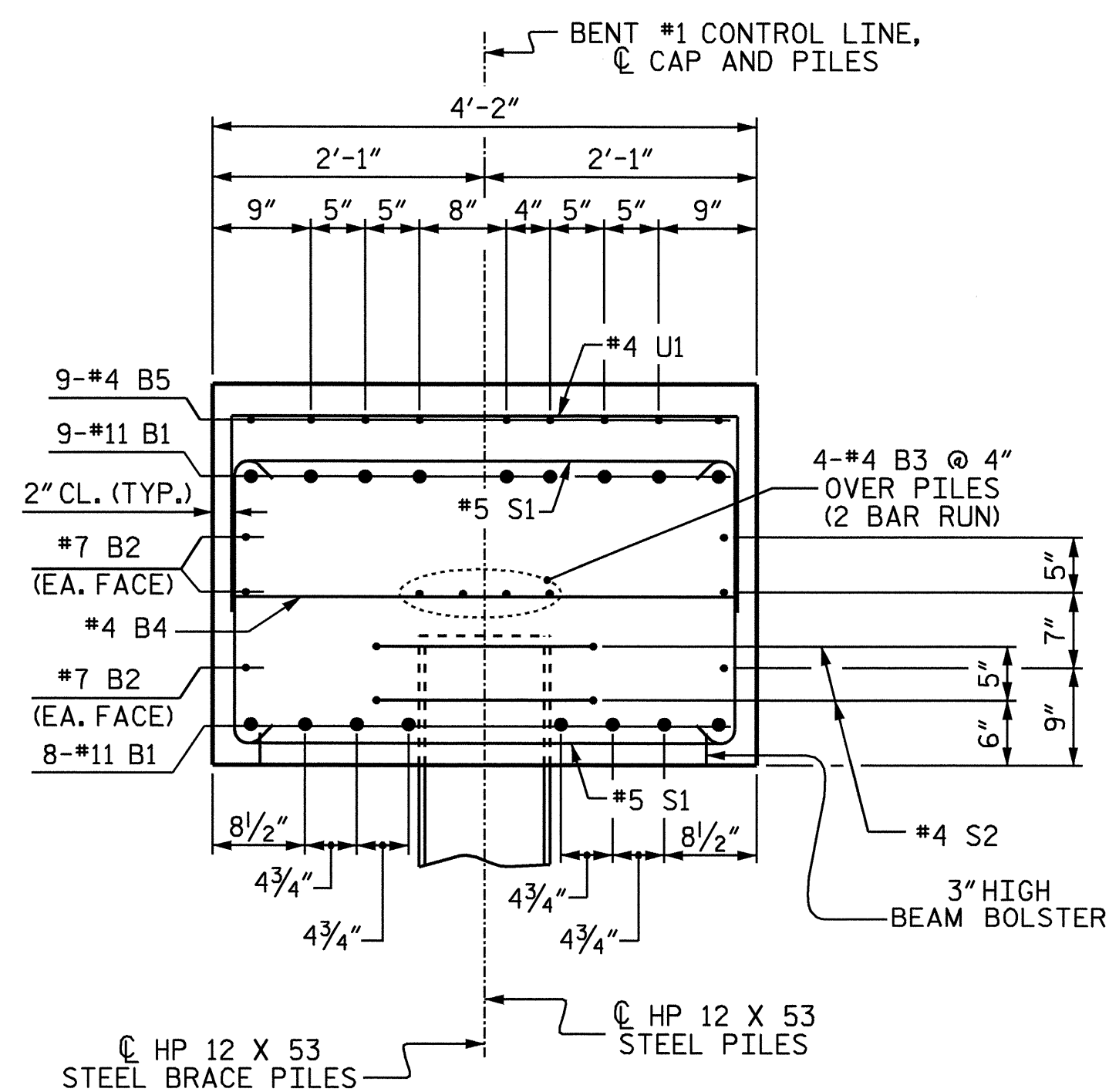
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	S-30
TOTAL SHEETS	45

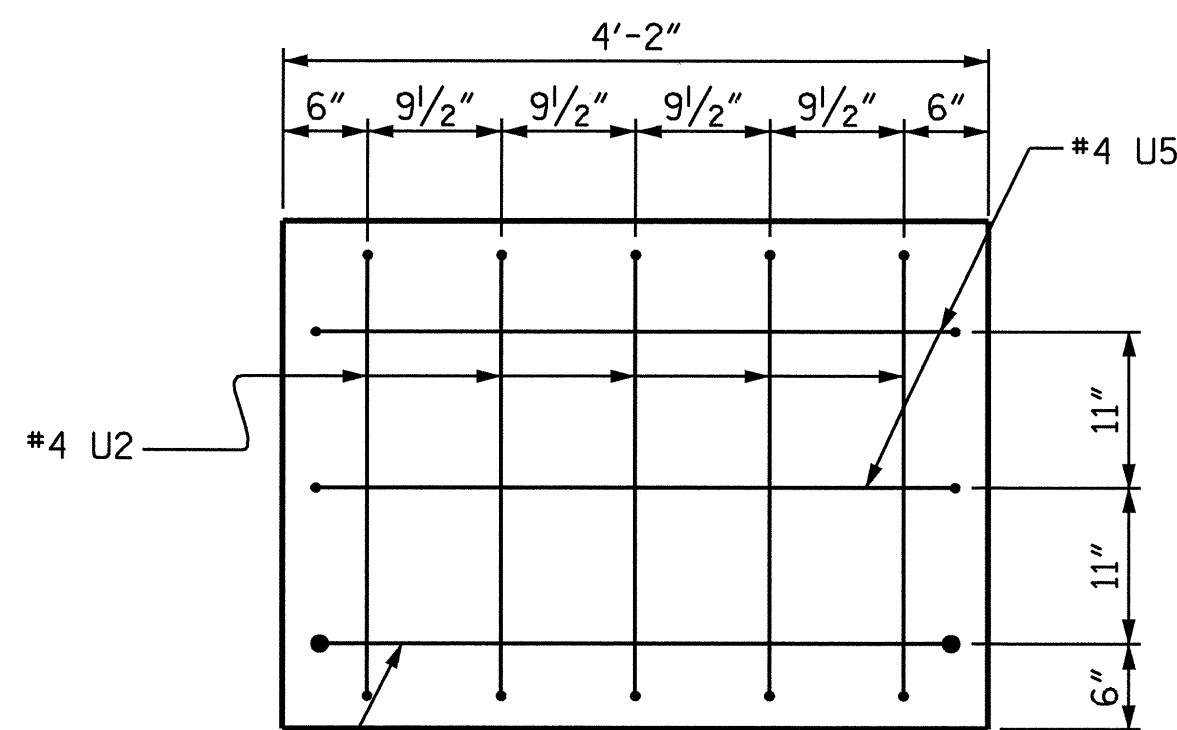
DRAWN BY: A. SORSENGINH DATE: 9/6/07
 CHECKED BY: H.T. BARBOUR DATE: 12/1/07



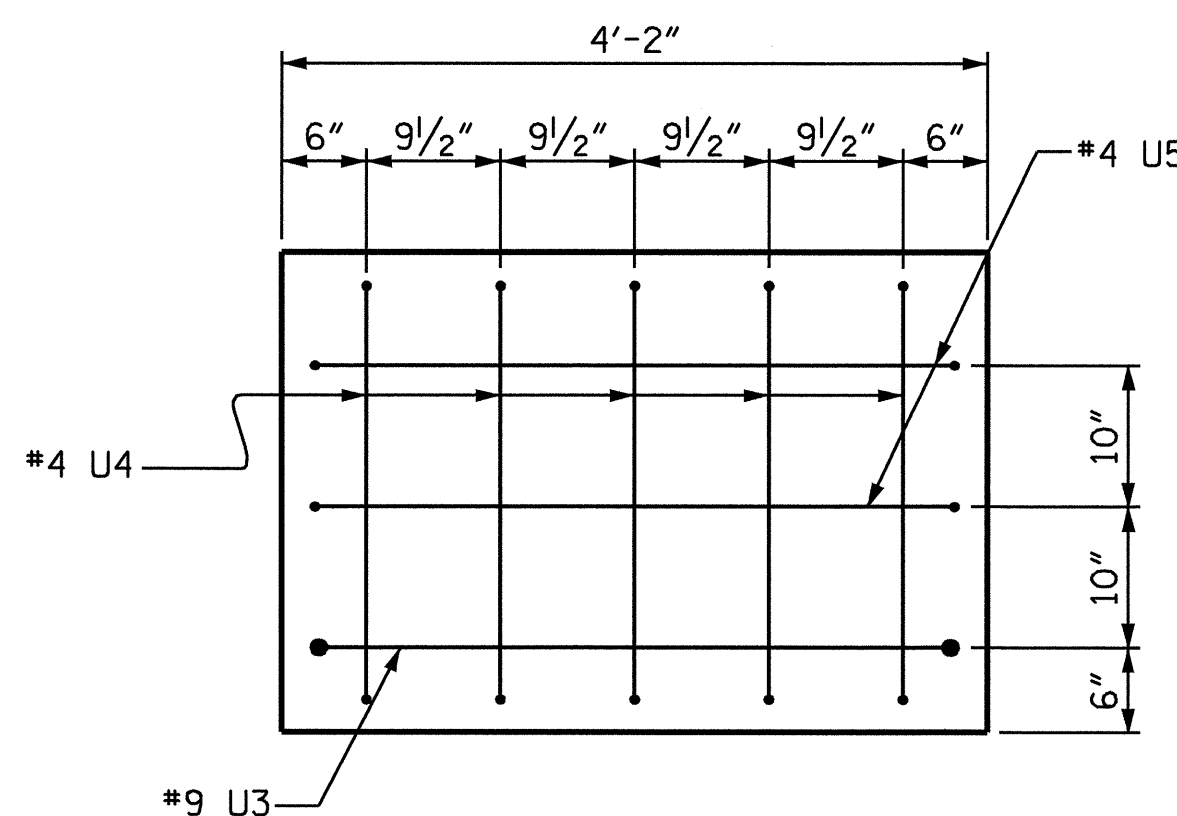
SECTION A-A



SECTION B-B

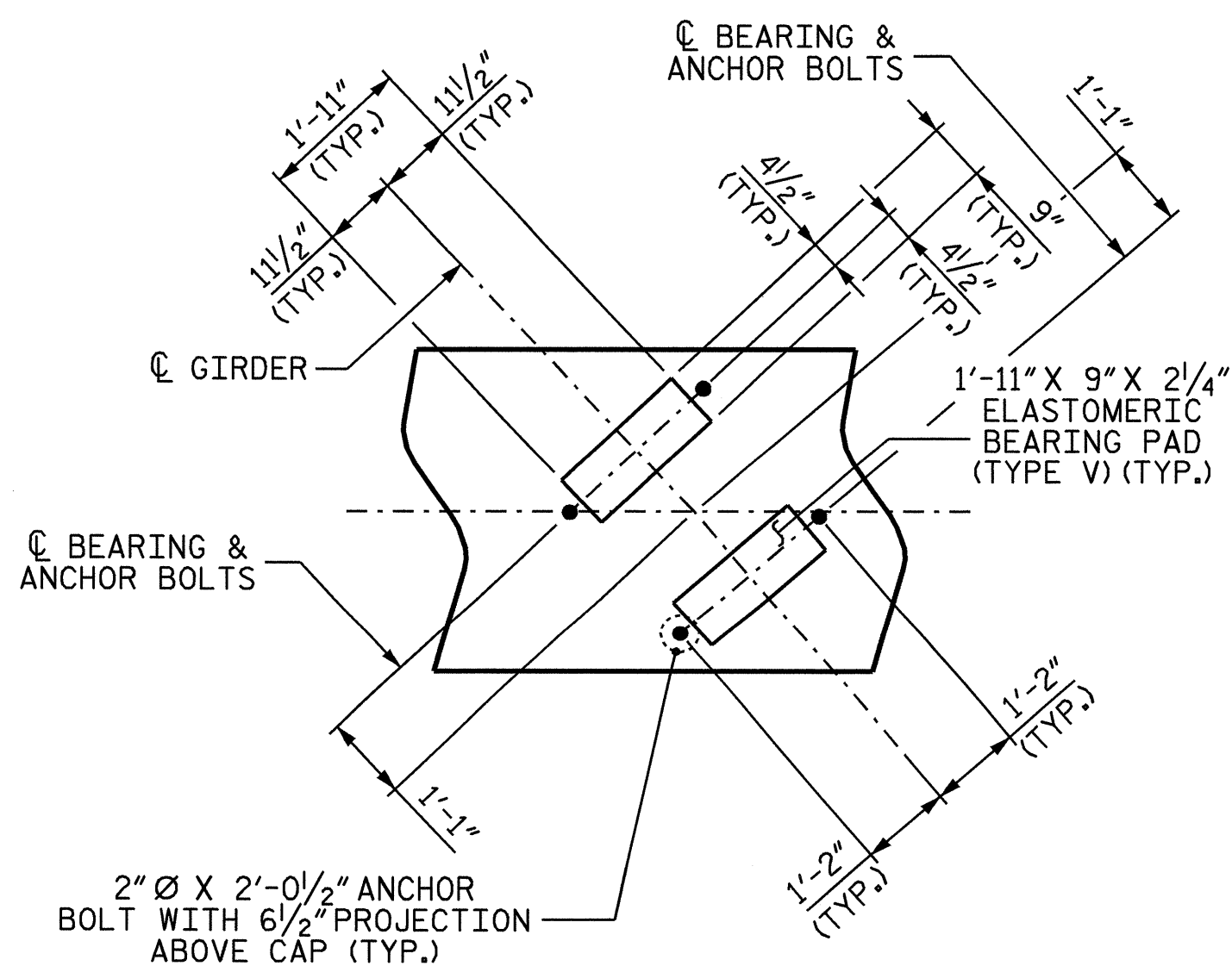


LEFT END VIEW



RIGHT END VIEW

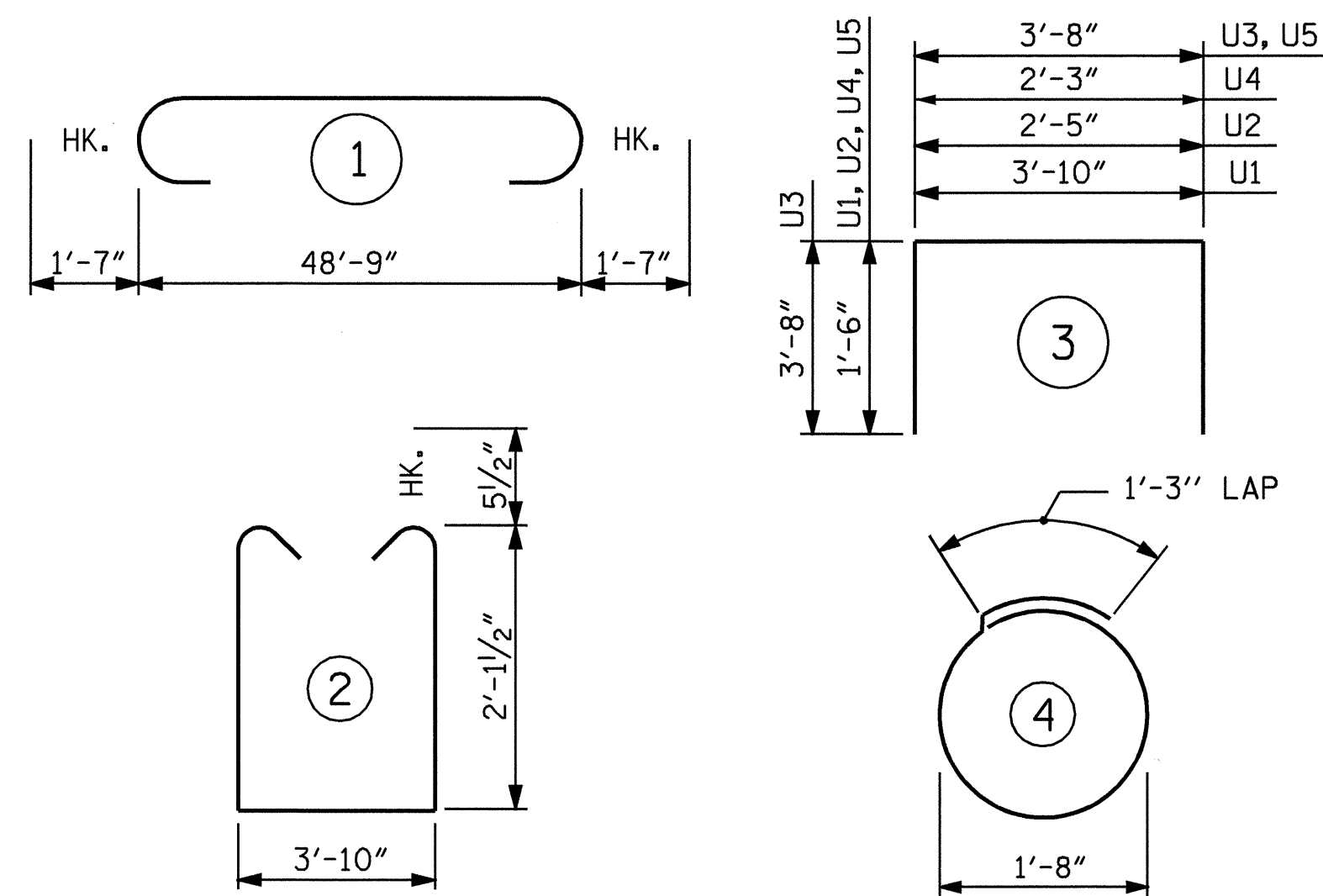
2" MIN. CONCRETE COVER FROM END OF CAP
REQUIRED FOR ALL #4 U1, #4 U2, #4 U4 AND #9 U3 BARS.
#4 U1, #4 U2, #4 U4 AND #9 U3 BARS MAY BE SHIFTED
UP TO 2" TO CLEAR "B" BARS.



DETAIL A

(TYP. EACH GIRDER)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

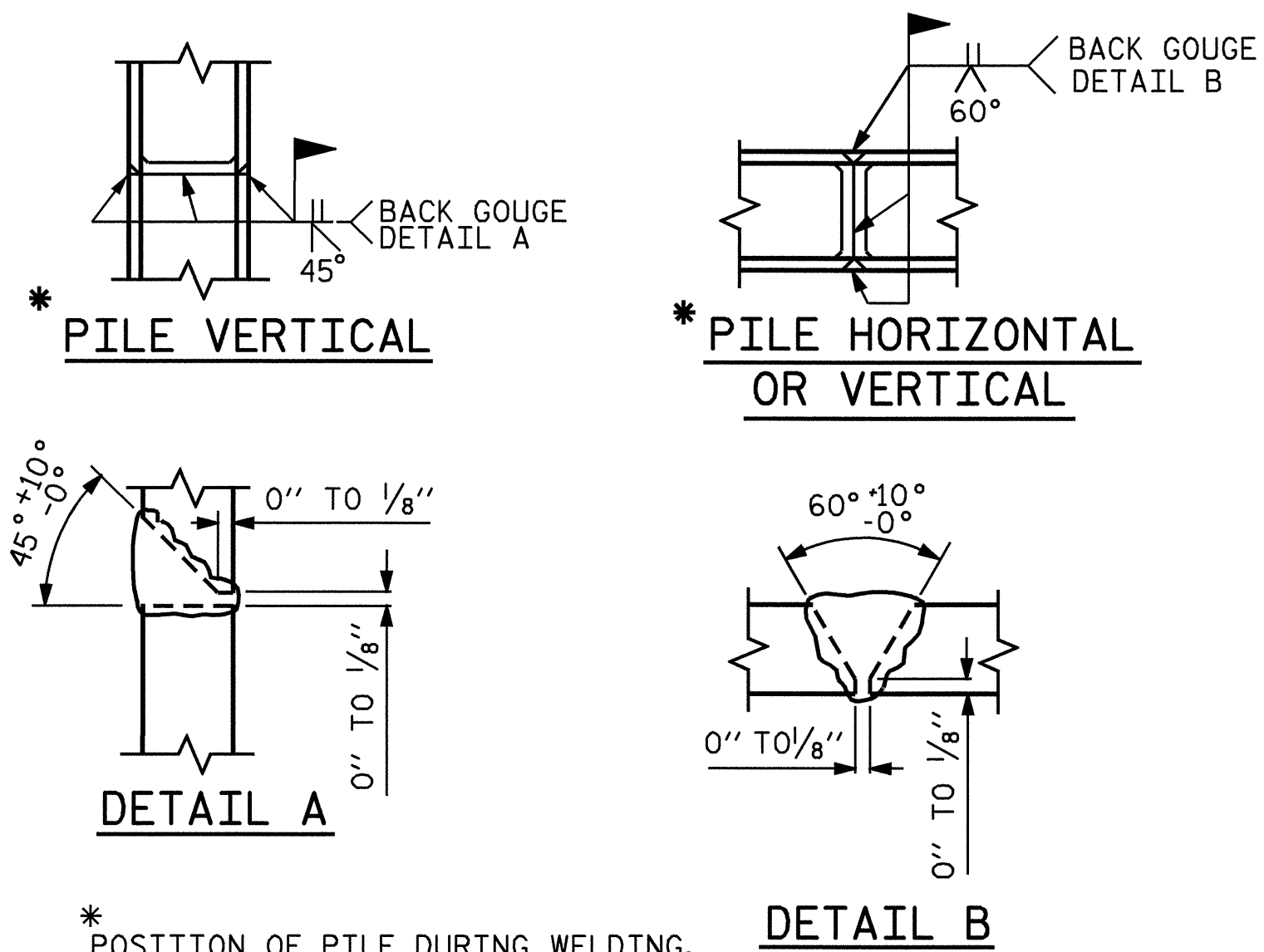
BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	17	#11	1	51'-11"	4689
B2	6	#7	STR	48'-11"	600
B3	8	#4	STR	25'-10"	138
B4	13	#4	STR	3'-10"	33
B5	27	#4	STR	5'-2"	93
B6	9	#4	STR	4'-4"	26
S1	74	#5	2	9'-0"	695
S2	22	#4	4	6'-6"	96
U1	35	#4	3	6'-10"	160
U2	5	#4	3	5'-5"	18
U3	2	#9	3	11'-0"	75
U4	5	#4	3	5'-3"	18
U5	4	#4	3	6'-8"	18

REINFORCING STEEL = 6659 LBS

CLASS A CONCRETE BREAKDOWN
POUR #1 (CAP) 20.8 C.Y.
TOTAL 20.8 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES
NO. 11 LIN. FT. 825.0



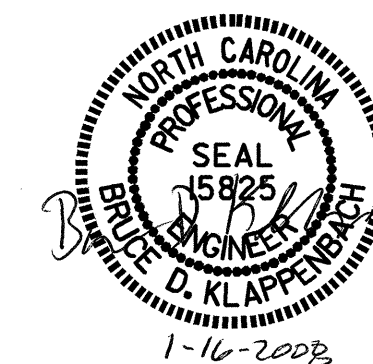
PILE SPLICE DETAILS

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #1

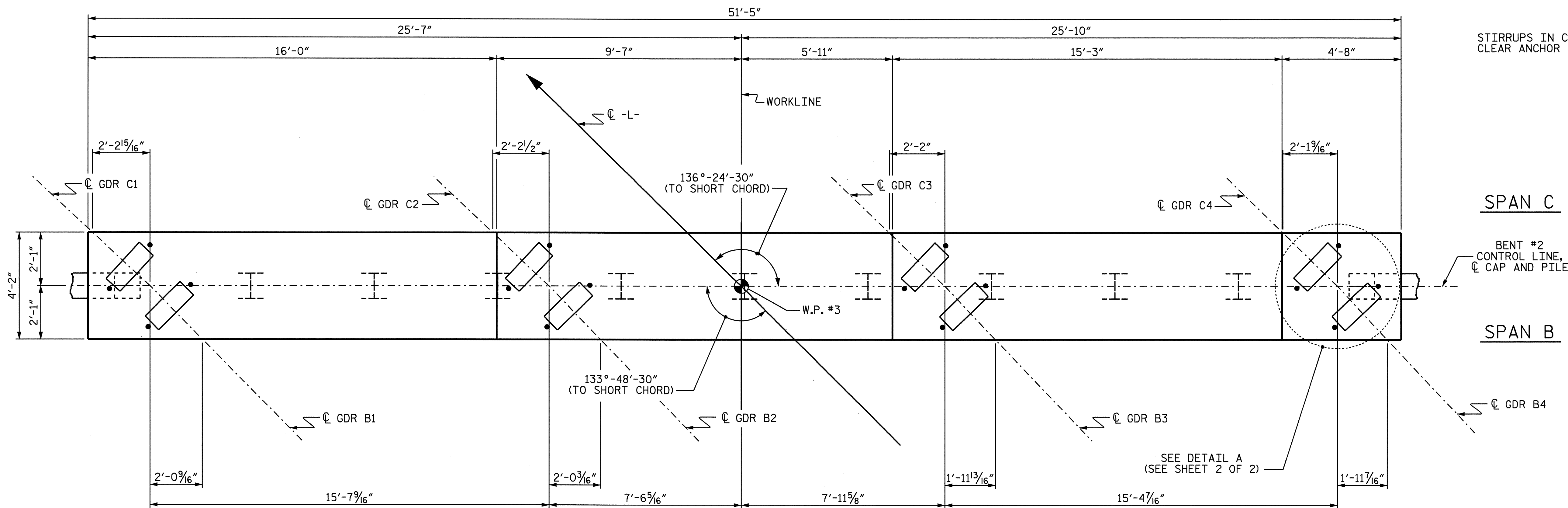


REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DRAWN BY: A. SORSENGINH DATE: 9/4/07
CHECKED BY: H. T. BARBOUR DATE: 12/1/07

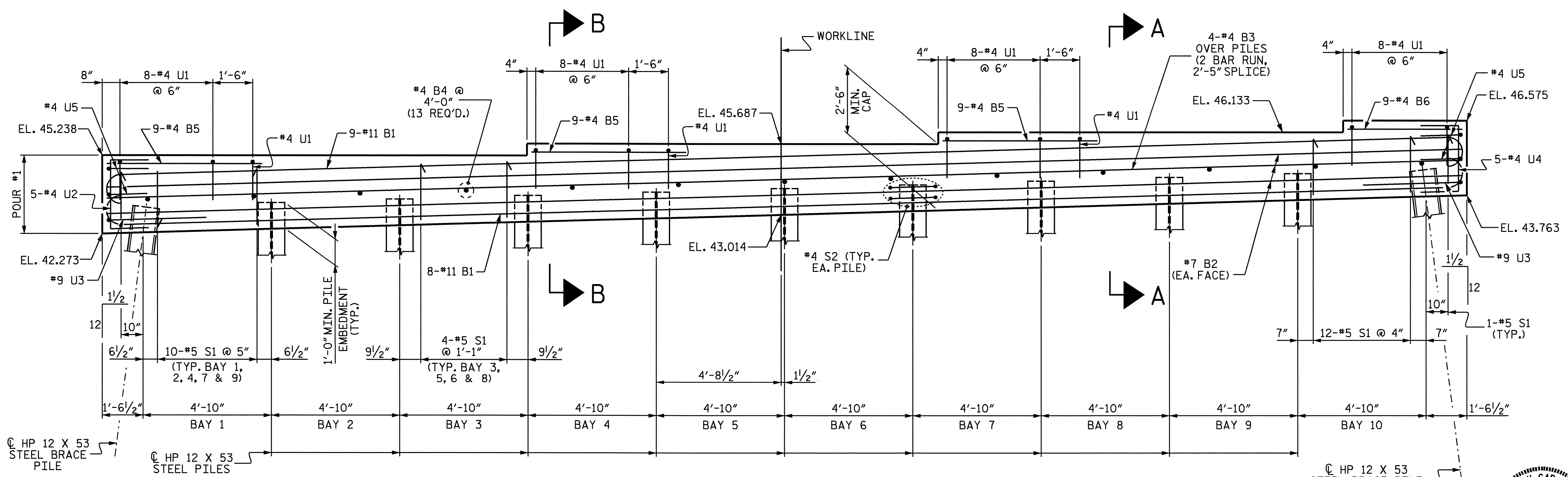
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.



