

TIP PROJECT: B-4931

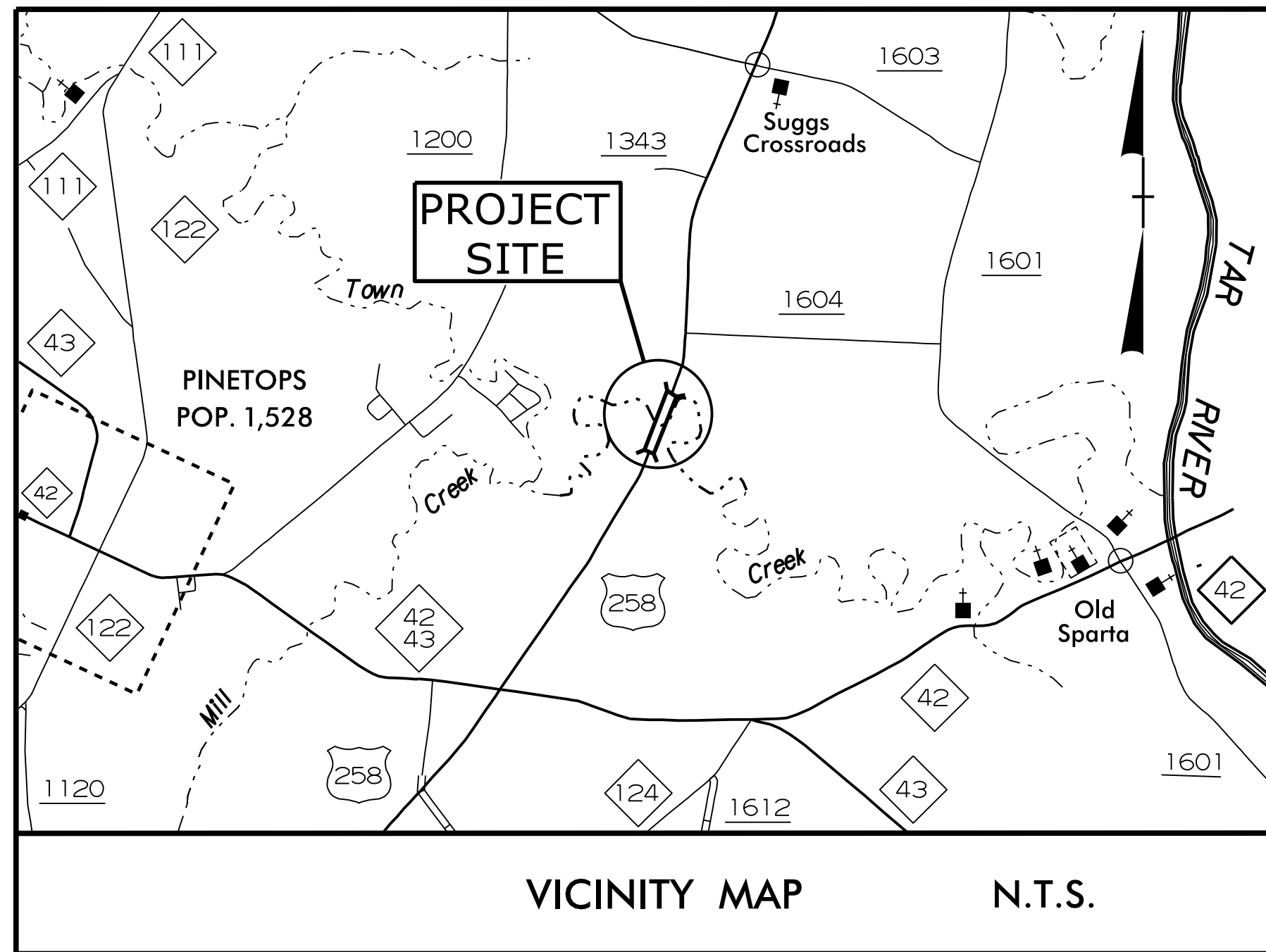
CONTRACT: C204518

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

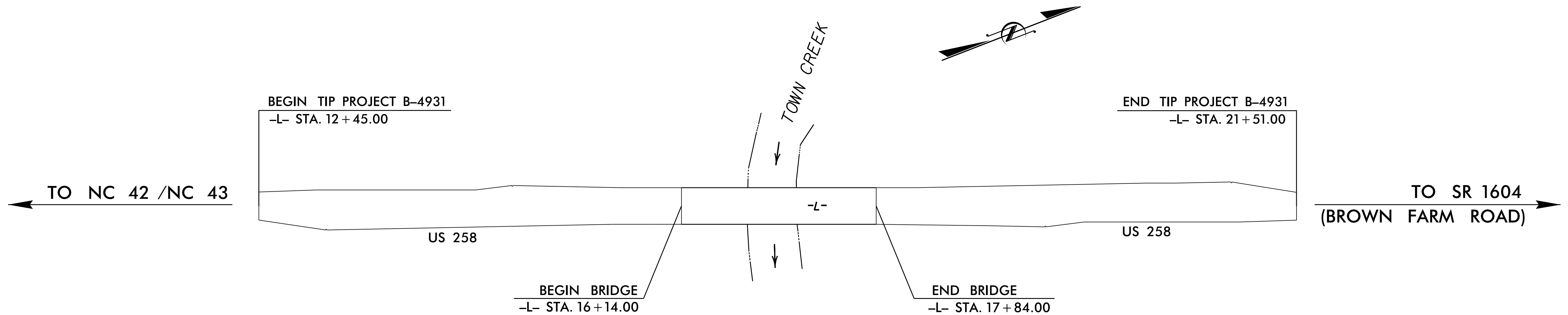
EDGECOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4931		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
40134.1.1	-	P.E.	
40134.2.1	-	ROWUTIL.	
40134.3.1	-	CONST.	

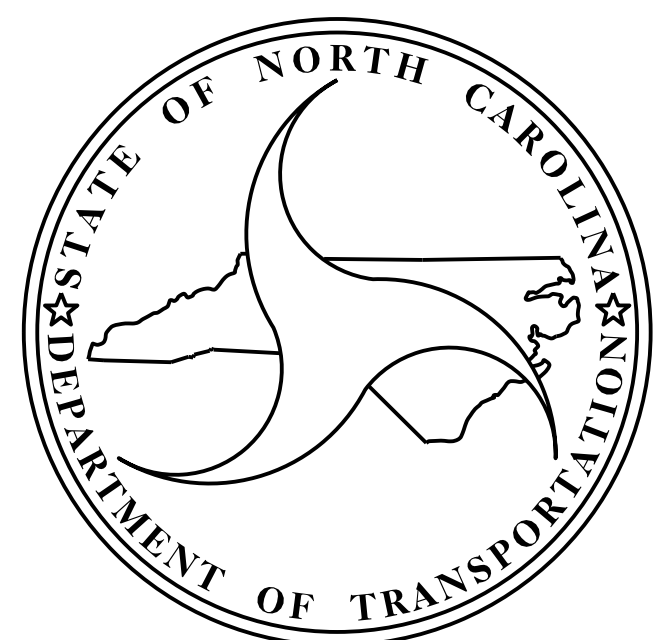


LOCATION: REPLACE BRIDGE NO. 22 OVER TOWN CREEK ON US 258

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



STRUCTURE



DESIGN DATA

ADT 2020 = 3,100
 ADT 2040 = 4,100
 K = 10 %
 D = 55 %
 T = 8 % **
 * V = 60 MPH
 ** (TTST 3 %, DUAL 5 %)
 FUNC CLASS = MINOR ARTERIAL
 REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4931 = 0.140 MILES
 LENGTH STRUCTURE TIP PROJECT B-4931 = 0.032 MILES
 TOTAL LENGTH TIP PROJECT B-4931 = 0.172 MILES

Prepared In the Office of:
DIVISION OF HIGHWAYS
 STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DR.
 RALEIGH, N.C. 27610

2018 STANDARD SPECIFICATIONS

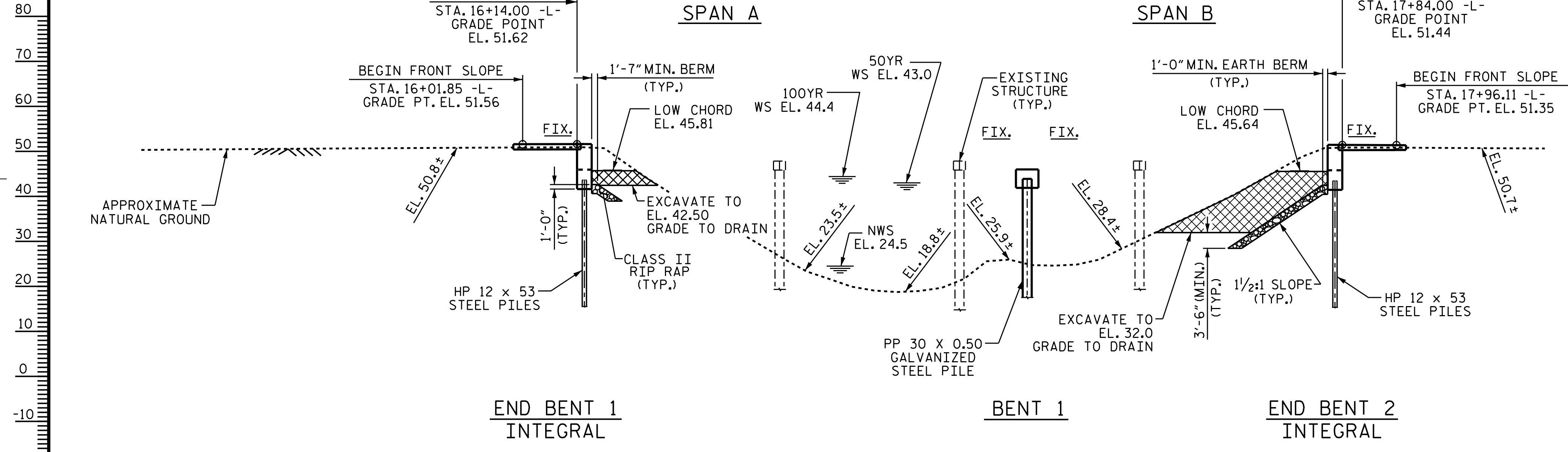
LETTING DATE :

May 18, 2021

KRISTY L. W. ALFORD, P.E., CPM
 PROJECT ENGINEER

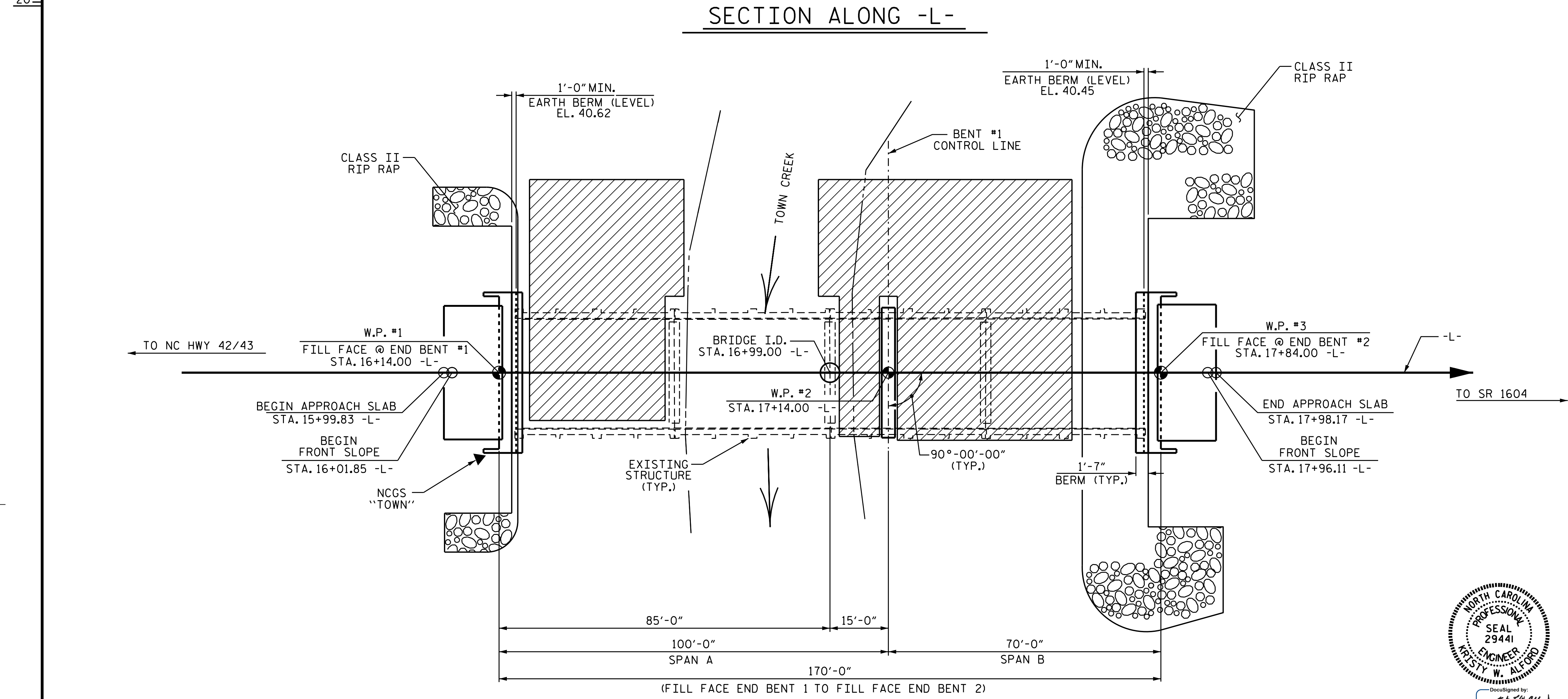
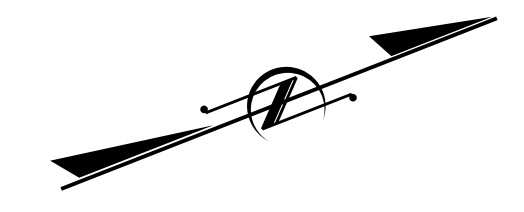
A. G. ABRAHA, P.E.
 PROJECT DESIGN ENGINEER

GRADE DATA
 (+)0.9737% (-)0.9730%
 PI STA. 16+82.50 -L-
 EL. = 52.50
 VC = 300'



TEMPORARY ACCESS
 UNCLASSIFIED STRUCTURE EXCAVATION

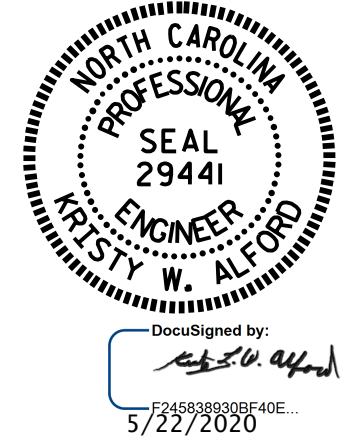
I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-
 SHEET 1 OF 3 REPLACES BRIDGE #22

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER TOWN CREEK
 ON US 258 BETWEEN
 NC 42/43 AND SR 1604

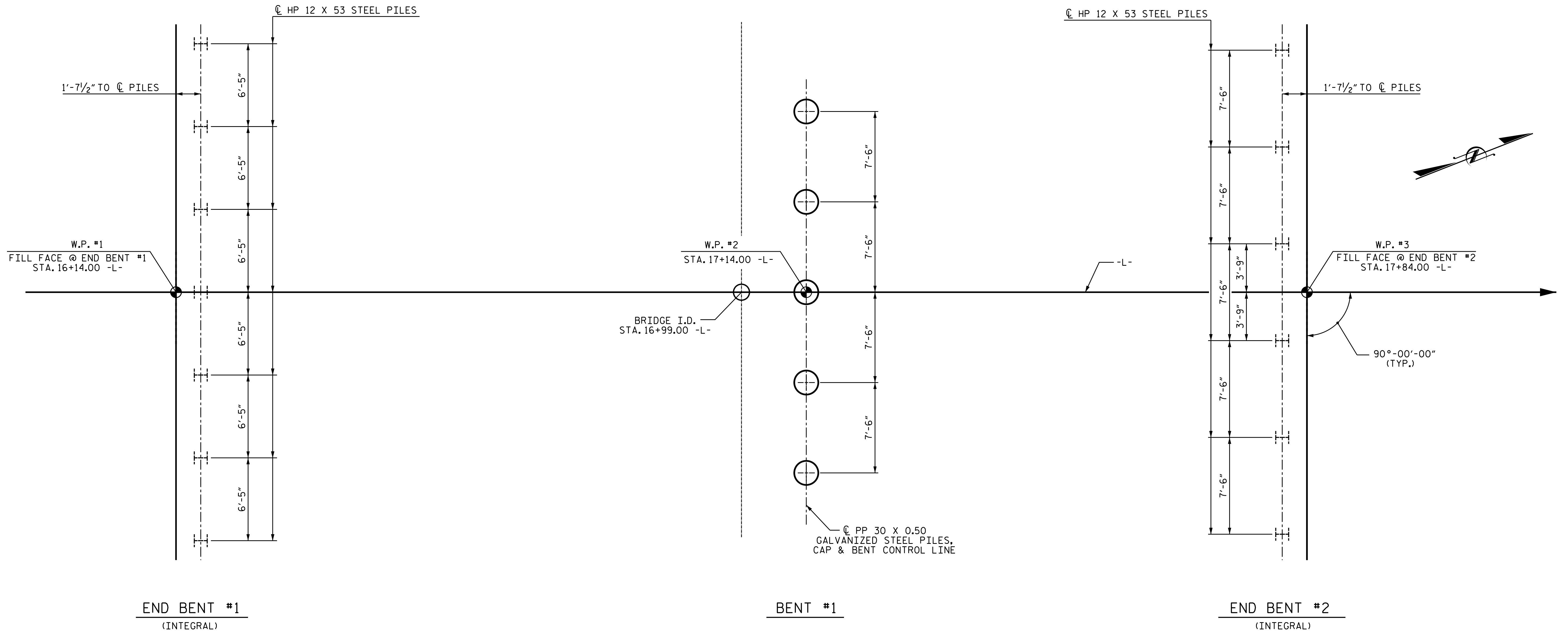


DRAWN BY : M.M. AHMED DATE : 02/20
 CHECKED BY : S. WANCE DATE : 02/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE : 09/19

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

TOTAL SHEETS: 30



FOUNDATION LAYOUT

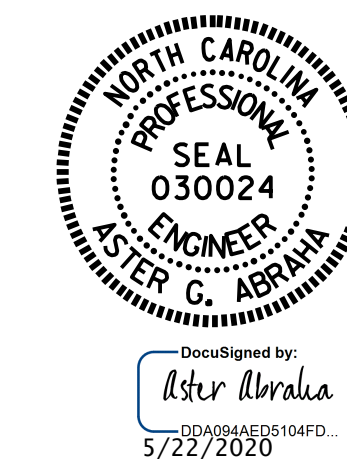
DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES.

NOTES:

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 AND END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 110 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 185 TONS PER PILE.
- PILES AT BENT NO.1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 240 TONS PER PILE.
- DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 410 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- INSTALL PILES AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN (-)12.0 FEET.
- THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 6.0 FEET, SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF STRUCTURE.
- TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED AT END BENTS, THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- TESTING THE FIRST PRODUCTION OF PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT NO.1. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 60,000 TO 130,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO.1. THIS ESTIMATED ENERGY RANGES DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER TOWN CREEK
 ON US 258 BETWEEN
 NC 42/43 AND SR 1604

DRAWN BY : M.M. AHMED DATE : 02/20
 CHECKED BY : S. WANCE DATE : 02/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE : 09/19

22-MAY-2020 10:07
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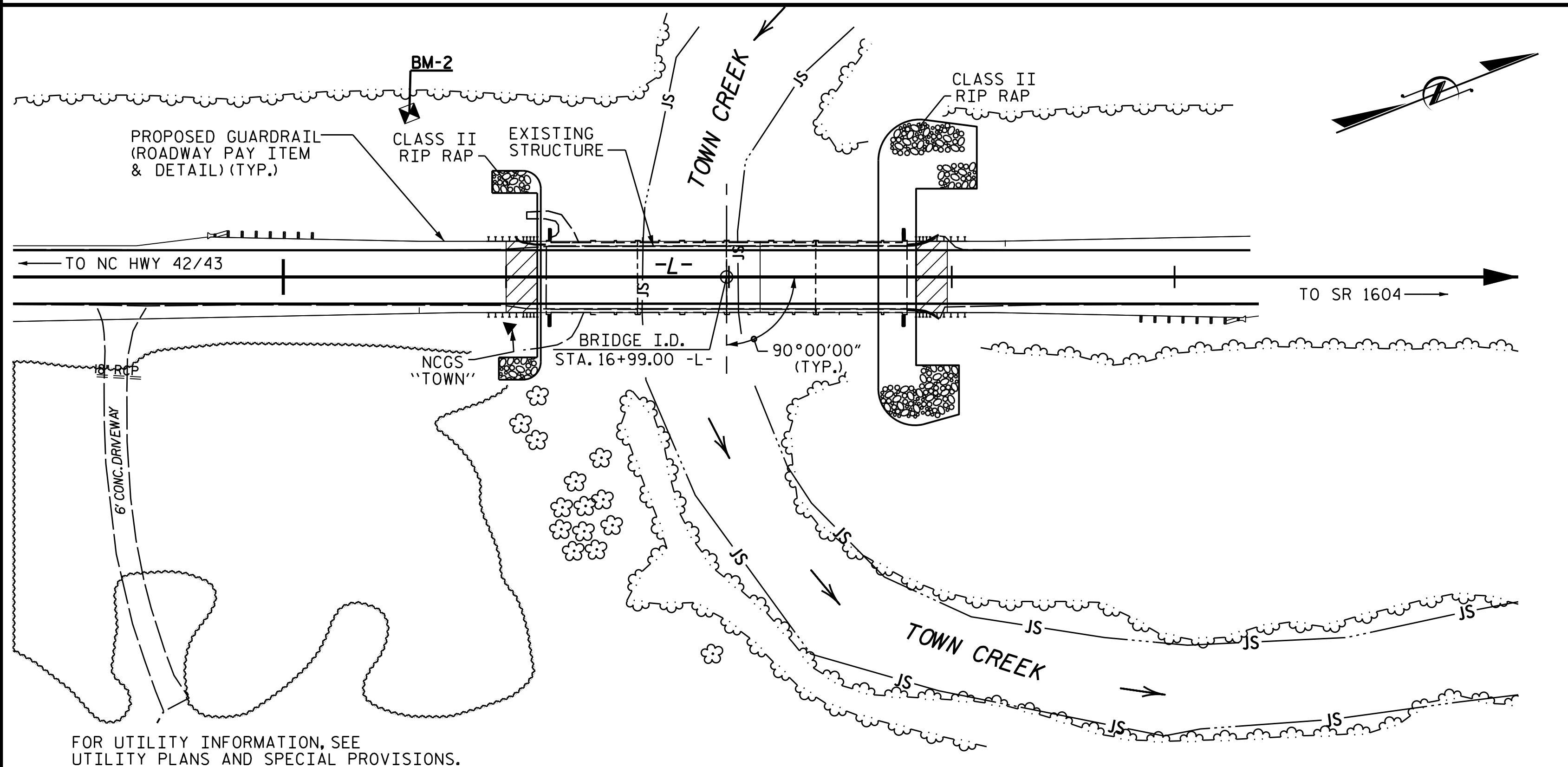
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR PP 30 X 0.50 GALVANIZED STEEL PILES	HP 12 x 53 STEEL PILES	PP 30 x 0.50 GALVANIZED STEEL PILES	PILE REDRIVES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	FIBER OPTIC CONDUIT SYSTEM				
	LUMP SUM	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SO. FT.	SO. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EACH	EACH	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SO. YDS.	LUMP SUM	LIN. FT.	
SUPERSTRUCTURE						5,934	5,684		LUMP SUM		8	669.33					336.67			LUMP SUM		332.67			
END BENT 1								32.4		4933		7		7	245							118	131		
BENT 1								24.5		3589			5		575	3									
END BENT 2								32.2		4595		6		6	390							413	458		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	2	LUMP SUM	5,934	5,684	89.1	LUMP SUM	13,117	8	669.33	13	5	13	635	5	575	10	336.67	531	589	LUMP SUM	332.67	

BENCH MARK: B.M.#2 R/R SPIKE IN 12" PINE, 73.4' LEFT OF STA. 15+56.58 -L-, ELEV. 45.85



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE = 7815 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YRS.
 DESIGN HIGH WATER ELEVATION = 43.0 FT.
 DRAINAGE AREA = 193.0 SQ. MI.
 BASE DISCHARGE (Q100) = 9305 CFS
 BASE HIGH WATER ELEVATION = 44.4 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 13326 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS.
 OVERTOPPING FLOOD ELEVATION = 46.1 FT.
 APPROXIMATE STA. (-)1+03 -L- (APPROXIMATELY 1700' OFF END OF PROPOSED BRIDGE)

NOTES:

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- 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.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
- FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.
- 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.
- NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- THE EXISTING STRUCTURE CONSISTING OF 4 SPANS @ 40'-0" WITH A CLEAR ROADWAY WIDTH OF 28.0 FT. WITH RC FLOOR AND RC DECK GIRDER ON RC BENT CAPS WITH RC PILES AND RC END BENT CAPS ON H-PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS NOT POSTED FOR LOAD LIMIT.

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.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS HATCHED AREA ON SHEET 1 OF 3 SHALL BE EXCAVATED FOR A DISTANCE OF 39' LEFT AND RIGHT OF CENTERLINE ROADWAY AT END BENT #1, AND 56' LEFT AND 45' RIGHT OF CENTERLINE ROADWAY AT END BENT #2 OR AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION.

