

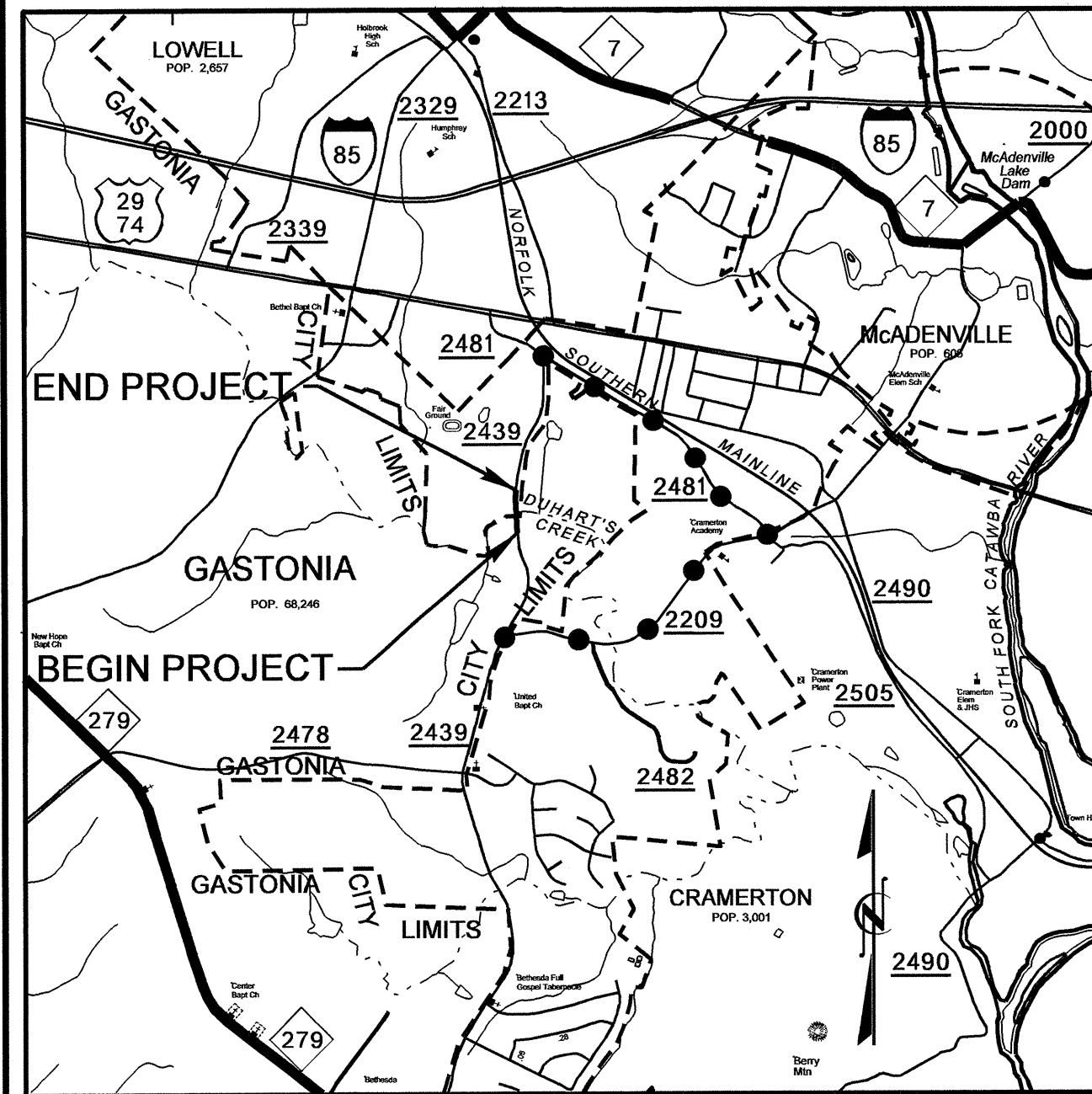
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GASTON COUNTY

**LOCATION: BRIDGE NO. 15 OVER DUHART'S CREEK ON SR 2439
(LOWELL BETHESDA RD.)**

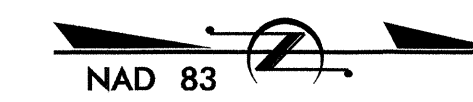
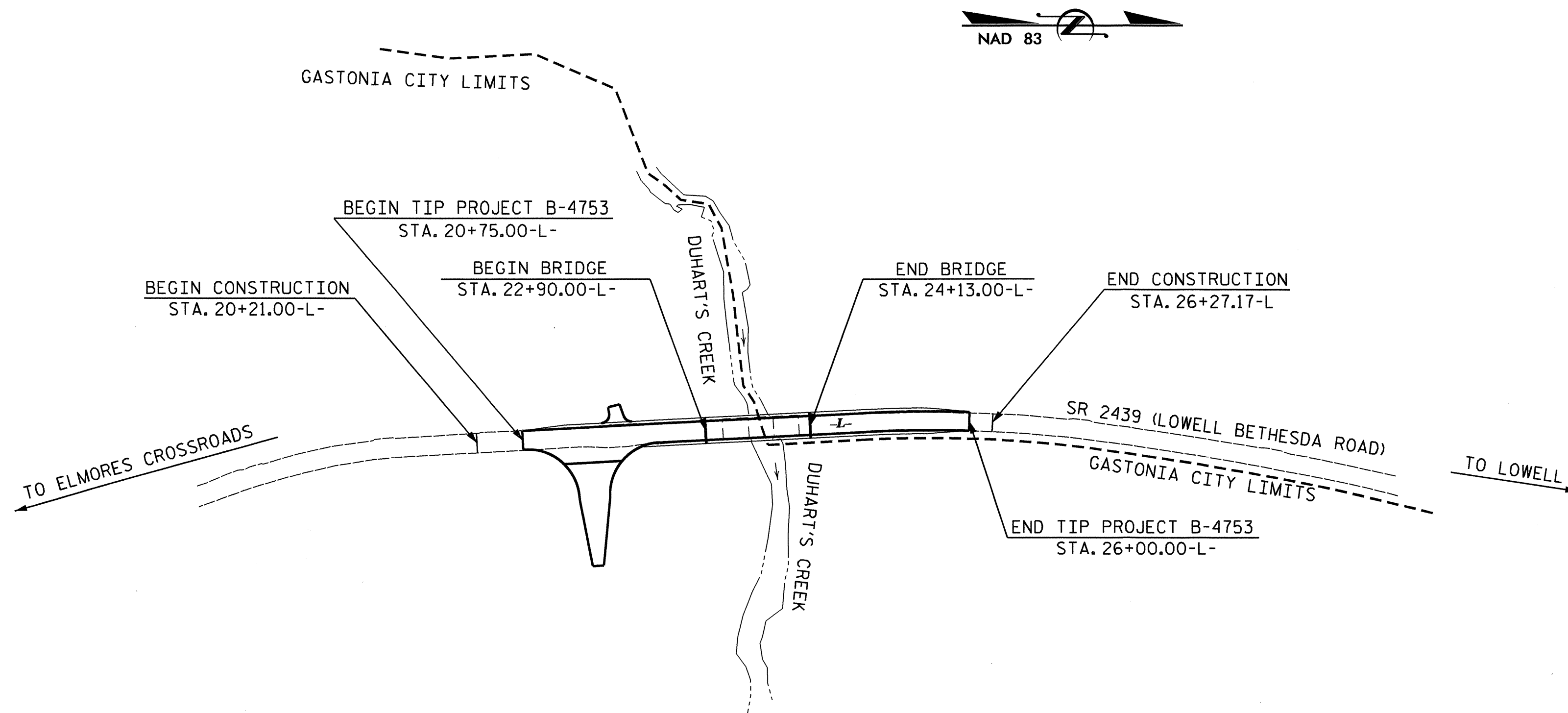
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4753		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38525.1.1	BRSTP-2439(1)	PE	
38525.2.1	BRSTP-2439(1)	RAW, UTIL	
38525.3.1	BRSTP-2439(1)	CONST.	



VICINITY MAP

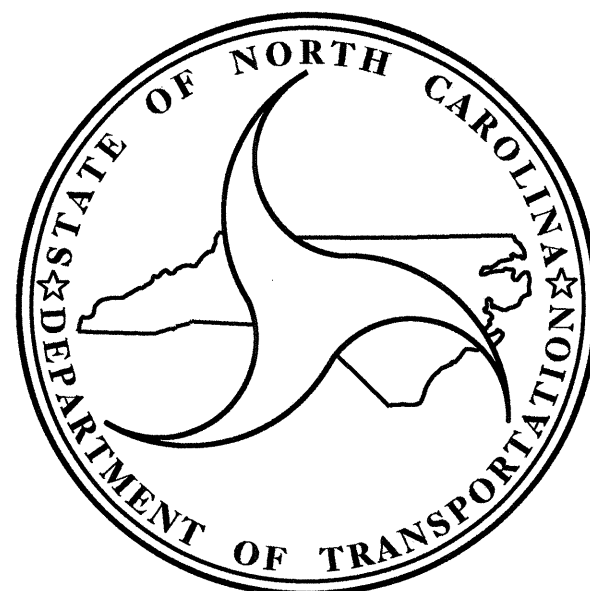
●●●●● OFFSITE DETOUR



TIP PROJECT: B-4753

CONTRACT: C202814

STRUCTURE



DESIGN DATA

ADT 2012 = 8700 VPD
ADT 2035 = 15800 VPD
DHV = 11 %
D = 70 %
T = 3 % *
V = 45 MPH
* TTST 1% DUAL 2%
FUNC. CLASS. = MINOR ARTERIAL
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4753 = 0.076 MILES
LENGTH STRUCTURE TIP PROJECT B-4753 = 0.023 MILES
TOTAL LENGTH TIP PROJECT B-4753 = 0.099 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

LETTING DATE:
DECEMBER 18, 2012

J. M. BAILEY, PE
PROJECT ENGINEER

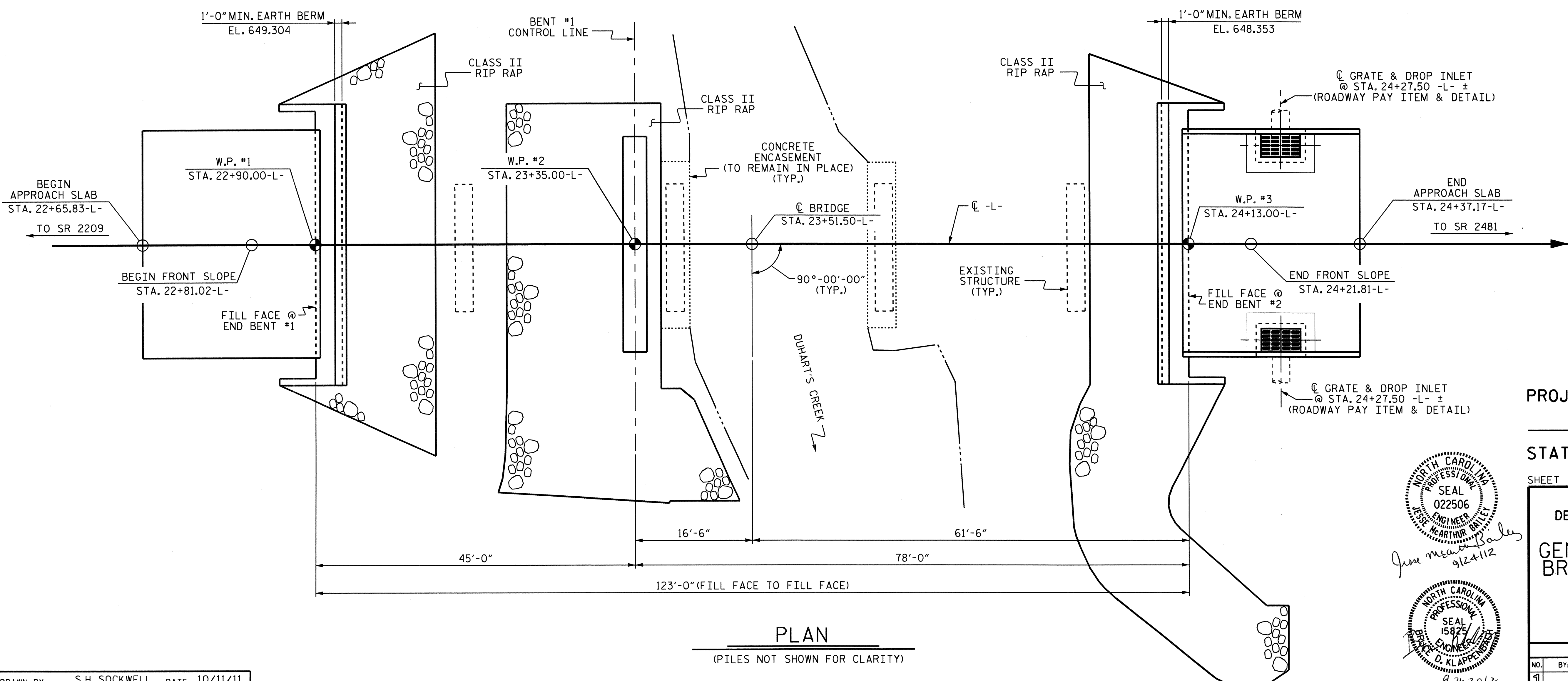
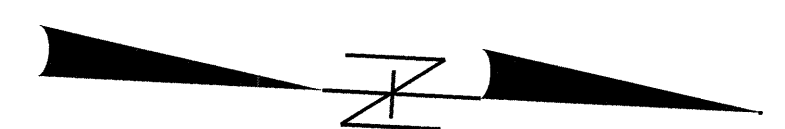
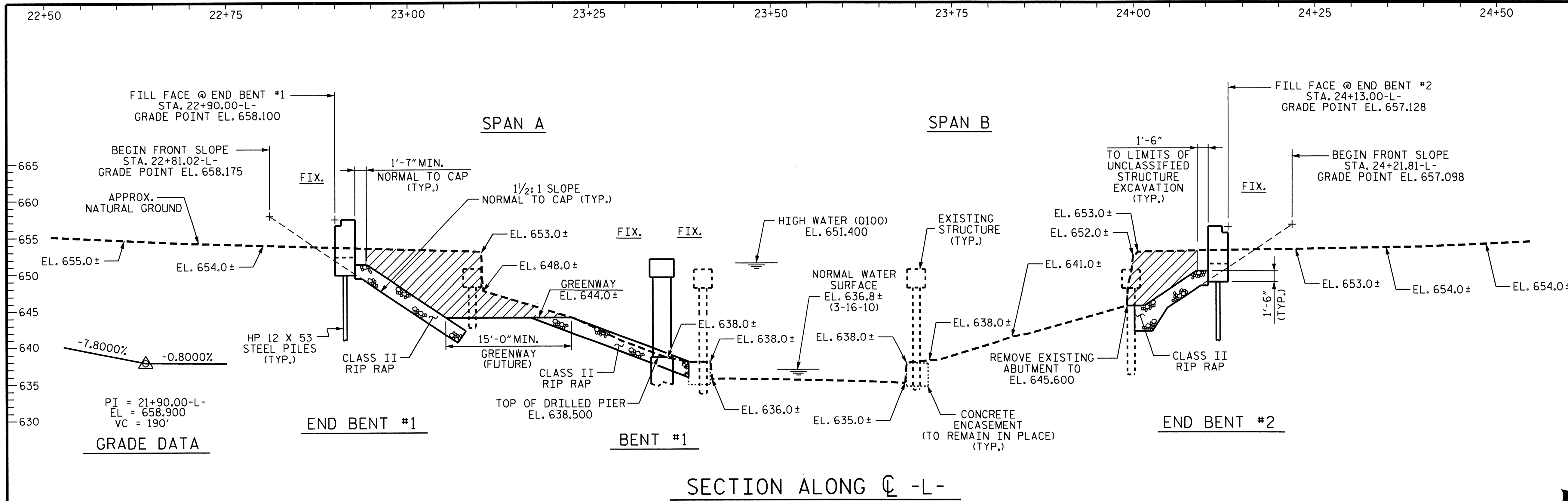
B. D. KLAPPENBACH, PE
PROJECT DESIGN ENGINEER

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED ENGINEER DIVISION ADMINISTRATION DATE



PROJECT NO. B-4753
 GASTON COUNTY
 STATION: 23+51.50-L-
 SHEET 1 OF 3 REPLACES BRIDGE NO. 15

Just mean Bailey
 9/24/12

9-24-2012

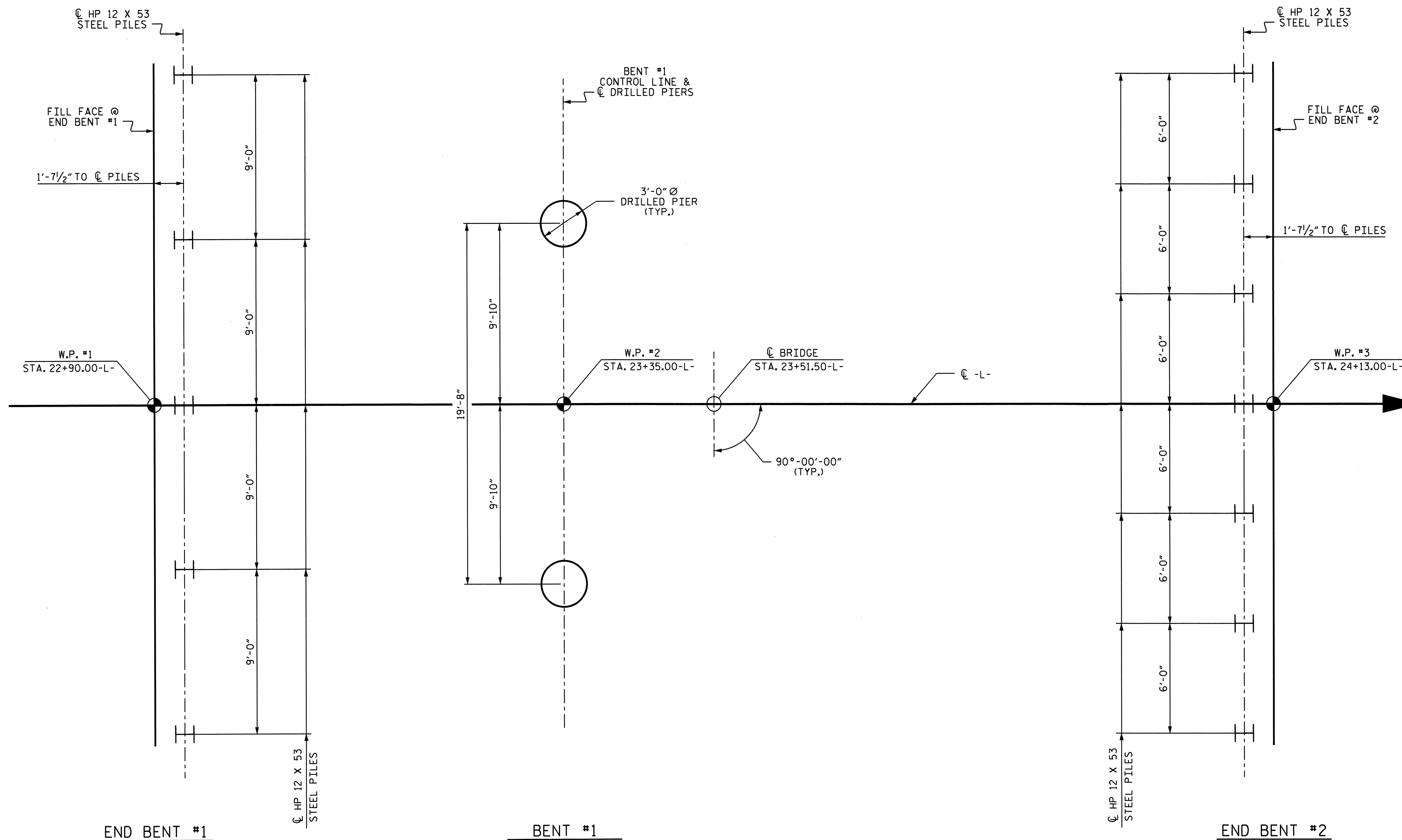
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**GENERAL DRAWING FOR
 BRIDGE OVER DUHART'S
 CREEK ON SR 2209
 BETWEEN SR 2439
 AND SR 2481**

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

S-1
 TOTAL SHEETS 33

DRAWN BY : S.H. SOCKWELL DATE : 10/11/11
 CHECKED BY : H.T. BARBOUR DATE : 10/12/11



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO PILE CENTERLINE.
 FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 PILES AT END BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.
 DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.
 FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
 DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 410 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 60 TSF.
 PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT NO.1. IF REQUIRED, DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION 634.000 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT STEEL CASING.
 INSTALL DRILLED PIERS AT BENT NO.1 THAT EXTEND TO AN ELEVATION NO HIGHER THAN 625.000 FT. AND SATISFY THE REQUIRED TIP RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 632.000 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

SPT TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

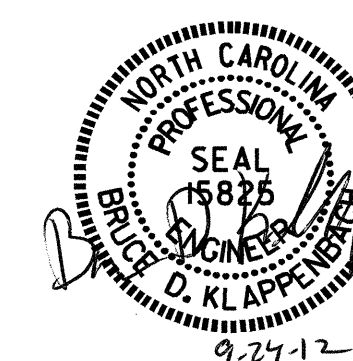
PILES AT END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.

DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 142 TONS PER PILE.

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 2 OF 3

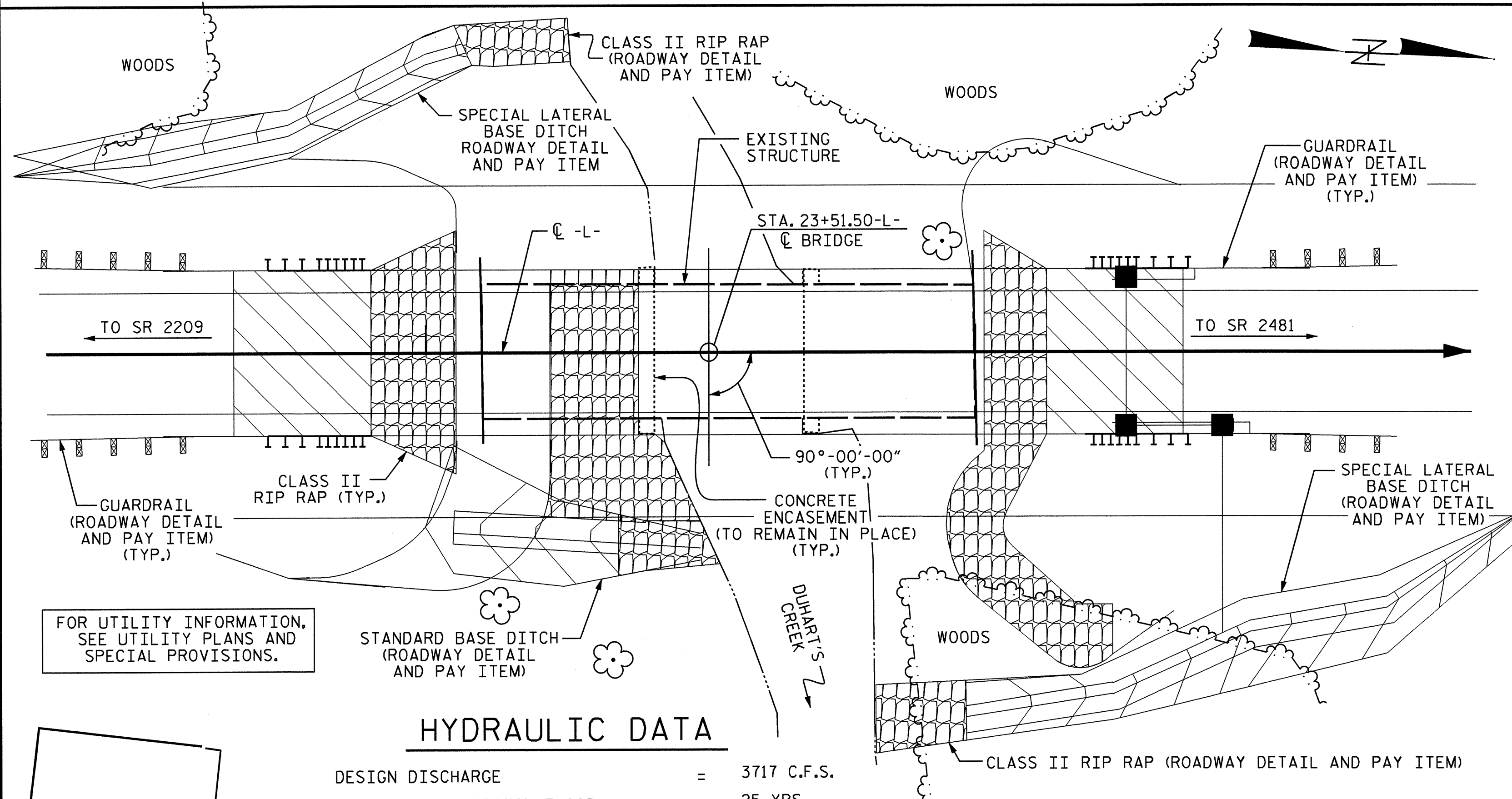
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING FOR
 BRIDGE OVER DUHART'S
 CREEK ON SR 2439
 BETWEEN SR 2209
 AND SR 2481



DRAWN BY : S.H. SOCKWELL DATE : 10/11/2011
 CHECKED BY : H.T. BARBOUR DATE : 10/12/2011

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			33

BENCH MARK #2: RAILROAD SPIKE IN 14" Ø PINE, 190.65' LEFT OF STA. 22+89.10-L-, EL. 642.66



HYDRAULIC DATA

DESIGN DISCHARGE	=	3717 C.F.S.
FREQUENCY OF DESIGN FLOOD	=	25 YRS.
DESIGN HIGH WATER ELEVATION	=	648.900
DRAINAGE AREA	=	7.5 SQ. MI.
BASE DISCHARGE (Q100)	=	5684 C.F.S.
BASE HIGH WATER ELEVATION	=	651.400

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	9598 C.F.S.+
FREQUENCY OF OVERTOPPING FLOOD	=	500 YRS.+
OVERTOPPING FLOOD ELEVATION	=	657.100

LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE 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.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS 1 @ 30'-4", 1 @ 30'-2", AND 1 @ 30'-0", ON A 4X8 TIMBER DECK WITH A 3" ASPHALT WEARING SURFACE ON 6 LINES OF W18X55 I-BEAMS ON TIMBER CAPS AND PILES AT THE END BENTS AND INTERIOR BENTS WITH PILES ENCASED IN CONCRETE AT THE INTERIOR BENTS WITH A CLEAR ROADWAY WIDTH OF 24.6' AND LOCATED AT THE PROPOSED SITE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THE LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. SEE SPECIAL PROVISIONS FOR REMOVAL OF EXISTING STRUCTURE AT STATION 23+51.50 -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 PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

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

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

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 23+51.50-L-."

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.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

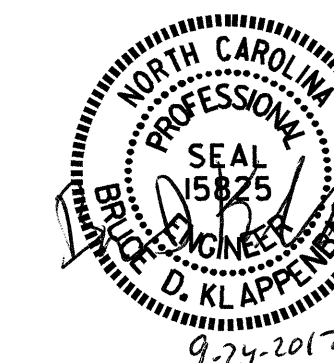
TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	3'-0" DIA. DRILLED PIERS IN SOIL	3'-0" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	
	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	LUMP SUM	SQ. FT.	SQ. FT.	
SUPERSTRUCTURE	LUMP SUM							LUMP SUM	4090	4581	
END BENT #1											
BENT #1		9.00	18.00	9.00							
END BENT #2											
TOTAL	LUMP SUM	9.00	18.00	9.00	1	1	1	LUMP SUM	4090	4581	
	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDERS	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	
	CU.YDS.	LUMP SUM	LBS.	LBS.	LIN.FT.	NO.	LIN.FT.	LIN.FT.	TONS	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE		LUMP SUM			481.00			242.67			LUMP SUM
END BENT #1	17.4		2391			5	90		145	160	
BENT #1	17.1		6537	846					160	180	
END BENT #2	17.7		2444			7	125		185	205	
TOTAL	52.2	LUMP SUM	11372	846	481.00	12	215	242.67	490.0	545.0	LUMP SUM

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING FOR
 BRIDGE OVER DUHART'S
 CREEK ON SR 2439
 BETWEEN SR 2209
 AND SR 2481**



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

TOTAL SHEETS: 33

DRAWN BY: S.H. SOCKWELL DATE: 10/11/11
 CHECKED BY: H. T. BARBOUR DATE: 10/12/11

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(InV)	N/A	1	1.008	--	1.75	0.824	1.22	A	I	21.146	0.867	1.02	A	I	12.688	0.80	0.774	1.01	B	EL	37.646		
	HL-93(0pr)	N/A	--	1.322	--	1.35	0.824	1.59	A	I	21.146	0.867	1.32	A	I	12.688	N/A	--	--	--	--	--		
	HS-20(InV)	36.000	2	1.189	42.821	1.75	0.824	1.5	A	I	21.146	0.867	1.19	A	I	12.688	0.80	0.774	1.33	B	EL	37.646		
	HS-20(0pr)	36.000	--	1.542	55.508	1.35	0.824	1.94	A	I	21.146	0.867	1.54	A	I	12.688	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.975	40.168	1.4	0.824	3.59	A	I	21.146	0.867	2.98	A	I	12.688	0.80	0.774	3.02	B	EL	37.646	
		SNGARBS2	20.000	--	2.239	44.789	1.4	0.824	2.92	A	I	16.917	0.867	2.28	A	I	12.688	0.80	0.774	2.24	B	EL	37.646	
		SNAGRIS2	22.000	--	2.117	46.58	1.4	0.824	2.83	A	I	16.917	0.867	2.18	A	I	12.688	0.80	0.774	2.12	B	EL	37.646	
		SNCOTTS3	27.250	--	1.501	40.899	1.4	0.824	1.8	A	I	21.146	0.867	1.5	A	I	12.688	0.80	0.774	1.50	B	EL	37.646	
		SNAGGRS4	34.925	--	1.251	43.691	1.4	0.824	1.59	A	I	21.146	0.867	1.36	A	I	12.688	0.80	0.774	1.25	B	EL	37.646	
		SNS5A	35.550	--	1.224	43.497	1.4	0.824	1.55	A	I	21.146	0.867	1.45	A	I	12.688	0.80	0.774	1.22	B	EL	37.646	
		SNS6A	39.950	--	1.121	44.794	1.4	0.824	1.47	A	I	21.146	0.867	1.38	A	I	12.688	0.80	0.774	1.12	B	EL	37.646	
	SNS7B	42.000	--	1.068	44.845	1.4	0.824	1.4	A	I	21.146	0.867	1.44	A	I	12.688	0.80	0.774	1.07	B	EL	37.646		
	TTST	TNAGRIT3	33.000	--	1.367	45.108	1.4	0.824	1.8	A	I	21.146	0.867	1.6	A	I	12.688	0.80	0.774	1.37	B	EL	37.646	
		TNT4A	33.075	--	1.373	45.397	1.4	0.824	1.82	A	I	21.146	0.867	1.5	A	I	12.688	0.80	0.774	1.37	B	EL	37.646	
		TNT6A	41.600	--	1.121	46.631	1.4	0.824	1.53	A	I	21.146	0.867	1.5	A	I	12.688	0.80	0.774	1.12	B	EL	37.646	
		TNT7A	42.000	--	1.126	47.285	1.4	0.824	1.57	A	I	21.146	0.867	1.4	A	I	12.688	0.80	0.774	1.13	B	EL	37.646	
		TNT7B	42.000	--	1.163	48.845	1.4	0.824	1.63	A	I	21.146	0.867	1.33	A	I	12.688	0.80	0.774	1.16	B	EL	37.646	
		TNAGRIT4	43.000	--	1.108	47.628	1.4	0.824	1.55	A	I	21.146	0.867	1.28	A	I	12.688	0.80	0.774	1.11	B	EL	37.646	
TNAGT5A		45.000	--	1.045	47.023	1.4	0.824	1.44	A	I	21.146	0.867	1.37	A	I	12.688	0.80	0.774	1.04	B	EL	37.646		
TNAGT5B	45.000	3	1.033	46.479	1.4	0.824	1.41	A	I	21.146	0.867	1.21	A	I	12.688	0.80	0.774	1.03	B	EL	37.646			

NOTES:

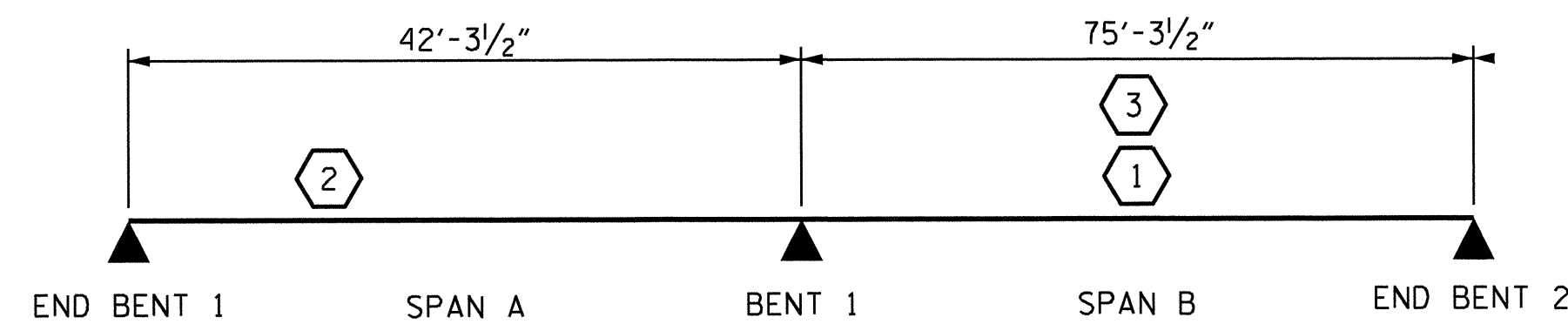
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

#	CONTROLLING LOAD RATING
1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER	
EL - EXTERIOR LEFT GIRDER	
ER - EXTERIOR RIGHT GIRDER	

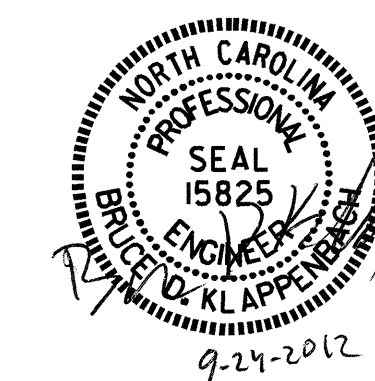


LRFR SUMMARY

PROJECT NO. B-4753
 GASTON COUNTY
 STATION: 23+51.50 -L-

ASSEMBLED BY : B.A. DUKE DATE : 12-15-11
 CHECKED BY : T.C. CLELLAND DATE : 12-15-11
 DRAWN BY : MAA 1/08 REV. 11/2/08R MAA/GM
 CHECKED BY : GM/DI 2/08

24-SEP-2012 08:50
 R:\Structures\Plans\bd Duke\Microstation\B-4753.SD.LRFR.dgn
 bklappenbach



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-4
1			3			TOTAL SHEETS
2			4			33

STD. NO. LRFR1

NOTES

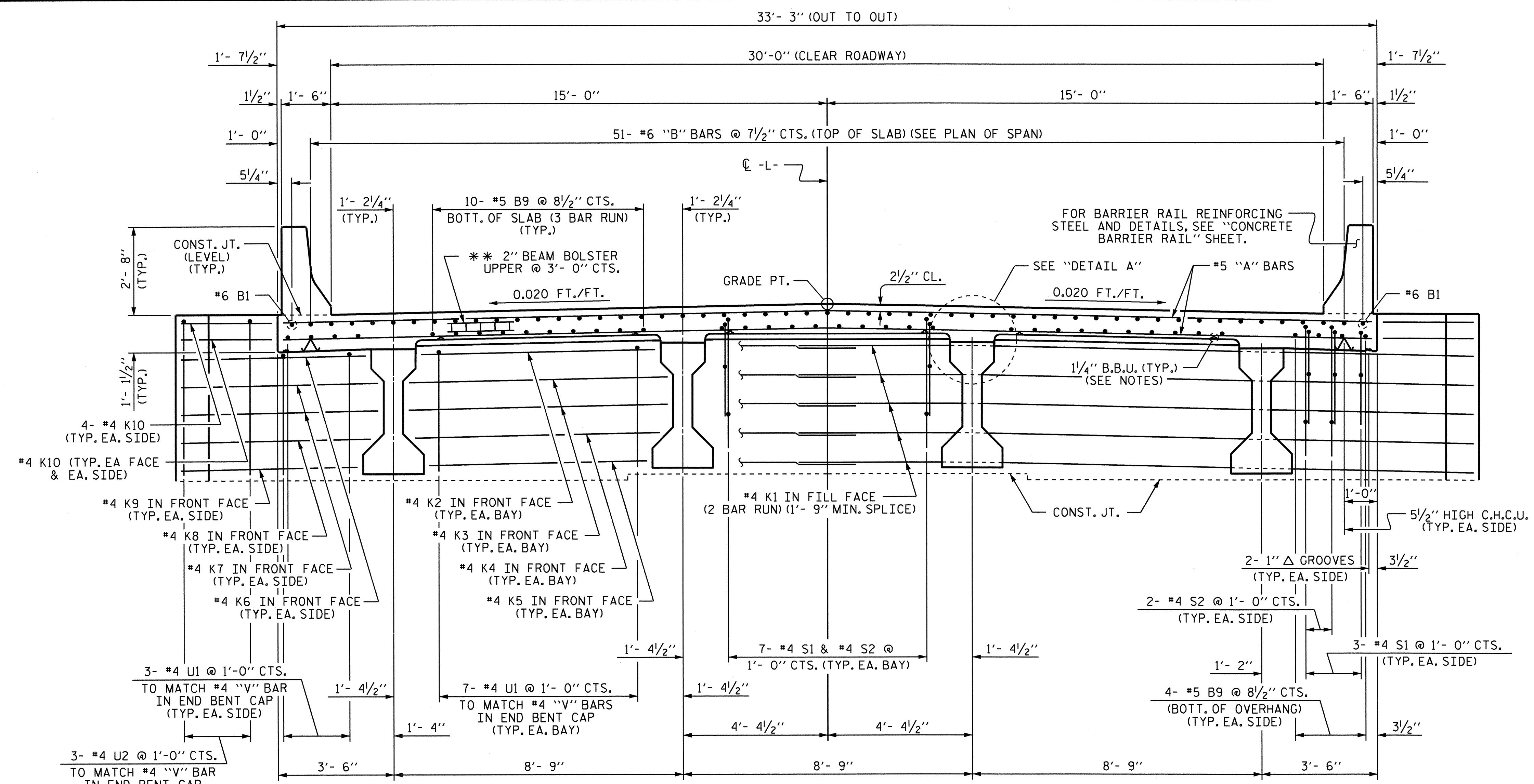
PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2"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

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

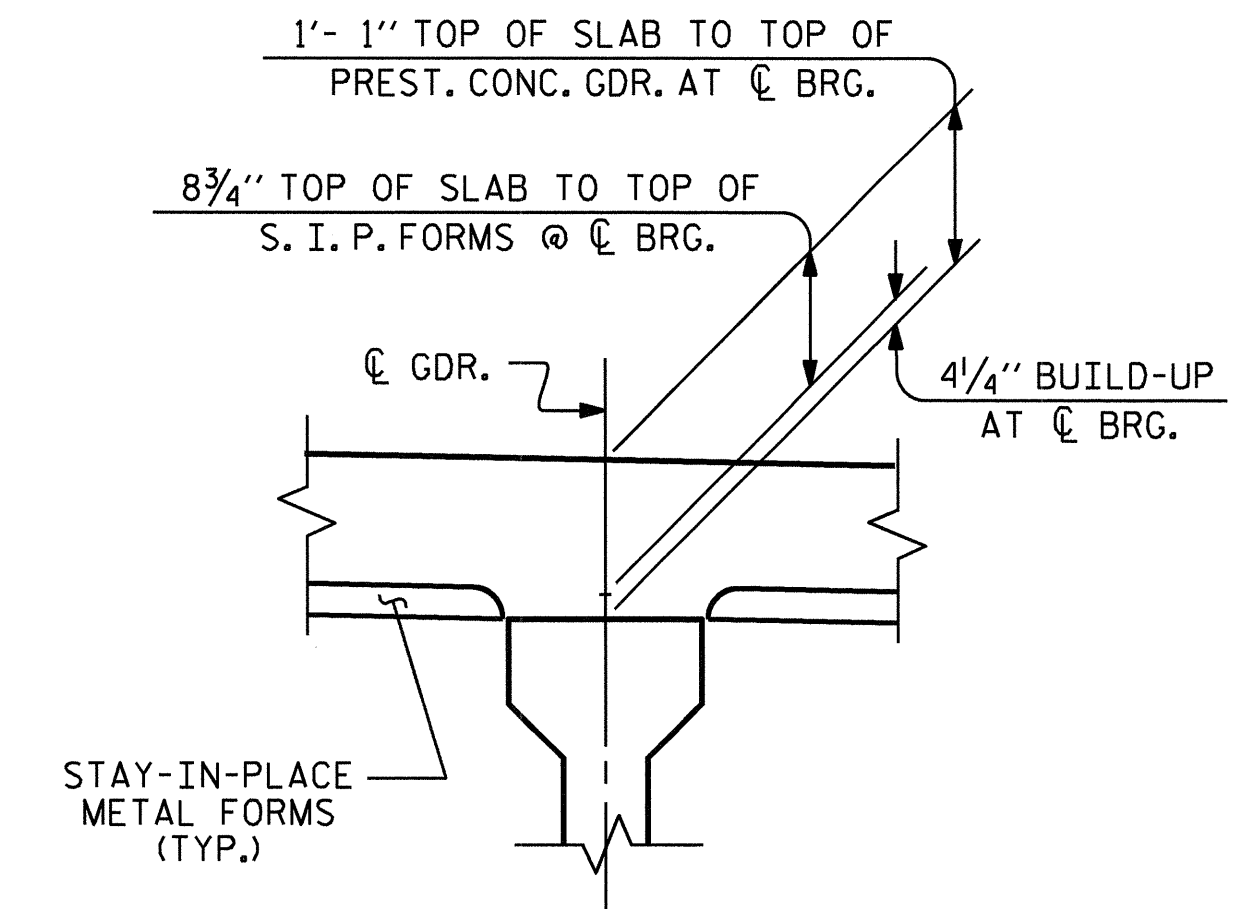
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

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

** USE THIS BAR SUPPORT IN THE AREA WITH THE #6 "B" BARS OVER INTEGRAL END BENTS AND #6 "B" BARS OVER INTERIOR BENT. FOR OTHER AREAS WITH #4 "B" BARS, USE THE BAR SUPPORT AS SHOWN IN THE "TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS."



TYPICAL SECTION AT INTEGRAL END BENT



DETAIL A

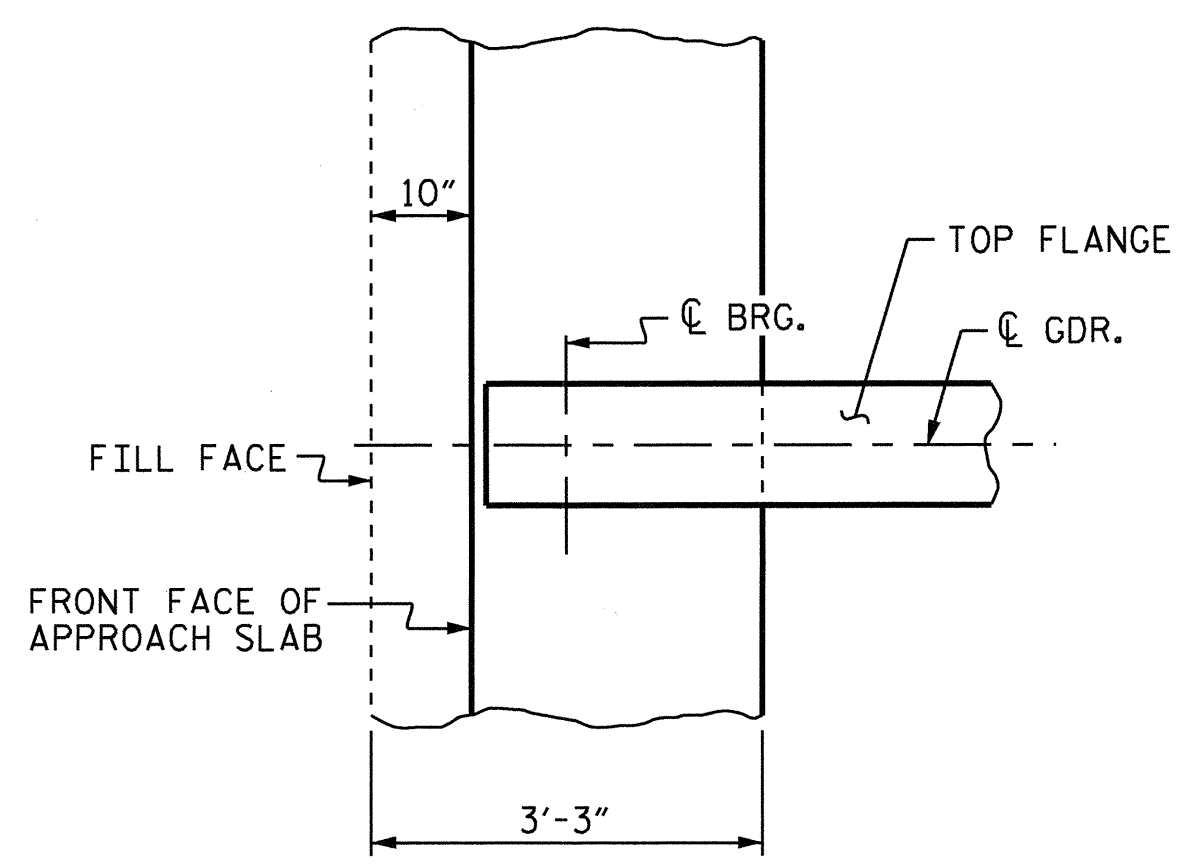
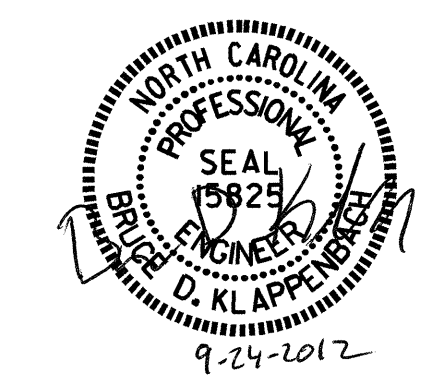
PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 1 OF 3

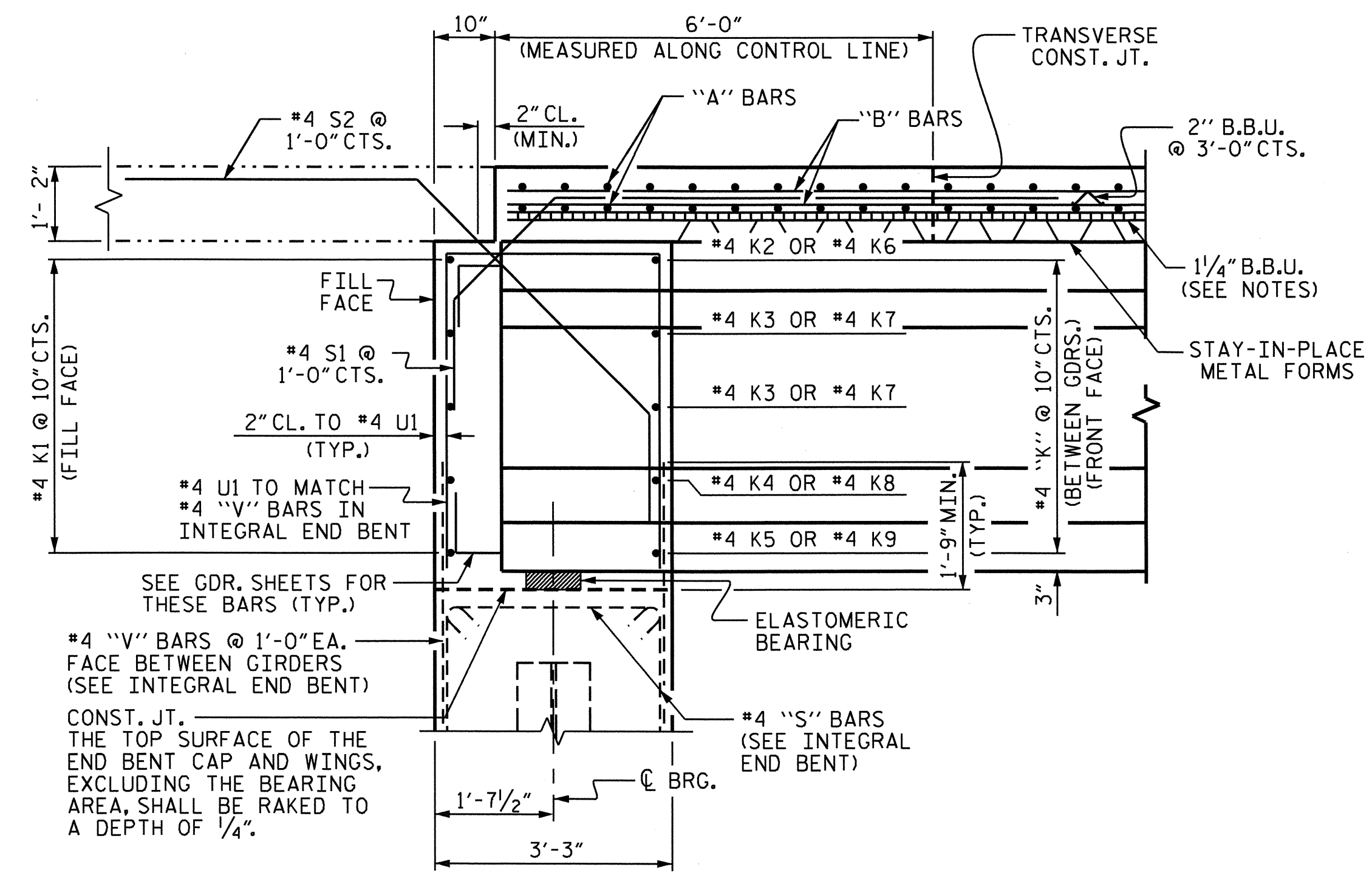
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 TYPICAL SECTION**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			33