PLAN

TOP OF PILE ELEVATIONS FOR BENT #2	
PILE	ELEVATION
1	43.332
2	43.472
3	43.612
4	43.752
5	43.892
6	44.033
7	44.173
8	44.313
9	44.453
10	44.593
11	44.733



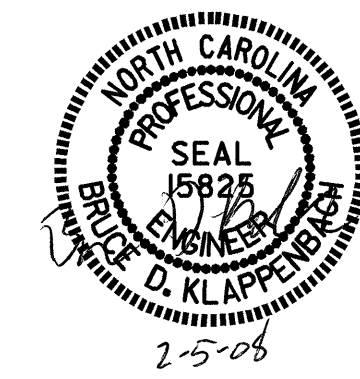
ELEVATION

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE BENT #2



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			45

DRAWN BY: A. SORSENGINH DATE: 9/6/07
 CHECKED BY: H.T. BARBOUR DATE: 12/1/07

01-FEB-2008 15:22
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 asorsenginh

BILL OF MATERIAL

BENT #2

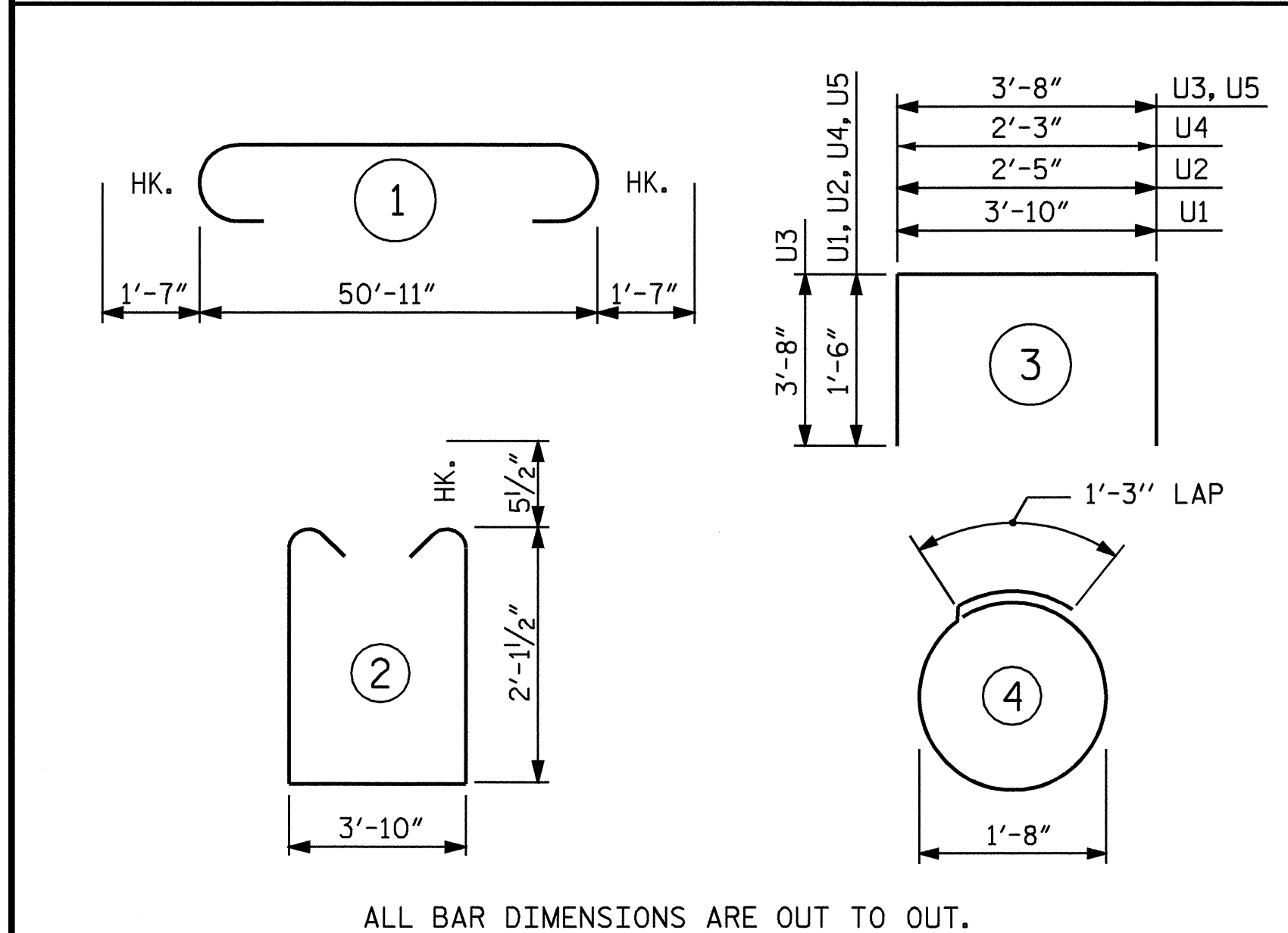
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	17	#11	1	54'-1"	4885
B2	6	#7	STR	51'-1"	626
B3	8	#4	STR	26'-9"	143
B4	13	#4	STR	3'-10"	33
B5	27	#4	STR	5'-10"	105
B6	9	#4	STR	4'-4"	26
S1	80	#5	2	9'-0"	751
S2	22	#4	4	6'-6"	96
U1	35	#4	3	6'-10"	160
U2	5	#4	3	5'-5"	18
U3	2	#9	3	11'-0"	75
U4	5	#4	3	5'-3"	18
U5	4	#4	3	6'-8"	18

REINFORCING STEEL = 6954 LBS

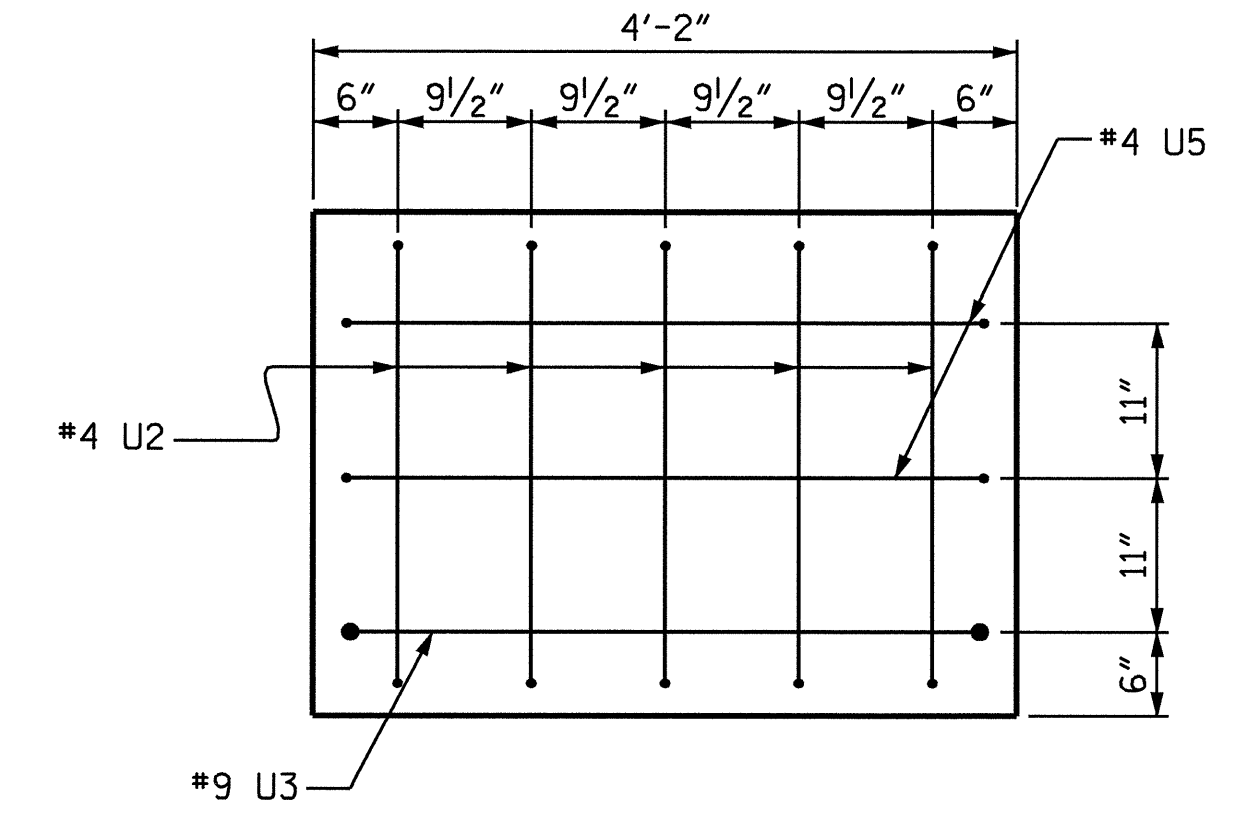
CLASS A CONCRETE BREAKDOWN
POUR #1 (CAP) 21.8 C.Y.
TOTAL 21.8 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES
NO. 11 LIN. FT. 880.0

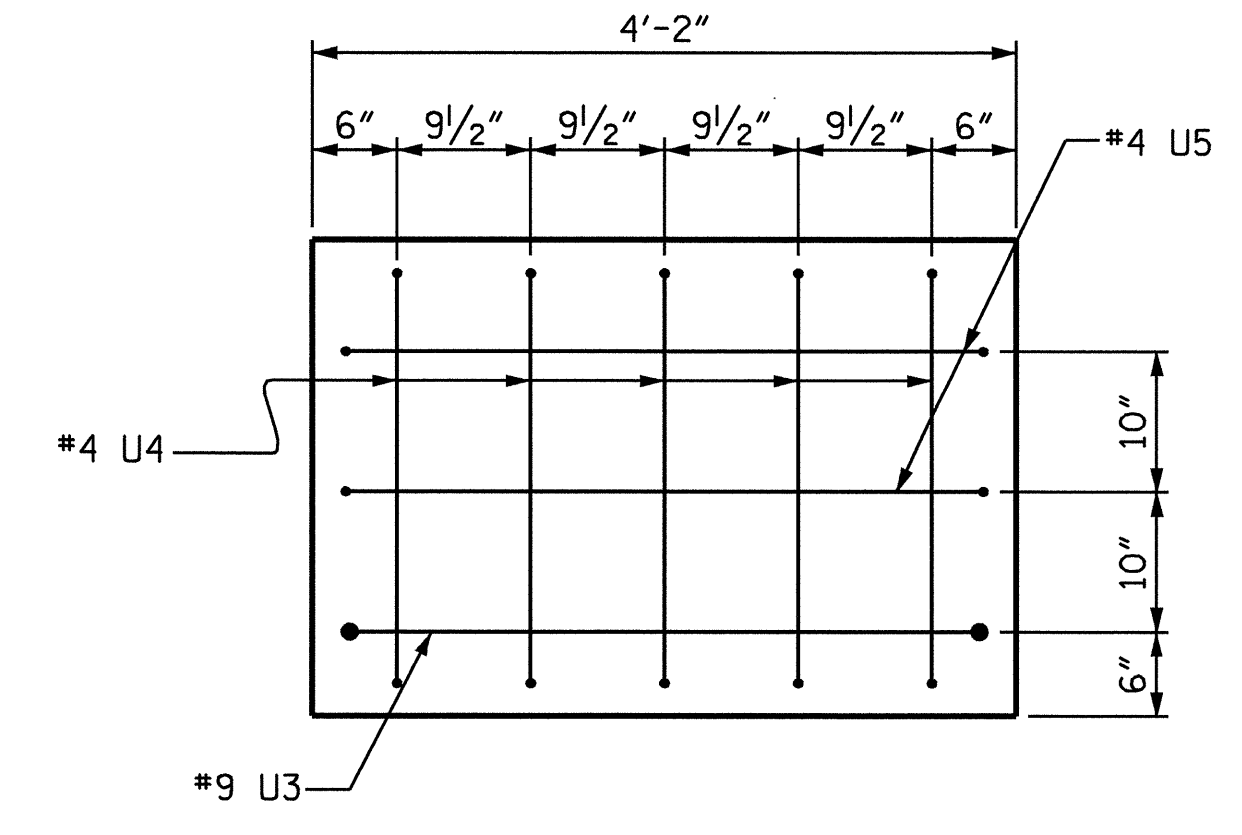
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

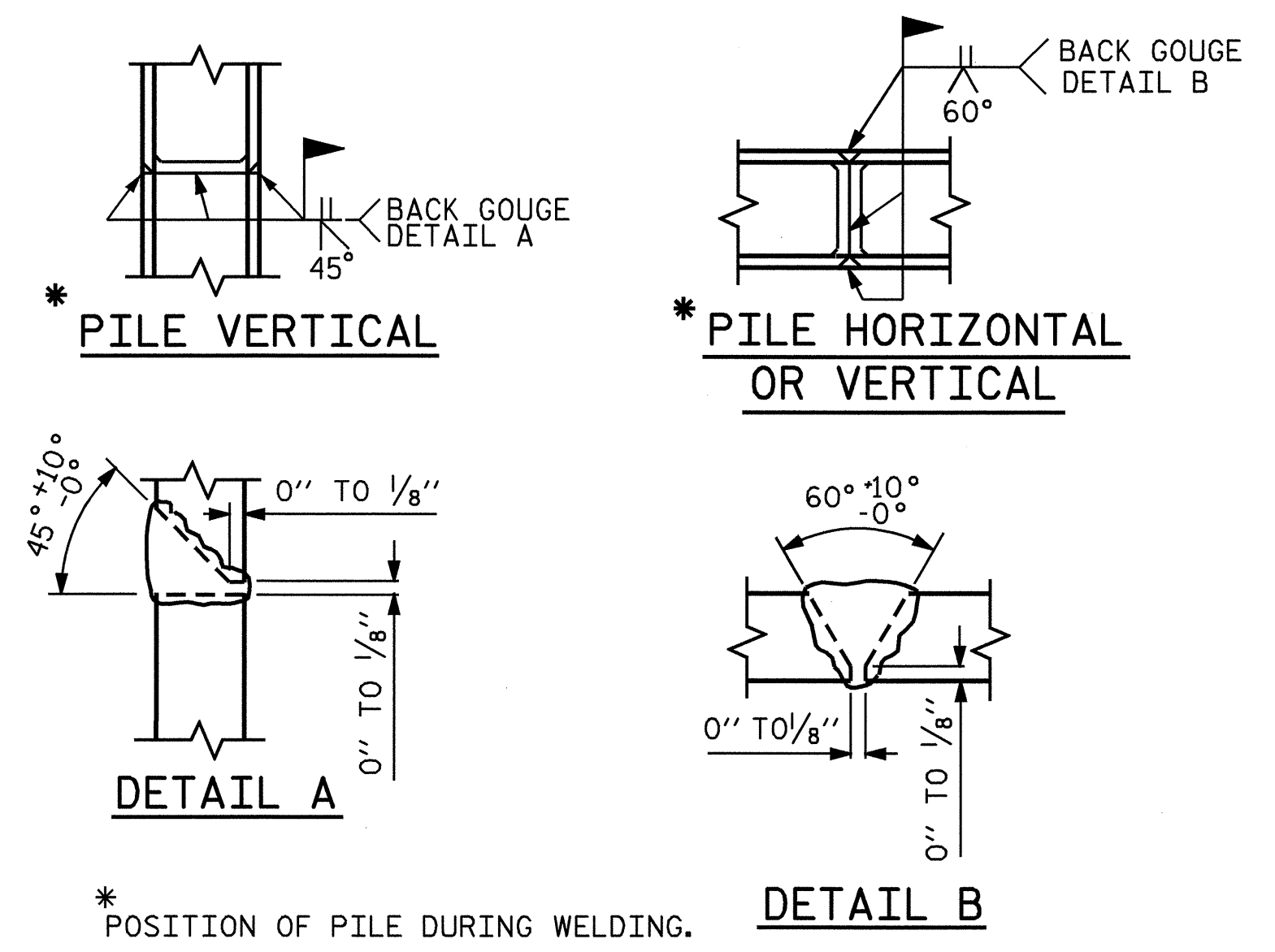


LEFT END VIEW

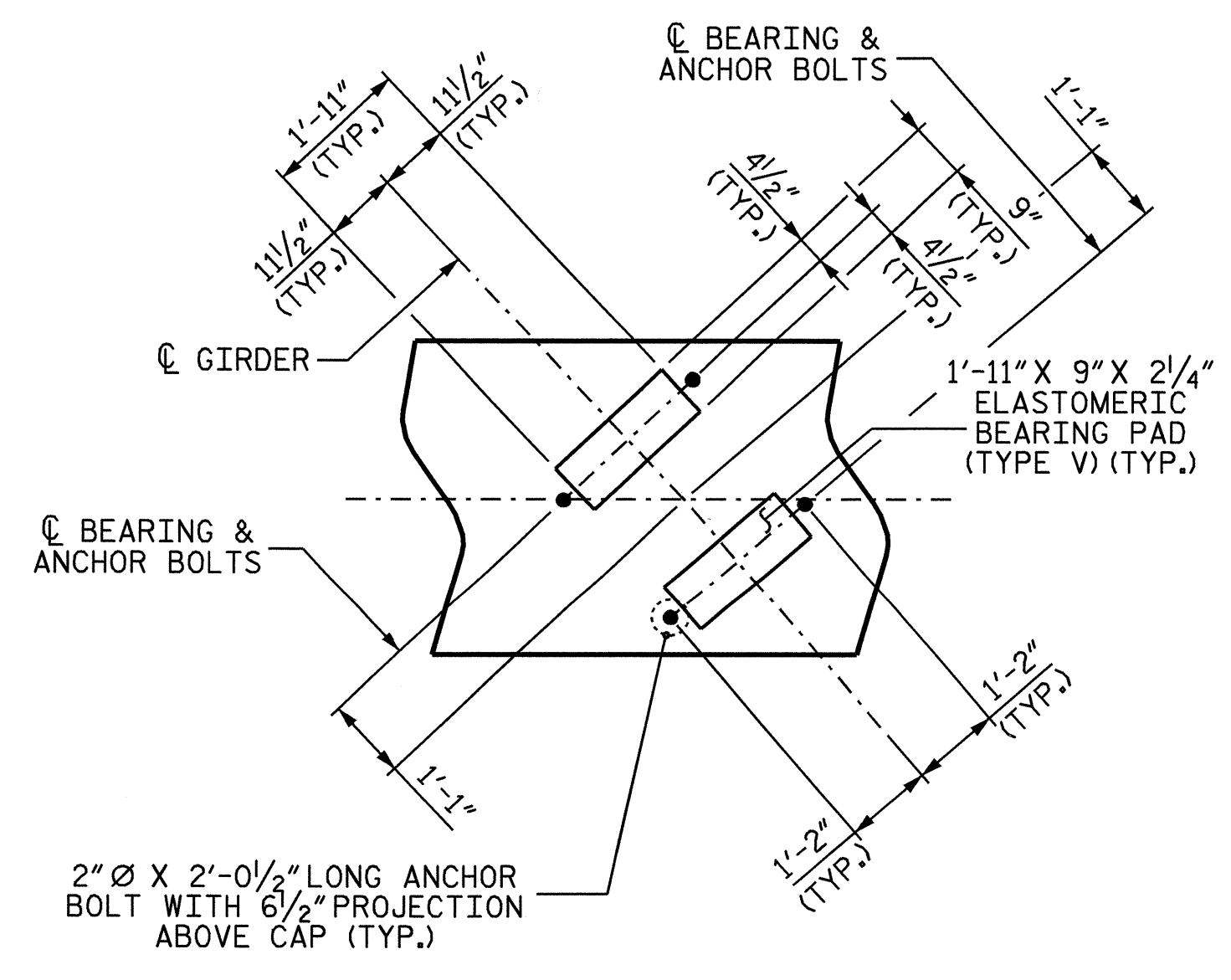


RIGHT END VIEW

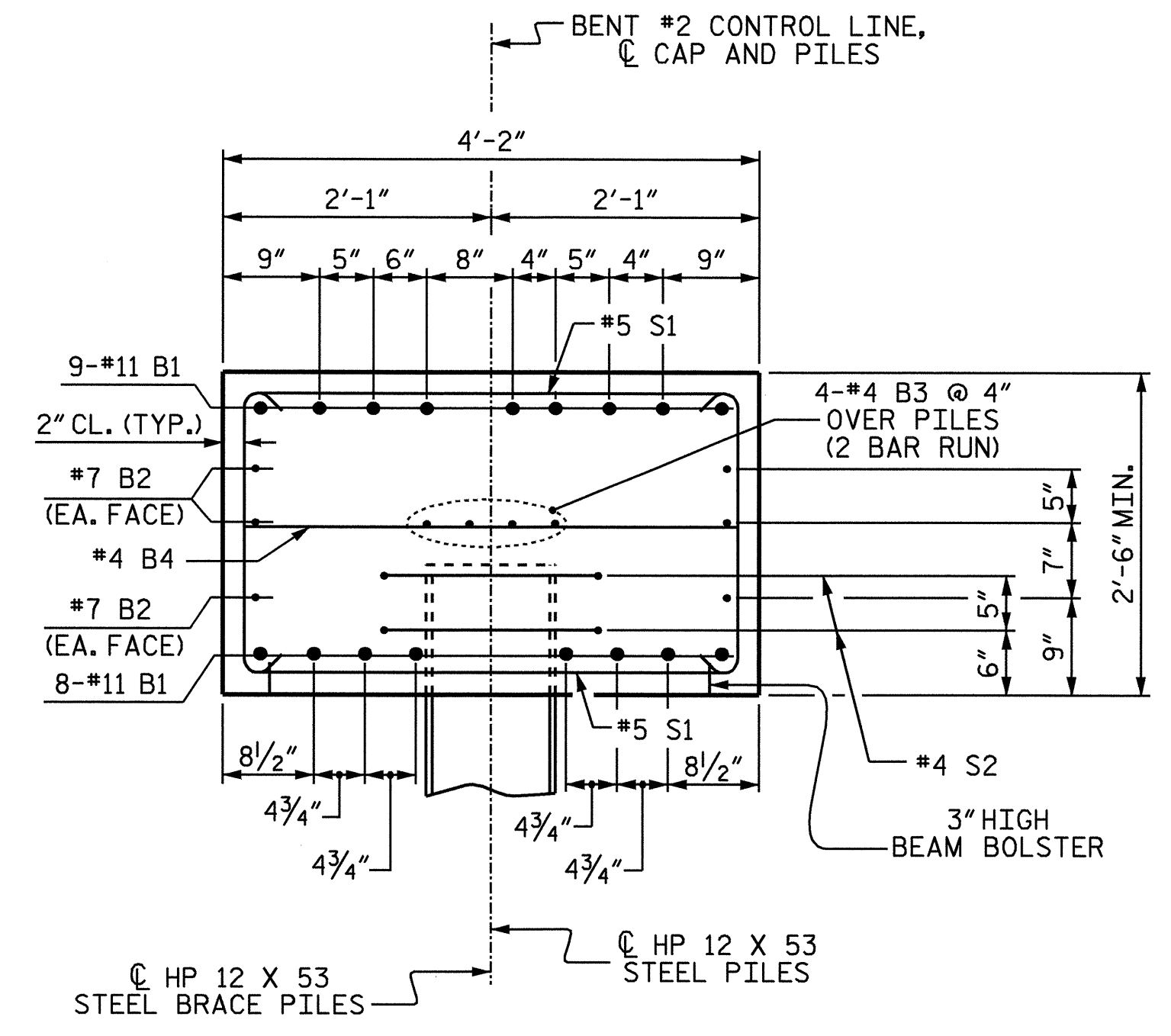
2" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4 U1, #4 U2, #4 U4 AND #9 U3 BARS.
#4 U1, #4 U2, #4 U4 AND #9 U3 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



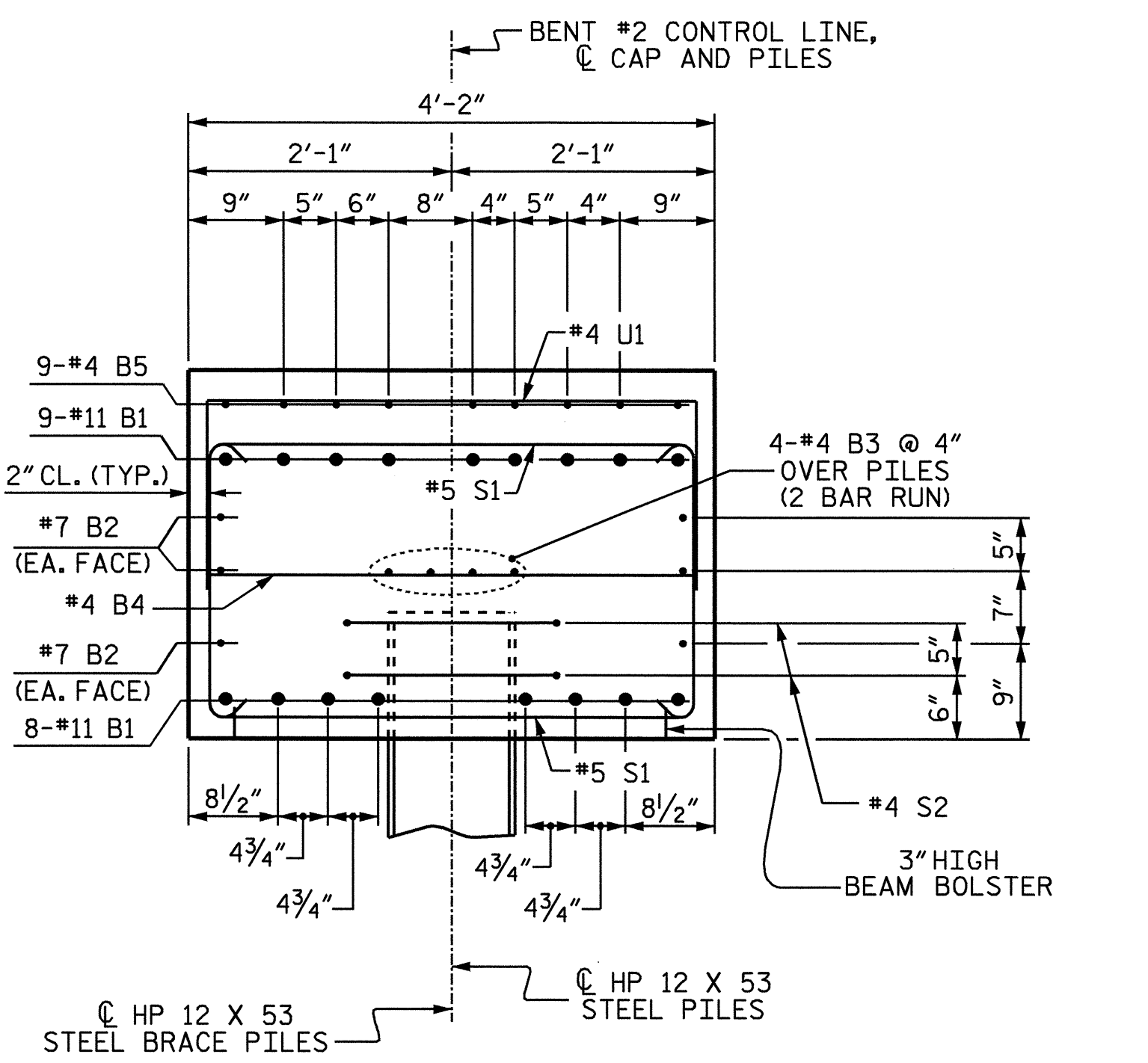
PILE SPLICE DETAILS



DETAIL A
(TYP. EACH GIRDER)