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

FOR INTERIOR BENT, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

FOR FIBER OPTIC CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

PROJECT NO. B-4931

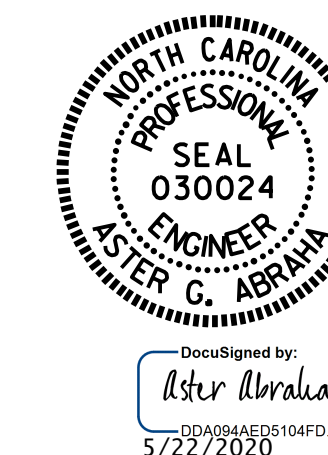
EDGEcombe COUNTY

STATION: 16+99.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER TOWN CREEK
 ON US 258 BETWEEN
 NC 42/43 AND SR 1604



DRAWN BY: M.M. AHMED DATE: 02/20
 CHECKED BY: S. WANCE DATE: 04/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: 09/19

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

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 (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

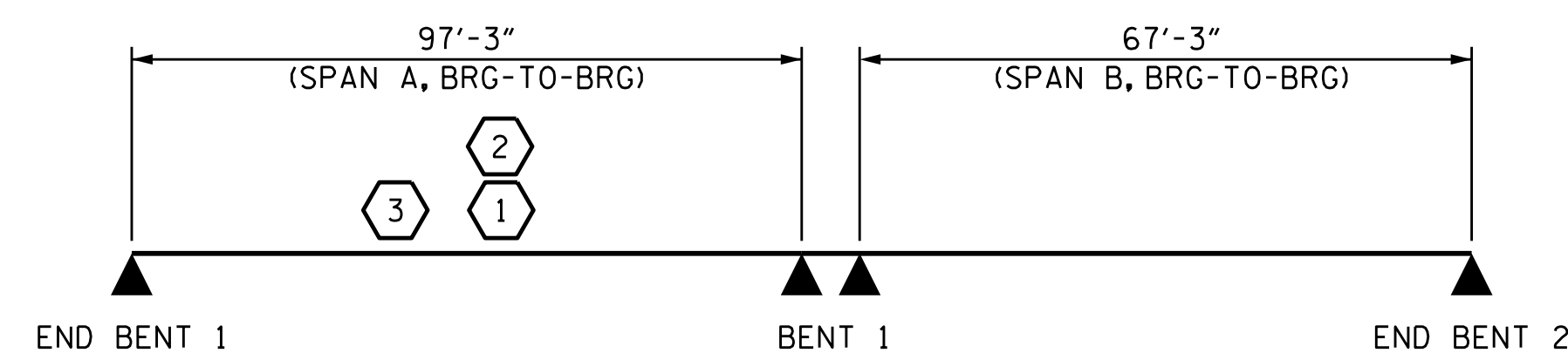
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.177	0.000	1.75	0.746	1.466	A	I	48.63	0.918	1.509	A	I	29.18	0.80	0.746	1.177	A	I	48.63		
	HL-93 (OPERATING)	N/A		1.177	0.000	1.35	0.746	1.901	A	I	48.63	0.918	1.957	A	I	29.18	N/A	0.746	1.177	A	I	48.63		
	HS-20 (INVENTORY)	36.000	②	1.632	58.767	1.75	0.746	2.034	A	I	48.63	0.918	1.884	A	I	29.18	0.80	0.746	1.632	A	I	48.63		
	HS-20 (OPERATING)	36.000		1.632	58.767	1.35	0.746	2.637	A	I	48.63	0.918	2.442	A	I	29.18	N/A	0.746	1.632	A	I	48.63		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.863	52.147	1.40	0.746	6.017	A	I	48.63	0.918	5.633	A	I	29.18	0.80	0.746	3.863	A	I	48.63	
		SNGARBS2	20.000		2.801	56.020	1.40	0.746	4.363	A	I	48.63	0.918	3.996	A	I	29.18	0.80	0.746	2.801	A	I	48.63	
		SNAGRIS2	22.000		2.621	57.669	1.40	0.746	4.083	A	I	48.63	0.918	3.706	A	I	29.18	0.80	0.746	2.621	A	I	48.63	
		SNCOTTS3	27.250		1.920	52.318	1.40	0.746	2.991	A	I	48.63	0.918	2.811	A	I	29.18	0.80	0.746	1.920	A	I	48.63	
		SNAGGRS4	34.925		1.575	54.992	1.40	0.746	2.453	A	I	48.63	0.918	2.327	A	I	29.18	0.80	0.746	1.575	A	I	48.63	
		SNS5A	35.550		1.542	54.809	1.40	0.746	2.402	A	I	48.63	0.918	2.353	A	I	29.18	0.80	0.746	1.542	A	I	48.63	
		SNS6A	39.950		1.402	56.025	1.40	0.746	2.185	A	I	48.63	0.918	2.145	A	I	29.18	0.80	0.746	1.402	A	I	48.63	
	SNS7B	42.000		1.335	56.072	1.40	0.746	2.08	A	I	48.63	0.918	2.104	A	I	29.18	0.80	0.746	1.335	A	I	48.63		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.707	56.316	1.40	0.746	2.658	A	I	48.63	0.918	2.554	A	I	29.18	0.80	0.746	1.707	A	I	48.63	
		TNT4A	33.075		1.711	56.584	1.40	0.746	2.665	A	I	48.63	0.918	2.492	A	I	29.18	0.80	0.746	1.711	A	I	48.63	
		TNT6A	41.600		1.387	57.716	1.40	0.746	2.161	A	I	48.63	0.918	2.235	A	I	29.18	0.80	0.746	1.387	A	I	48.63	
		TNT7A	42.000		1.388	58.309	1.40	0.746	2.163	A	I	48.63	0.918	2.191	A	I	29.18	0.80	0.746	1.388	A	I	48.63	
		TNT7B	42.000		1.422	59.708	1.40	0.746	2.215	A	I	48.63	0.918	2.056	A	I	29.18	0.80	0.746	1.422	A	I	48.63	
		TNAGRIT4	43.000		1.363	58.619	1.40	0.746	2.124	A	I	48.63	0.918	1.992	A	I	29.18	0.80	0.746	1.363	A	I	48.63	
TNAGT5A		45.000		1.290	58.072	1.40	0.746	2.010	A	I	48.63	0.918	1.976	A	I	29.18	0.80	0.746	1.290	A	I	48.63		
TNAGT5B	45.000	③	1.279	57.577	1.40	0.746	1.993	A	I	48.63	0.918	1.895	A	I	29.18	0.80	0.746	1.279	A	I	48.63			

NOTES:

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

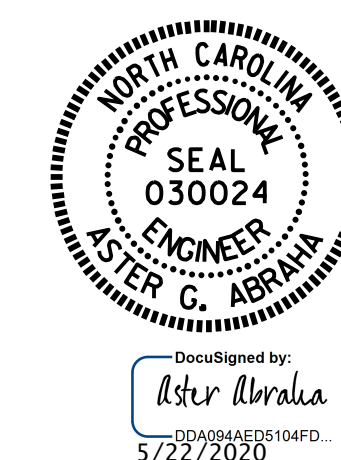
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

#	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-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-



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

ASSEMBLED BY : A. Y. GODFREY DATE : 04/2020
 CHECKED BY : A. ABRAHA DATE : 04/2020
 DRAWN BY : MAA 1/08
 CHECKED BY : GM/DI 2/08

REV. 11/2/08RR MAA/GM
 REV. 10/1/11 MAA/GM
 REV. 12/1/17 MAA/THC

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

NOTES

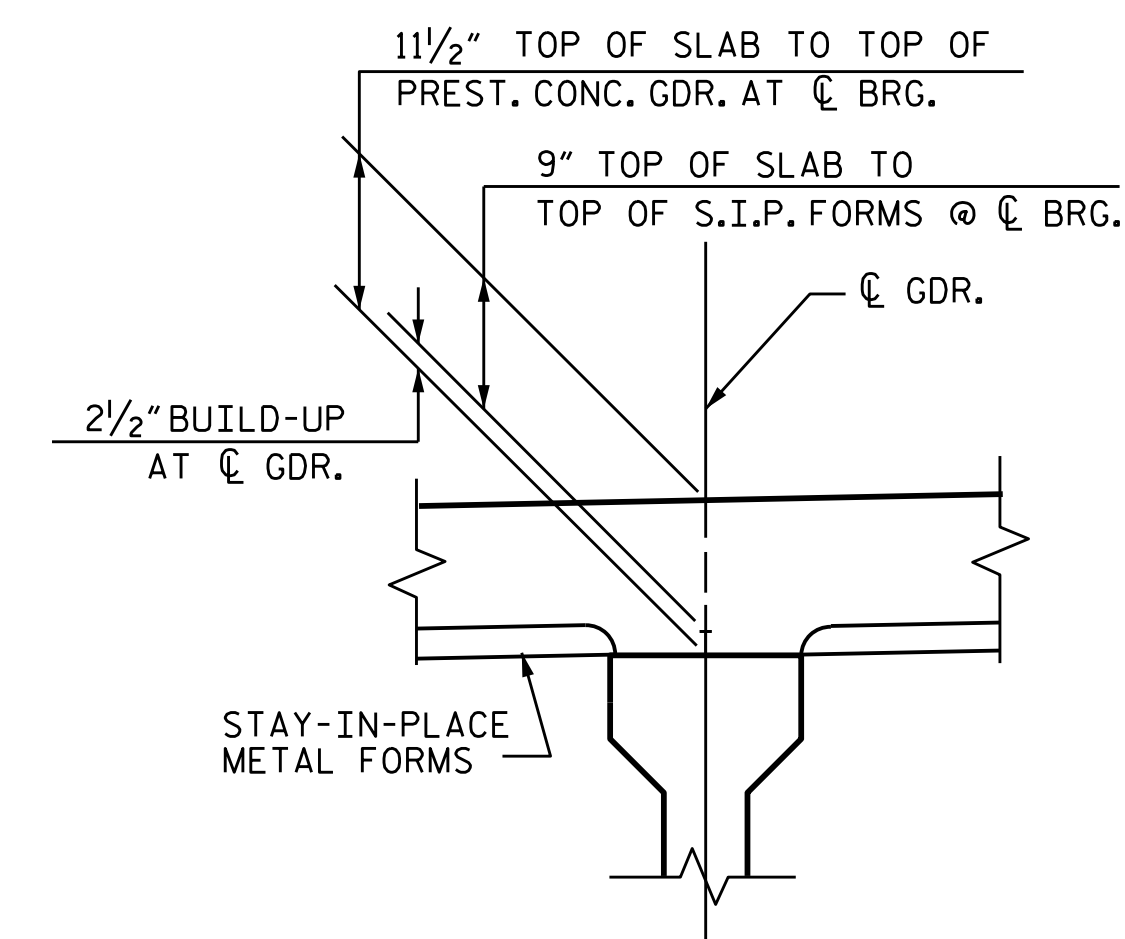
PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2 1/2"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

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

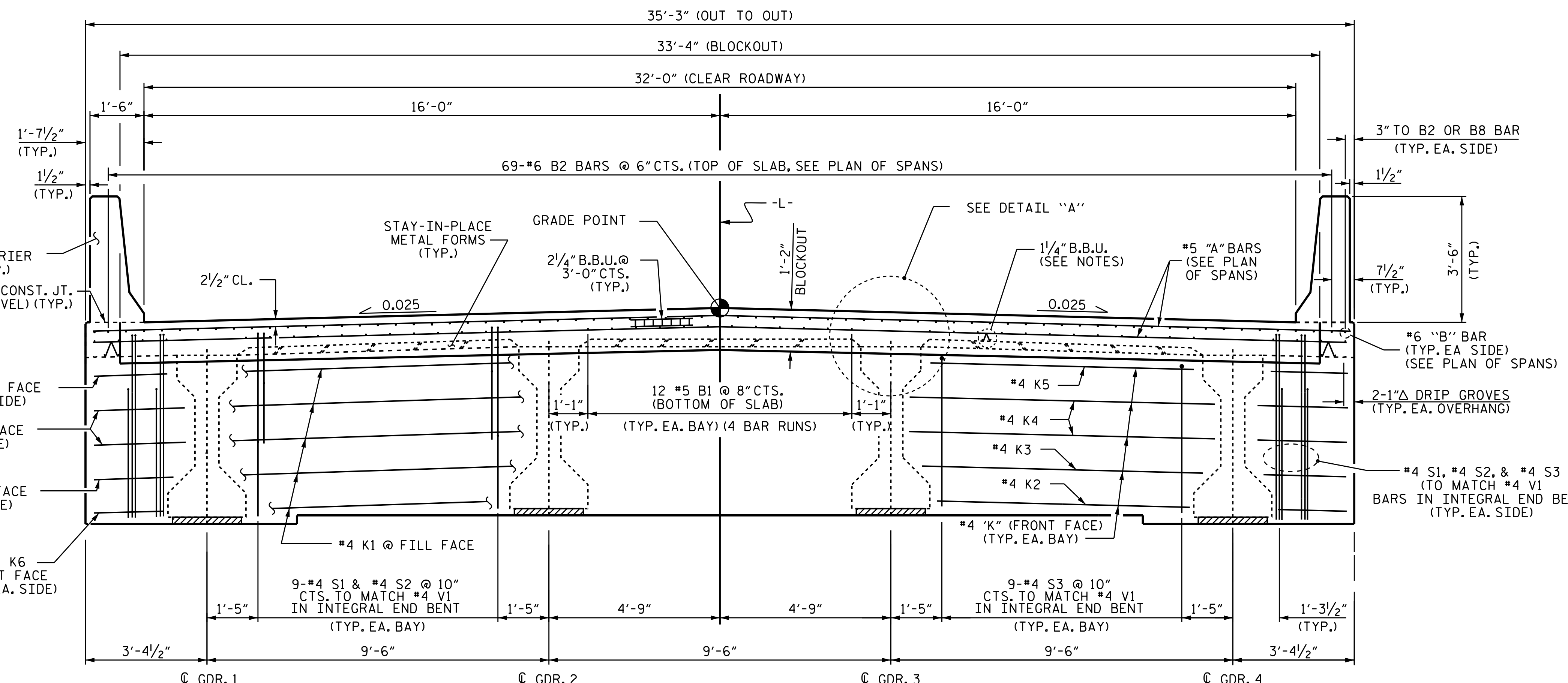
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

FOR INTERMEDIATE STEEL DIAPHRAGMS DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS SHEET.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE SUPPORT ANGLES WITHIN THE LINK SLAB AREAS. SEE "PLAN OF SPANS" SHEETS FOR LOCATION.

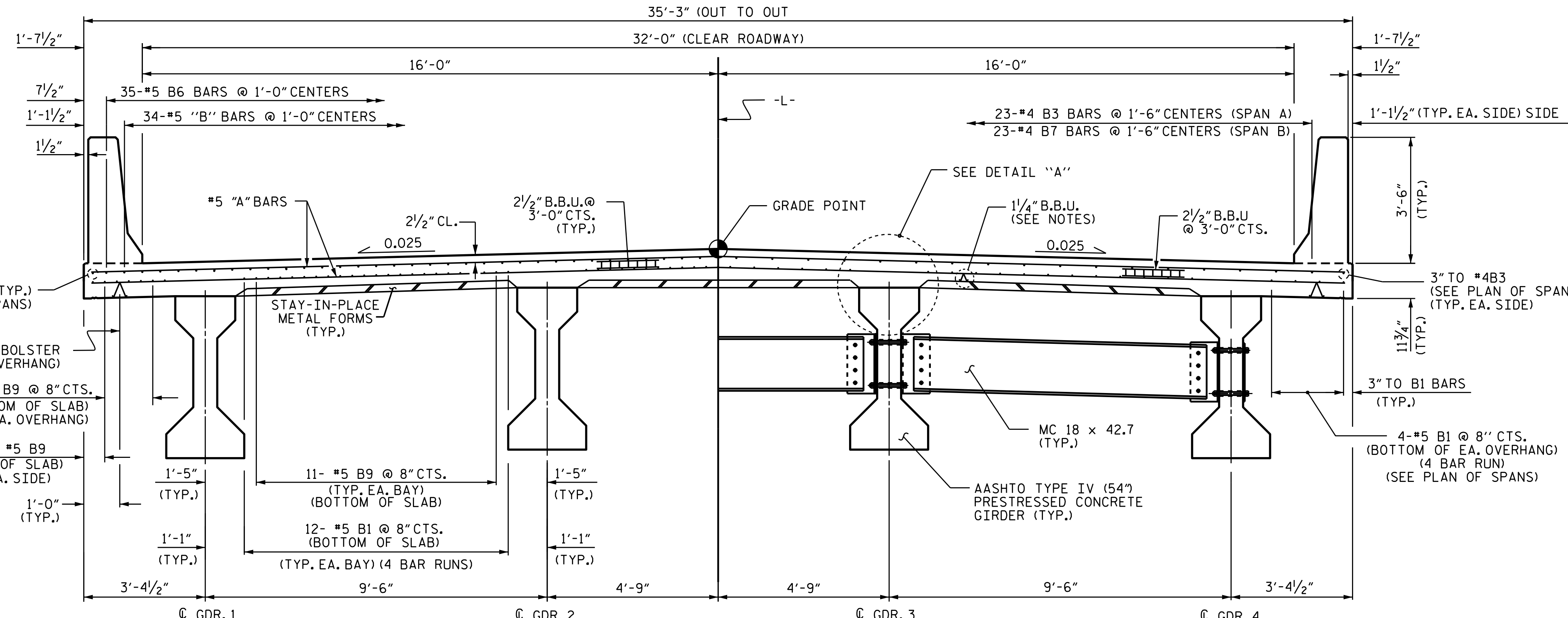


DETAIL "A"



TYPICAL SECTION @ INTEGRAL END BENTS

SHOWING ABUTMENT WALL AT FILL FACE OF END BENTS. WINGS NOT SHOWN FOR CLARITY.



HALF SECTION @ INTERMEDIATE DIAPHRAGM

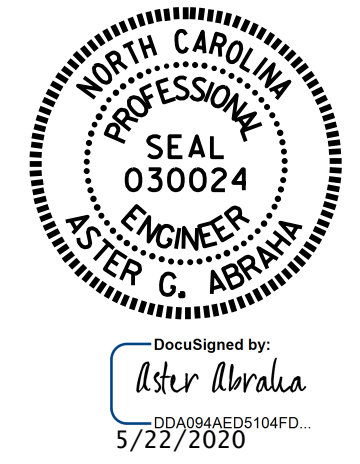
HALF SECTION - LINK SLAB @ BENT

TYPICAL SECTION

DRAWN BY : A. Y. GODFREY DATE : 03/2020
 CHECKED BY : S. WANCE DATE : 04/2020
 DESIGN ENGINEER OF RECORD : M. M. AHMED DATE : 11/2019

22-MAY-2020 10:07
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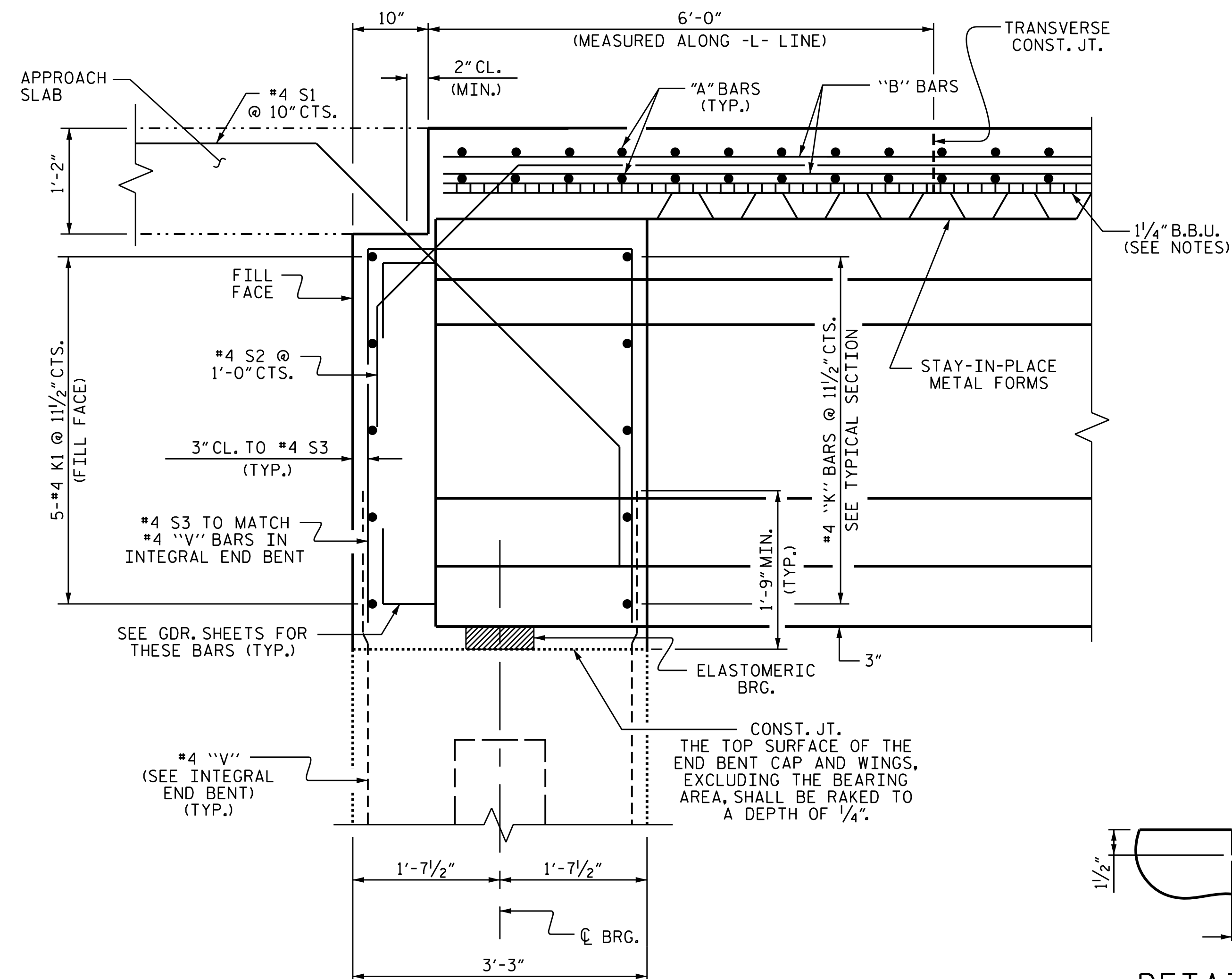
PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 2

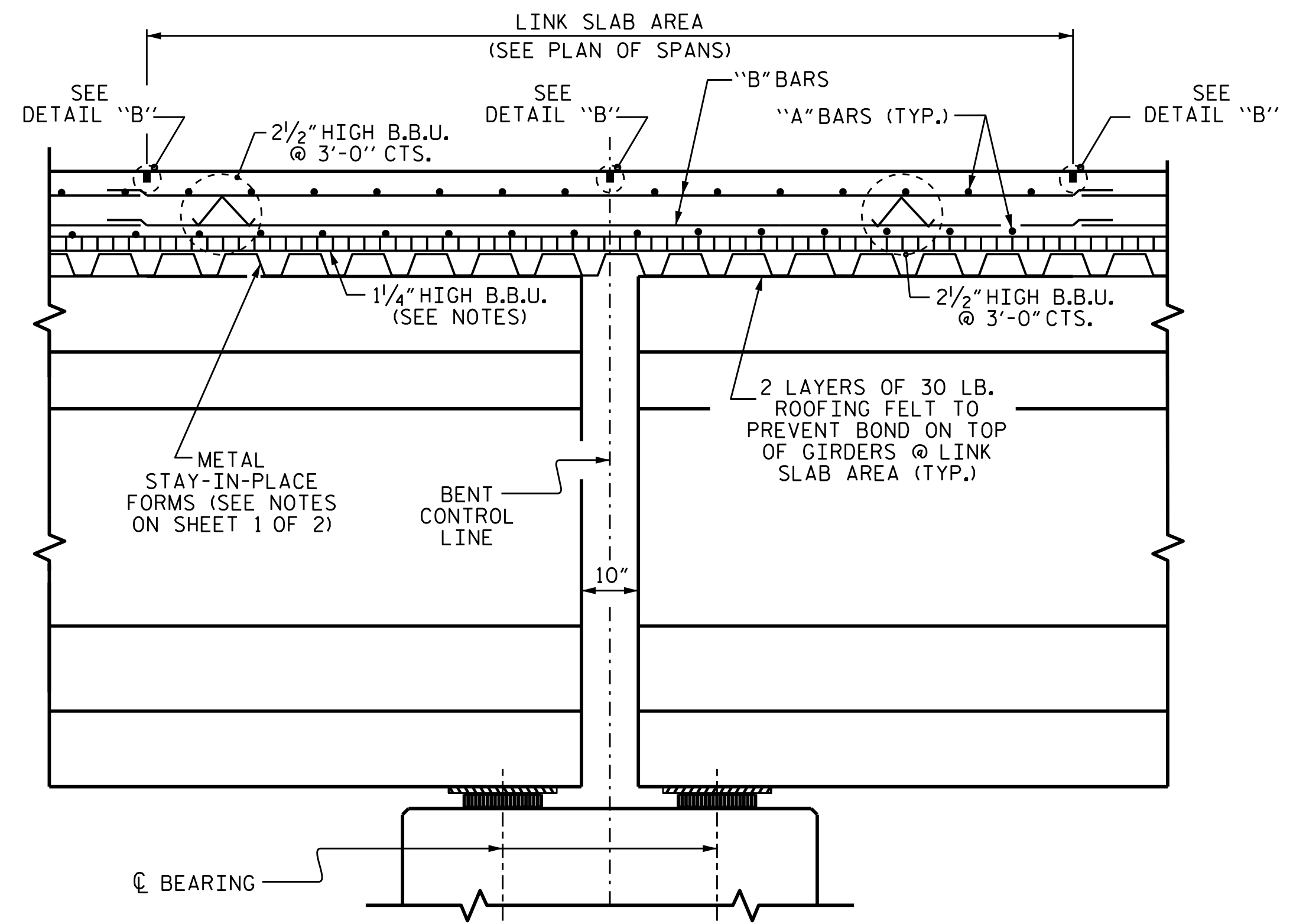
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
TYPICAL SECTION
DETAILS

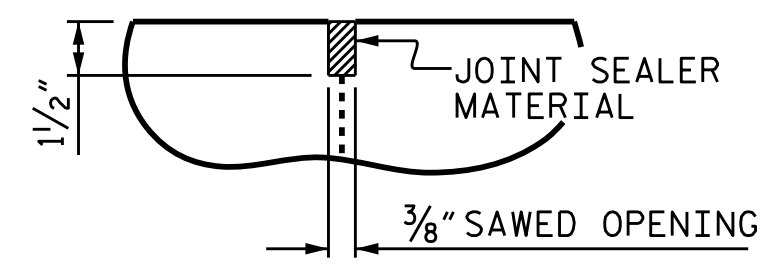
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			30