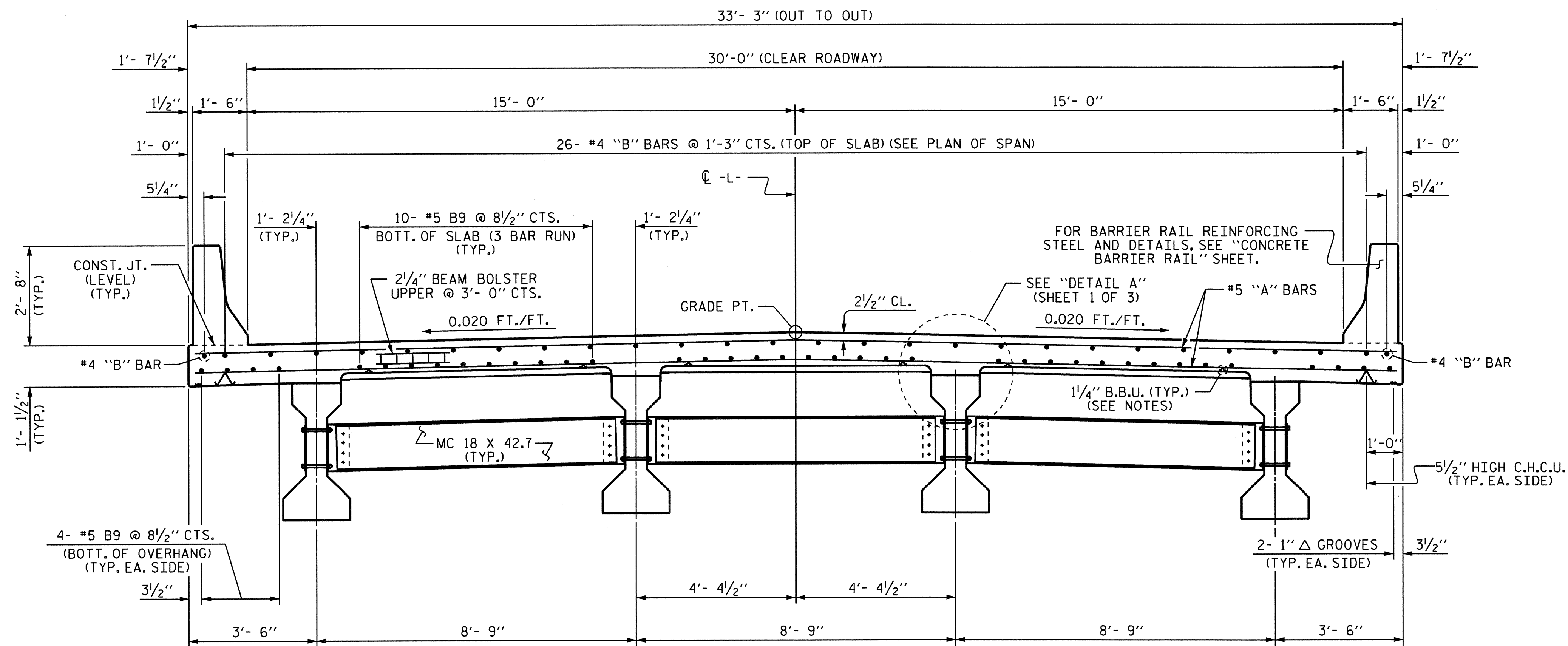


PLAN OF GIRDER AT INTEGRAL END BENT

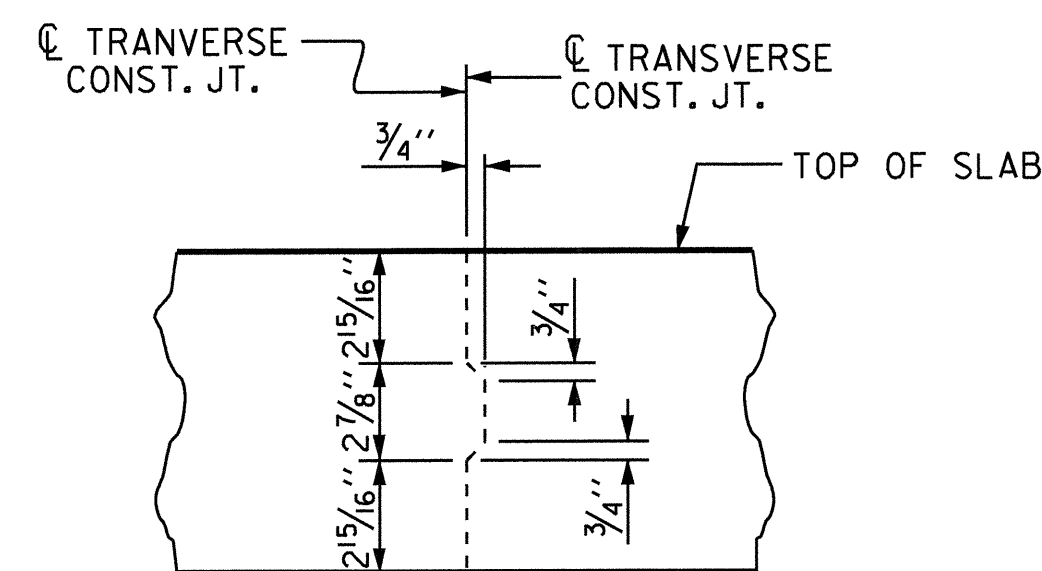


END OF GIRDER DETAIL AT INTEGRAL END BENT

DRAWN BY: D. A. GLADDEN DATE: 4-12-11
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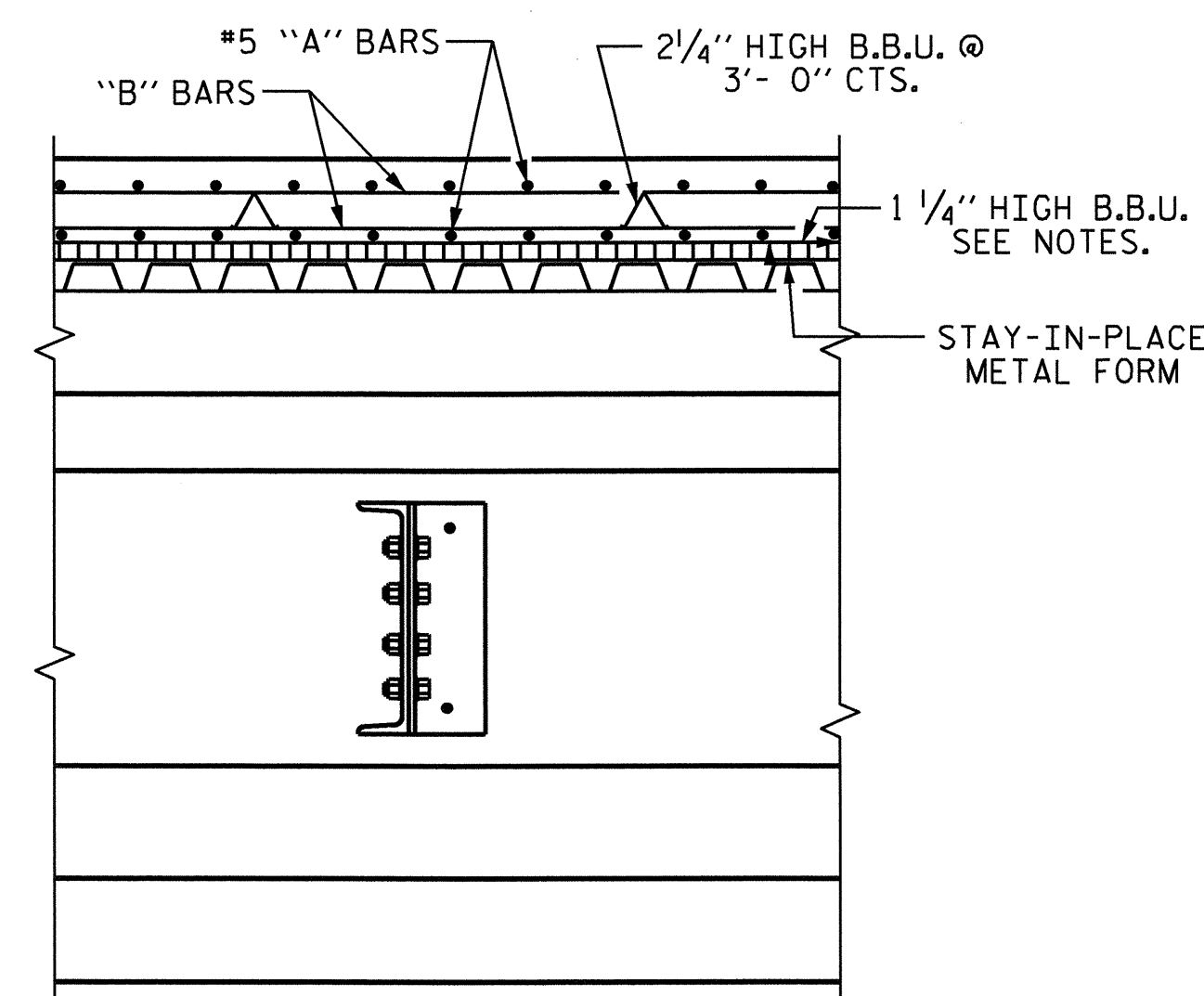


TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS



TRANVERSE CONSTRUCTION JOINT DETAIL

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



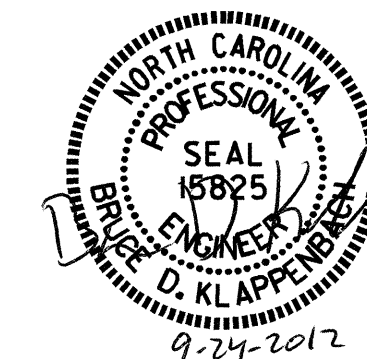
SECTION THRU INTERMEDIATE DIAPHRAGM

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 2 OF 3

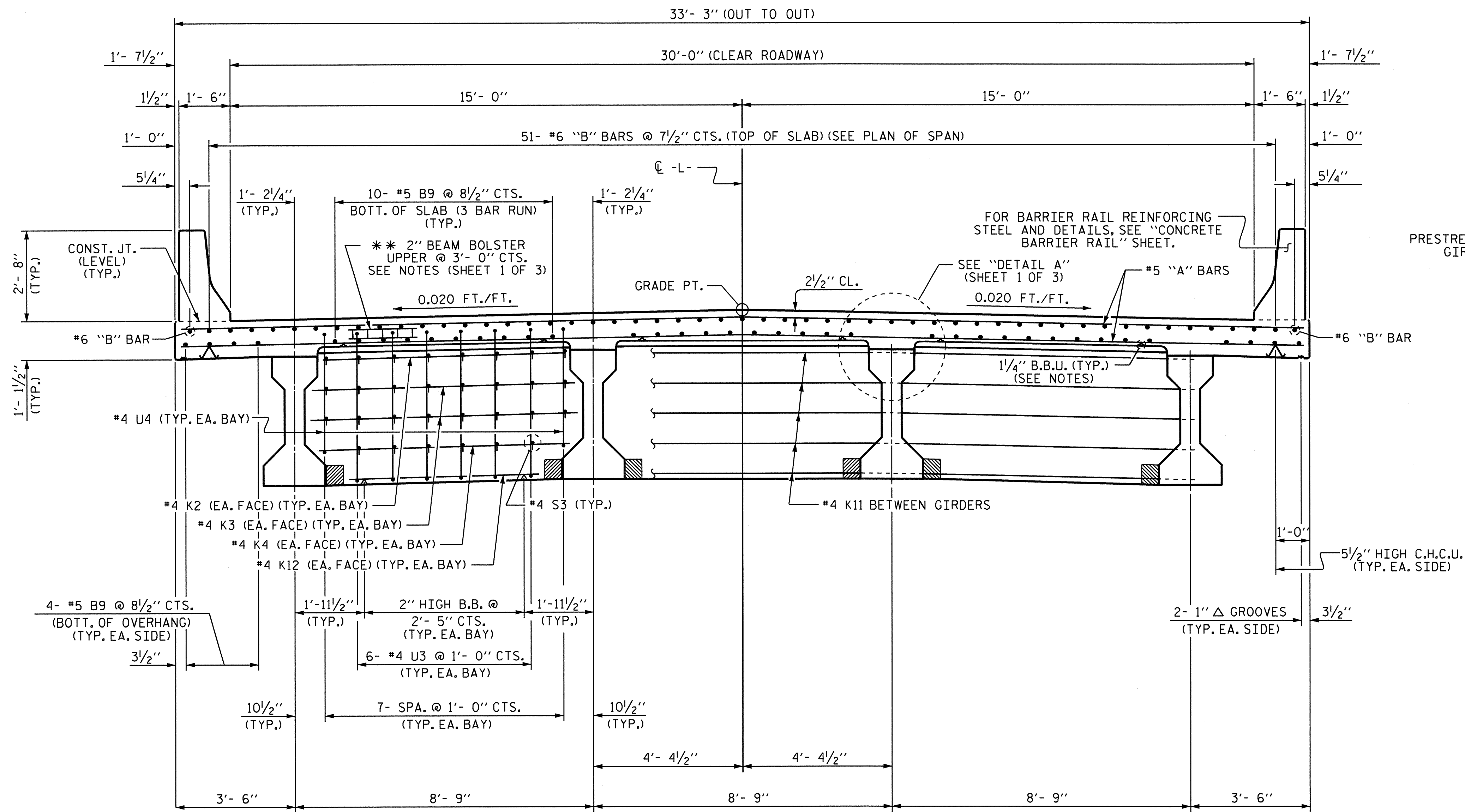
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION

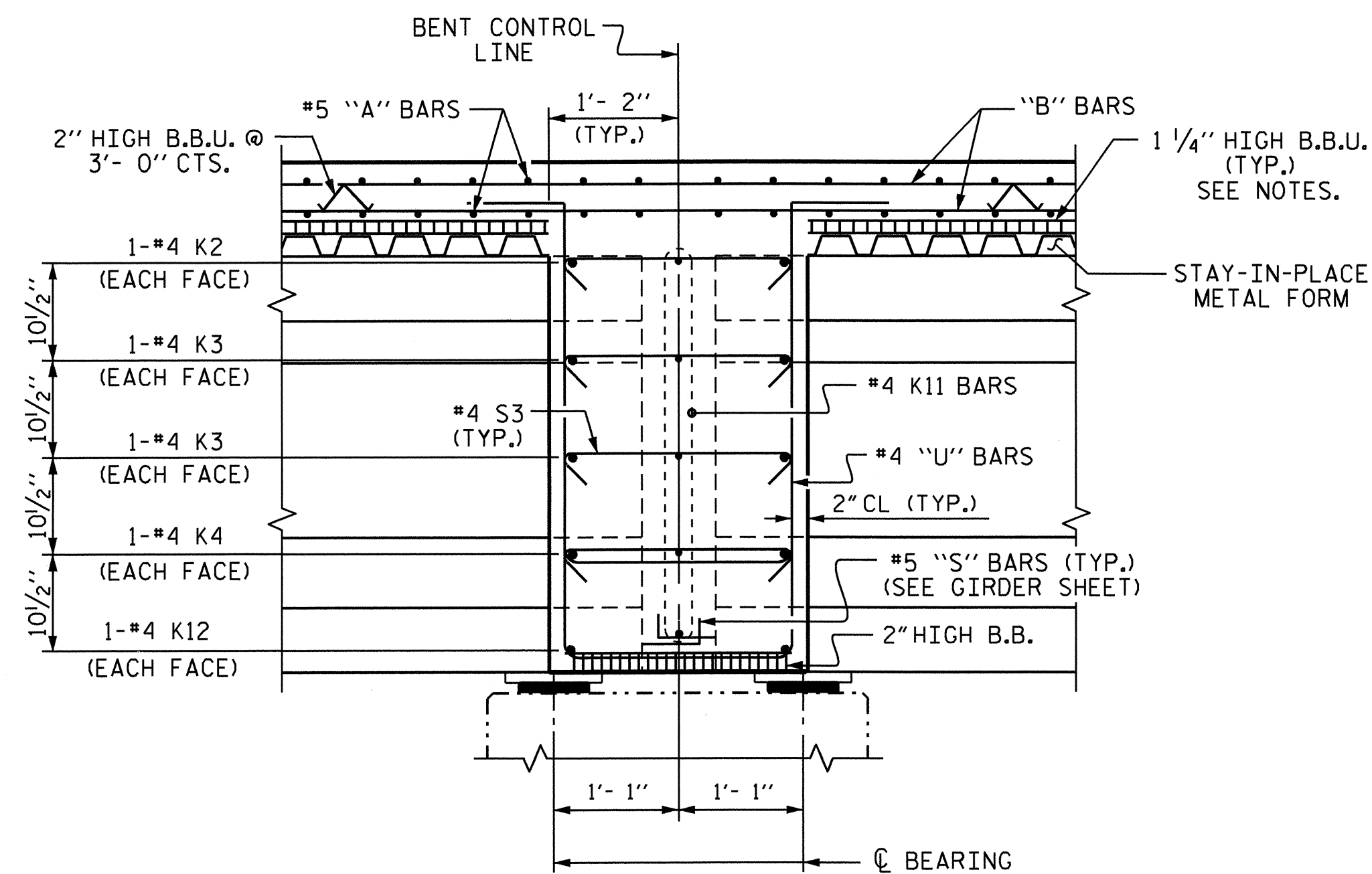


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			33

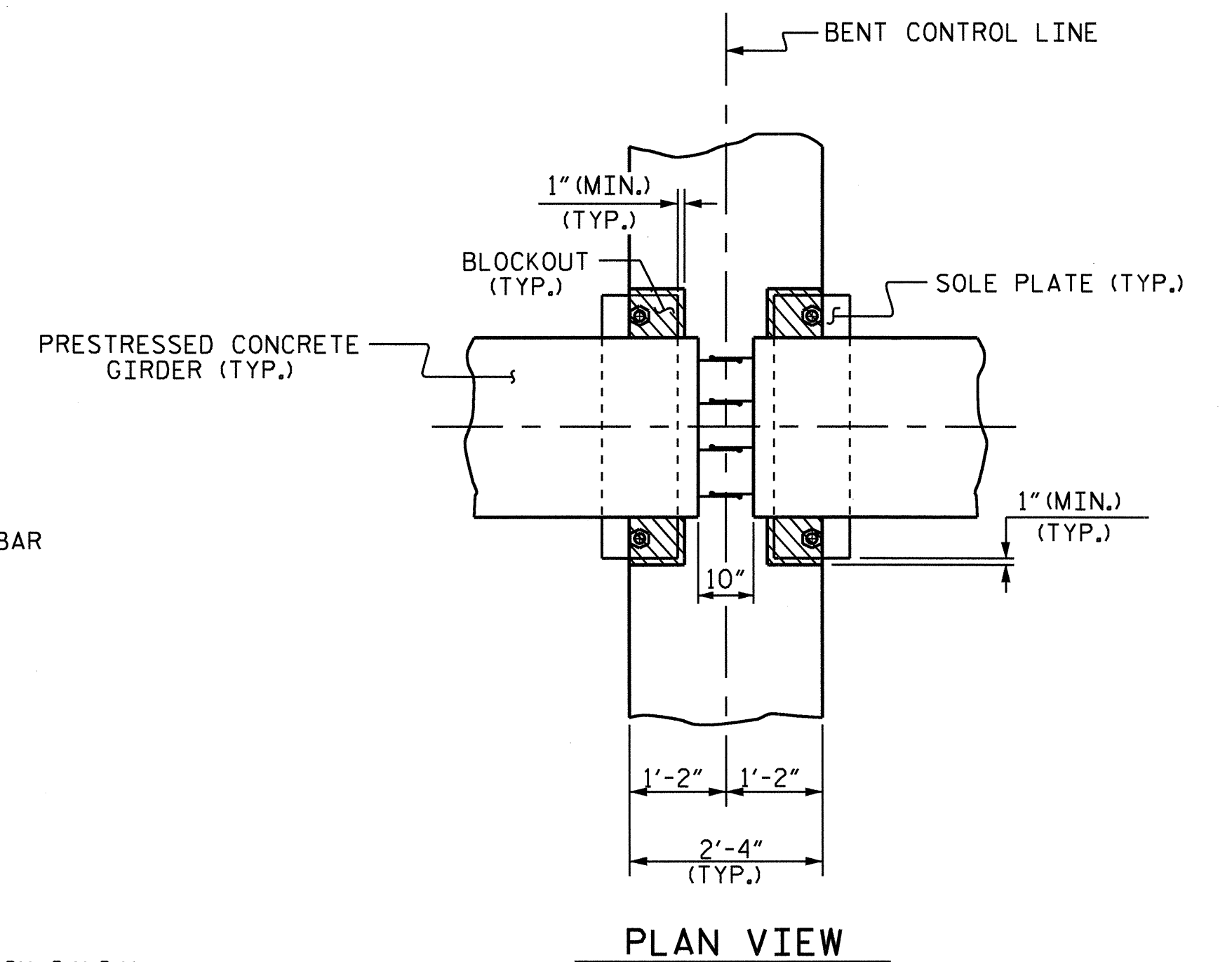
DRAWN BY: D. A. GLADDEN DATE: 4-12-11
 CHECKED BY: M. G. SHAIKH DATE: 5-25-11



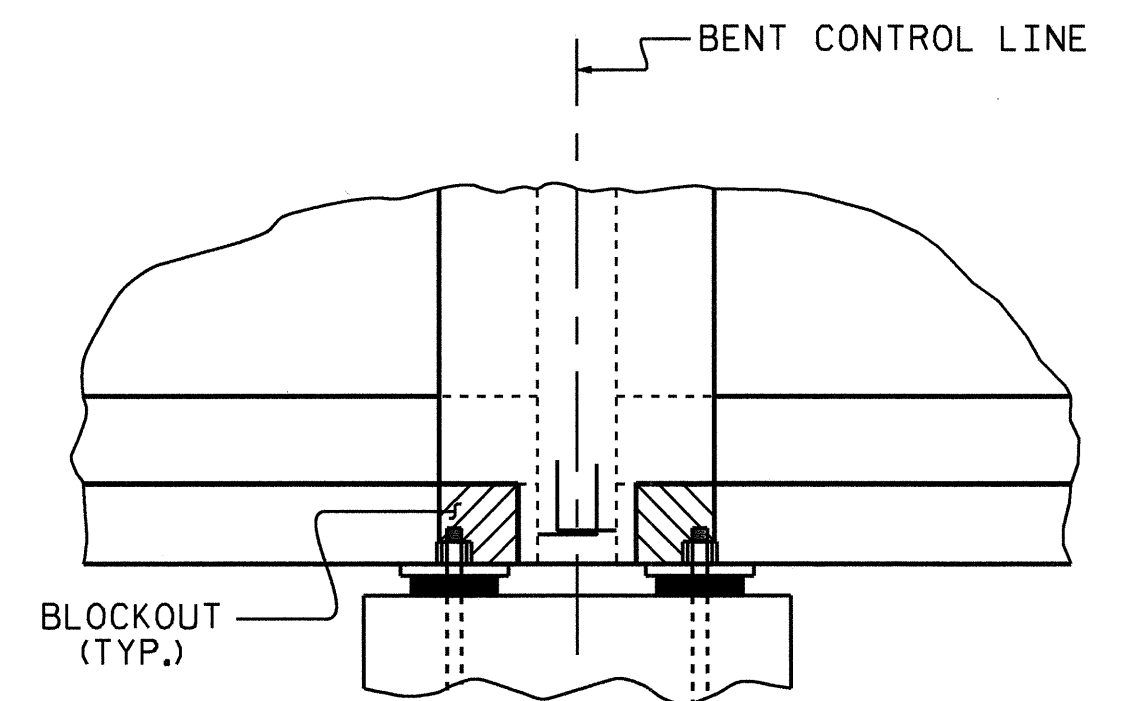
TYPICAL SECTION AT BENT DIAPHRAGMS



SECTION THRU BENT DIAPHRAGM



PLAN VIEW



ELEVATION VIEW

BENT DIAPHRAGM BLOCKOUT DETAIL

(PRESTRESSED GIRDERS WITH CONTINUOUS DECK SLAB)

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
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 RALEIGH

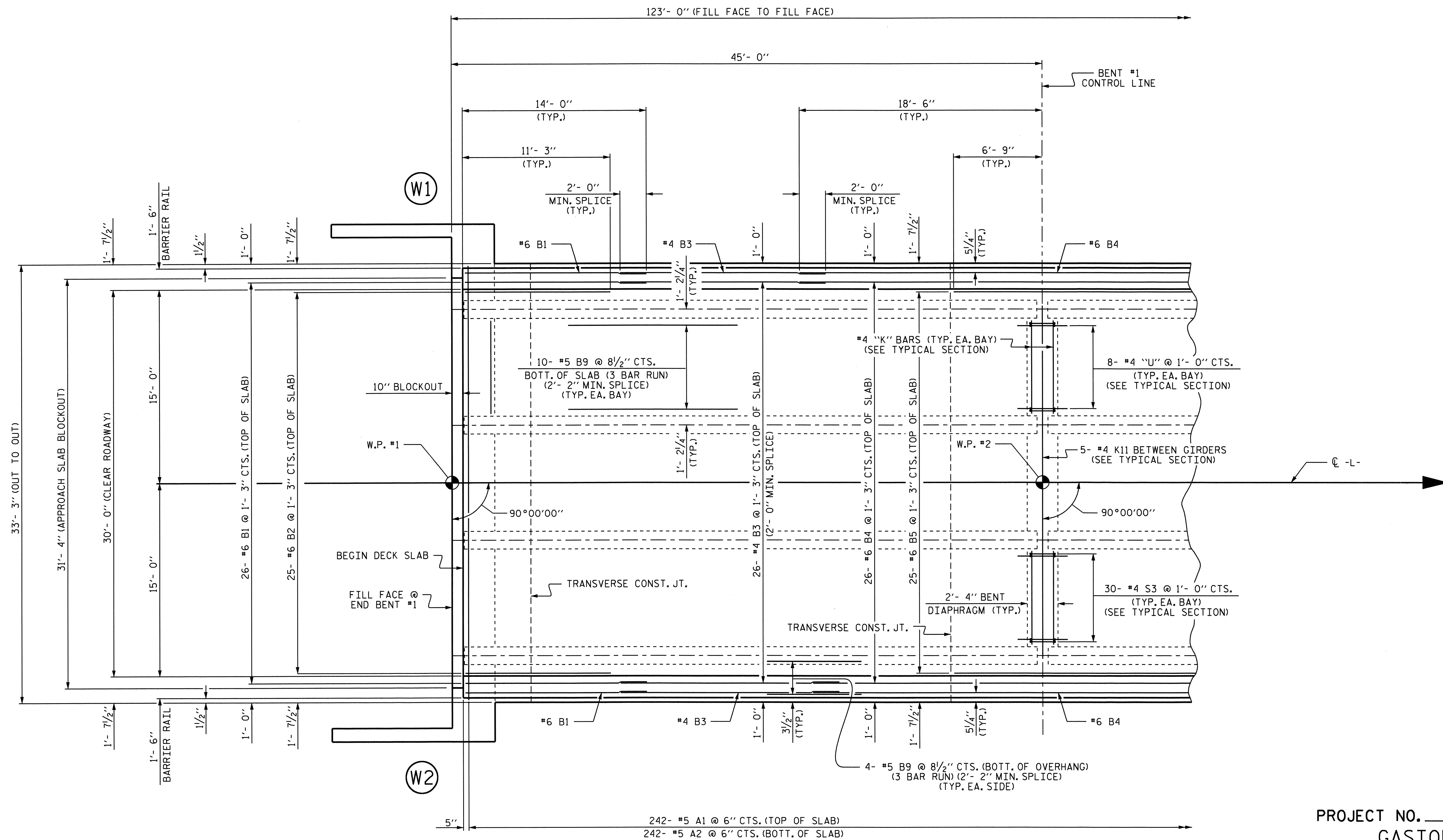
SUPERSTRUCTURE
 TYPICAL SECTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			33



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 CHECKED BY: M. G. SHAIKH DATE: 5-25-11

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 daladden



PLAN OF SPAN A

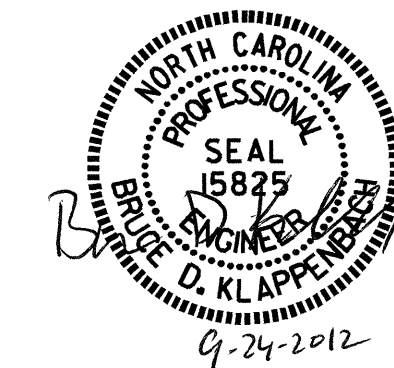
FOR REINFORCING STEEL IN ABUTMENTS, SEE "PLAN OF SPAN DETAILS" SHEET.

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

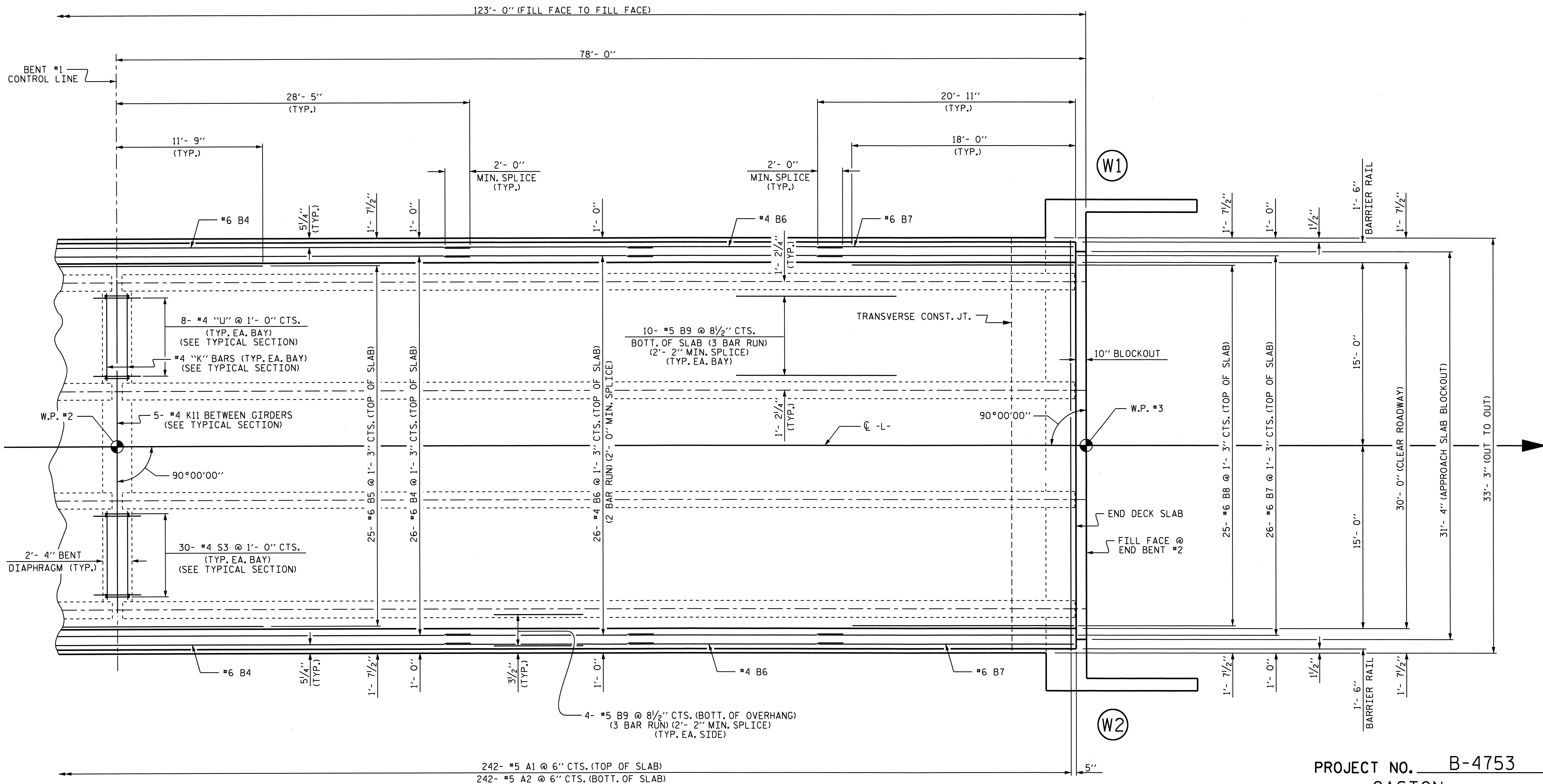
SUPERSTRUCTURE
 PLAN OF SPAN A



DRAWN BY: D. A. GLADDEN DATE: 4-20-11
 CHECKED BY: M. G. SHAIKH DATE: 5-25-11

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			33



PLAN OF SPAN B

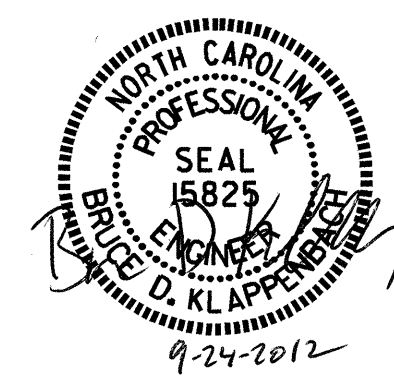
FOR REINFORCING STEEL IN ABUTMENTS, SEE "PLAN OF SPAN DETAILS" SHEET.

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

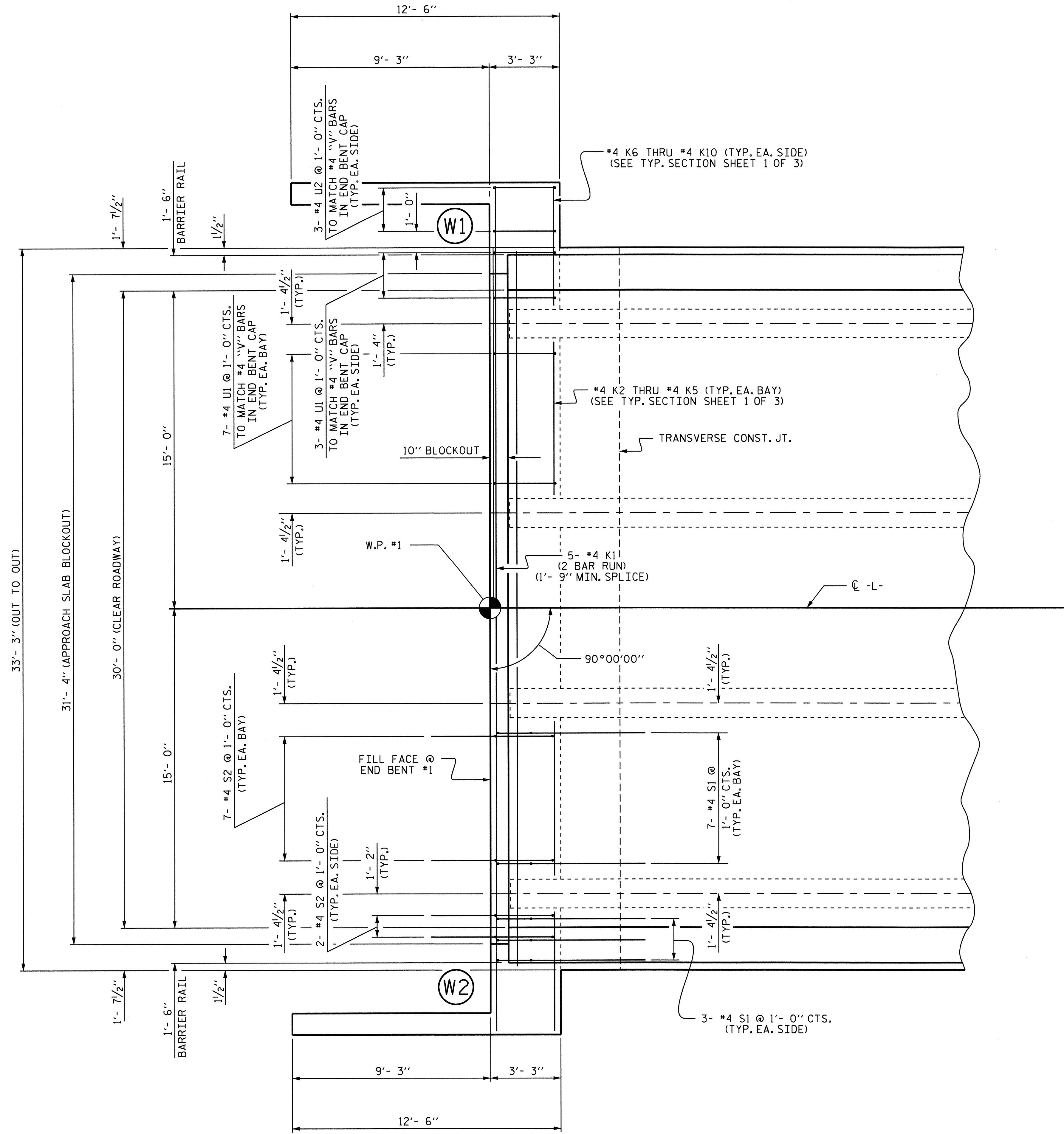
**SUPERSTRUCTURE
 PLAN OF SPAN B**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			33

DRAWN BY : D. A. GLADDEN DATE : 4-20-11
 CHECKED BY : M. G. SHAIKH DATE : 5-25-11

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PLAN OF ABUTMENT AT END BENT #1

NOTE: END BENT #2 SIMILAR BY ROTATION.

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

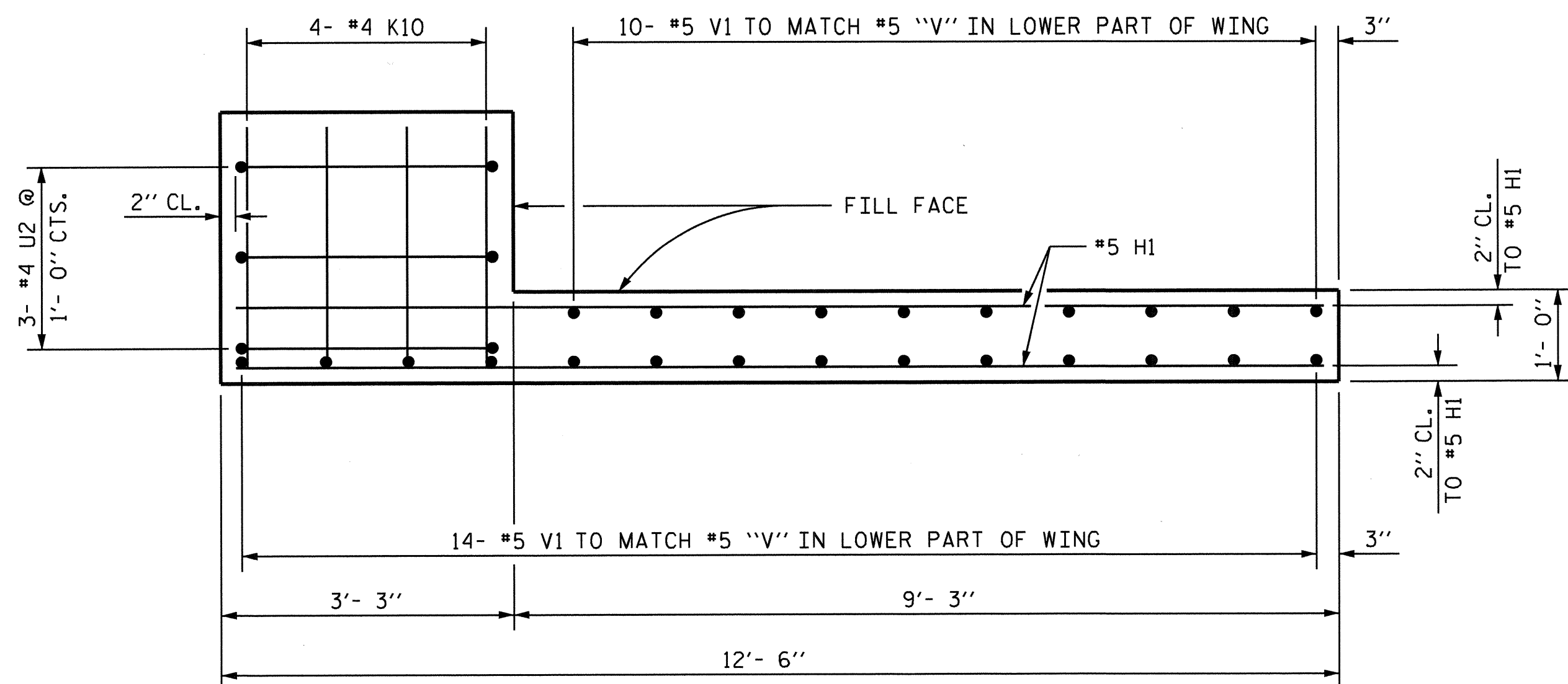
**SUPERSTRUCTURE
 PLAN OF SPAN
 DETAILS**



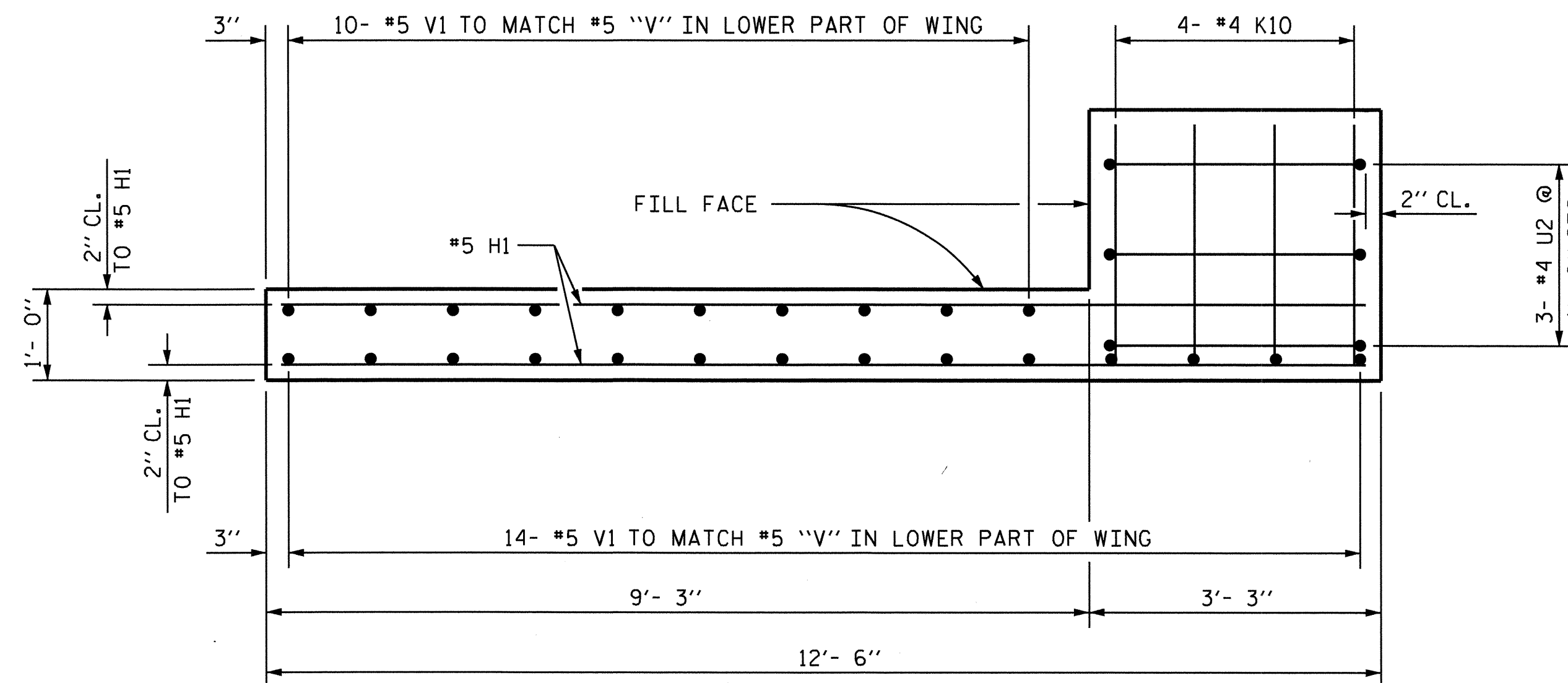
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			33

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 CHECKED BY: M. G. SHAIKH DATE: 5-25-11

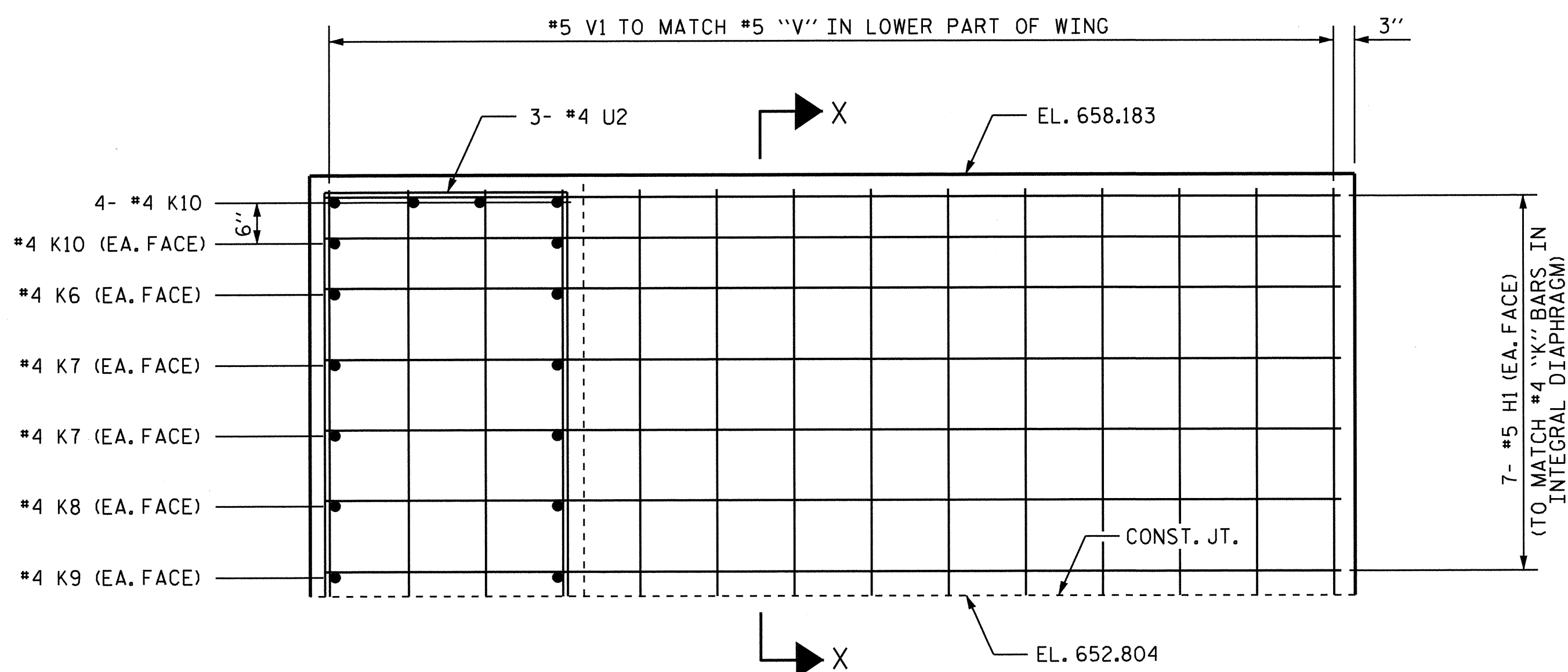
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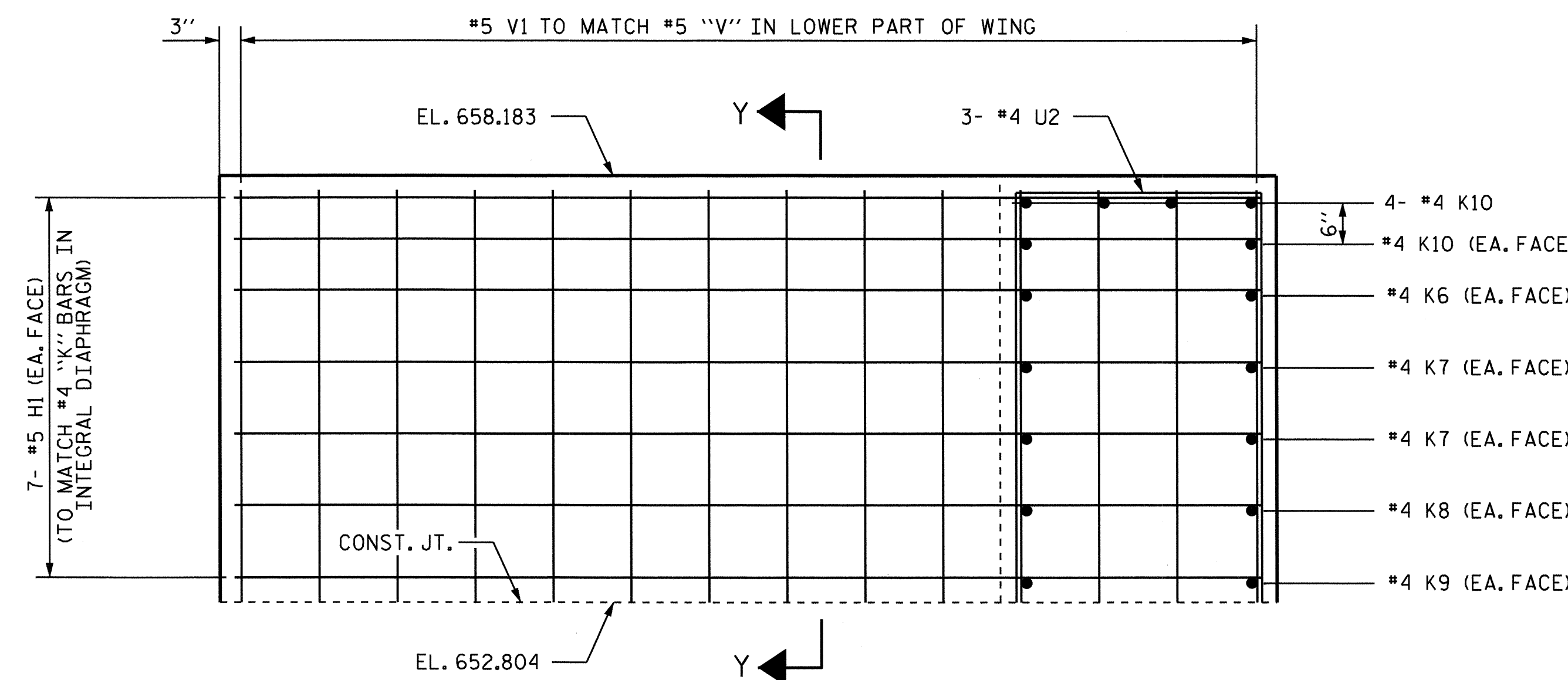
PLAN OF LEFT WING (W1)