SECTION A-A



SECTION B-B

DRAWN BY: A. SORSENGINH DATE: 9/4/07
CHECKED BY: H. T. BARBOUR DATE: 12/1/07

16-JAN-2008 14:47
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PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-
SHEET 2 OF 2

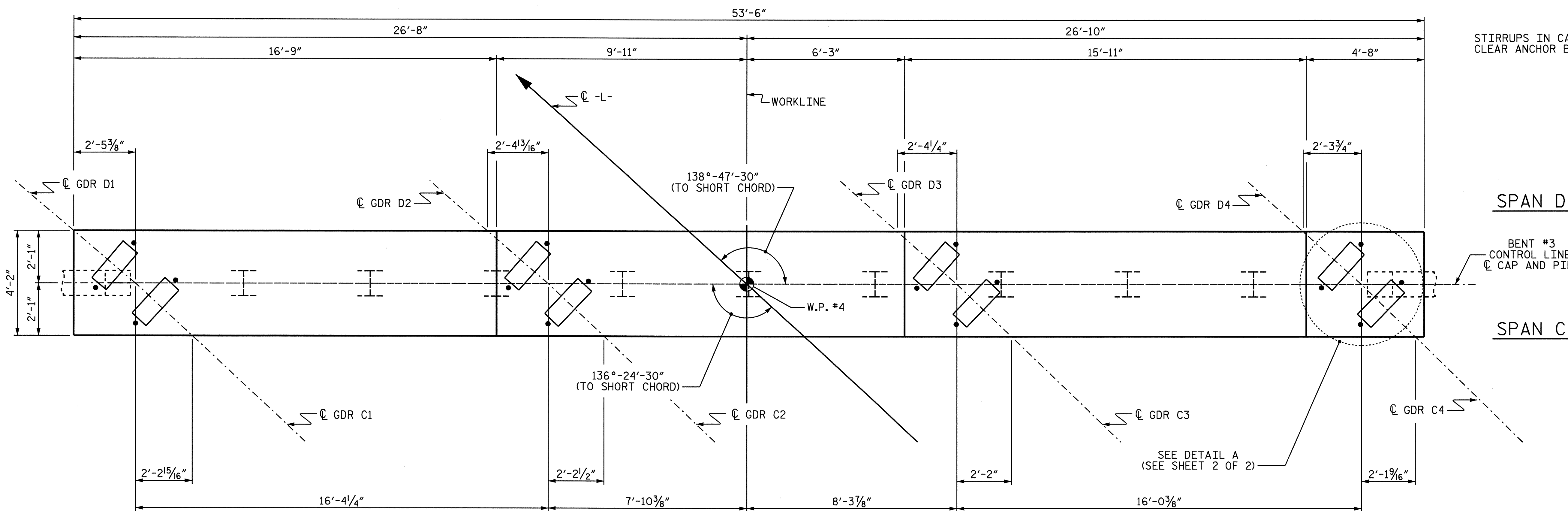
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 45

SUBSTRUCTURE BENT #2

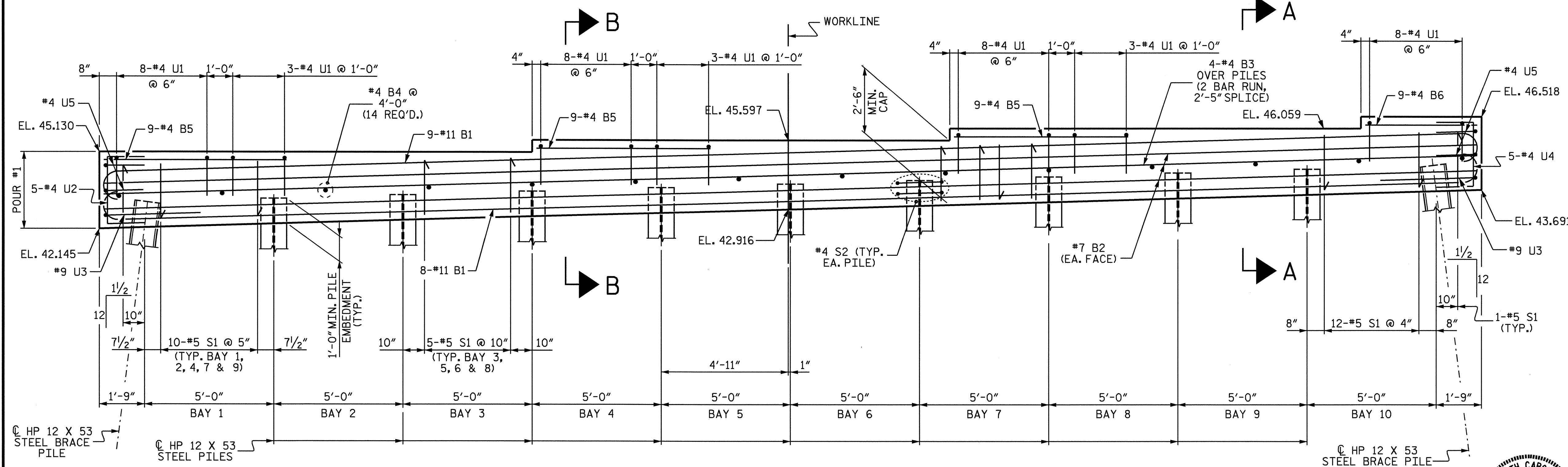
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.



PLAN

PILE	ELEVATION
1	43.210
2	43.355
3	43.499
4	43.644
5	43.788
6	43.933
7	44.077
8	44.222
9	44.366
10	44.511
11	44.655



ELEVATION

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT #3**



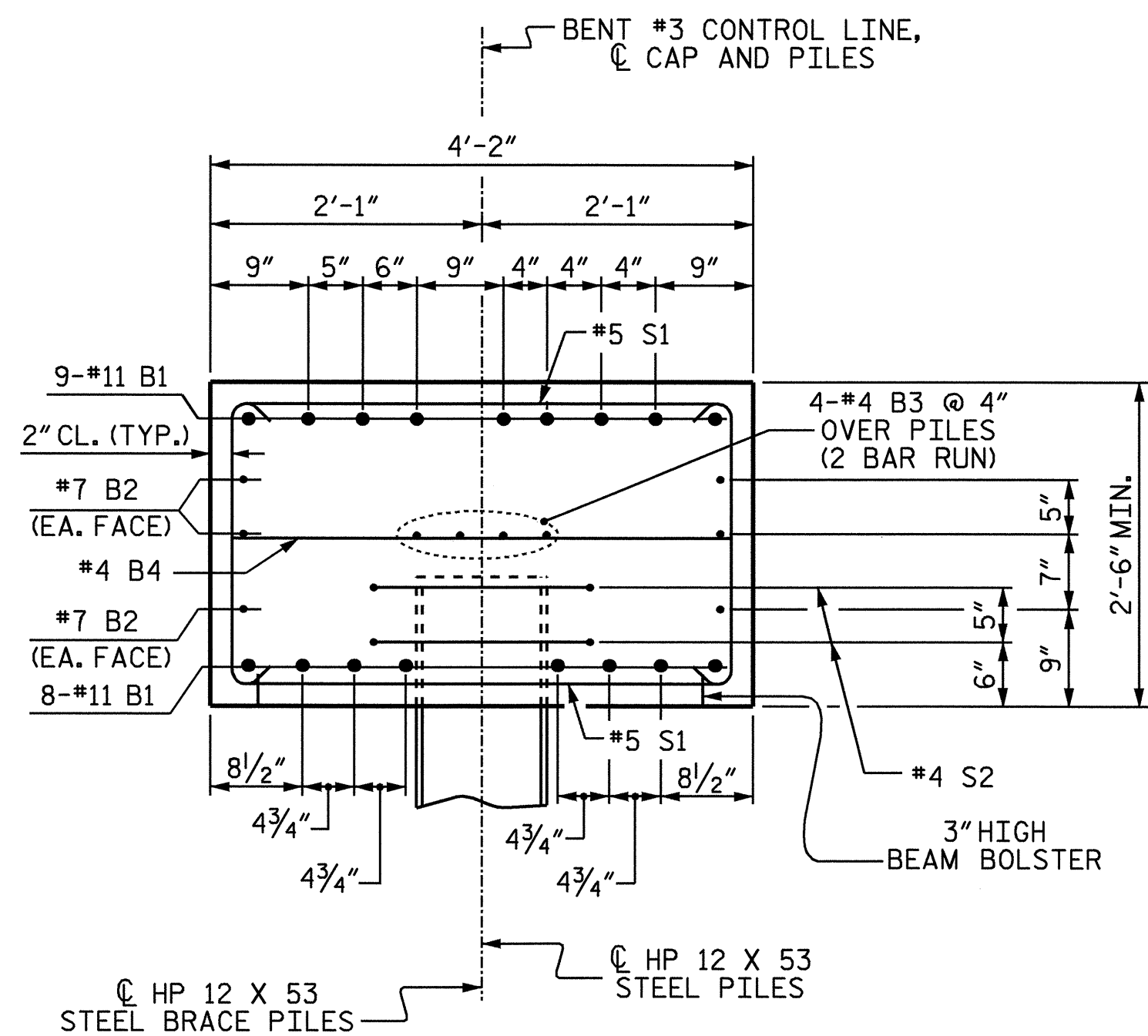
DRAWN BY: A. SORSENGINH DATE: 9/6/07
 CHECKED BY: H.T. BARBOUR DATE: 12/1/07

INVERT ALTERNATE STIRRUPS

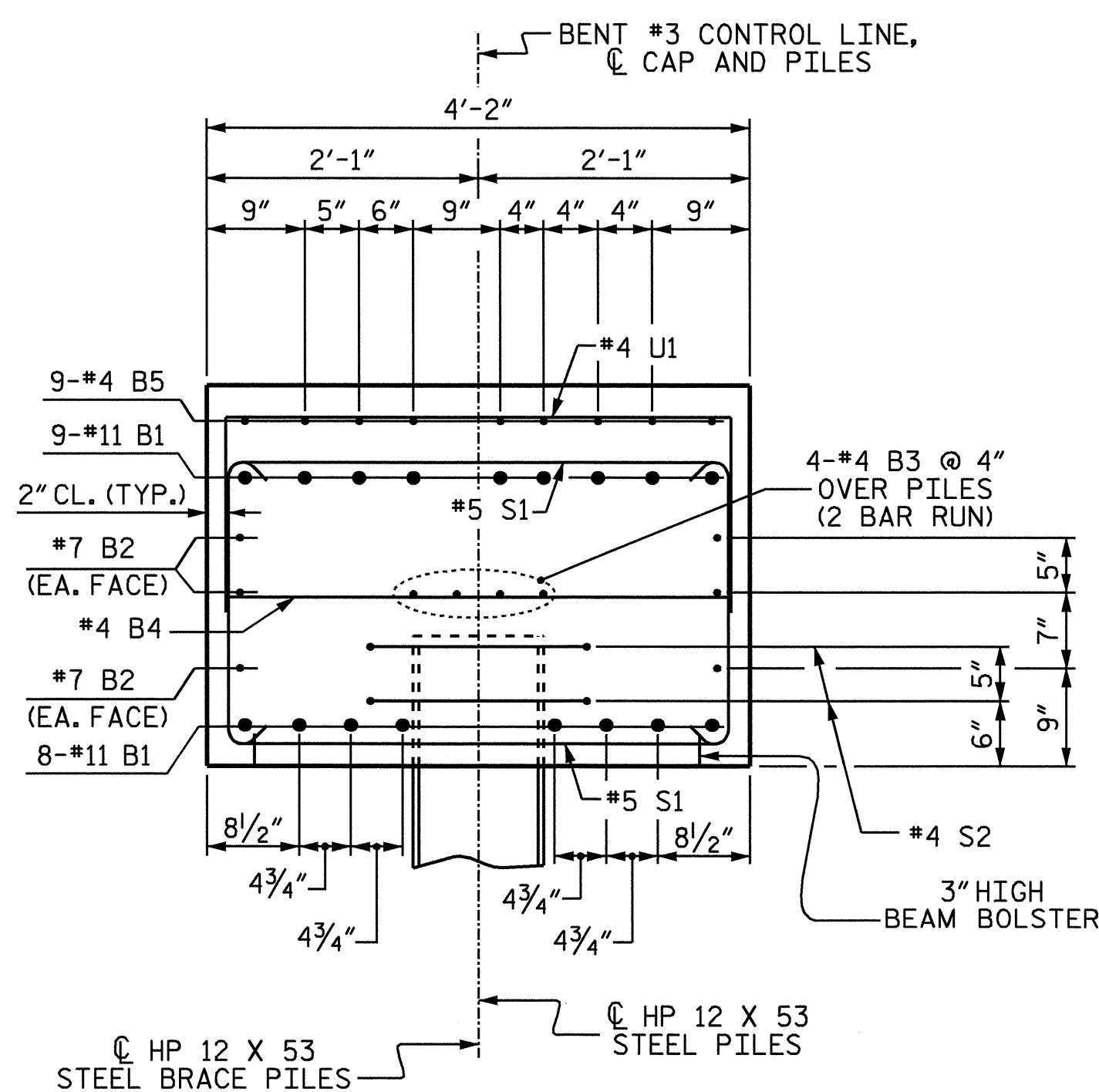
REVISIONS

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

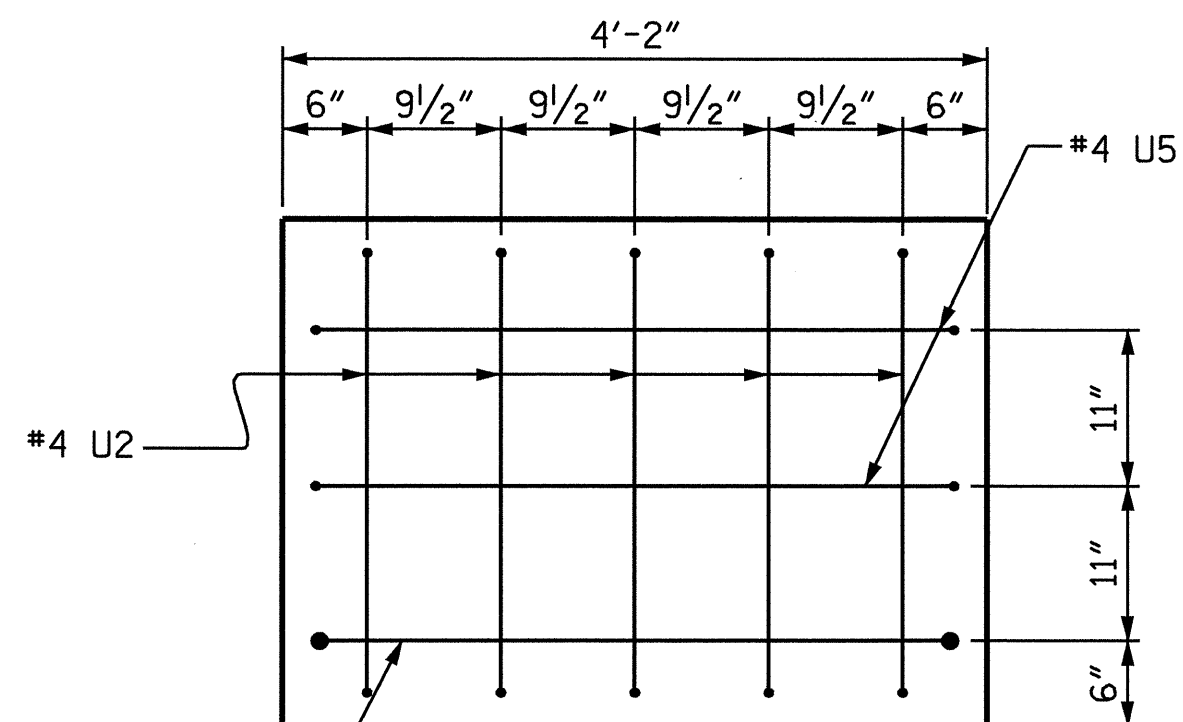
SHEET NO.
S-34
TOTAL SHEETS
45



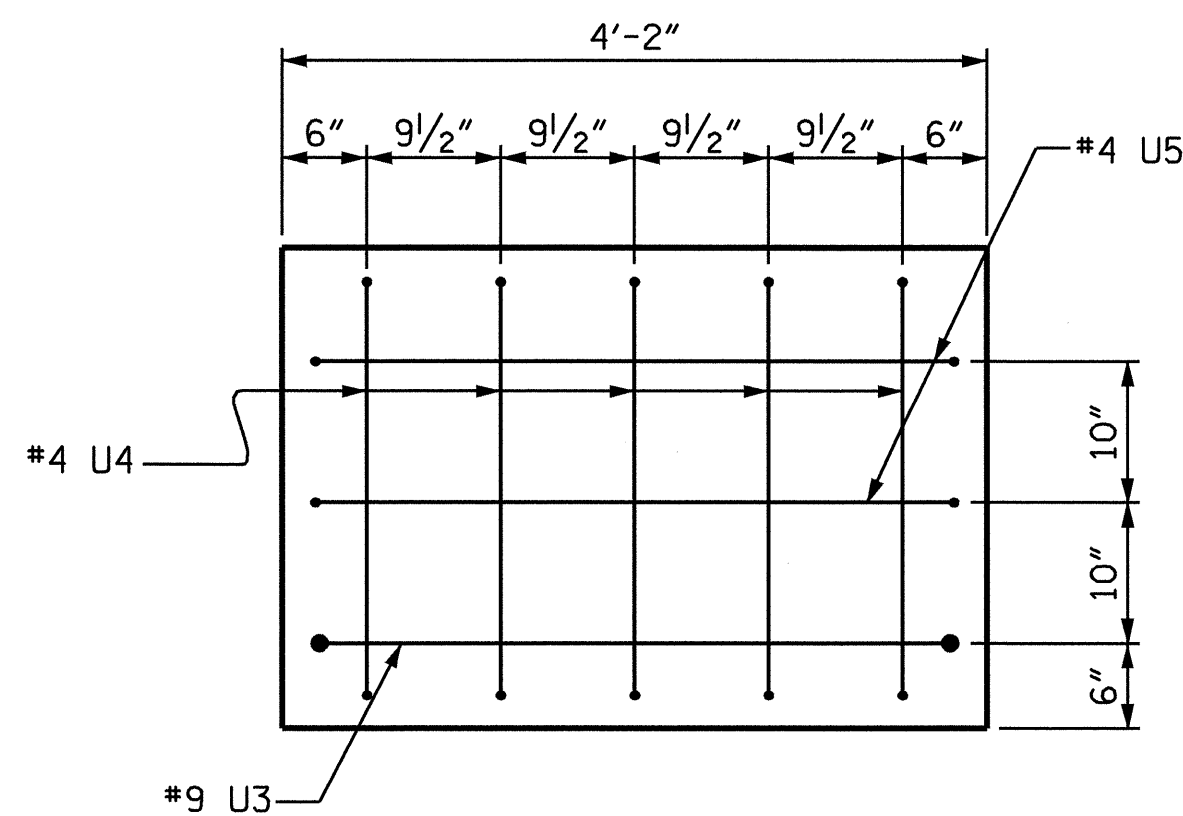
SECTION A-A



SECTION B-B

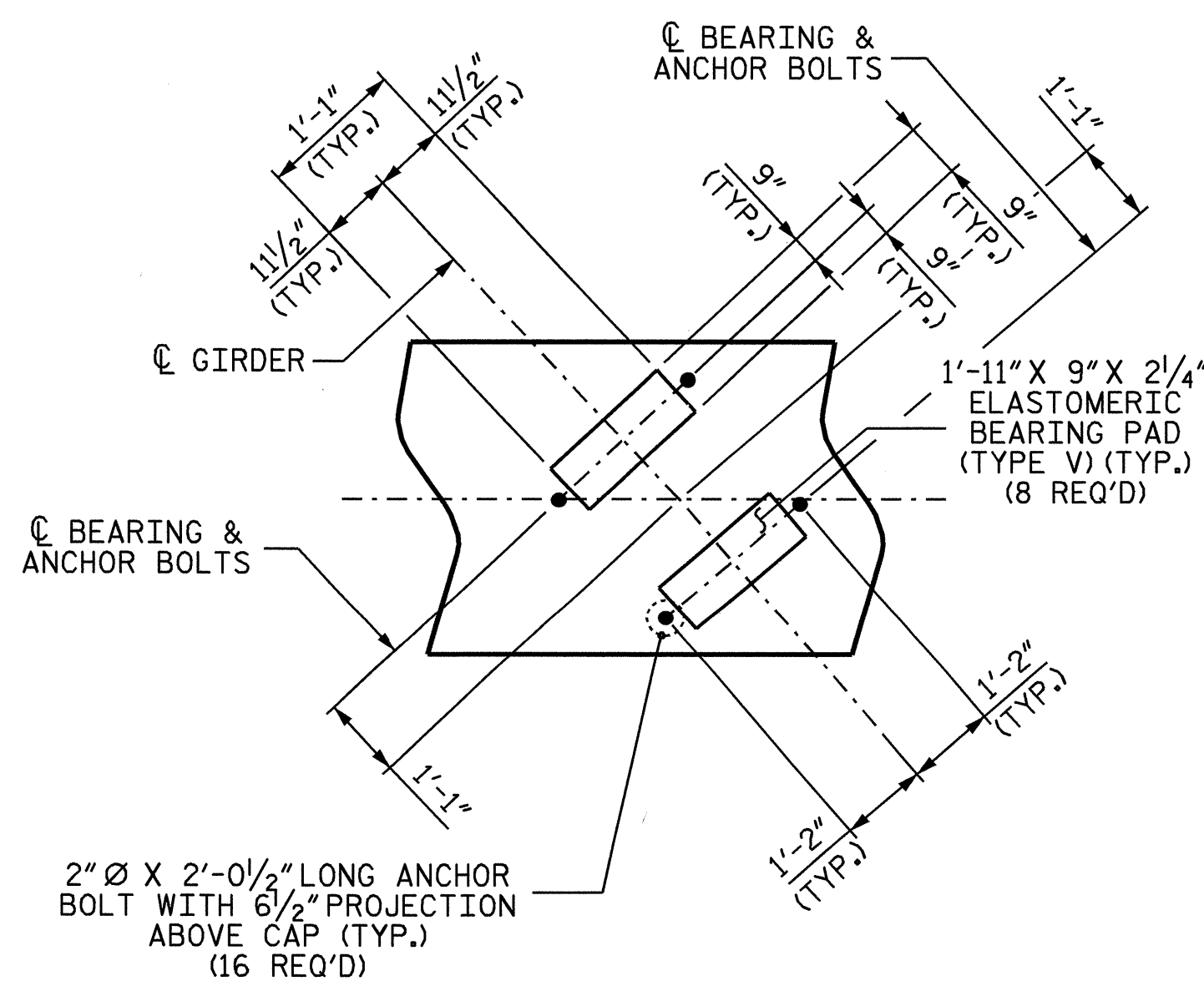


LEFT END VIEW



RIGHT END VIEW

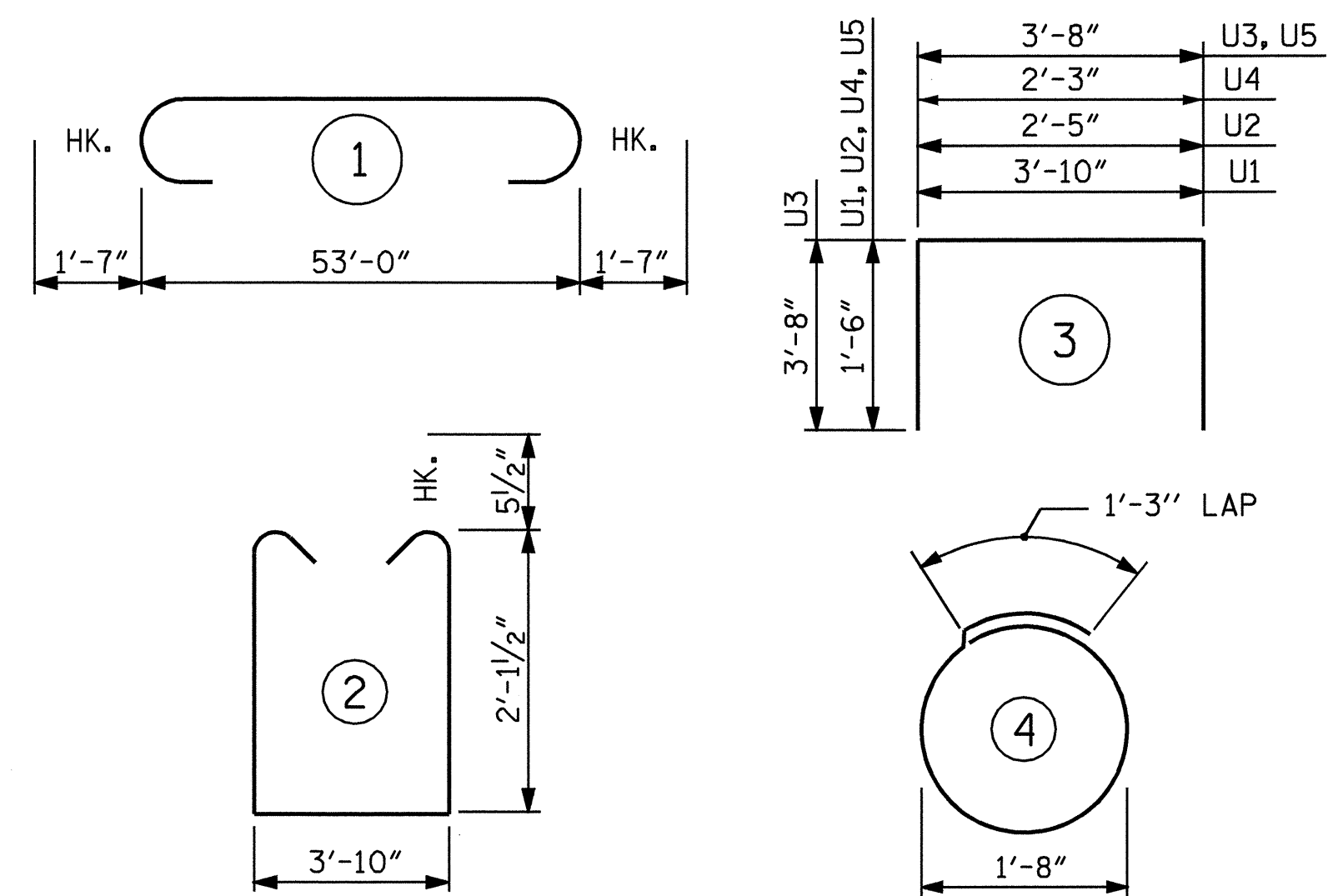
2" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4 U1, #4 U2, #4 U4 AND #9 U3 BARS.
#4 U1, #4 U2, #4 U4 AND #9 U3 BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