SECTION @ INTEGRAL END BENT

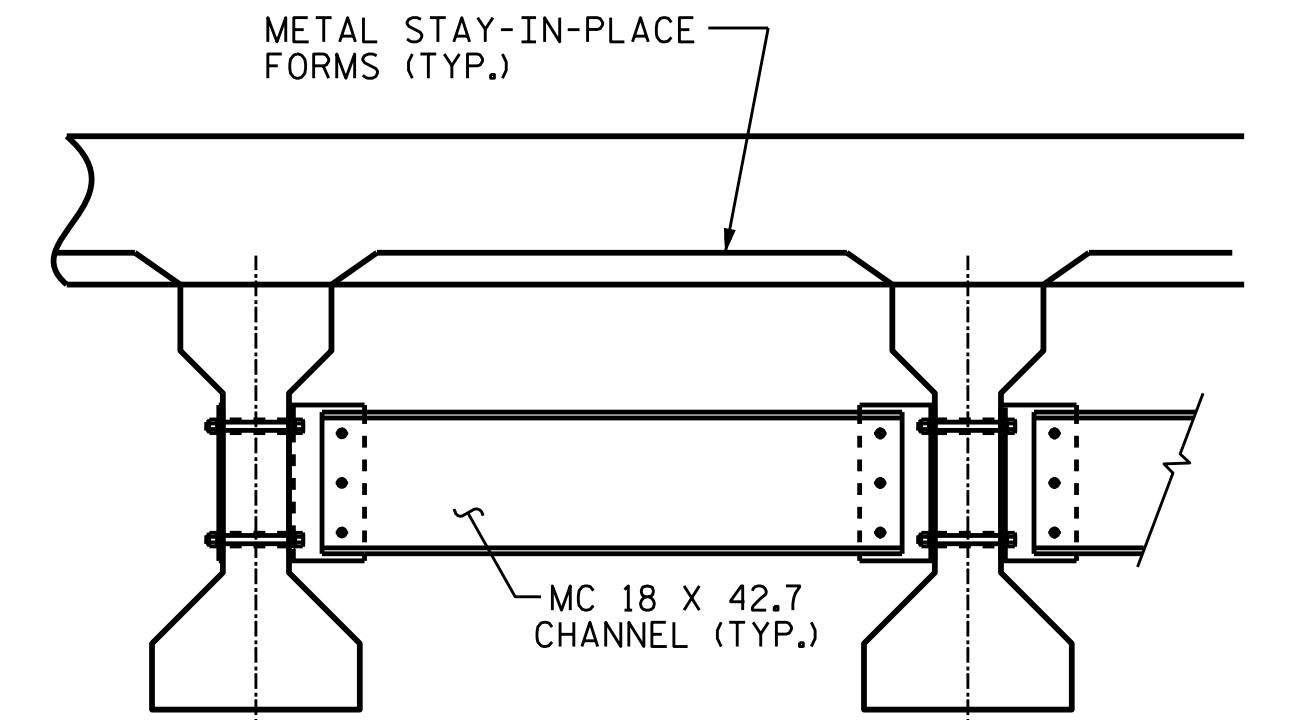


SECTION @ LINK SLAB



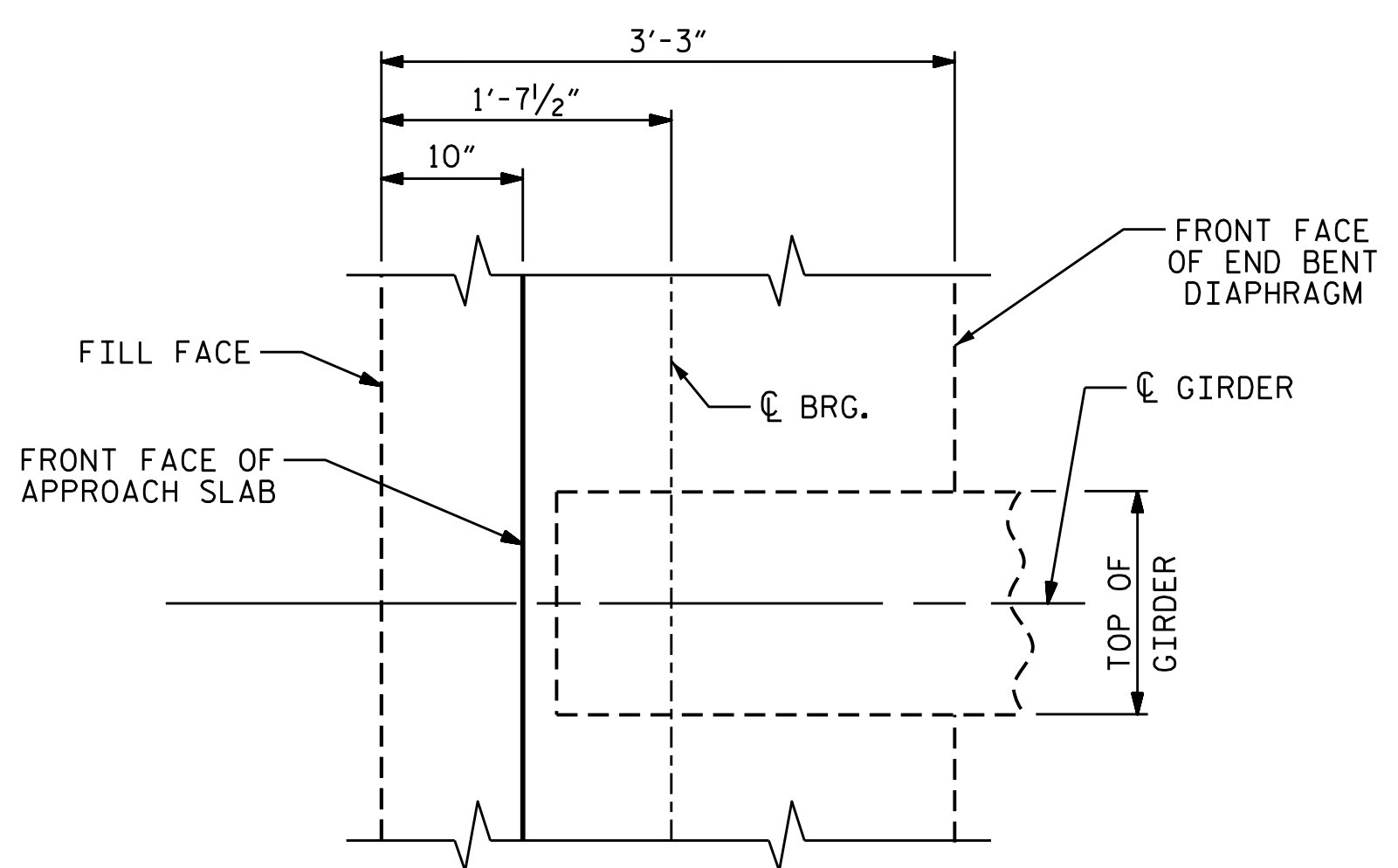
DETAIL "B"

A 1/2" DEEP CONTRACTION JOINT AT BENT CONTROL LINE AND EDGES OF LINK SLAB AREA SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

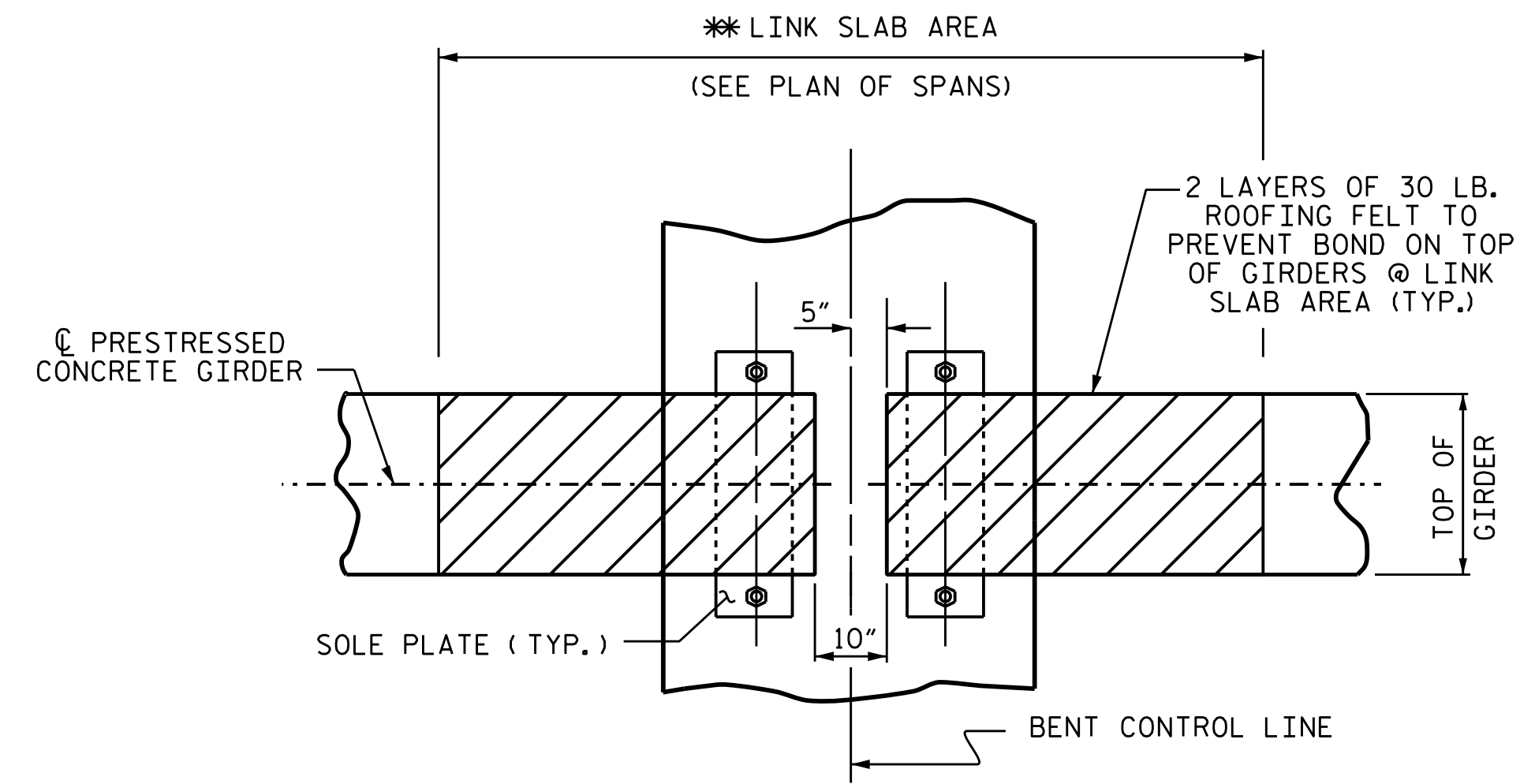


TYPICAL INTERMEDIATE DIAPHRAGM

SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDER" SHEET FOR DETAILS.



PLAN @ INTEGRAL END BENT



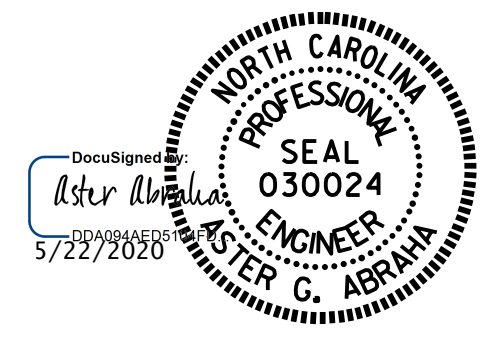
PLAN @ BENT

* THE TOP OF THE GIRDER IN THE AREA OF THE LINK SLAB SHALL BE SMOOTH AND FREE OF STIRRUPS OR ANCHOR STUDS.

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 2

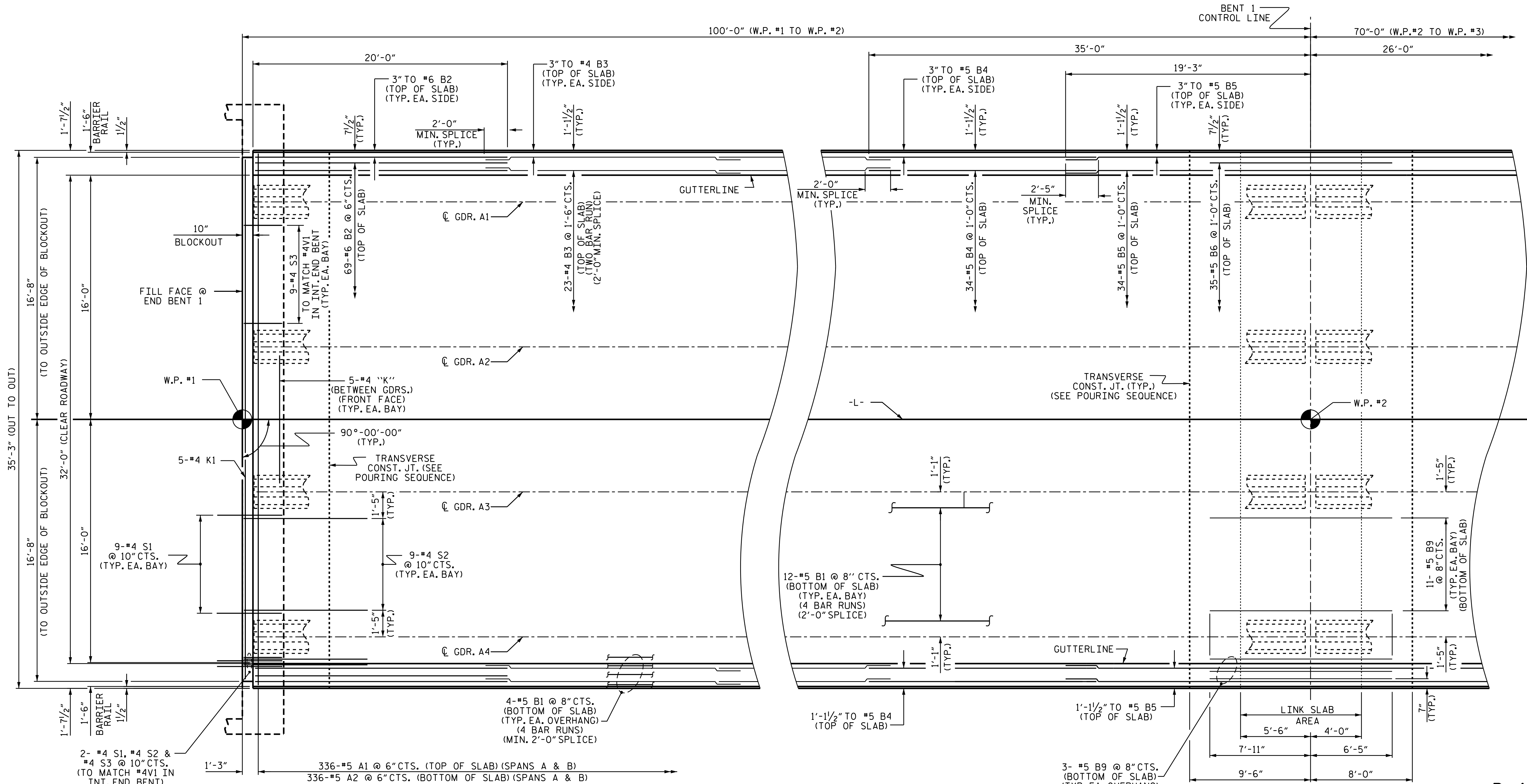
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS



DRAWN BY: A. Y. GODFREY DATE: 03/2020
 CHECKED BY: S. WANCE DATE: 04/2020
 DESIGN ENGINEER OF RECORD: M. M. AHMED DATE: 11/2019

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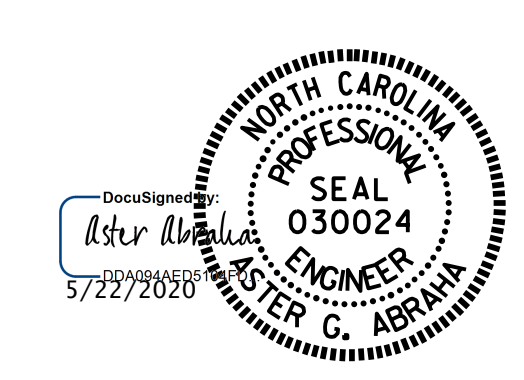
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			30



PLAN OF SPAN "A"

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 2

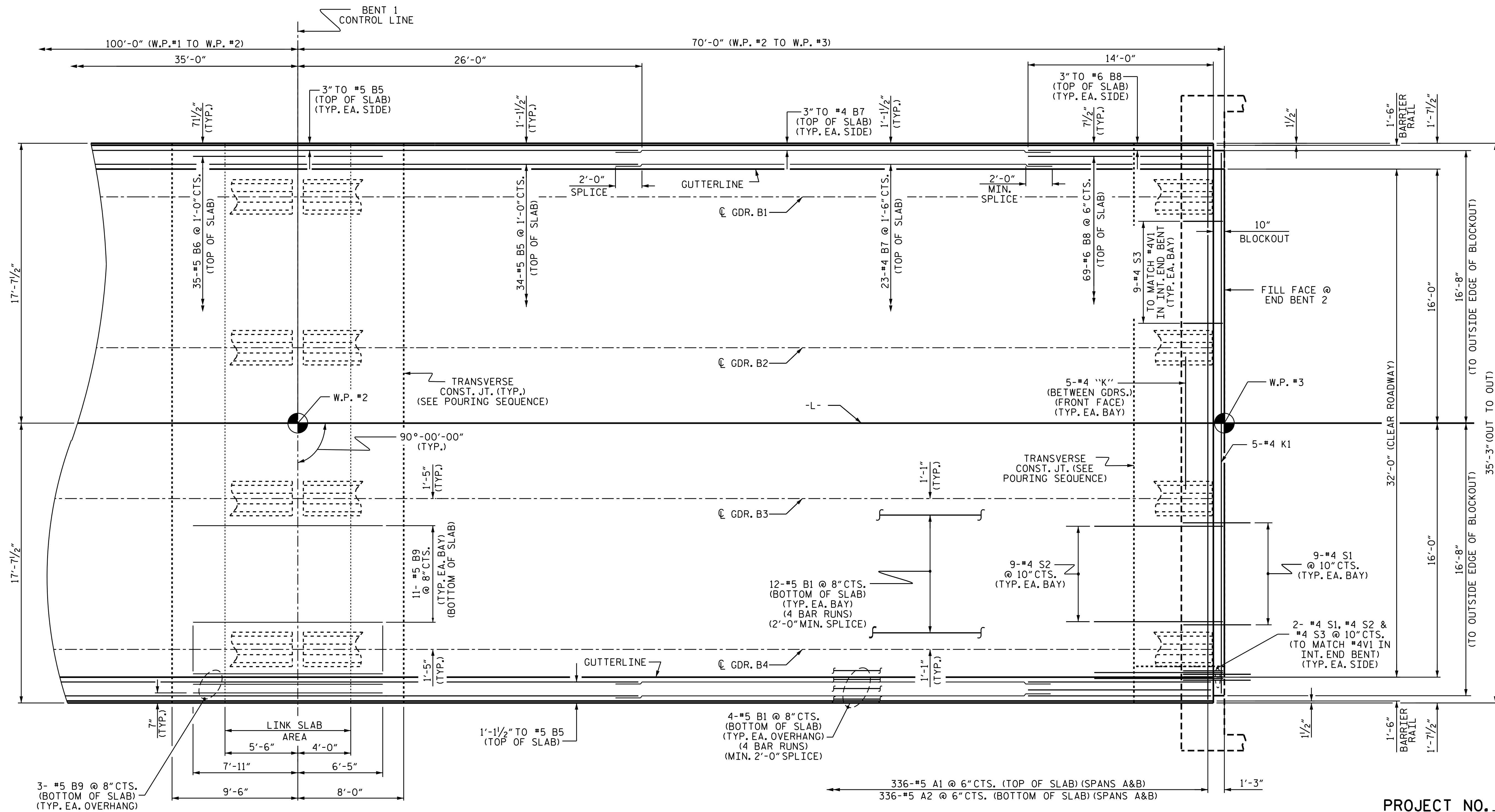


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF SPANS

DRAWN BY : A. Y. GODFREY DATE : 03/2020
 CHECKED BY : S. WANCE DATE : 04/2020
 DESIGN ENGINEER OF RECORD: M. M. AHMED DATE : 11/2019

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			30



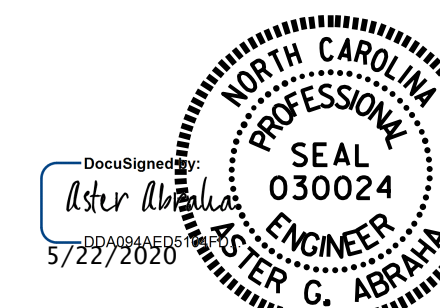
PLAN OF SPAN "B"

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPANS

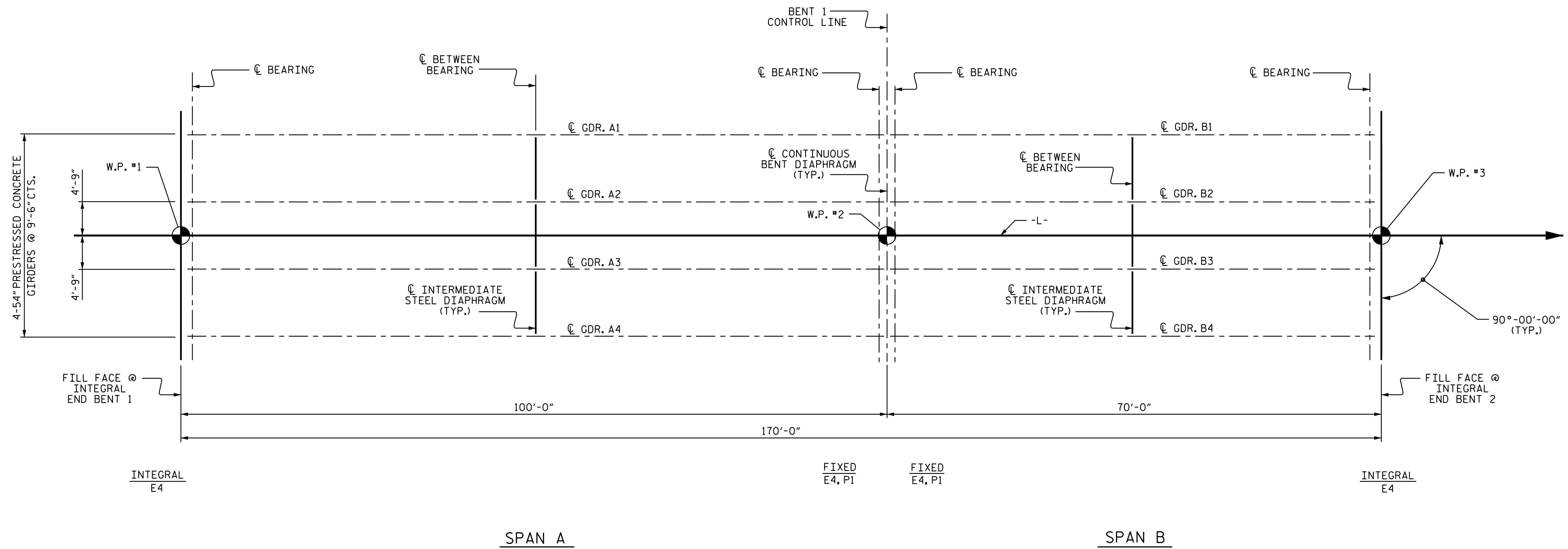


DRAWN BY : A. Y. GODFREY DATE : 03/2020
 CHECKED BY : S. WANCE DATE : 04/2020
 DESIGN ENGINEER OF RECORD: M. M. AHMED DATE : 11/2019

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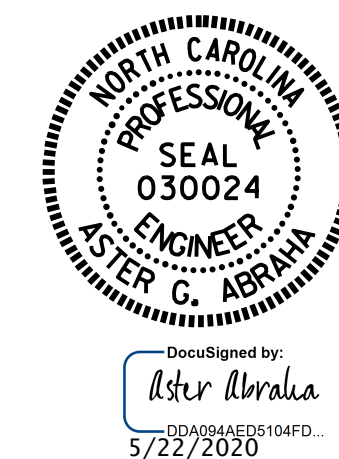
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			30



GIRDER LAYOUT

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-



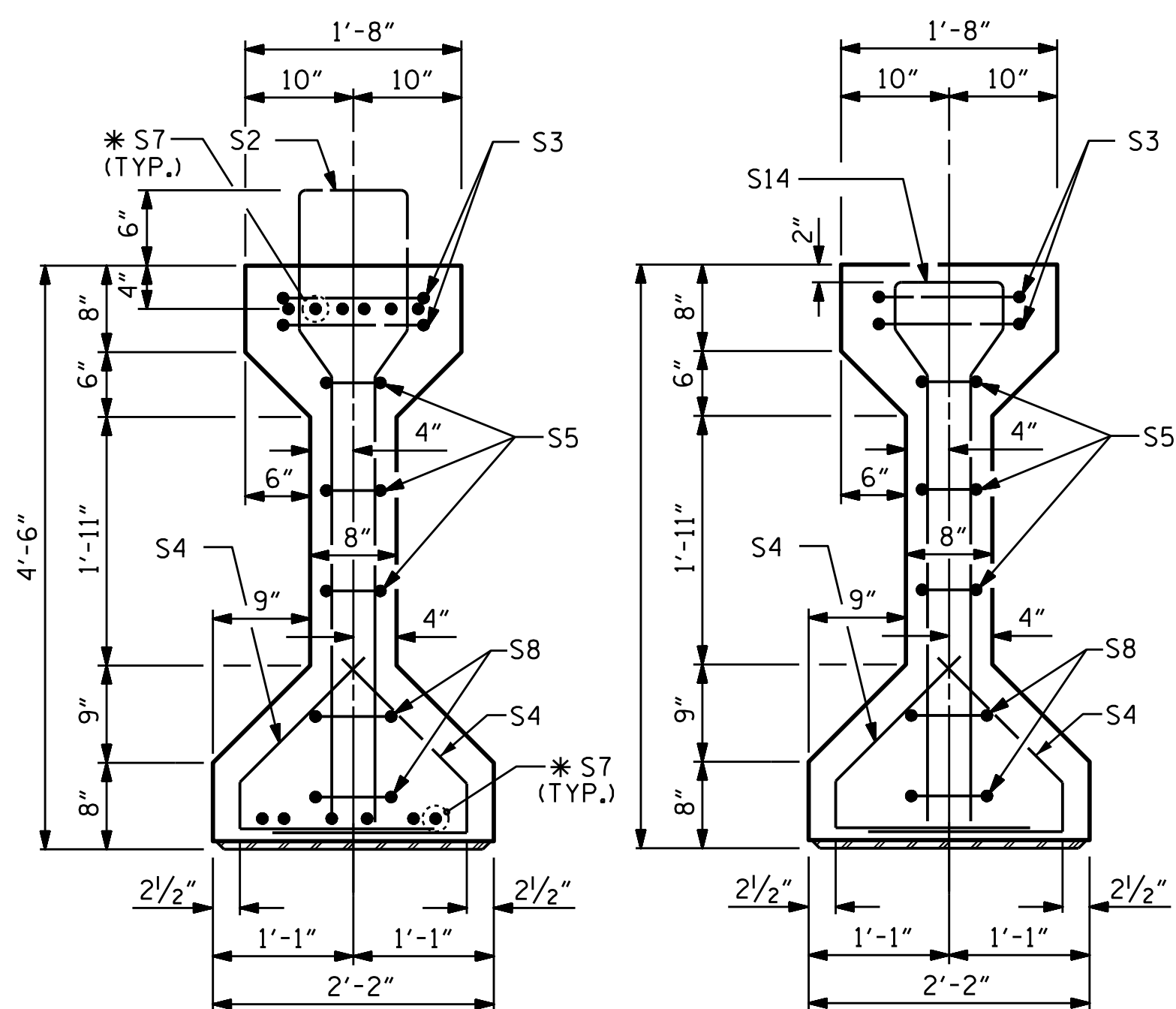
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 GIRDER LAYOUT**

DRAWN BY : M. AHMED DATE : 11/14/19
 CHECKED BY : A. Y. GODFREY DATE : 01/2020
 DESIGN ENGINEER OF RECORD: M. AHMED DATE : 11/2019

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

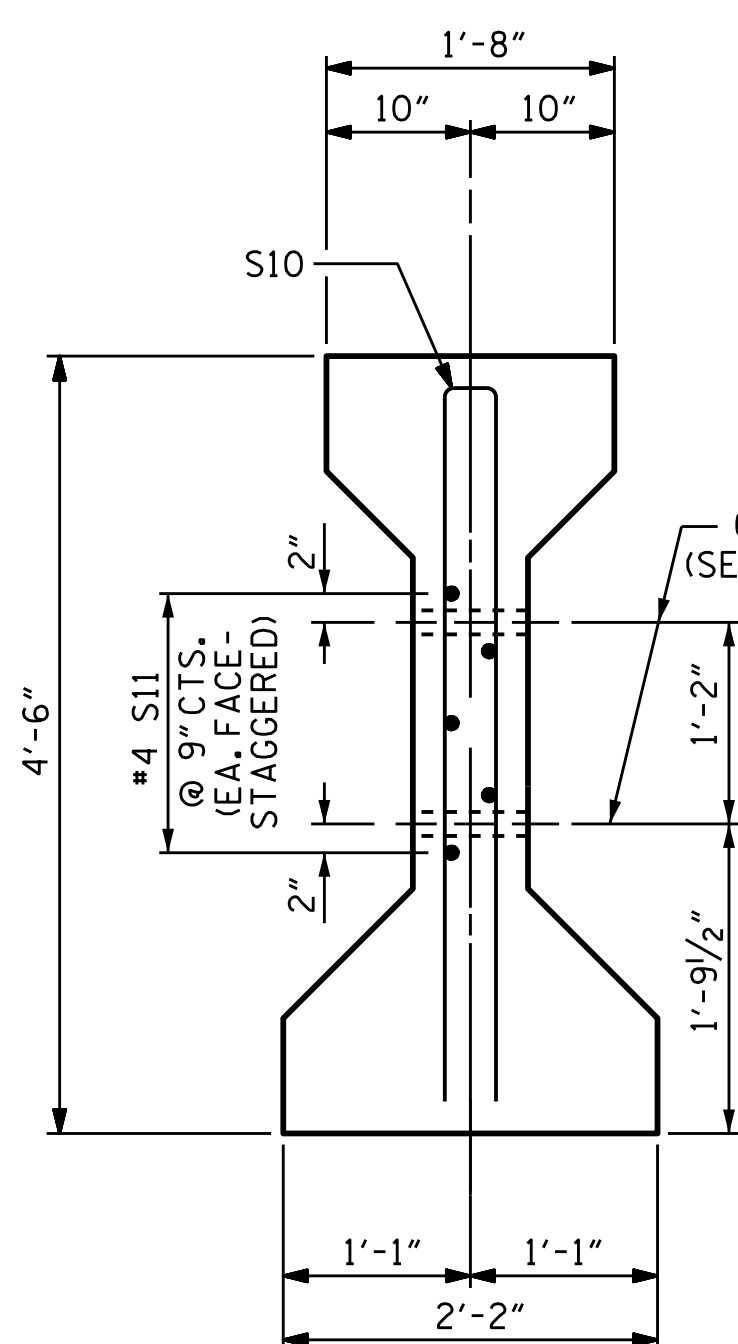
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 30
2			4			