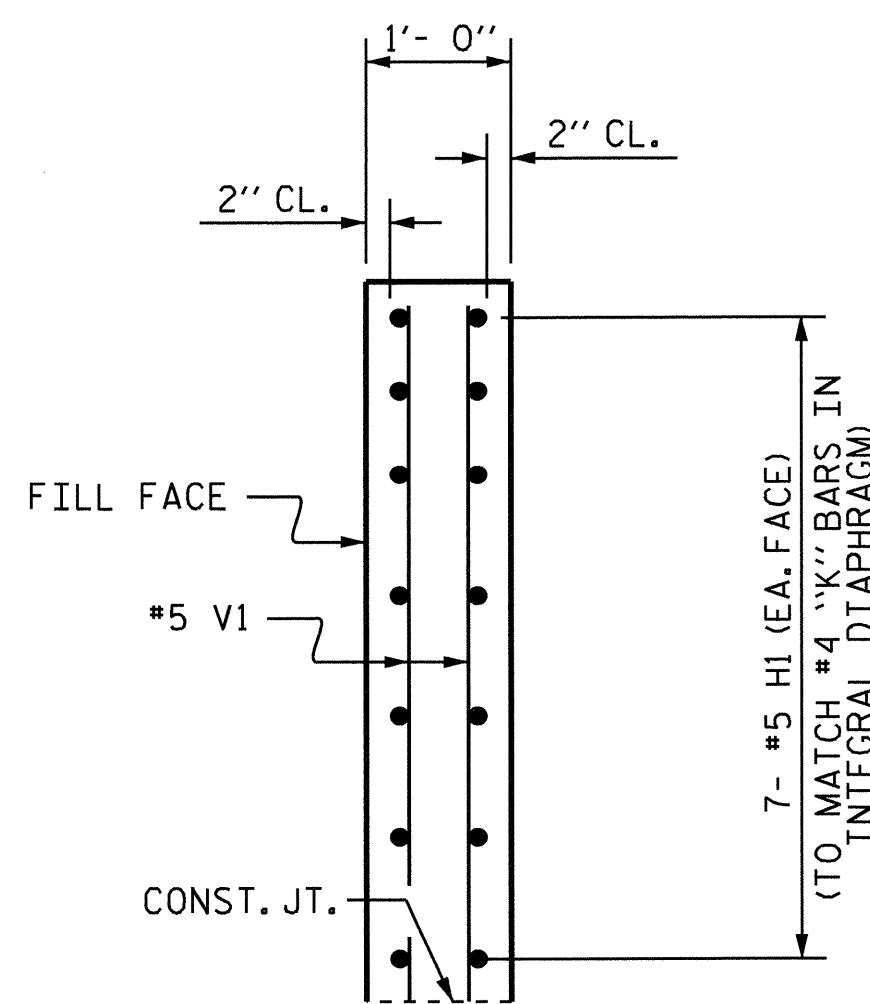
PLAN OF RIGHT WING (W2)



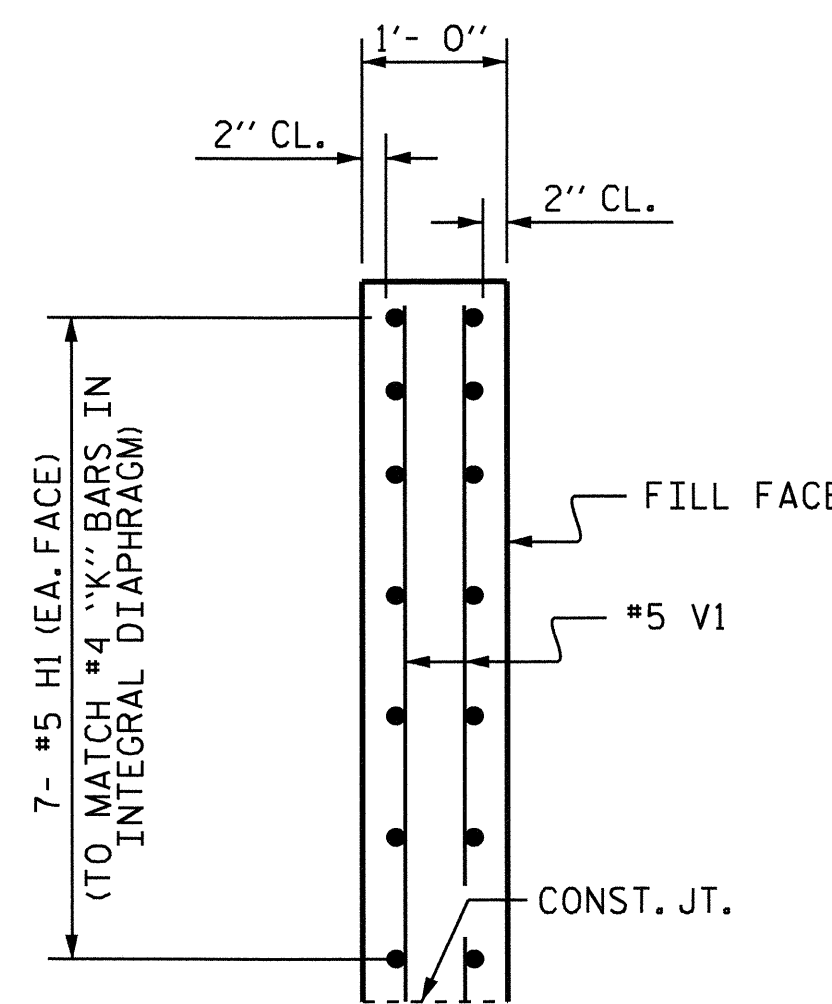
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



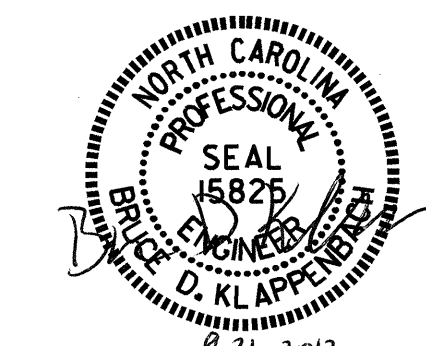
SECTION X-X



SECTION Y-Y

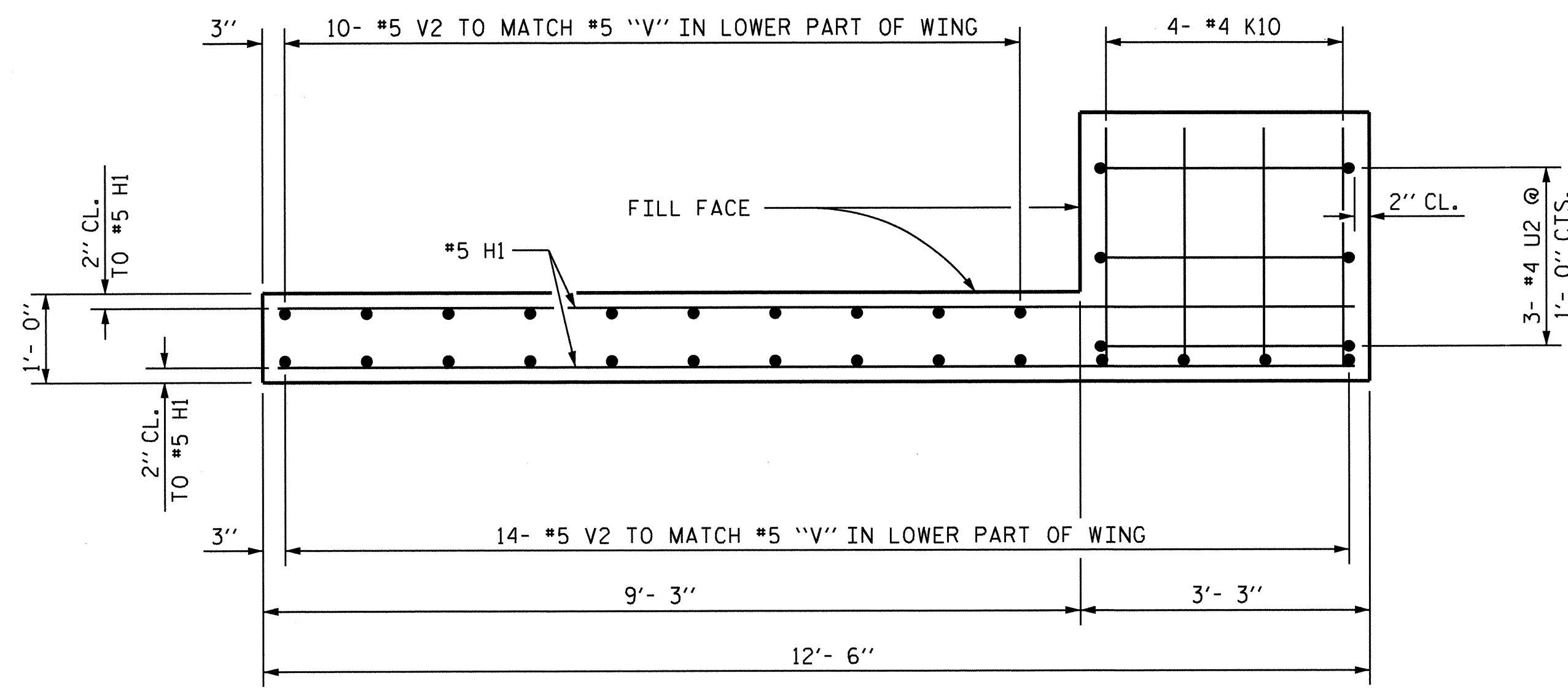
PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 UPPER PART OF WING
 AT INTEGRAL
 END BENT #1

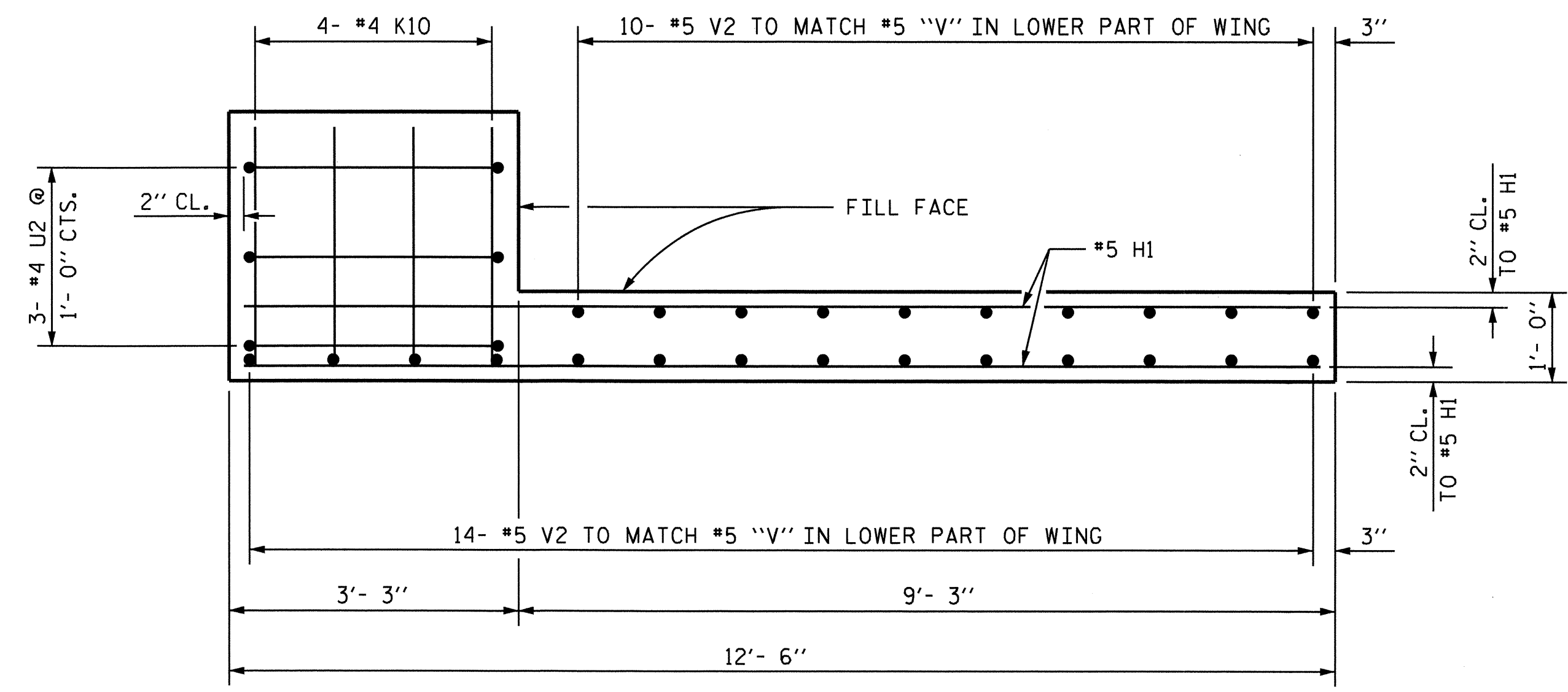


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			33

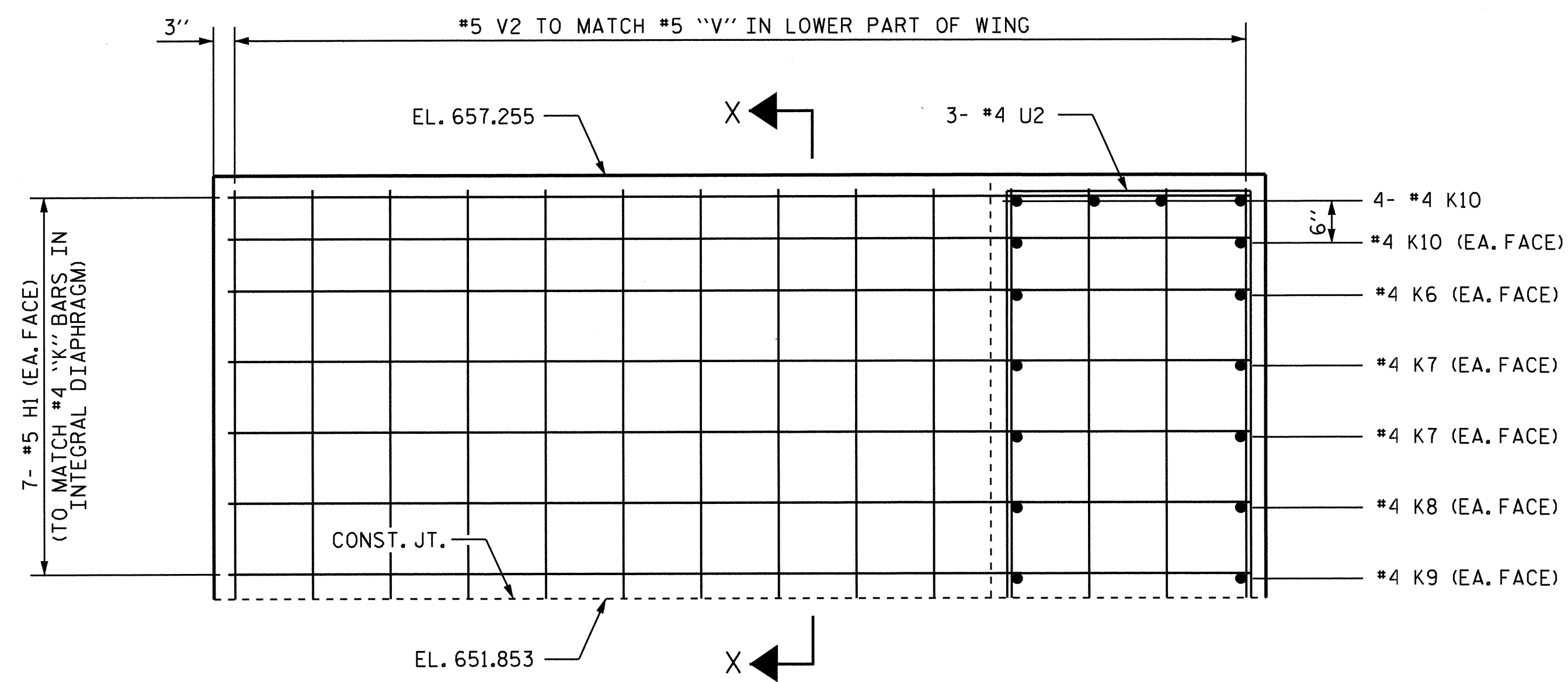
DRAWN BY: D. A. GLADDEN DATE: 4-12-11
 CHECKED BY: M. G. SHAIKH DATE: 5-25-11



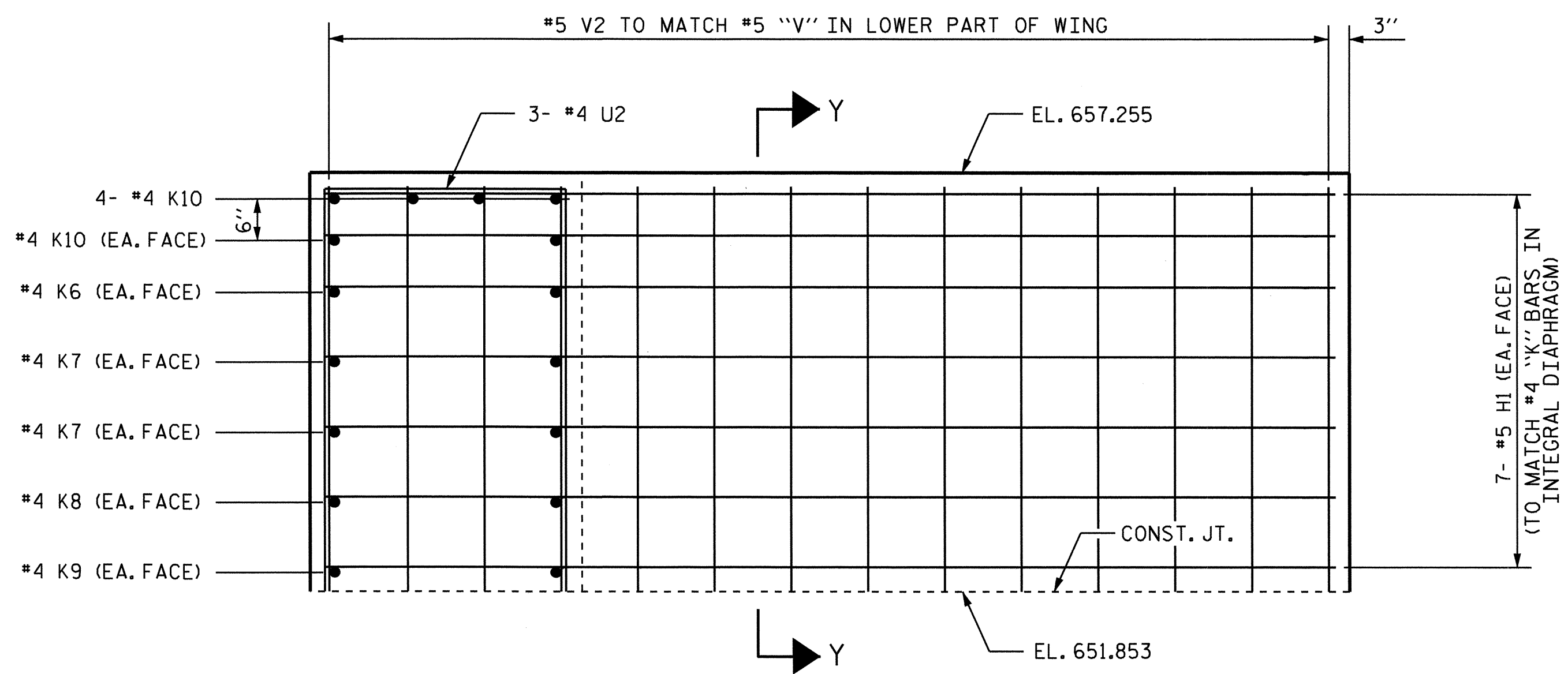
PLAN OF LEFT WING (W1)



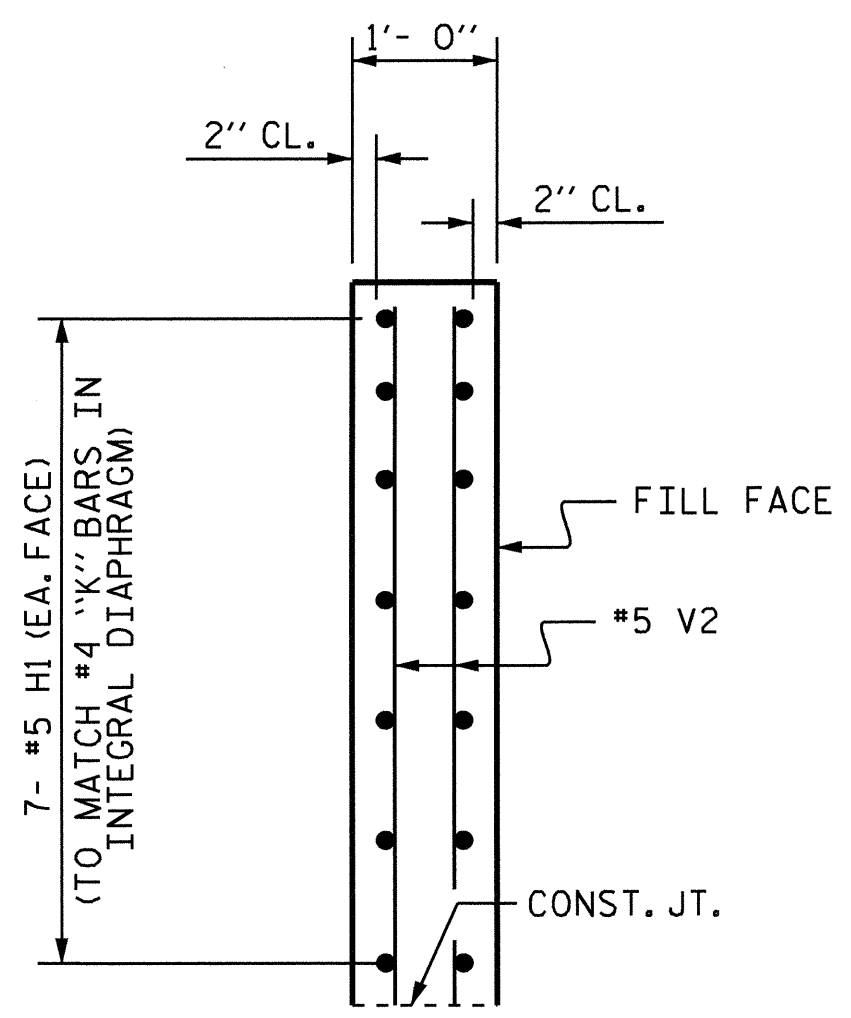
PLAN OF RIGHT WING (W2)



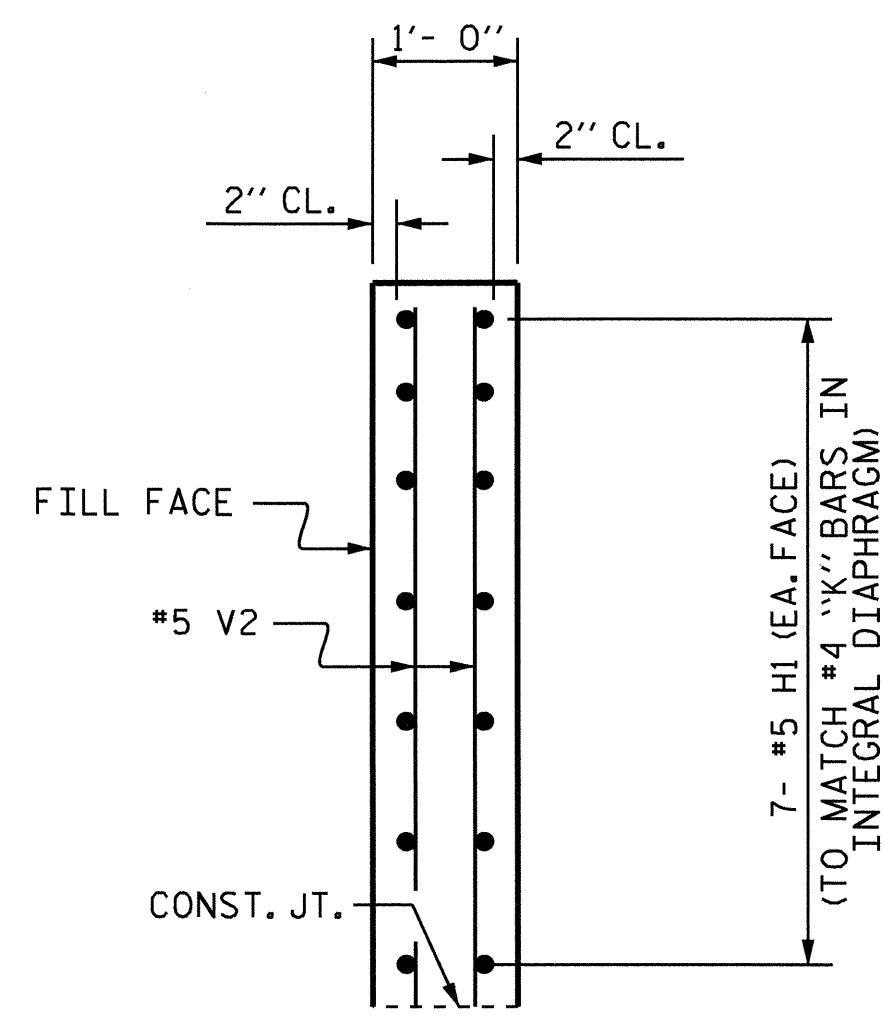
ELEVATION OF LEFT WING (W1)



ELEVATION OF RIGHT WING (W2)



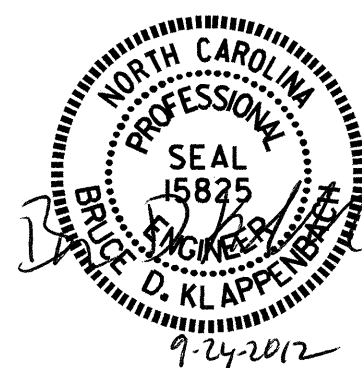
SECTION X-X



SECTION Y-Y

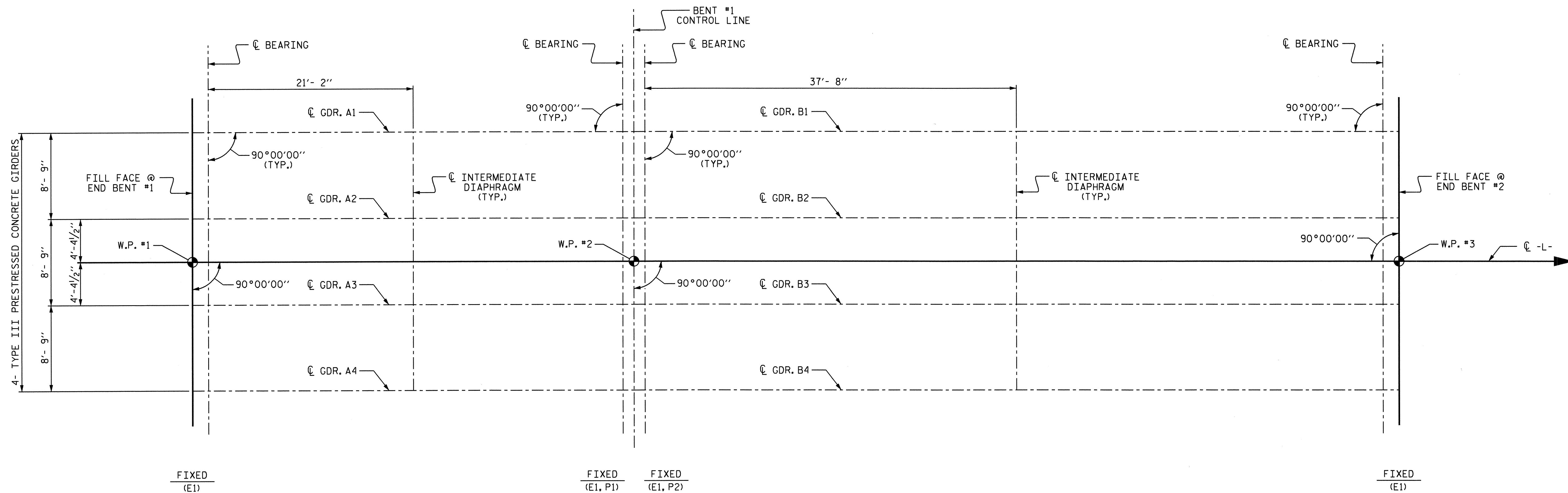
PROJECT NO. B-4753
 GASTON COUNTY
 STATION: 23+51.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 UPPER PART OF WING
 AT INTEGRAL
 END BENT #2



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

DRAWN BY: D. A. GLADDEN DATE: 4-12-11
 CHECKED BY: M. G. SHAIKH DATE: 5-25-11



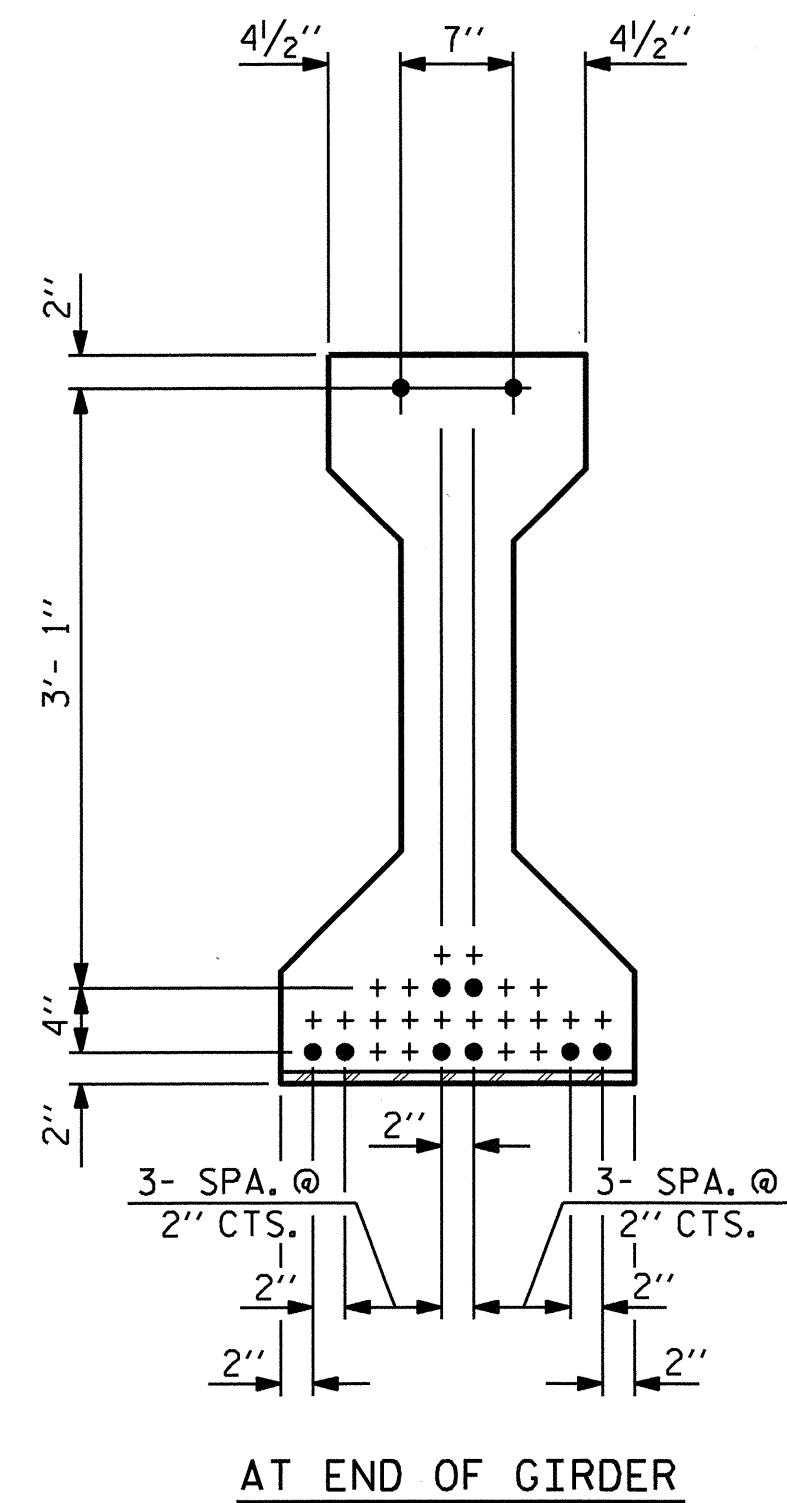
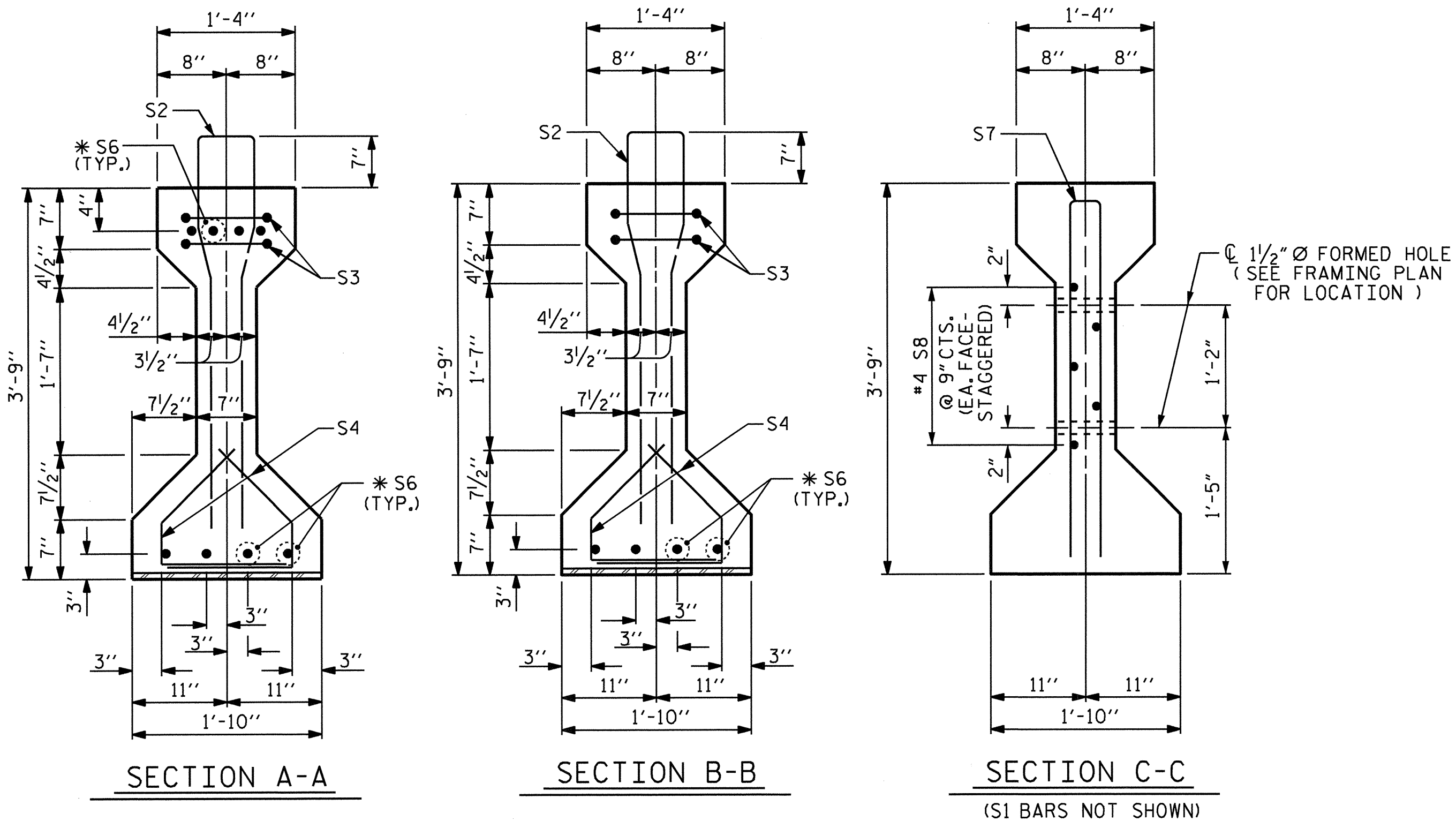
FRAMING PLAN

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

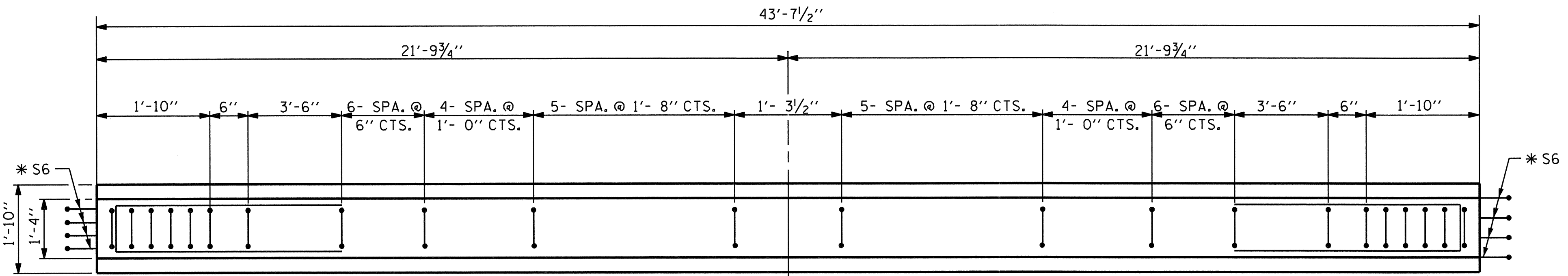


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE FRAMING PLAN					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					33

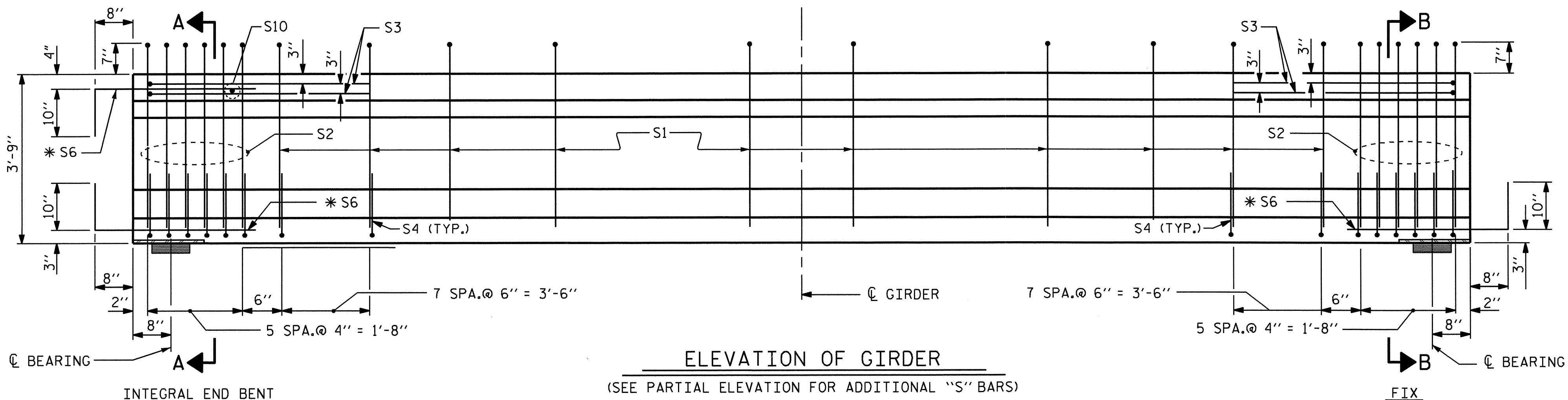
DRAWN BY : D. A. GLADDEN DATE : 4-25-11
 CHECKED BY : M. G. SHAIKH DATE : 5-25-11



0.6" Ø LOW RELAXATION STRAND LAYOUT

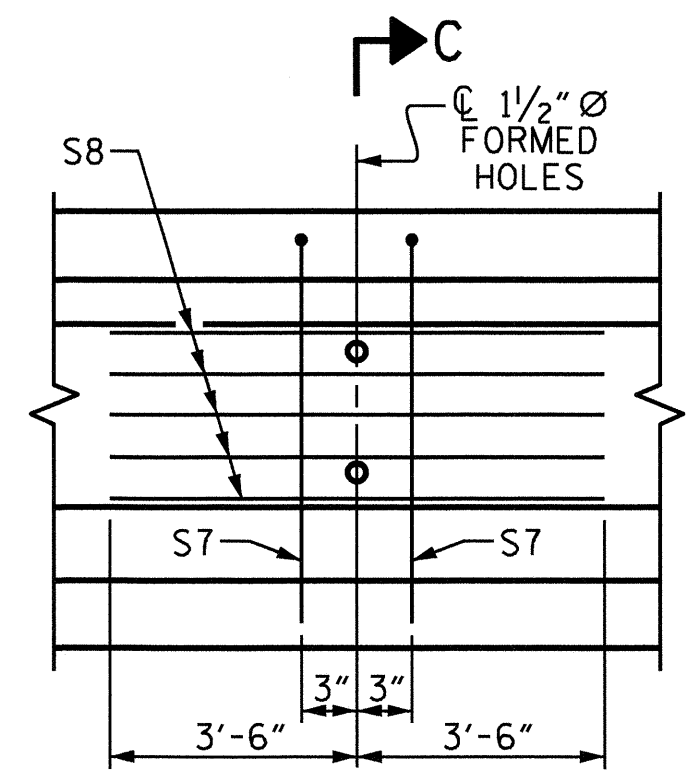


PLAN OF GIRDER



ELEVATION OF GIRDER

(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1, 2, 3 & 4

0.6" 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

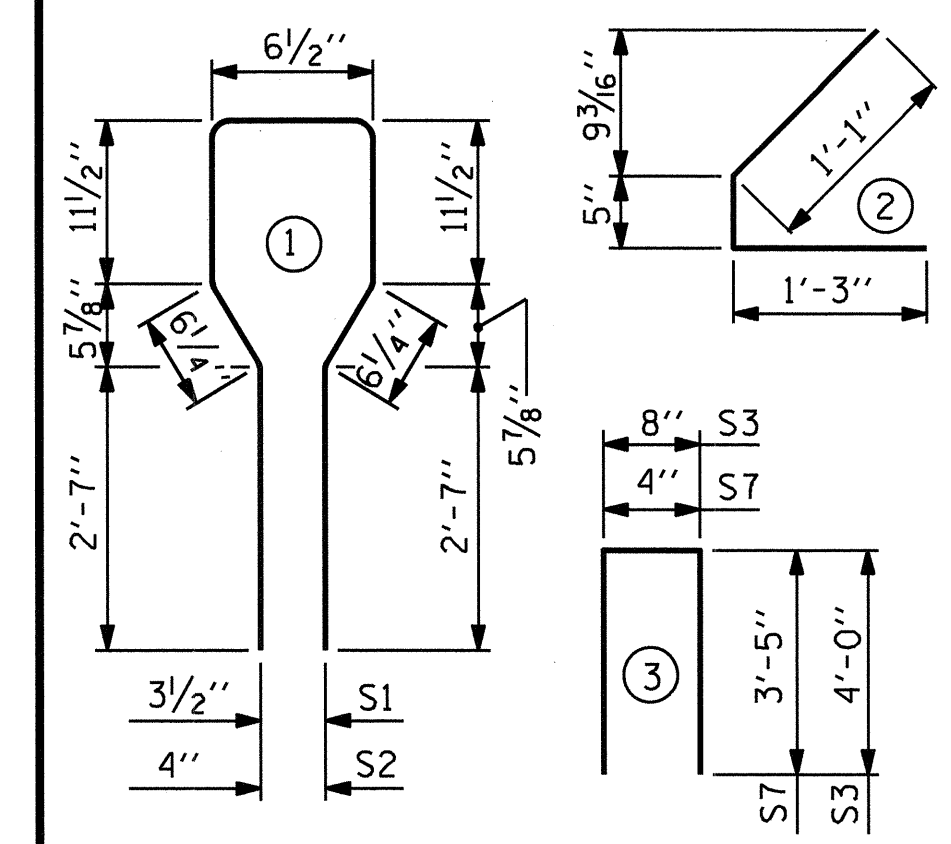
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	46	#4	1	8'- 8"	266
S2	12	#6	1	8'- 8"	156
S3	4	#4	3	8'- 8"	23
S4	56	#4	2	2'- 9"	103
*S6	12	#5	STR	3'- 8"	46
S7	2	#5	3	7'- 2"	15
S8	5	#4	STR	7'- 0"	23
S10	1	#3	STR	1'- 0"	1

* 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	5000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
GIRDERS 1-4	633	6.3	10

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	43.63'	174.50'

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-

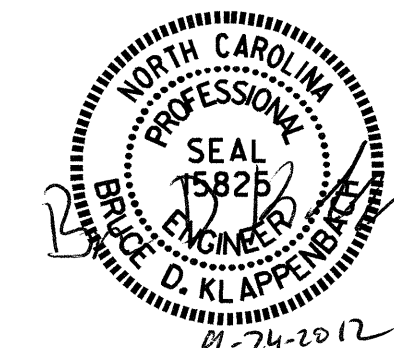
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
(SPAN A)

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

TOTAL SHEETS
33



ASSEMBLED BY: D. A. GLADDEN DATE: 4-25-11
CHECKED BY: M. G. SHAIKH DATE: 5-25-11
DRAWN BY: ELR 8/91 REV. 10/17/00R RWW/LES
CHECKED BY: GRP 8/91 REV. 5/1/06R TLA/GM
REV. 10/1/11 MAA/GM

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.

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.

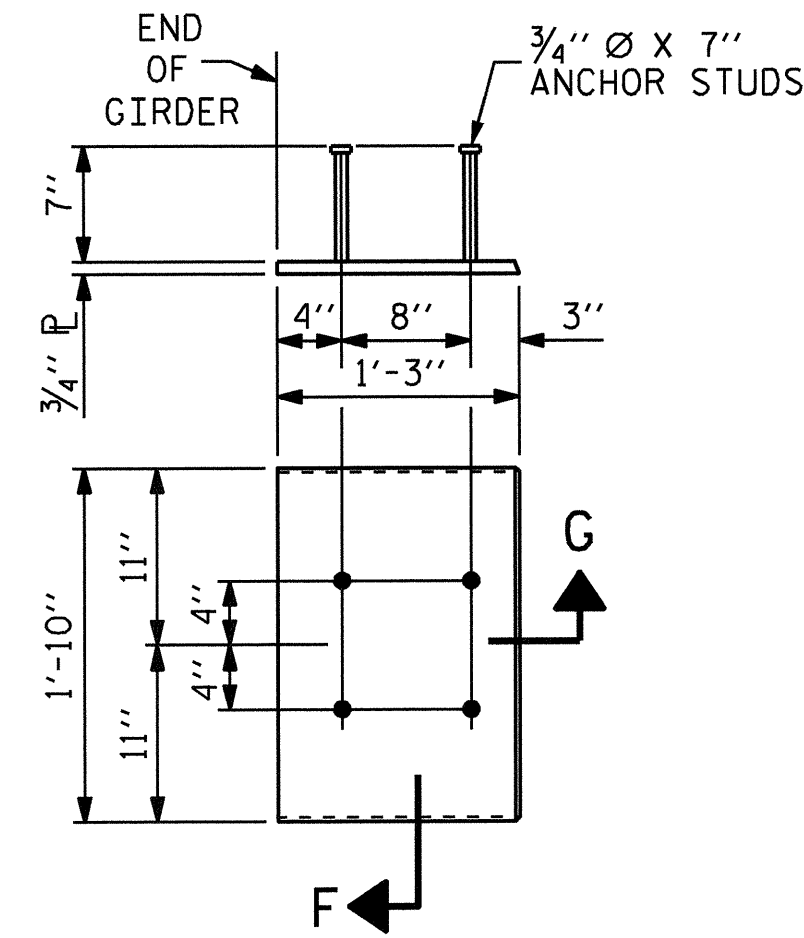
AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER IN SPAN "A" SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

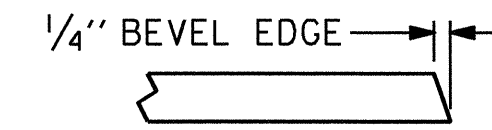
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER IN SPAN "B" SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6100 PSI.

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

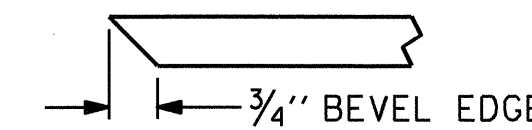
THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".