DETAIL A

(TYP. EACH GIRDER)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

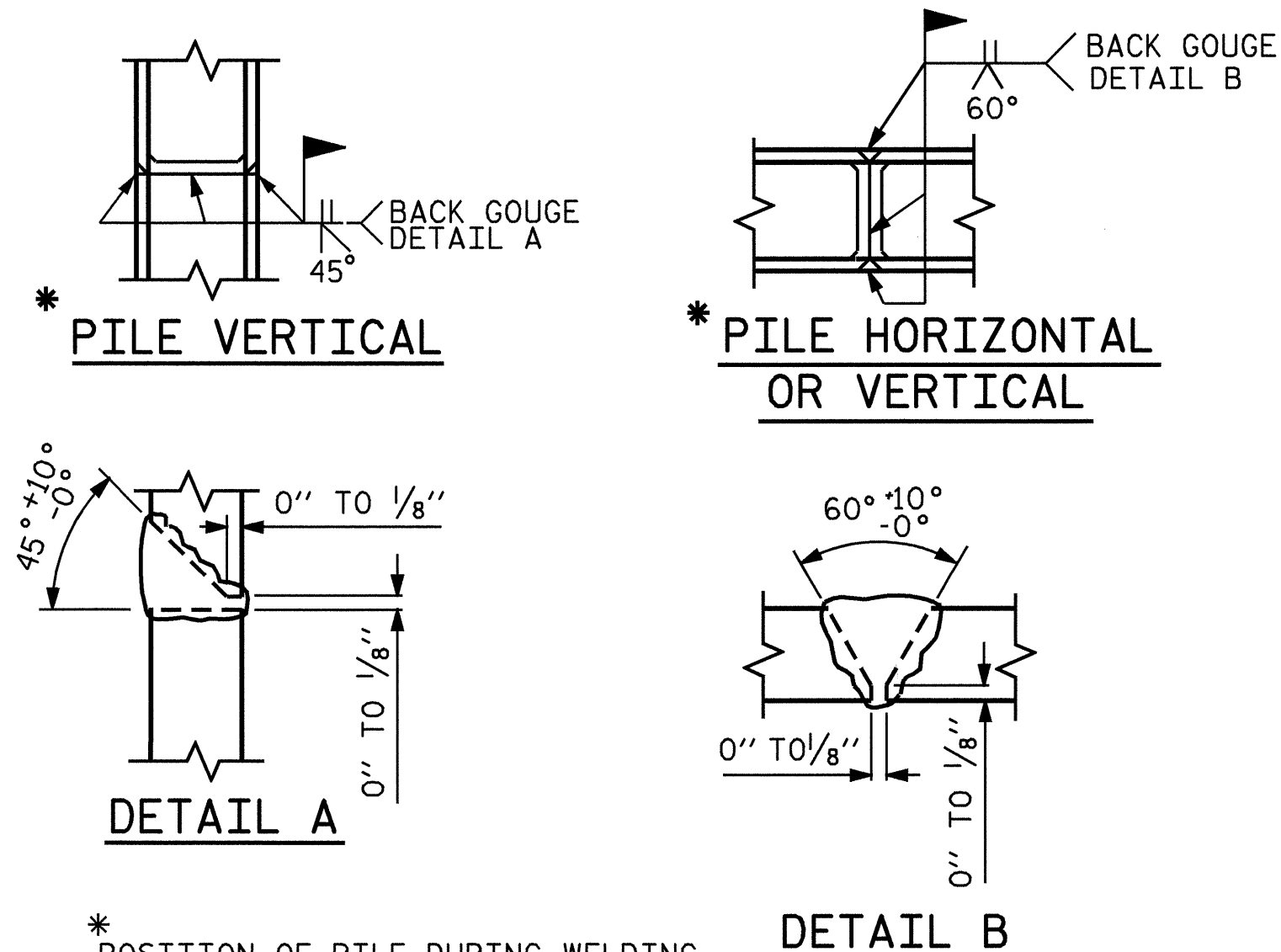
BENT #3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	17	#11	1	56'-2"	5073
B2	6	#7	STR	53'-2"	652
B3	8	#4	STR	27'-10"	149
B4	14	#4	STR	3'-10"	36
B5	27	#4	STR	7'-2"	129
B6	9	#4	STR	4'-4"	26
S1	84	#5	2	9'-0"	789
S2	22	#4	4	6'-6"	96
U1	39	#4	3	6'-10"	178
U2	5	#4	3	5'-5"	18
U3	2	#9	3	11'-0"	75
U4	5	#4	3	5'-3"	18
U5	4	#4	3	6'-8"	18

REINFORCING STEEL = 7257 LBS

CLASS A CONCRETE BREAKDOWN
POUR #1 (CAP) 22.7 C.Y.
TOTAL 22.7 C.Y.

HP 12 X 53 GALVANIZED STEEL PILES
NO. 11 LIN. FT. 935.0



PILE SPLICE DETAILS

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT #3



REVISIONS						SHEET NO. S-35
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			

DRAWN BY: A. SORSENGINH DATE: 9/6/07
CHECKED BY: H. T. BARBOUR DATE: 12/1/07

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

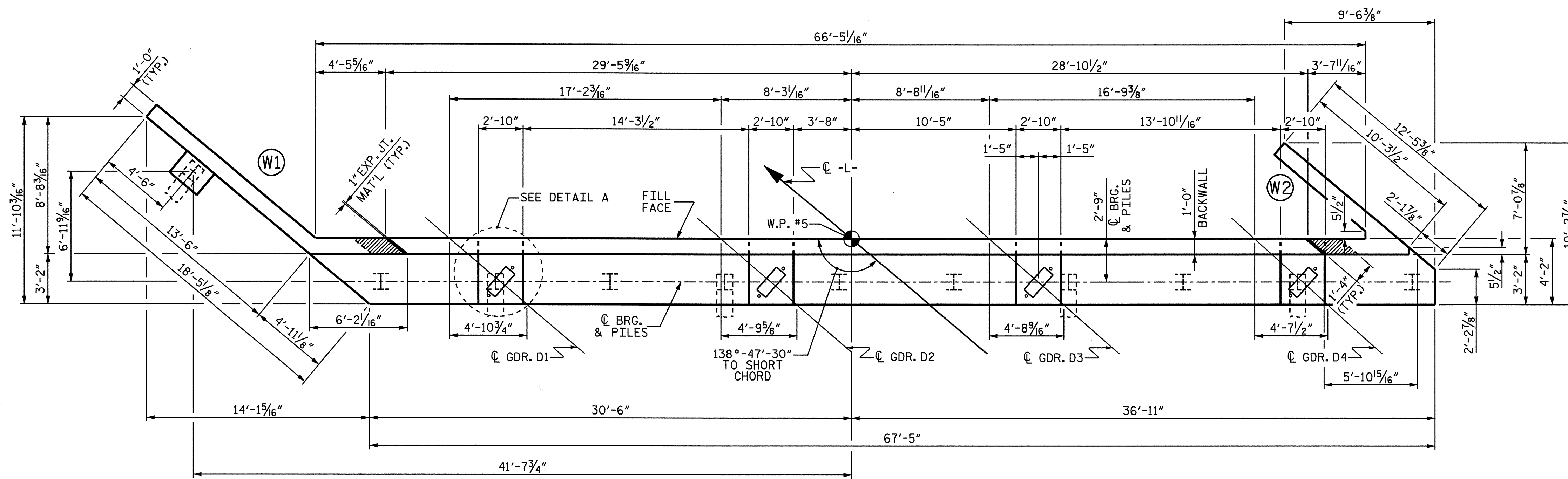
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

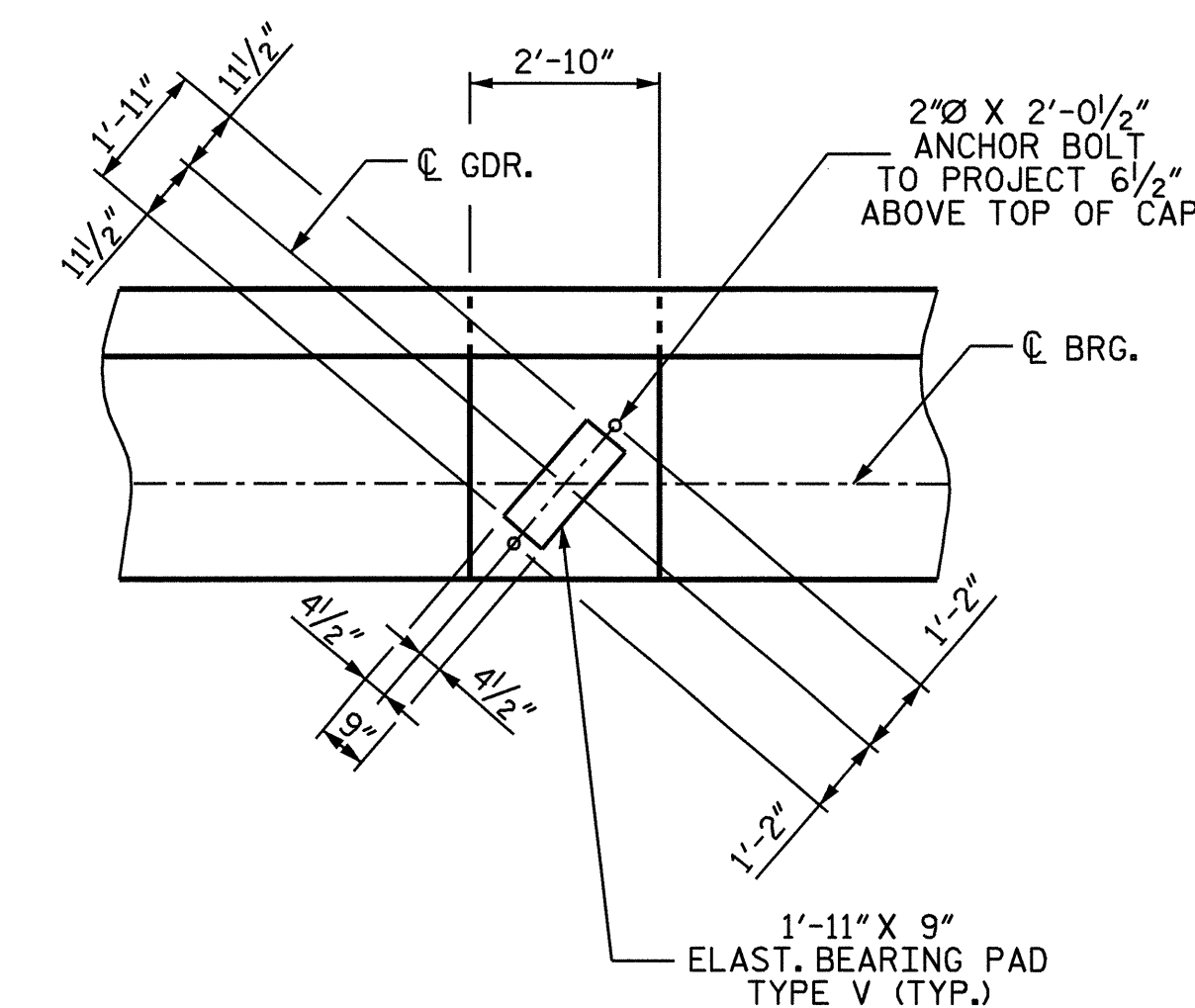
THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

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 RAIL ARE CAST IF SLIP FORMING IS USED.

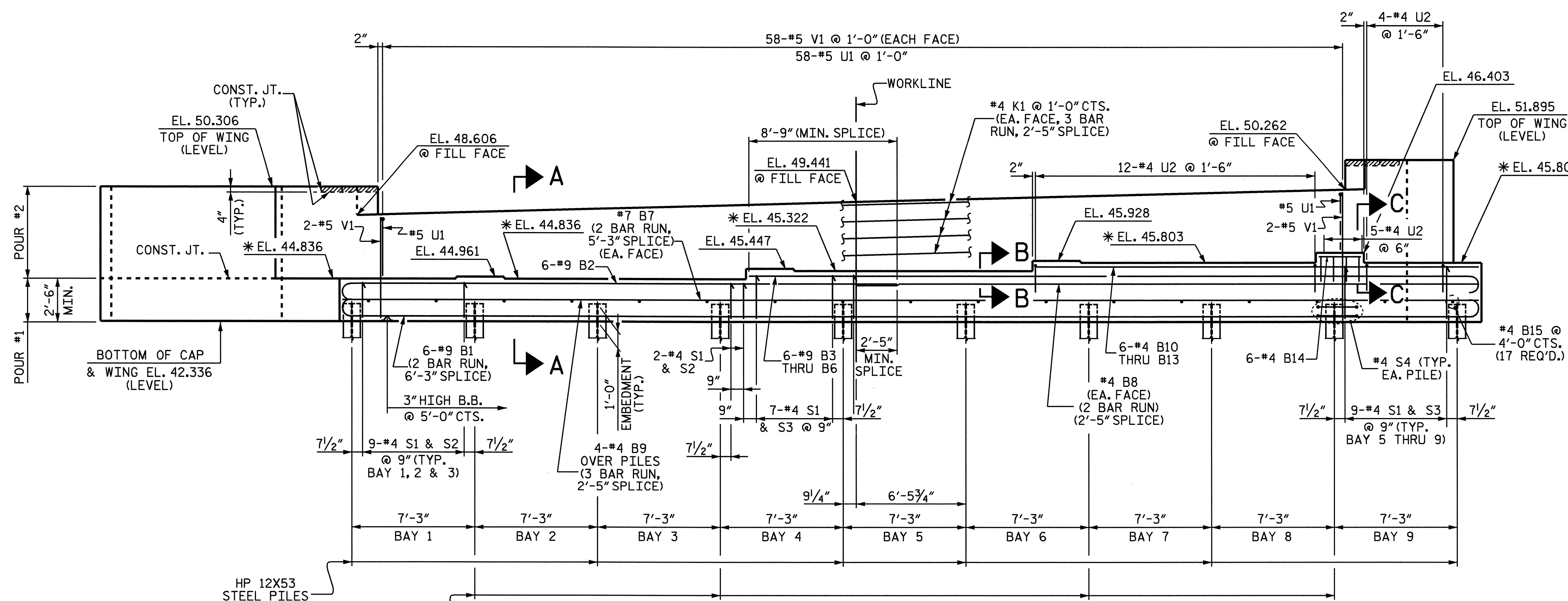


PLAN



DETAIL A

(DIMENSIONS TYP. EA. BRG.)



ELEVATION

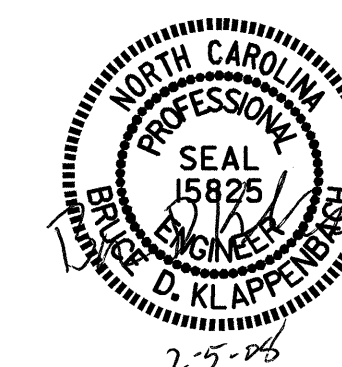
PILES IN WING NOT SHOW FOR CLARITY

PROJECT NO. B-4212
 NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT #2**



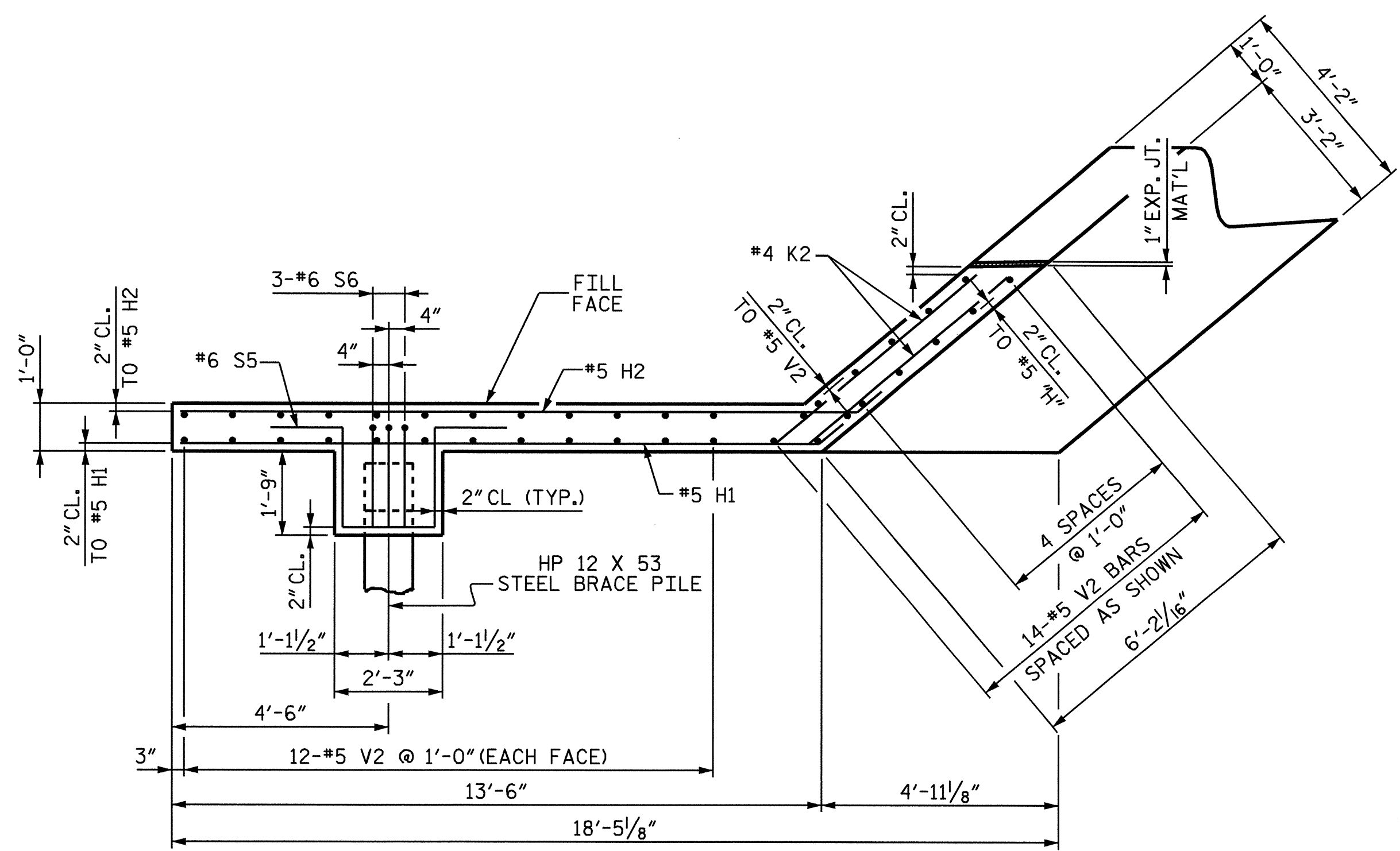
REVISIONS

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

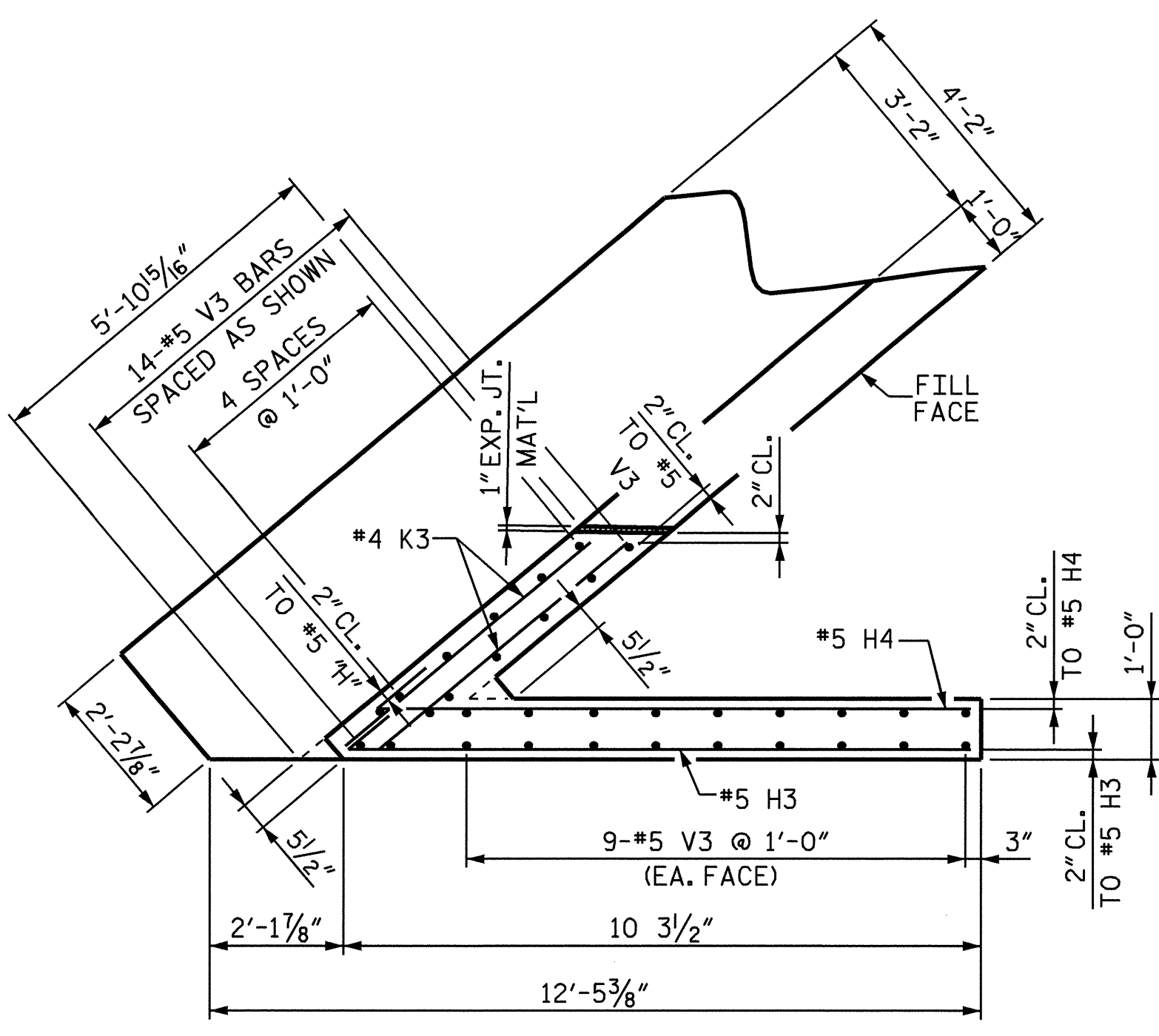
SHEET NO.
S-36
TOTAL SHEETS
45

DRAWN BY: A. SORSENGINH DATE: 6/12/07
 CHECKED BY: C.R. YARBROUGH DATE: 10/12/07

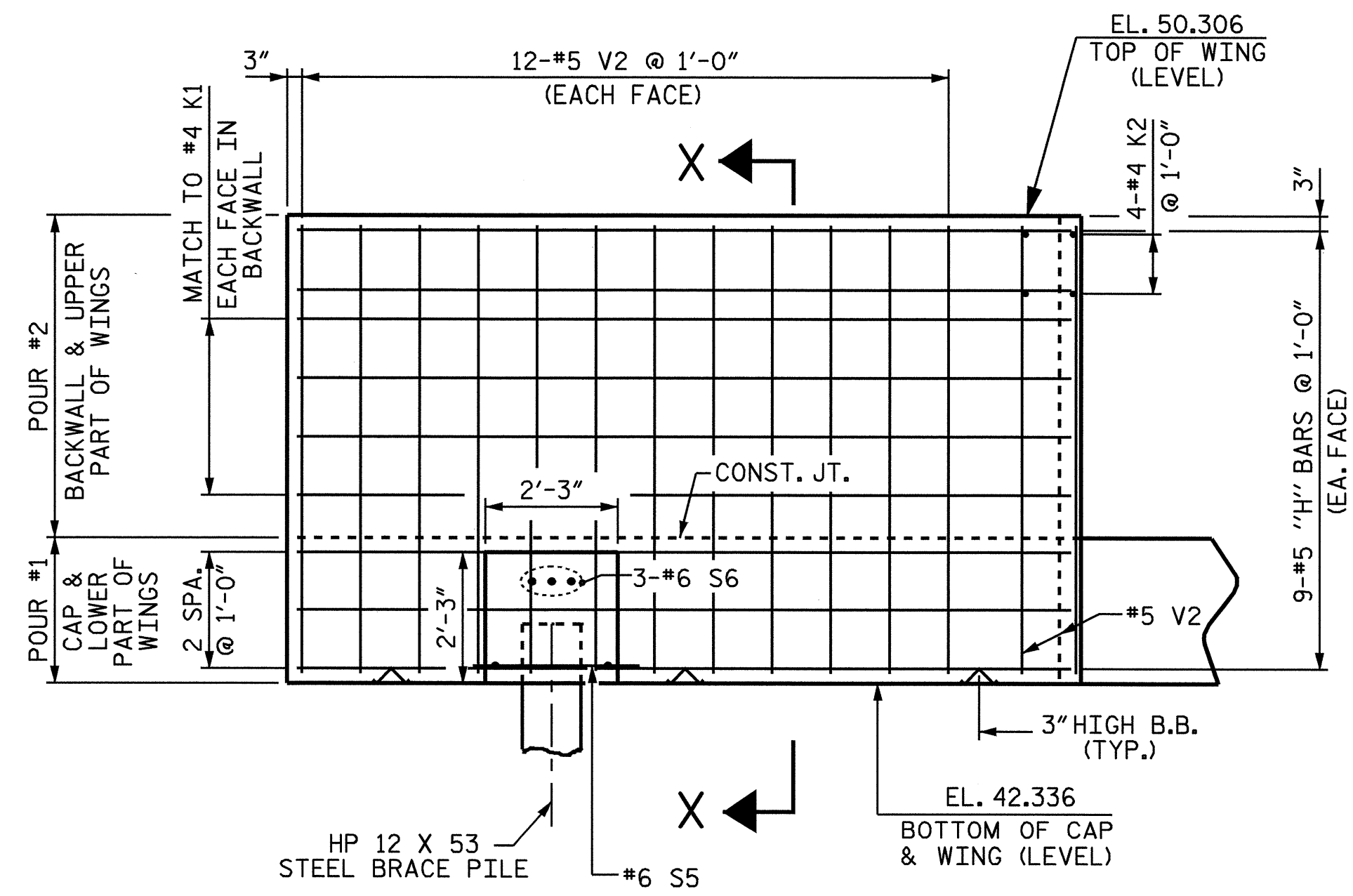
01-FEB-2008 15:23
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 asorsenginh