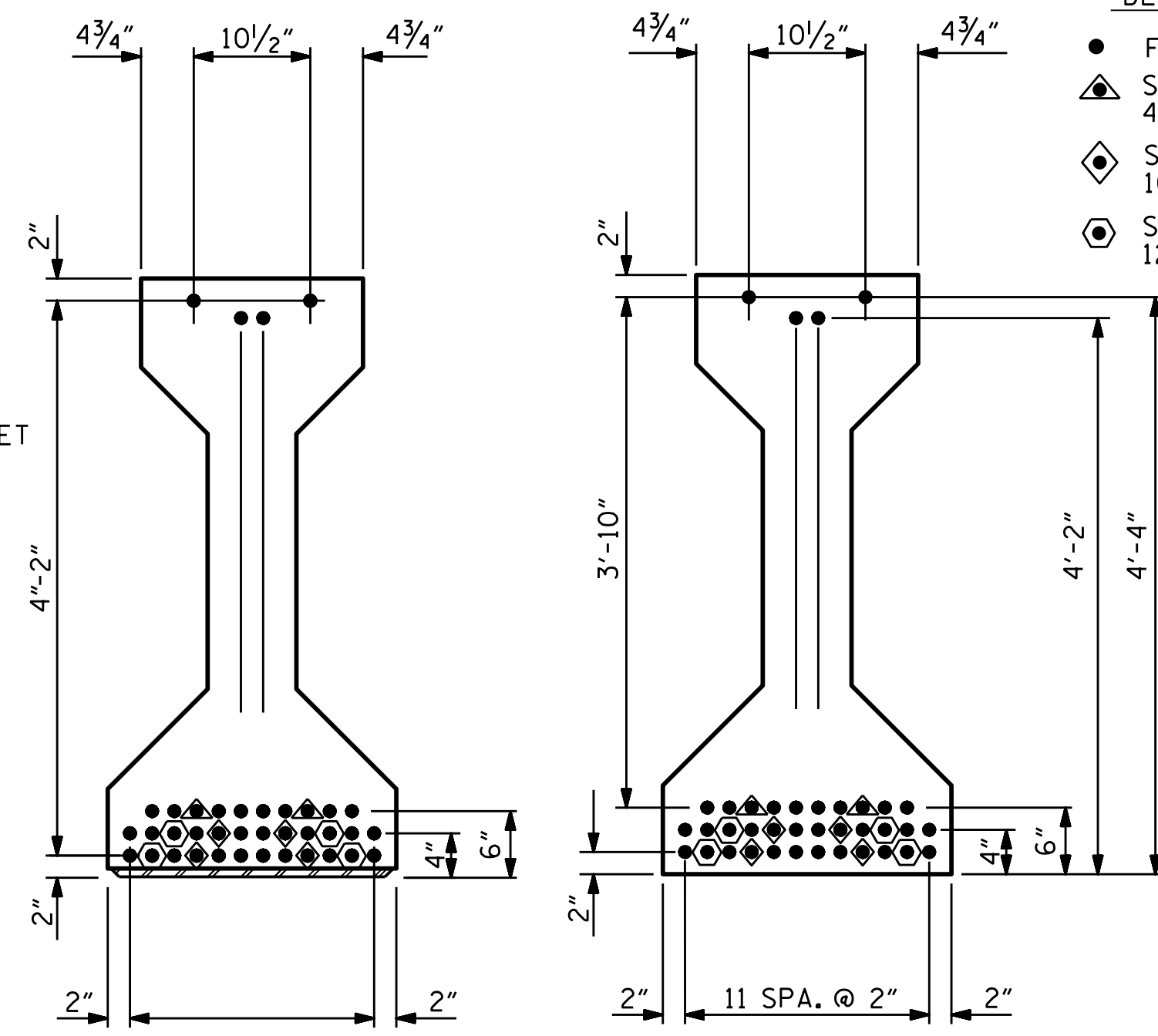
SECTION A-A

SECTION B-B

* FOR S7 BARS, SEE
DETAIL "A" OF
PRESTRESSED
CONCRETE GIRDER
CONTINUOUS FOR LIVE
LOAD DETAILS
AND DEFLECTIONS
SHEET



SECTION C-C
(S1 BARS NOT SHOWN)



AT END OF GIRDER AT C OF GIRDER
0.6" Ø LOW RELAXATION STRAND LAYOUT
(38 STRANDS REQUIRED, ALL STRAIGHT)

DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

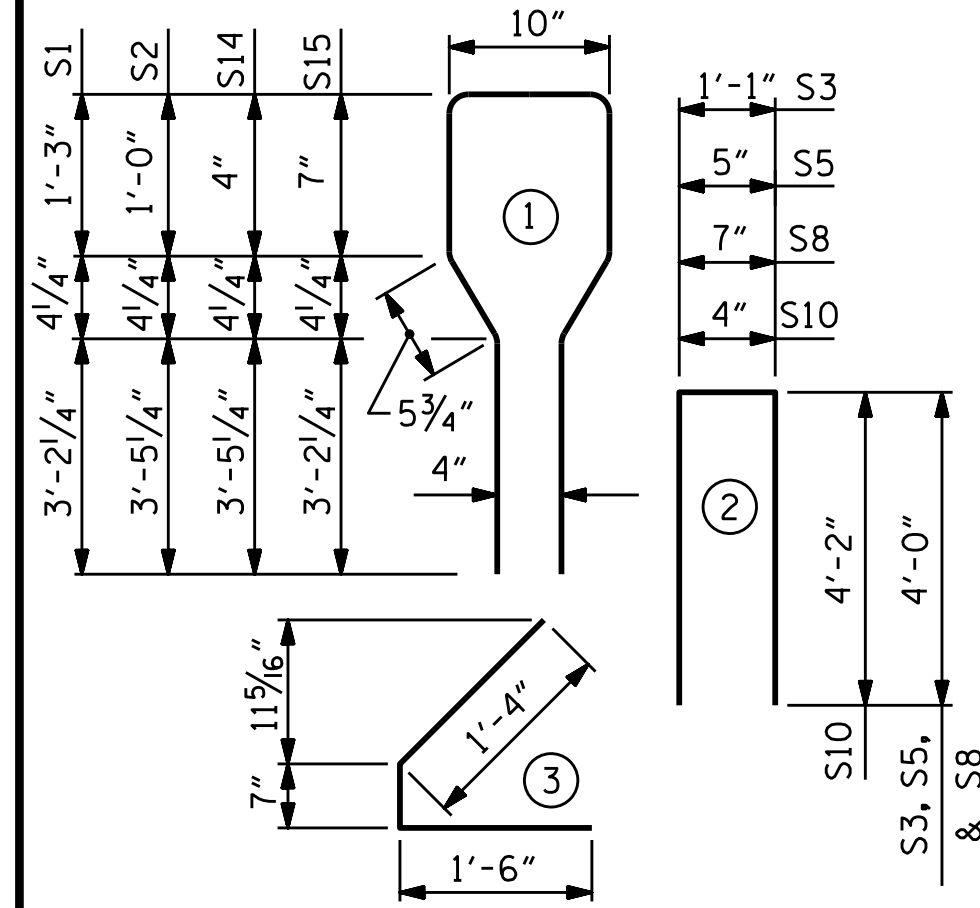
0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	195	#4	1	10'-8"	1389
S2	6	#6	1	10'-8"	96
S3	4	#4	2	9'-1"	24
S4	84	#4	3	3'-5"	192
S5	6	#4	2	8'-5"	34
* S7	12	#5	STR	3'-8"	46
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23
S13	1	#3	STR	1'-4"	1
S14	6	#6	1	9'-4"	84
S15	9	#4	1	9'-4"	56

* NOTE: S7 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

QUANTITIES FOR ONE GIRDER

SPAN A	REINFORCING STEEL	9000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPAN A	1986	20.1	38

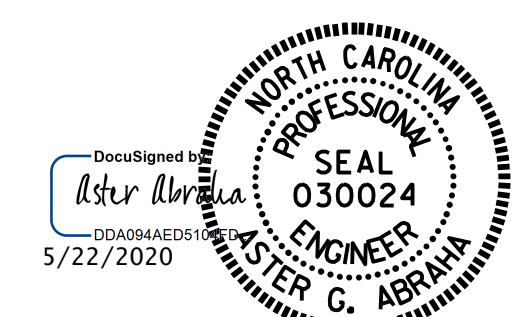
GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	98'-8"	394'-8"

PROJECT NO. B-4931
EDGEcombe COUNTY
STATION: 16+99.00 -L-

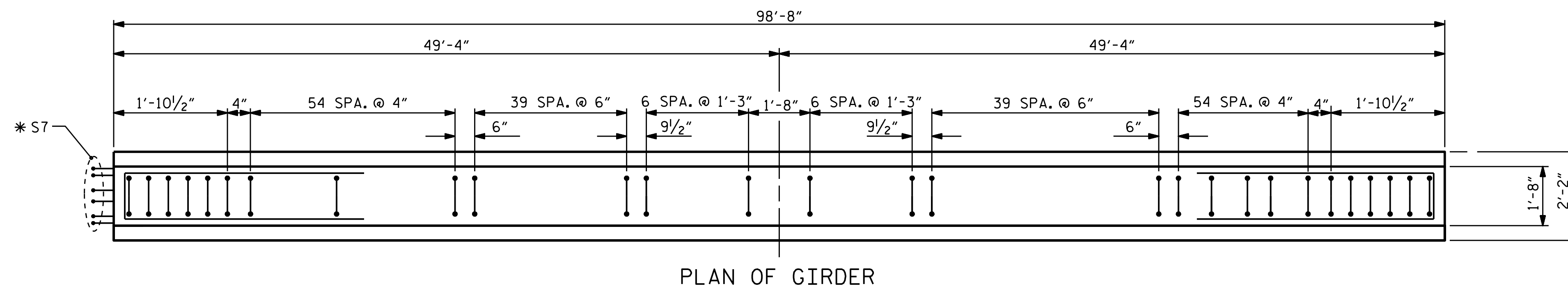
SHEET 1 OF 3

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



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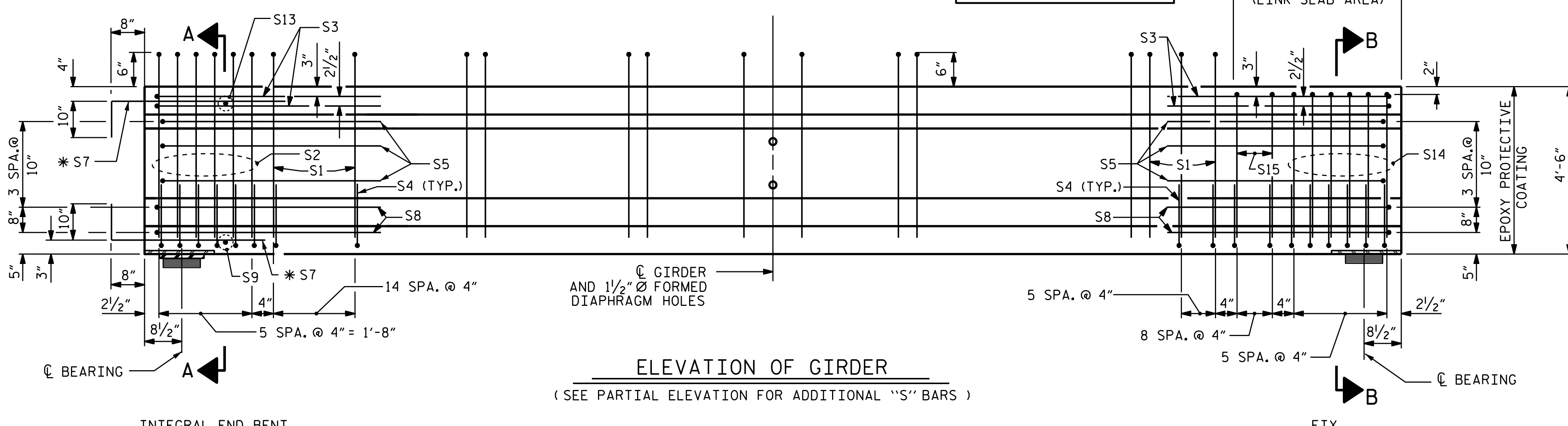
REVISIONS						SHEET NO. S-10 TOTAL SHEETS 30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



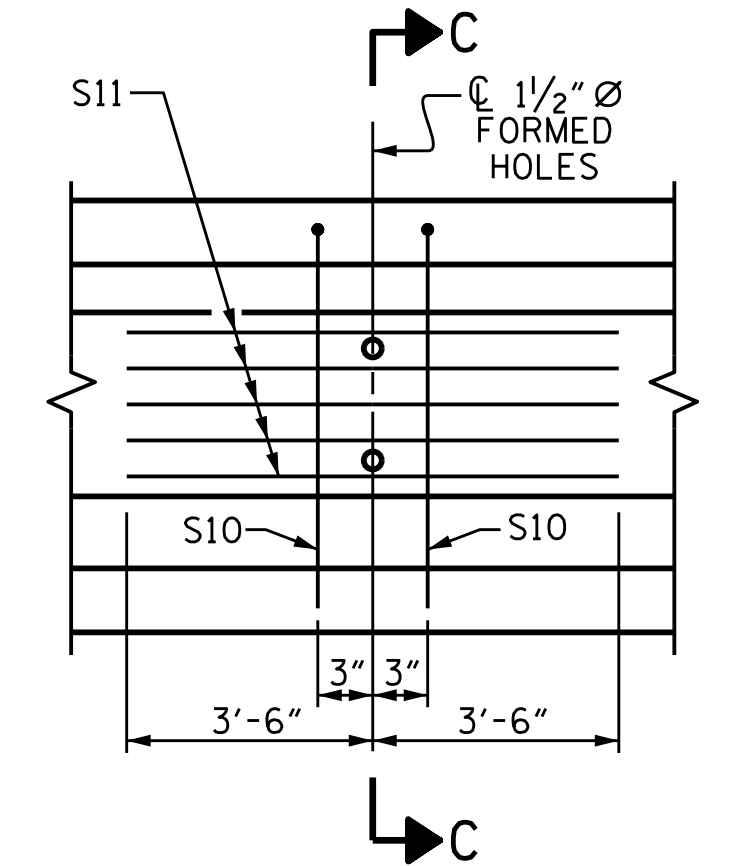
PLAN OF GIRDER

** DO NOT RAKE TOP OF GIRDER IN THIS AREA

** 5'-1" (LINK SLAB AREA)



ELEVATION OF GIRDER
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

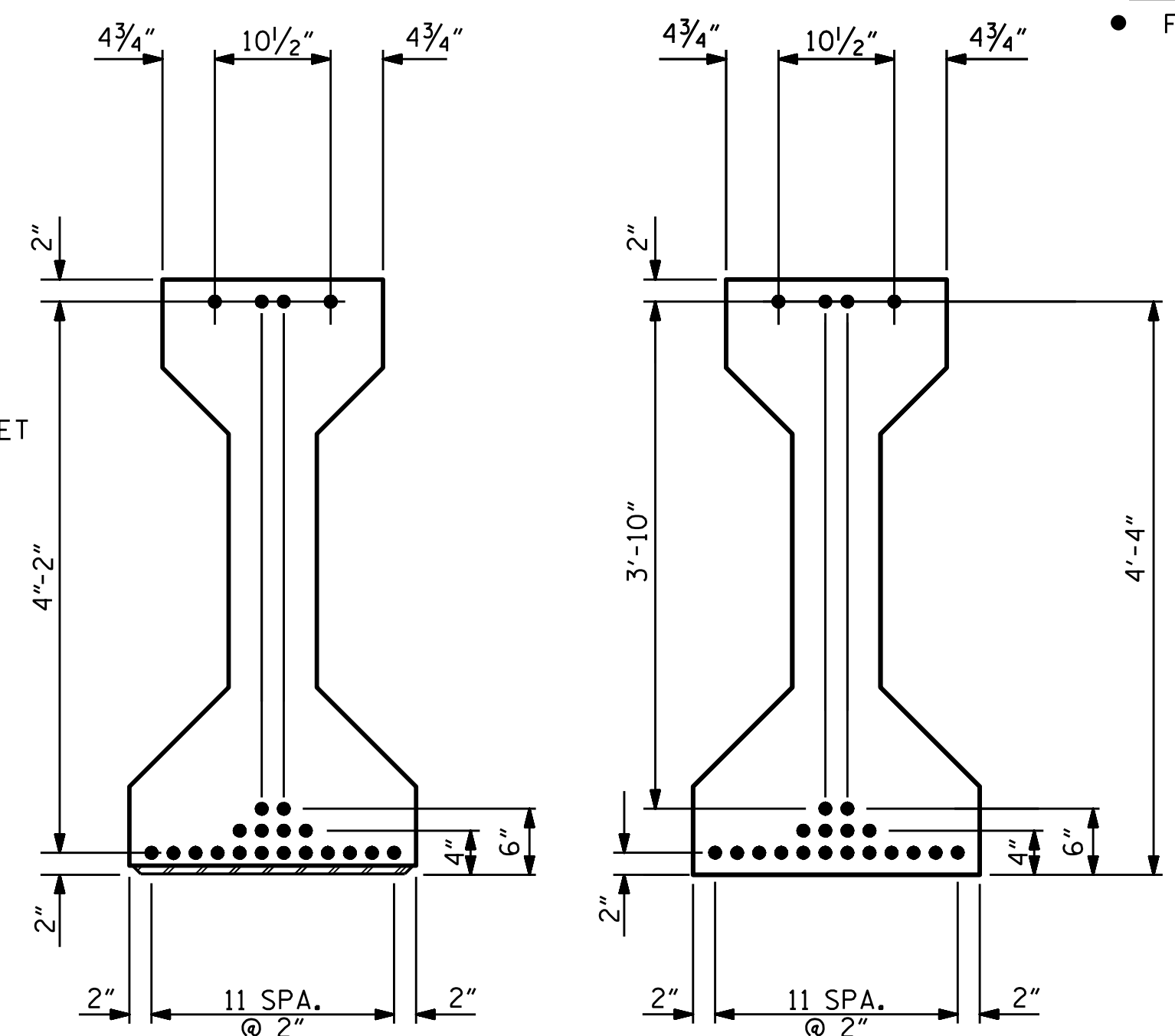
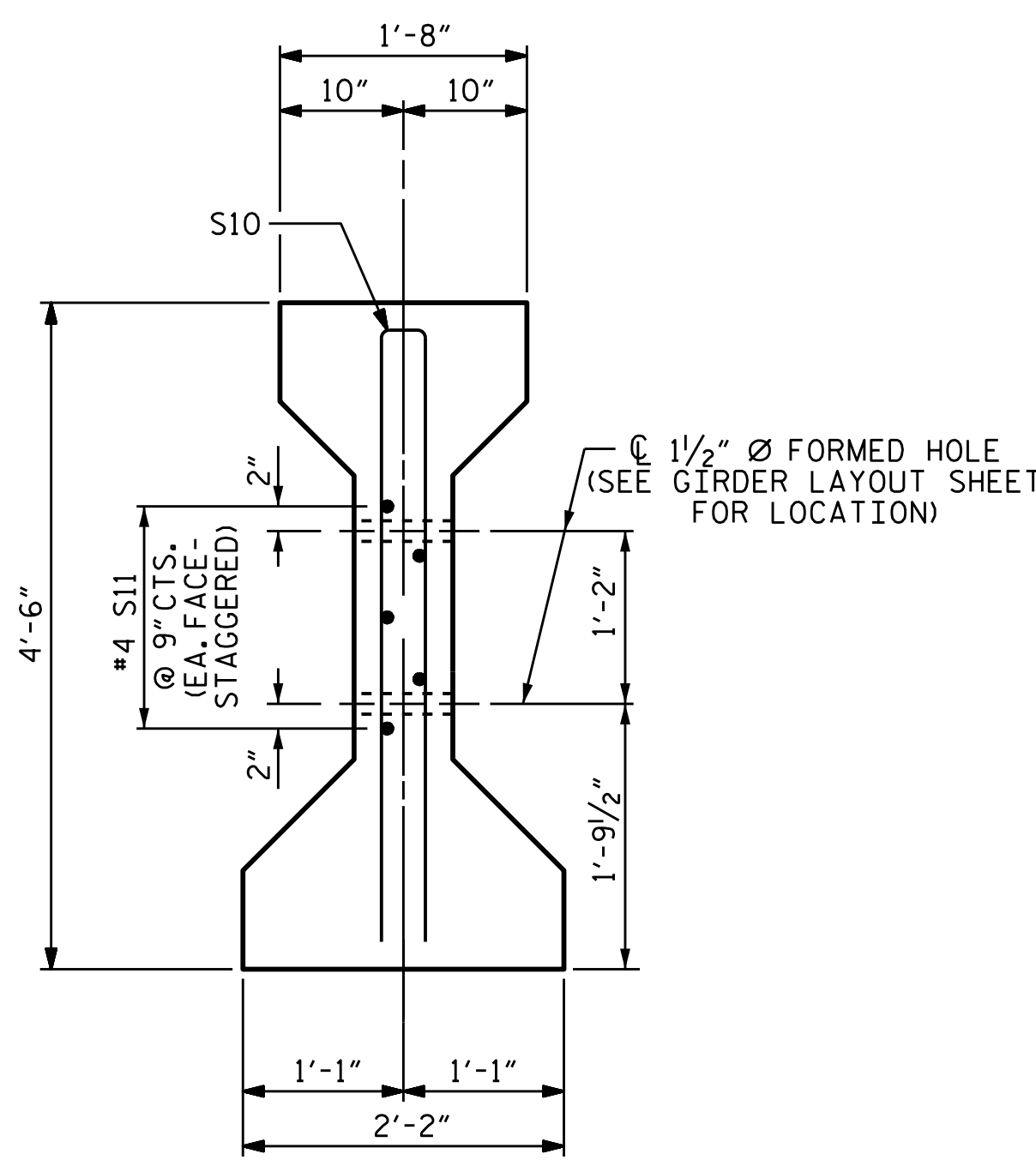
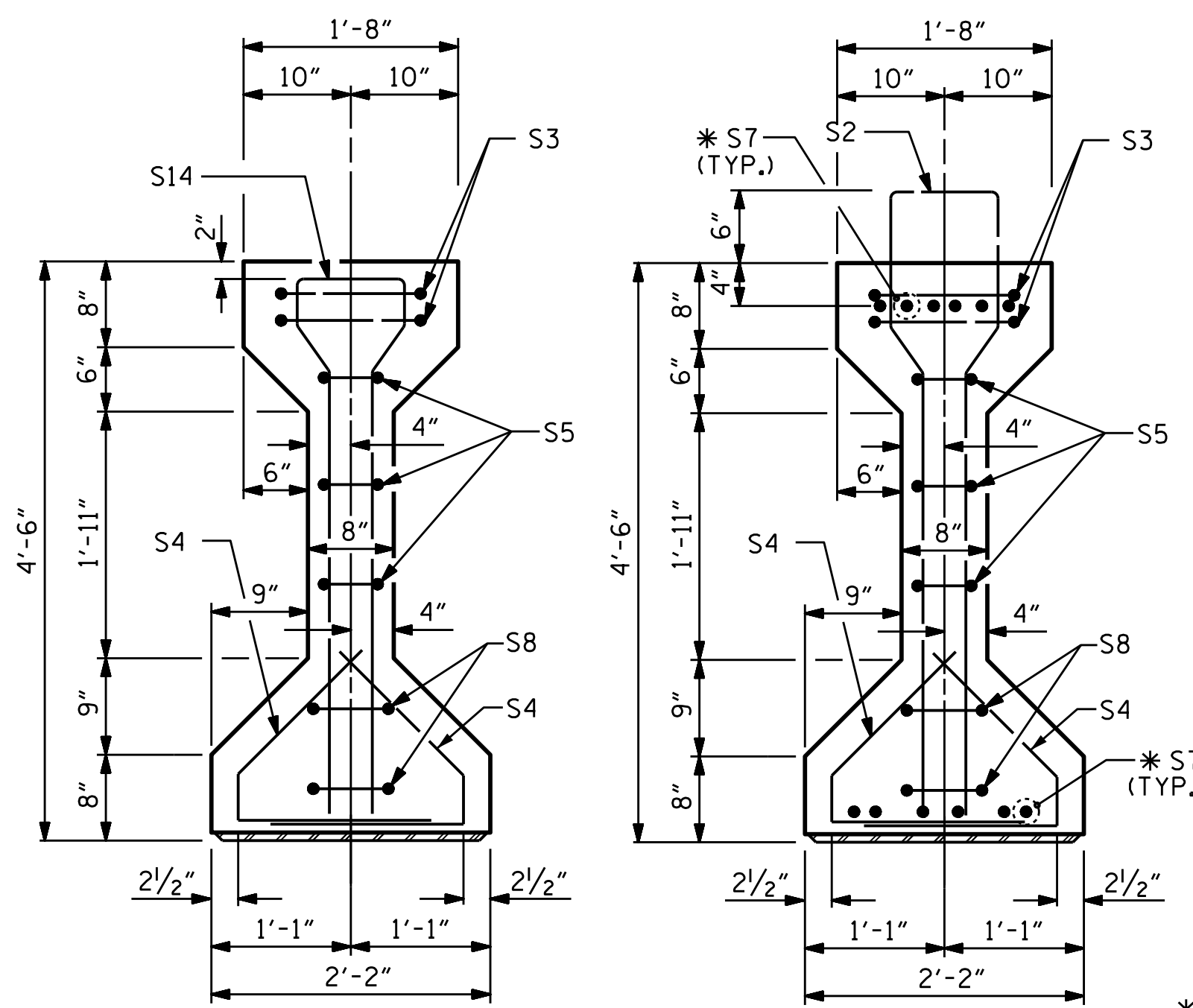


PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS

ASSEMBLED BY : S. WANCE/A.Y.GODFREY	DATE : 05/2020
CHECKED BY : A.Y.GODFREY	DATE : 05/2020
DRAWN BY : ELR 8/91	REV. 10/1/11 MAA/GM
CHECKED BY : GRP 8/91	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