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



SECTION "G"



SECTION "F"

(SEE NOTES)

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS



ASSEMBLED BY : D. A. GLADDEN	DATE : 4-25-11
CHECKED BY : M. G. SHAIKH	DATE : 5-25-11
DRAWN BY : ELR 11/91	REV. 10/17/00 RWW/LES
CHECKED BY : GRP 11/91	REV. 7/10/01RR LES/RDR
	REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			33

STRUCTURAL STEEL NOTES

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

TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

THE PLATES, BENT PLATES, CHANNELS, AND ANGLES 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 PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

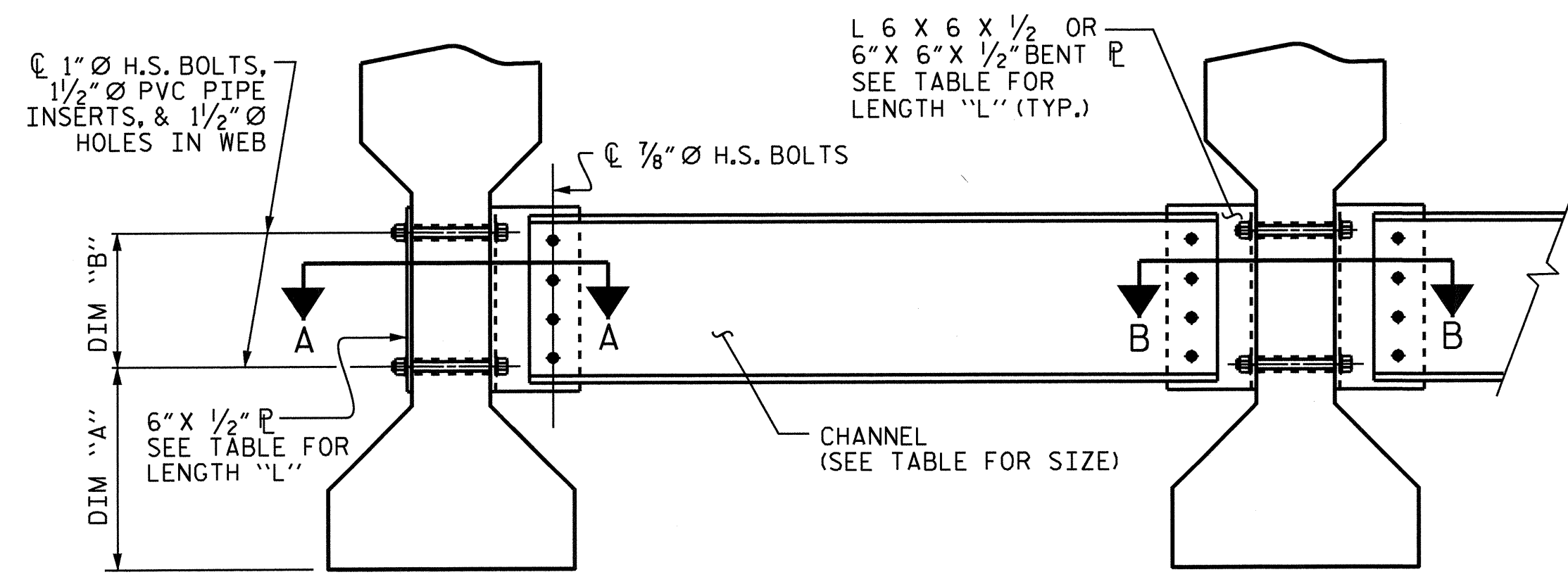
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

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, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

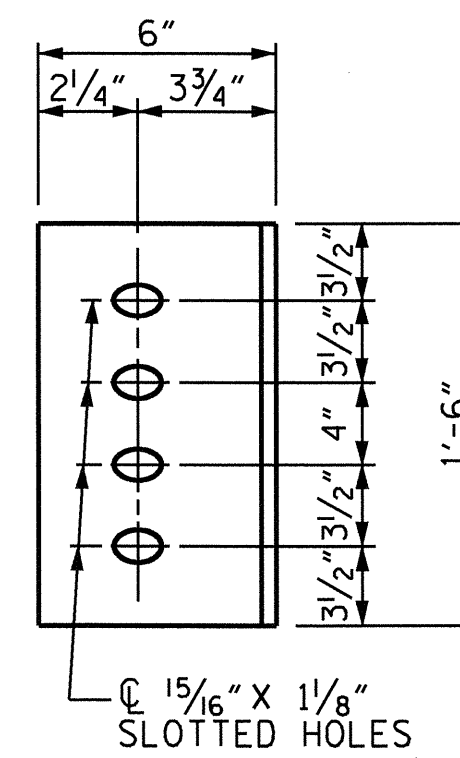
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



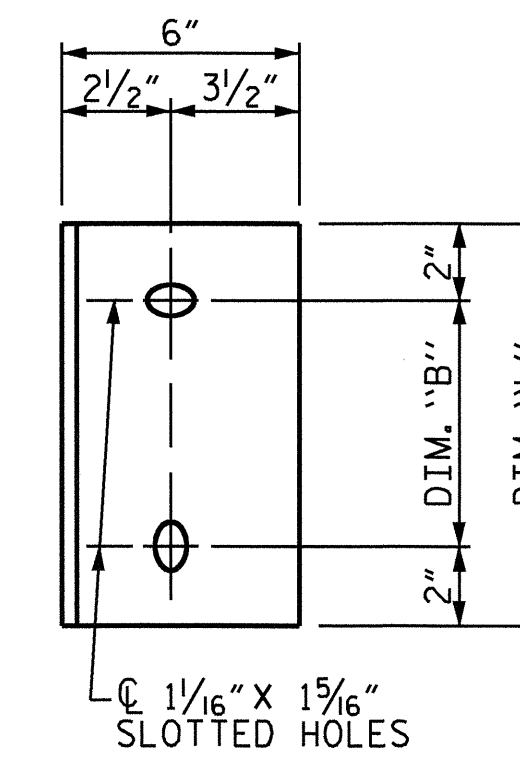
EXTERIOR GIRDER **INTERIOR GIRDER**

PART SECTION AT INTERMEDIATE DIAPHRAGM

(TYPE III OR TYPE IV GIRDER SHOWN)

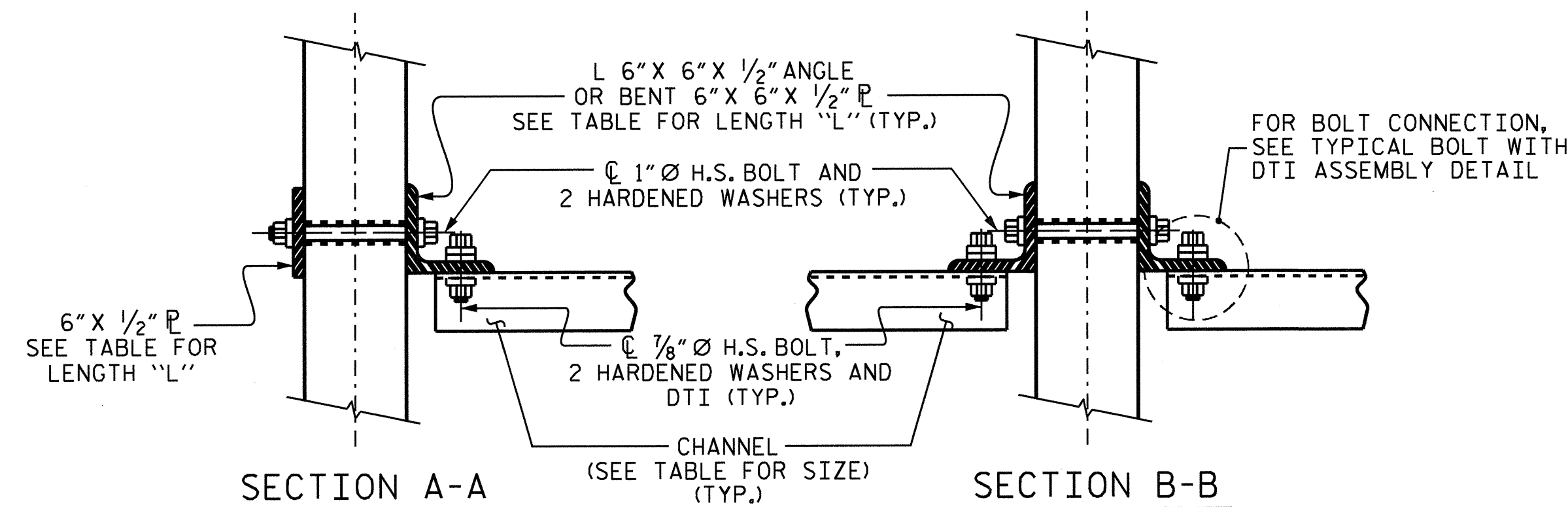


DIAPHRAGM FACE
(TYPE III OR TYPE IV GDR.)



WEB FACE

CONNECTOR PLATE DETAILS



CONNECTION DETAILS

(FOR SKEW = 90°)

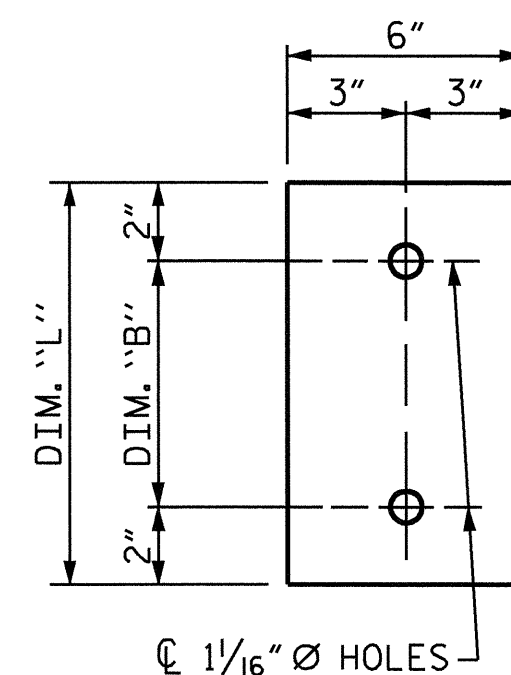
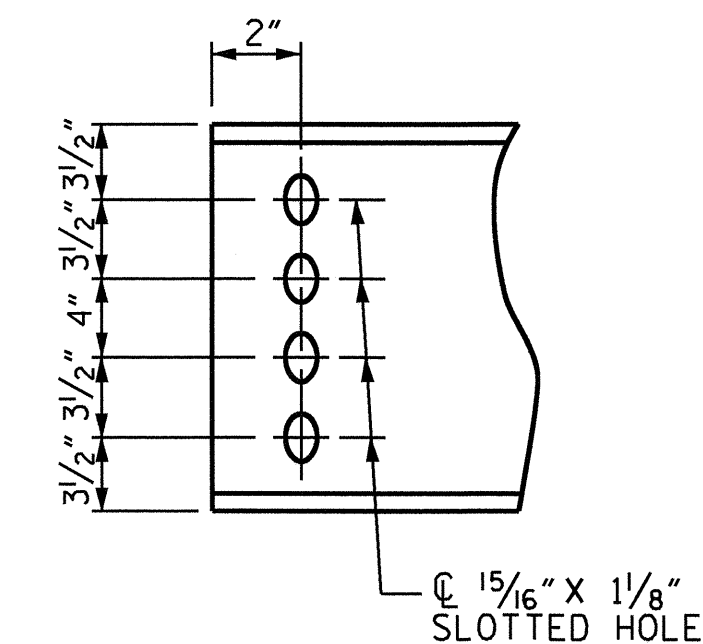


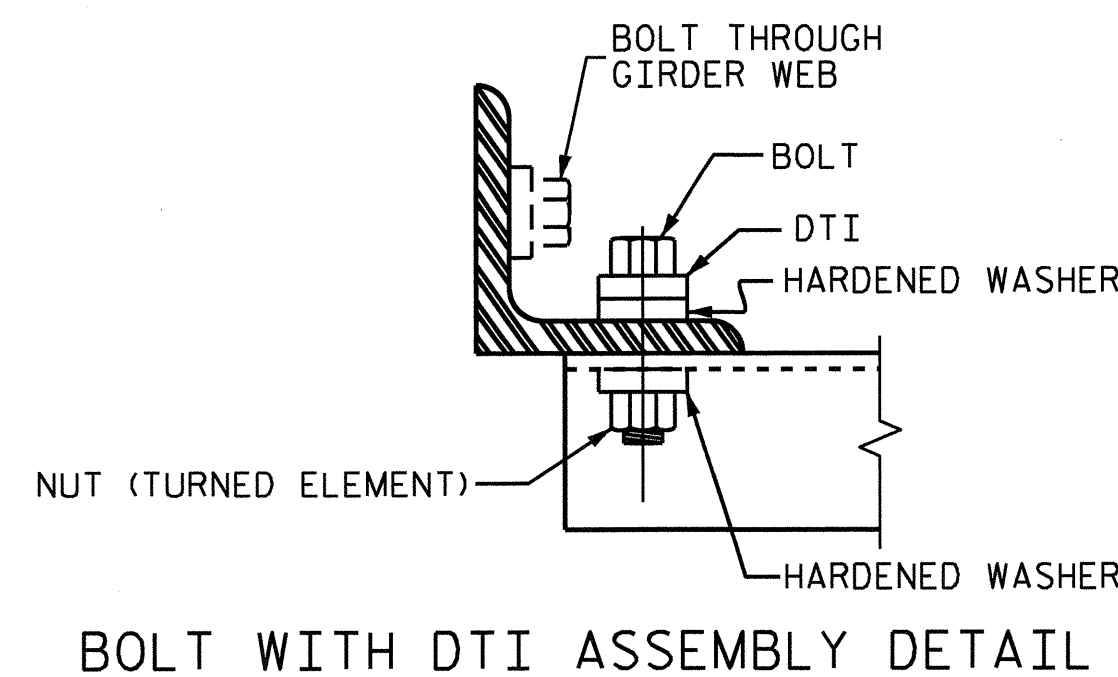
PLATE DETAILS



CHANNEL END
(TYPE III OR TYPE IV GDR.)

TABLE

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



BOLT WITH DTI ASSEMBLY DETAIL

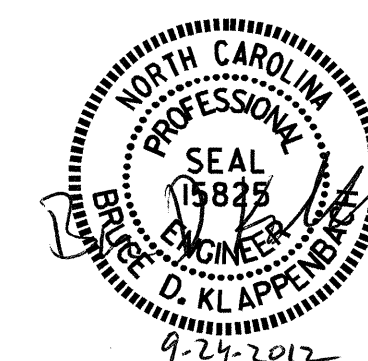
PROJECT NO. B-4753

GASTON COUNTY

STATION: 23+51.50 -L-

SHEET 4 OF 4

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



REVISIONS						SHEET NO. 5-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 33
2			4			

ASSEMBLED BY : D. A. GLADDEN DATE : 4-25-11
CHECKED BY : M. G. SHAIKH DATE : 5-25-11
DRAWN BY : TLA 6/05
CHECKED BY : VC 6/05
ADDED 10/21/05
REV. 5/1/06RRR KMM/GM
REV. 10/1/11 MAA/GM

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																	
0.6 "Ø LOW RELAXATION	SPAN "A"																																
	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
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.010	0.018	0.025	0.029	0.030	0.029	0.025	0.018	0.010	0.000	0.000	0.010	0.018	0.025	0.029	0.030	0.029	0.025	0.018	0.010	0.000	0.000	0.010	0.034	0.047	0.055	0.057	0.055	0.047	0.034	0.018	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.000	0.005	0.009	0.012	0.014	0.015	0.014	0.012	0.009	0.005	0.000	0.000	0.005	0.009	0.012	0.014	0.015	0.014	0.012	0.009	0.005	0.000	0.000	0.005	0.008	0.011	0.013	0.014	0.013	0.011	0.008	0.004	0.000
FINAL CAMBER ↑	0.000	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0.000	0.000	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0.000	0.000	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	0.000

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																	
0.6 "Ø LOW RELAXATION	SPAN "B"																																
	GIRDER #1											GIRDERS #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
CAMBER (GIRDER ALONE IN PLACE) ↑	0.000	0.084	.159	0.217	0.254	0.267	0.254	0.217	.159	0.084	0.000	0.000	0.084	.159	0.217	0.254	0.267	0.254	0.217	.159	0.084	0.000	0.000	0.084	.159	0.217	0.254	0.267	0.254	0.217	.159	0.084	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0.000	0.035	0.067	0.092	0.108	0.113	0.108	0.092	0.067	0.035	0.000	0.000	0.036	0.068	0.093	0.109	0.114	0.109	0.093	0.068	0.036	0.000	0.000	0.035	0.067	0.092	0.108	0.113	0.108	0.092	0.067	0.035	0.000
FINAL CAMBER ↑	0.000	9/16"	1/8"	1/2"	13/4"	17/8"	13/4"	1/2"	1/8"	9/16"	0.000	0.000	9/16"	1/16"	1/2"	13/4"	13/16"	13/4"	1/2"	1/16"	9/16"	0.000	0.000	9/16"	1/8"	1/2"	13/4"	17/8"	13/4"	1/2"	1/8"	9/16"	0.000

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-



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 33

DRAWN BY : D. A. GLADDEN DATE : 4-25-11
CHECKED BY : M. G. SHAIKH DATE : 5-25-11

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.

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

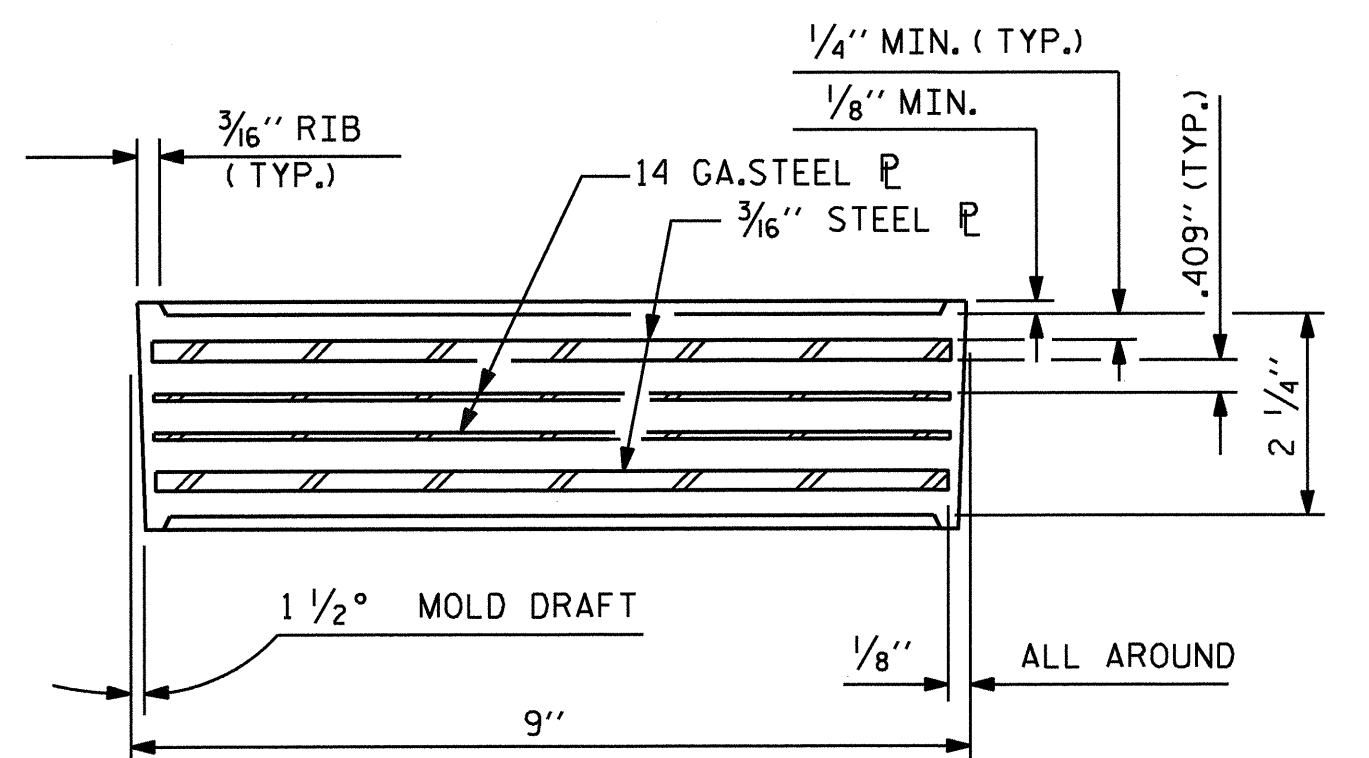
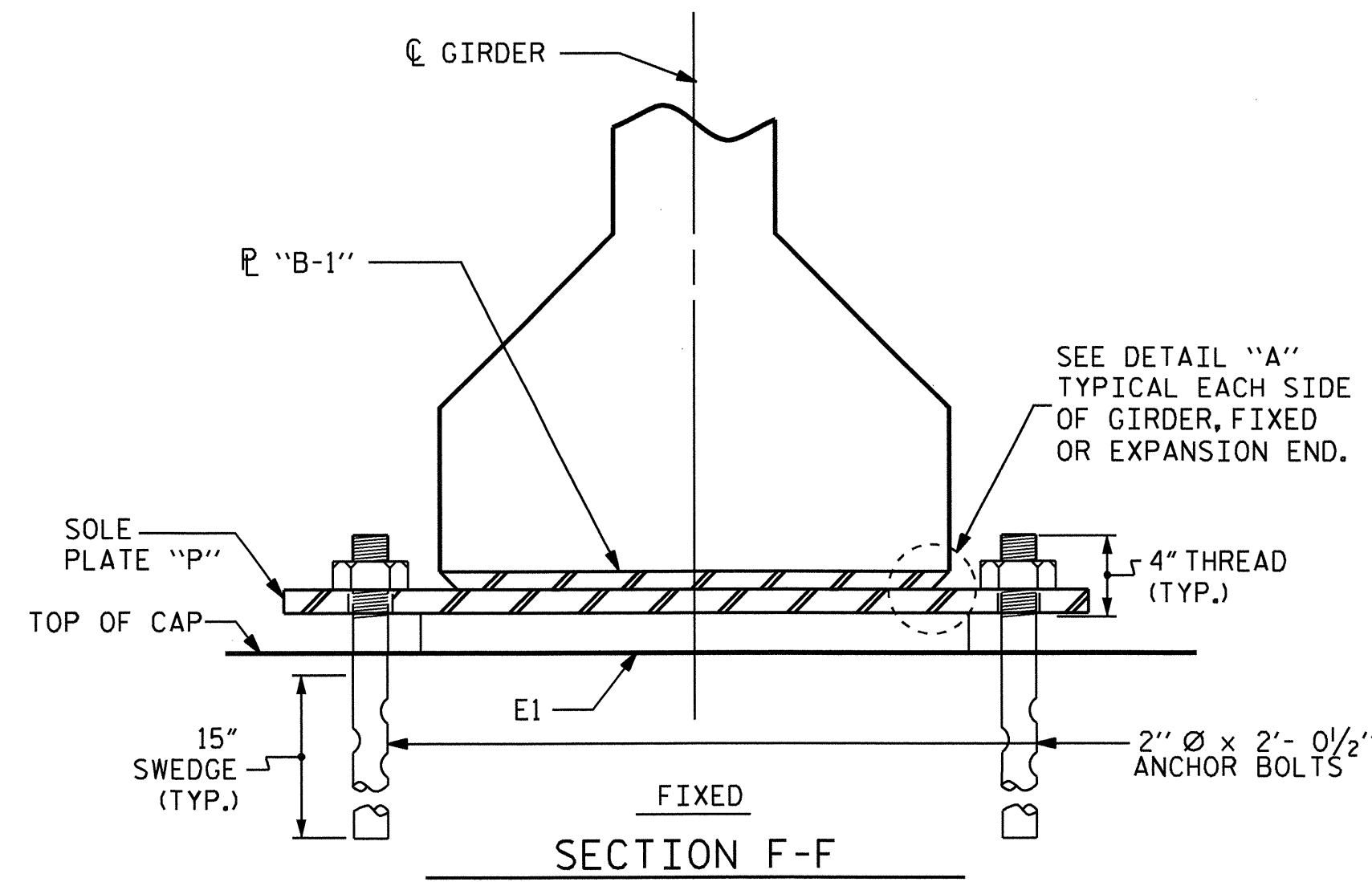
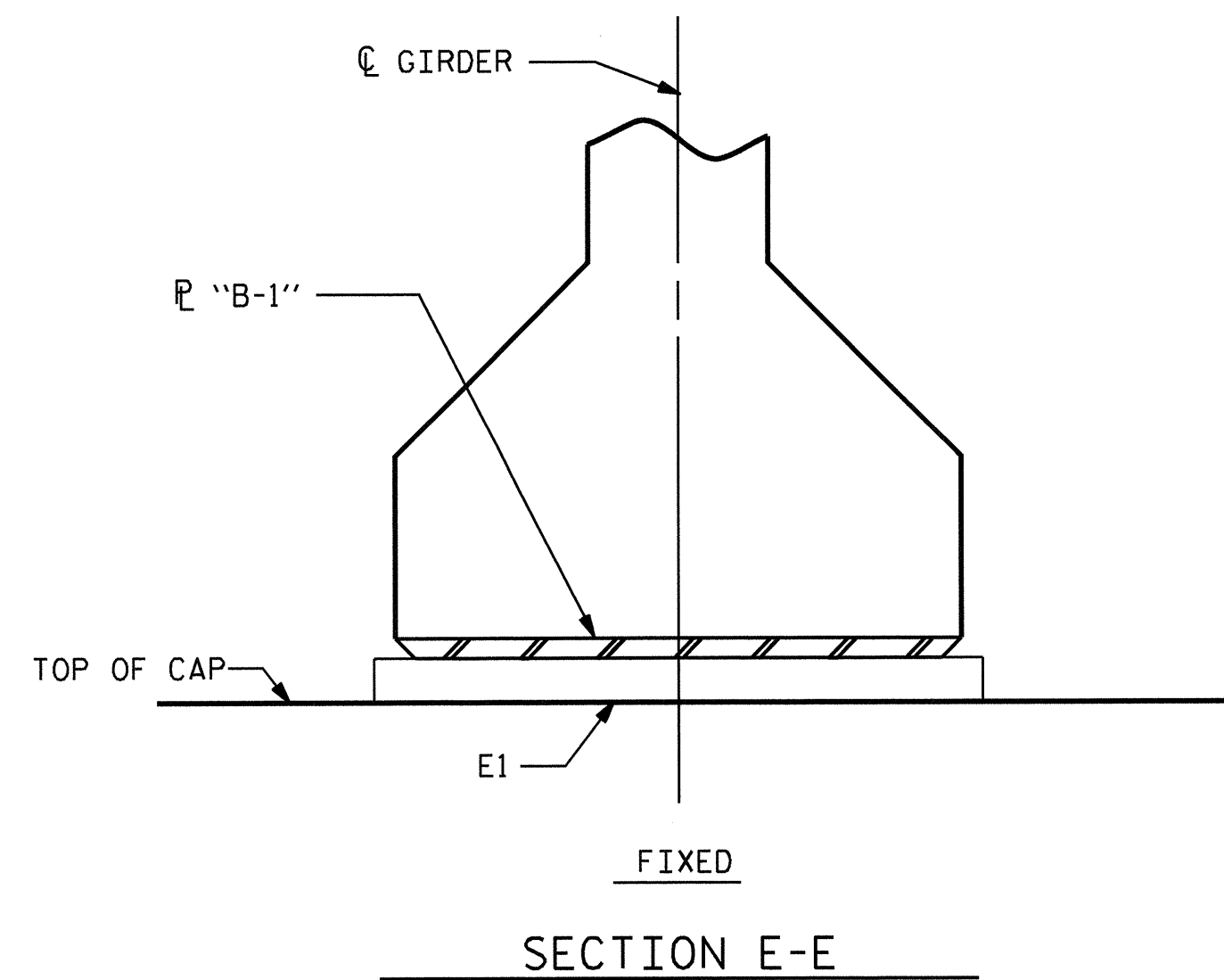
PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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.

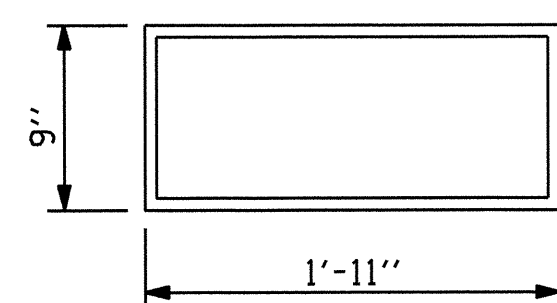
SOLE PLATE "P", BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

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. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

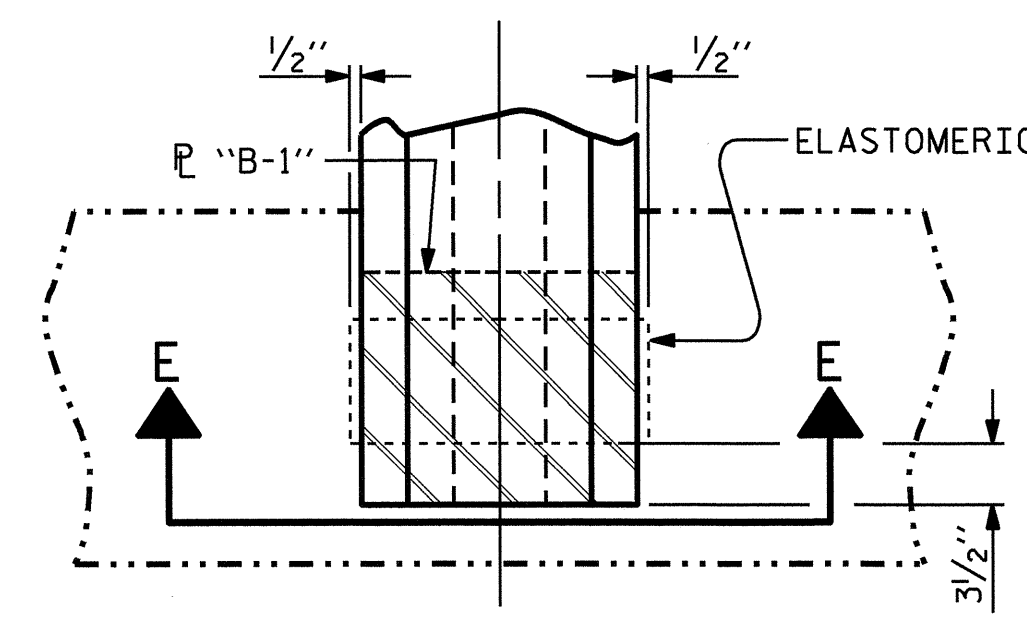
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



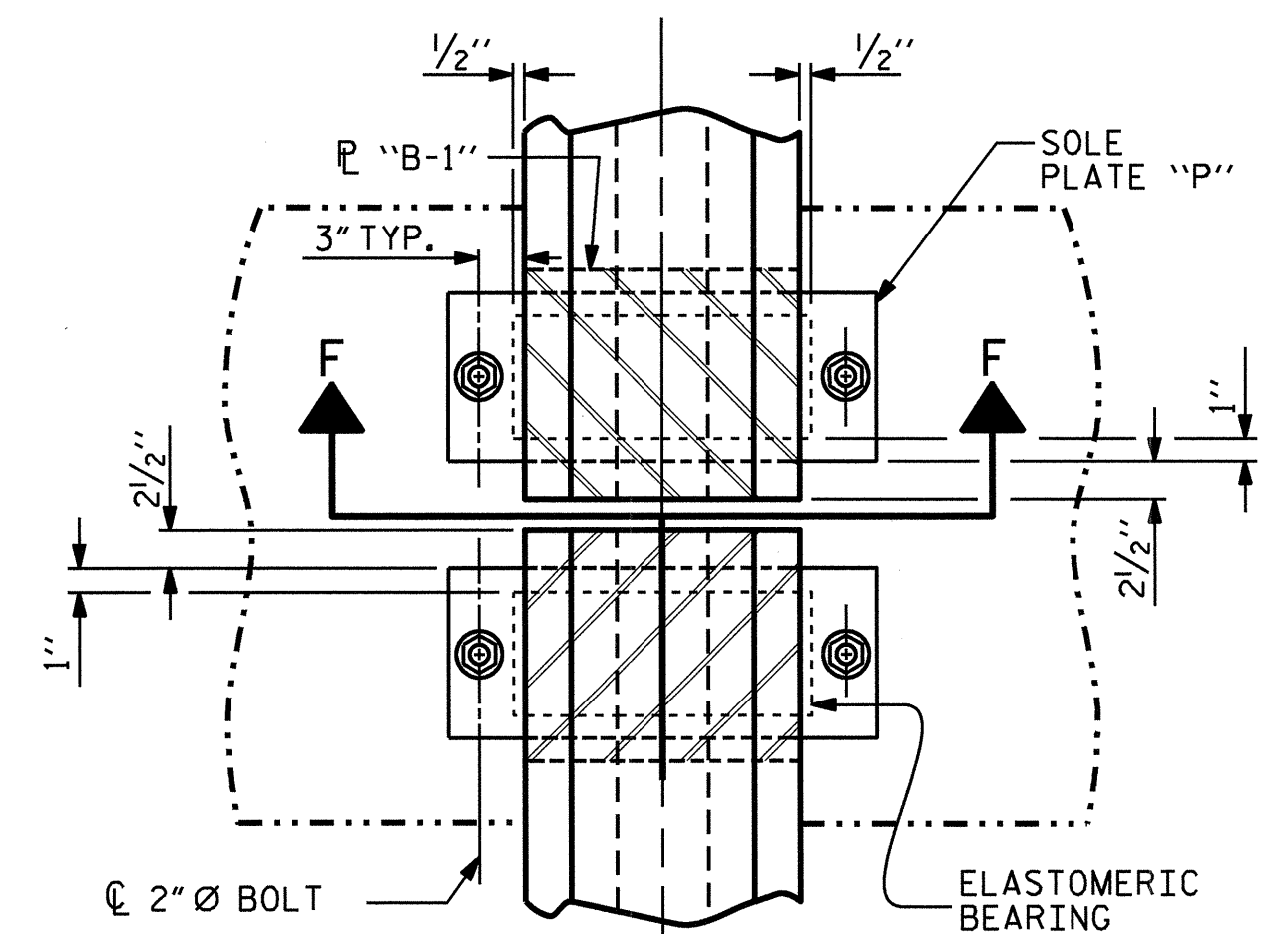
TYPICAL SECTION OF ELASTOMERIC BEARINGS



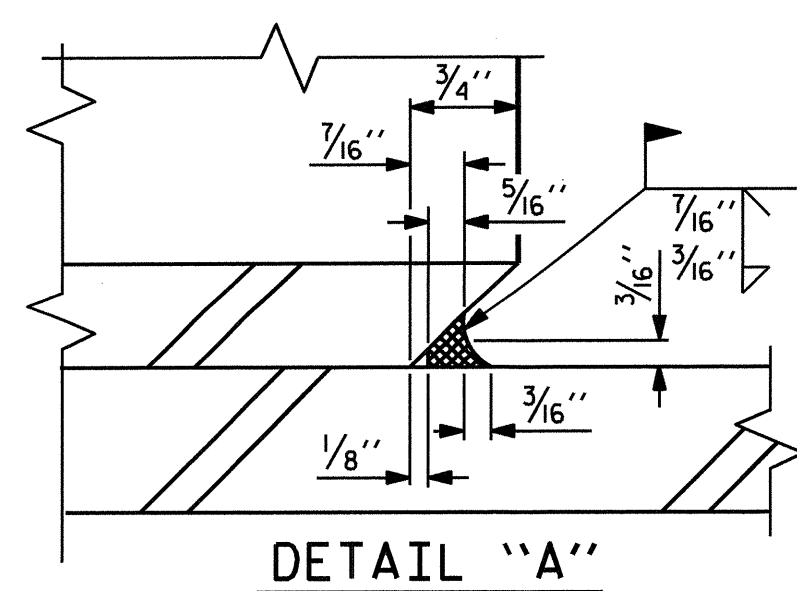
E1 (16 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING
TYPE V



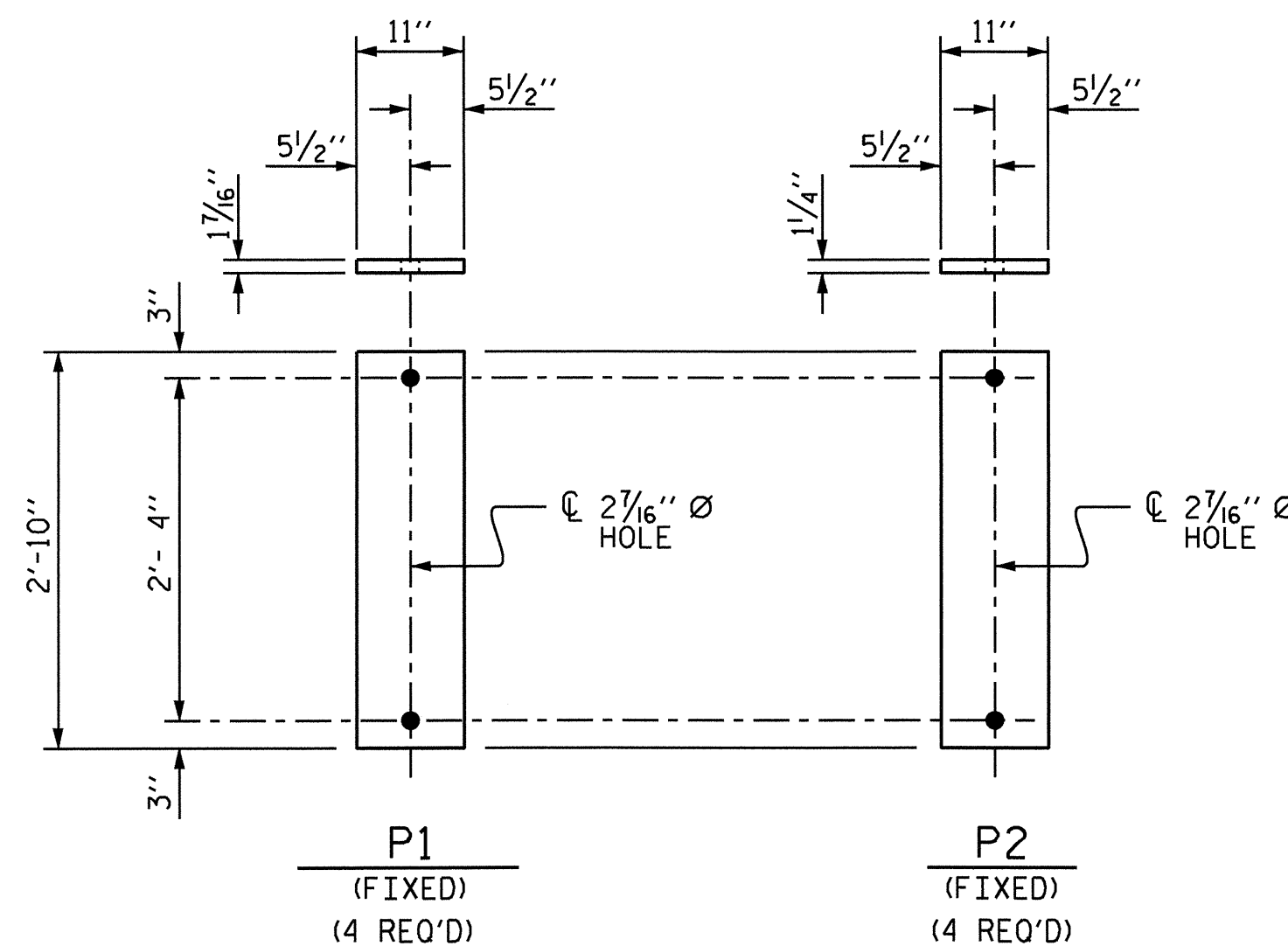
TYPICAL PLAN
(SHOWING INTEGRAL END BENT)



TYPICAL PLAN
(SHOWING CONTINUOUS BENT)



DETAIL "A"

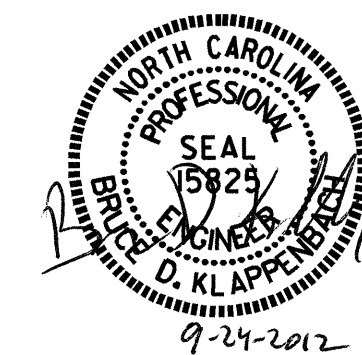


SOLE PLATE DETAILS ("P")

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

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-

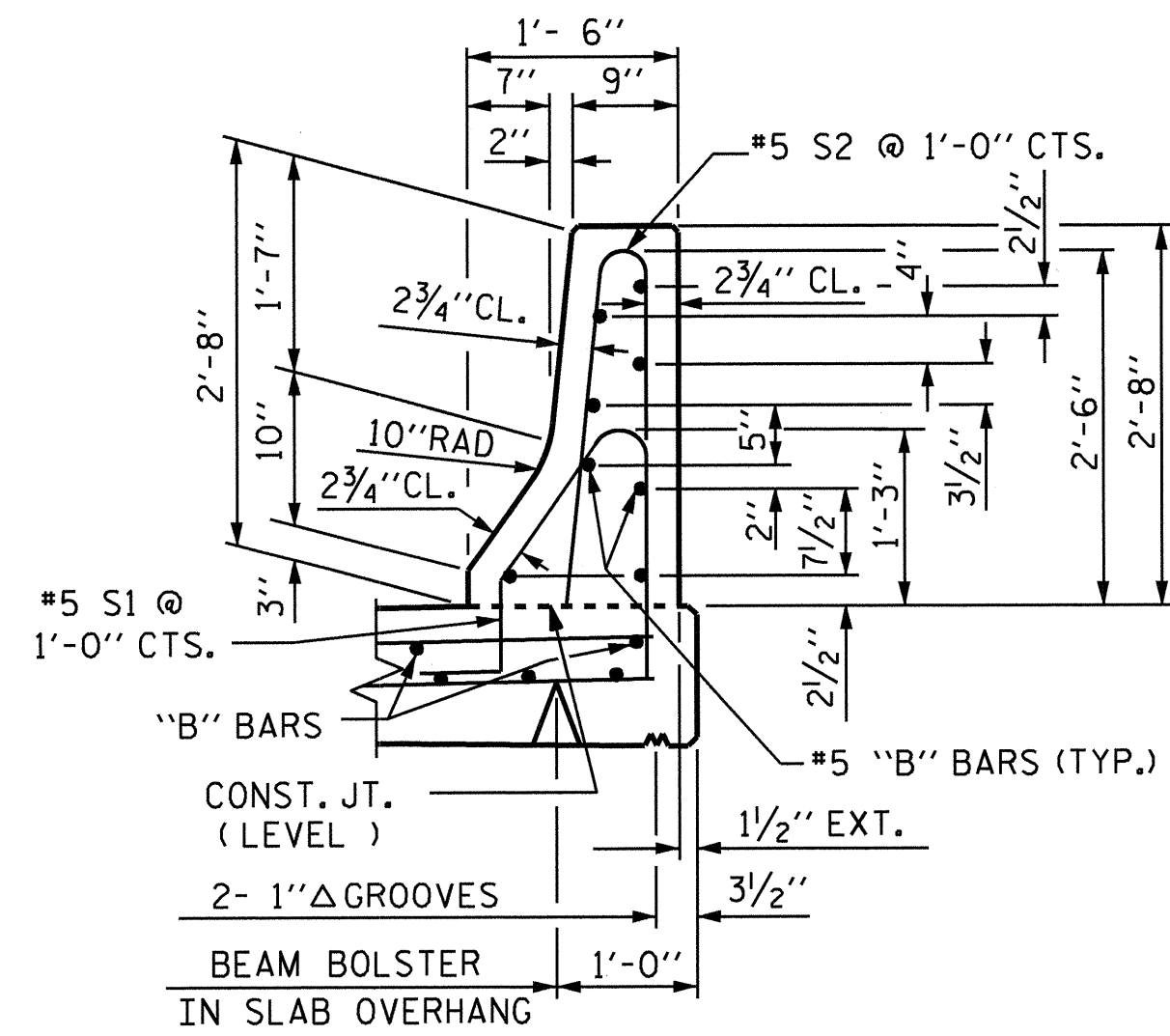
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ELASTOMERIC BEARING
DETAILS
PRESTRESSED CONCRETE GIRDER
SUPERSTRUCTURE



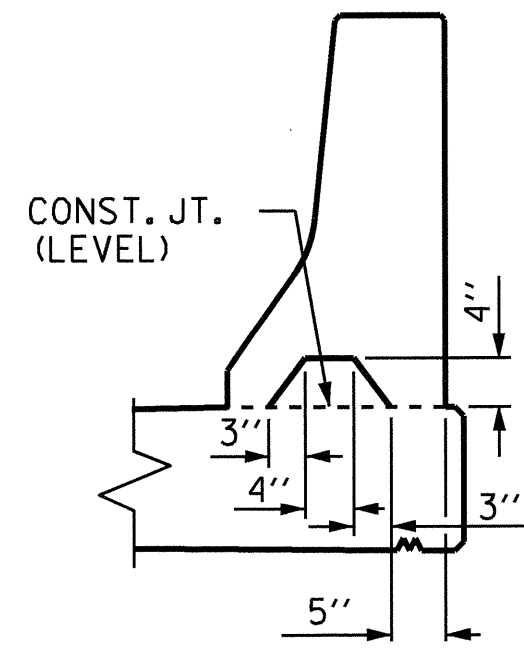
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 33

ASSEMBLED BY: D. A. GLADDEN DATE: 4-25-11
CHECKED BY: M. G. SHAIKH DATE: 5-25-11
DRAWN BY: EEM 2/97 REV. 10/17/00 RWW/LES
CHECKED BY: VAP 2/97 REV. 5/1/06 TLA/GM
REV. 10/1/11 MMA/GM

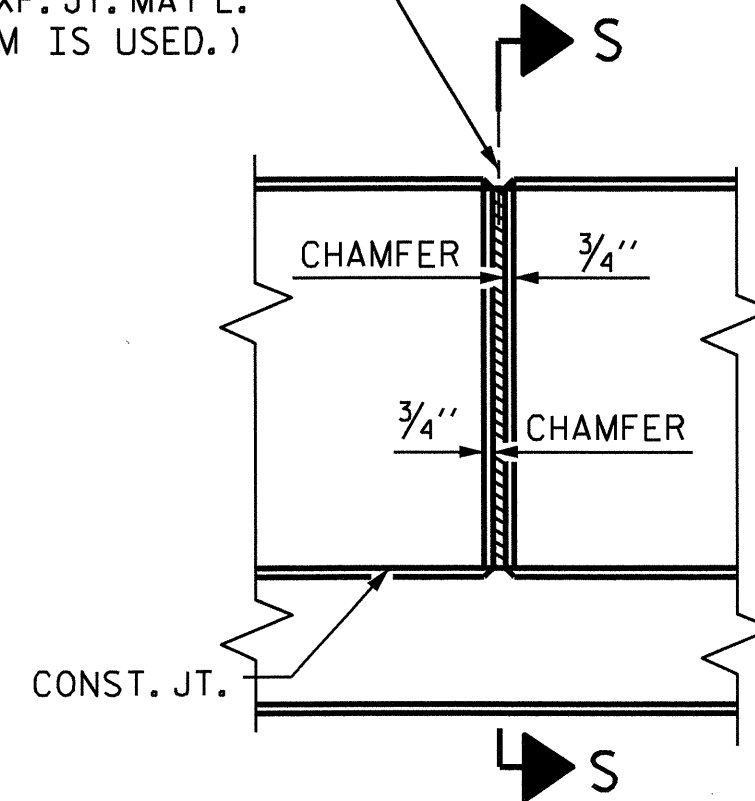


SECTION THRU RAIL



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

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)



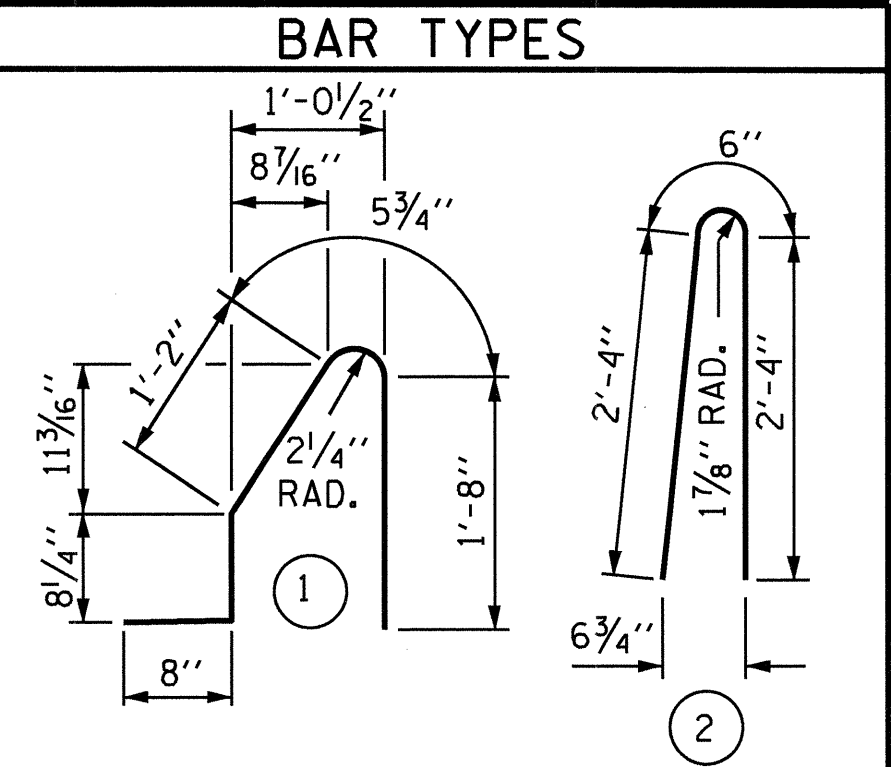
ELEVATION AT EXPANSION JOINTS

NOTES

THE 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.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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.



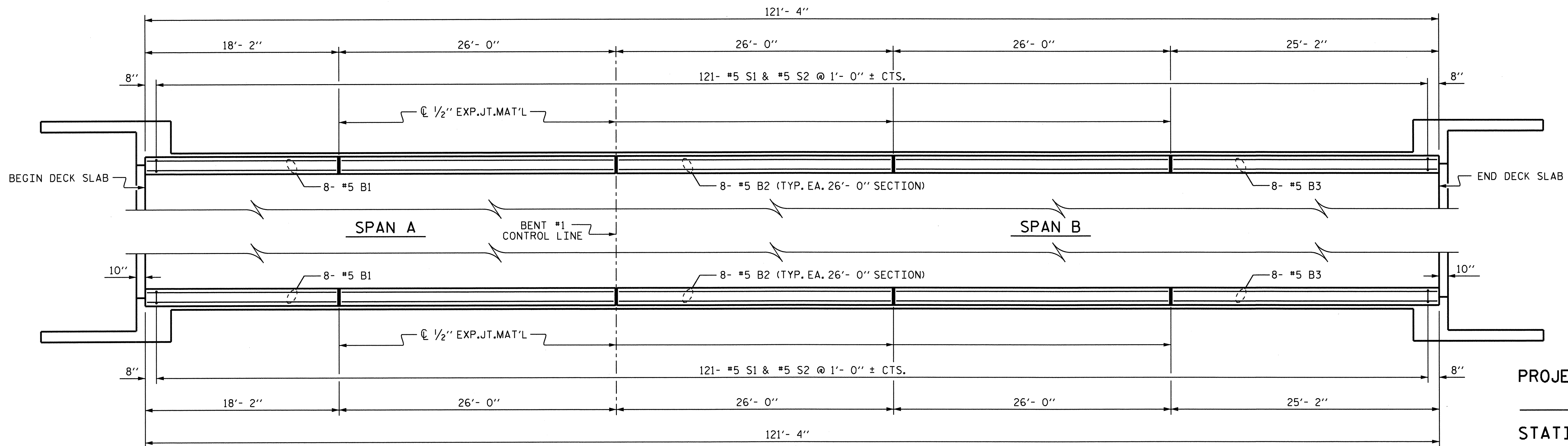
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

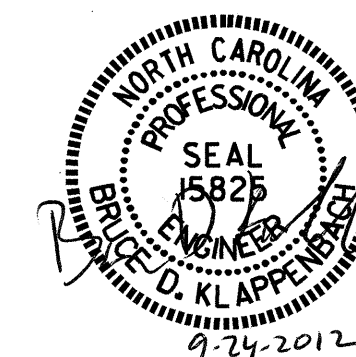
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	16	#5	STR	17'- 9"	296
* B2	48	#5	STR	25'- 6"	1277
* B3	16	#5	STR	24'- 9"	413
* S1	242	#5	1	4'- 8"	1178
* S2	242	#5	2	5'- 2"	1304

* EPOXY COATED REINFORCING STEEL 4468 LBS.
CLASS AA CONCRETE 24.3 CU. YDS.
CONCRETE BARRIER RAIL 242.67 LIN. FT.