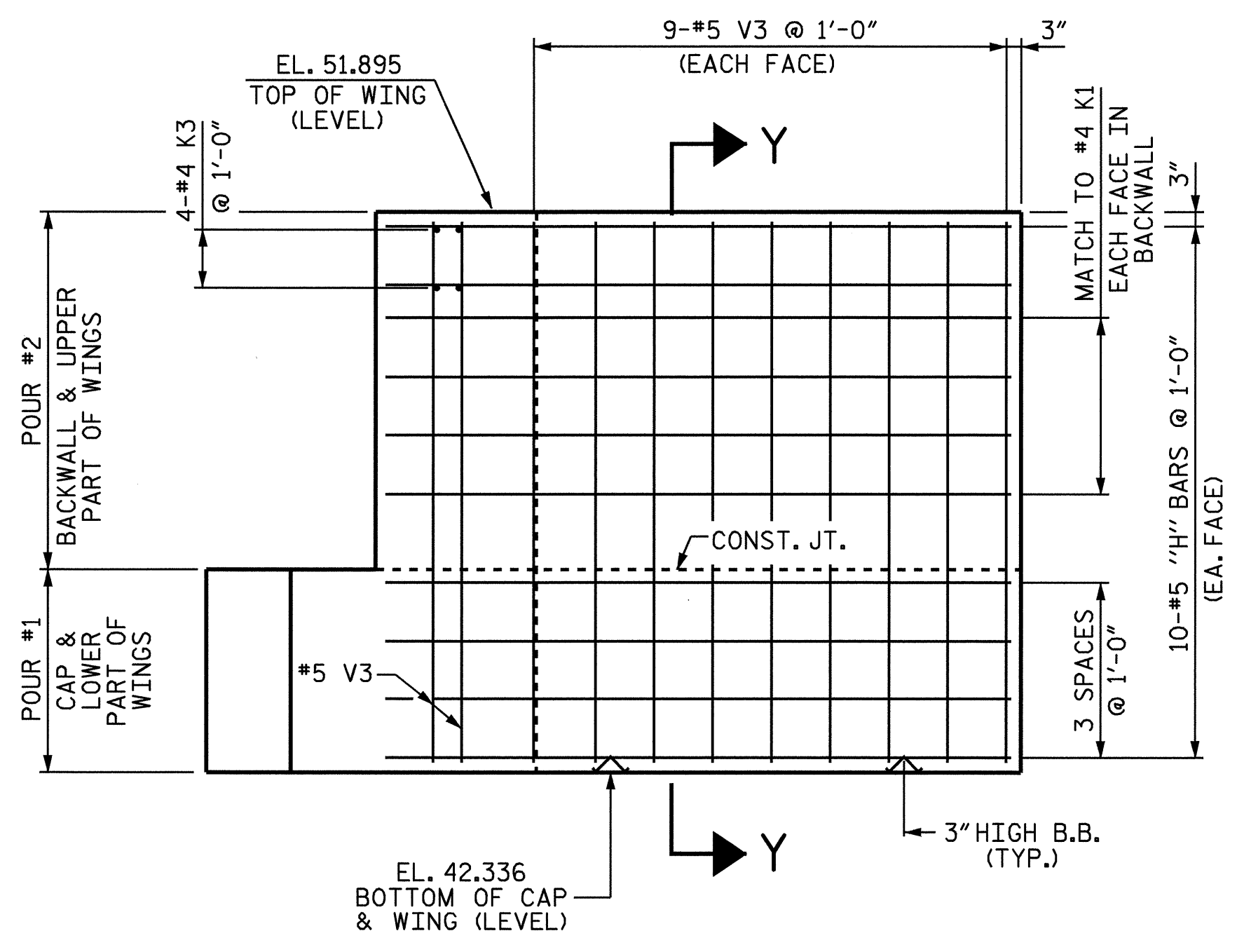
PLAN OF LEFT WING (W1)



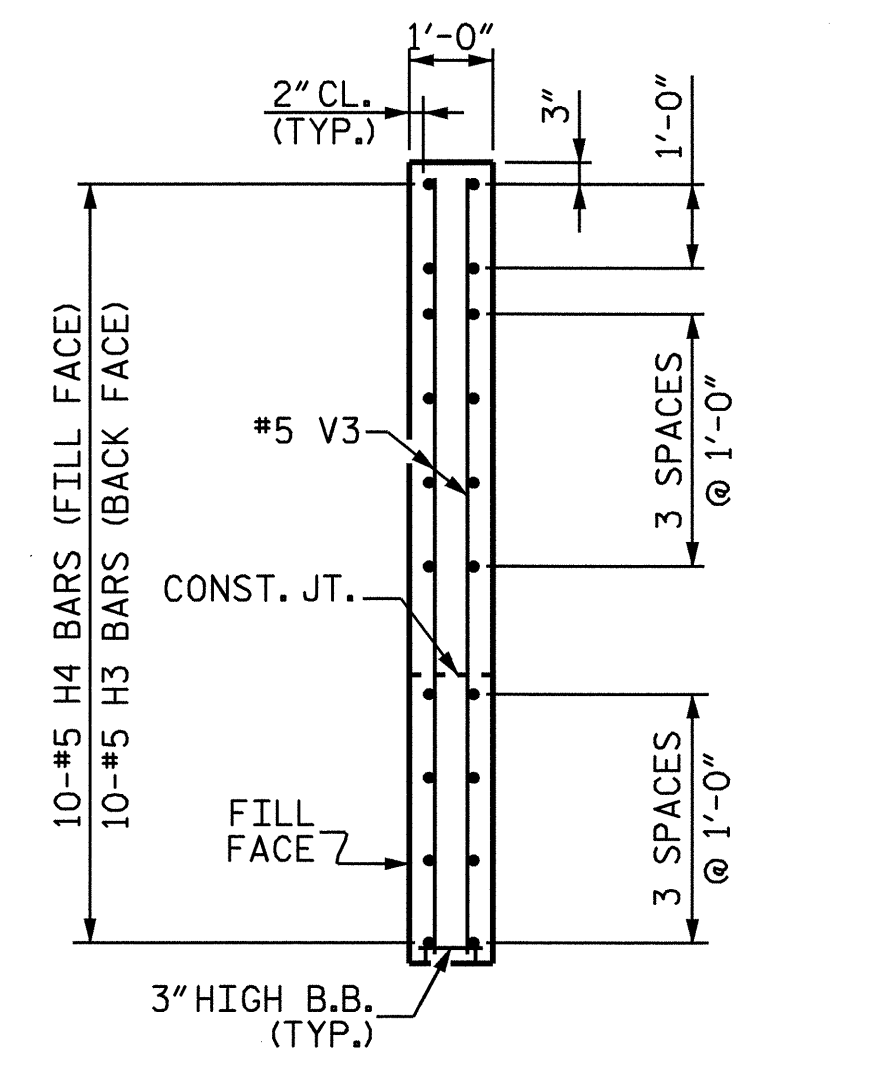
PLAN OF RIGHT WING (W2)



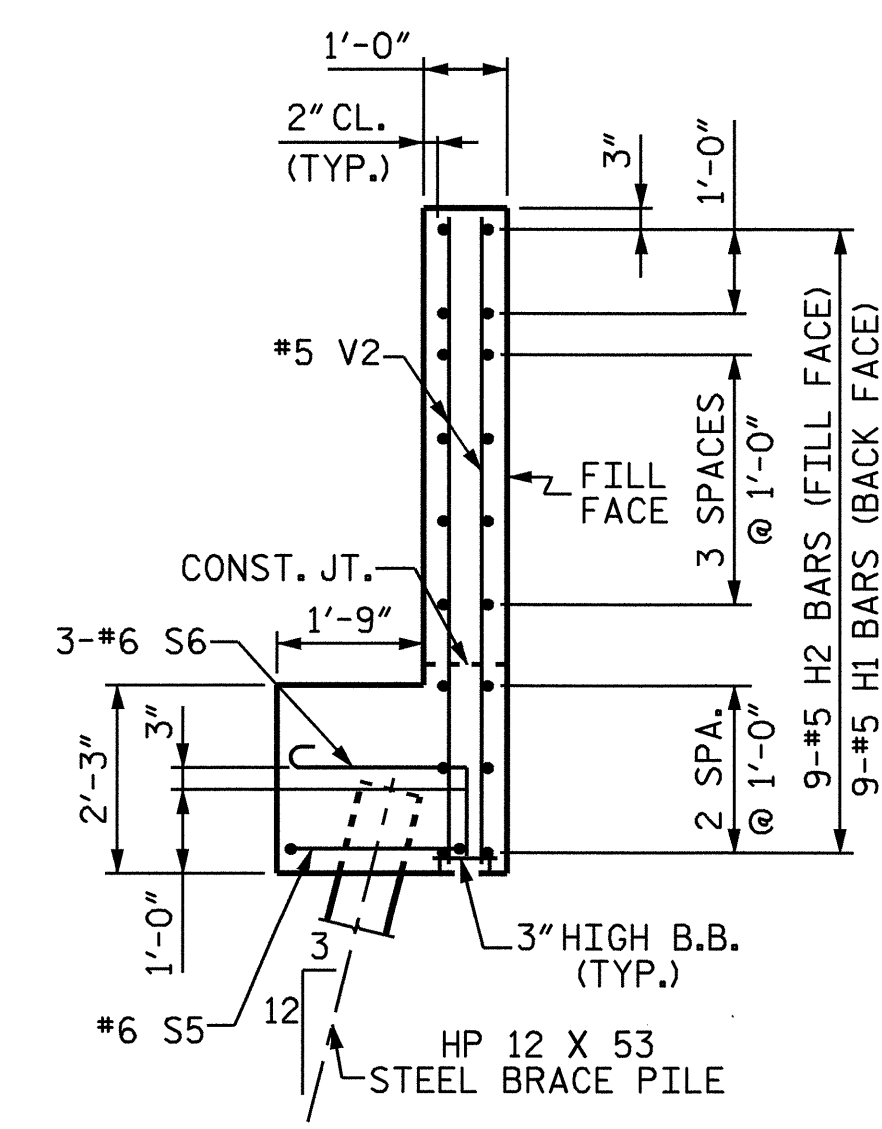
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



SECTION Y-Y



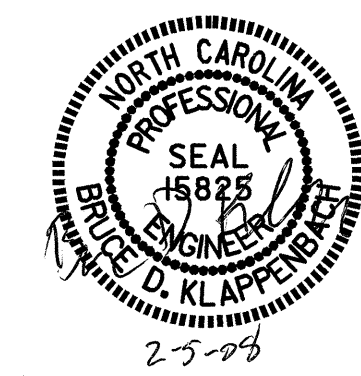
SECTION X-X

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

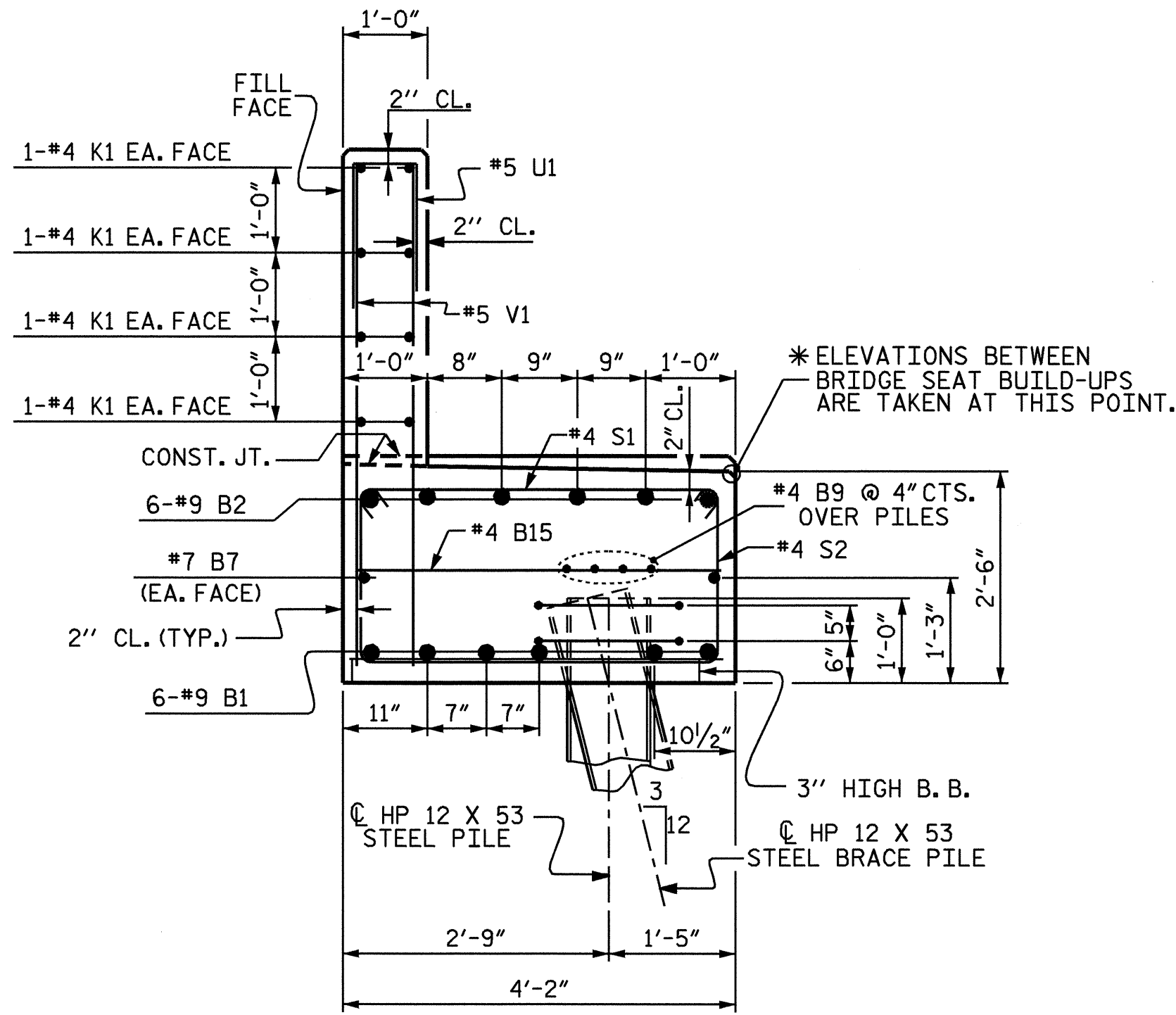
SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

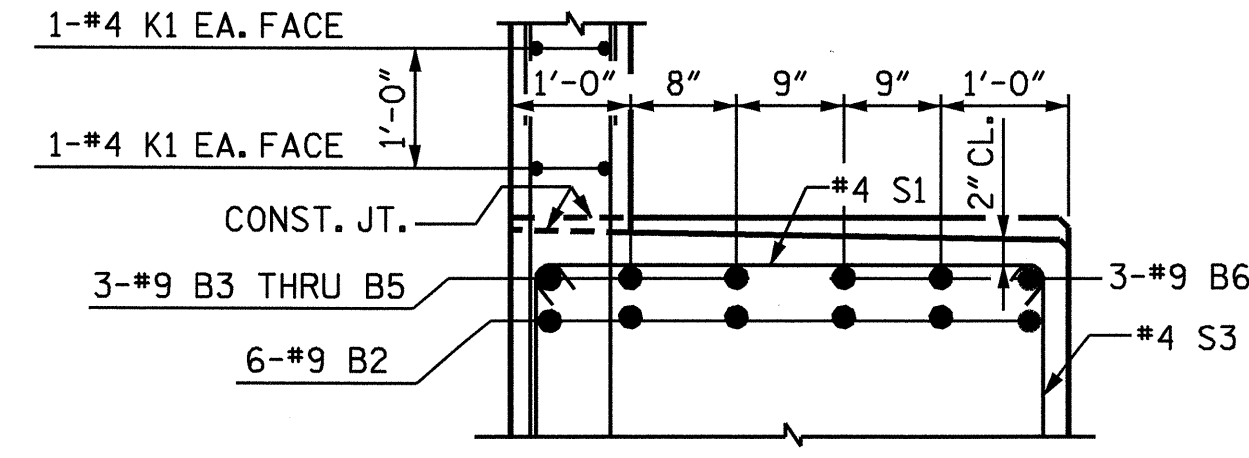
SUBSTRUCTURE
 END BENT #2



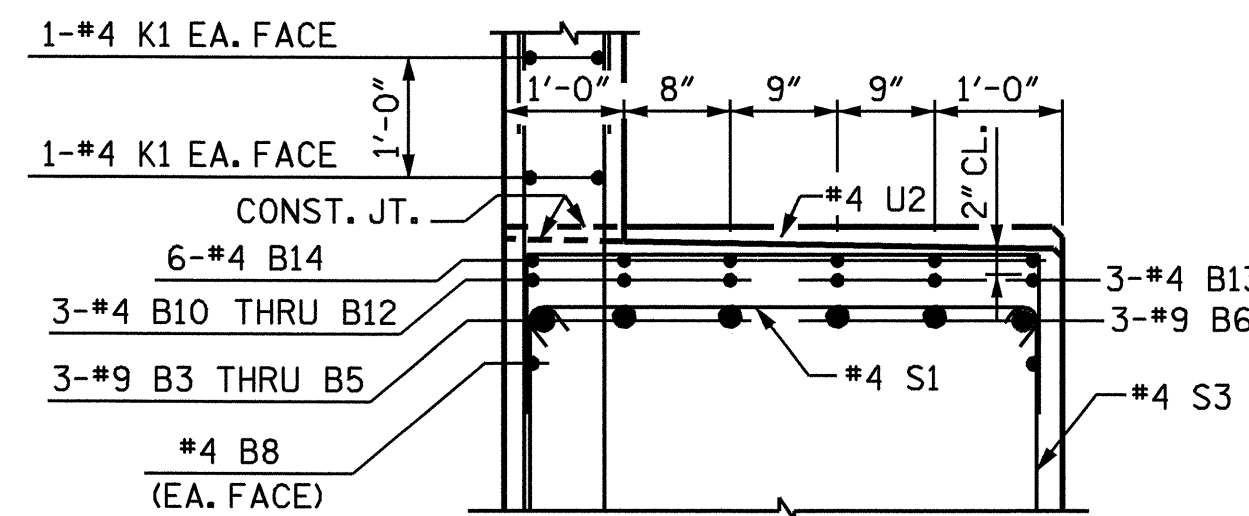
REVISIONS						SHEET NO. S-37
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			



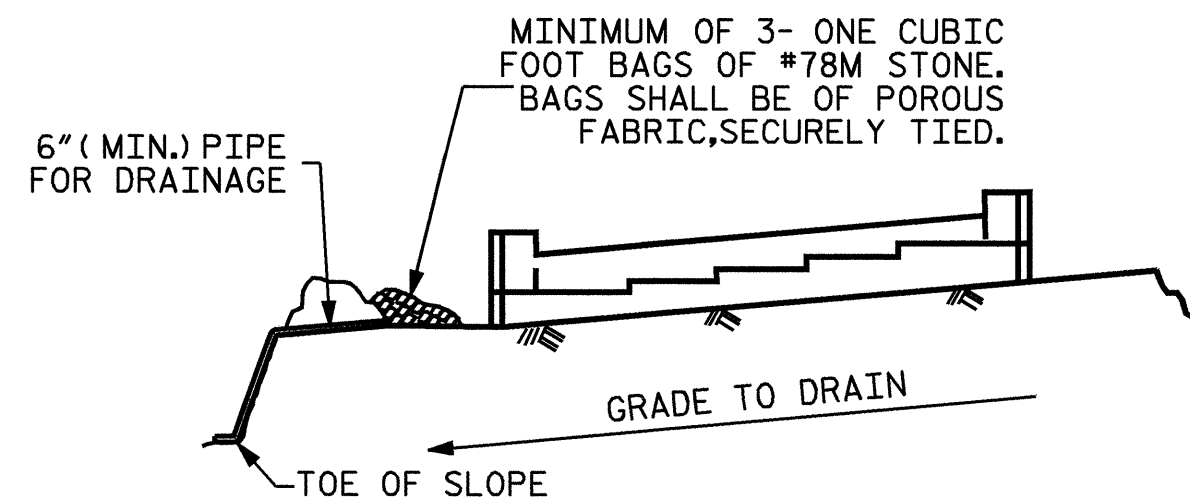
SECTION A-A
(SEE SHEET 1 OF 3)



SECTION B-B
(SEE SHEET 1 OF 3)



SECTION C-C
(SEE SHEET 1 OF 3)

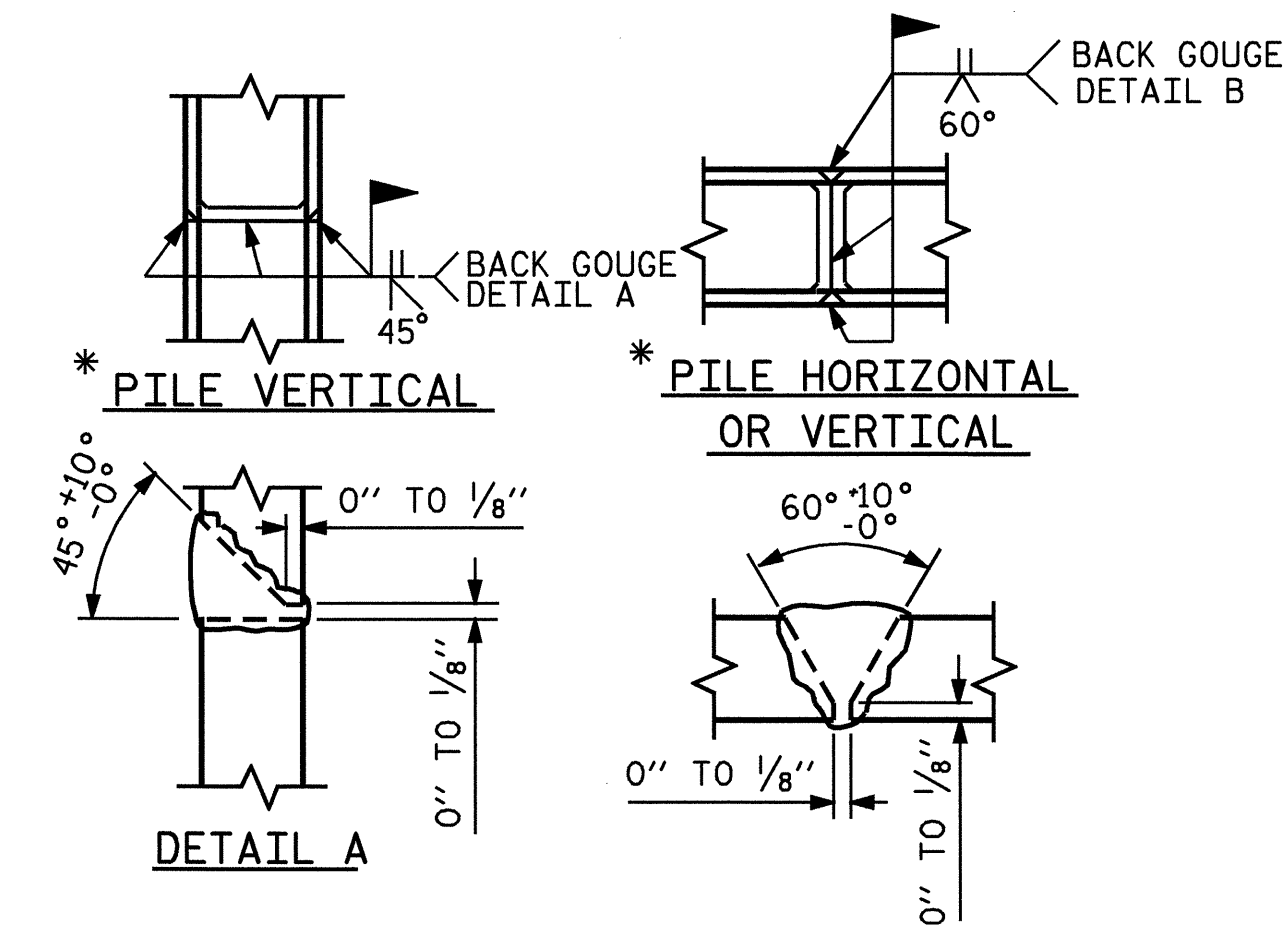


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

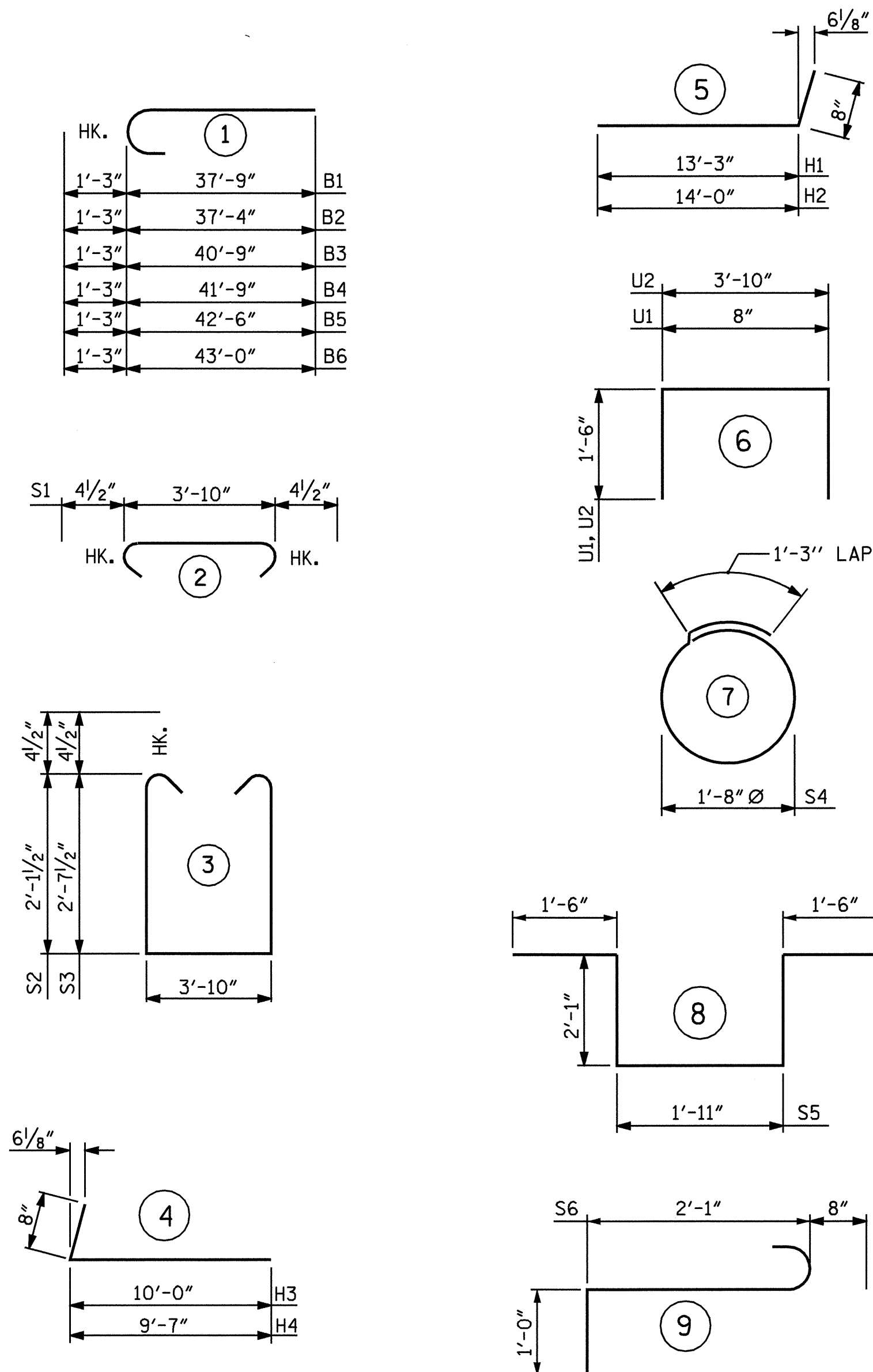
TEMPORARY DRAINAGE AT END BENT



* POSITION OF PILE DURING WELDING. **DETAIL B**

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	9	1	39'-0"	1591
B2	6	9	1	38'-7"	787
B3	1	9	1	42'-0"	143
B4	1	9	1	43'-0"	146
B5	1	9	1	43'-9"	149
B6	3	9	1	44'-3"	451
B7	4	7	STR	37'-5"	306
B8	4	4	STR	19'-7"	52
B9	12	4	STR	24'-0"	192
B10	1	4	STR	23'-11"	16
B11	1	4	STR	24'-11"	17
B12	1	4	STR	25'-9"	17
B13	3	4	STR	26'-2"	52
B14	6	4	STR	2'-6"	10
B15	17	4	STR	3'-10"	44
H1	9	5	5	13'-11"	131
H2	9	5	5	14'-8"	138
H3	10	5	4	10'-8"	111
H4	10	5	4	10'-3"	107
K1	24	4	STR	24'-8"	395
K2	4	4	STR	5'-4"	14
K3	6	4	STR	5'-2"	21
S1	81	4	2	4'-7"	248
S2	29	4	3	8'-10"	171
S3	52	4	3	9'-10"	342
S4	20	4	7	6'-6"	87
S5	1	6	8	9'-1"	14
S6	3	6	9	3'-9"	17
U1	58	5	6	3'-8"	222
U2	20	4	6	6'-10"	91
V1	116	5	STR	5'-11"	716
V2	38	5	STR	7'-7"	301
V3	32	5	STR	9'-0"	300
REINFORCING STEEL				LBS	7,399

CLASS A CONCRETE BREAKDOWN

POUR #1	CAP & LOWER PART OF WINGS	33.7	CU. YDS.
POUR #2	BACKWALL & UPPER PART OF WINGS	15.4	CU. YDS.
CLASS A CONCRETE TOTAL		49.1	CU. YDS.