DEVELOPING LEGEND
 • FULLY BONDED STRANDS

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

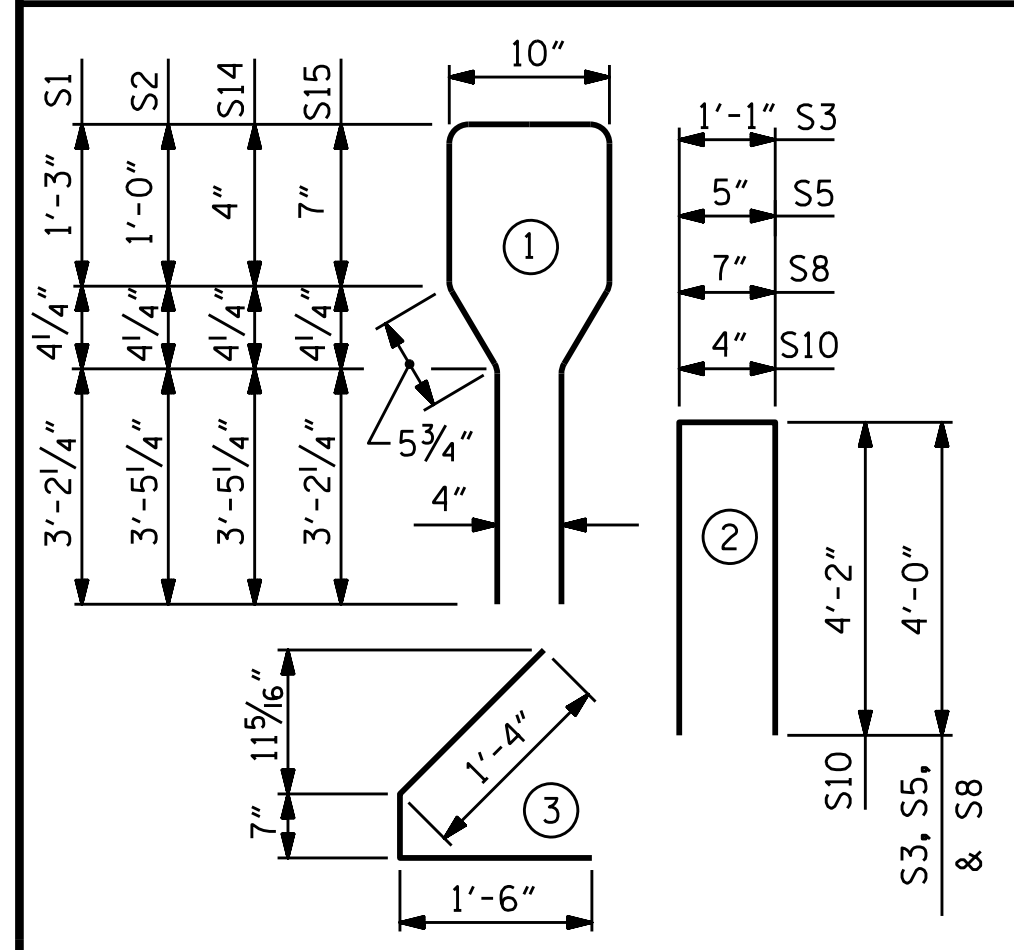


REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	97	#4	1	10'-8"	691
S2	6	#6	1	10'-8"	96
S3	4	#4	2	9'-1"	24
S4	64	#4	3	3'-5"	146
S5	6	#4	2	8'-5"	34
* S7	12	#5	STR	3'-8"	46
S8	4	#4	2	8'-7"	23
S9	1	#3	STR	1'-10"	1
S10	2	#5	2	8'-8"	18
S11	5	#4	STR	7'-0"	23
S13	1	#3	STR	1'-4"	1
S14	6	#6	1	9'-4"	84
S15	3	#4	1	9'-4"	19

* NOTE: S7 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

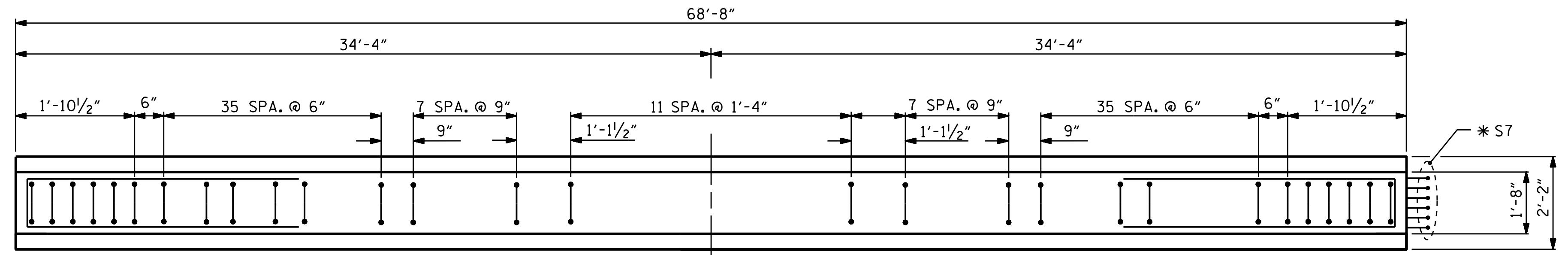
SPAN B	REINFORCING STEEL	7000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPAN B	1205	14.0	22

GIRDERS REQUIRED

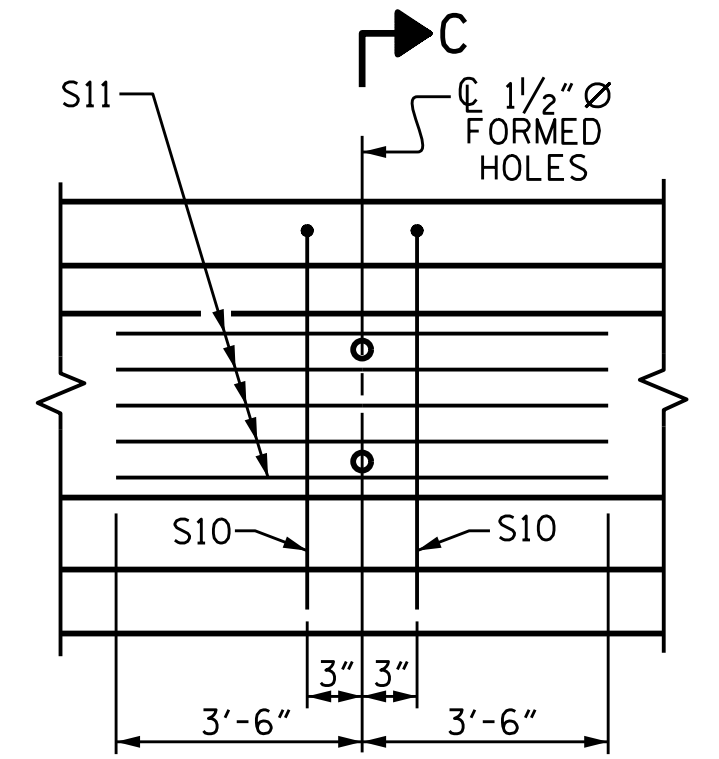
NUMBER	LENGTH	TOTAL LENGTH
4	68'-8"	274'-8"

* FOR S7 BARS, SEE DETAIL 'A' OF PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS AND DEFLECTIONS SHEET

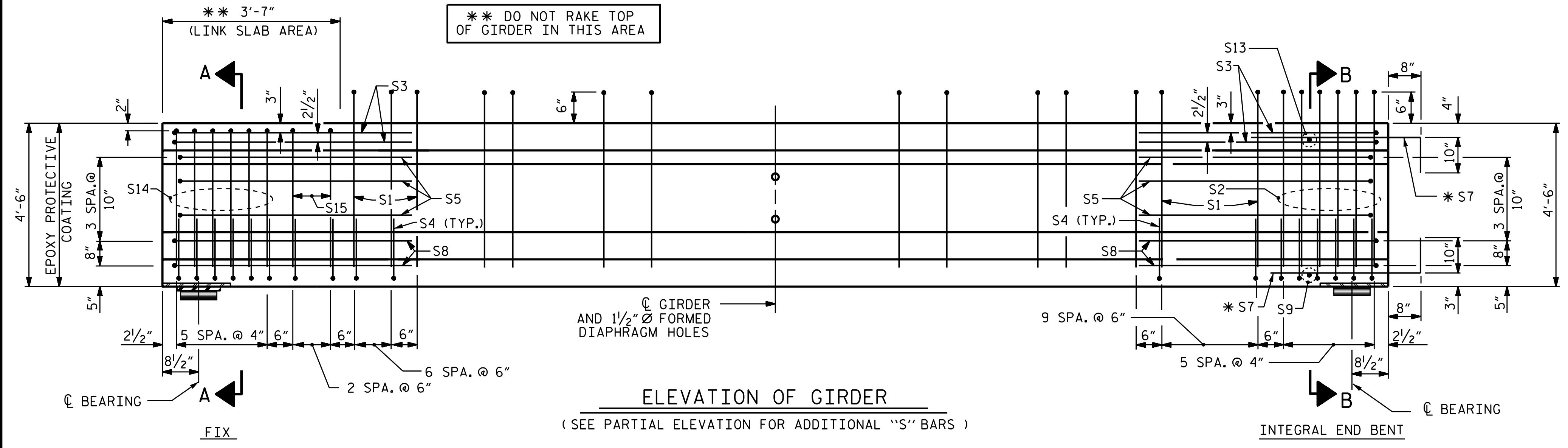
AT END OF GIRDER AT C OF GIRDER
 0.6" Ø LOW RELAXATION STRAND LAYOUT
 (22 STRANDS REQUIRED, ALL STRAIGHT)



PLAN OF GIRDER

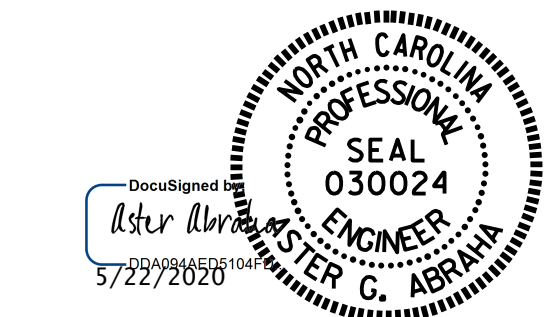


PARTIAL ELEVATION
 SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS



ELEVATION OF GIRDER
 (SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

ASSEMBLED BY : S. WANCE/A.Y.GODFREY DATE : 05/2020
 CHECKED BY : A.Y.GODFREY DATE : 05/2020
 DRAWN BY : ELR 8/91 REV. 10/1/11 MAA/GM
 CHECKED BY : GRP 8/91 REV. 1/15 MAA/TMC
 REV. 12/17 MAA/THC



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**AASHTO TYPE IV
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN B**

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-11
1			3		TOTAL SHEETS
2			4		30

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 GIRDER ELEVATION VIEWS.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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 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 7500 PSI FOR SPAN A AND NOT LESS THAN 5600 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" AND LINK SLAB AREA, SHALL BE RAKED TO A MINIMUM DEPTH OF 1/4".

NO WELDING OF THE FORMS OR FALSEWORK TO THE TOP OF THE GIRDER WILL BE PERMITTED IN THE LINK SLAB AREA.

DEAD LOAD DEFLECTION TABLE

SPAN "A"

0.6" Ø LOW RELAXATION	GIRDERS 1 & 4																				
	TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.030	0.060	0.087	0.113	0.135	0.155	0.170	0.181	0.188	0.190	0.188	0.181	0.170	0.155	0.135	0.113	0.087	0.060	0.030	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.024	0.048	0.071	0.091	0.109	0.125	0.137	0.146	0.152	0.153	0.152	0.146	0.137	0.125	0.109	0.091	0.071	0.048	0.024	0
FINAL CAMBER ↑	0	1/16"	1/8"	3/16"	1/4"	3/16"	3/8"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	3/8"	5/16"	1/4"	3/16"	1/8"	1/16"	0

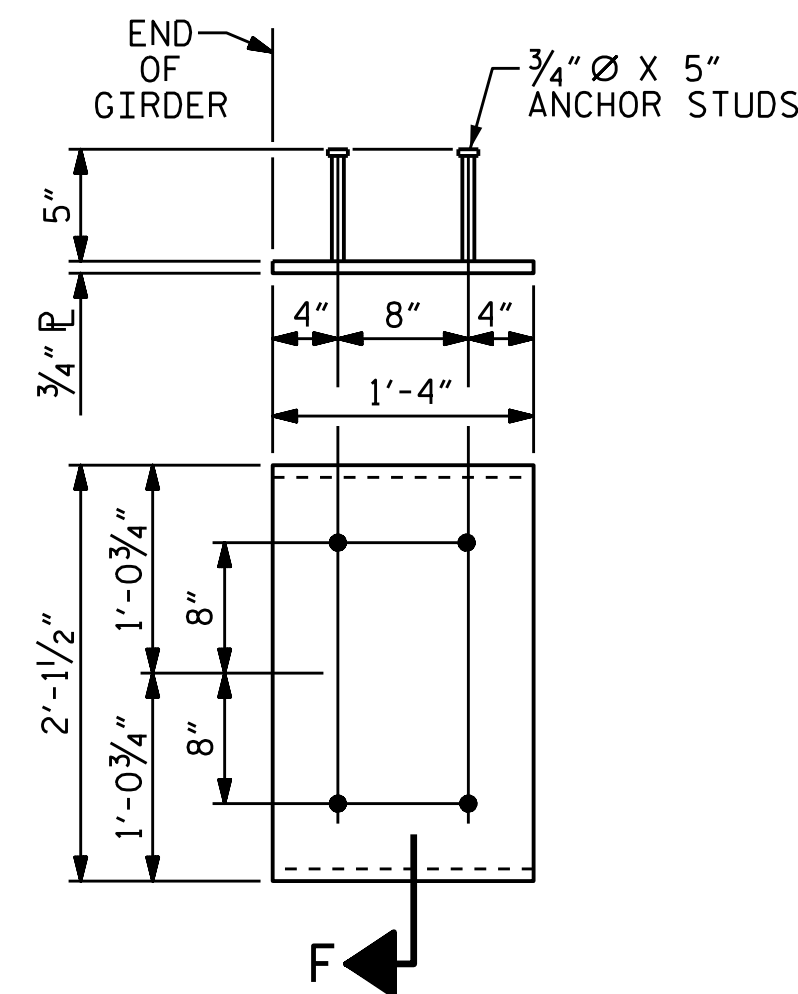
0.6" Ø LOW RELAXATION	GIRDERS 2 & 3																					
	TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.030	0.059	0.087	0.112	0.135	0.154	0.169	0.180	0.187	0.189	0.187	0.180	0.169	0.154	0.135	0.112	0.087	0.059	0.030	0	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.027	0.054	0.079	0.102	0.123	0.140	0.154	0.164	0.170	0.172	0.170	0.164	0.154	0.140	0.123	0.102	0.079	0.054	0.027	0	
FINAL CAMBER ↑	0	1/16"	1/16"	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	1/16"	1/16"	0

SPAN "B"

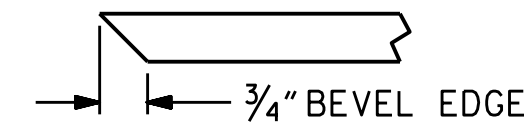
0.6" Ø LOW RELAXATION	GIRDERS 1 & 4																				
	TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.010	0.019	0.027	0.035	0.043	0.049	0.053	0.057	0.059	0.060	0.059	0.057	0.053	0.049	0.043	0.035	0.027	0.019	0.010	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.006	0.012	0.017	0.022	0.027	0.031	0.034	0.036	0.037	0.038	0.037	0.036	0.034	0.031	0.027	0.022	0.017	0.012	0.006	0
FINAL CAMBER ↑	0	1/16"	1/16"	1/8"	3/16"	3/16"	3/16"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/16"	3/16"	3/16"	1/8"	1/16"	1/16"	0

0.6" Ø LOW RELAXATION	GIRDERS 2 & 3																					
	TWENTIETH POINTS	0	.05	.1	.15	.2	.25	.3	.35	.4	.45	.5	.55	.6	.65	.7	.75	.8	.85	.9	.95	0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.009	0.019	0.027	0.035	0.042	0.048	0.053	0.057	0.059	0.059	0.059	0.057	0.053	0.048	0.042	0.035	0.027	0.019	0.009	0	
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.007	0.013	0.020	0.025	0.030	0.035	0.038	0.041	0.042	0.043	0.042	0.041	0.038	0.035	0.030	0.025	0.020	0.013	0.007	0	
FINAL CAMBER ↑	0	1/16"	1/16"	1/16"	1/8"	1/8"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	1/16"	1/16"	0

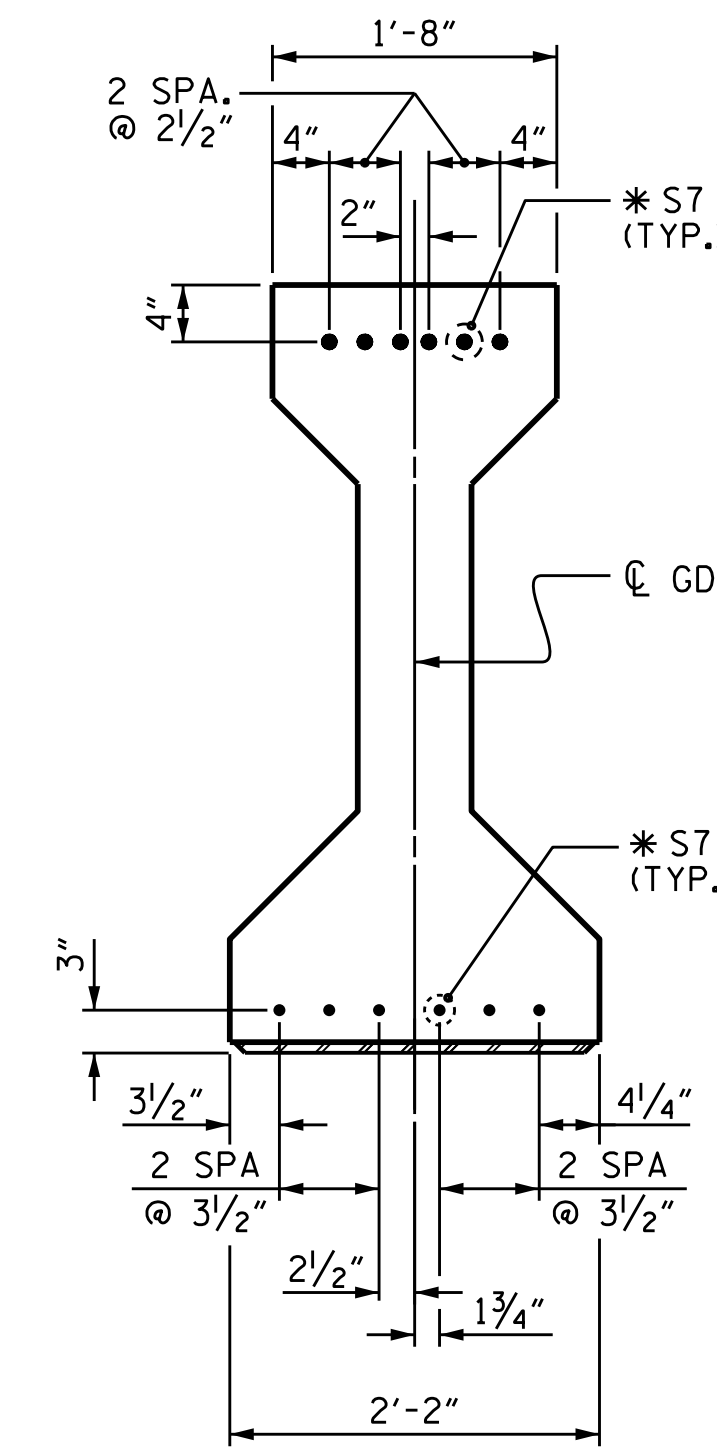
* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT
"FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).



EMBEDDED PLATE "B1" DETAILS
FOR AASHTO TYPE IV GIRDERS
(2 REQ'D PER GIRDER)



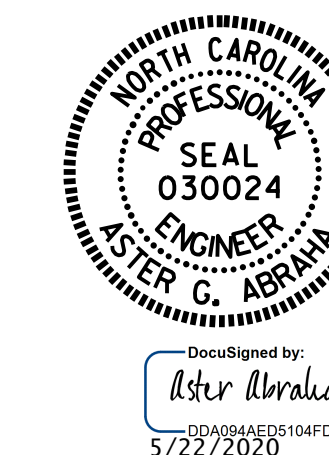
SECTION "F"
(SEE NOTES)



AT INTEGRAL END BENT END

DETAIL "A"
(FOR AASHTO TYPE IV GIRDERS)

ASSEMBLED BY : S. WANCE/A.Y. GODFREY DATE : 05/2020
CHECKED BY : S. WANCE DATE :
DESIGN ENGINEER OF RECORD : M. M. AHMED DATE : 09/2019
DRAWN BY : ELR 8/91 REV. 10/1/11 MAA/GM
CHECKED BY : GRP 8/91 REV. 1/15 MAA/TMG
REV. 12/17 MAA/THC



PROJECT NO. B-4931
EDGEcombe COUNTY
STATION: 16+99.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS AND DEFLECTIONS

NO.	REVISIONS			SHEET NO.
	BY:	DATE:	NO.	
1			3	S-12
2			4	TOTAL SHEETS 30

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STD. NO. PCG9

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 A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, 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.

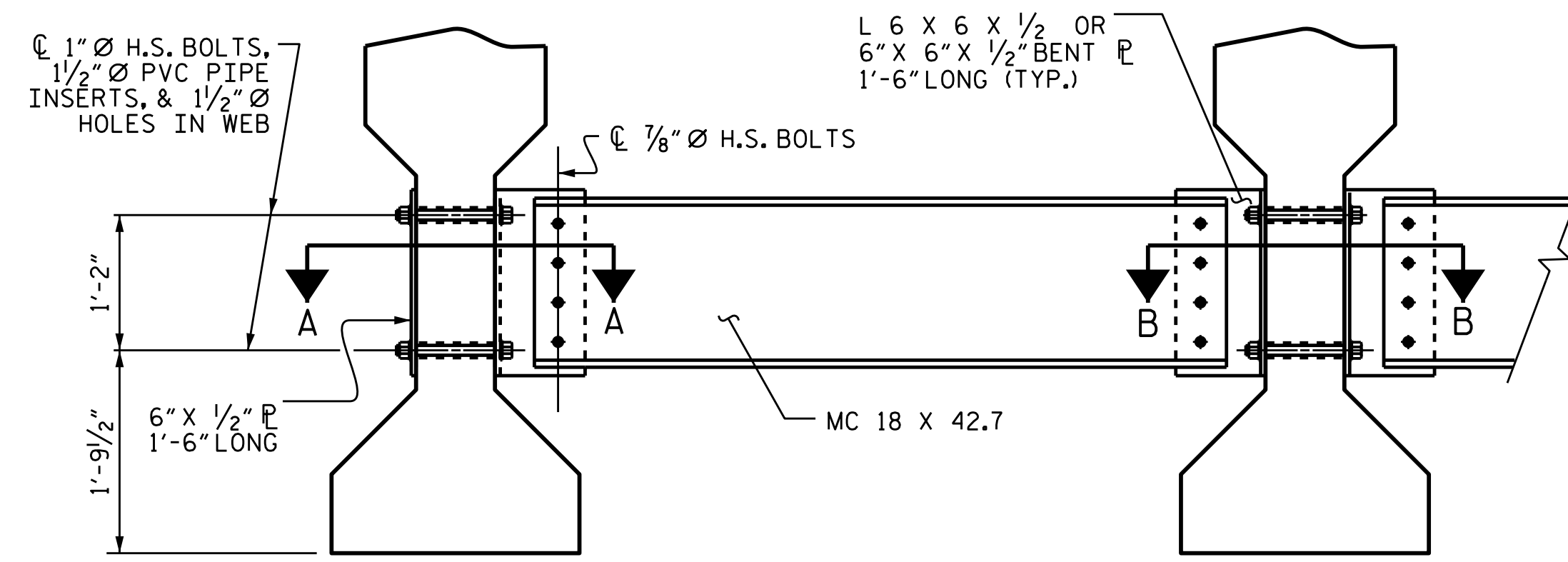
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

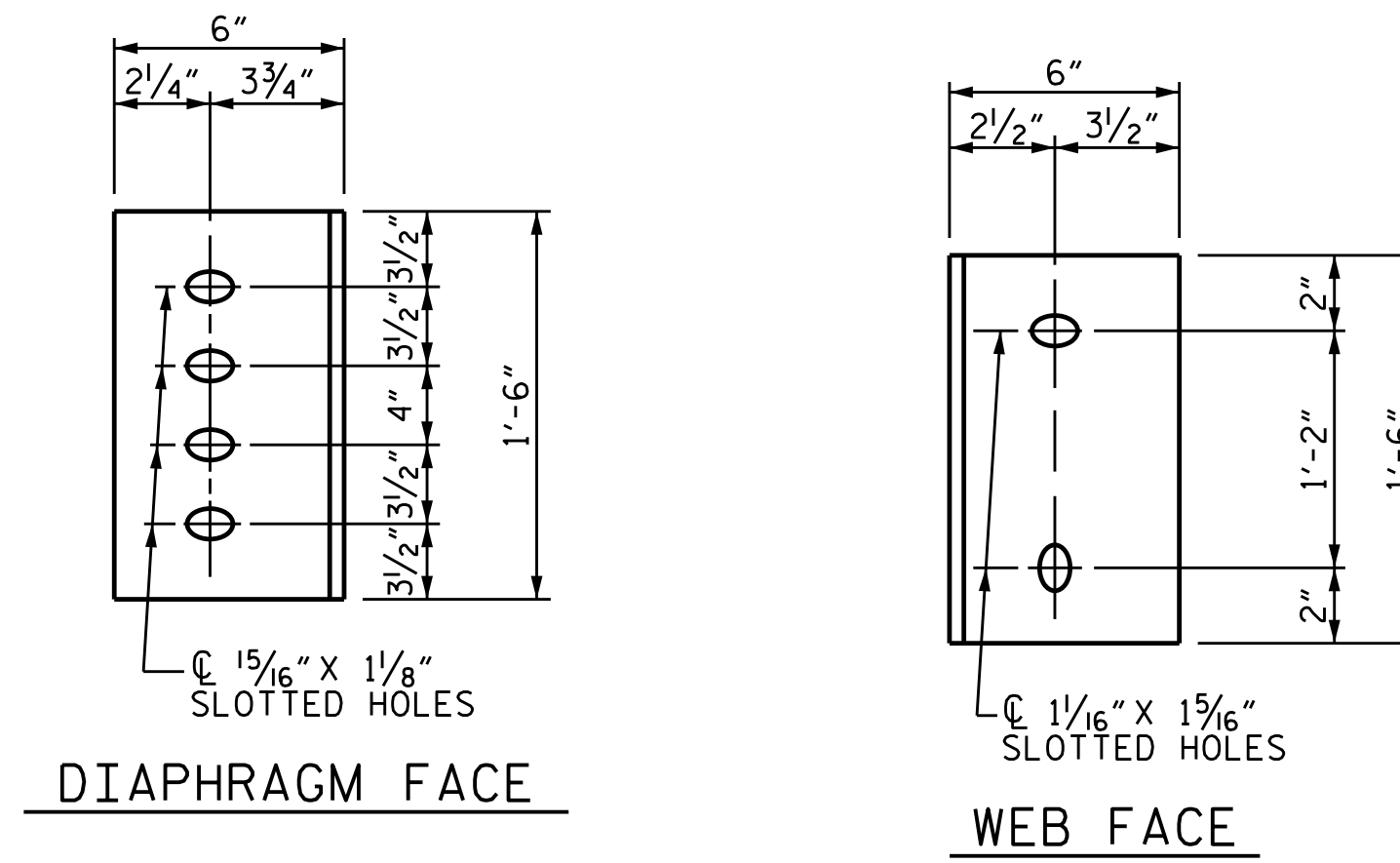
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

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.