PLAN OF BARRIER RAIL

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-



ASSEMBLED BY : D. A. GLADDEN DATE : 4-28-11
CHECKED BY : M. G. SHAIKH DATE : 5-25-11
DRAWN BY : ARB 5/87 REV. 10/17/00 RWW/LES
CHECKED BY : SJD 9/87 REV. 5/17/03R RWW/JTE
REV. 5/1/06R TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-20
1			3			TOTAL SHEETS
2			4			33

NOTES

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

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

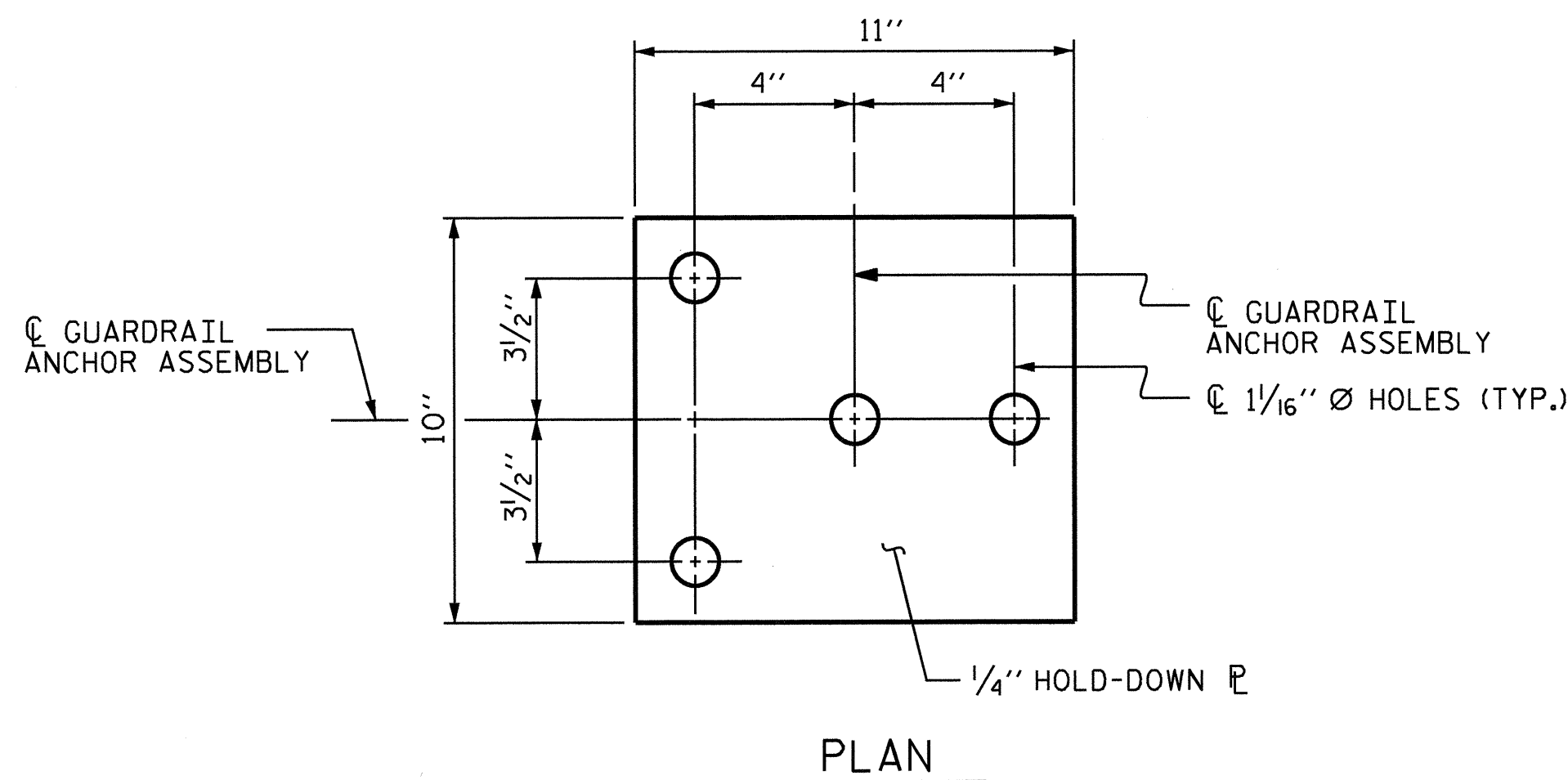
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

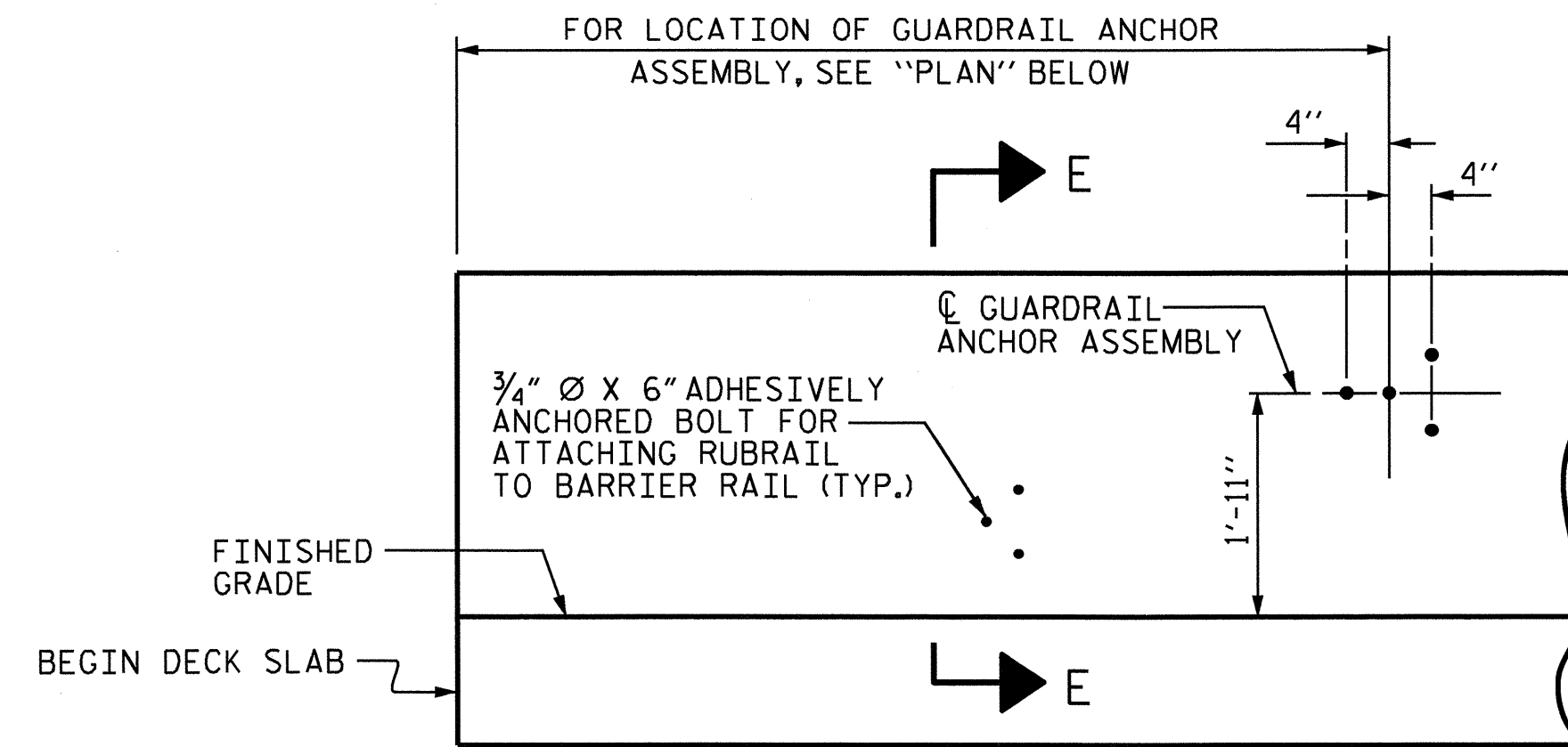
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

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

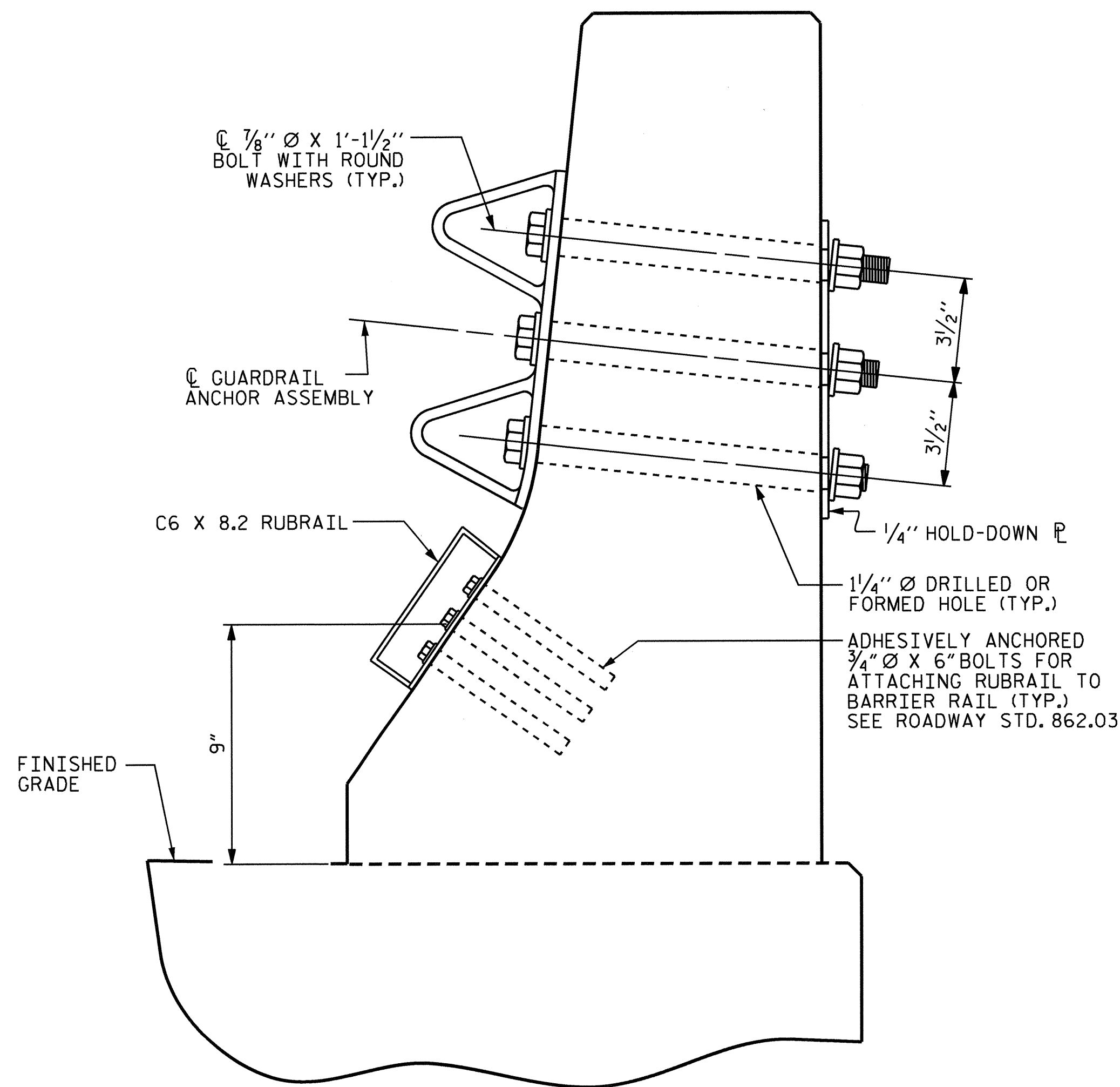


PLAN



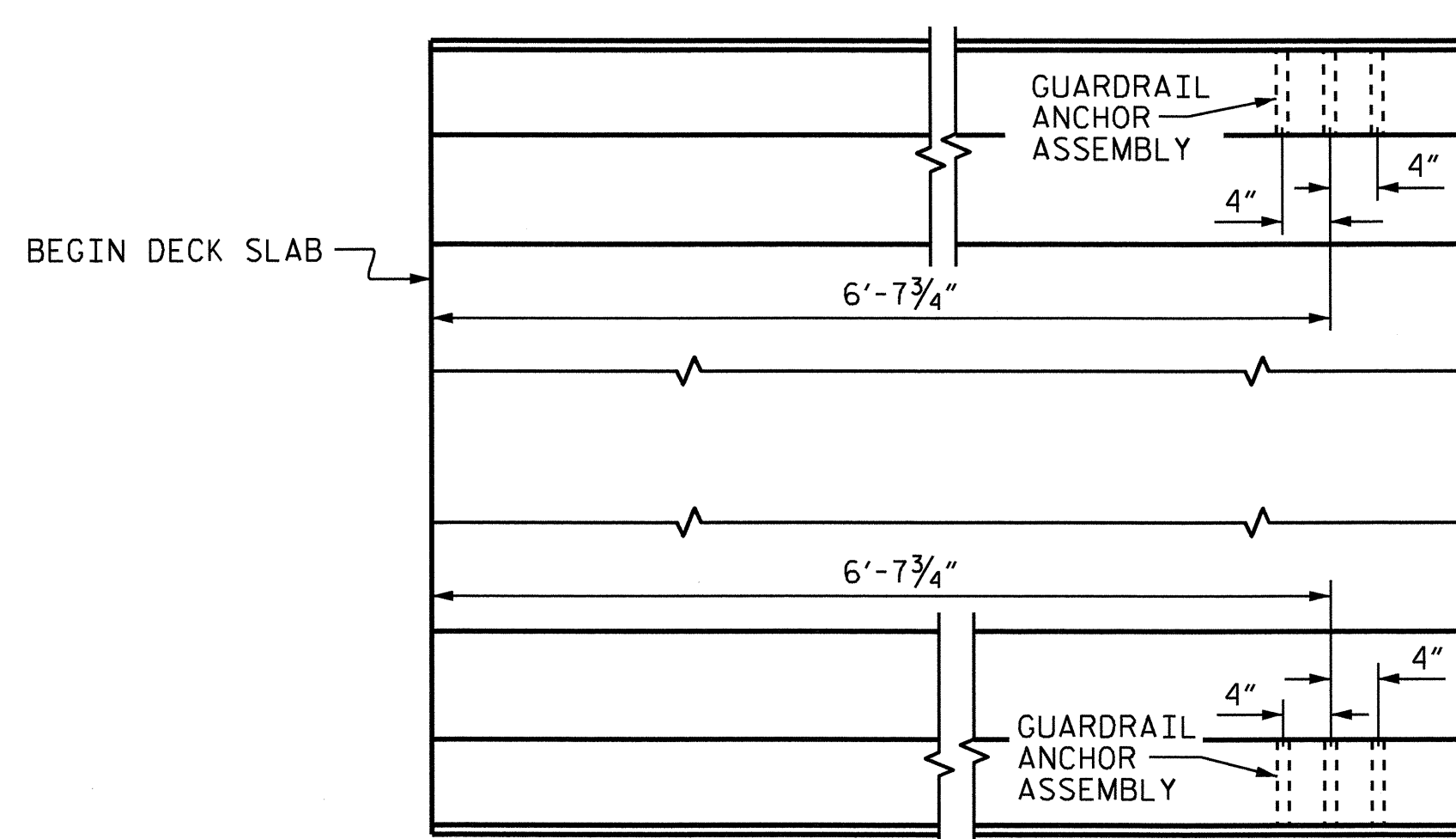
ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



SECTION E-E

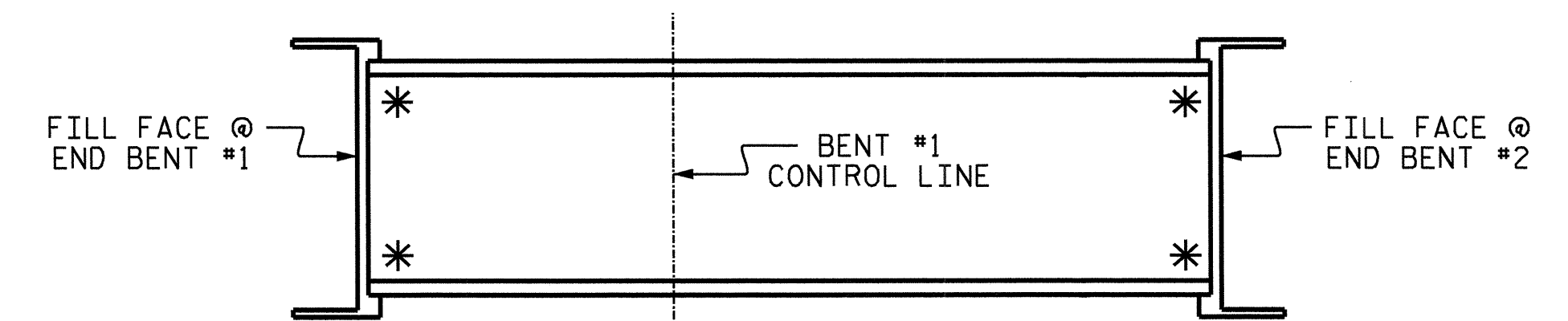
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

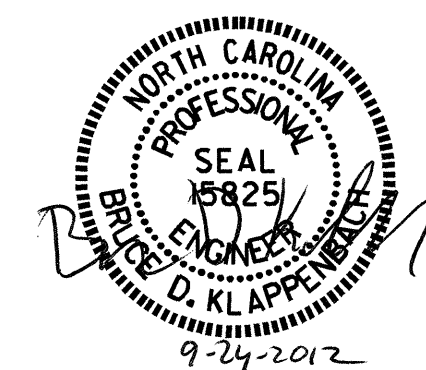


SKETCH SHOWING POINTS OF ATTACHMENTS

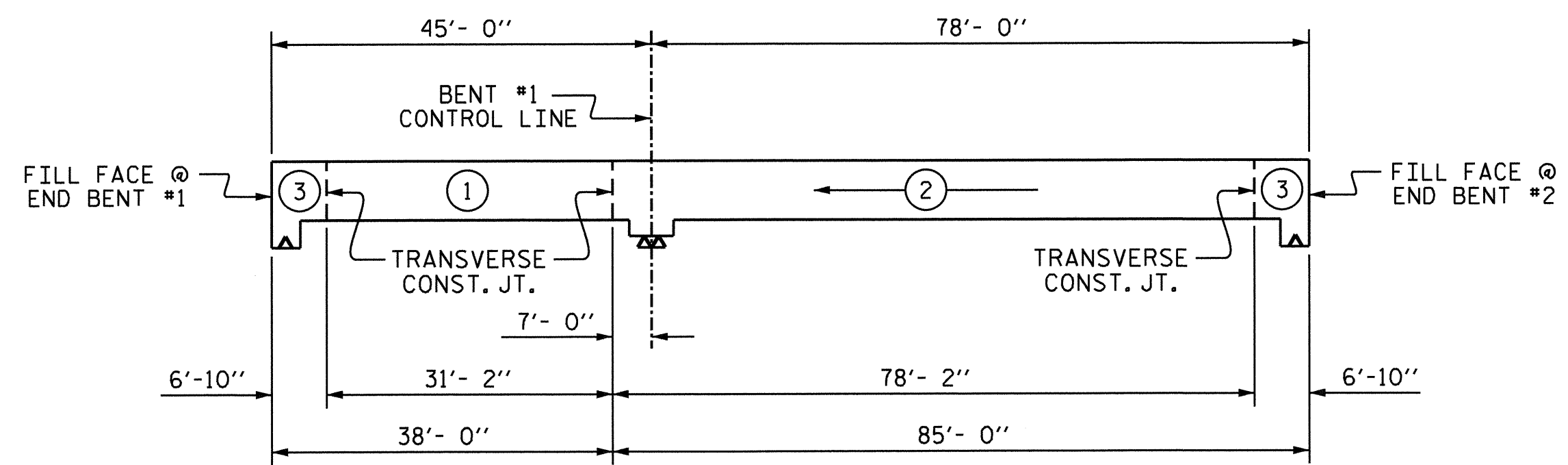
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
GUARDRAIL ANCHORAGE FOR BARRIER RAIL					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-21
					TOTAL SHEETS 33

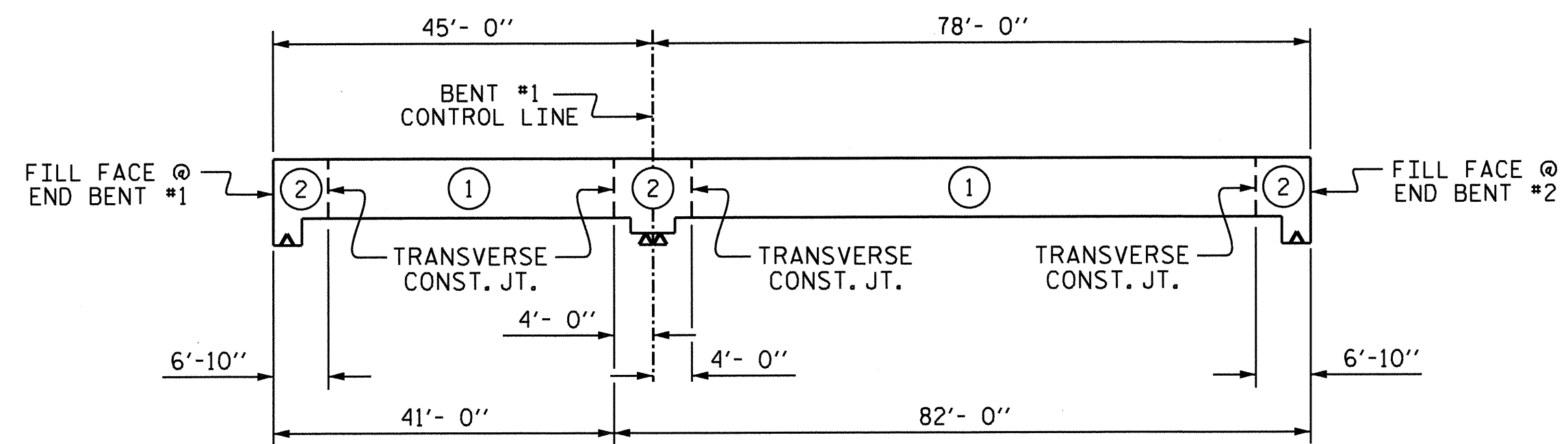


ASSEMBLED BY : D. A. GLADDEN DATE : 4-28-11
 CHECKED BY : M. G. SHAIKH DATE : 5-25-11
 DRAWN BY : TLA 5/06 ADDED 5/1/06R KMM/GM
 CHECKED BY : GM 5/06



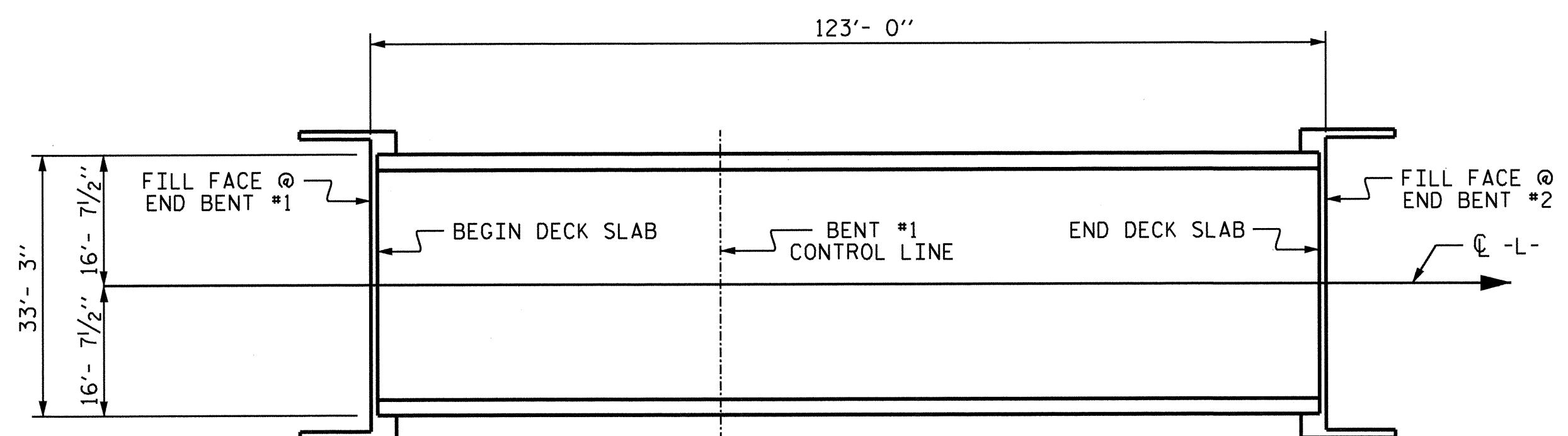
POURING SEQUENCE

POUR #3 INCLUDES 6'-10" SECTION OF THE BRIDGE DECK AND UPPER PART OF INTEGRAL END BENTS AND WINGS.



OPTIONAL POURING SEQUENCE

POUR #2 CAN NOT BE POURED UNTIL BOTH ADJACENT #1 POURS REACH A MINIMUM STRENGTH OF 3000 PSI.
AT END BENTS, POUR #2 INCLUDES 6'-10" SECTION OF THE BRIDGE DECK AND UPPER PART OF INTEGRAL END BENTS AND WINGS.

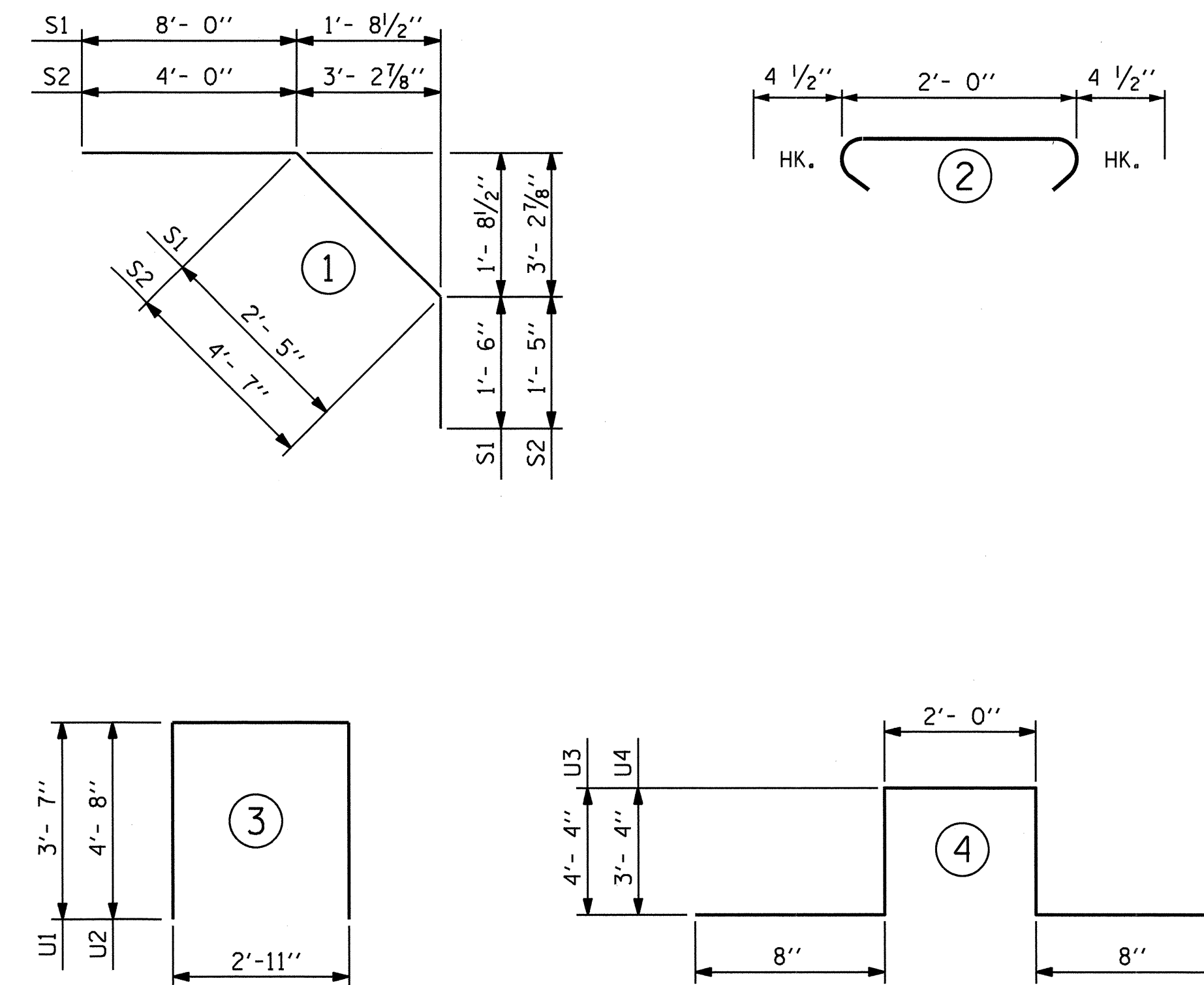


LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. = 4,090)

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	242	#5	STR	32'-11"	8308
A2	242	#5	STR	32'-11"	8308
*B1	28	#6	STR	13'-10"	582
*B2	25	#6	STR	11'-1"	416
*B3	28	#4	STR	15'-8"	293
*B4	28	#6	STR	46'-11"	1973
*B5	25	#6	STR	18'-6"	695
*B6	56	#4	STR	17'-0"	636
*B7	28	#6	STR	20'-7"	866
*B8	25	#6	STR	17'-10"	670
B9	114	#5	STR	41'-10"	4974
H1	56	#5	STR	12'-2"	711
K1	20	#4	STR	20'-4"	272
K2	12	#4	STR	7'-1"	57
K3	24	#4	STR	7'-9"	124
K4	12	#4	STR	7'-5"	59
K5	6	#4	STR	6'-7"	26
K6	4	#4	STR	5'-7"	15
K7	8	#4	STR	5'-11"	32
K8	4	#4	STR	5'-8"	15
K9	4	#4	STR	5'-4"	14
K10	24	#4	STR	2'-9"	44
K11	5	#4	STR	26'-6"	89
K12	6	#4	STR	5'-5"	22
*S1	54	#4	1	11'-11"	430
*S2	50	#4	1	10'-0"	334
S3	90	#4	2	2'-9"	165
U1	54	#4	3	10'-1"	364
U2	12	#4	3	12'-3"	98
*U3	18	#4	4	12'-0"	144
*U4	6	#4	4	10'-0"	40
V1	48	#5	STR	5'-1"	254
V2	48	#5	STR	5'-2"	259
REINFORCING STEEL =				15902	LBS
*EPOXY COATED REINF. STEEL =				15387	LBS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	*EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
POUR 1	35.2		
POUR 2	96.8	15902	15387
POUR 3 ***	40.9		
TOTALS **	172.9	15902	15387

** QUANTITIES FOR CONCRETE BARRIER RAIL ARE NOT INCLUDED

*** POUR #3 INCLUDES 6'-10" SECTION OF THE BRIDGE DECK AND UPPER PART OF INTEGRAL END BENTS AND WINGS.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

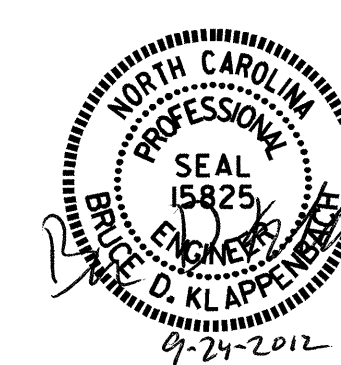
GROOVING BRIDGE FLOORS

APPROACH SLABS	1314	SQ.FT.
BRIDGE DECK	3267	SQ.FT.
TOTAL	4581	SQ.FT.

PROJECT NO. B-4753
GASTON COUNTY
STATION: 23+51.50 -L-

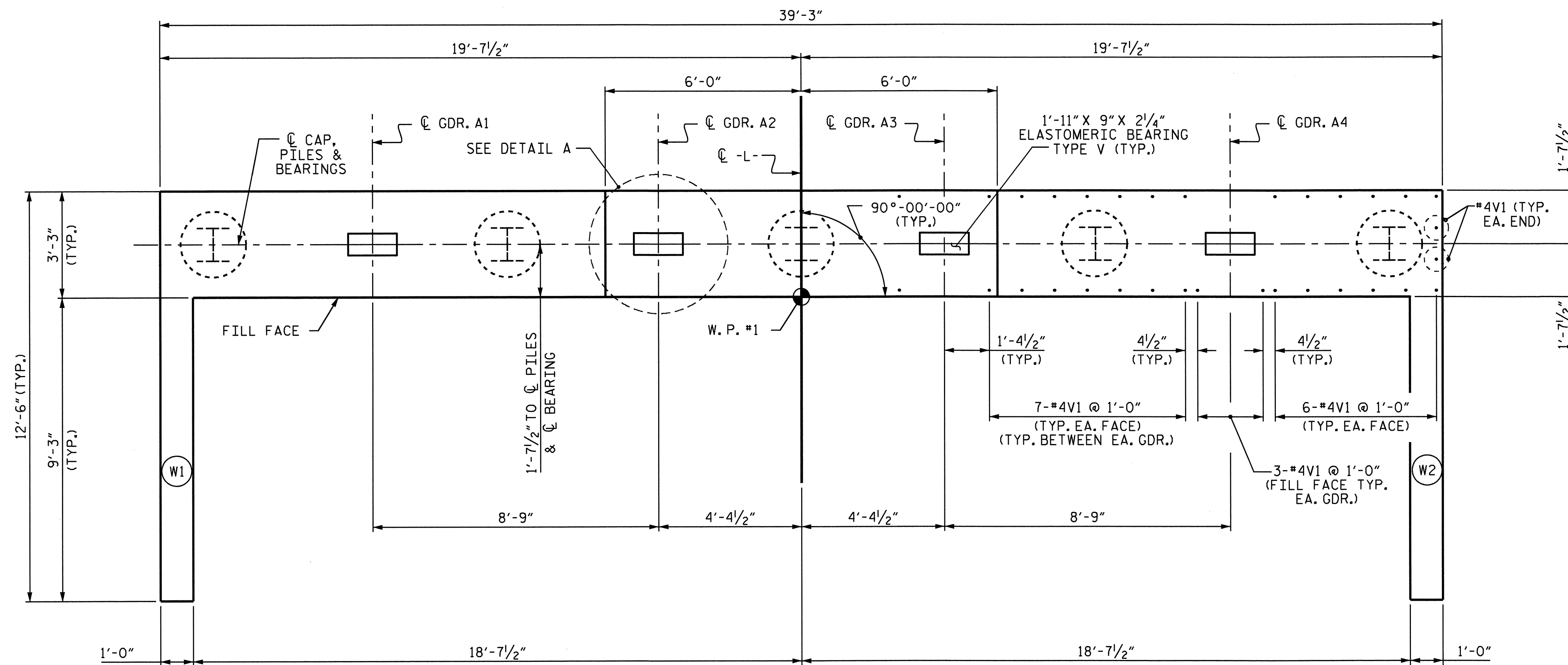
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL



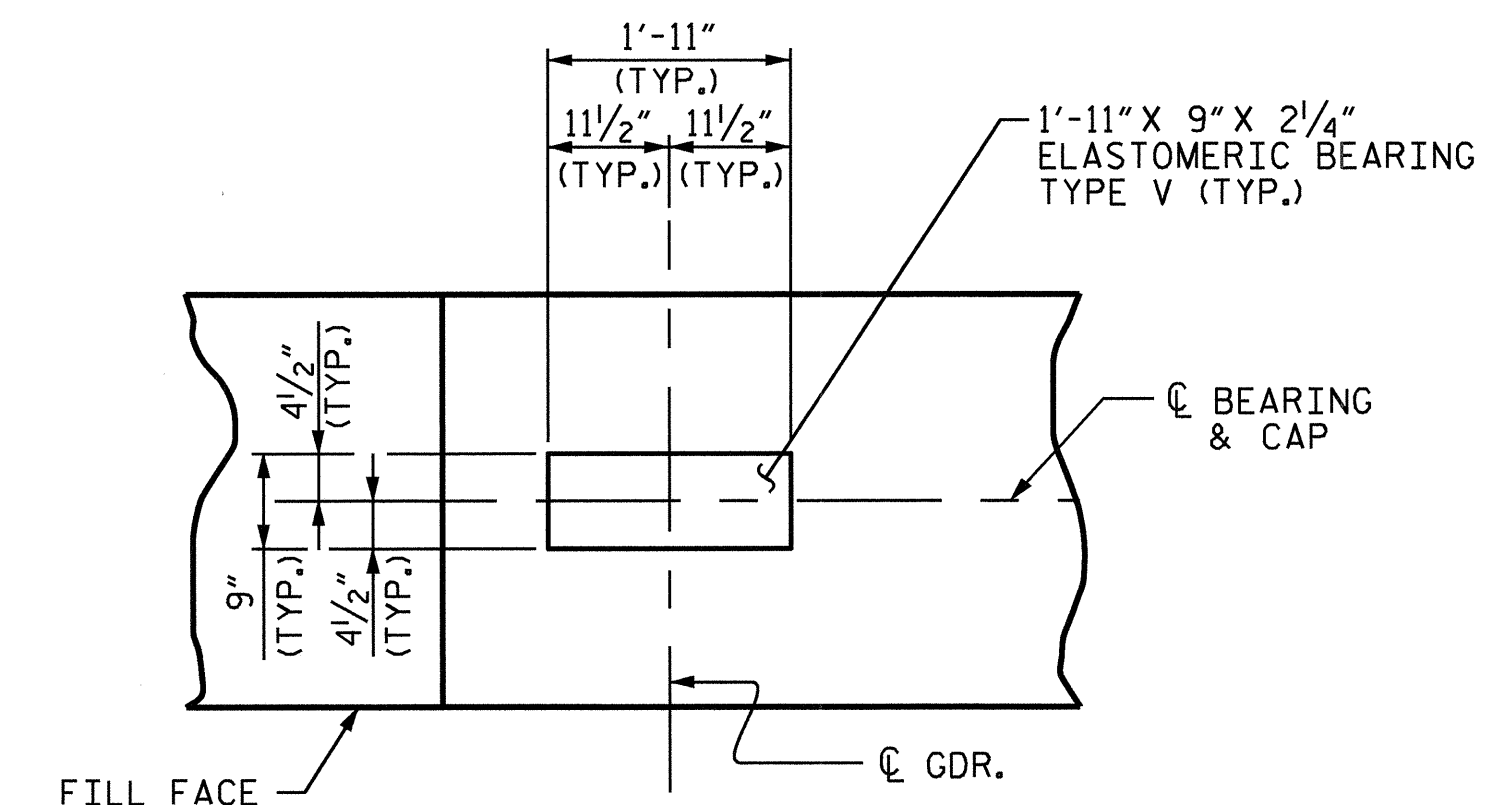
ASSEMBLED BY: D. A. GLADDEN DATE: 4-28-11
CHECKED BY: M. G. SHAIKH DATE: 5-27-11
DRAWN BY: JMB 5/87 REV. 6/1/94 EEM/GRP
CHECKED BY: SJD 9/87 REV. 8/16/99 RWW/LES
REV. 5/1/06 TLA/GM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-22
2			4			TOTAL SHEETS 33

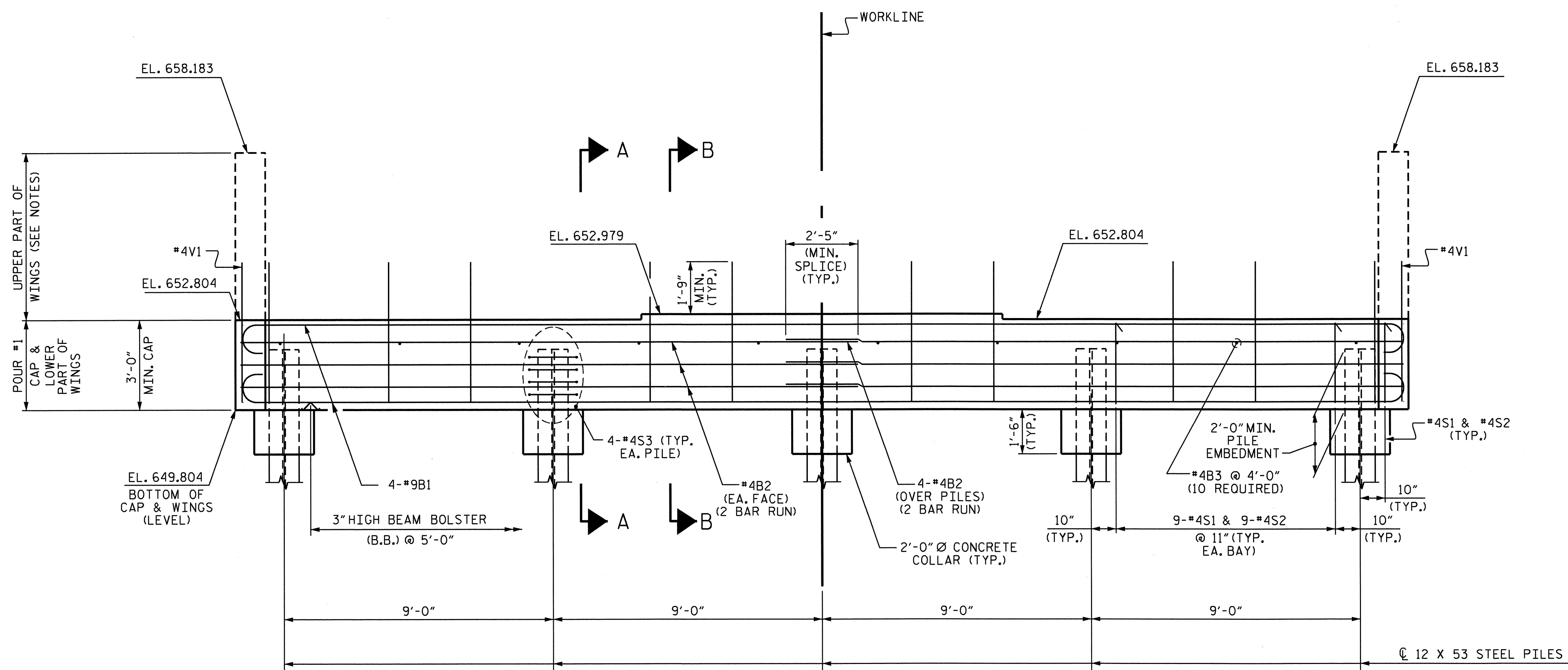


PLAN

NOTES
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE UPPER PART OF THE END BENT WINGS ARE POURED WITH POUR #3 OF THE SUPERSTRUCTURE.
 SEE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAILS.



DETAIL A



ELEVATION

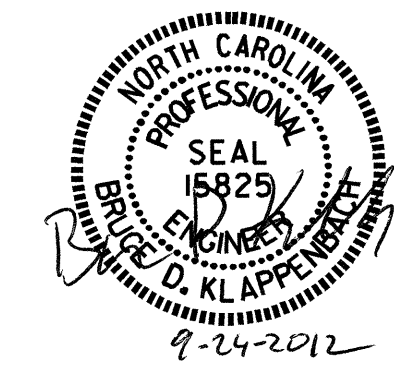
PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

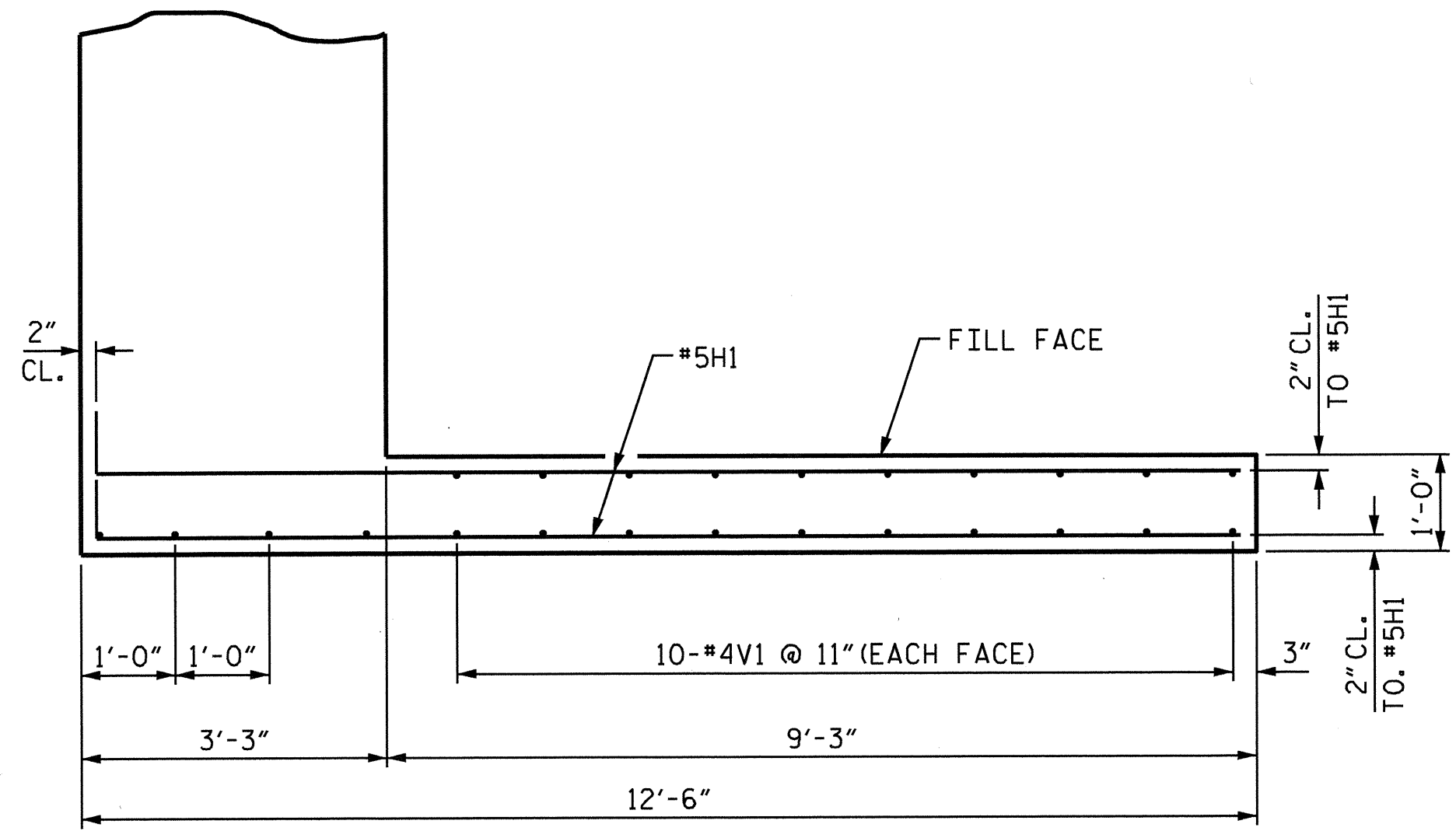
**SUBSTRUCTURE
 INTEGRAL
 END BENT #1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-23
1			3			TOTAL SHEETS
2			4			33

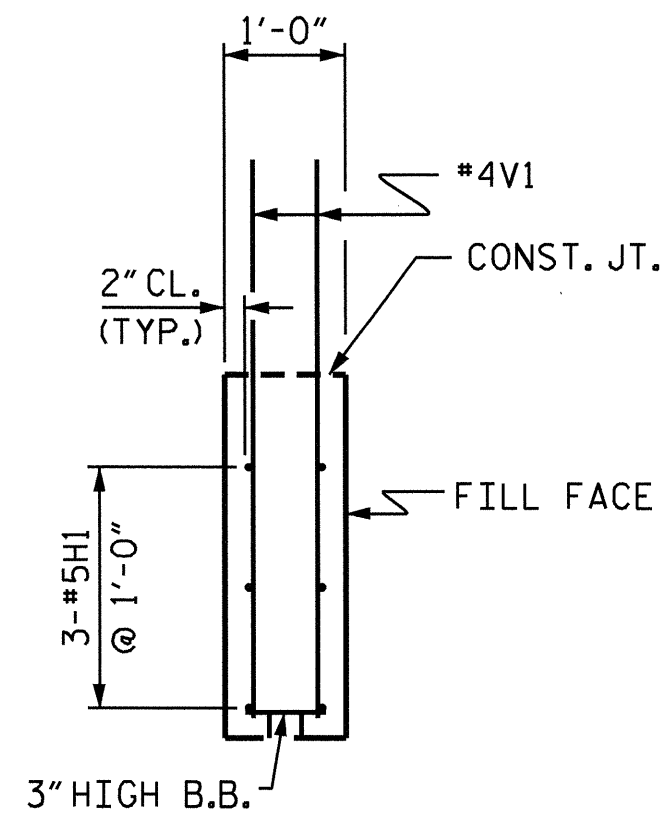


DRAWN BY: H. T. BARBOUR DATE: 9-29-11
 CHECKED BY: T. L. CLELLAND DATE: 12-11

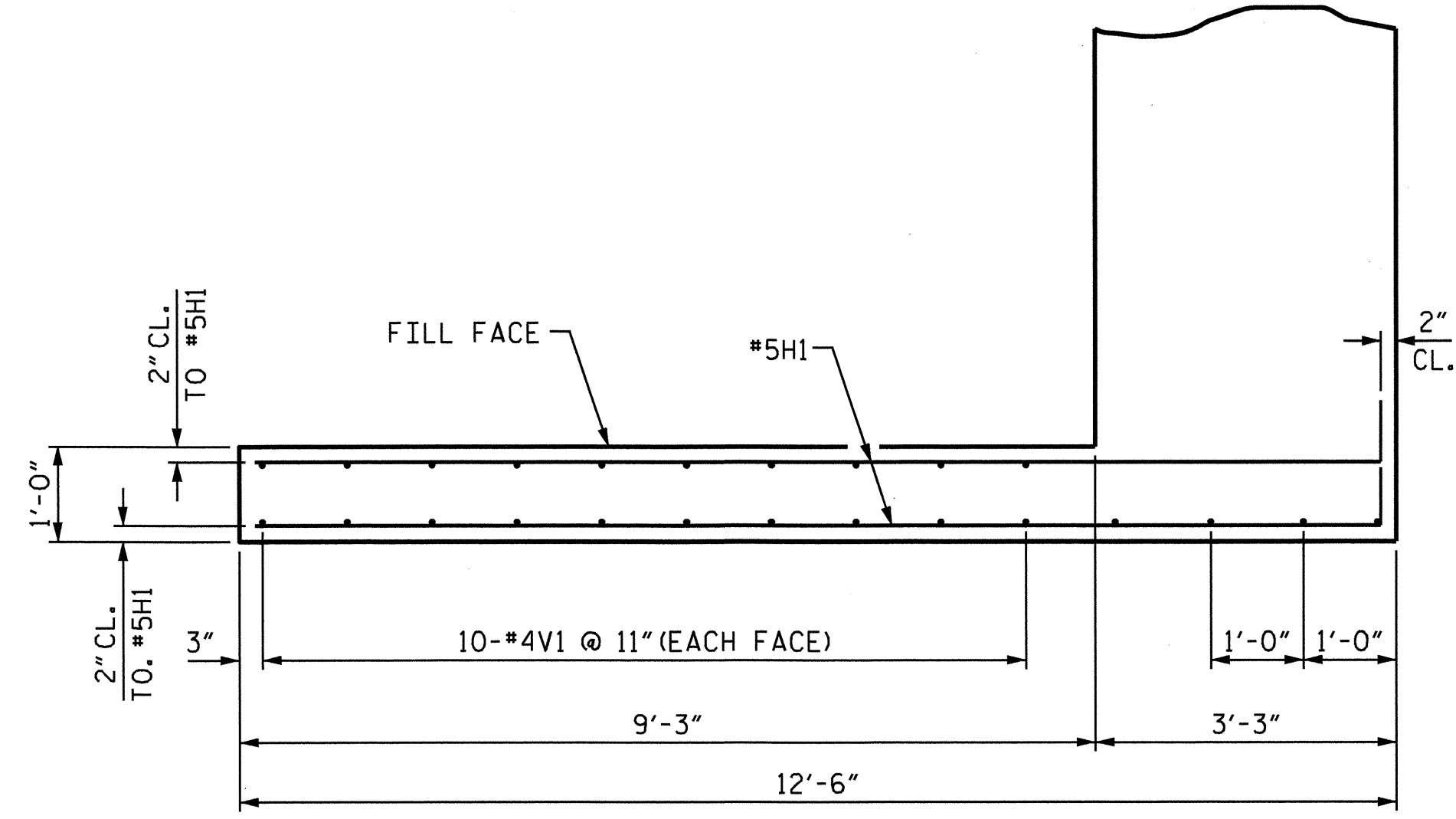
20-SEP-2012 11:43
 R:\Structures\Plans\barbour\Microstation\B4753_SD.E*.dgn
 daladden