HP 12 x 53 STEEL PILES

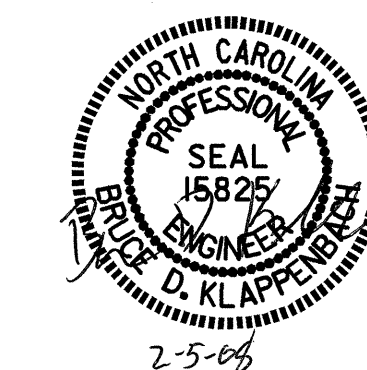
NO. 11 LIN. FT. 880

PROJECT NO. B-4212
NORTHAMPTON COUNTY
STATION: 26+25.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

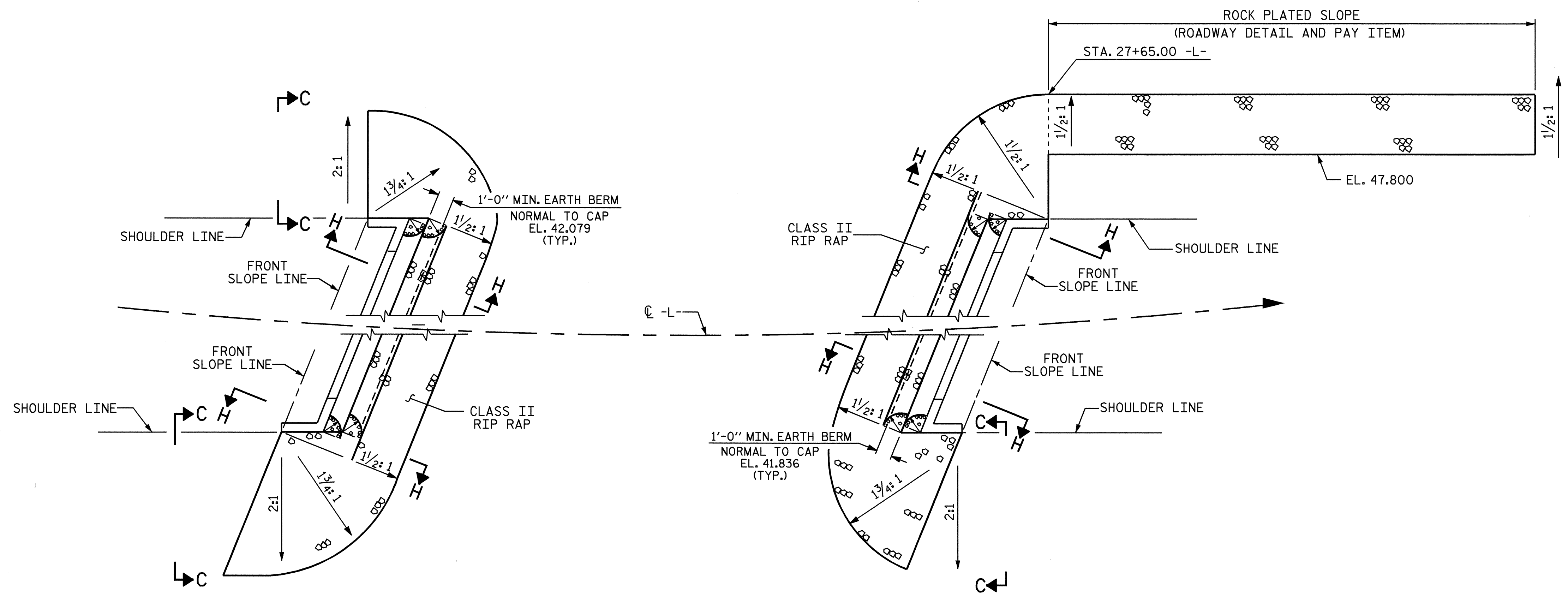
**SUBSTRUCTURE
END BENT #2**



REVISIONS

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

SHEET NO.
S-38
TOTAL SHEETS
45

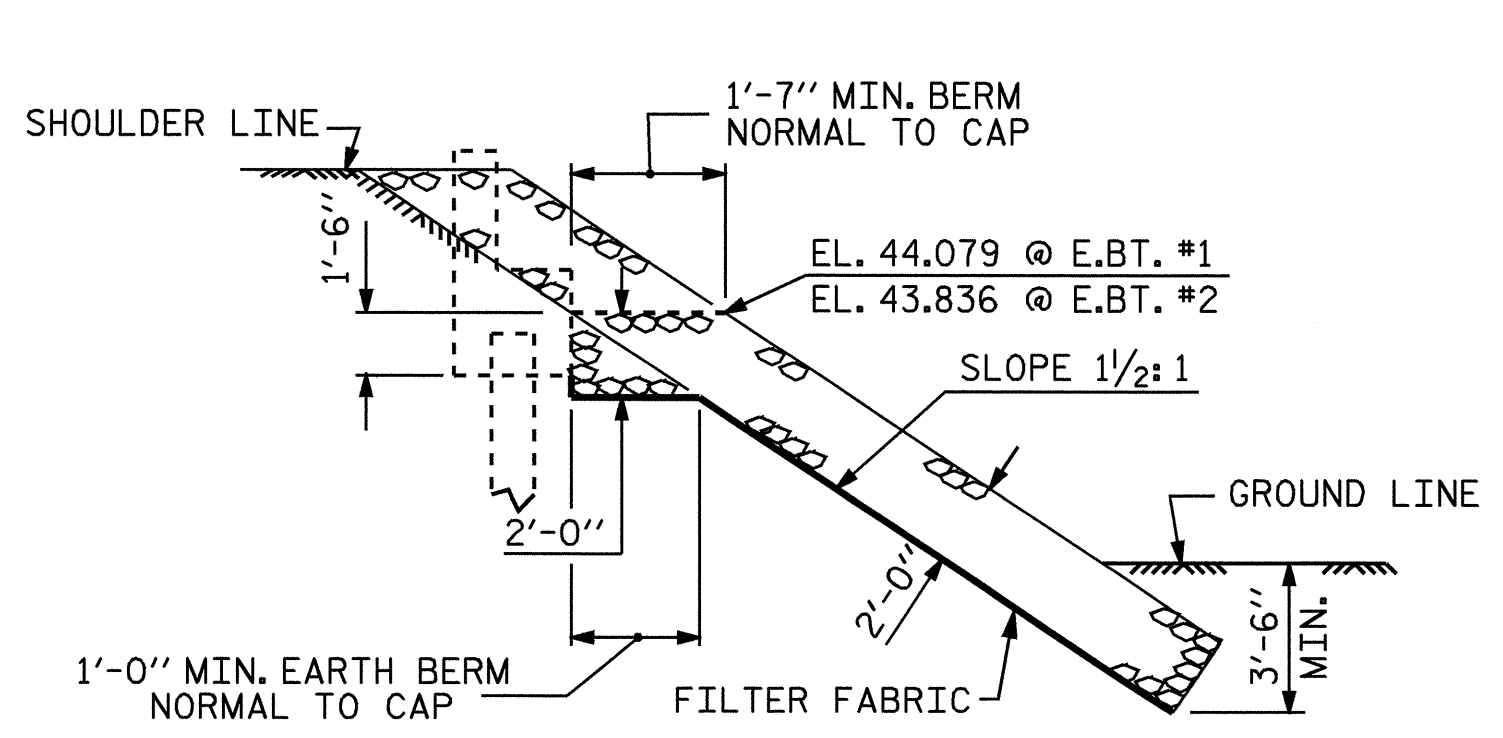


END BENT #1

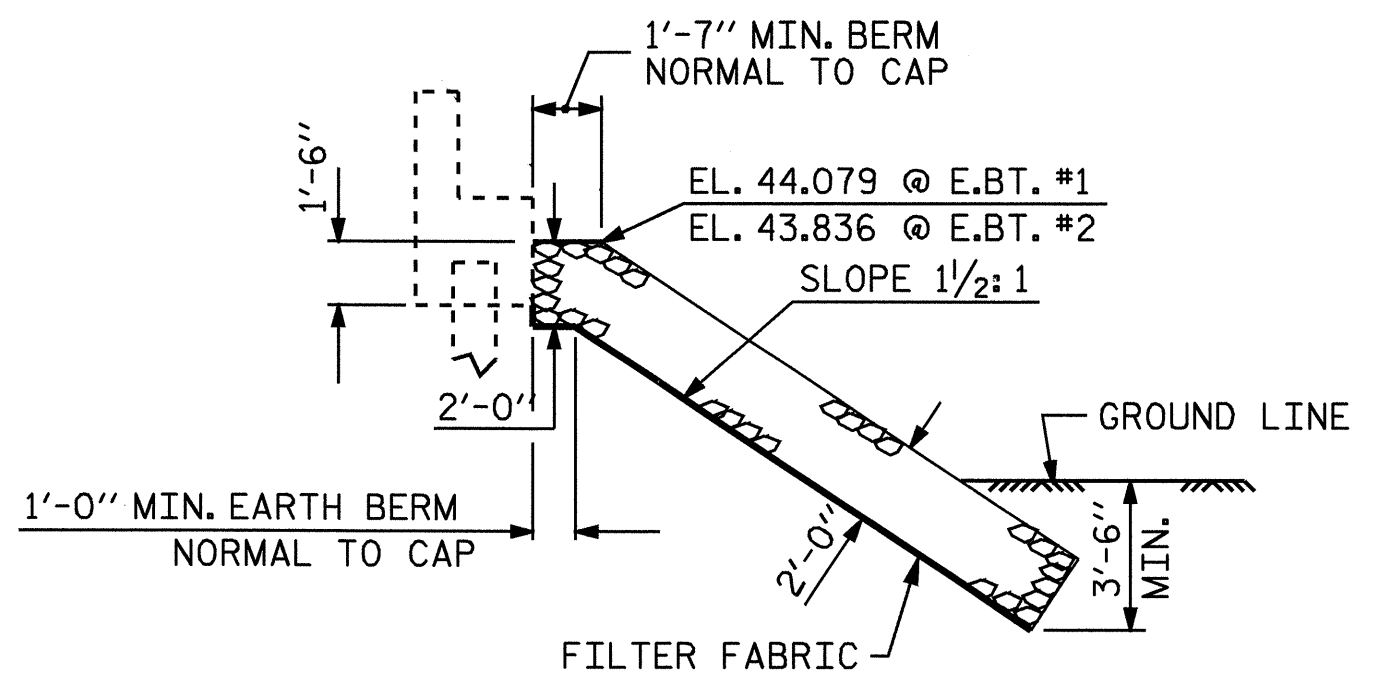
END BENT #2

PLAN

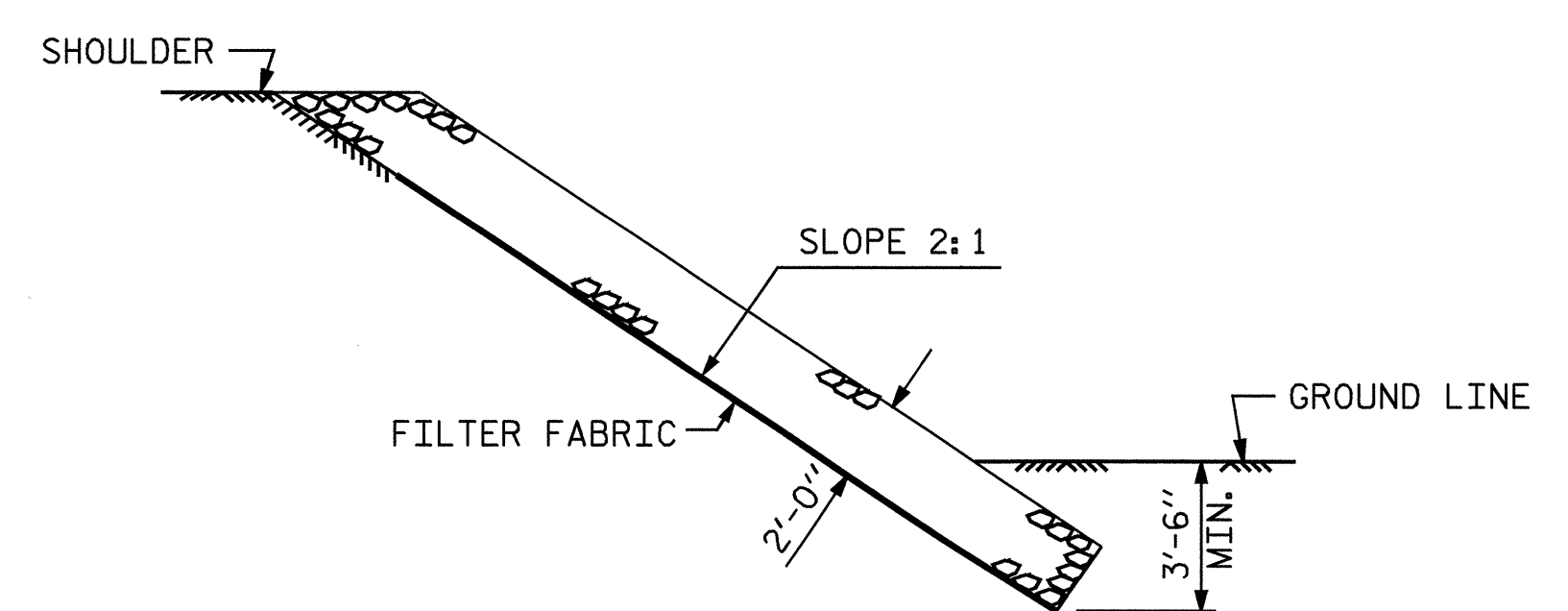
ESTIMATED QUANTITIES		
BRIDGE @ STA. 26+25.00 -L-	RIP RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	103	115
END BENT 2	102	114
TOTAL	205	229



SECTION H-H



SECTION Q-Q
BERM RIP RAPPED



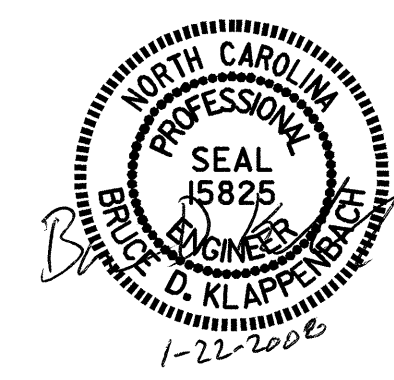
SECTION C-C

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 RIP RAP DETAILS

REVISIONS						SHEET NO. S-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			



ASSEMBLED BY : M. G. SHAIKH DATE : 5/18/07
 CHECKED BY : C. R. YARBROUGH DATE : 6/11/07
 DRAWN BY : REK 1/84 REV. 8/16/99 RWW/LES
 CHECKED BY : RDU 1/84 REV. 10/17/00 RWW/LES
 REV. 5/1/06 TLA/GM

NOTES

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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 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.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

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.

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	30	#4	STR	25'-0"	501
A2	32	#4	STR	24'-10"	531
*B1	74	#5	STR	14'-1"	1087
B2	74	#6	STR	14'-5"	1602

REINFORCING STEEL LBS. 2133

*EPOXY COATED REINFORCING STEEL LBS. 1588

CLASS AA CONCRETE C. Y. 21.6

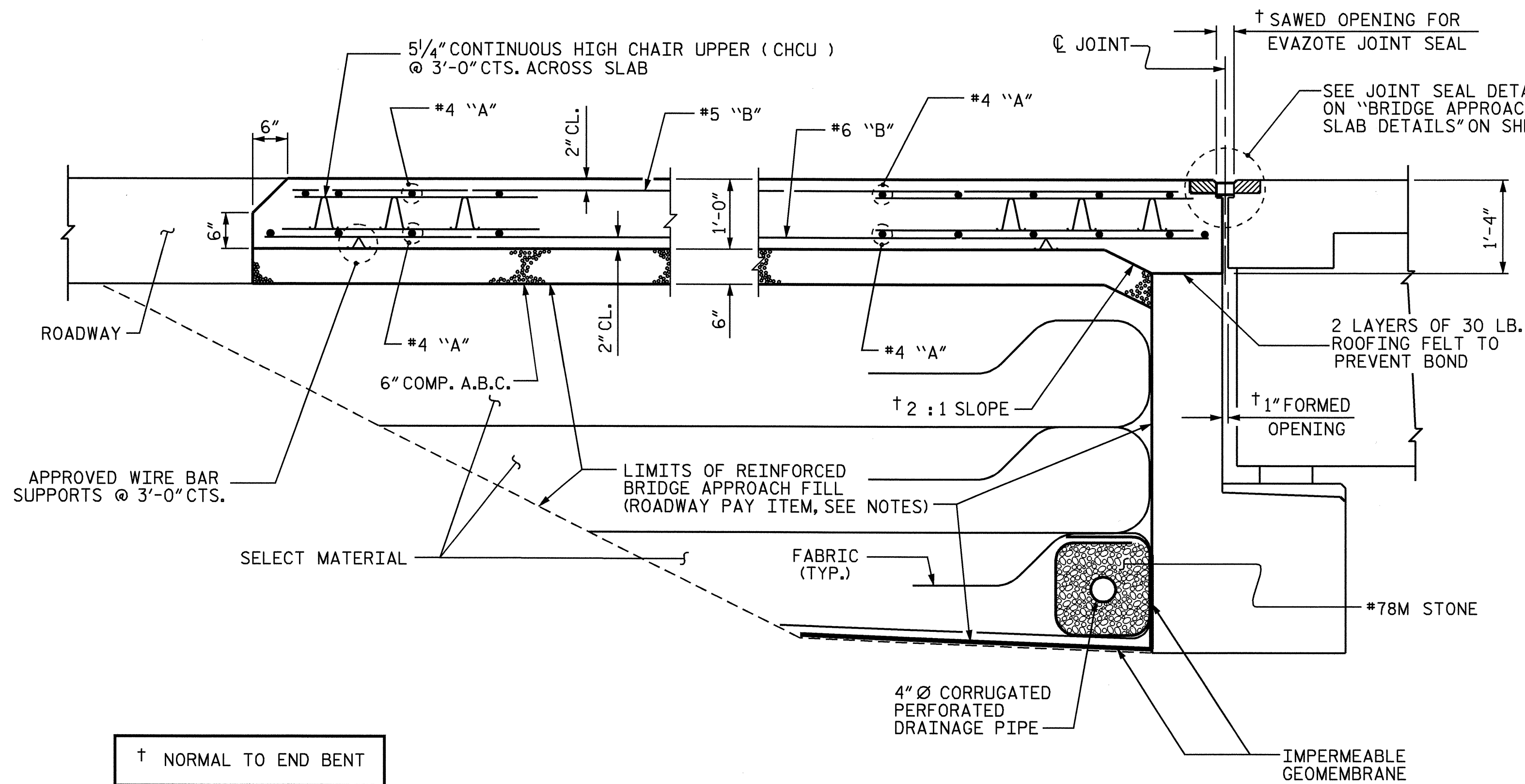
APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	30	#4	STR	30'-4"	608
A4	32	#4	STR	30'-2"	645
*B3	74	#5	STR	14'-0"	1081
B4	74	#6	STR	14'-4"	1593

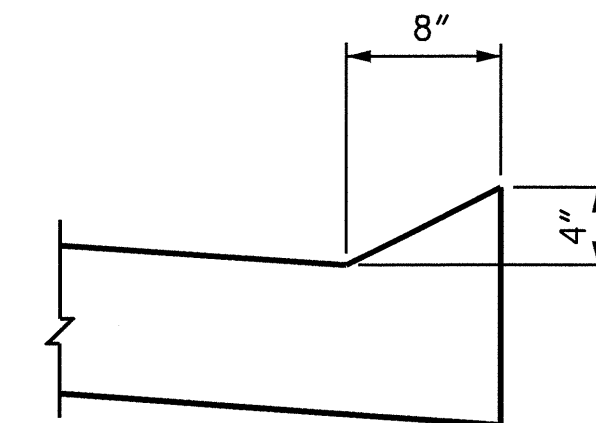
REINFORCING STEEL LBS. 2283

*EPOXY COATED REINFORCING STEEL LBS. 1689

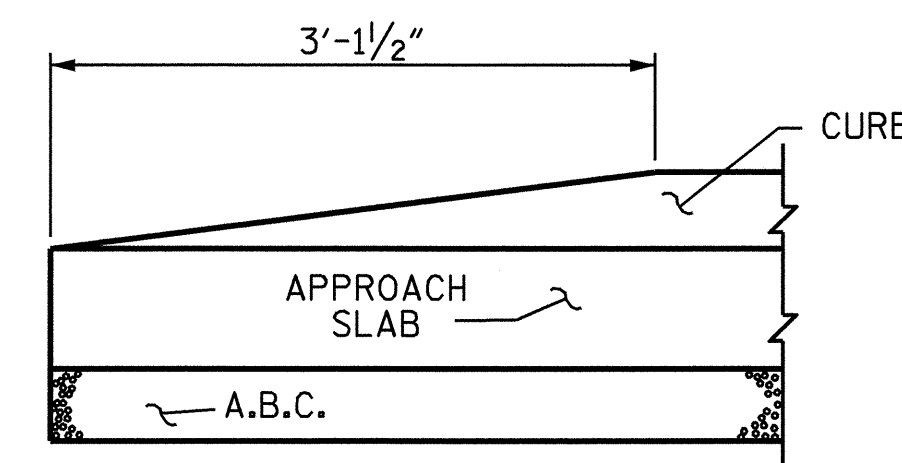
CLASS AA CONCRETE C. Y. 21.8



SECTION THRU SLAB
SHOWING SECTION WITHOUT CONCRETE WEARING SURFACE



SECTION N-N
(SEE SHEET 2 OF 3)



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

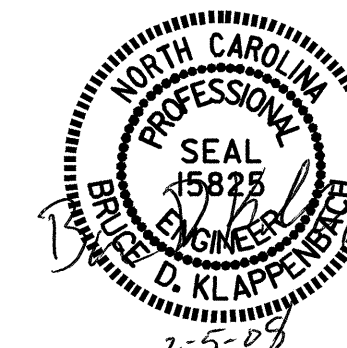
PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 3

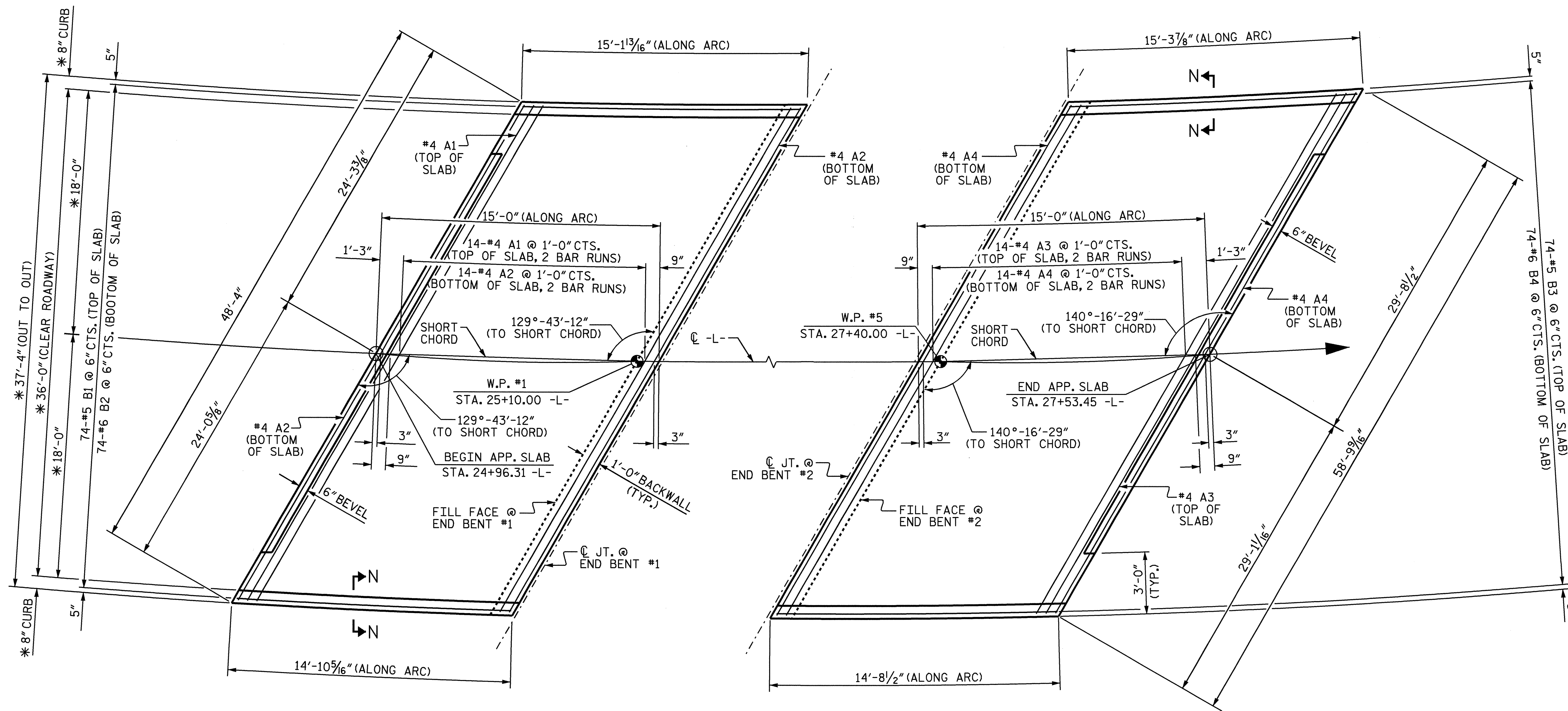
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

ASSEMBLED BY : M. G. SHAIKH	DATE : 5/03/07
CHECKED BY : H. T. BARBOUR	DATE : 5/11/07
DRAWN BY : EEM 3/95	REV. 7/10/01 LES/RDR
CHECKED BY : VAP 3/95	REV. 5/7/03R RWW/JTE
	REV. 5/1/06 TLA/GM



REVISIONS						SHEET NO. S-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			



PLAN @ END BENT #1

PLAN @ END BENT #2

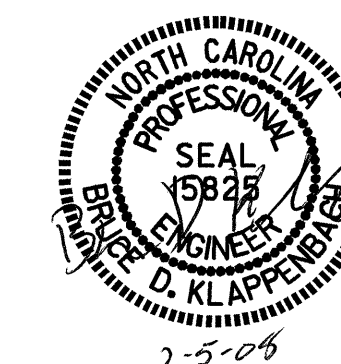
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS
 (* RADIAL DIMENSION)
 ARC OFFSETS ARE NEGLIGIBLE, THEREFORE NOT SHOWN.