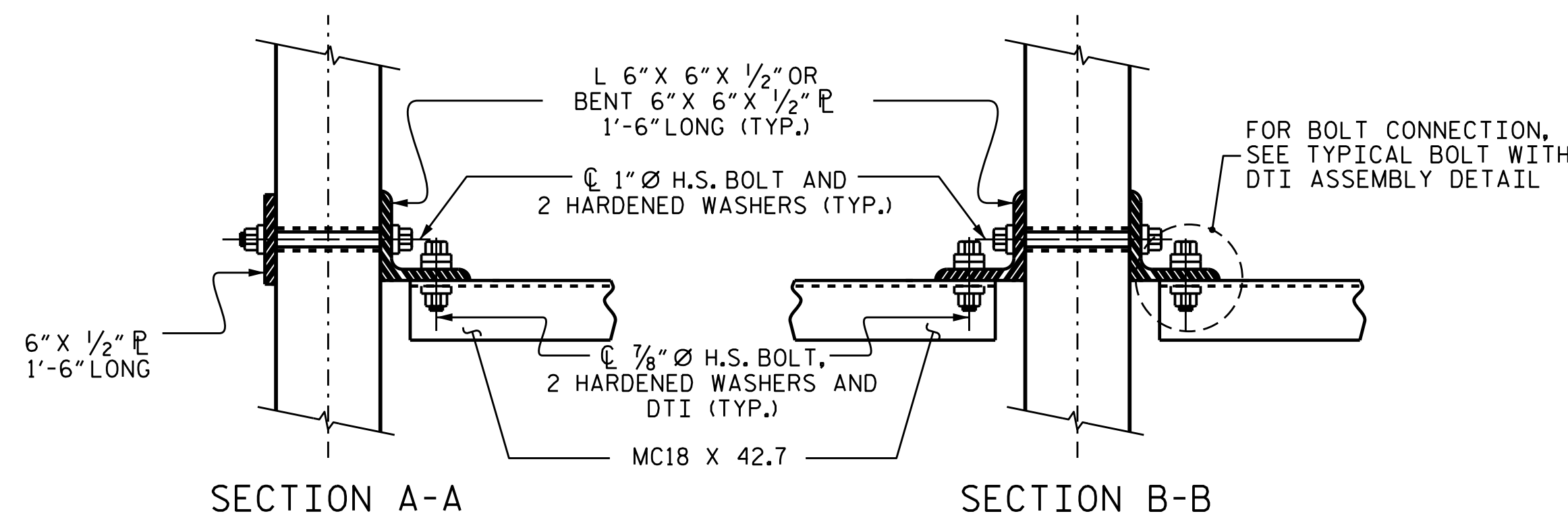
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



EXTERIOR GIRDER **INTERIOR GIRDER**
PART SECTION AT INTERMEDIATE DIAPHRAGM
 (TYPE IV GIRDER)



CONNECTOR PLATE DETAILS
 (TYPE IV GIRDER)



SECTION A-A **SECTION B-B**
CONNECTION DETAILS

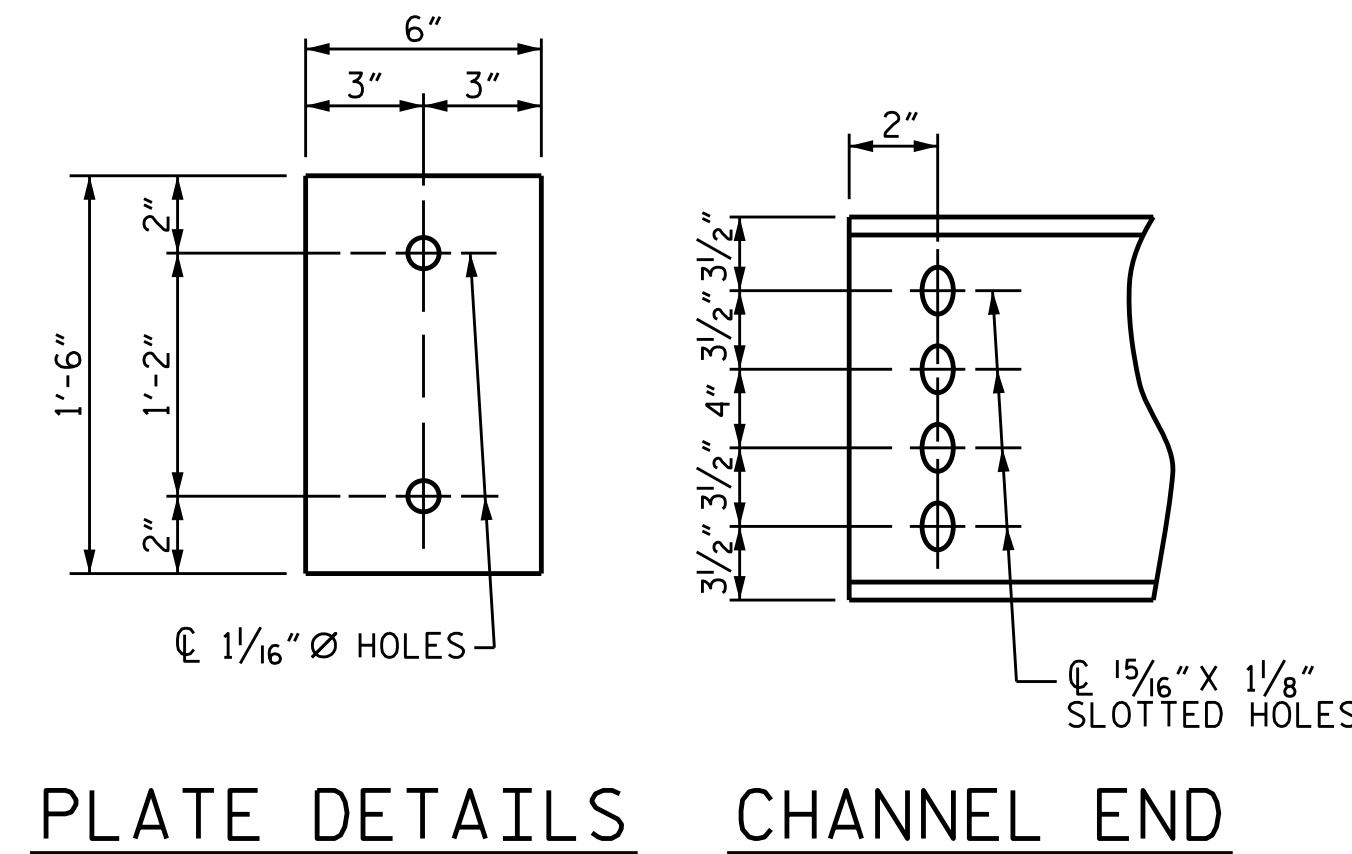
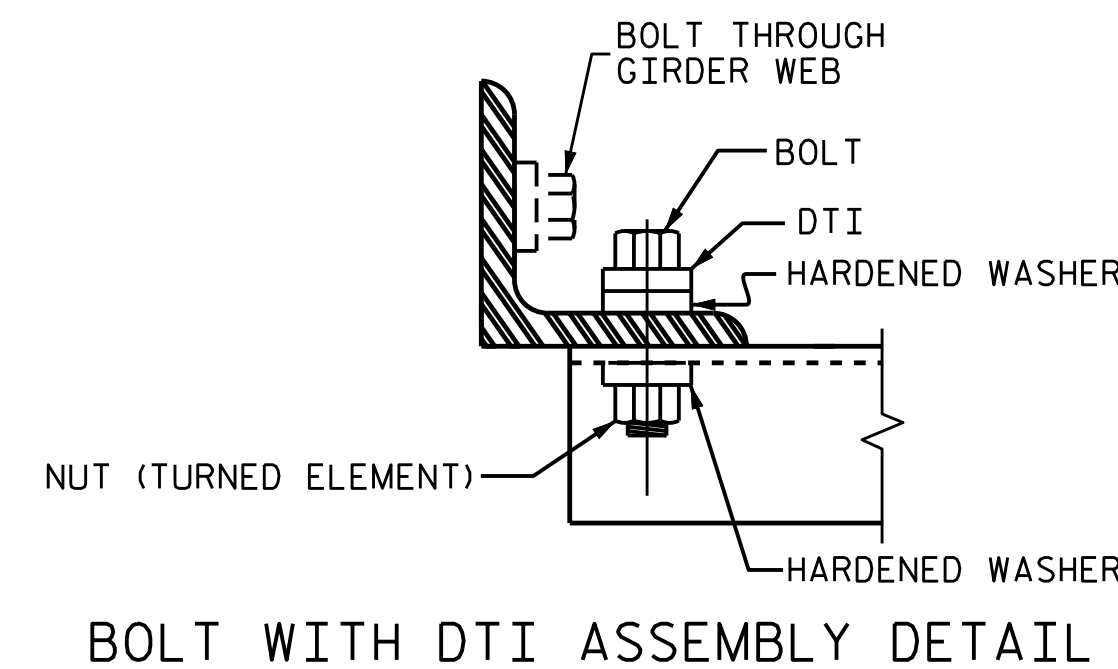
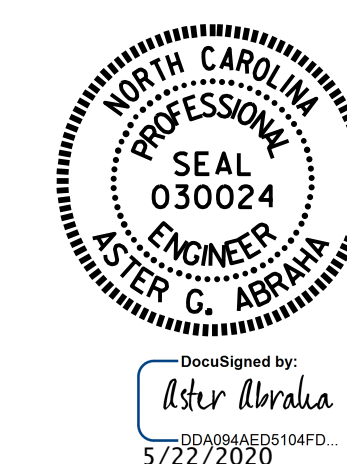


PLATE DETAILS **CHANNEL END**



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 INTERMEDIATE
 STEEL DIAPHRAGMS
 FOR TYPE IV
 PRESTRESSED CONCRETE
 GIRDER

ASSEMBLED BY :	S. WANCE	DATE :	12/2019
CHECKED BY :	A. Y. GODFREY	DATE :	01/2020
DRAWN BY :	TLA	6/05	REV. 5/1/06RRR KMM/GM
CHECKED BY :	VC	6/05	REV. 10/1/11 MAA/GM
			REV. 12/17 MAA/THC

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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			30

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, AND NUTS 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, AND NUTS SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

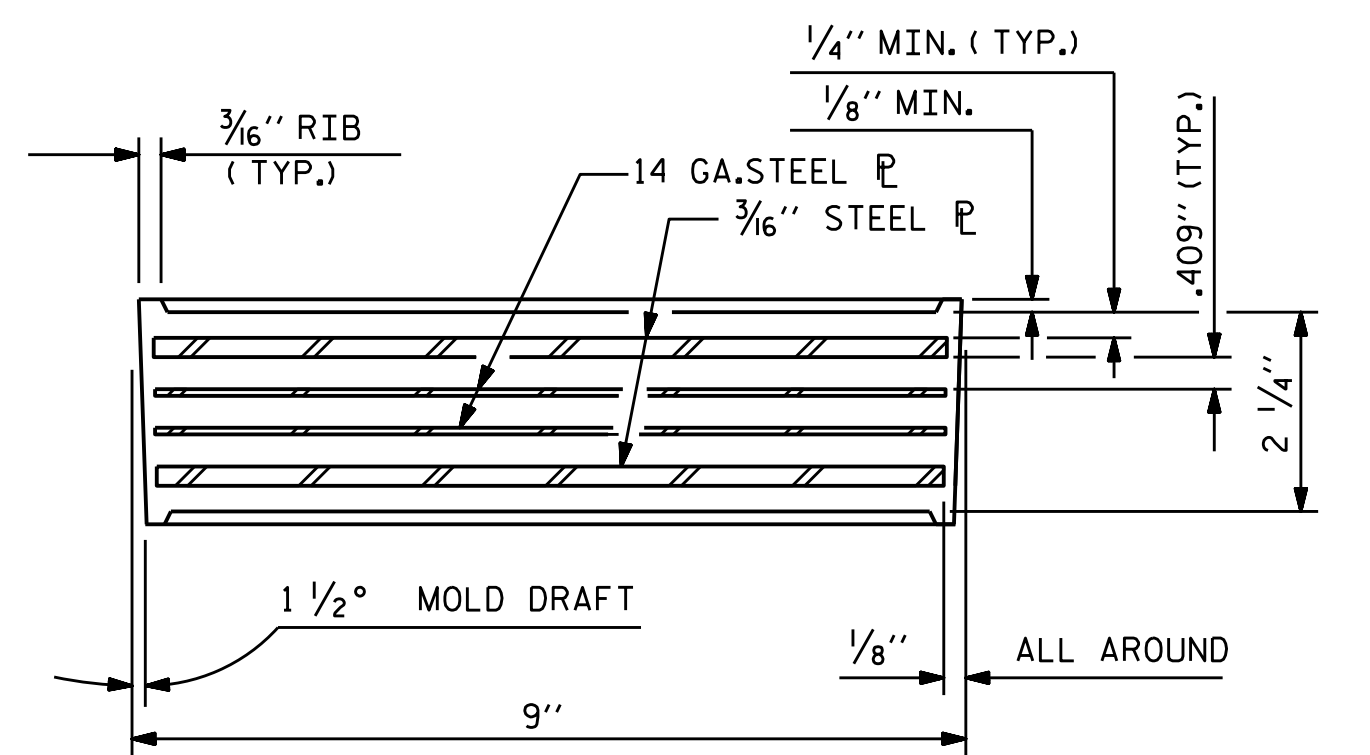
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, AND NUTS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

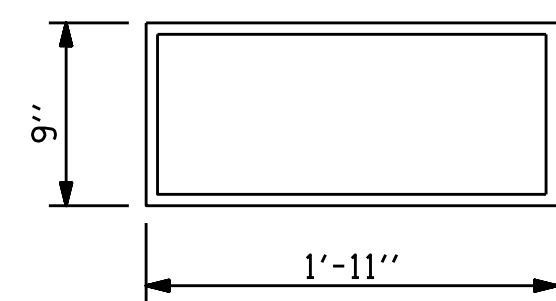
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

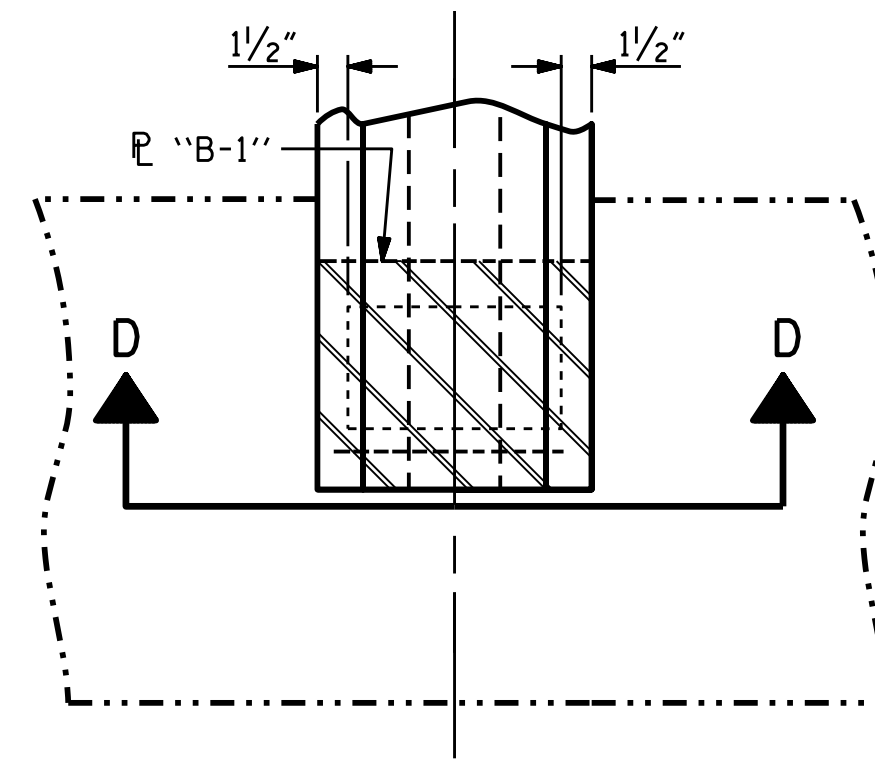
ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.



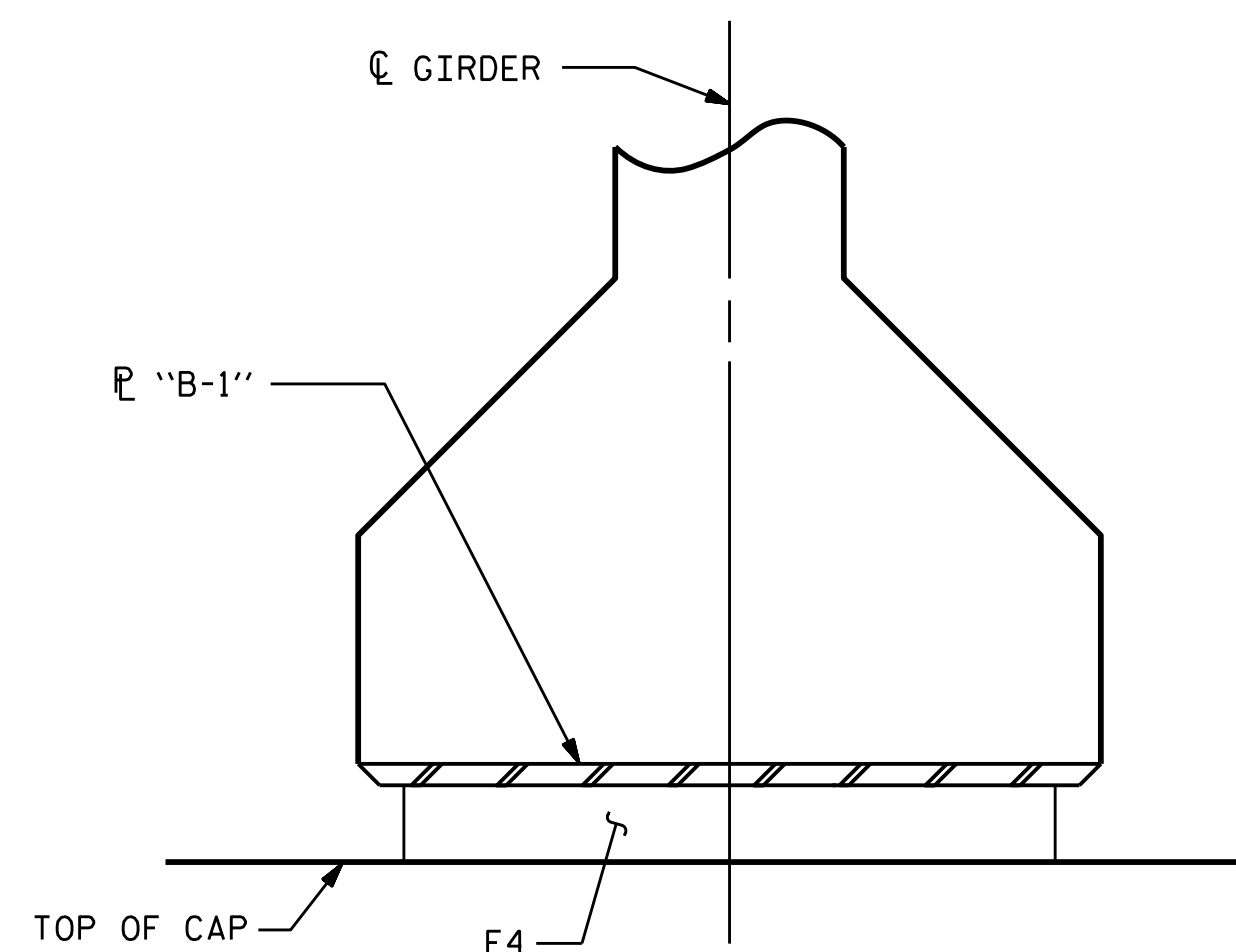
TYPICAL SECTION OF ELASTOMERIC BEARINGS



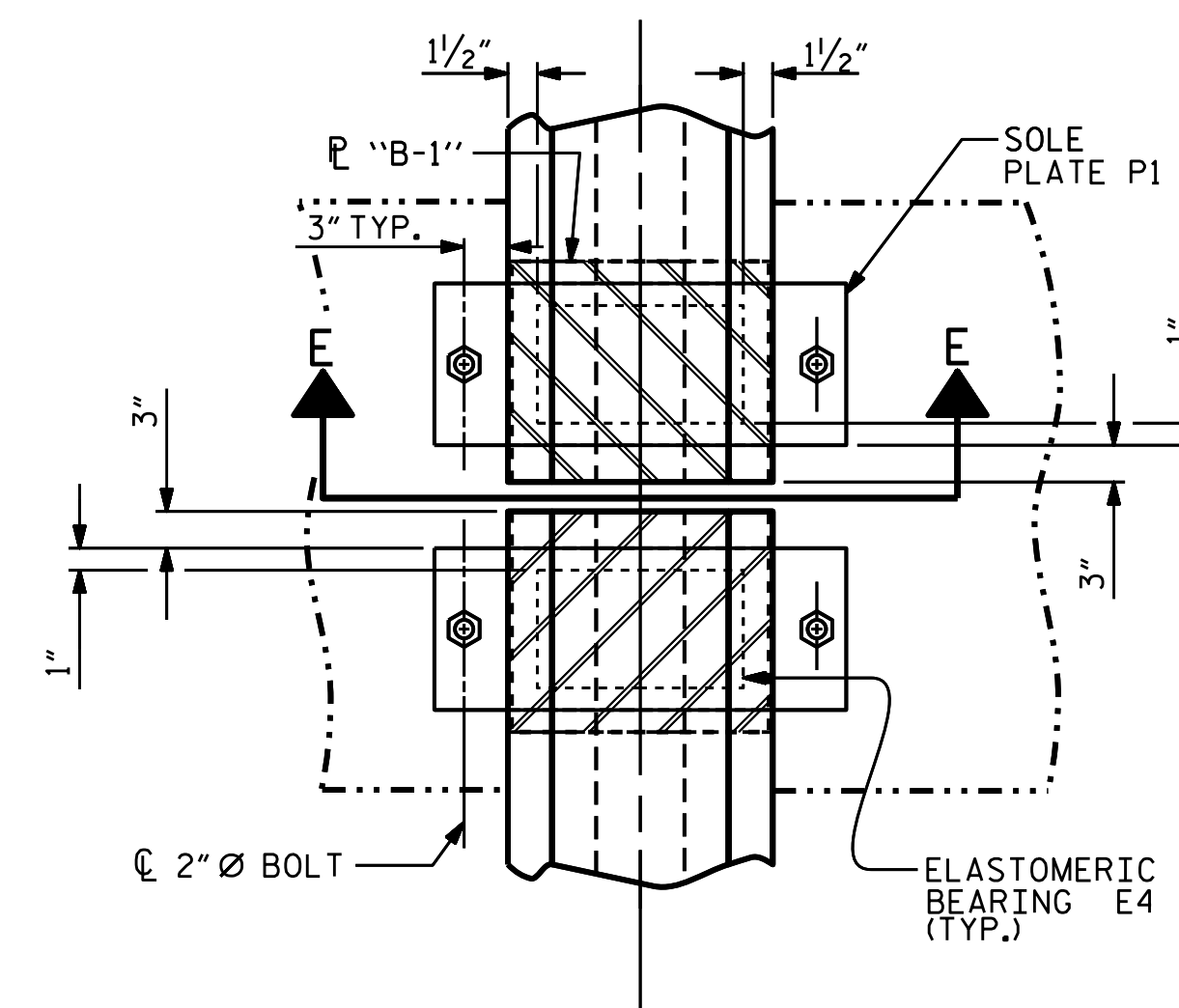
E4 (16 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING
TYPE V



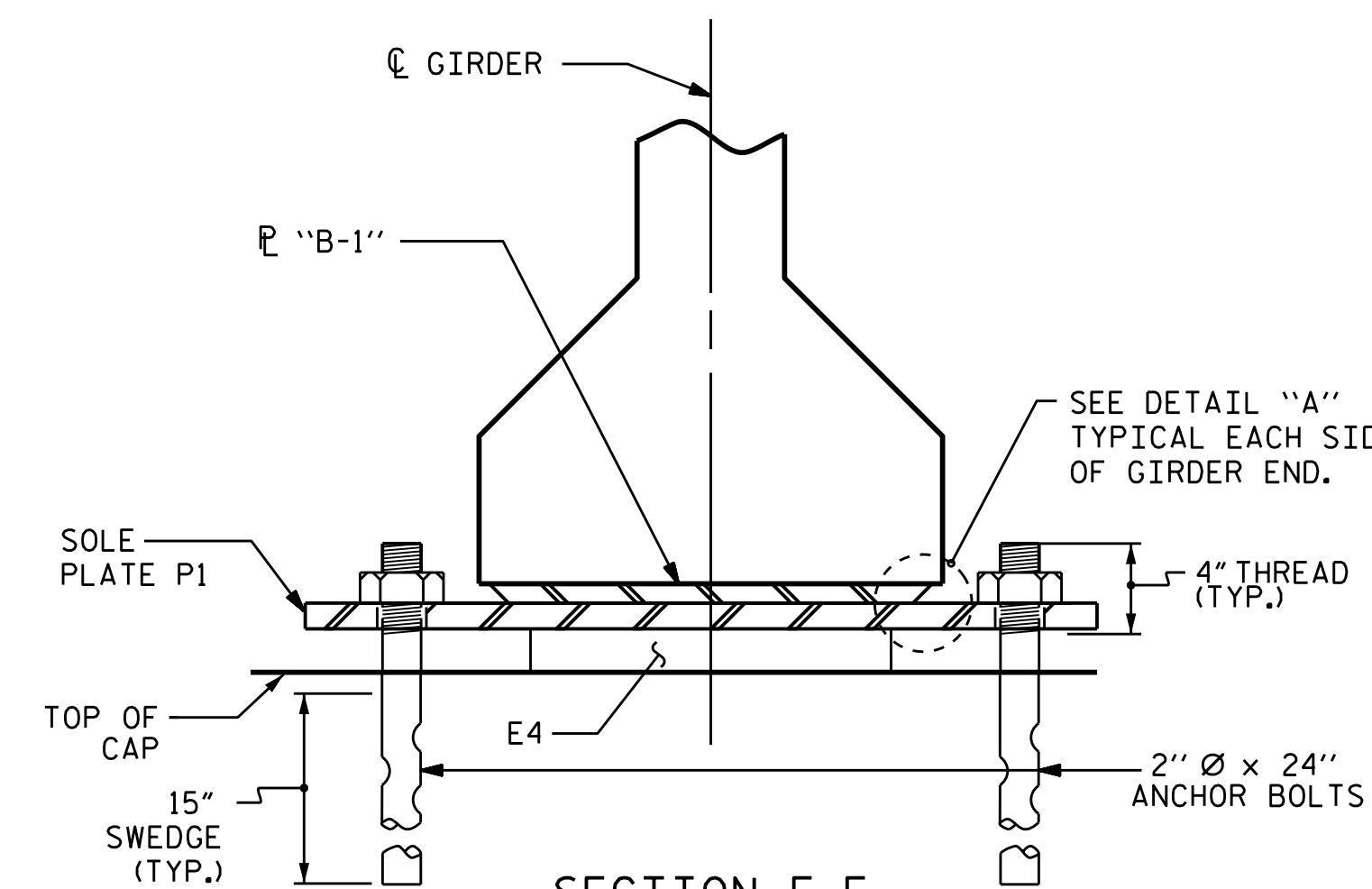
TYPICAL PLAN OF INTEGRAL END BENT



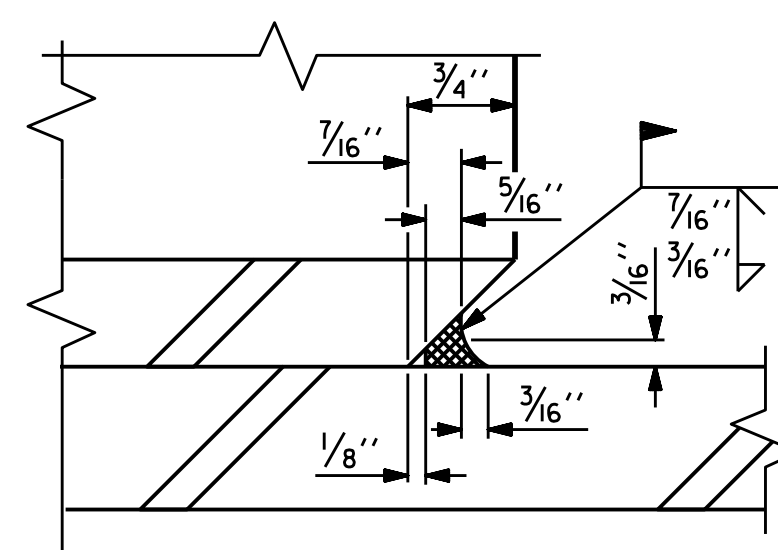
SECTION D-D
(AT INTEGRAL END BENTS)