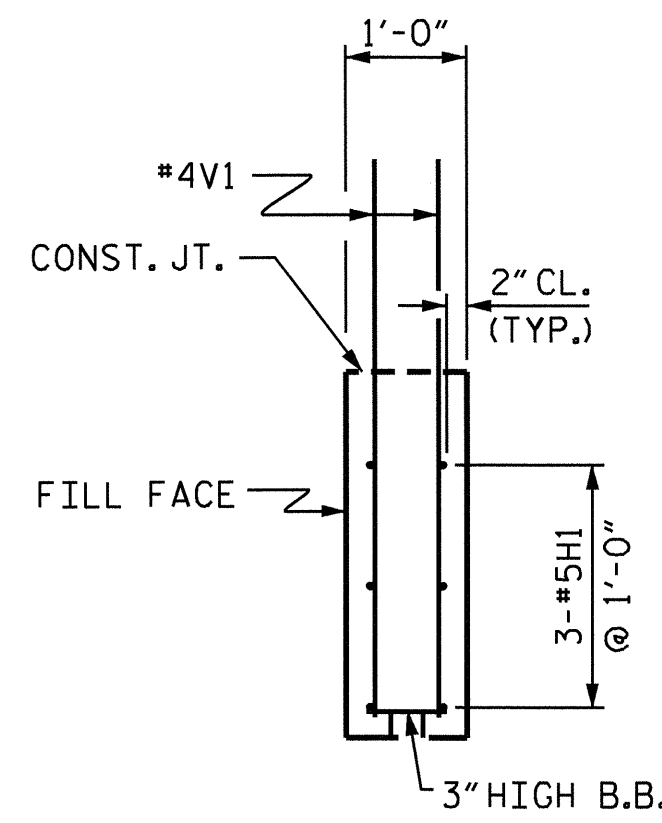
PLAN OF LEFT WING (W1)



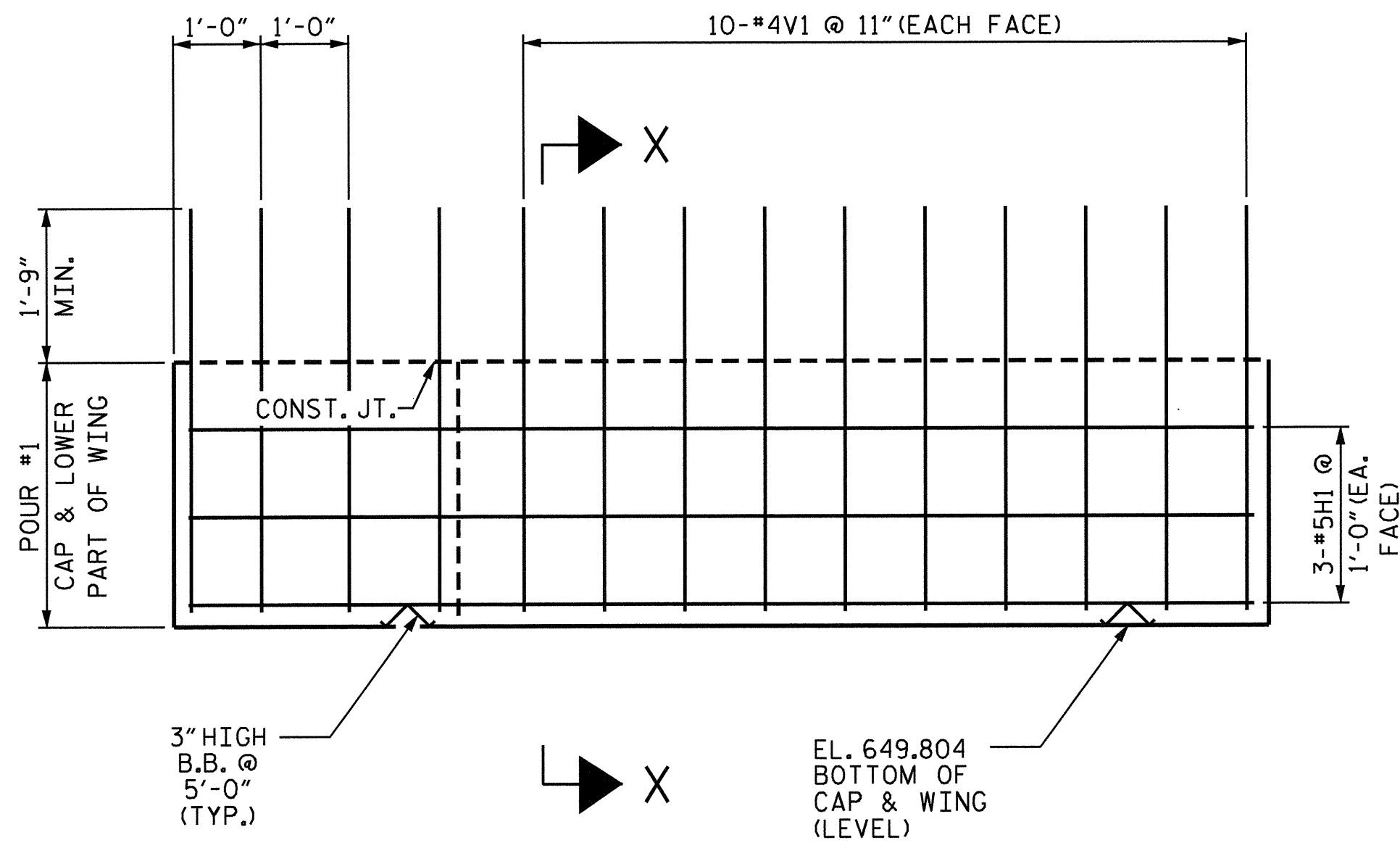
SECTION Y-Y



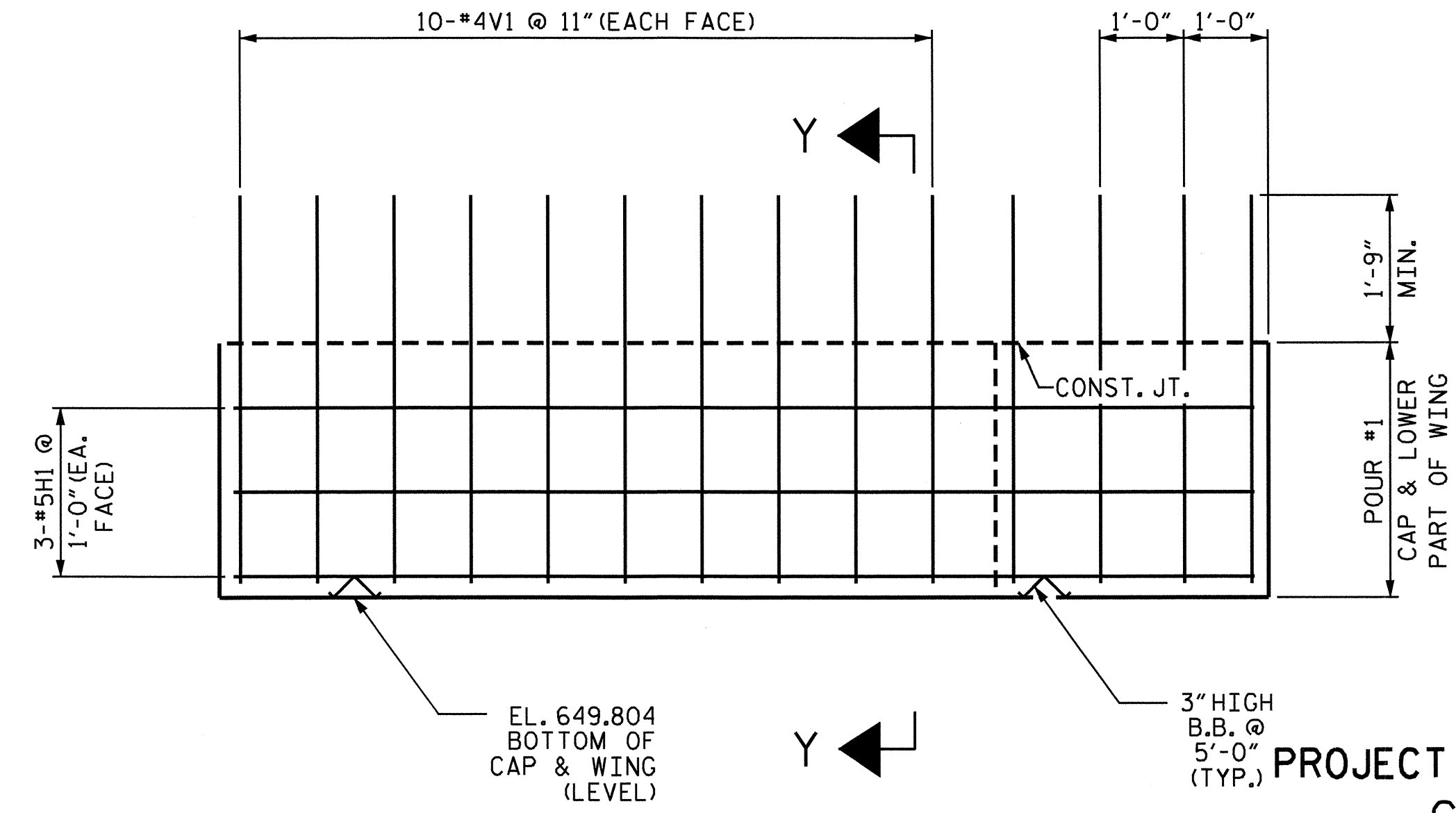
(W2) PLAN OF LEFT WING



SECTION X-X



ELEVATION OF LEFT WING (W1)



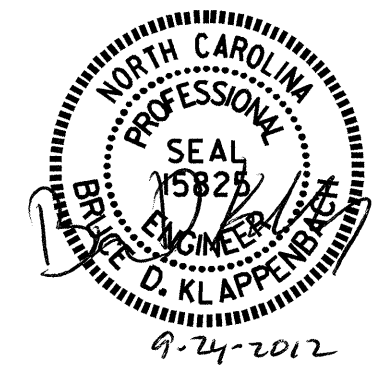
ELEVATION OF RIGHT WING (W2)

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

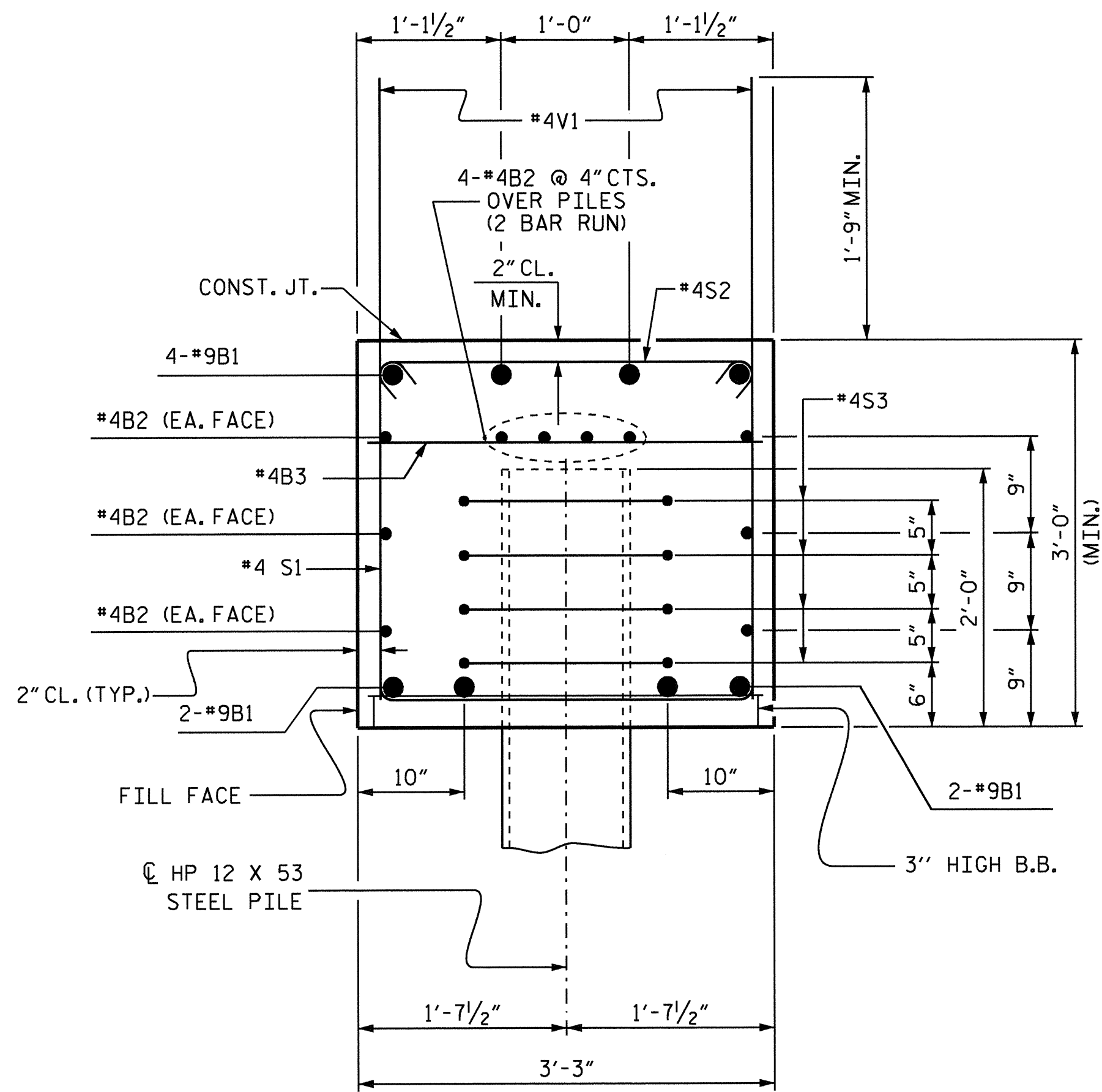
SUBSTRUCTURE
 INTEGRAL
 END BENT #1



REVISIONS						SHEET NO. S-24 TOTAL SHEETS 33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

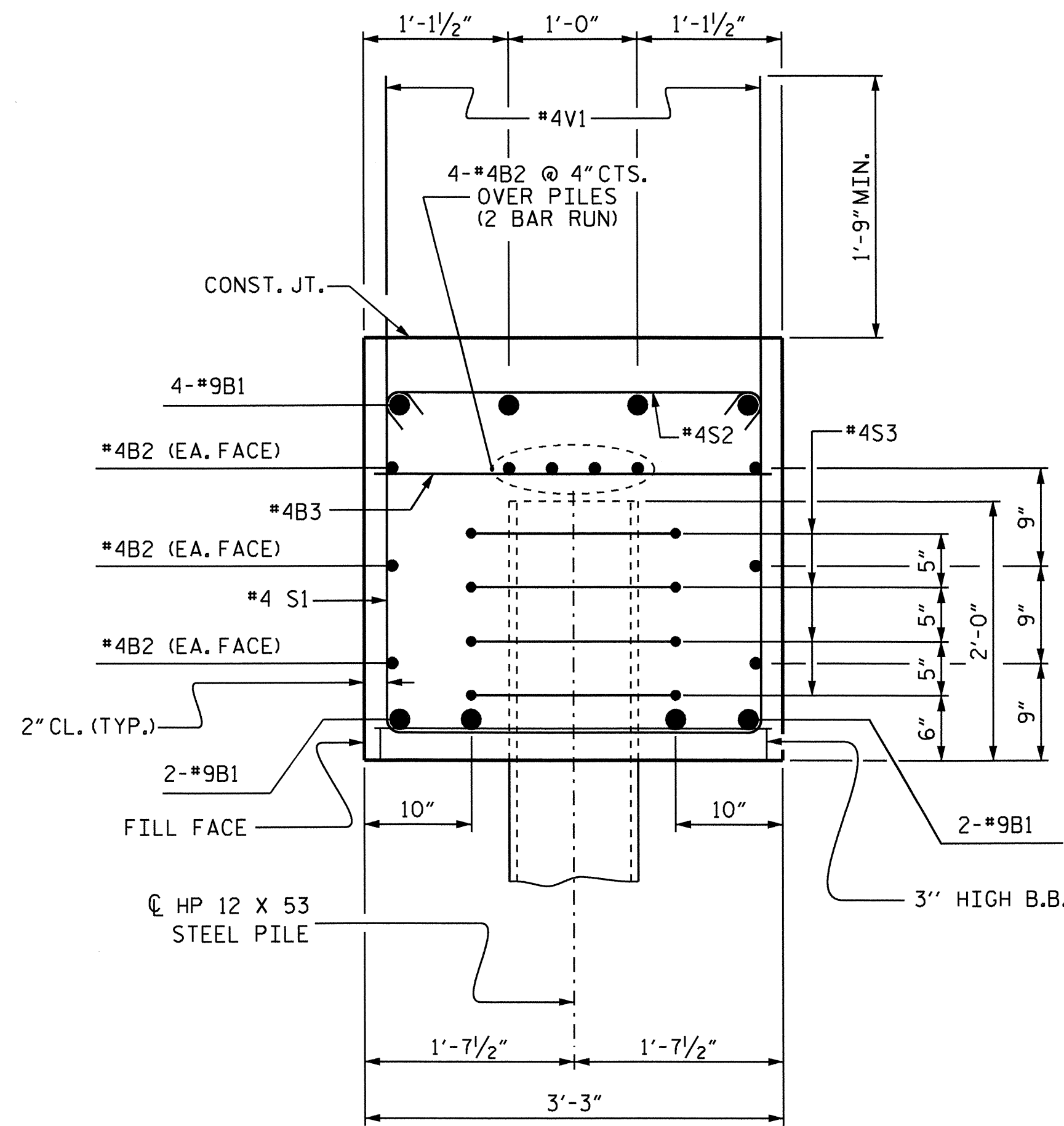
DRAWN BY: H. T. BARBOUR DATE: 9-30-11
 CHECKED BY: T. L. CLELLAND DATE: 12-11

20-SEP-2012 11:44
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 daladden



SECTION A-A

PILE COLLARS NOT SHOWN FOR CLARITY



SECTION B-B

PILE COLLARS NOT SHOWN FOR CLARITY

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT #1

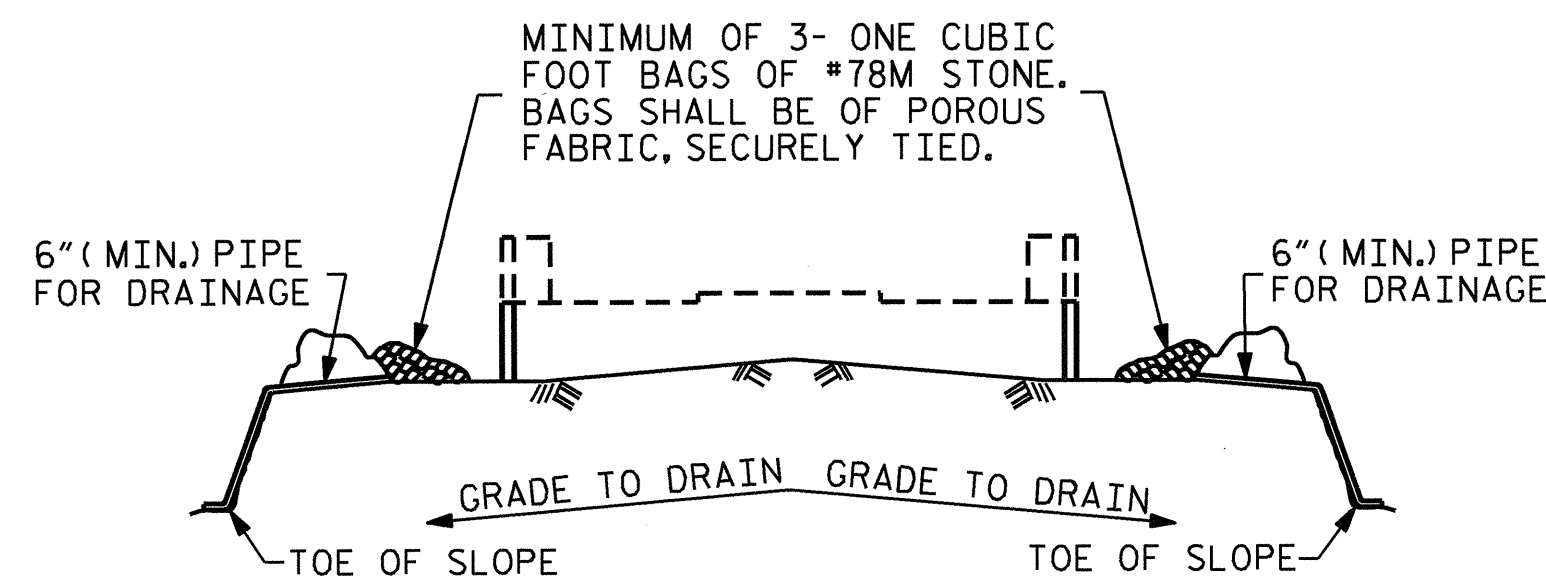
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-3"	1122
B2	20	#4	STR	20'-8"	276
B3	10	#4	STR	2'-11"	19
HI	12	#5	5	12'-10"	161
S1	38	#4	3	8'-11"	226
S2	38	#4	2	3'-8"	93
S3	20	#4	4	6'-6"	87
V1	122	#4	STR	5'-0"	407

REINFORCING STEEL = 2391 LBS

CLASS A CONCRETE
 POUR #1
 CAP, CONCRETE COLLARS 17.4 CU. YDS.
 & LOWER PART OF WINGS
 TOTAL 17.4 CU. YDS.

HP 12 X 53 STEEL PILES
 NO. 5 90 LIN. FT.

◆ CONCRETE QUANTITY FOR UPPER PART OF WINGS IS INCLUDED IN POUR #3 OF THE SUPERSTRUCTURE.

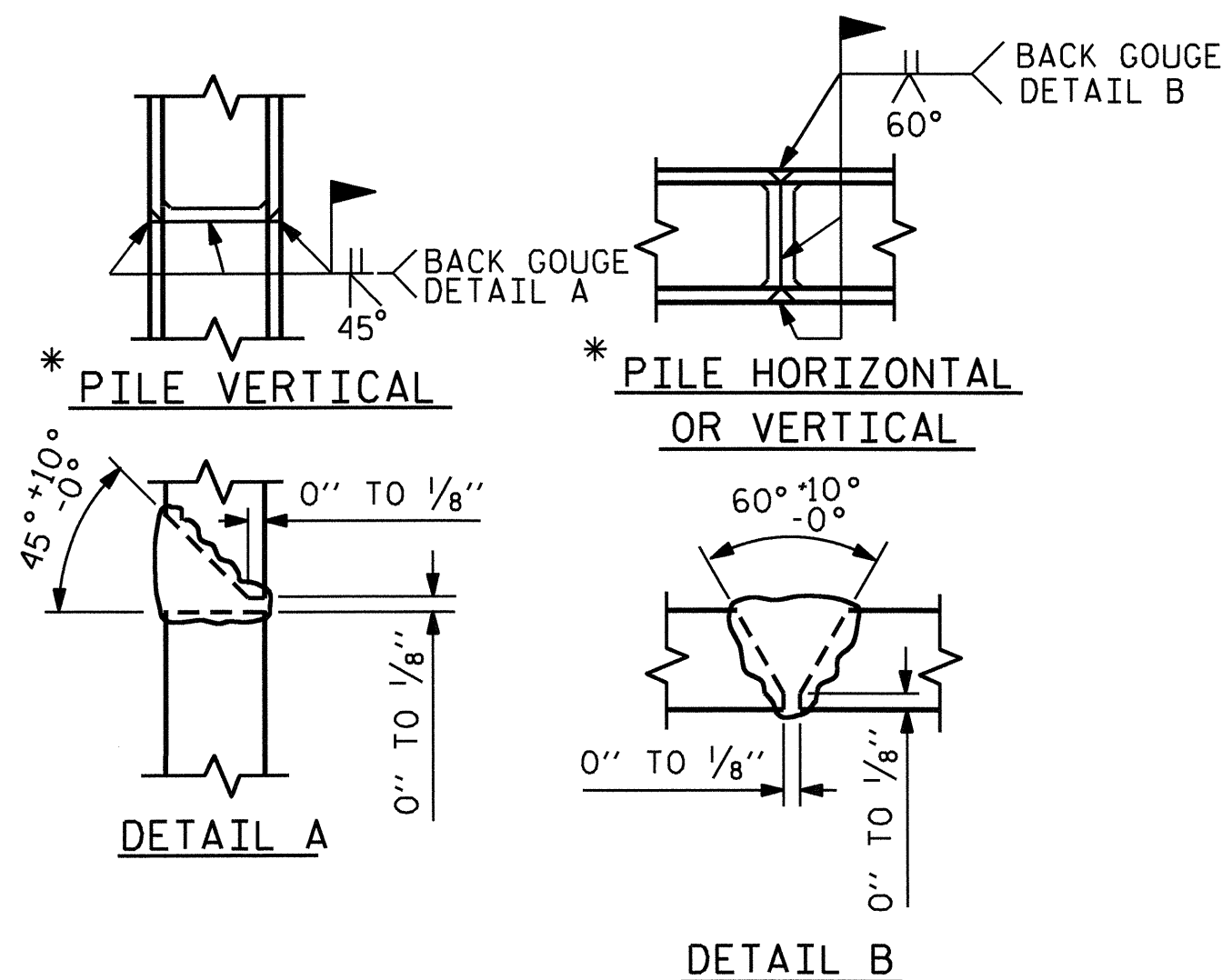


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

* POSITION OF PILE DURING WELDING.

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

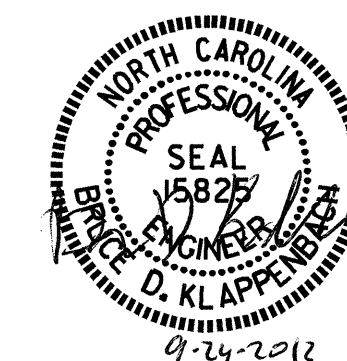
SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

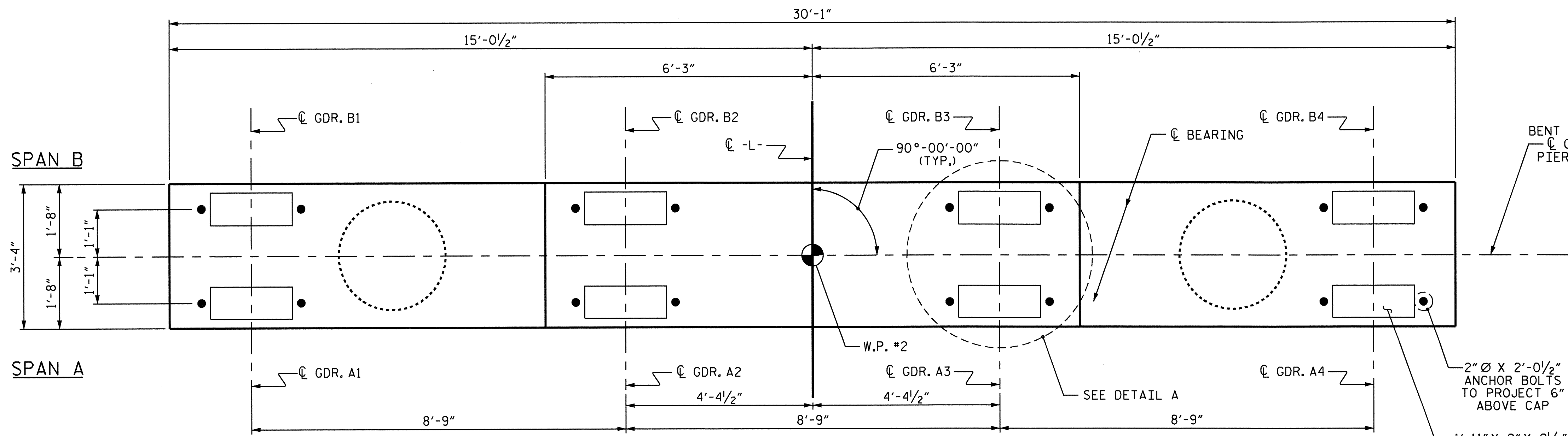
**SUBSTRUCTURE
 INTEGRAL
 END BENT #1**

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

S-25
TOTAL SHEETS 33



DRAWN BY: H.T. BARBOUR DATE: 9-30-11
 CHECKED BY: T.L. CLELLAND DATE: 12-11



NOTES

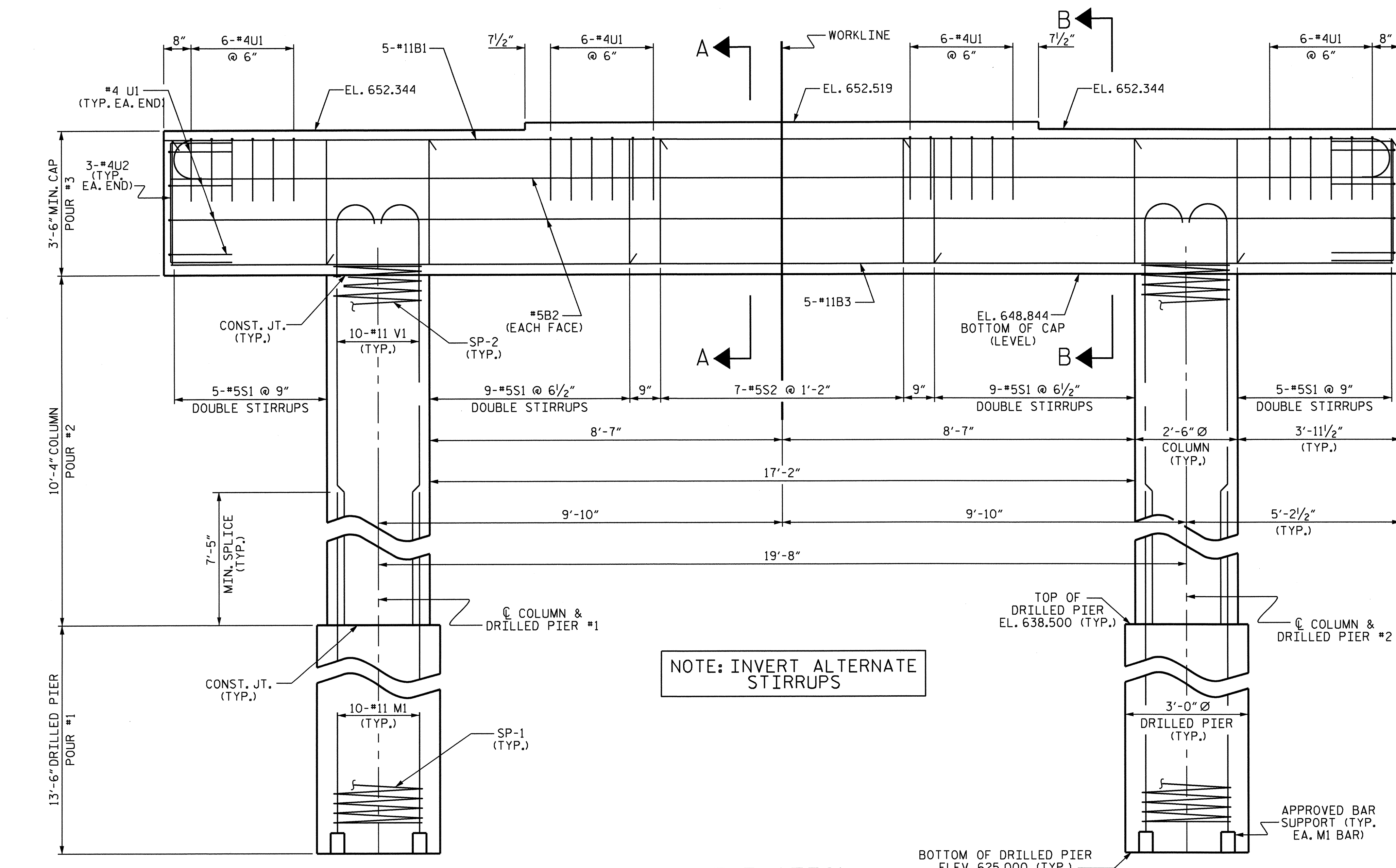
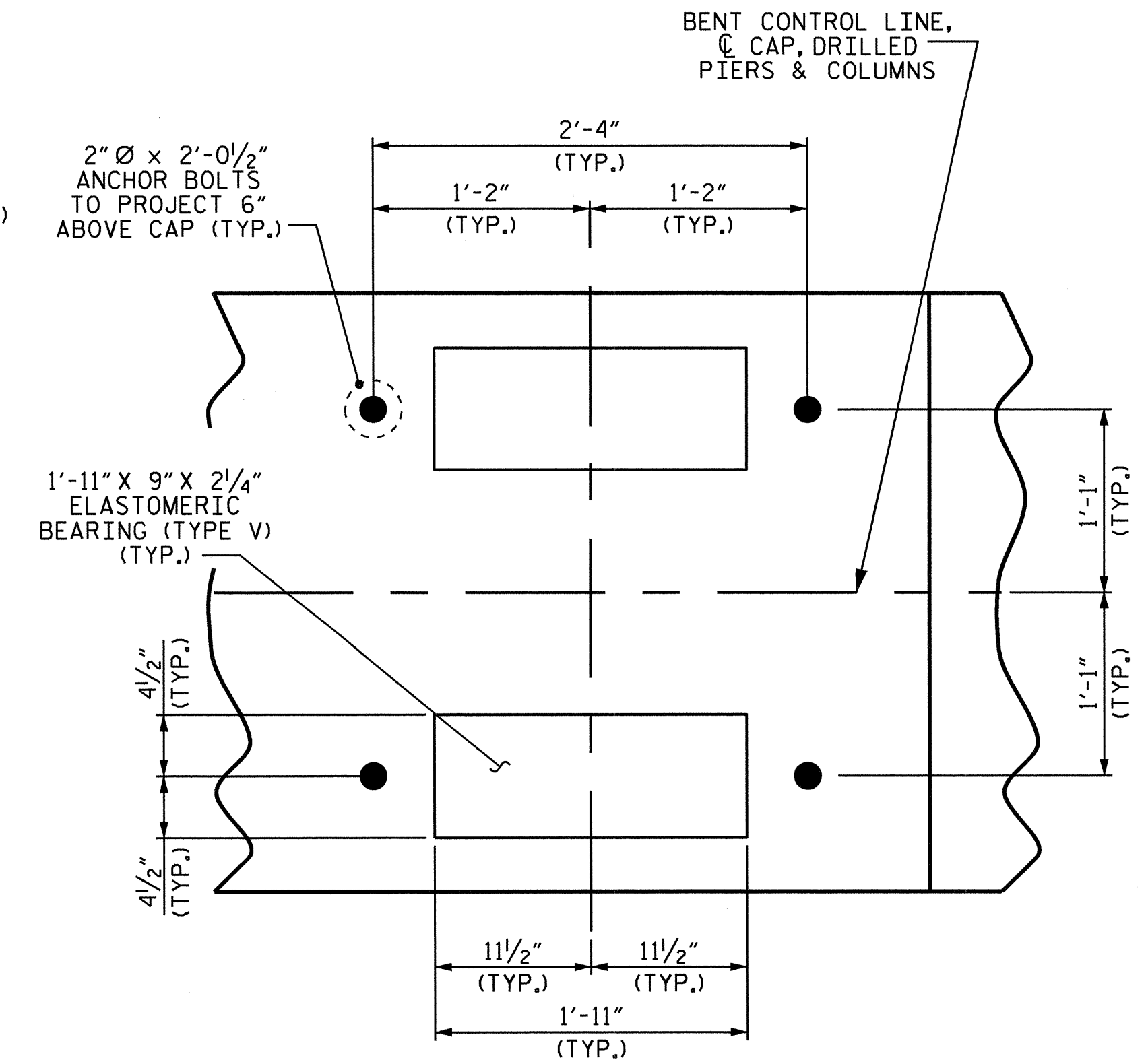
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V1" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

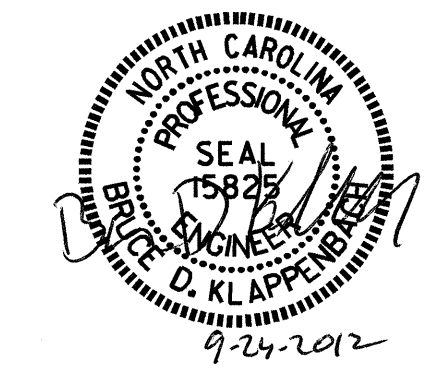
FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

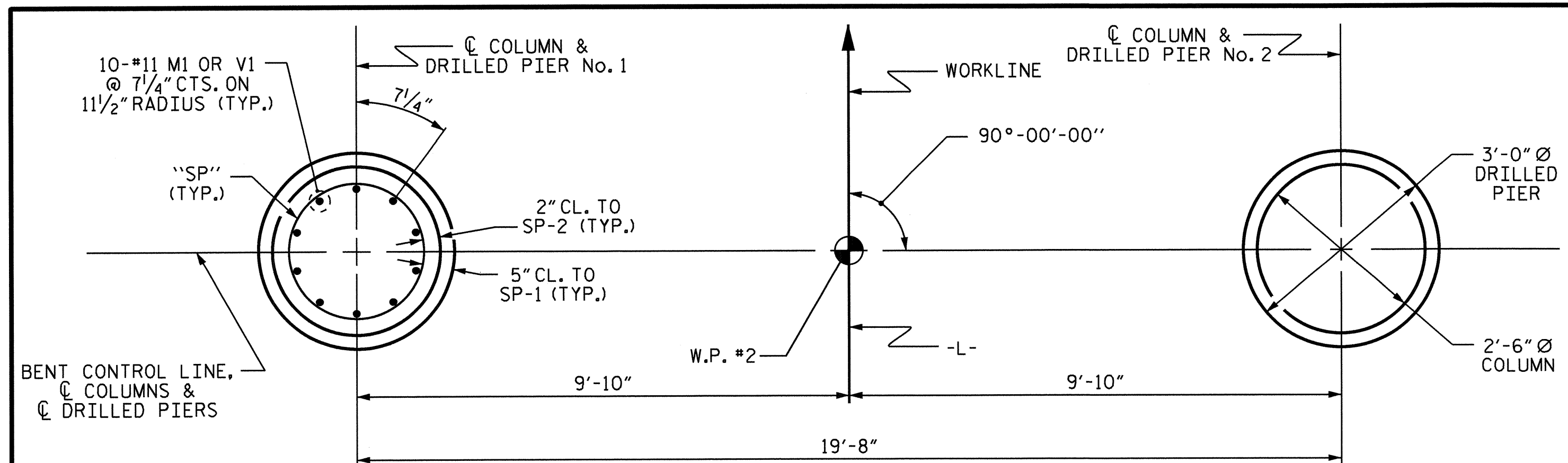


PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

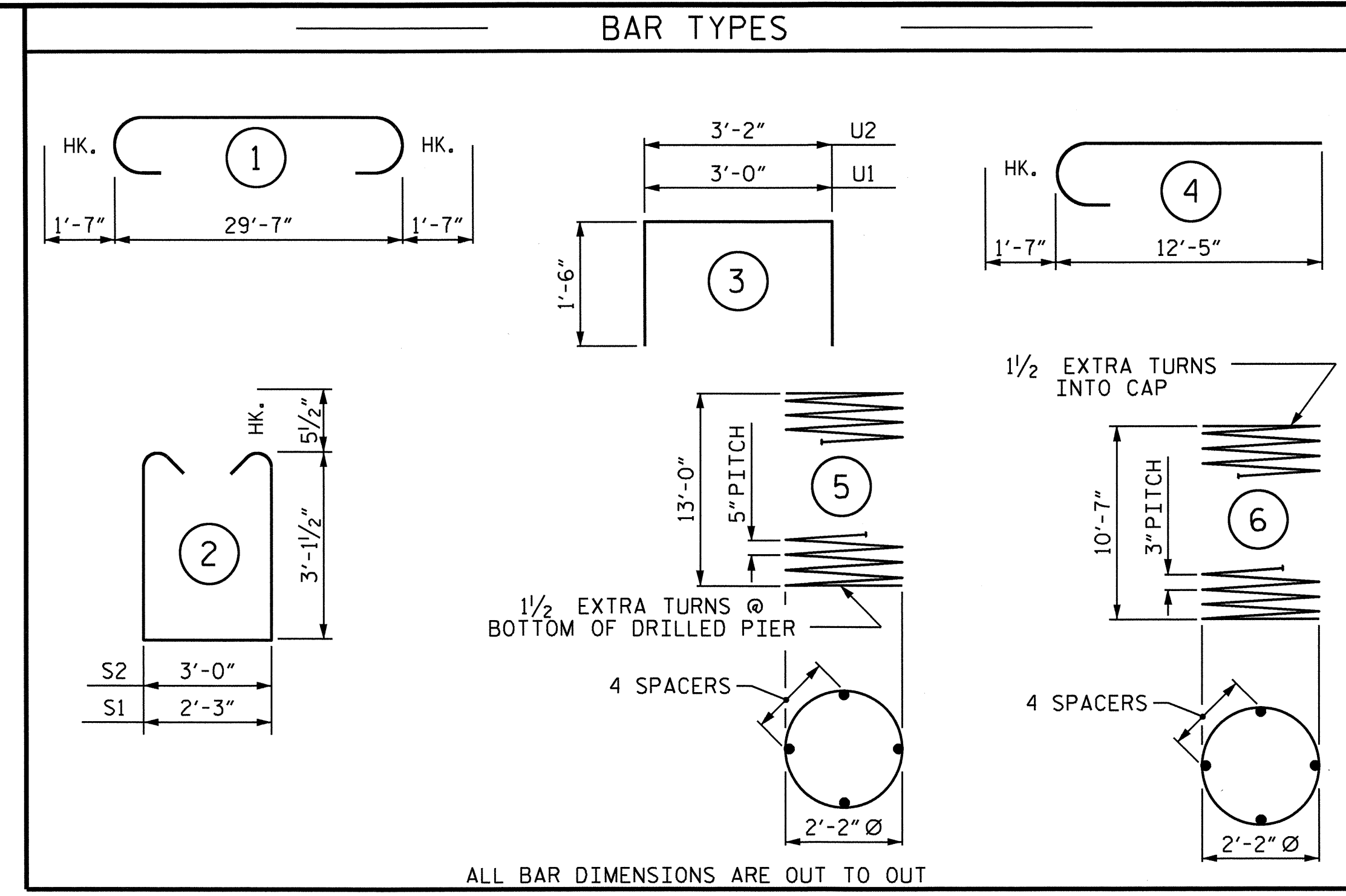
SHEET 1 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-26
1			3			TOTAL SHEETS 33
2			4			

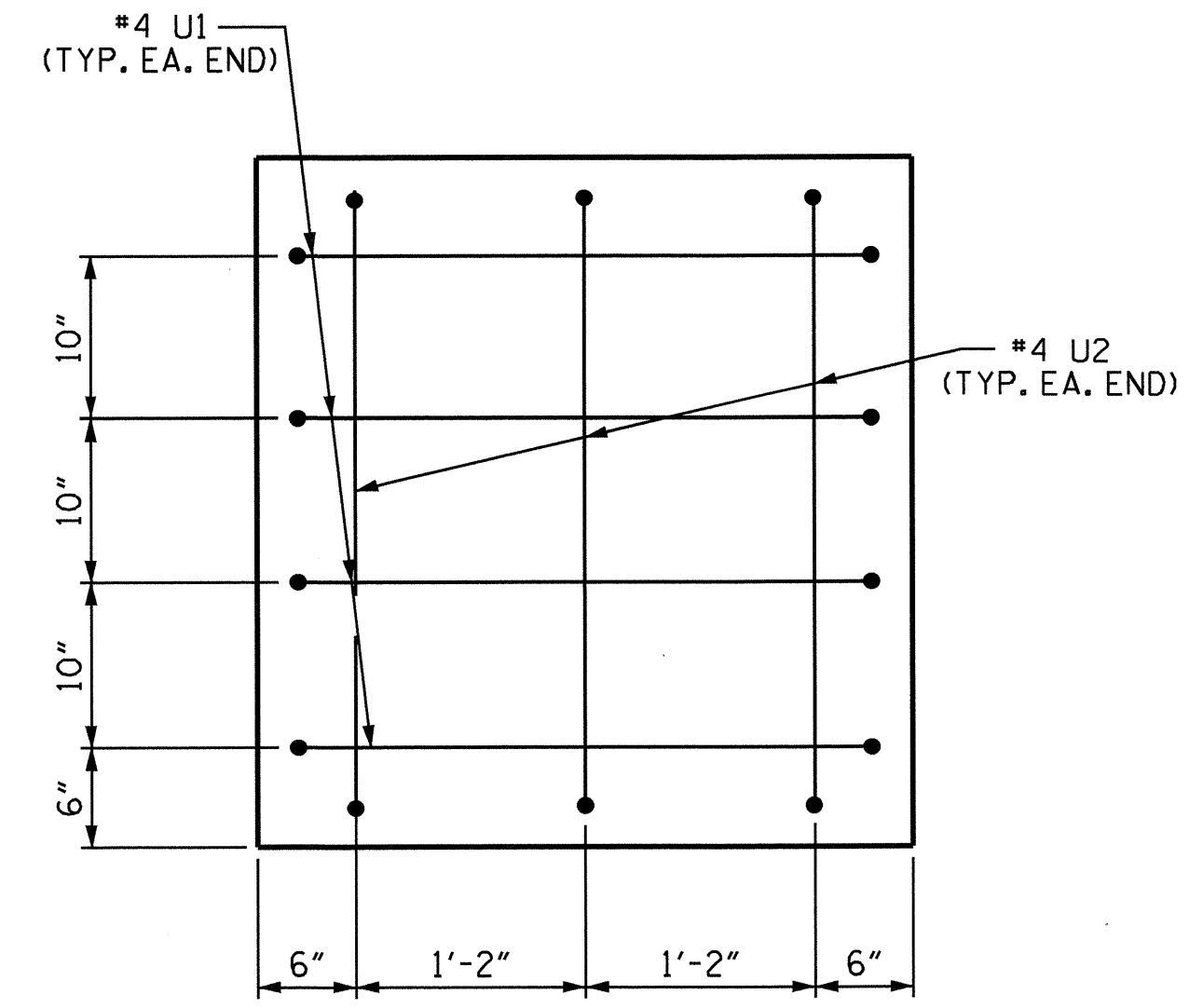
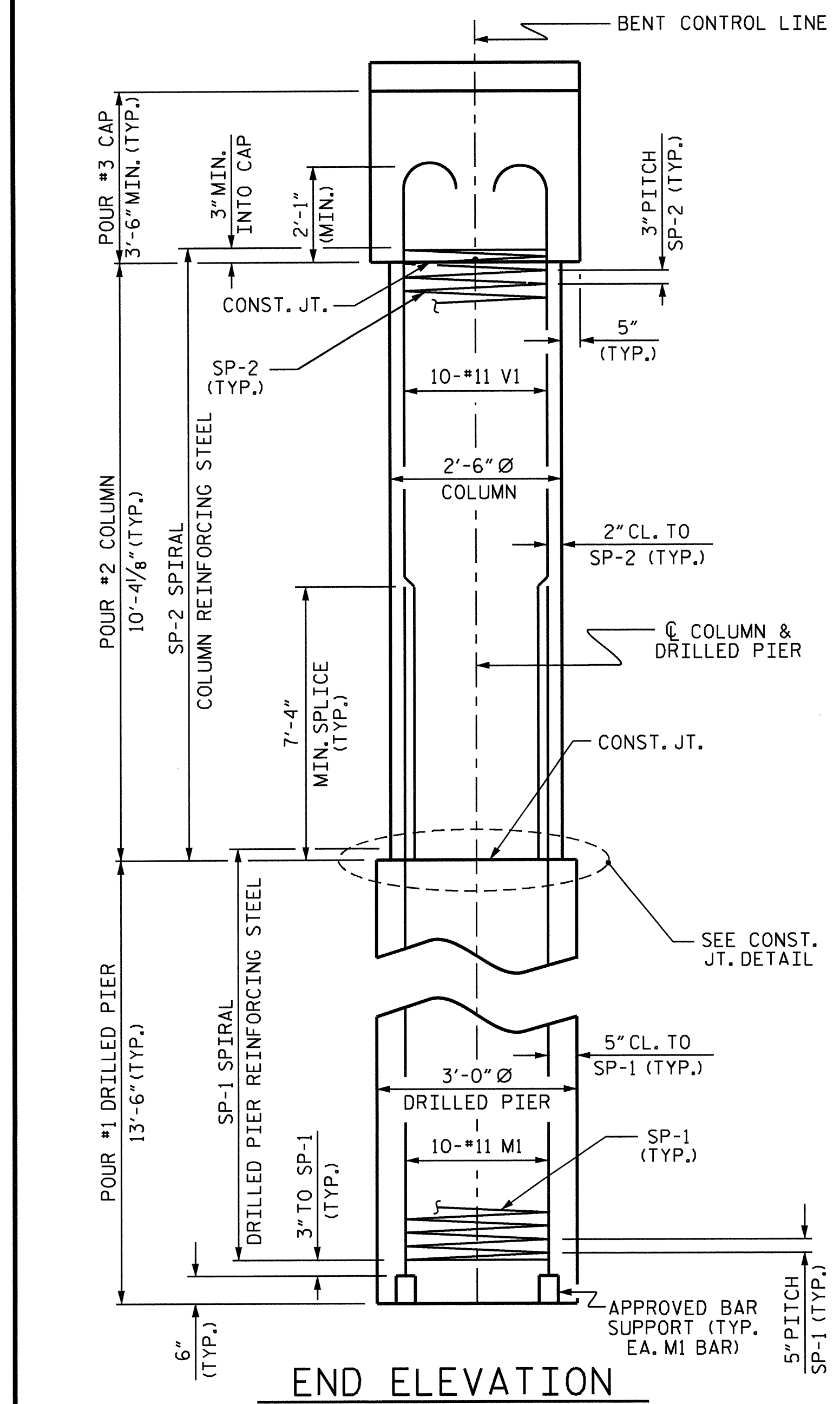




PLAN OF DRILLED PIERS & COLUMNS



BILL OF MATERIAL FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#11	1	32'-9"	870
B2	4	#5	STR	29'-9"	124
B3	5	#11	STR	29'-9"	790
M1	20	#11	STR	23'-5"	2488
S1	56	#5	2	9'-5"	550
S2	7	#5	2	10'-2"	74
U1	32	#4	3	6'-0"	128
U2	6	#4	3	6'-2"	25
V1	20	#11	4	14'-0"	1488
REINFORCING STEEL (FOR ONE BENT)					6537 LBS.
SPIRAL COLUMN REINFORCING STEEL					846 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
* THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #2 (COLUMNS)					3.8 C.Y.
POUR #3 (CAP)					13.3 C.Y.
TOTAL CLASS A CONCRETE					17.1 C.Y.
DRILLED PIERS: (FOR ONE BENT)					
DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)					7.1 C.Y.
3'-0" Ø DRILLED PIER NOT IN SOIL					18.00 LIN. FT.
3'-0" Ø DRILLED PIER IN SOIL					9.00 LIN. FT.
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER					9.00 LIN. FT.
CSL TUBES					120 LIN. FT.