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 2 OF 3

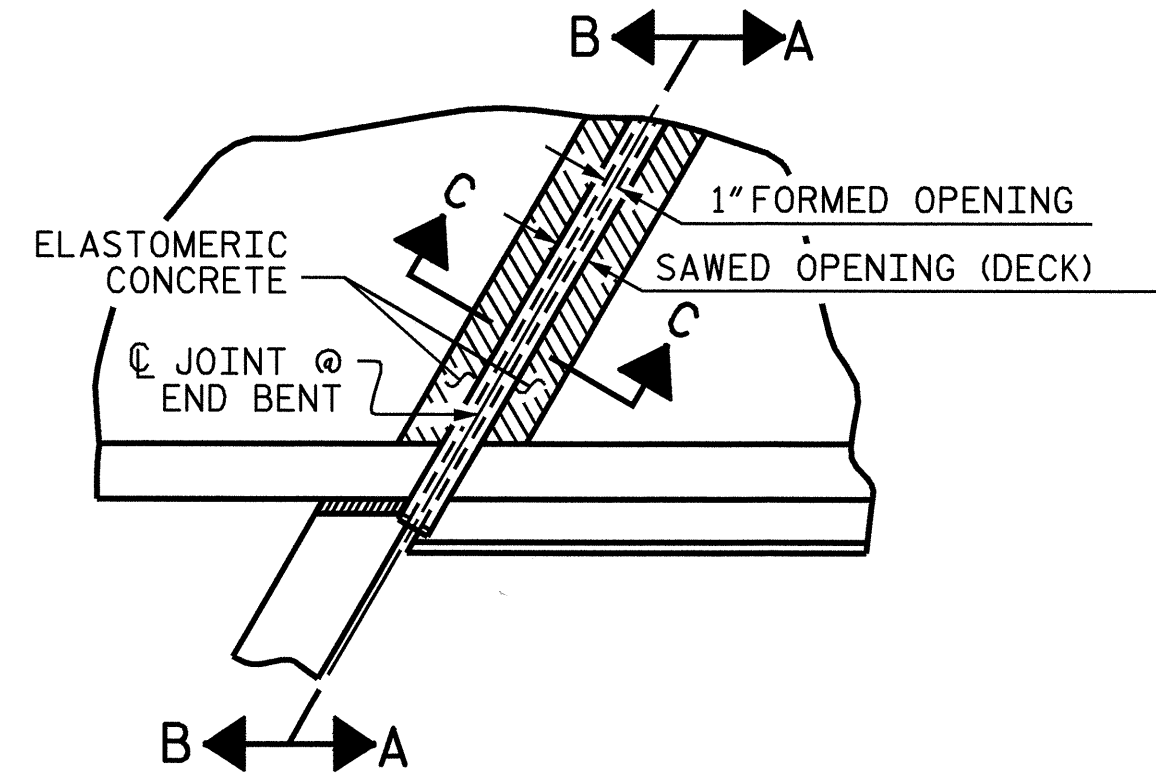
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

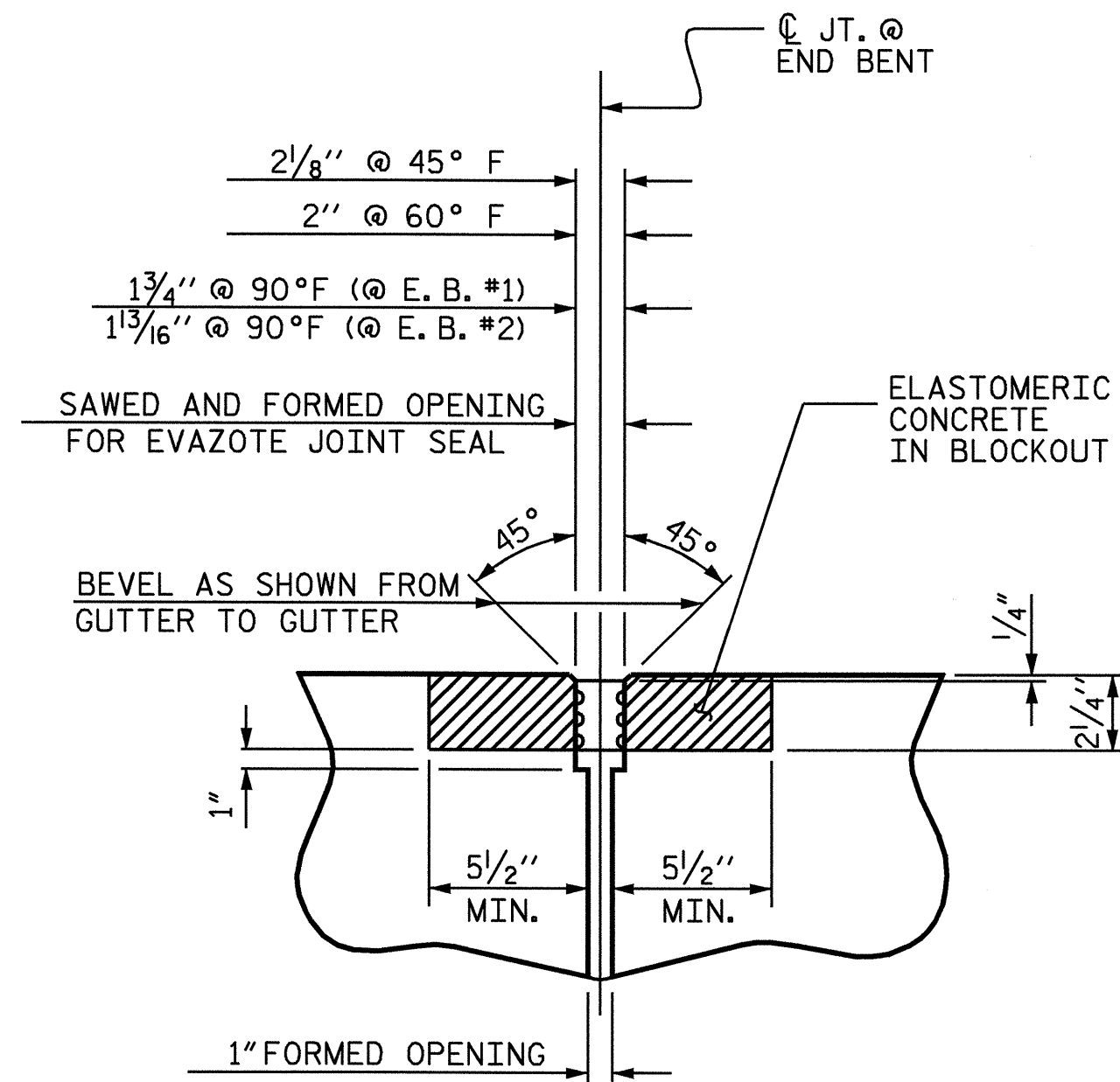


REVISIONS						SHEET NO. S-41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			

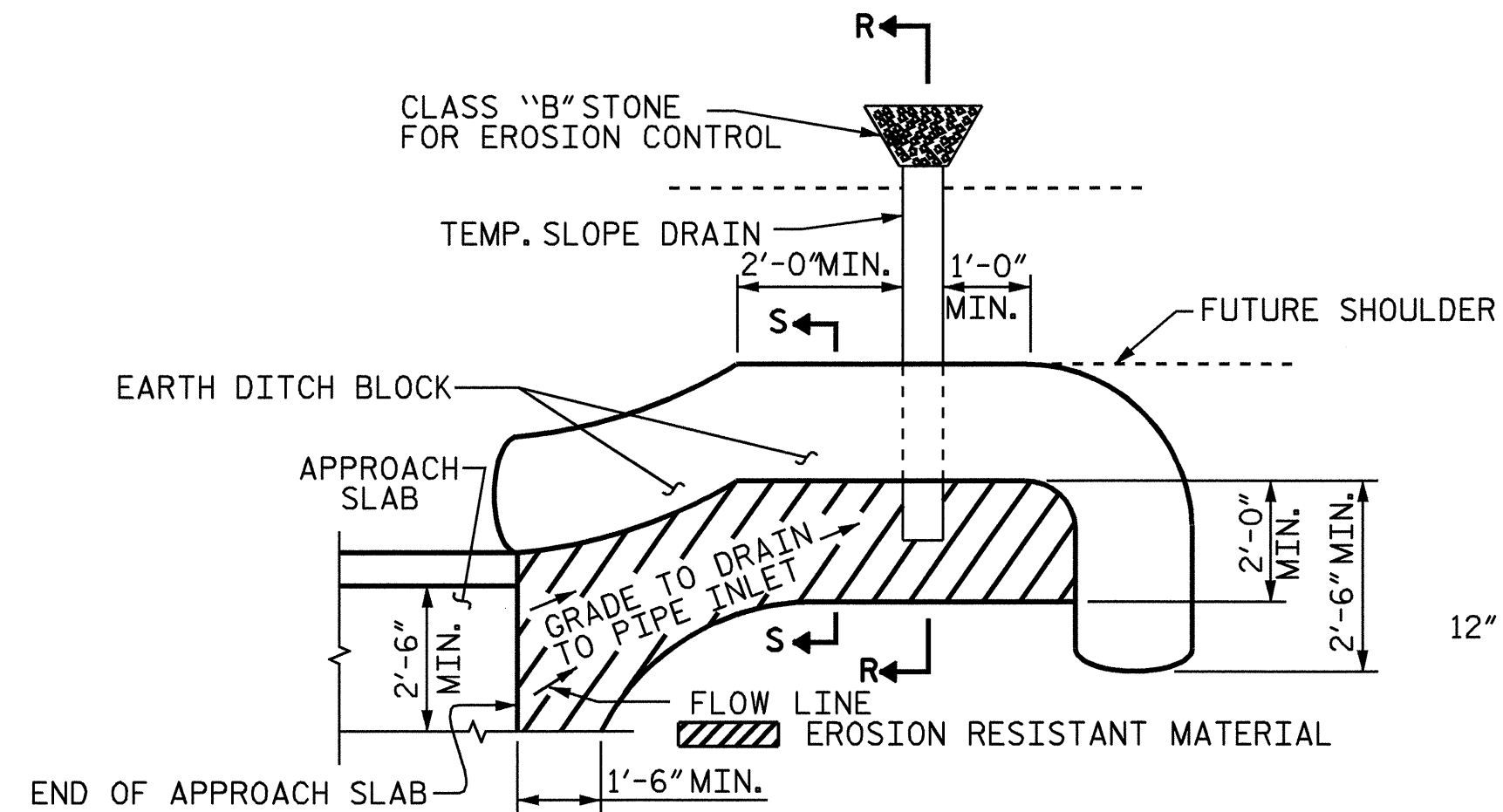
DRAWN BY : M. G. SHAIKH DATE : 5/04/07
 CHECKED BY : H. T. BARBOUR DATE : 5/11/07



PLAN @ END BENT

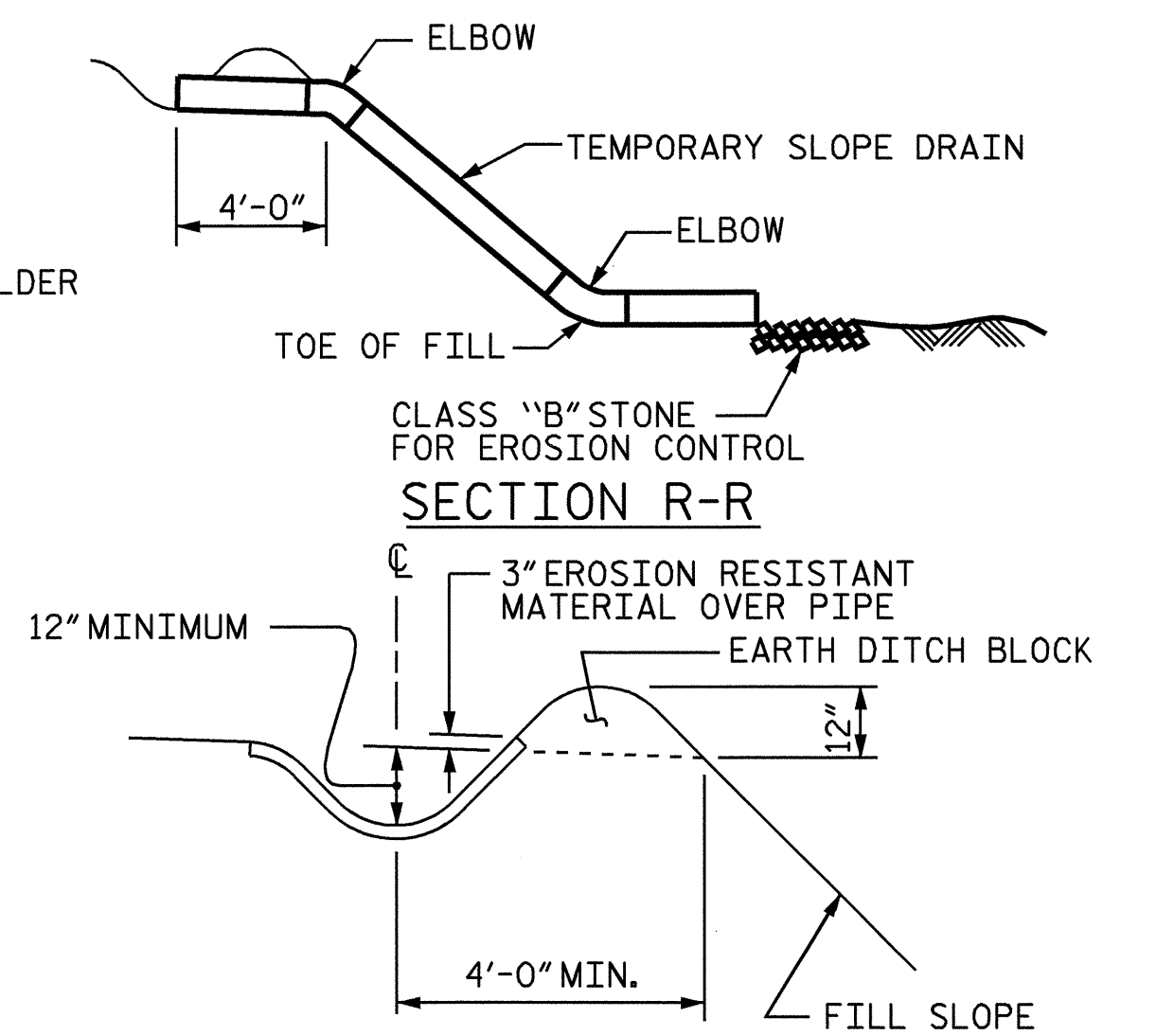


SECTION C-C
EVAZOTE JOINT SEAL
(EXPANSION)



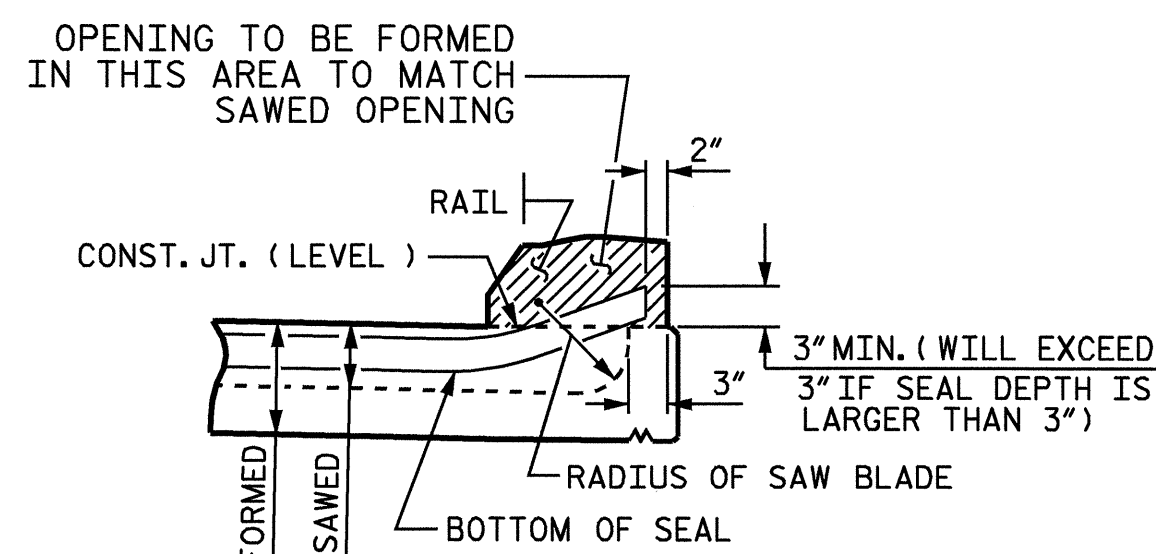
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

PLAN VIEW

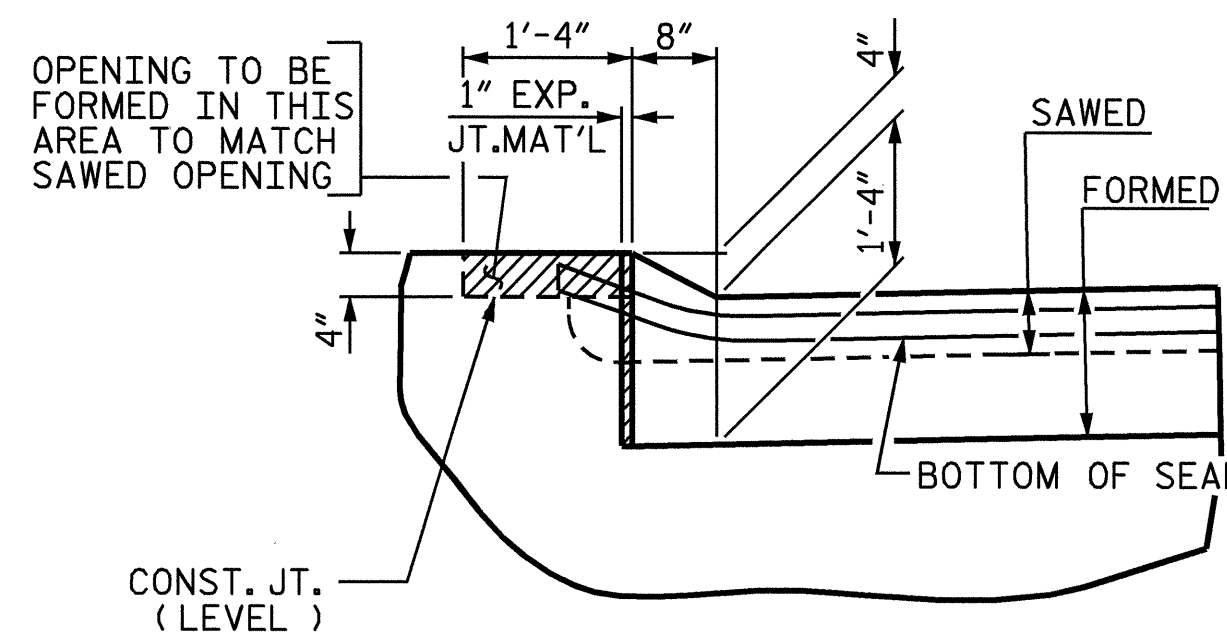


SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS



SECTION A-A

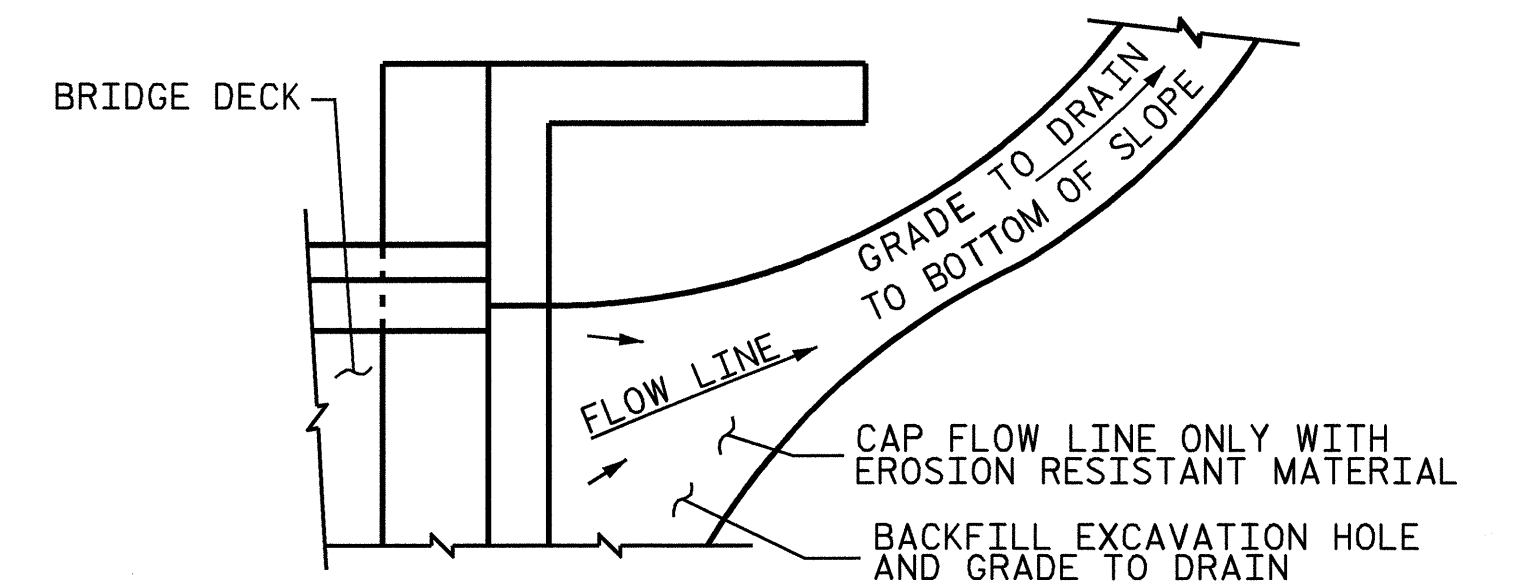


SECTION B-B

JOINT SEAL DETAILS @ END BENT

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	8.3
2	10.1
TOTAL	18.4

* BASED ON THE MINIMUM BLOCKOUT SHOWN



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.

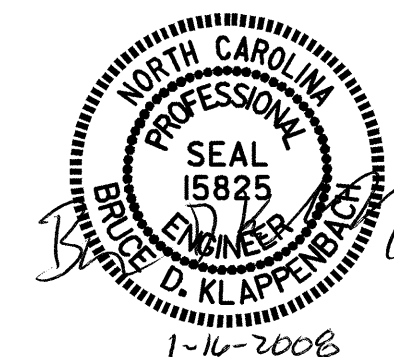
TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH
 SLAB DETAILS



ASSEMBLED BY : M. G. SHAIKH DATE : 5/04/07
 CHECKED BY : H. T. BARBOUR DATE : 5/11/07
 DRAWN BY : FCJ 11/88 REV. 10/17/00 RWW/LES
 CHECKED BY : ARB 11/88 REV. 5/7/03 RWW/JTE
 REV. 5/1/06 TLA/GM

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	
1			3		S-42
2			4		TOTAL SHEETS 45

OVERHANG BRACKET CALCULATION INSTRUCTIONS

AASHTO SHAPES - TYPES III, IV, V, AND VI

- RECORD KNOWN INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- CALCULATE THE MAXIMUM SCREED LOAD PER BRACKET (SLPB) WITH AN ESTIMATED $R = 1.5$. $SLPB = R \times W$. ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE ESTIMATED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE, AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE THE BRACKET SPACING, S.
- CALCULATE S/D1 AND S/D2, ROUNDING UP TO NEAREST VALUE IN TABLE 2. ENTER TABLE 2 AND DETERMINE R VALUE.
- CALCULATE REVISED SLPB. ROUND VALUE UP TO NEAREST SLPB VALUE INDICATED ON APPROPRIATE TABLE 1-1, 1-2, 1-3, OR 1-4.
- WITH THE REVISED SLPB, OVERHANG SLAB THICKNESS, "K" VALUE AND 45° HANGER SAFE WORKING LOAD (SWL), ENTER THE APPROPRIATE TABLE 1-1, 1-2, 1-3 OR 1-4 (BASED ON OVERHANG DIMENSION) AND DETERMINE REVISED BRACKET SPACING, S.
- CONTINUE ITERATIONS OF STEPS 4-6 UNTIL THE REVISED BRACKET SPACING, S, IS THE SAME AS THE PREVIOUS S VALUE.
- CHECK LUMBER JOIST SPACING: WITH BRACKET SPACING VALUE, S, ROUND THIS VALUE UP TO THE NEAREST VALUE OF ALLOWABLE SPAN LENGTH OF JOIST OF TABLE 3. USING THIS VALUE, ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE, DETERMINE JOIST SPACING FROM TABLE 3. IF NECESSARY, ADJUST LUMBER JOIST SIZE AND/OR JOIST SPACING TO MEET ALLOWABLE SPAN LENGTH OF JOIST.
- CONVERSELY, IF THE DESIRED JOIST SPACING IS KNOWN, USE THIS ALONG WITH THE AVERAGE OVERHANG SLAB THICKNESS AND THE LUMBER JOIST SIZE TO DETERMINE IF ALLOWABLE SPAN LENGTH OF JOIST IS GREATER THAN THE BRACKET SPACING, S. IF NECESSARY, ADJUST LUMBER JOIST SIZE TO MEET REQUIREMENTS OF ALLOWABLE SPAN LENGTH OF JOIST AND JOIST SPACING.
- RECORD REMAINING INFORMATION ON "BRIDGE OVERHANG BRACKET SUMMARY" FORM.
- SUBMIT FORM AND CALCULATIONS FOR REVIEW AND APPROVAL.