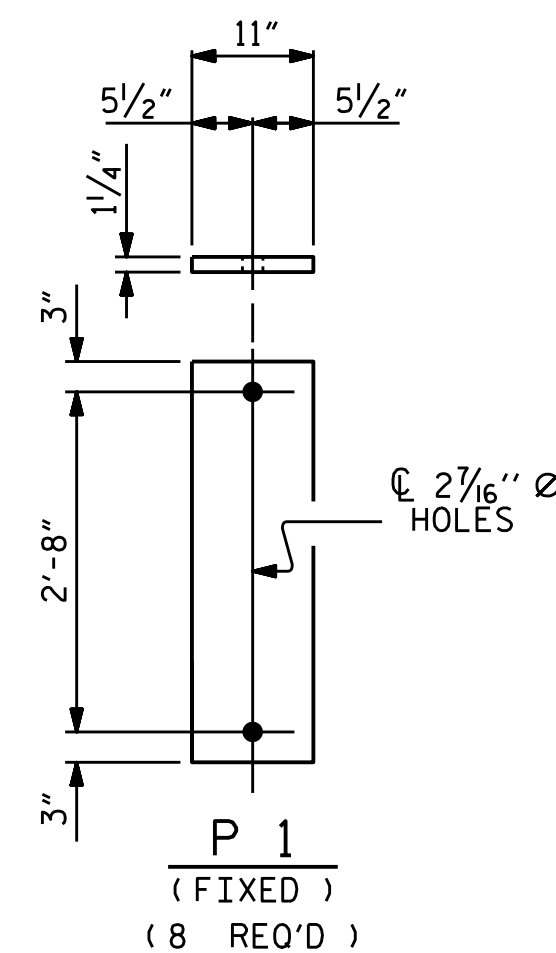
TYPICAL PLAN
(SHOWING CONTINUOUS BENT)



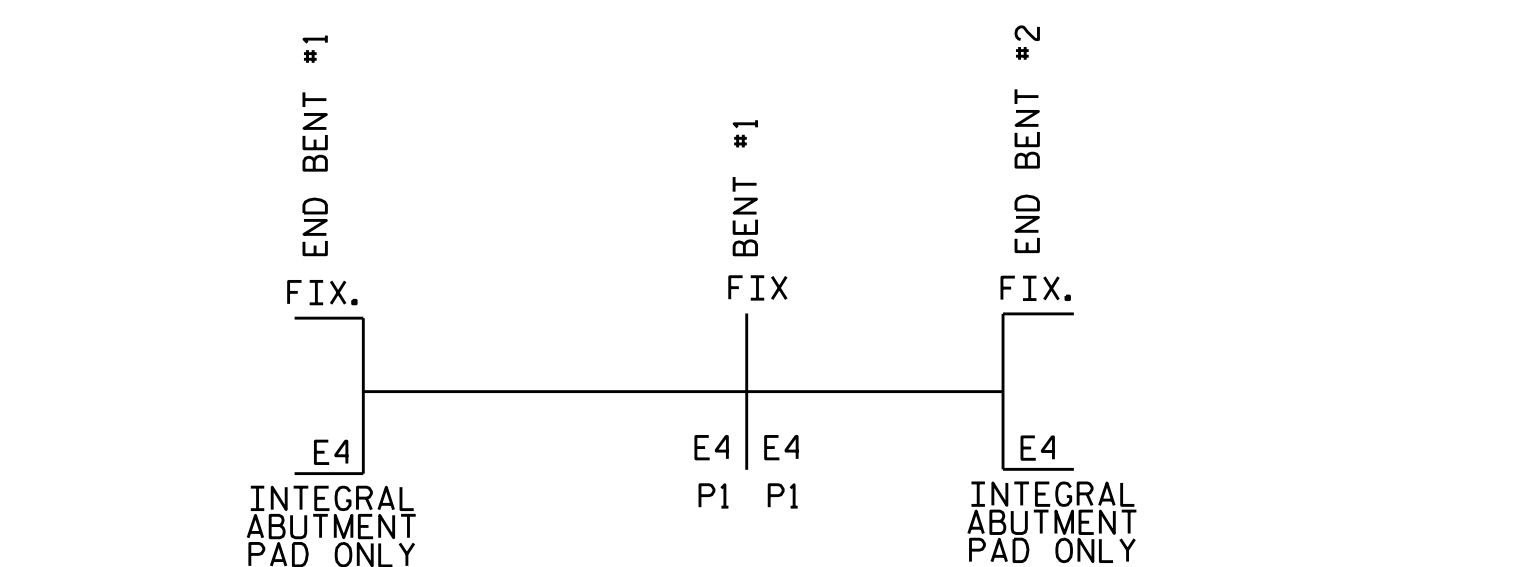
SECTION E-E
(AT CONTINUOUS BENTS)



DETAIL "A"



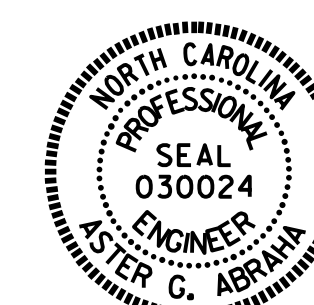
SOLE PLATE DETAILS ("P")



SOLE PLATE LOCATION SKETCH

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	320 k

PROJECT NO. B-4931
EDGEcombe COUNTY
STATION: 16+99.00 -L-

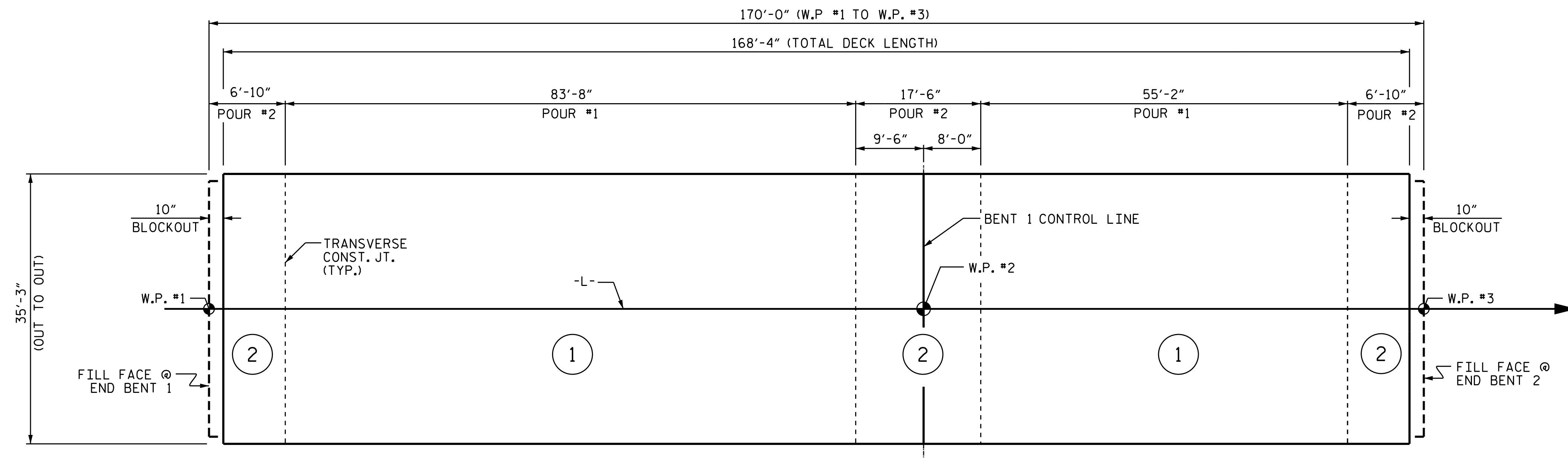


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
ELASTOMERIC BEARING
DETAILS
PRESTRESSED CONCRETE GIRDER
SUPERSTRUCTURE

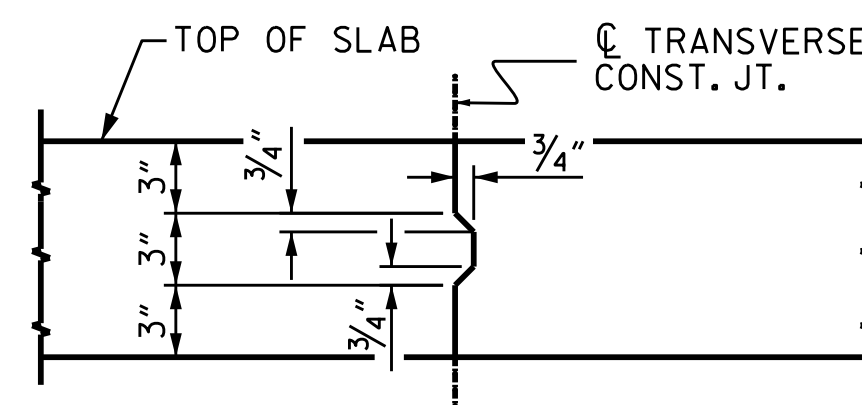
ASSEMBLED BY : S. WANCE	DATE : 12/2019
CHECKED BY : A. G. ABRAHA	DATE : 01/2020
DRAWN BY : EEM 2/97	REV. 6/13 AAC/MAA
CHECKED BY : VAP 2/97	REV. 1/15 MAA/TMC
	REV. 12/17 MAA/THC

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			30



POURING SEQUENCE



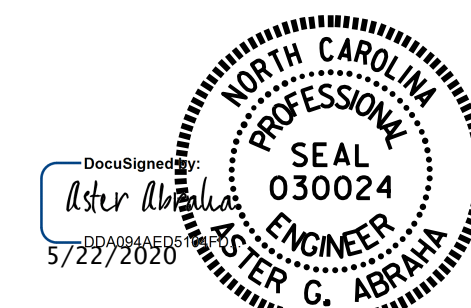
TRANSVERSE CONSTRUCITON JOINT DETAIL

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

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

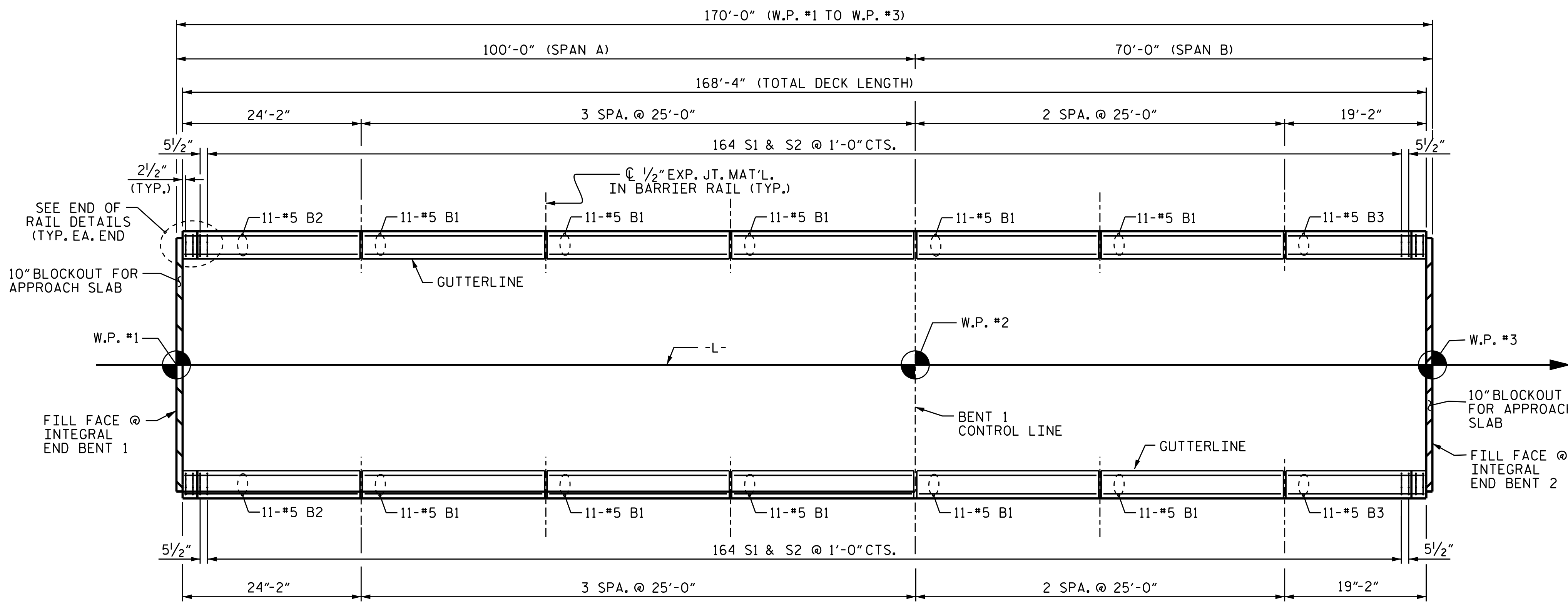
POUR SEQUENCE



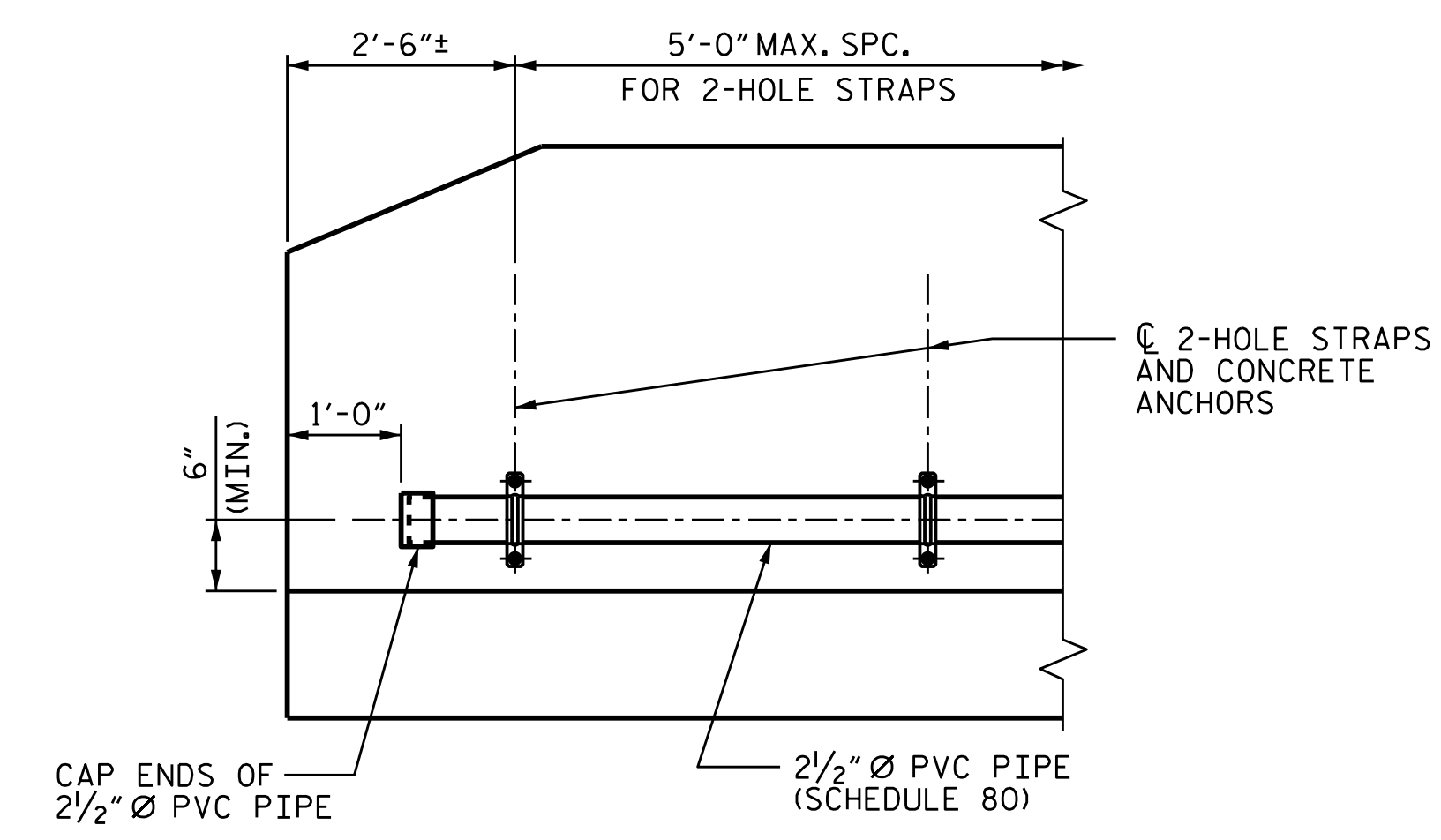
DRAWN BY : A. Y. GODFREY DATE : 04/2020
 CHECKED BY : S. WANCE DATE : 04/2020
 DESIGN ENGINEER OF RECORD: M. M. AHMED DATE : 11/2019

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

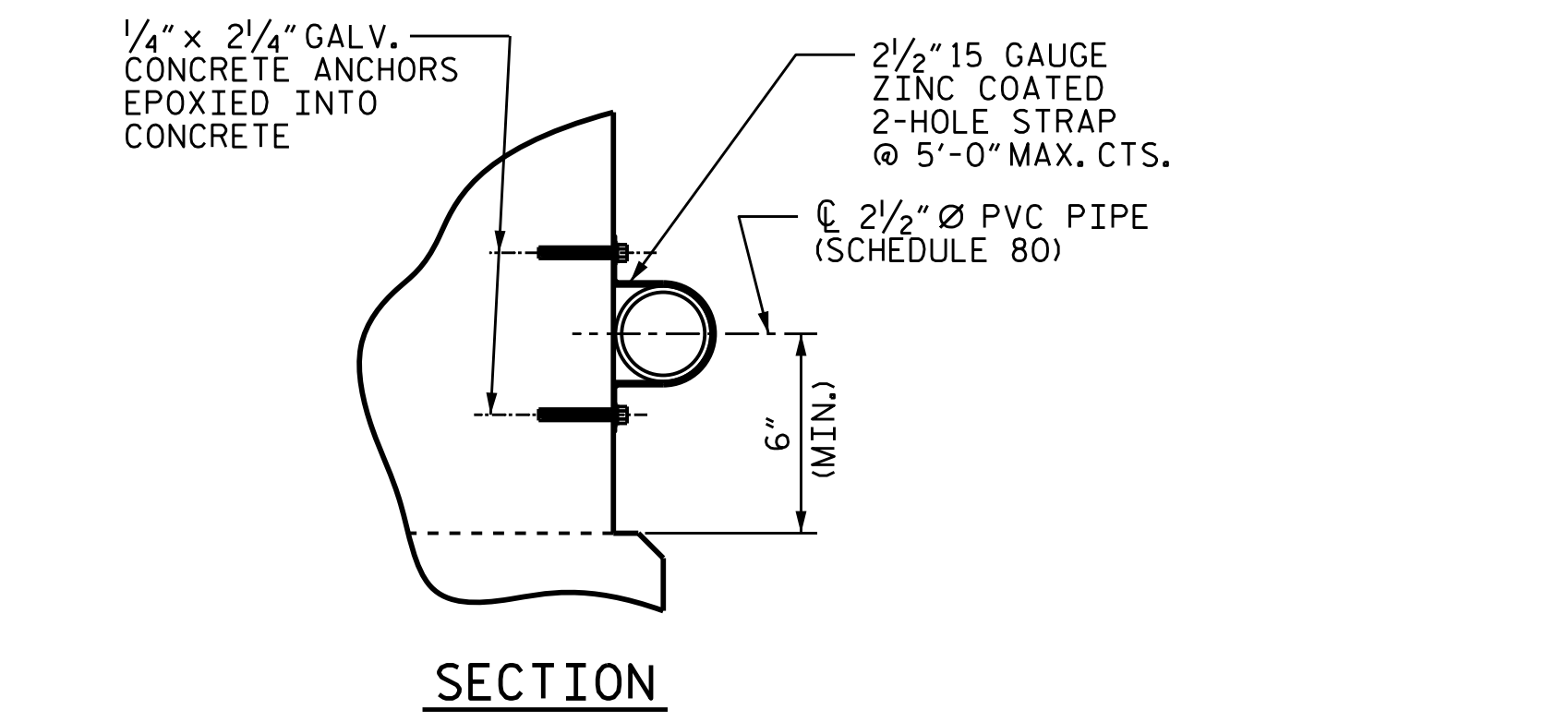
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			30



PLAN OF CONCRETE BARRIER RAIL

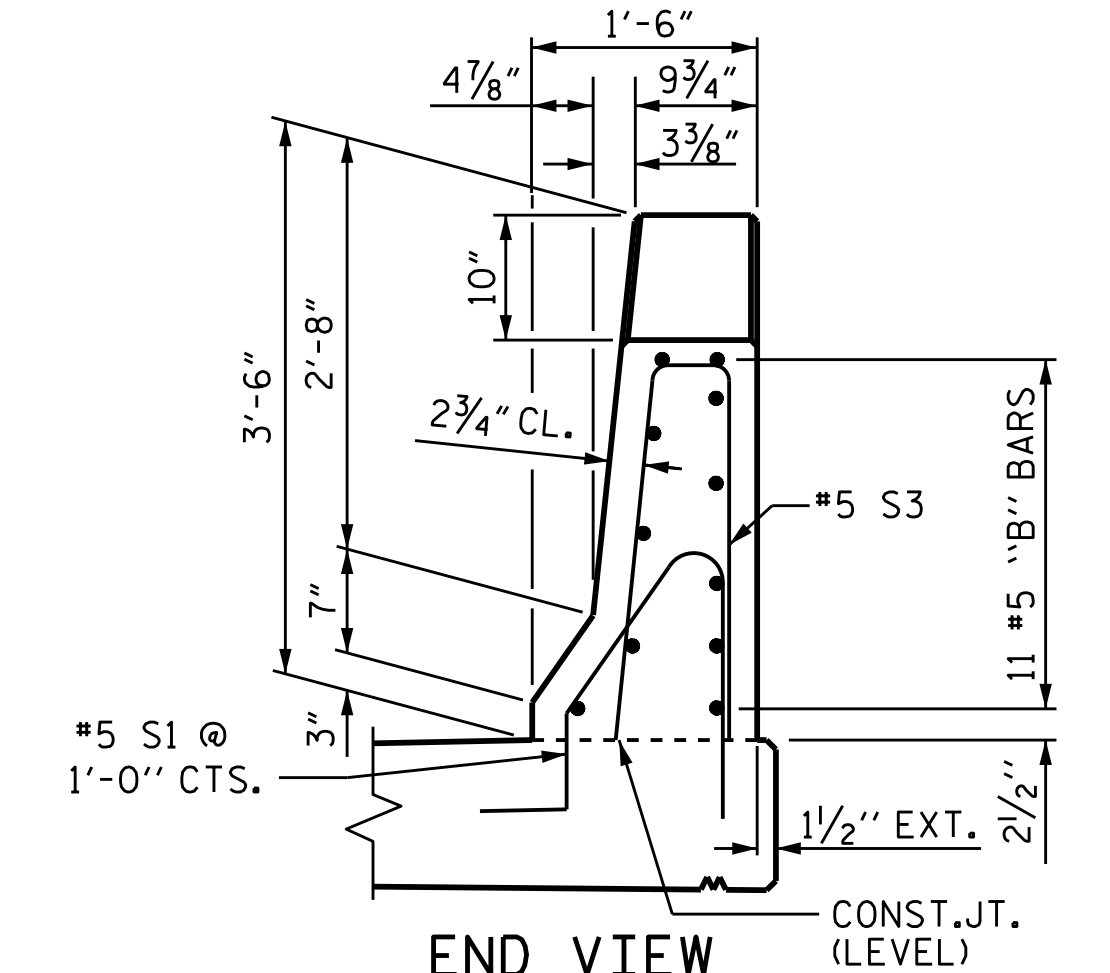


ELEVATION

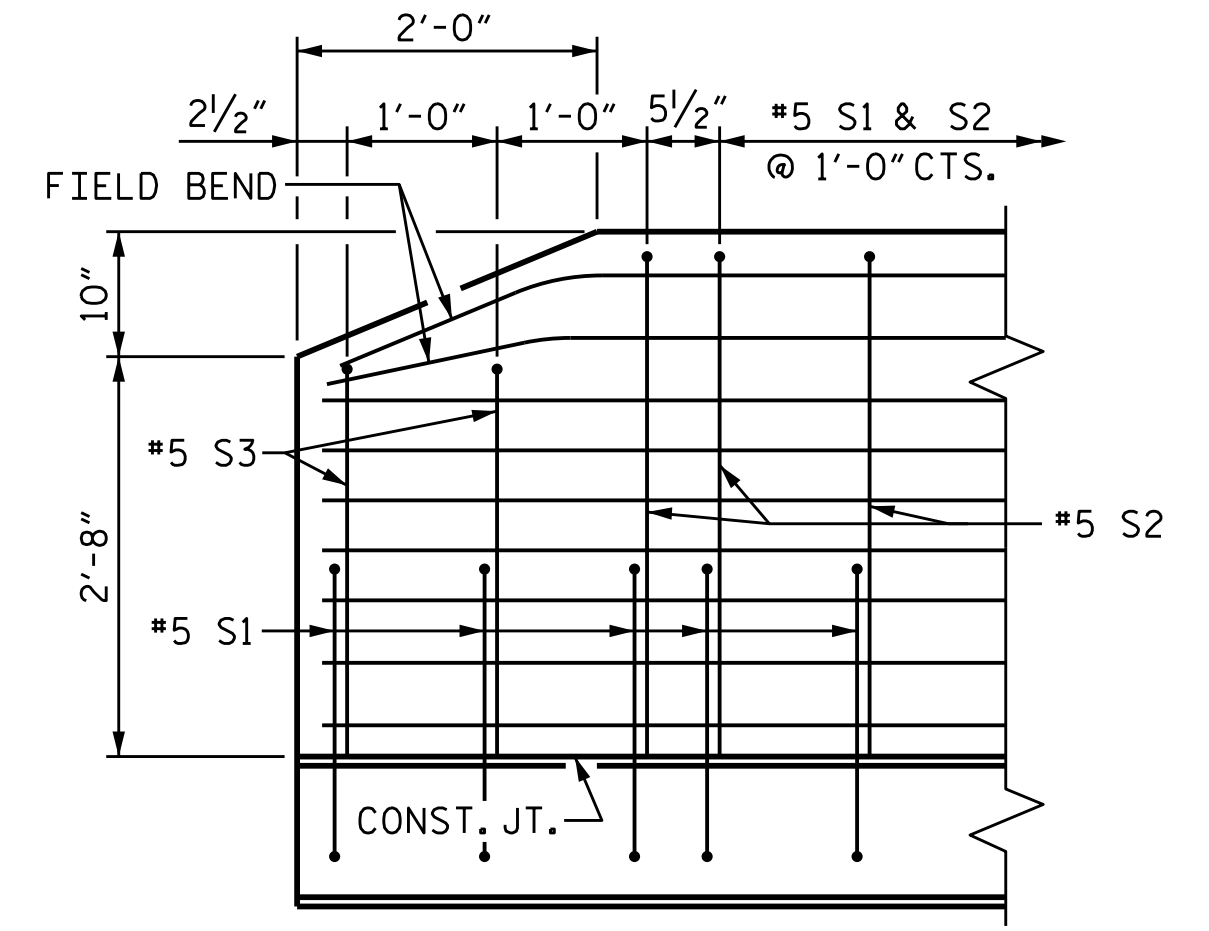


SECTION

FIBER OPTIC CONDUIT SYSTEM DETAILS
 2 1/2" Ø SCHEDULE 80 PVC PIPE ATTACHED TO THE BACK OF BOTH RAILS FOR FUTURE FIBER OPTIC CABLE.