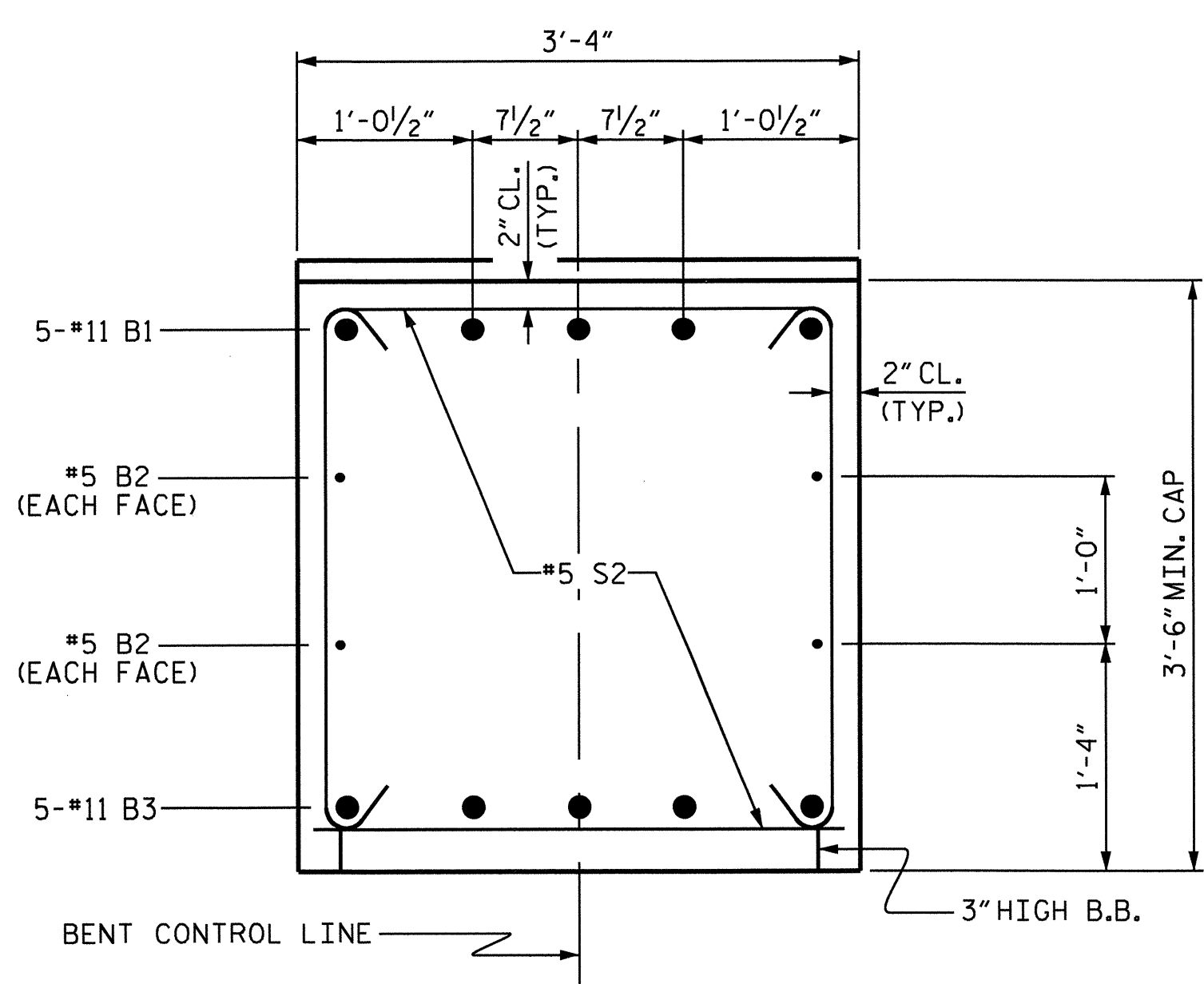


END OF CAP VIEW

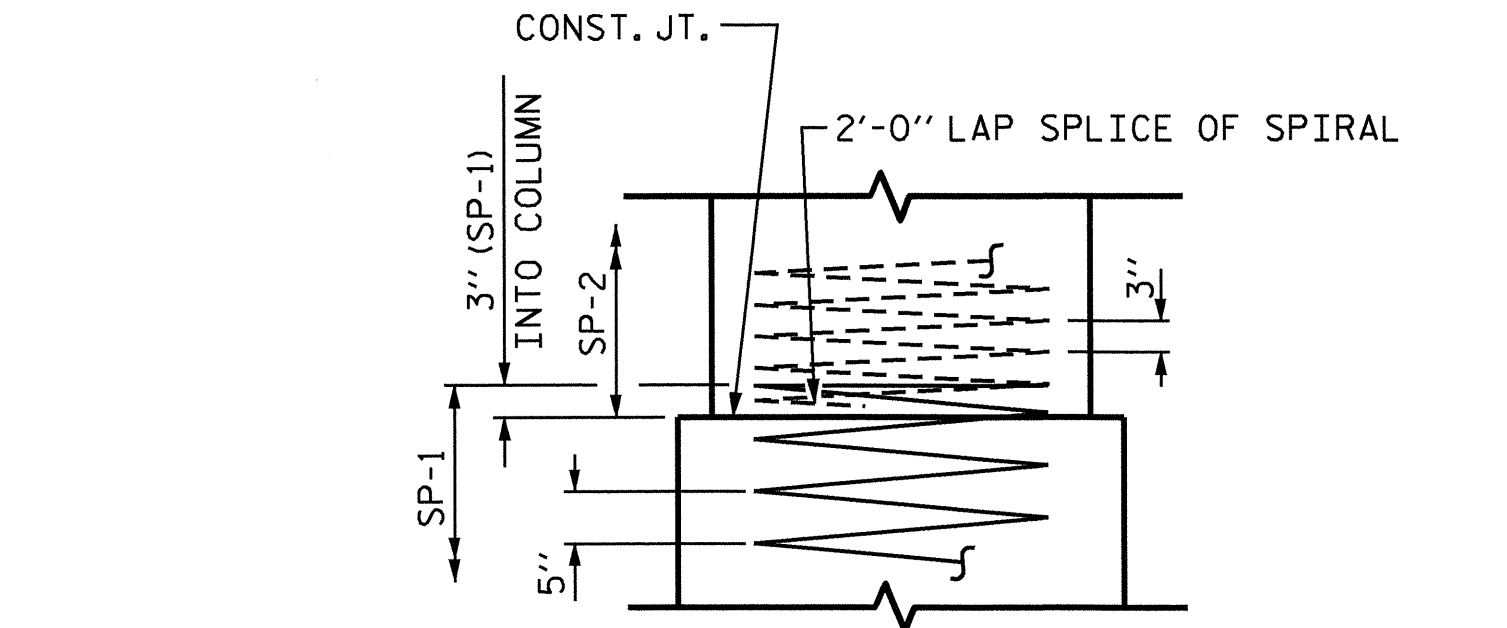
(TYPICAL BOTH ENDS)

2" MIN. CONCRETE COVER FROM END OF CAP REQUIRED FOR ALL #4"U" BARS.

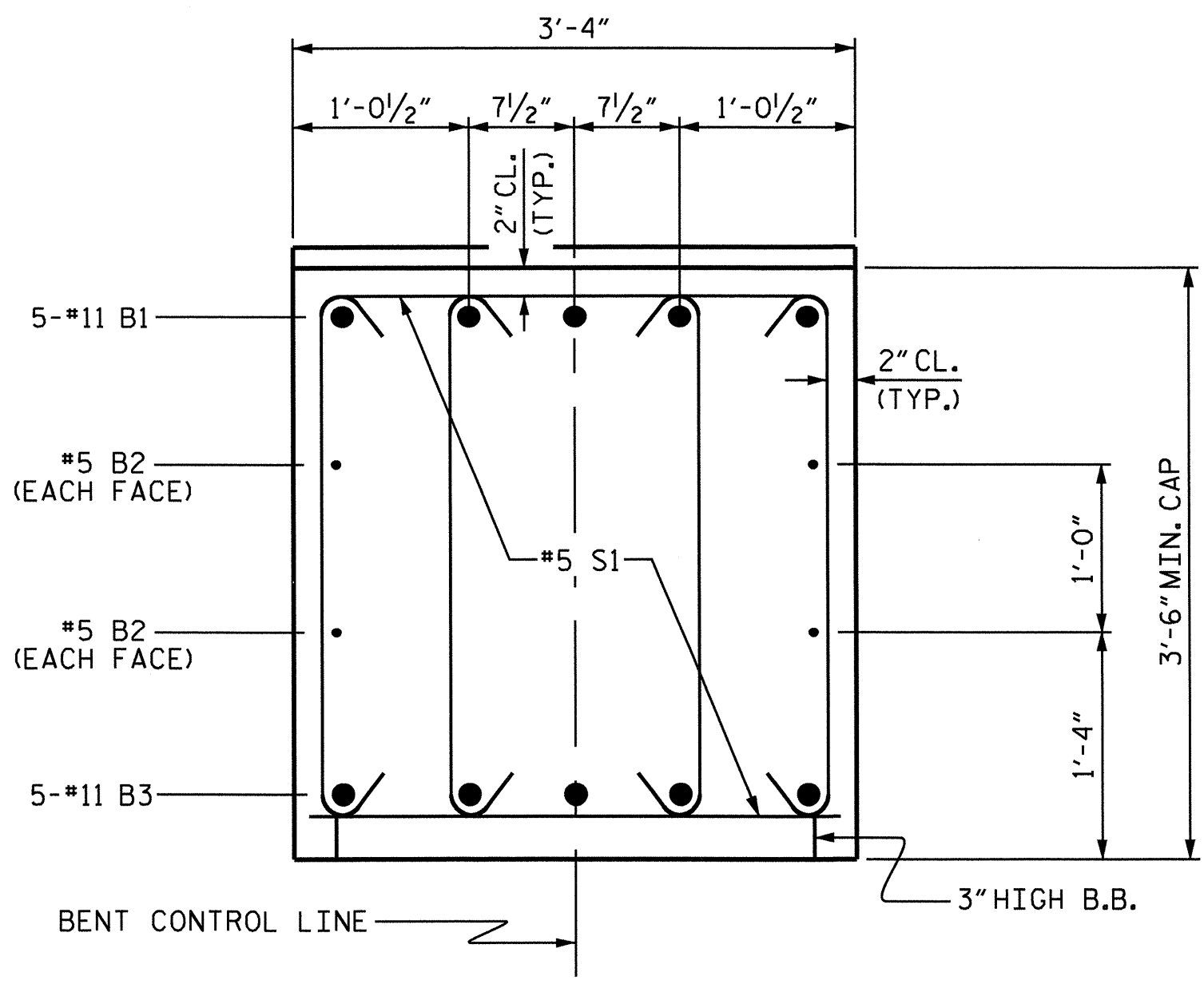
#4"U" BARS MAY BE SHIFTED UP TO 2" TO CLEAR "B" BARS.



SECTION A-A



CONSTRUCTION JOINT DETAIL



SECTION B-B

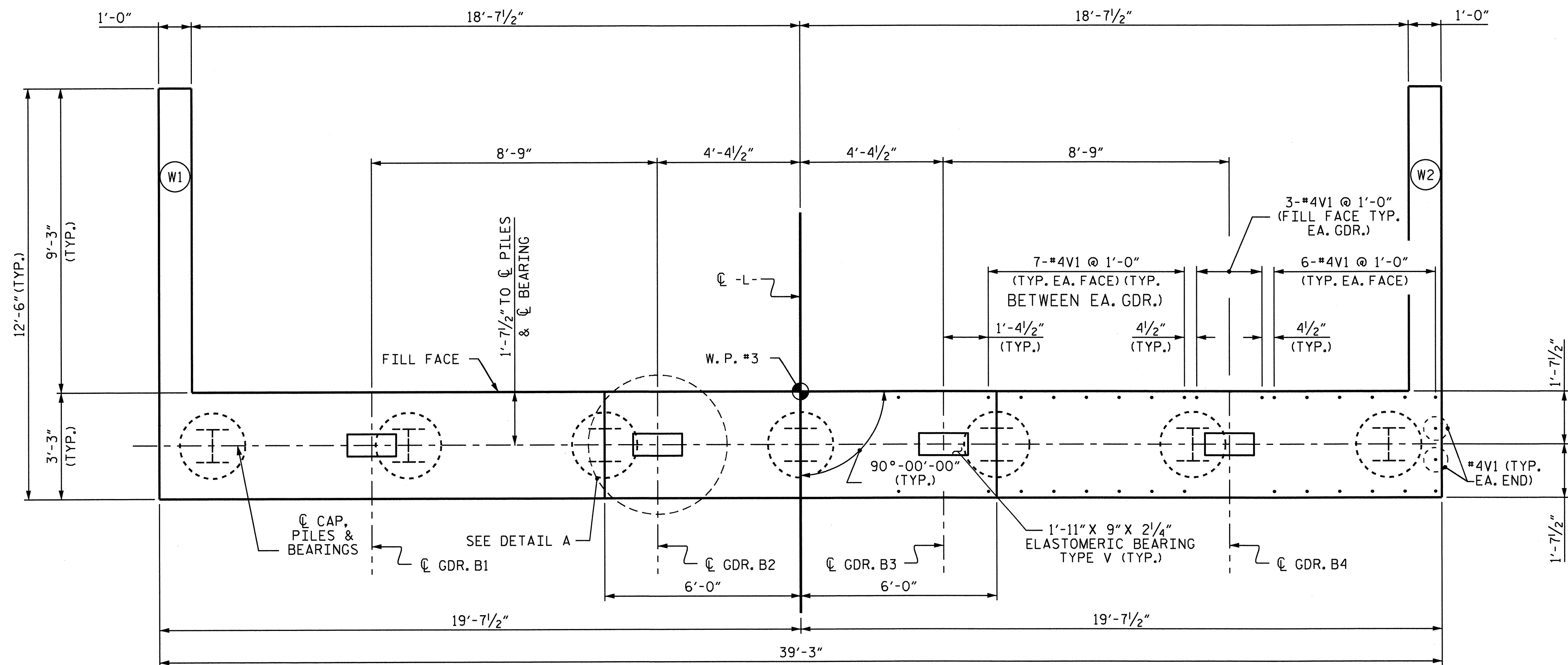


PROJECT NO. B-4753
 GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 2 OF 2

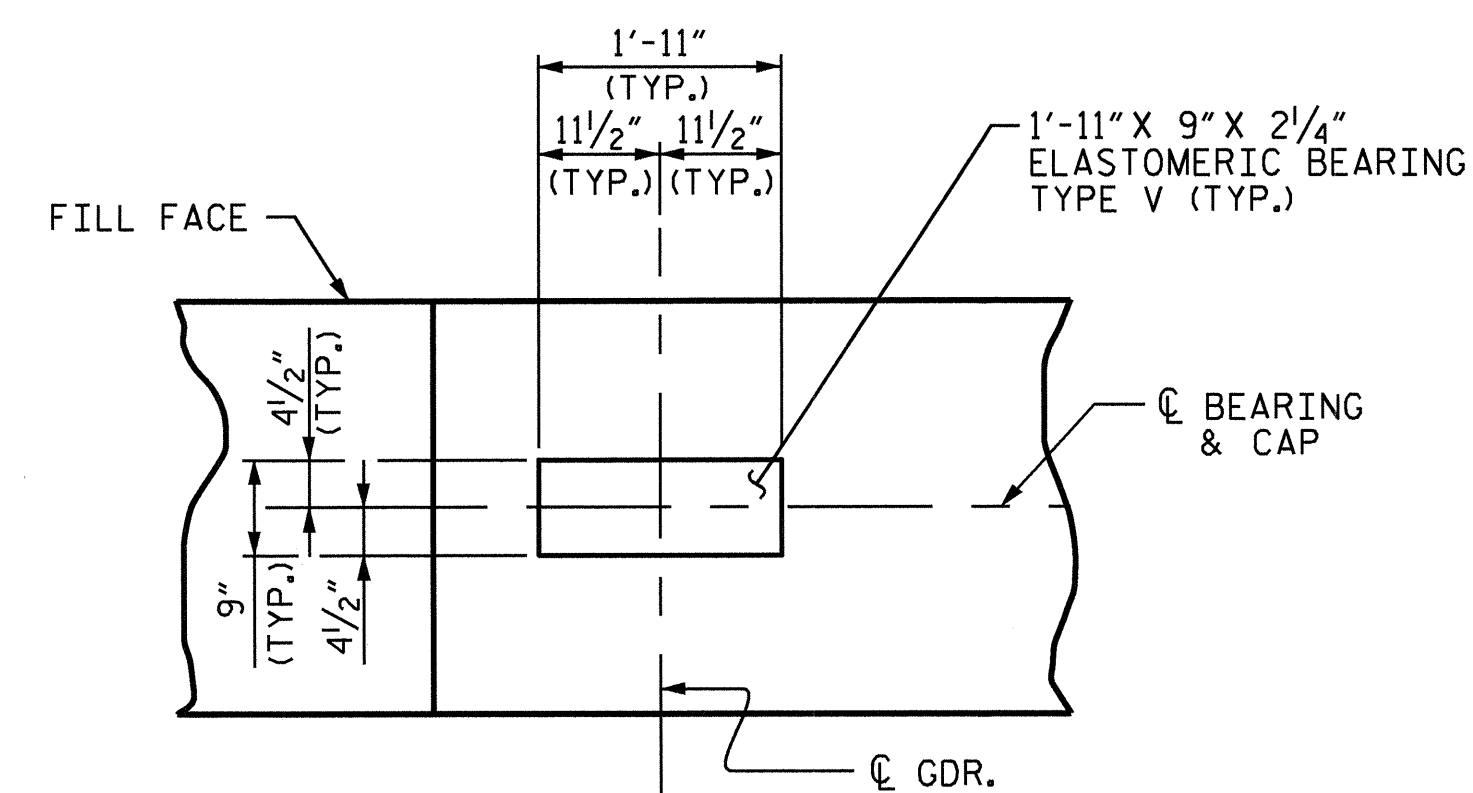
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 33
					S-27

ASSEMBLED BY : H. T. BARBOUR	DATE : 10-06-11
CHECKED BY : T. L. CLELLAND	DATE : 1-09-12
DRAWN BY : DGE 03/10	
CHECKED BY : MKT 03/10	

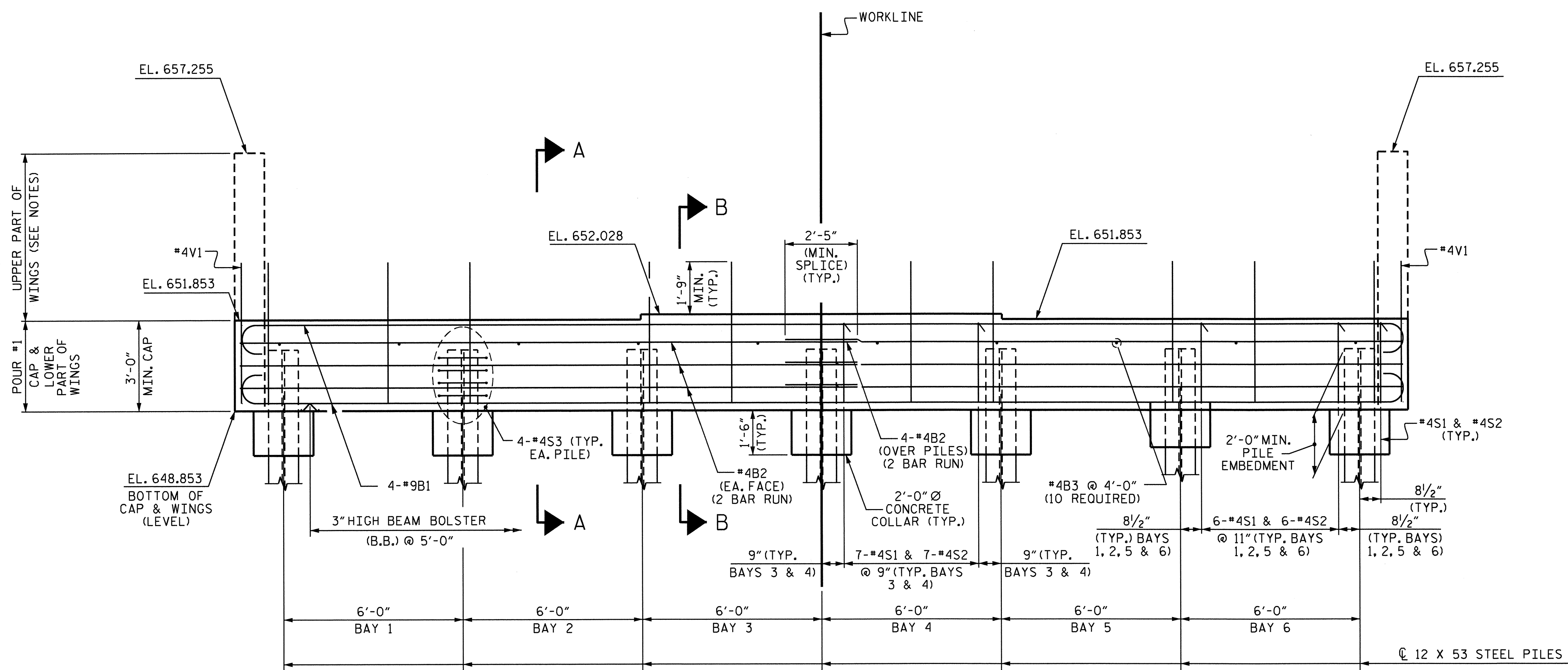


PLAN

NOTES
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE UPPER PART OF THE END BENT WINGS ARE POURED WITH POUR #3 OF THE SUPERSTRUCTURE.
 SEE SUPERSTRUCTURE SHEETS FOR UPPER PART OF INTEGRAL END BENT DETAILS.



DETAIL A
 PILE NOT SHOWN FOR CLARITY



ELEVATION

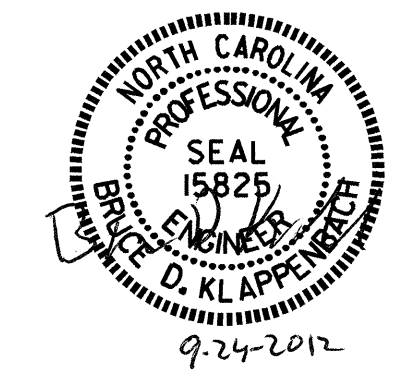
PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

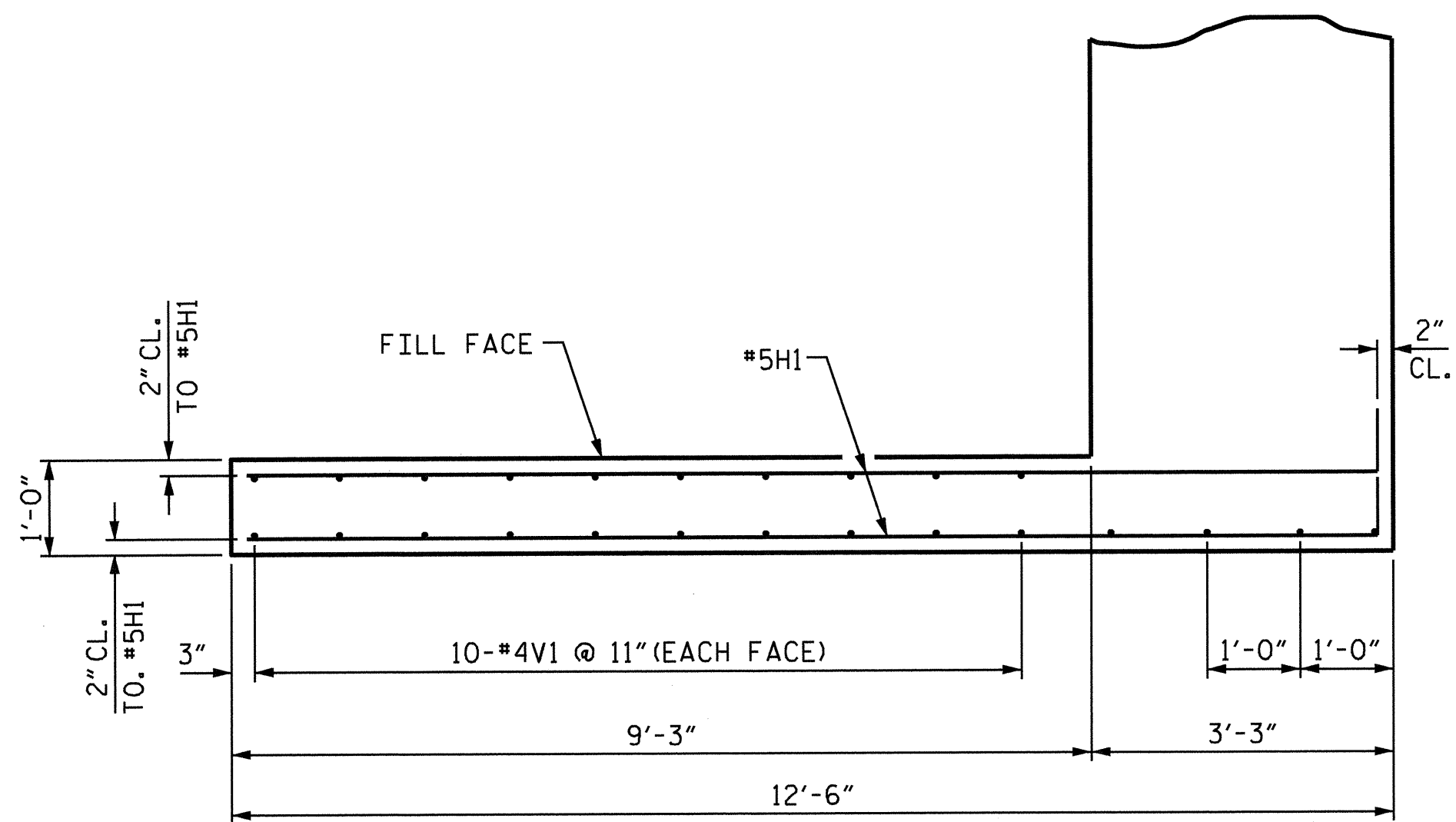
**SUBSTRUCTURE
 INTEGRAL
 END BENT #2**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-28
1			3			TOTAL SHEETS 33
2			4			

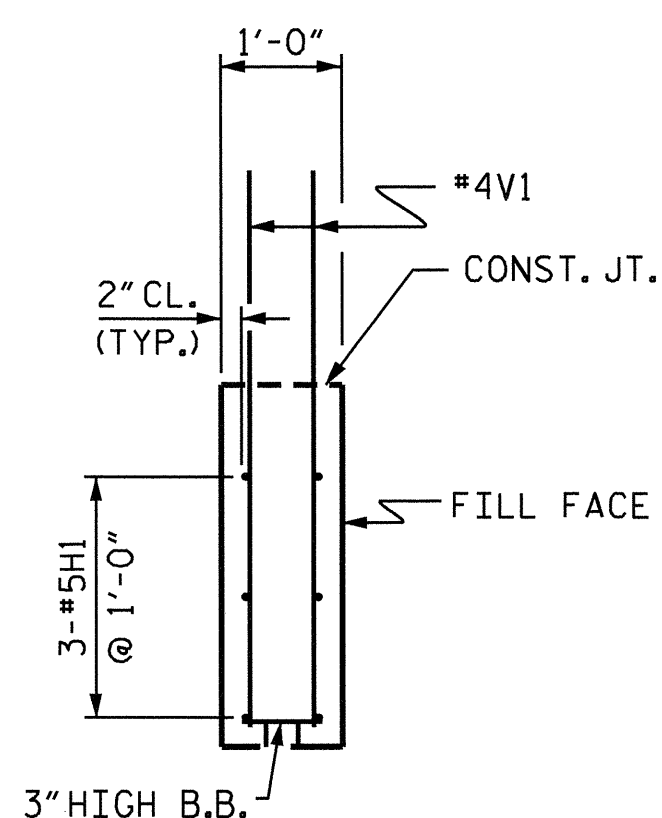


DRAWN BY: H. T. BARBOUR DATE: 9-29-11
 CHECKED BY: T. L. CLELLAND DATE: 12-11

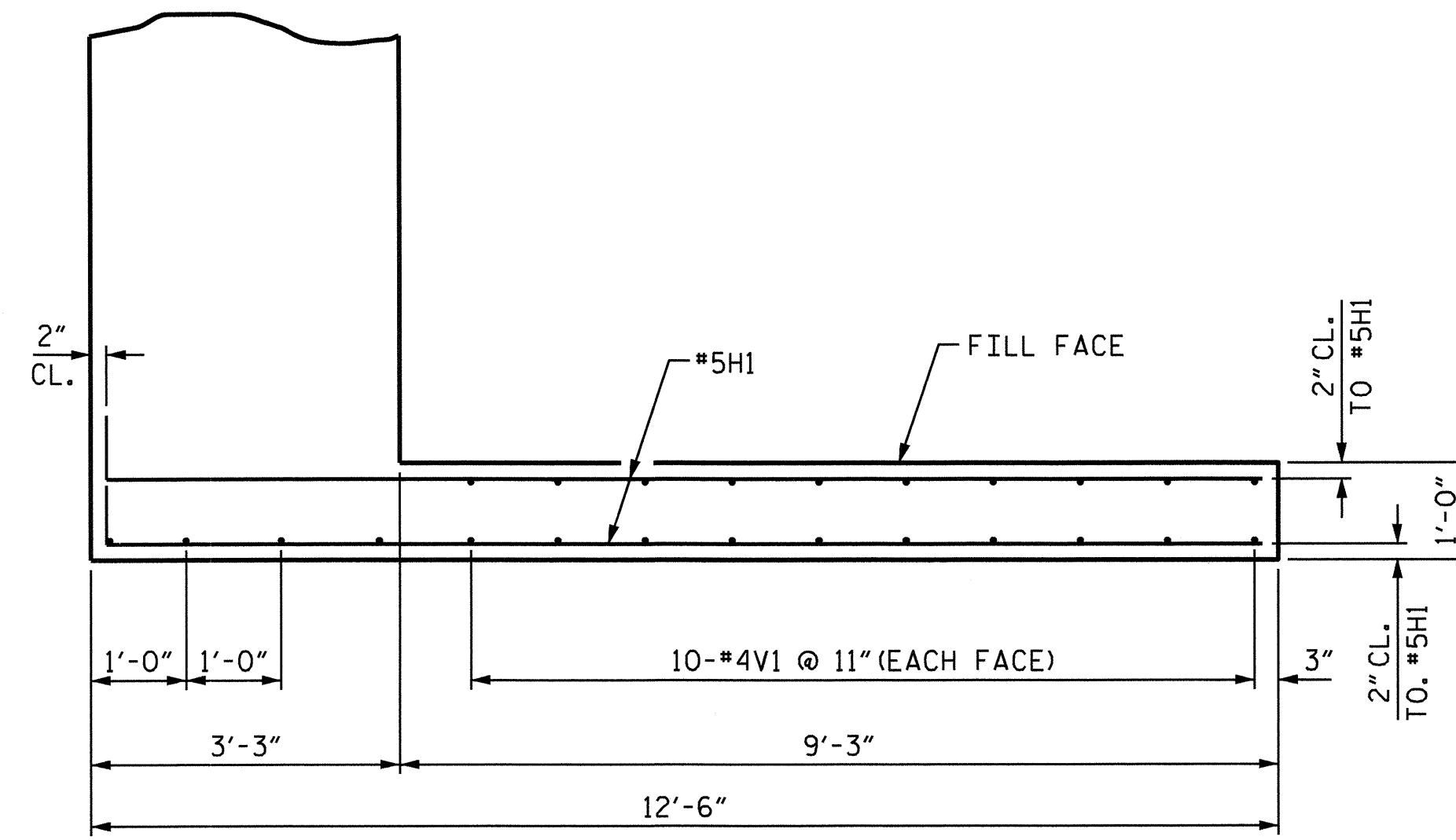
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 dgladden



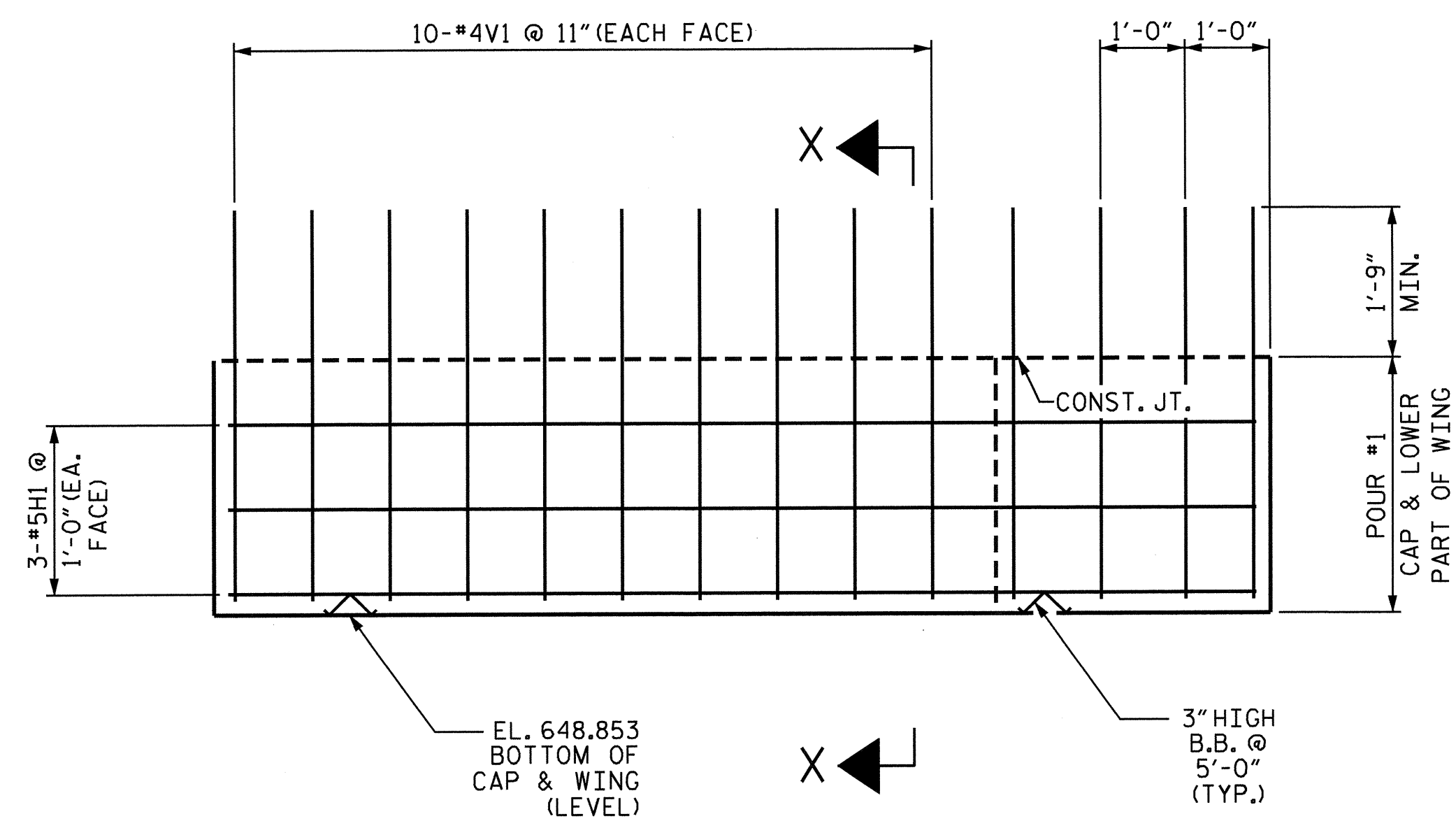
W1 PLAN OF LEFT WING



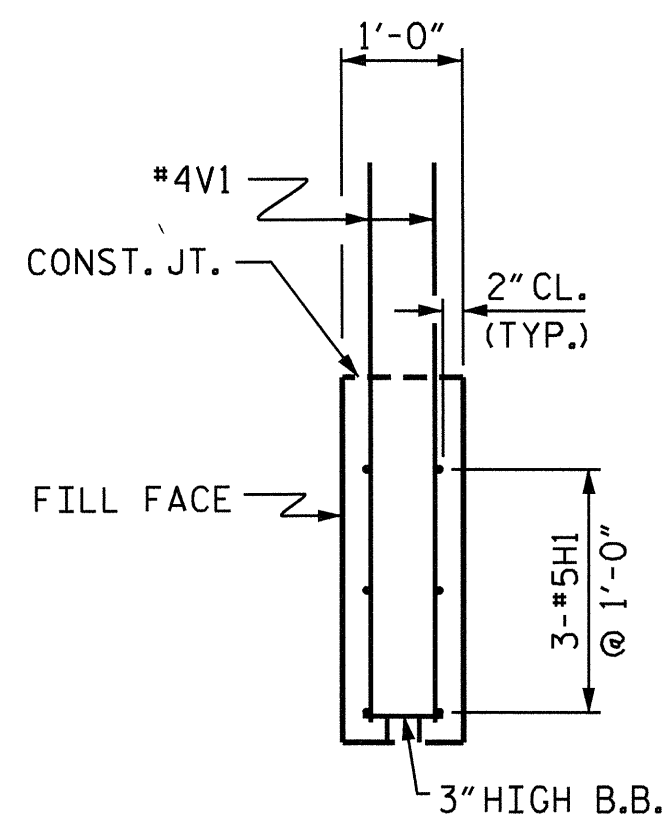
SECTION Y-Y



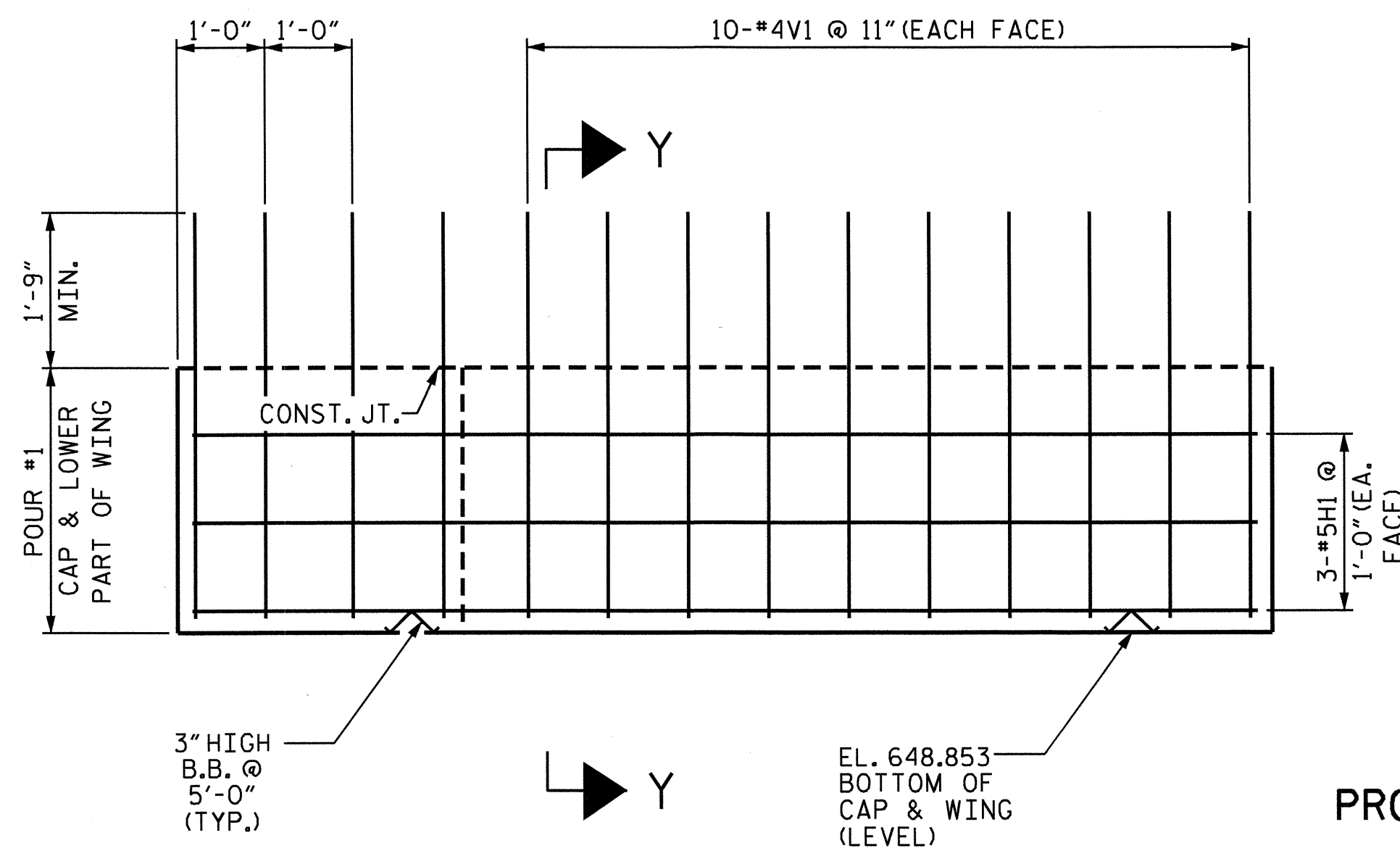
PLAN OF LEFT WING W2



ELEVATION OF LEFT WING W1



SECTION X-X



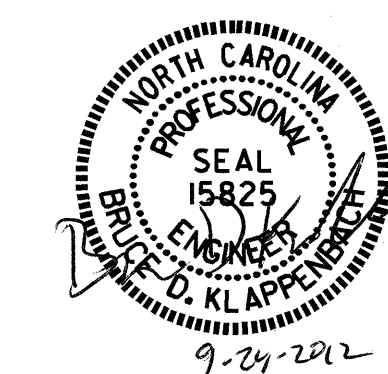
ELEVATION OF RIGHT WING W2

PROJECT NO. B-4753
 GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 2 OF 3

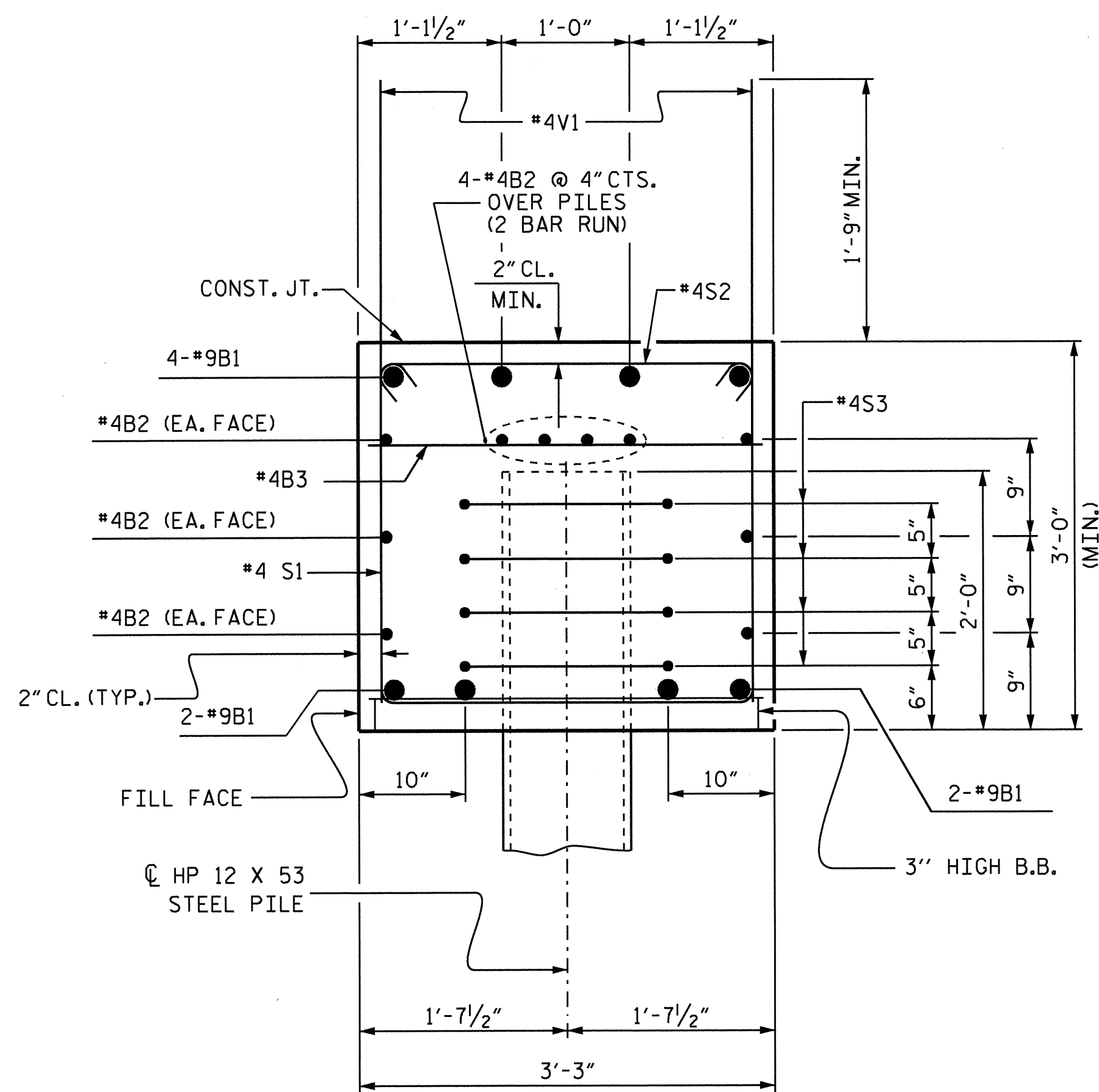
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT #2



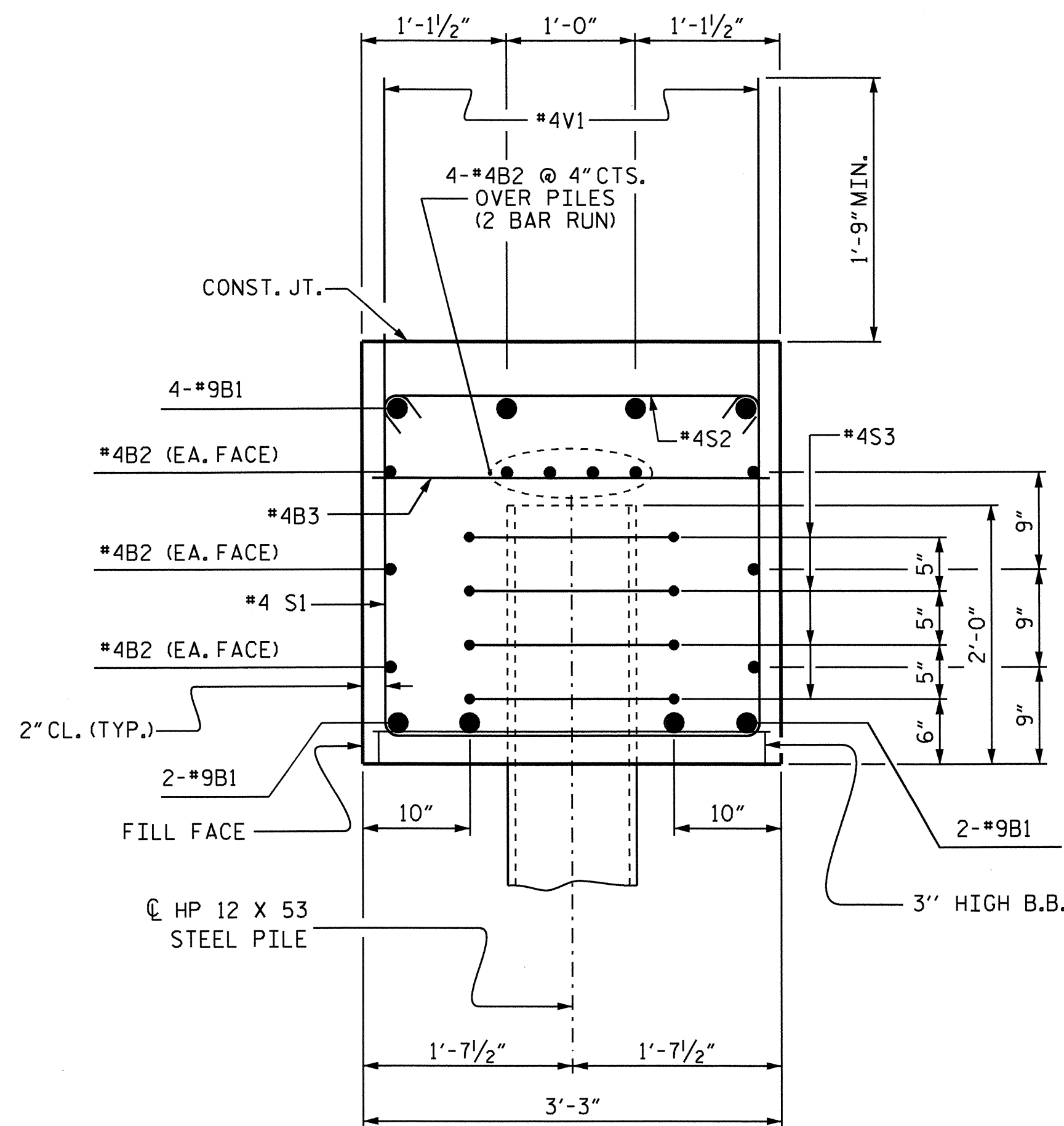
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS 33
2			4			