TABLE 1-1 (FOR USE ON UP TO 2'-0" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (T) (in)	BRACKET (K) DIMENSION (in)	SCREED LOAD PER BRACKET									45° HANGER SWL (lbs)
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.	0 lbs.	
		BRACKET SPACING									
10	30	3'-6"	4'-0"	4'-5"	2'-1"	2'-7"	3'-2"	3'-8"	4'-2"	5'-9"	4000
	40	3'-6"	4'-0"	4'-5"	2'-1"	2'-7"	3'-2"	3'-8"	4'-2"	5'-9"	6000
	50	3'-6"	4'-0"	4'-5"	2'-1"	2'-7"	3'-2"	3'-8"	4'-2"	5'-9"	6000
12	30	3'-2"	3'-7"	4'-1"	2'-4"	2'-10"	3'-4"	3'-9"	5'-2"	4000	
	40	3'-2"	3'-7"	4'-1"	2'-4"	2'-10"	3'-4"	3'-9"	5'-2"	6000	
	50	3'-2"	3'-7"	4'-1"	2'-4"	2'-10"	3'-4"	3'-9"	5'-2"	6000	
14	30	2'-10"	3'-4"	3'-9"	2'-2"	2'-7"	3'-0"	3'-5"	4'-9"	4000	
	40	2'-10"	3'-4"	3'-9"	2'-2"	2'-7"	3'-0"	3'-5"	4'-9"	6000	
	50	2'-10"	3'-4"	3'-9"	2'-2"	2'-7"	3'-0"	3'-5"	4'-9"	6000	
16	30	2'-8"	3'-0"	3'-5"	2'-0"	2'-4"	2'-9"	3'-2"	4'-4"	4000	
	40	2'-8"	3'-0"	3'-5"	2'-0"	2'-4"	2'-9"	3'-2"	4'-4"	6000	
	50	2'-8"	3'-0"	3'-5"	2'-0"	2'-4"	2'-9"	3'-2"	4'-4"	6000	

TABLE 1-2 (FOR USE ON OVER 2'-0" TO 2'-6" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (T) (in)	BRACKET (K) DIMENSION (in)	SCREED LOAD PER BRACKET									45° HANGER SWL (lbs)
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.	0 lbs.	
		BRACKET SPACING									
10	30	3'-1"	3'-6"	4'-0"	2'-4"	2'-9"	3'-3"	3'-8"	5'-1"	4000	
	40	3'-1"	3'-6"	4'-0"	2'-4"	2'-9"	3'-3"	3'-8"	5'-1"	6000	
	50	3'-1"	3'-6"	4'-0"	2'-4"	2'-9"	3'-3"	3'-8"	5'-1"	6000	
12	30	2'-9"	3'-2"	3'-7"	2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	4000	
	40	2'-9"	3'-2"	3'-7"	2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	6000	
	50	2'-9"	3'-2"	3'-7"	2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	6000	
14	30	2'-6"	2'-10"	3'-3"	2'-3"	2'-7"	3'-0"	4'-1"	4000		
	40	2'-6"	2'-10"	3'-3"	2'-3"	2'-7"	3'-0"	4'-1"	6000		
	50	2'-6"	2'-10"	3'-3"	2'-3"	2'-7"	3'-0"	4'-1"	6000		
16	30	2'-3"	2'-7"	2'-11"	2'-1"	2'-5"	2'-9"	3'-9"	4000		
	40	2'-3"	2'-7"	2'-11"	2'-1"	2'-5"	2'-9"	3'-9"	6000		
	50	2'-3"	2'-7"	2'-11"	2'-1"	2'-5"	2'-9"	3'-9"	6000		

TABLE 1-3 (FOR USE ON OVER 2'-6" TO 3'-0" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (T) (in)	BRACKET (K) DIMENSION (in)	SCREED LOAD PER BRACKET									45° HANGER SWL (lbs)
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.	0 lbs.	
		BRACKET SPACING									
10	30					2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	4000
	40					2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	6000
	50	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-7"	4000
12	30					2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	4000
	40					2'-1"	2'-6"	2'-11"	3'-4"	4'-6"	6000
	50	2'-9"	3'-2"	3'-7"	4'-0"	4'-5"	4'-10"	5'-3"	5'-7"	6'-7"	4000
14	30					3'-11"	4'-3"	4'-8"	5'-0"	6'-1"	4000
	40					3'-11"	4'-3"	4'-8"	5'-0"	6'-1"	6000
	50	2'-5"	2'-10"	3'-2"	3'-6"	3'-11"	4'-3"	4'-8"	5'-0"	6'-1"	6000
16	30					2'-11"	3'-2"	3'-6"	3'-10"	4'-1"	4000
	40					2'-11"	3'-2"	3'-6"	3'-10"	4'-1"	6000
	50	2'-0"	2'-4"	2'-7"	2'-11"	3'-2"	3'-6"	3'-10"	4'-1"	5'-0"	4000

TABLE 1-4 (FOR USE ON OVER 3'-0" TO 3'-6" OVERHANG (L) & 54" HORIZONTAL LEG LENGTH OF THE OVERHANG BRACKET)

AVG. SLAB THICKNESS (T) (in)	BRACKET (K) DIMENSION (in)	SCREED LOAD PER BRACKET									45° HANGER SWL (lbs)
		2500 lbs.	2250 lbs.	2000 lbs.	1750 lbs.	1500 lbs.	1250 lbs.	1000 lbs.	750 lbs.	0 lbs.	
		BRACKET SPACING									
10	30					2'-3"	2'-1"	2'-5"	2'-9"	3'-10"	4000
	40					2'-3"	2'-1"	2'-5"	2'-9"	3'-10"	6000
	50					2'-4"	2'-8"	3'-0"	3'-7"	4'-1"	4000
12	30					2'-4"	2'-8"	3'-0"	3'-7"	4'-1"	4000
	40					2'-4"	2'-8"	3'-0"	3'-7"	4'-1"	6000
	50	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-1"	4'-5"	4'-9"	5'-9"	4000
14	30					2'-1"	2'-8"	3'-4"	3'-11"	5'-2"	4000
	40					2'-1"	2'-8"	3'-4"	3'-11"	5'-2"	6000
	50					2'-1"	2'-8"	3'-4"	3'-11"	5'-2"	6000
16	30					2'-2"	2'-5"	2'-8"	3'-4"	3'-7"	4000
	40					2'-2"	2'-5"	2'-8"	3'-4"	3'-7"	6000
	50	2'-1"	2'-4"	2'-8"	3'-0"	3'-4"	3'-7"	3'-11"	4'-3"	5'-2"	4000

DEFINITIONS

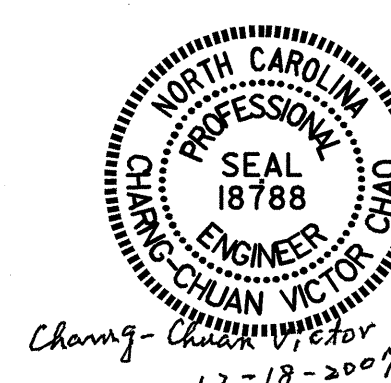
- SLPB = SCREED LOAD PER BRACKET (R x W)
- R = SCREED LOAD FACTOR, OBTAINED FROM TABLE 2
- W = WHEEL LOAD
- S = BRACKET SPACING
- T = AVERAGE SLAB THICKNESS
- SWL = SAFE WORKING LOAD
- K = DIMENSION DEFINED ON "BRIDGE OVERHANG BRACKET SUMMARY" ON SHEET 2
- L = OVERHANG MEASURED FROM EDGE OF TOP FLANGE TO EDGE OF SUPERSTRUCTURE

PROJECT NO. B-4212
 NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD OVERHANG FALSEWORK
 AASHTO TYPES
 III, IV, V, AND VI

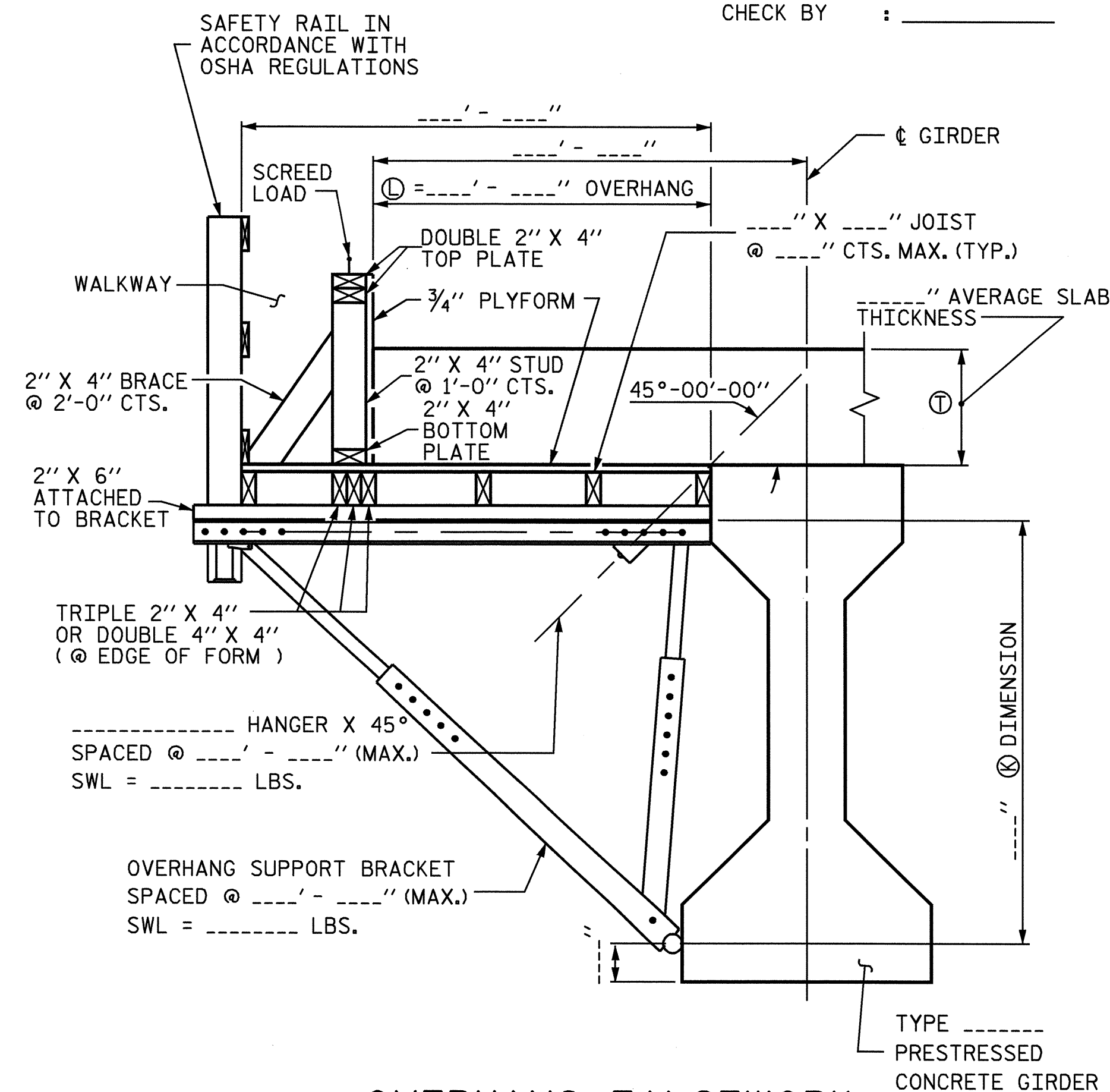


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-43
2			4			TOTAL SHEETS 45

ASSEMBLED BY:	DATE:
CHECKED BY:	DATE:
DRAWN BY: R. WRIGHT 06/04	REV.
CHECKED BY: C. V. CHAO 06/04	

BRIDGE OVERHANG BRACKET SUMMARY

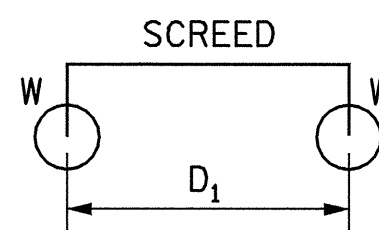
TOTAL SCREED WEIGHT = _____ LBS. PROJECT No. : _____
 NUMBER OF SCREED WHEELS = _____ COUNTY : _____
 SCREED WHEEL LOAD (W) = _____ LBS. STATION : _____
 SCREED LOAD PER BRACKET = _____ LBS. DESCRIPTION : _____
 DATE : _____
 DESIGN BY : _____
 CHECK BY : _____



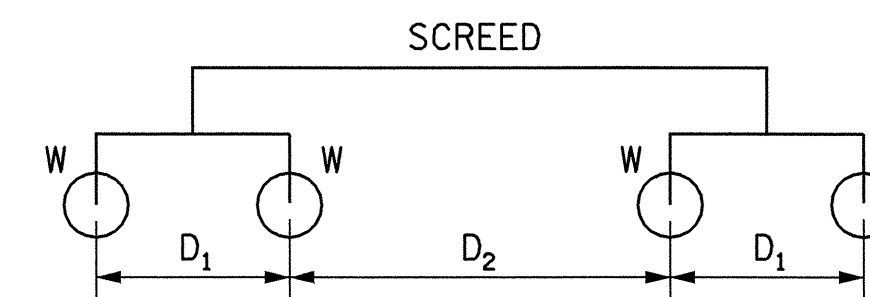
OVERHANG FALSEWORK

NOTES

DESIGN INCLUDES CONSTRUCTION LIVE LOAD 20 PSF ON THE AREA SUPPORTED AND 75 PLF AT THE OUTSIDE DECK OF OVERHANGS.
 REQUIRED MINIMUM DIAGONAL LEG CAPACITY: 3600 LB WORKING LOAD
 THE CONTRACTOR HAS THE OPTION OF SUBMITTING HIS OWN DESIGN FOR OVERHANG FALSEWORK IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
 SUBMITTALS UTILIZING THE INSTRUCTIONS AND PROCEDURES DESCRIBED ON SHEET 1 OF 3 SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE SPECIFICATIONS AND SPECIAL PROVISIONS, EXCEPT THAT CALCULATIONS FOR OVERHANG FALSEWORK NEED NOT BE SEALED BY A REGISTERED ENGINEER.
 FOR OVERHANG FALSEWORK BRACING DESIGN, SEE SHEET 3 OF 3.



4-WHEEL MACHINE



8-WHEEL MACHINE

TABLE 2: SCREED LOAD FACTOR "R"

4 WHEEL MACHINE	
S/D1	R
<= 1.0	1.00
1.1	1.09
1.2	1.17
1.3	1.23
1.4	1.29
1.5	1.33
1.6	1.38
1.7	1.41
1.8	1.44
1.9	1.47
2.0	1.50
2.2	1.55
2.4	1.58
2.6	1.62
2.8	1.64
3.0	1.67
3.5	1.71
4.0	1.75

		THE SCREED LOAD FACTOR R (FOR 8 WHEEL MACHINE)																	
		S/D ₂																	
		<= 1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.5	4.0
S/D ₁	<= 1.0	1.00	1.09	1.17	1.23	1.29	1.33	1.38	1.41	1.44	1.47	1.50	1.55	1.58	1.62	1.64	1.67	1.71	1.75
	1.1	1.09	1.18	1.26	1.32	1.38	1.42	1.47	1.50	1.54	1.56	1.59	1.64	1.67	1.71	1.73	1.76	1.81	1.84
	1.2	1.17	1.26	1.33	1.40	1.45	1.50	1.54	1.58	1.61	1.64	1.67	1.71	1.75	1.78	1.81	1.83	1.88	1.92
	1.3	1.23	1.32	1.40	1.46	1.52	1.56	1.61	1.64	1.68	1.70	1.73	1.78	1.81	1.85	1.87	1.90	1.95	1.98
	1.4	1.29	1.38	1.45	1.52	1.57	1.62	1.66	1.70	1.73	1.76	1.79	1.83	1.87	1.90	1.93	1.95	2.00	2.07
	1.5	1.33	1.42	1.50	1.56	1.62	1.67	1.71	1.75	1.78	1.81	1.83	1.88	1.92	1.95	1.98	2.00	2.10	2.17
	1.6	1.38	1.47	1.54	1.61	1.66	1.71	1.75	1.79	1.82	1.85	1.88	1.92	1.96	1.99	2.04	2.08	2.18	2.25
	1.7	1.41	1.50	1.58	1.64	1.70	1.75	1.79	1.82	1.86	1.89	1.91	1.96	2.00	2.05	2.11	2.16	2.25	2.32
	1.8	1.44	1.54	1.61	1.68	1.73	1.78	1.82	1.86	1.89	1.92	1.94	1.99	2.06	2.12	2.17	2.22	2.32	2.39
	1.9	1.47	1.56	1.64	1.70	1.76	1.81	1.85	1.89	1.92	1.95	1.97	2.04	2.11	2.18	2.23	2.28	2.38	2.45
	2.0	1.50	1.59	1.67	1.73	1.79	1.83	1.88	1.91	1.94	1.97	2.00	2.09	2.17	2.23	2.29	2.33	2.43	2.50
	2.2	1.55	1.64	1.71	1.78	1.83	1.88	1.92	1.96	1.99	2.04	2.09	2.18	2.26	2.32	2.38	2.42	2.52	2.59
	2.4	1.58	1.67	1.75	1.81	1.87	1.92	1.96	2.00	2.06	2.11	2.17	2.26	2.33	2.40	2.45	2.50	2.60	2.67
	2.6	1.62	1.71	1.78	1.85	1.90	1.95	1.99	2.05	2.12	2.18	2.23	2.32	2.40	2.46	2.52	2.56	2.66	2.73
	2.8	1.64	1.73	1.81	1.87	1.93	1.98	2.04	2.11	2.17	2.23	2.29	2.38	2.45	2.52	2.57	2.62	2.71	2.79
	3.0	1.67	1.76	1.83	1.90	1.95	2.00	2.08	2.16	2.22	2.28	2.33	2.42	2.50	2.56	2.62	2.67	2.76	2.83
3.5	1.71	1.81	1.88	1.95	2.00	2.10	2.18	2.25	2.32	2.38	2.43	2.52	2.60	2.66	2.71	2.76	2.86	2.93	
4.0	1.75	1.84	1.92	1.98	2.07	2.17	2.25	2.32	2.39	2.45	2.50	2.59	2.67	2.73	2.79	2.83	2.93	3.00	

TABLE 3: ALLOWABLE SPAN LENGTH OF JOISTS AND JOIST SPACINGS

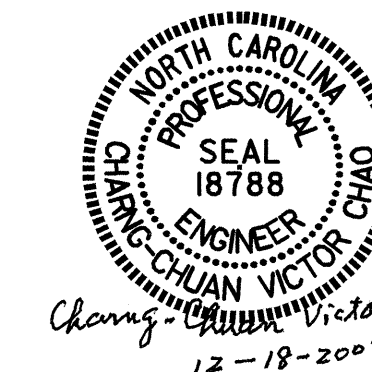
AVG. SLAB THICKNESS (IN)	LUMBER JOIST SIZE (IN X IN)	JOIST SPACINGS			
		15 IN	12 IN	10 IN	8 IN
10	2 X 4	---	4' - 6"	4' - 9"	5' - 0"
	4 X 4	5' - 9"	6' - 3"	6' - 6"	6' - 7"
12	2 X 4	---	4' - 3"	4' - 9"	5' - 0"
	4 X 4	5' - 3"	6' - 0"	6' - 3"	6' - 5"
14	2 X 4	---	4' - 0"	4' - 6"	5' - 0"
	4 X 4	---	5' - 6"	6' - 0"	6' - 4"
16	2 X 4	---	4' - 0"	4' - 3"	4' - 9"
	4 X 4	---	5' - 3"	5' - 9"	6' - 3"

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 2 OF 3

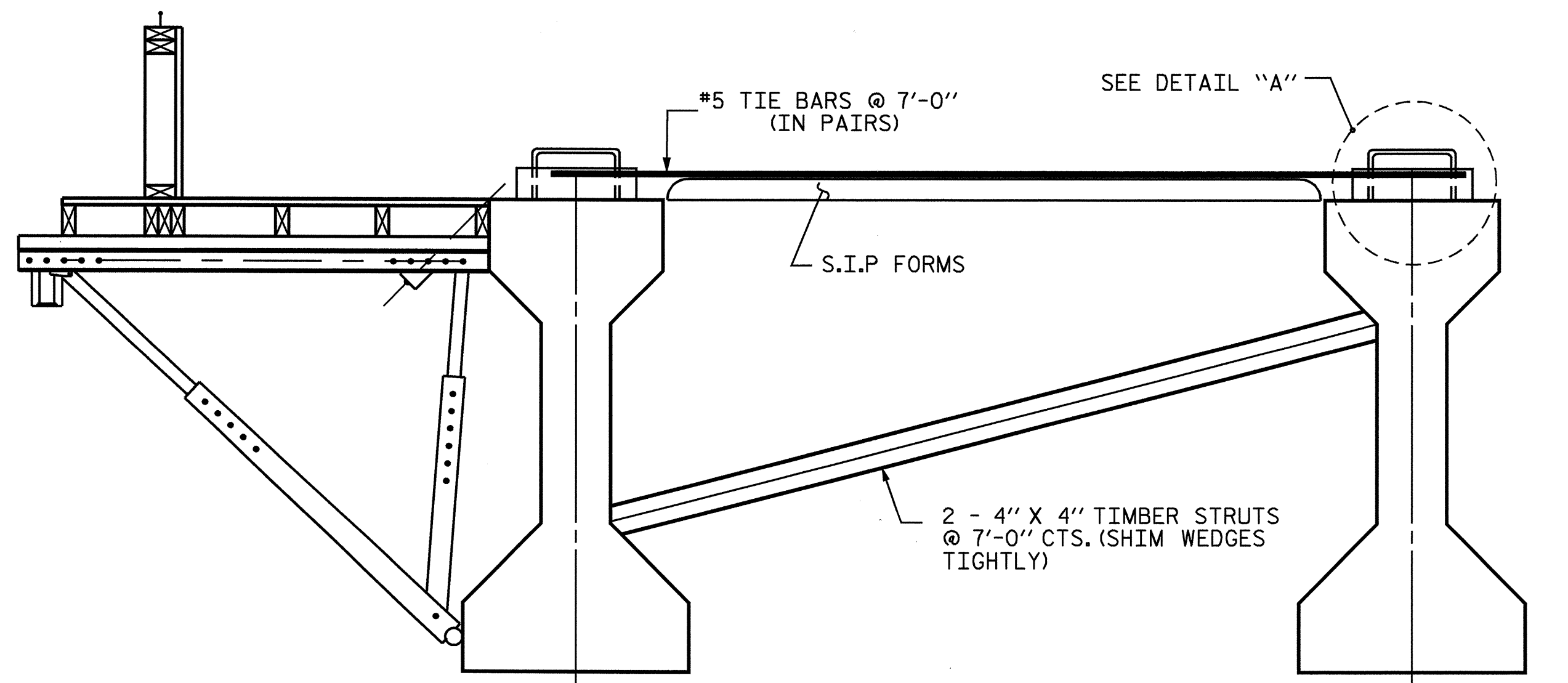
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD OVERHANG FALSEWORK
 AASHTO TYPES III, IV, V, AND VI



REVISIONS						SHEET NO. 5-44
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 45
2			4			

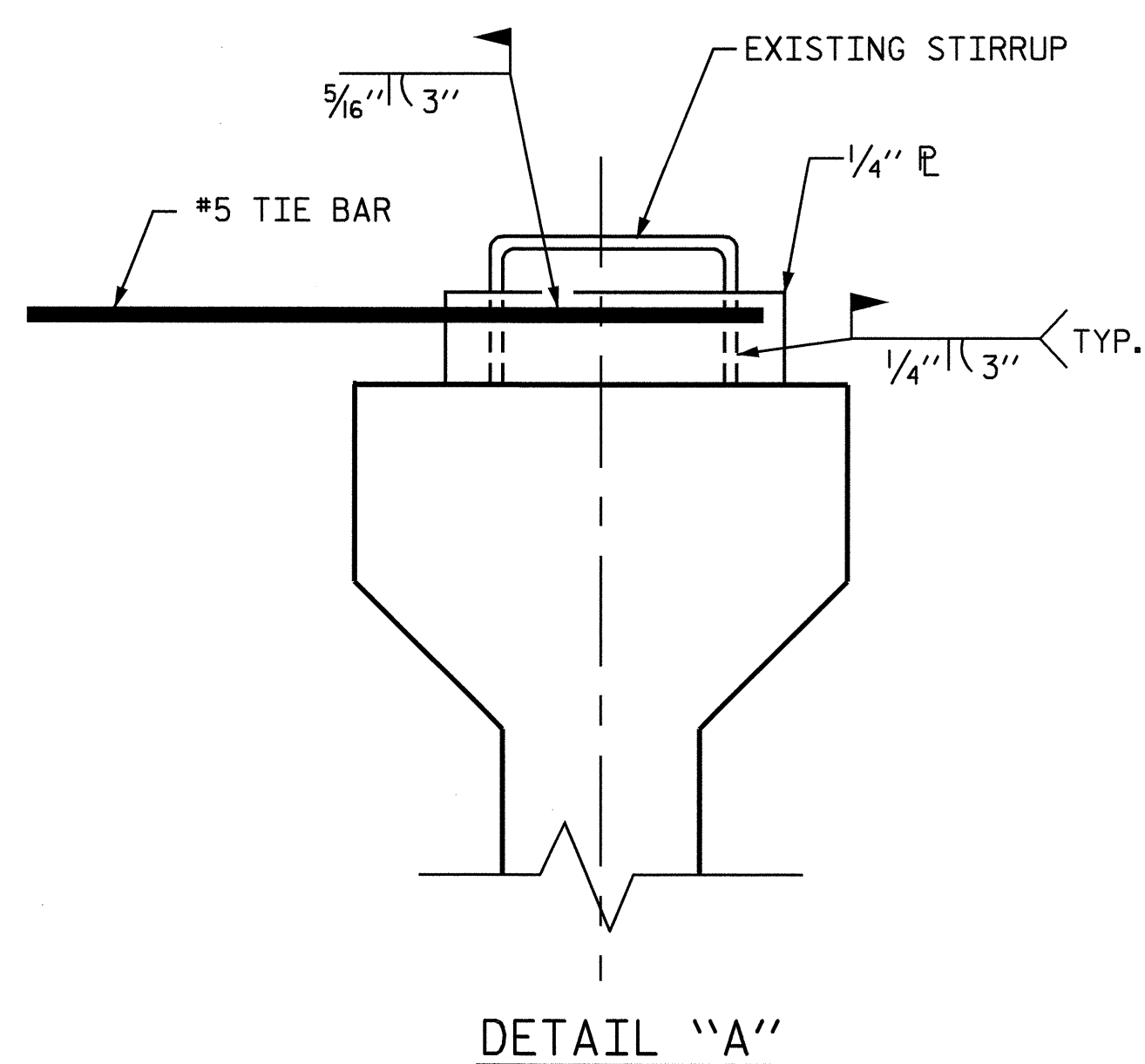
ASSEMBLED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 DRAWN BY: R. WRIGHT 06/04 REV. _____
 CHECKED BY: C. V. CHAO 06/04



EXTERIOR GIRDER

INTERIOR GIRDER

DETAIL OF REQUIRED OVERHANG FALSEWORK BRACING SYSTEM



NOTES:

EACH #5 TIE BAR SHALL BE WELDED TO ONE STIRRUP LOOP AS SHOWN IN DETAIL "A". #5 TIE BARS SHALL BE WELDED TO TWO ADJACENT STIRRUPS OF THE EXTERIOR GIRDER AND THE ADJACENT INTERIOR GIRDER BETWEEN PERMANENT DIAPHRAGMS. WELD STEEL PLATES IN BETWEEN THE TIE BARS AND THE STIRRUP LOOP. WELDING TWO TIE BARS TO THE SAME STIRRUP LOOP SHALL NOT BE PERMITTED.

MAXIMUM SPACING BETWEEN THE BRACING (TIE BARS-TIMBER STRUT) IS 7'-0" CTS. #5 TIE BARS SHALL BE LOCATED OVER A TIMBER STRUT.

INSTALL TIE BARS AND TIMBER STRUTS PRIOR TO PLACEMENT OF CONCRETE OR SCREED WEIGHT ONTO THE OVERHANG FALSEWORK.

PROJECT NO. B-4212
NORTHAMPTON COUNTY
 STATION: 26+25.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD OVERHANG FALSEWORK
 AASHTO TYPES
 III, IV, V, AND VI



Chang-Chuan Victor Chao
 12-18-2007

DRAWN BY: R. WRIGHT 06/04 DATE : _____
 CHECKED BY: C. V. CHAO 06/04 DATE : _____

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-45
2			4			TOTAL SHEETS 45

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