DRAWN BY: H. T. BARBOUR DATE: 9-30-11
 CHECKED BY: T. L. CLELLAND DATE: 12-11



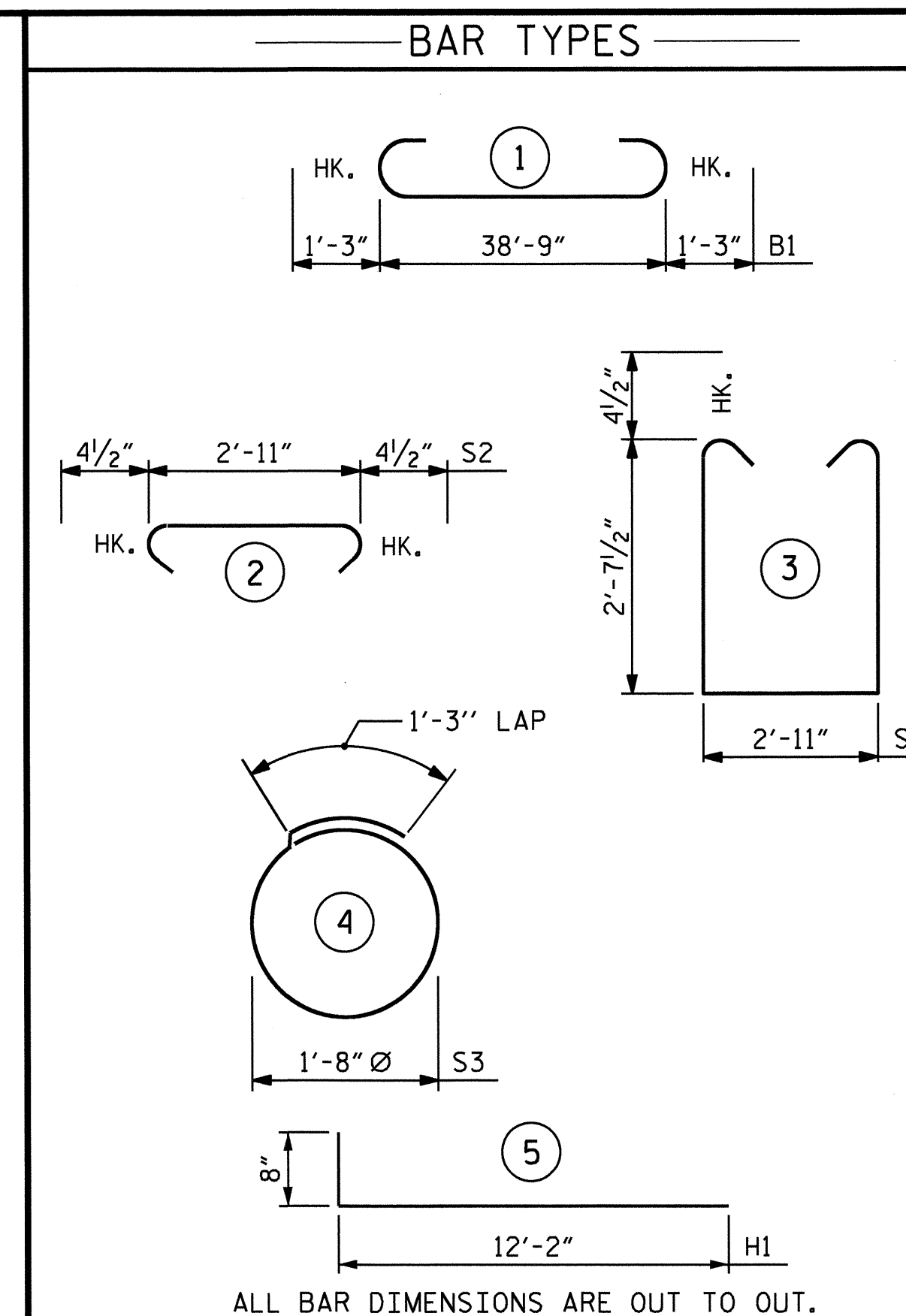
SECTION A-A

PILE COLLARS NOT SHOWN FOR CLARITY



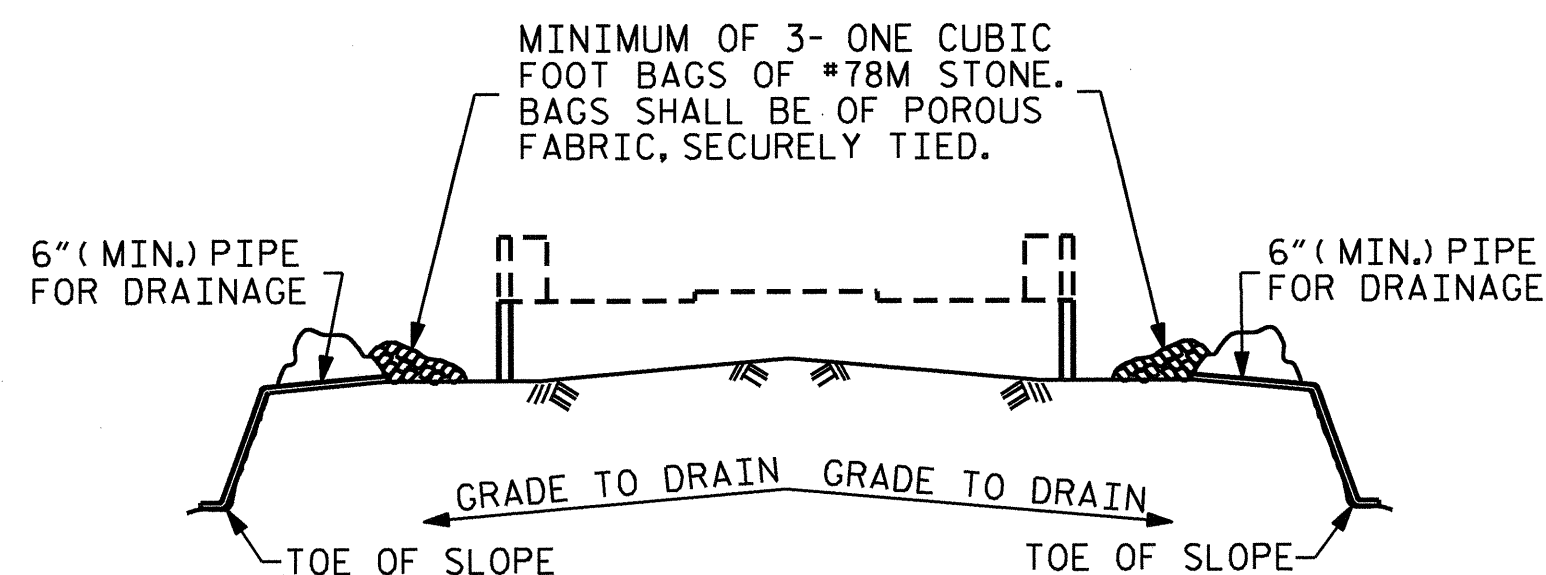
SECTION B-B

PILE COLLARS NOT SHOWN FOR CLARITY



BILL OF MATERIAL					
END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-3"	1122
B2	20	#4	STR	20'-8"	276
B3	10	#4	STR	2'-11"	19
H1	12	#5	5	12'-10"	161
S1	40	#4	3	8'-11"	238
S2	40	#4	2	3'-8"	99
S3	28	#4	4	6'-6"	122
V1	122	#4	STR	5'-0"	407
REINFORCING STEEL					= 2444 LBS
CLASS A CONCRETE					
◆ POUR #1					
CAP, CONCRETE COLLARS				17.7 CU. YDS.	
& LOWER PART OF WINGS					
TOTAL				17.7 CU. YDS.	
HP 12 X 53 STEEL PILES					
NO. 7				125 LIN. FT.	
◆ CONCRETE QUANTITY FOR UPPER PART OF WINGS IS INCLUDED IN POUR #3 OF THE SUPERSTRUCTURE.					

ALL BAR DIMENSIONS ARE OUT TO OUT.

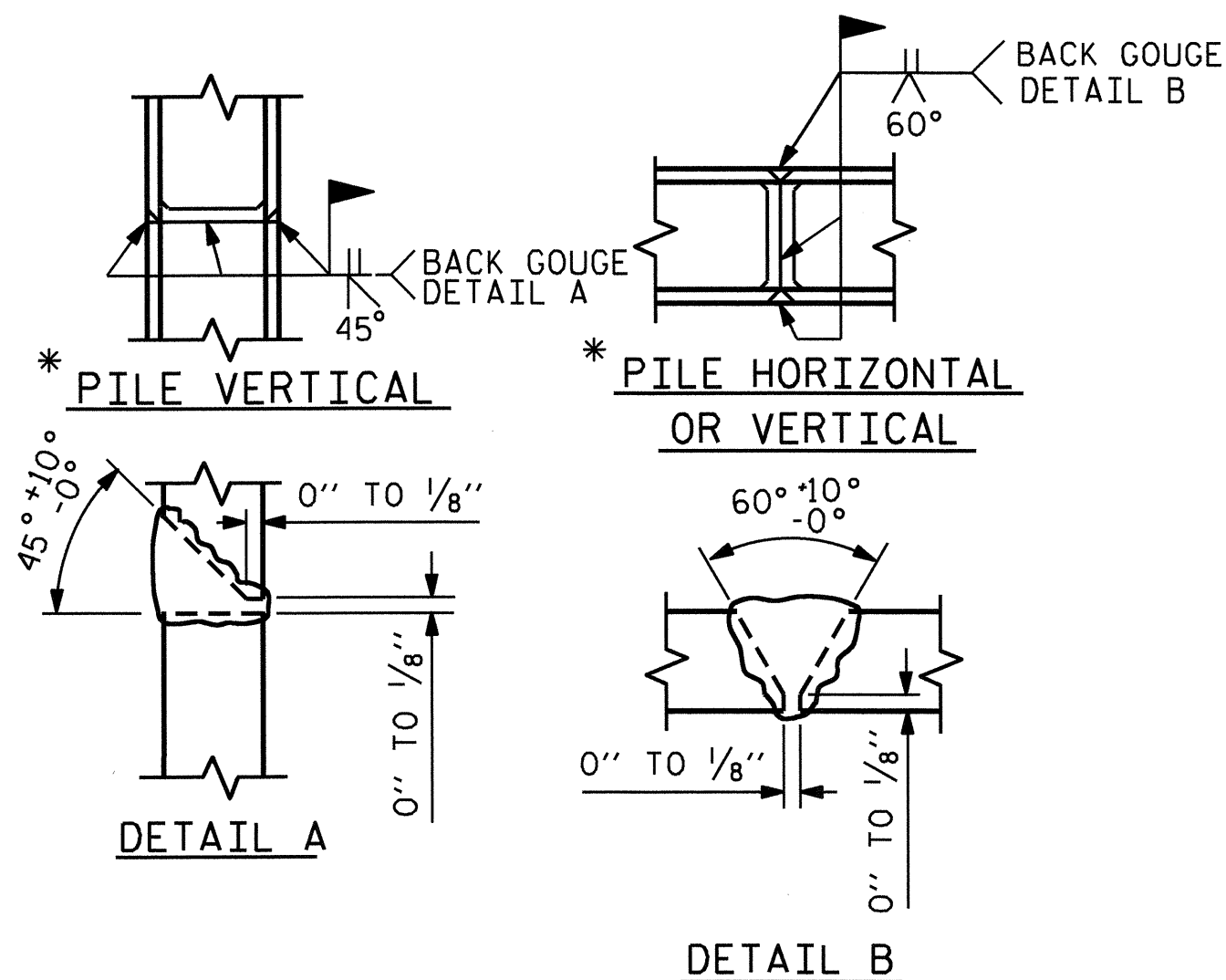


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

* POSITION OF PILE DURING WELDING.

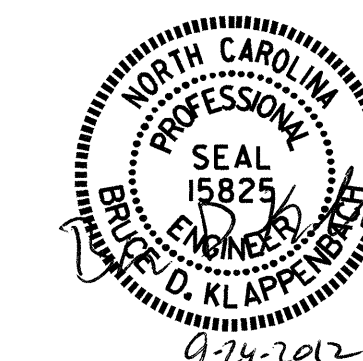
PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50-L-

SHEET 3 OF 3

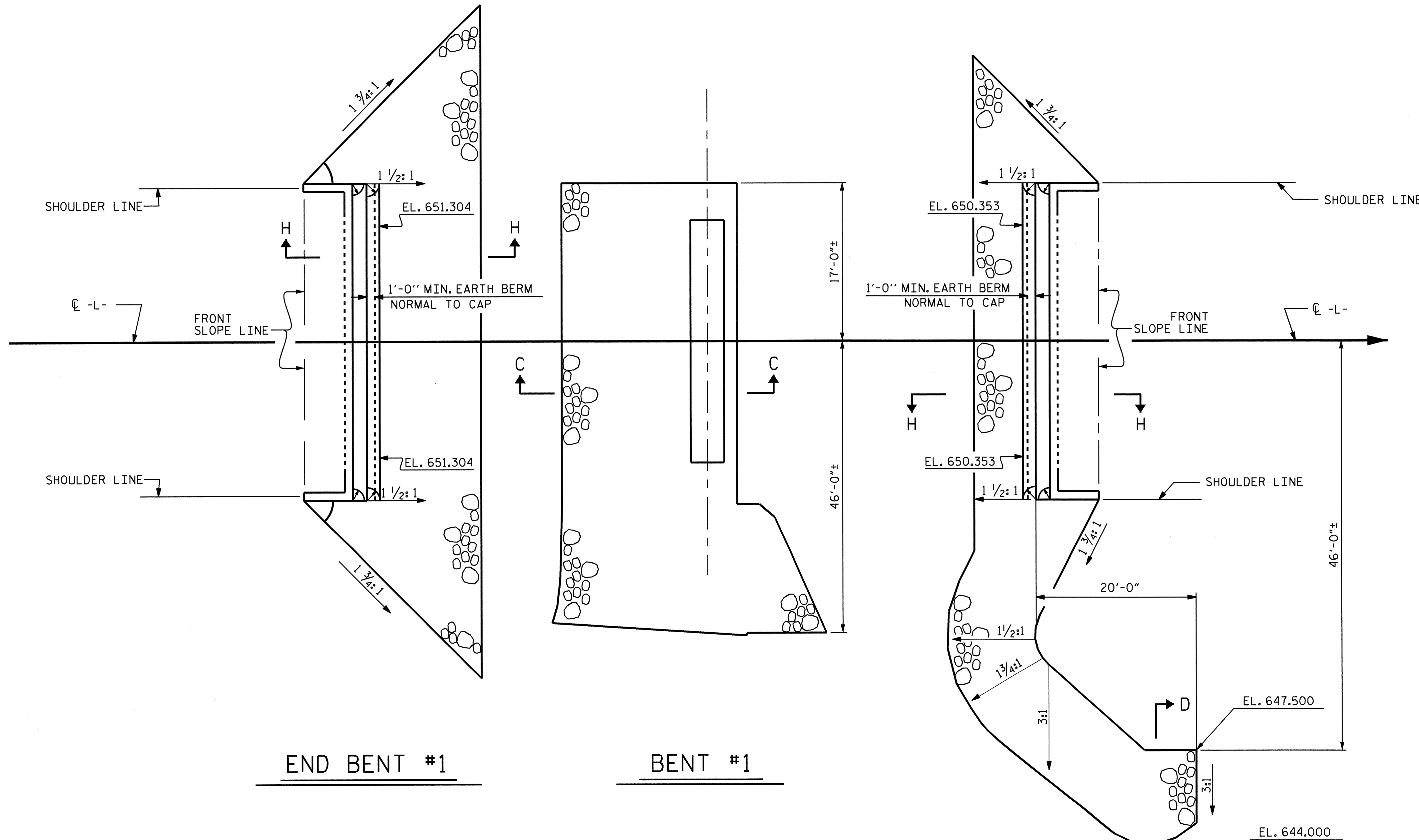
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 INTEGRAL
 END BENT #2**

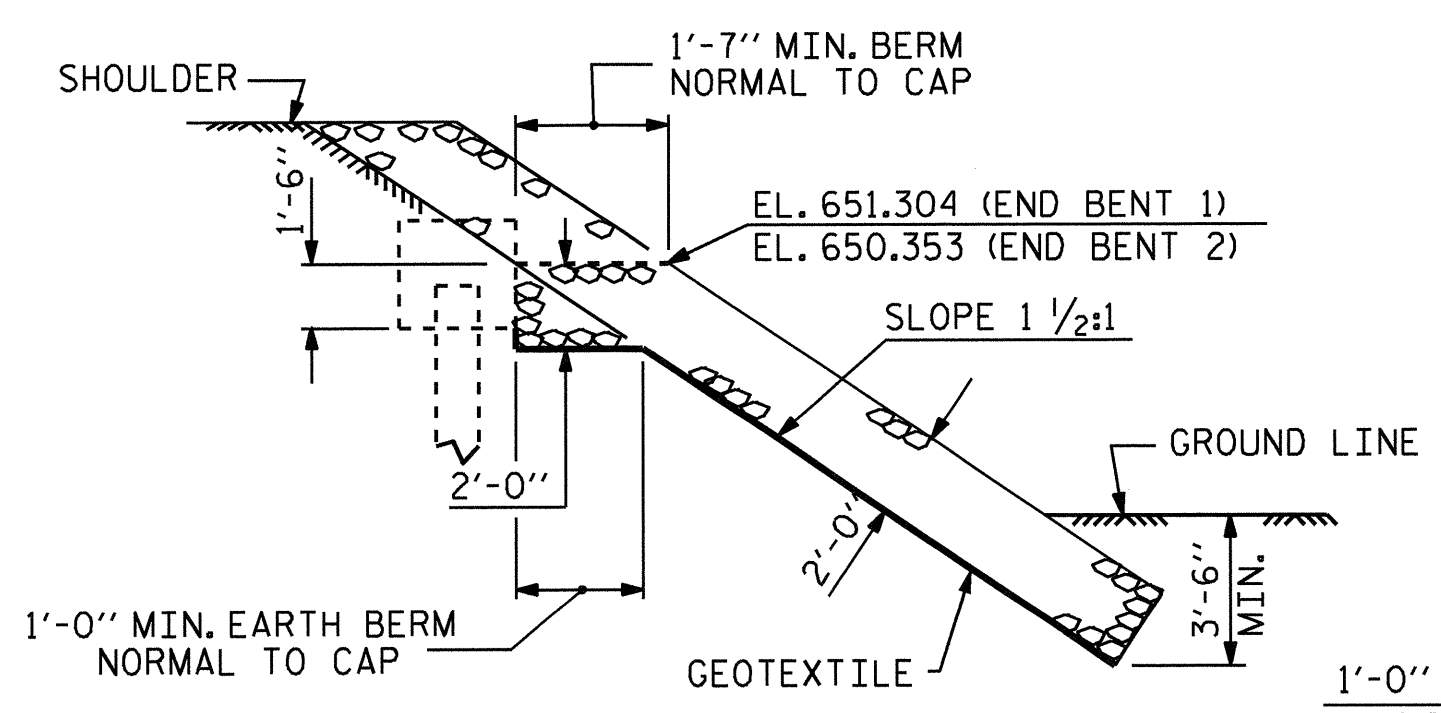
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-30	
1			3			TOTAL SHEETS 33	
2			4				



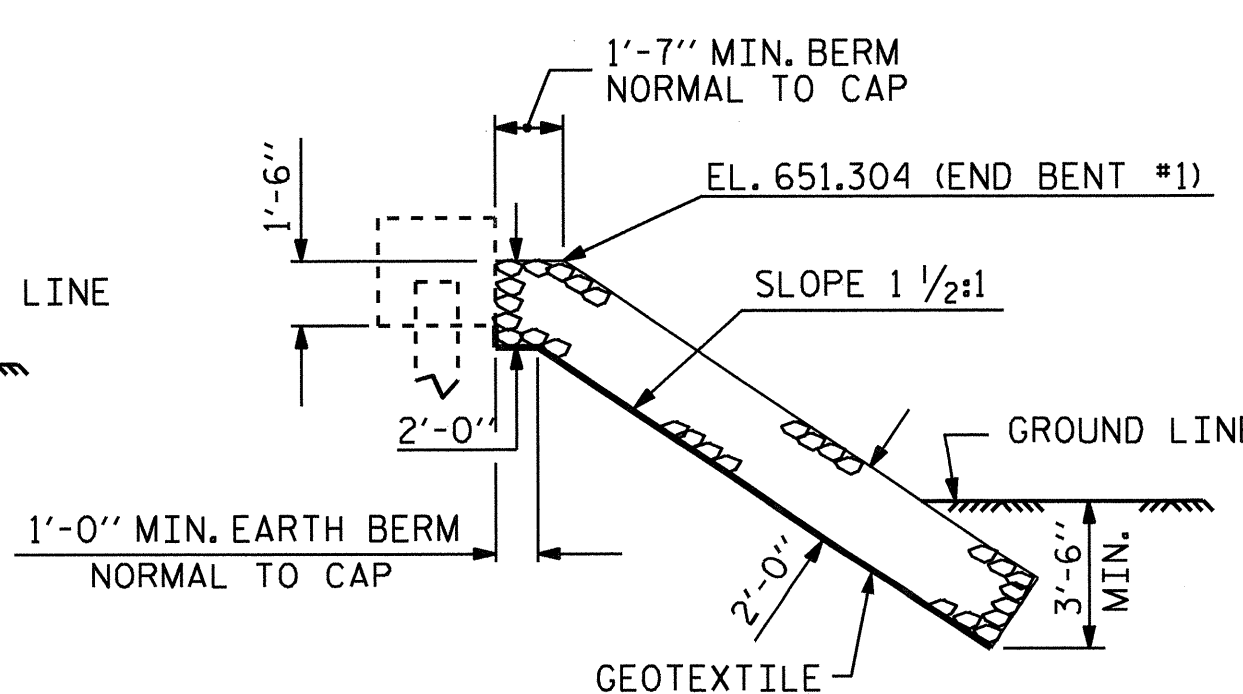
DRAWN BY: H.T. BARBOUR DATE: 9-30-11
 CHECKED BY: T.L. CLELLAND DATE: 12-11



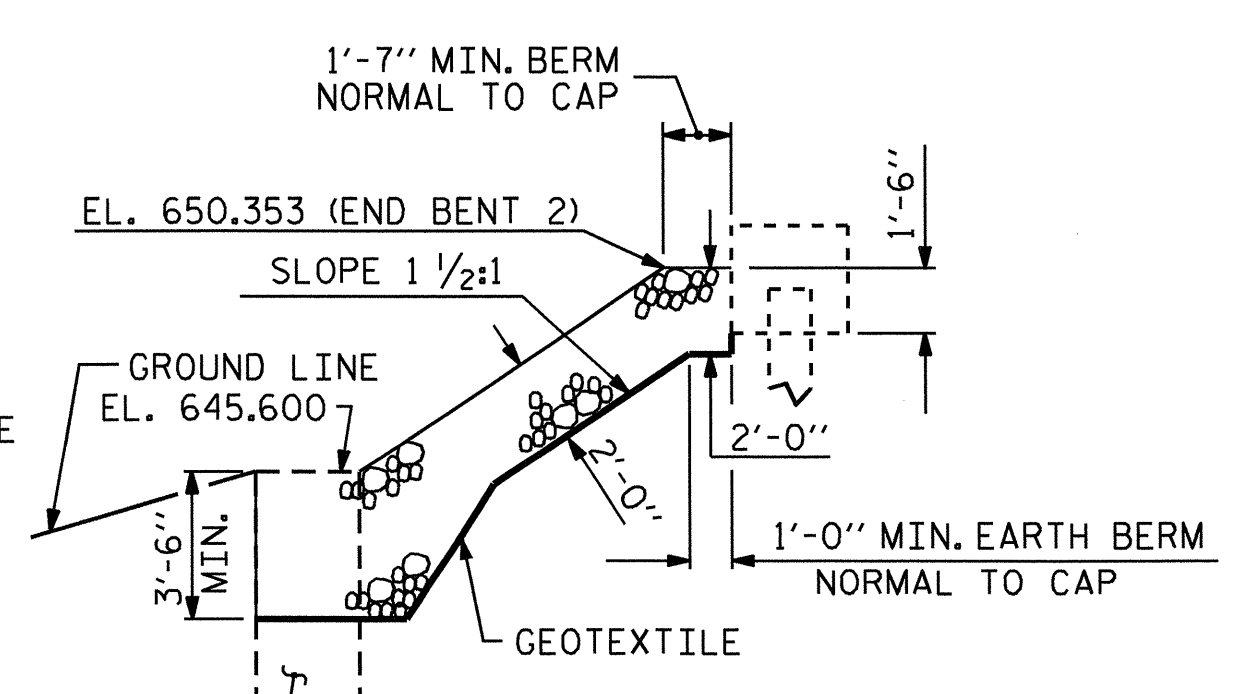
ESTIMATED QUANTITIES		
BRIDGE @ STA. 23+51.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	145.0	160.0
BENT 1	160.0	180.0
END BENT 2	185.0	205.0
TOTAL	490.0	545.0



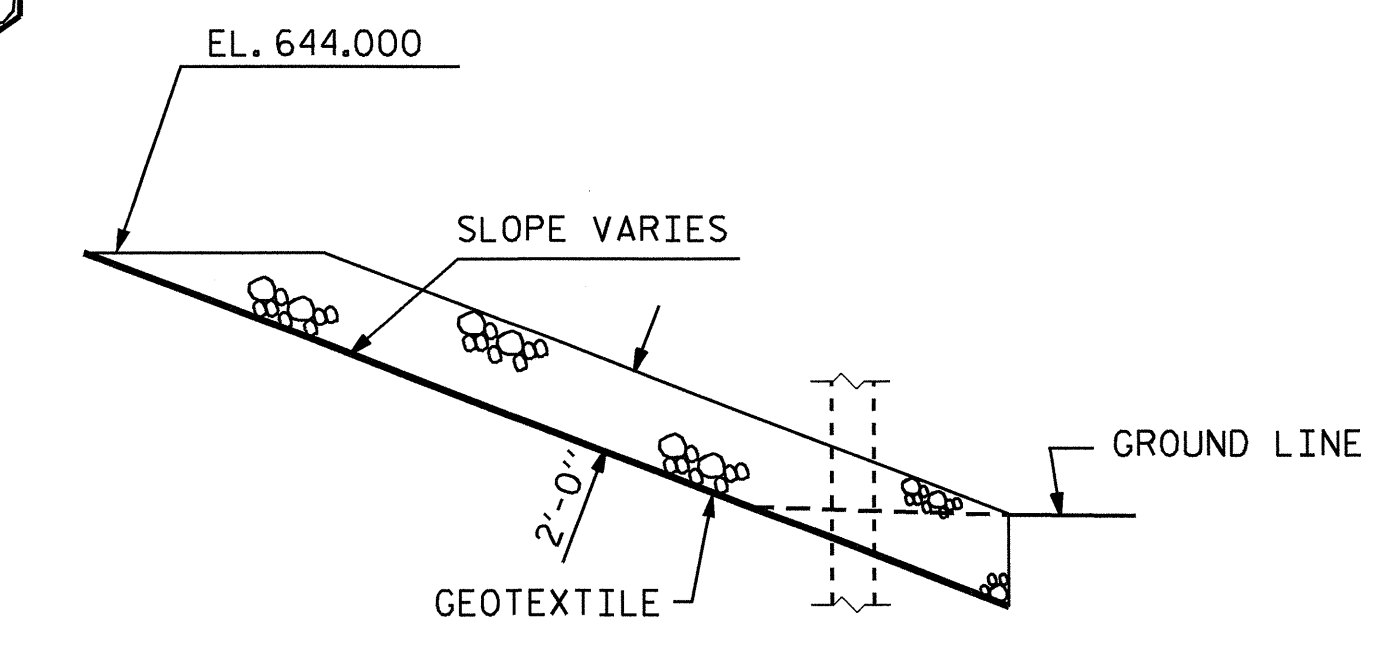
SECTION H-H



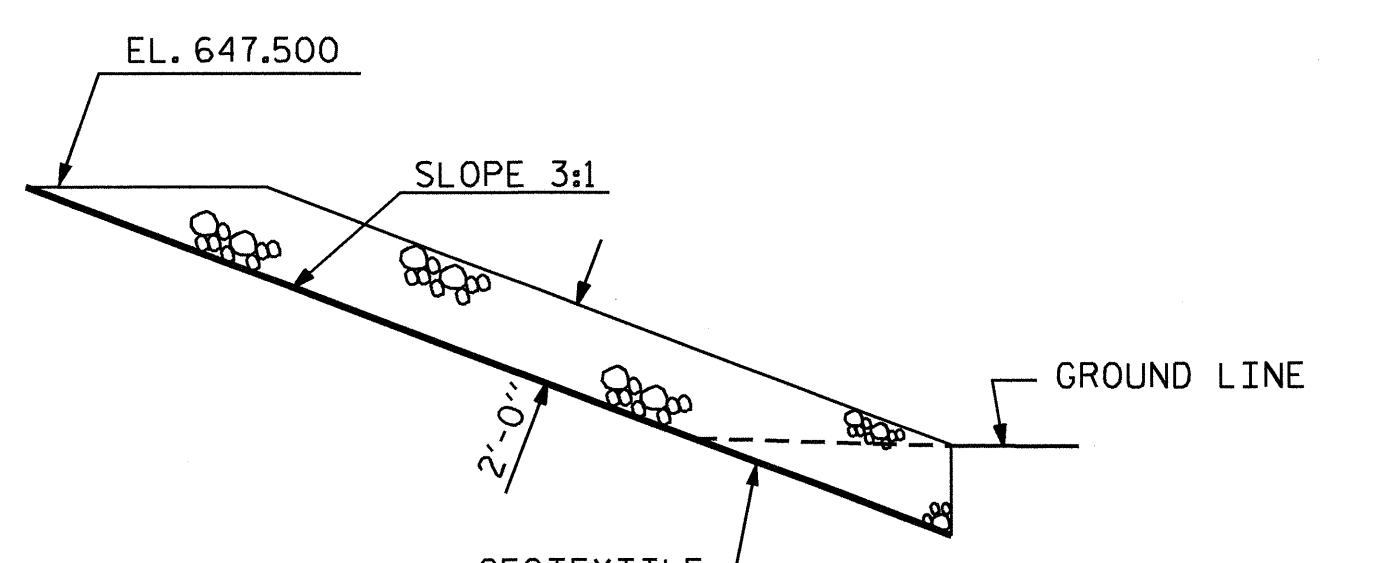
SECTION C-C
BERM RIP RAPPED
END BENT #1



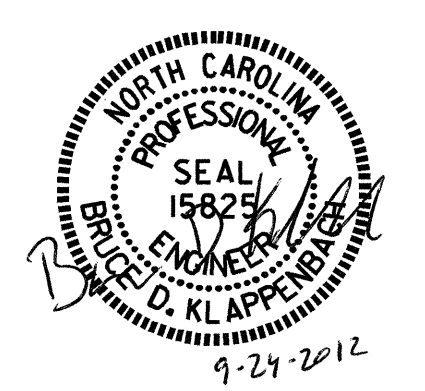
SECTION D-D
BERM RIP RAPPED
END BENT #2



SECTION C-C



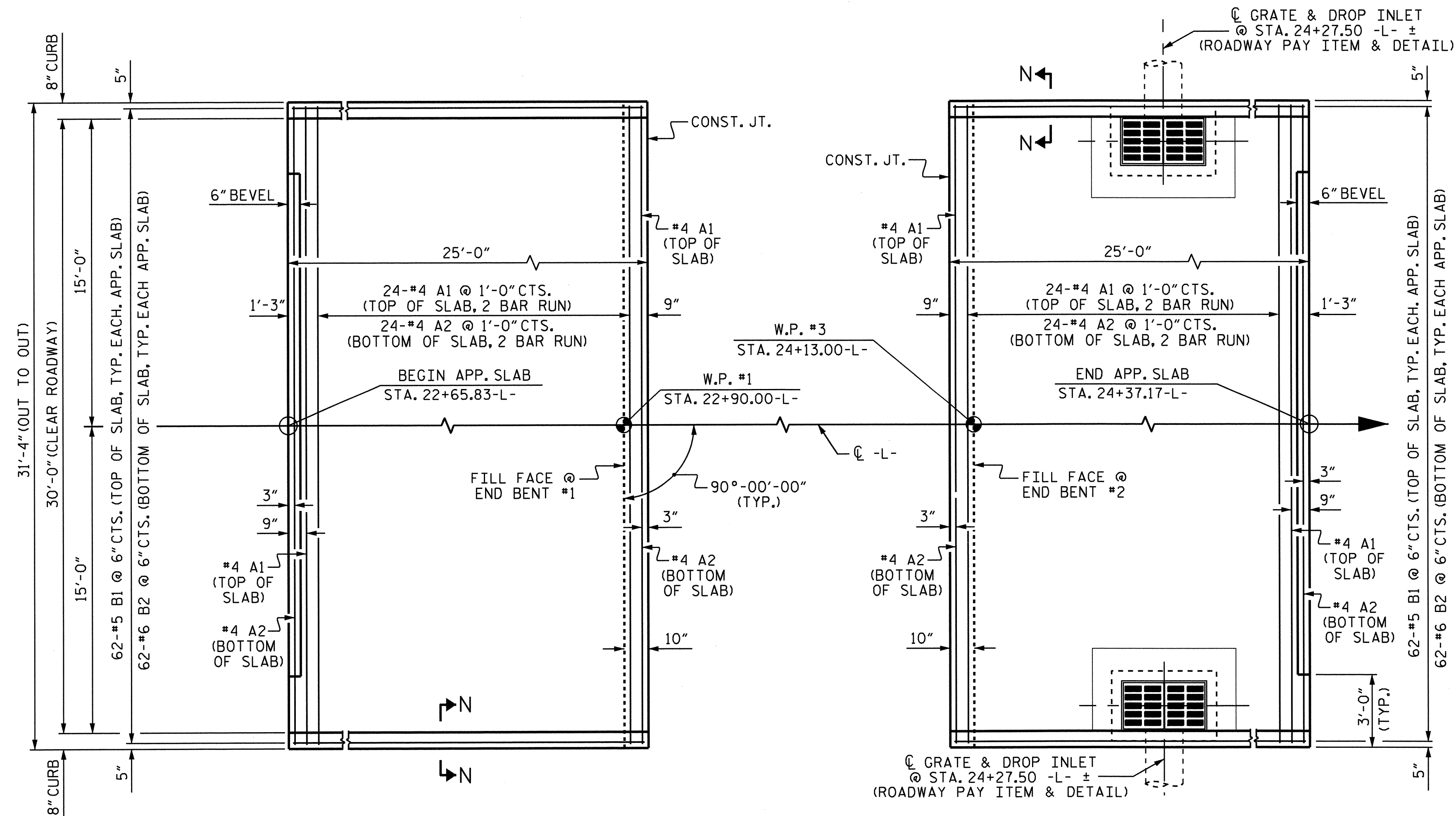
SECTION D-D



PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

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

ASSEMBLED BY : B.D. KLAPPENBACH DATE : 07/11
 CHECKED BY : H.T. BARBOUR DATE : 07/11
 DRAWN BY : FCJ 2/88 REV. 8/16/99 RWW/LES
 CHECKED BY : ARB 8/88 REV. 10/17/00 RWW/LES
 REV. 5/1/06R TLA/GM



NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND *78M STONE BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

*78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

*78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

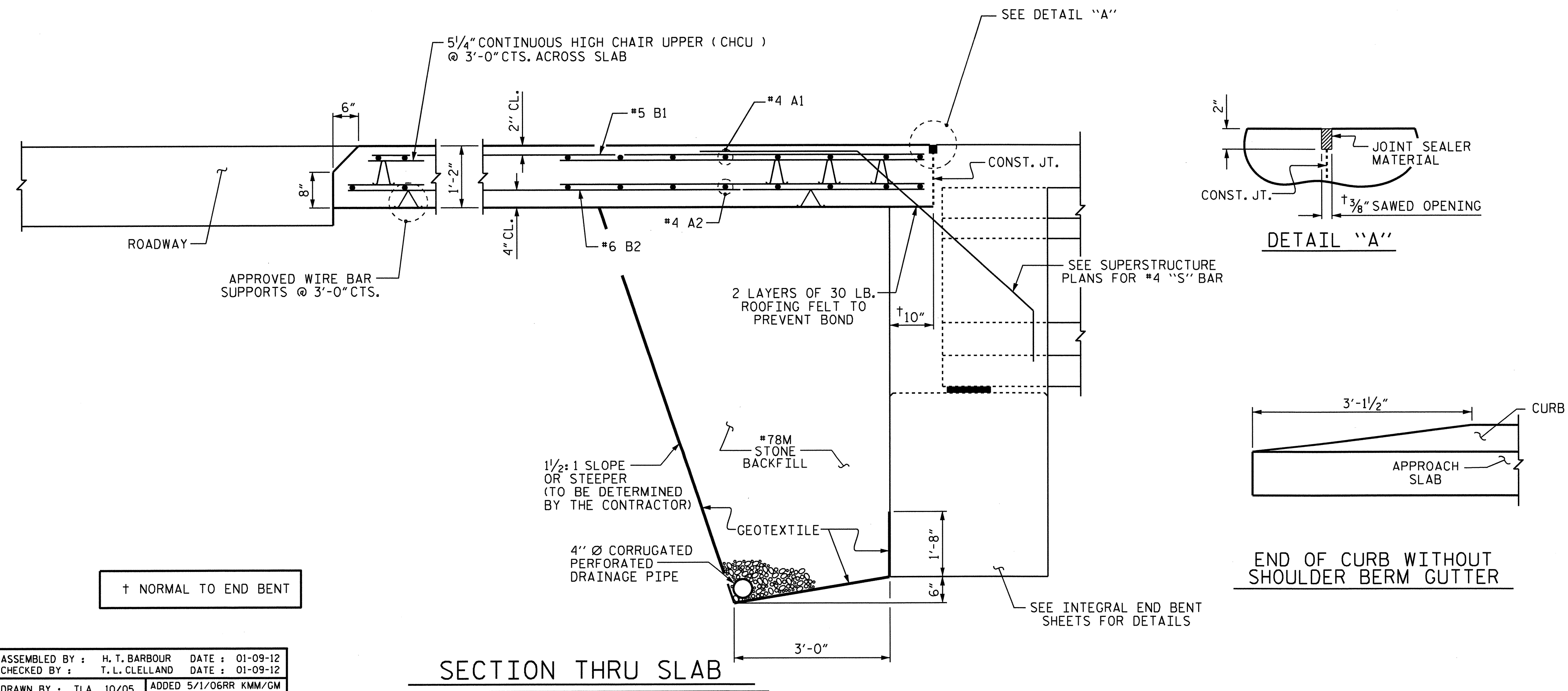
APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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 JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

BILL OF MATERIAL						
FOR ONE APPROACH SLAB (2 REQ'D)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* A1	52	#4	STR	16'-6"	573	
A2	52	#4	STR	16'-5"	570	
* B1	62	#5	STR	24'-3"	1568	
B2	62	#6	STR	24'-8"	2297	
REINFORCING STEEL					LBS. 2867	
* EPOXY COATED REINFORCING STEEL					LBS. 2141	
CLASS AA CONCRETE					C. Y. 33.9	



PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 1 OF 2

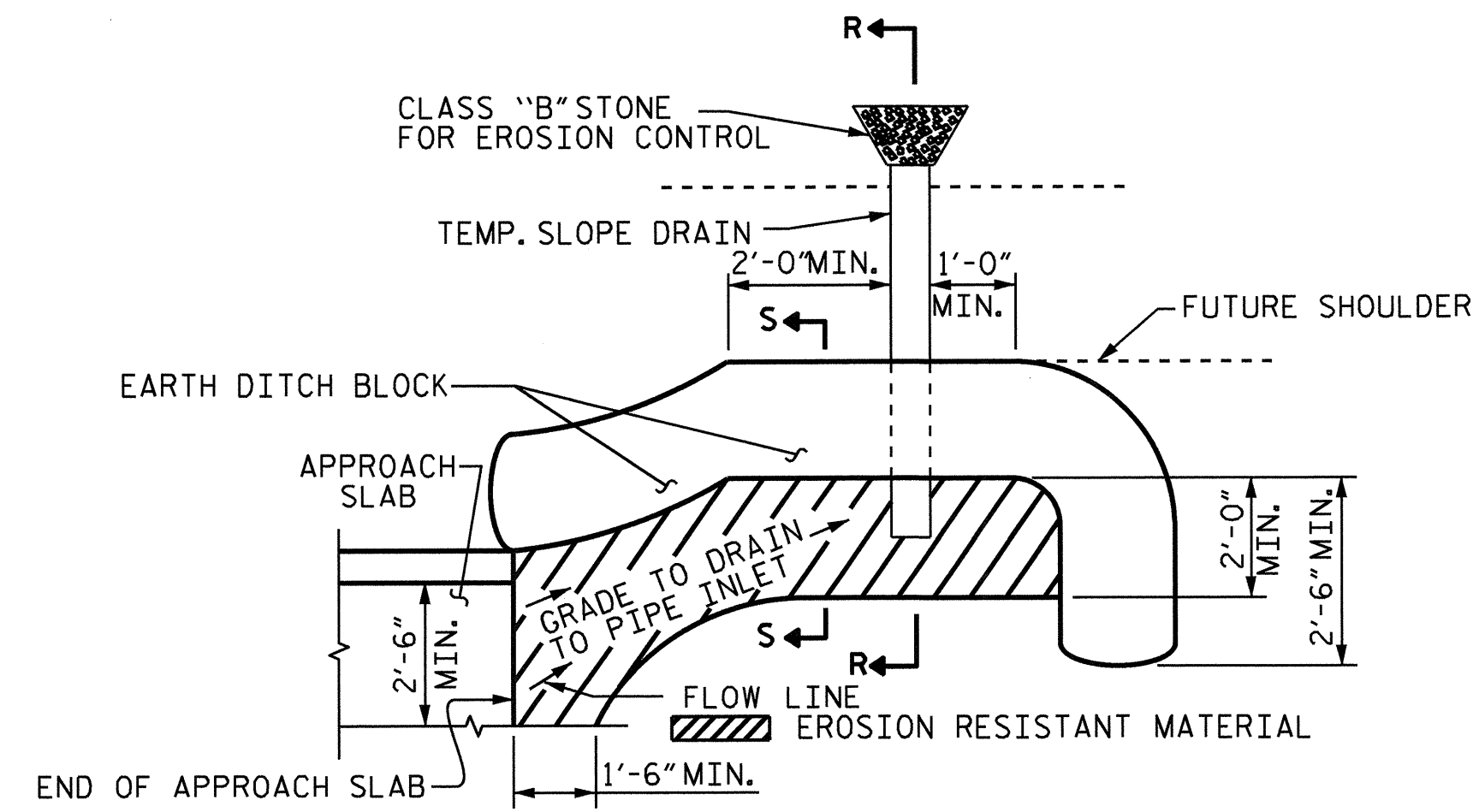
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS 33
2			4			

ASSEMBLED BY : H. T. BARBOUR DATE : 01-09-12
 CHECKED BY : T. L. CLELLAND DATE : 01-09-12
 DRAWN BY : TLA 10/05
 CHECKED BY : GM 5/06

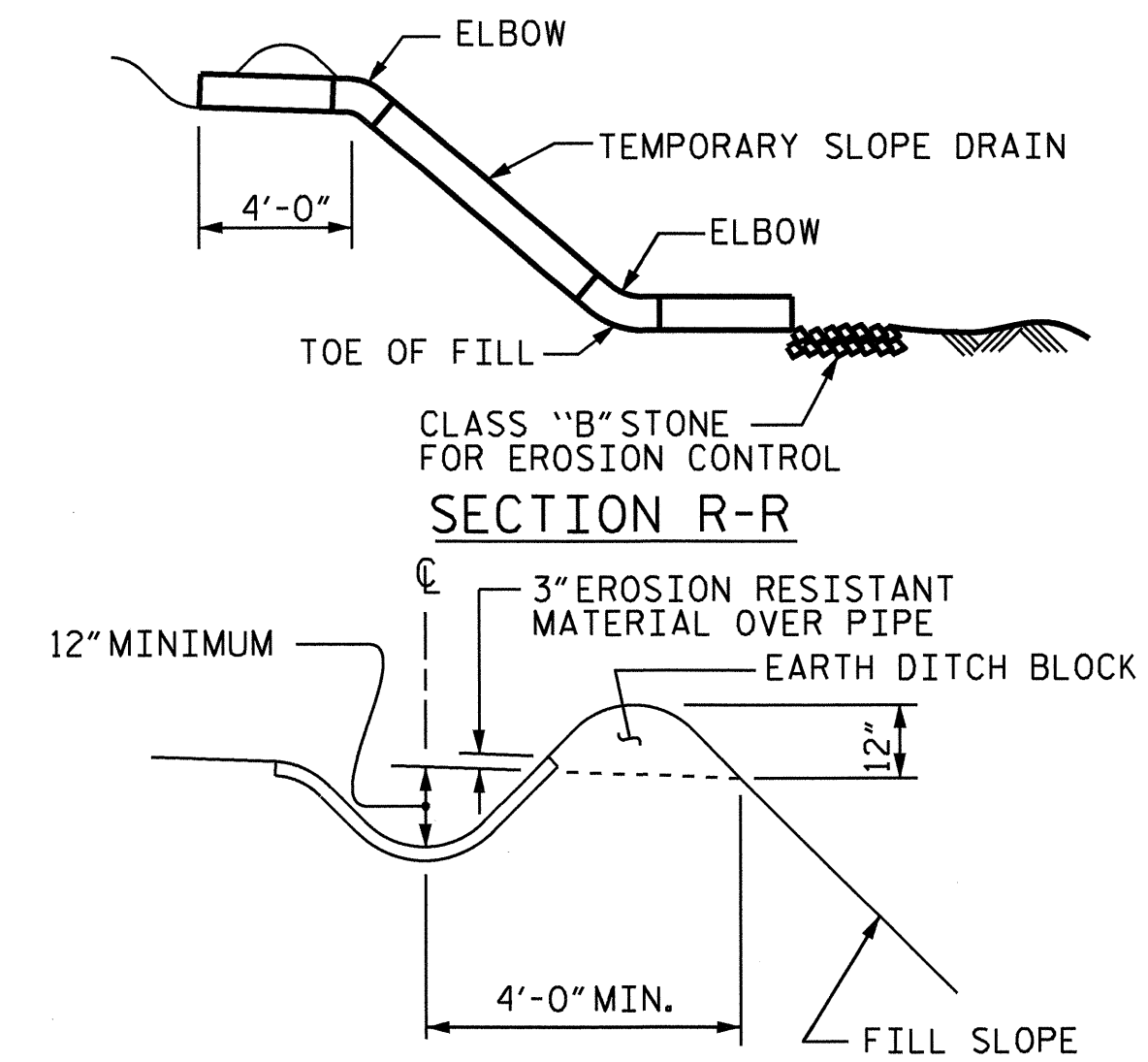
ADDED 5/1/06RR KMM/GM
 REV. 10/1/11 MAA/GM
 REV. 12/21/11 MAA/GM





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

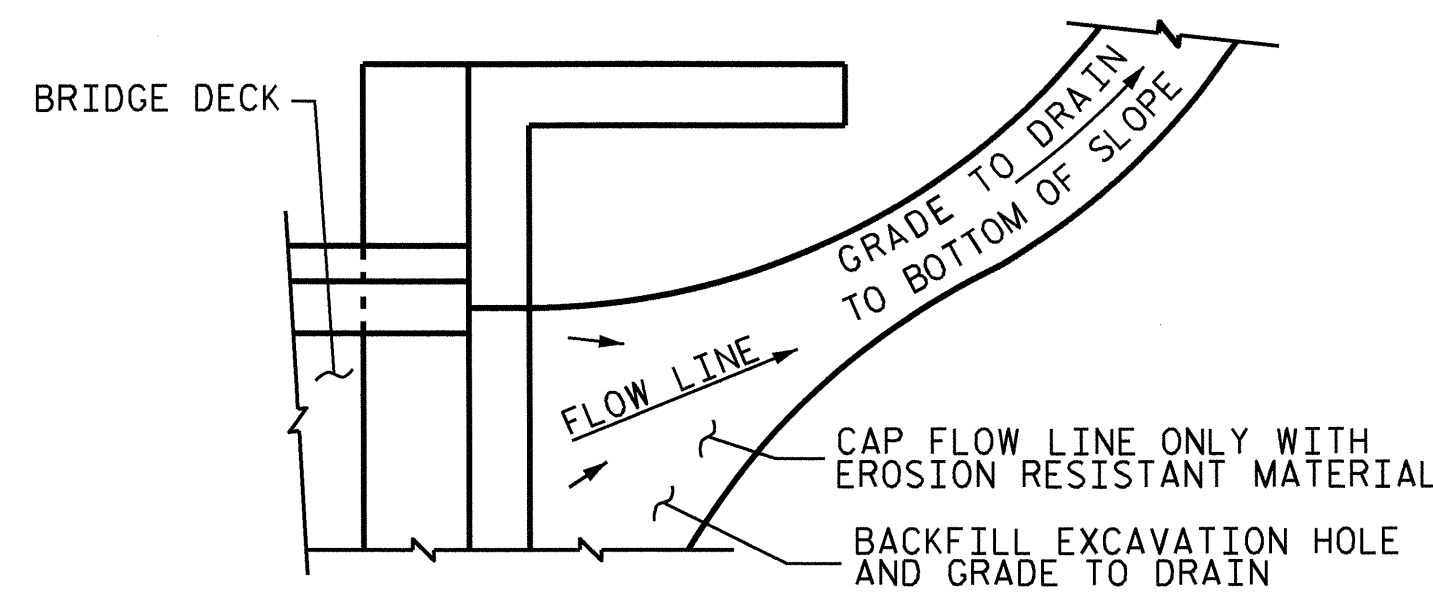
PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



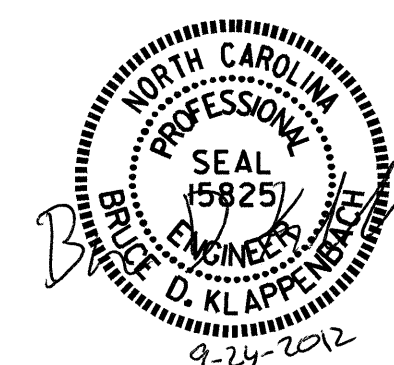
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

PROJECT NO. B-4753
GASTON COUNTY
 STATION: 23+51.50 -L-

SHEET 2 OF 2

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



ASSEMBLED BY :	H. T. BARBOUR	DATE :	01-09-12
CHECKED BY :	C. L. CLELLAND	DATE :	01-09-12
DRAWN BY :	FCJ 11/88	REV. 10/17/00	RWW/LES
CHECKED BY :	ARB 11/88	REV. 5/7/03	RWW/JTE
		REV. 5/1/06RR	MAA/KMM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			33

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 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS 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