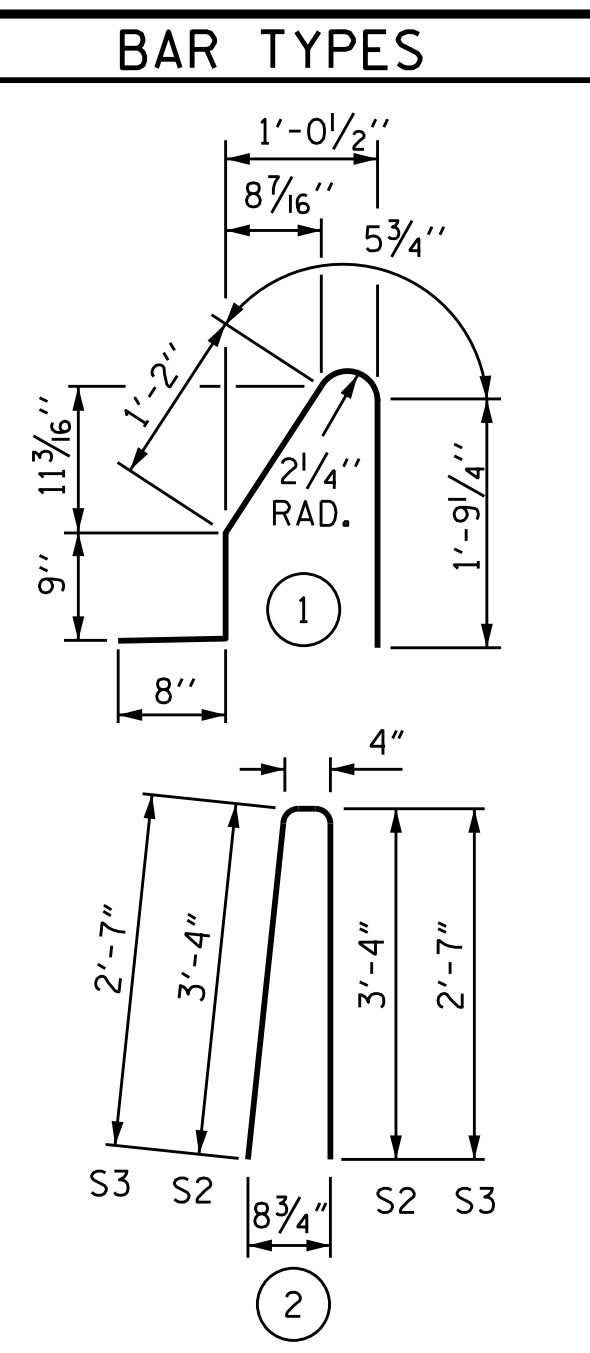
END VIEW



SIDE VIEW

END OF RAIL DETAILS

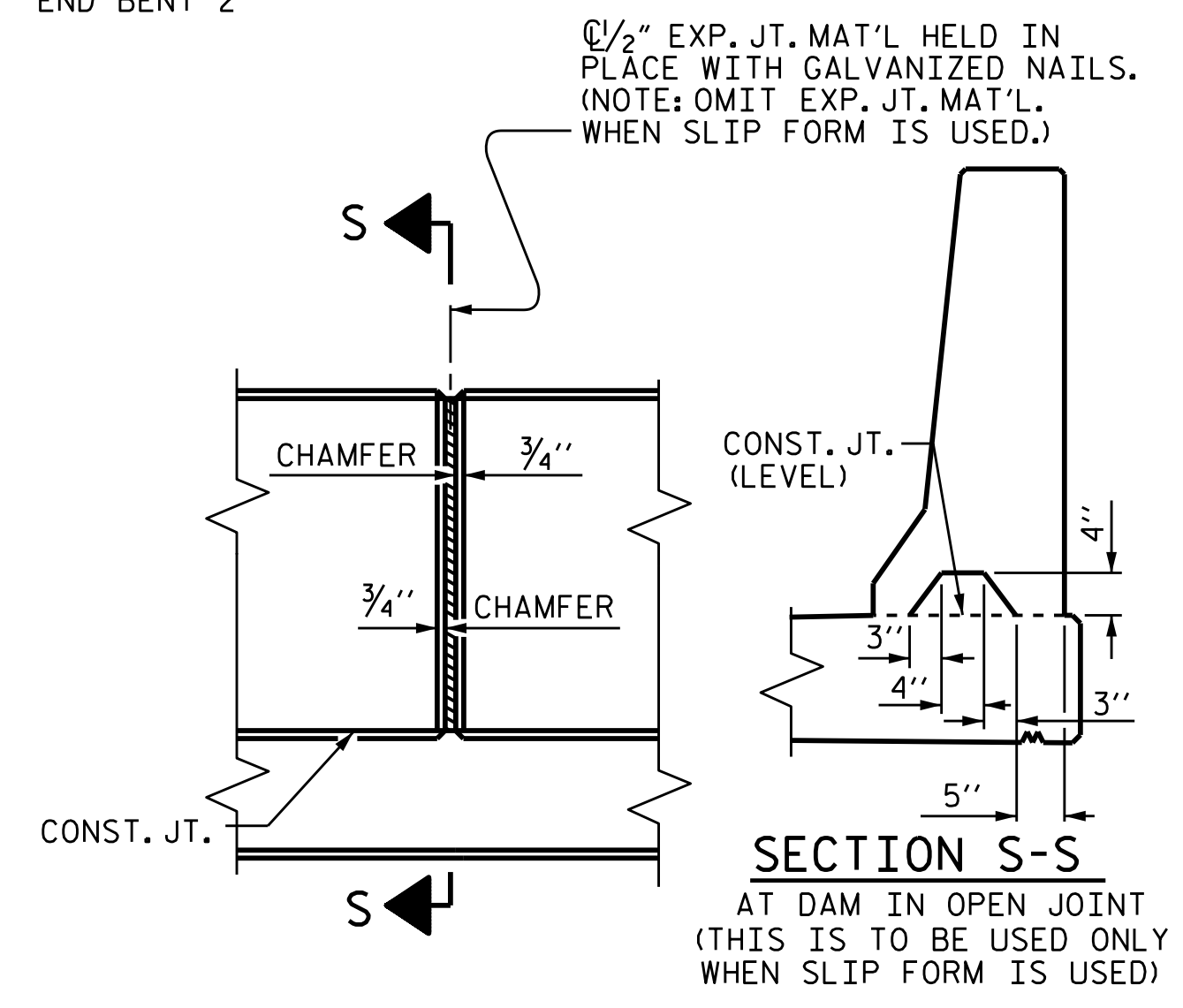
NOTES
 THE BARRIER RAIL IN A CONTINUOUS SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
 ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.
 THE #5 S1 AND #5 S2 BARS MAY BE SHIFTED SLIGHTLY IN ORDER TO MAINTAIN A 2" MINIMUM CLEARANCE TO 1/2" EXPANSION JOINT MATERIAL IN THE BARRIER RAIL.
 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.
 FOR FIBER OPTIC CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.



ALL BAR DIMENSIONS ARE OUT TO OUT

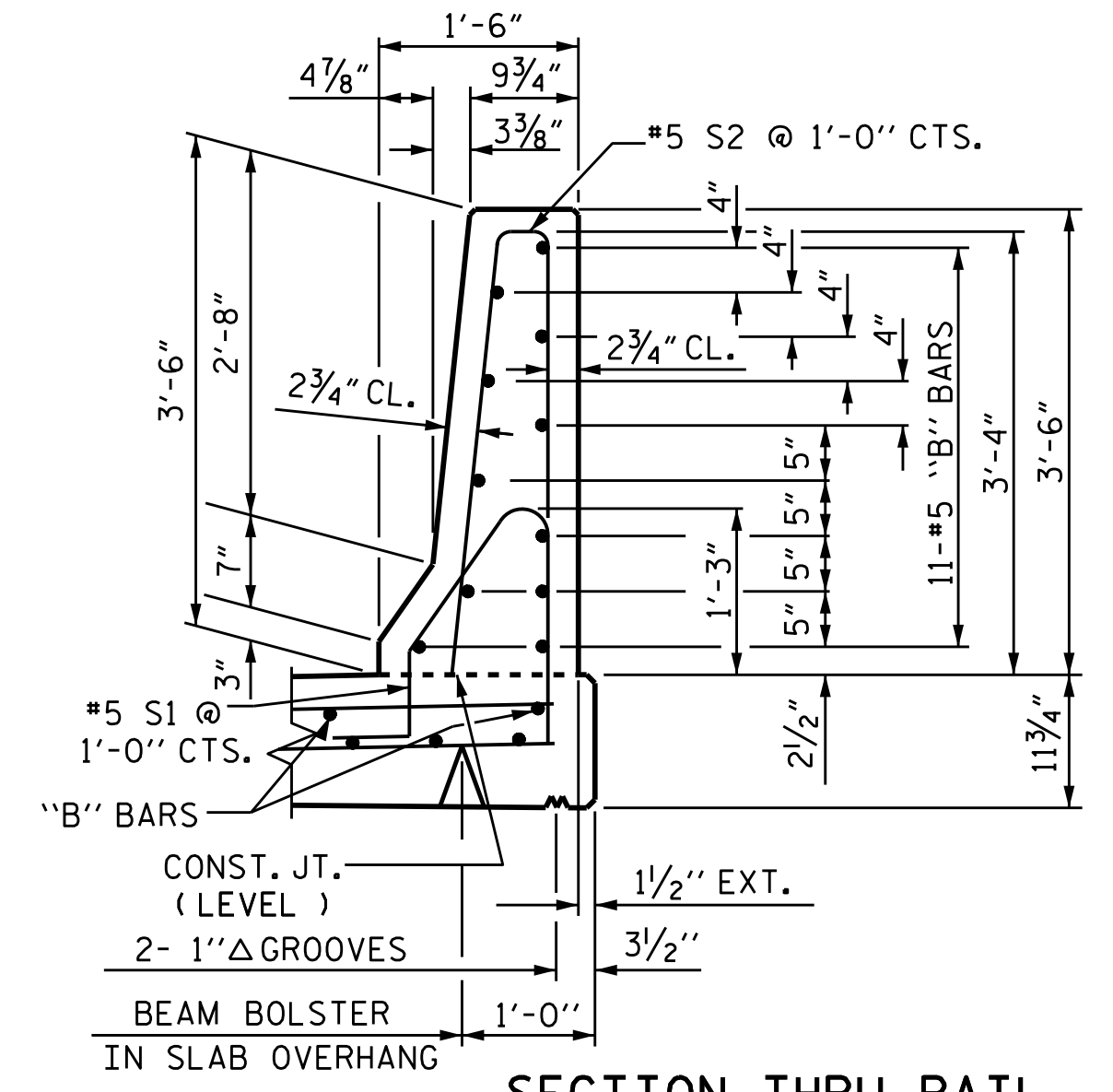
BILL OF MATERIAL
 FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	110	#5	STR	24'-7"	2,820
* B2	22	#5	STR	23'-9"	545
* B3	22	#5	STR	18'-9"	430
* S1	340	#5	1	4'-10"	1,714
* S2	332	#5	2	7'-0"	2,424
* S3	8	#5	2	5'-6"	46
* EPOXY COATED REINFORCING STEEL					7,979 LBS.
CLASS AA CONCRETE					46 CU. YDS.
CONCRETE BARRIER RAIL					336.67 LIN. FT.

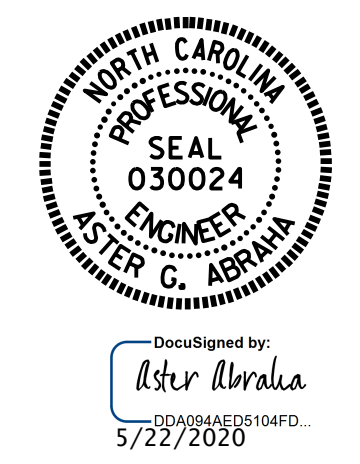


ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS



SECTION THRU RAIL



PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

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

ASSEMBLED BY : S. WANCE	DATE : 01/2020
CHECKED BY : A. G. ABRAHA	DATE : 01/2020
DRAWN BY : ARB 5/87	REV. 7/12 MAA/GM
CHECKED BY : SJD 9/87	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			30

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.)

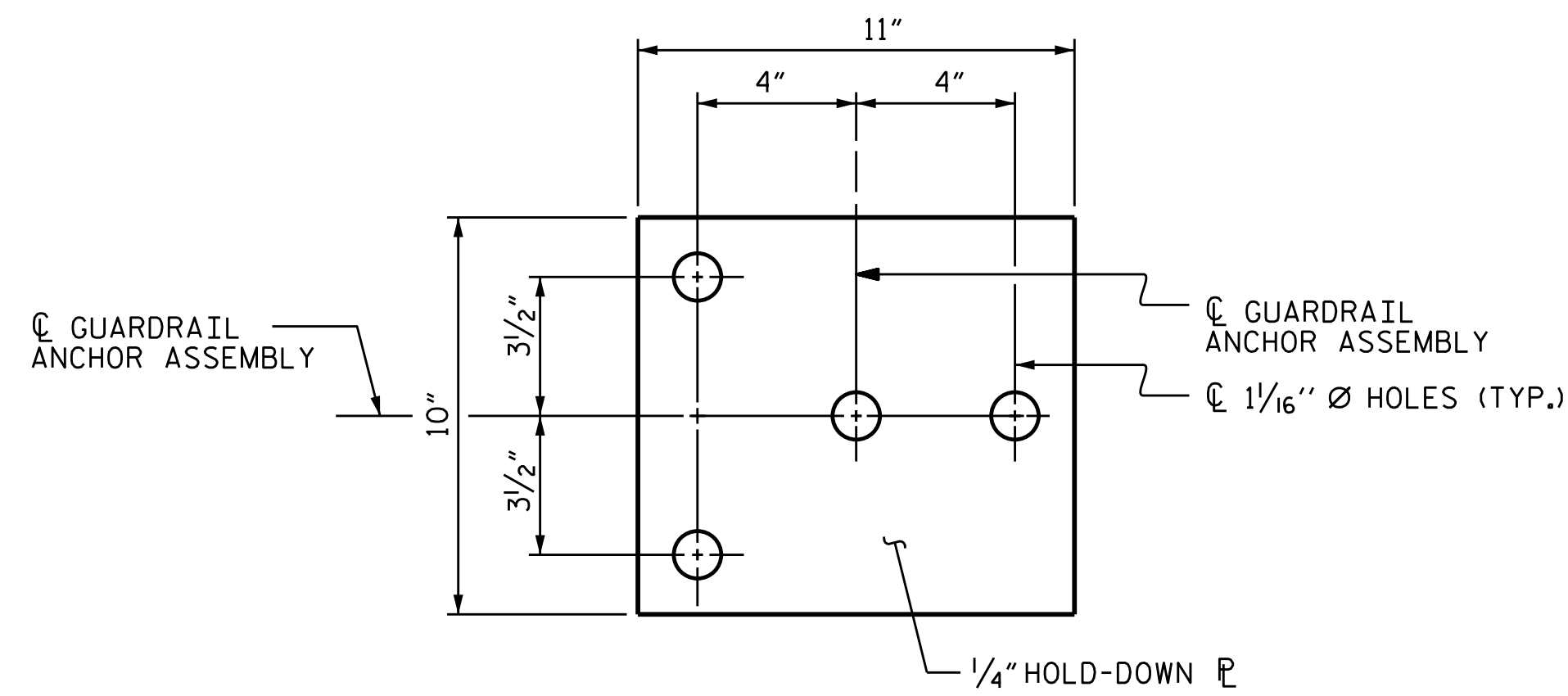
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

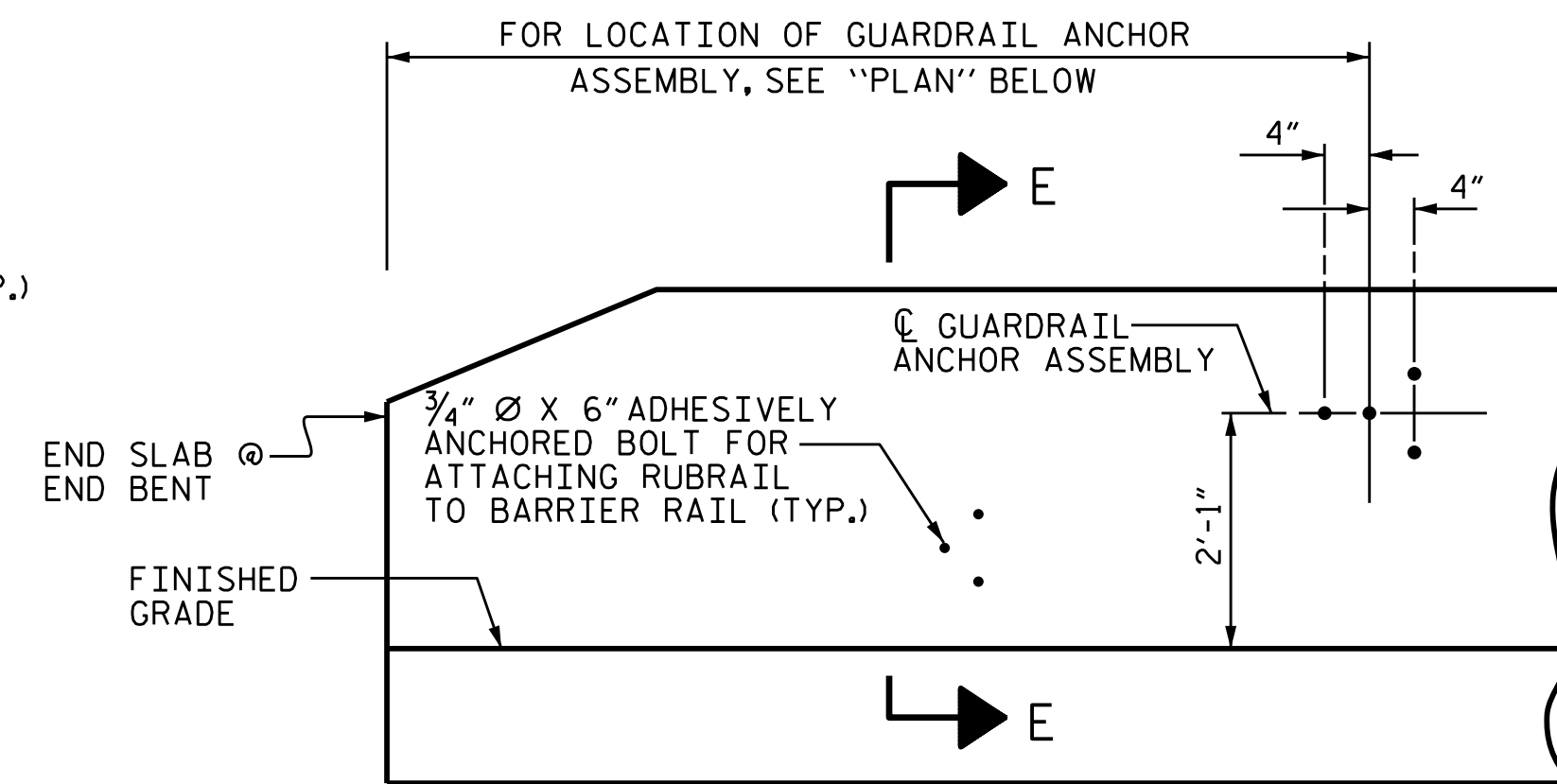
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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.

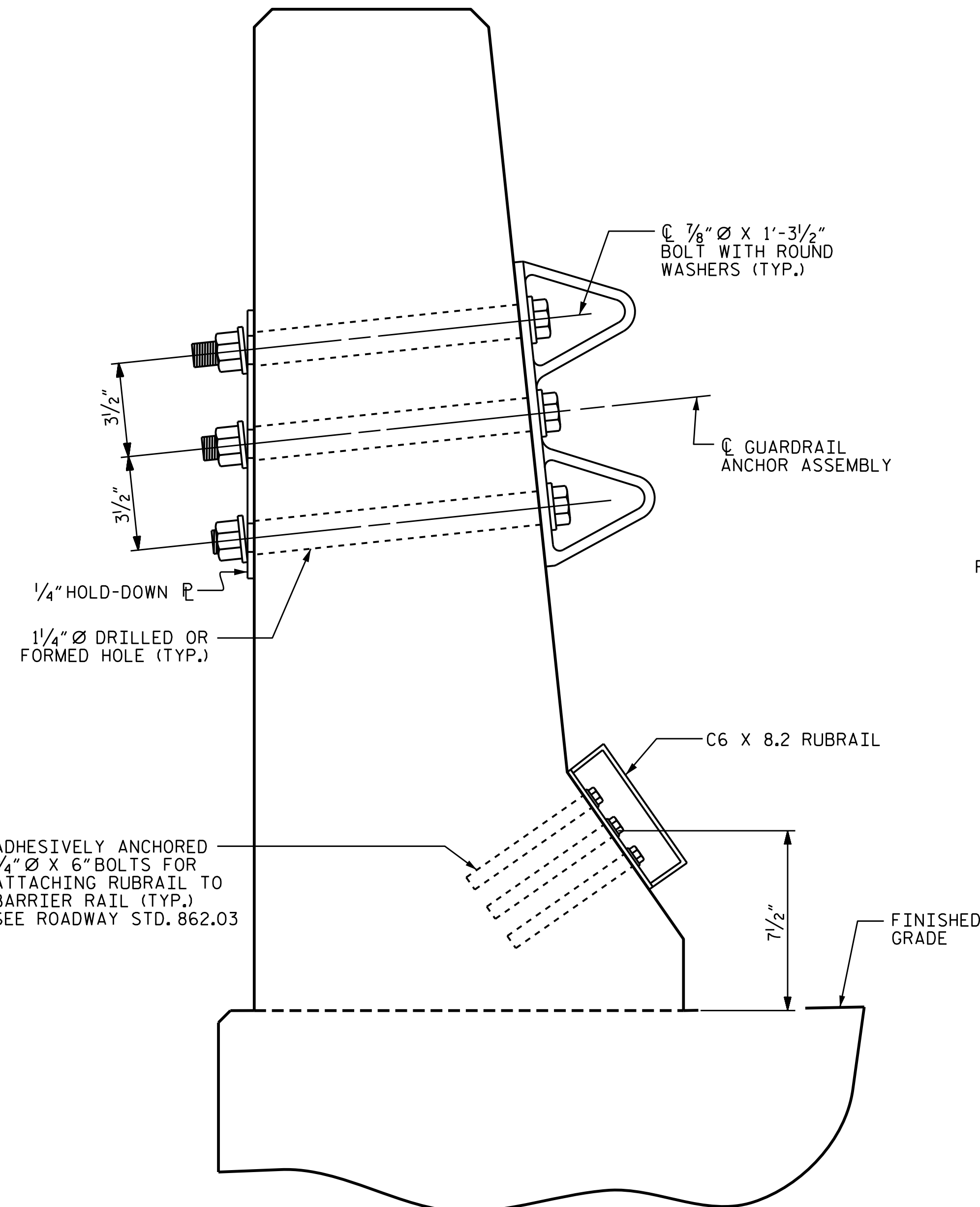
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR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



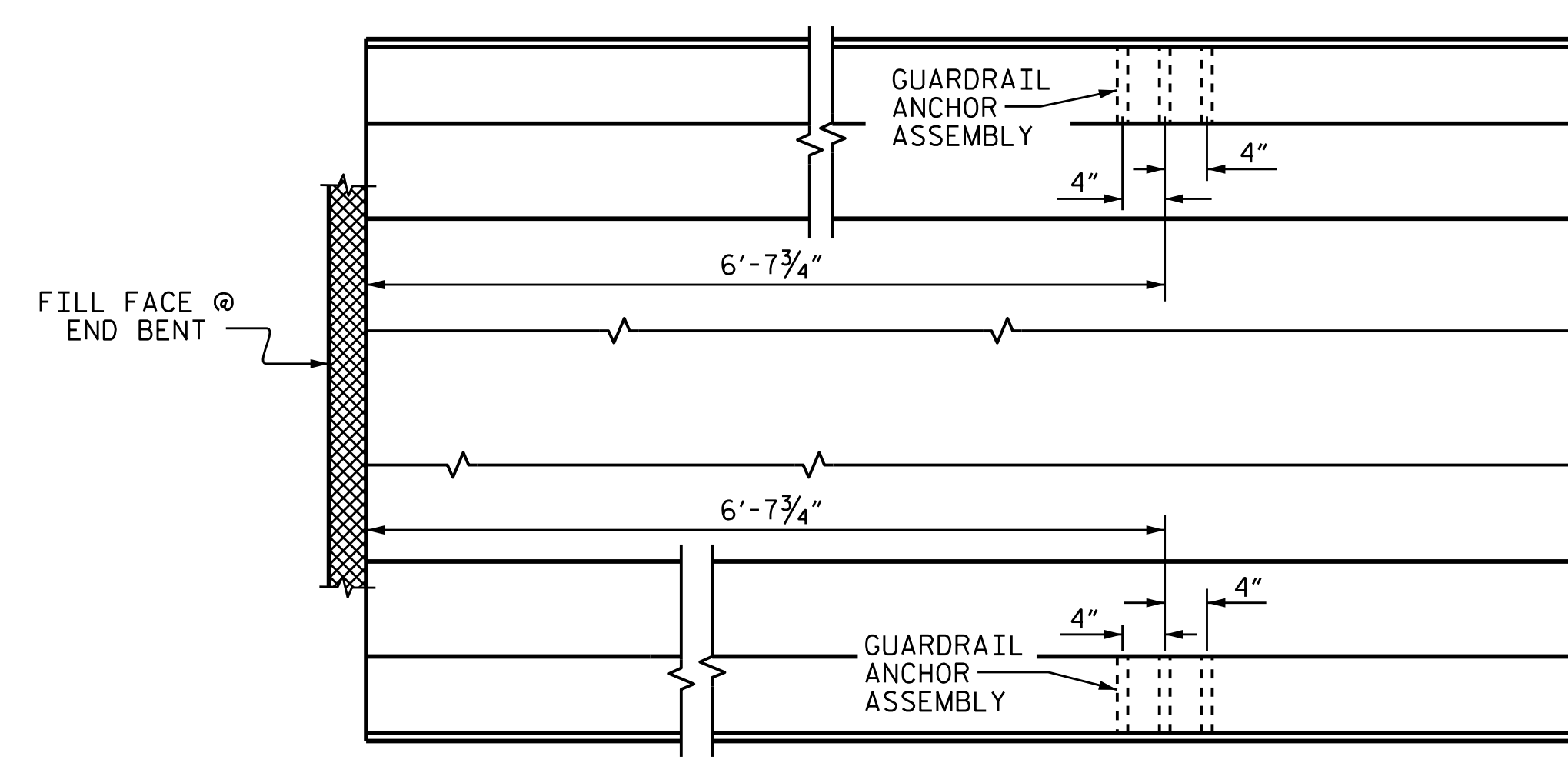
PLAN



ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

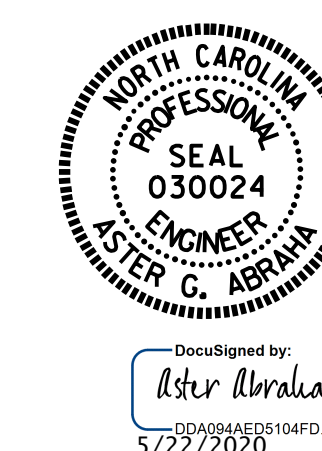
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-



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

ASSEMBLED BY : S. WANCE	DATE : 01/2020
CHECKED BY : A. G. ABRAHA	DATE : 01/2020
DRAWN BY : TLA 5/06	REV. 7/12 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			30

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

BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

GROOVING BRIDGE FLOORS

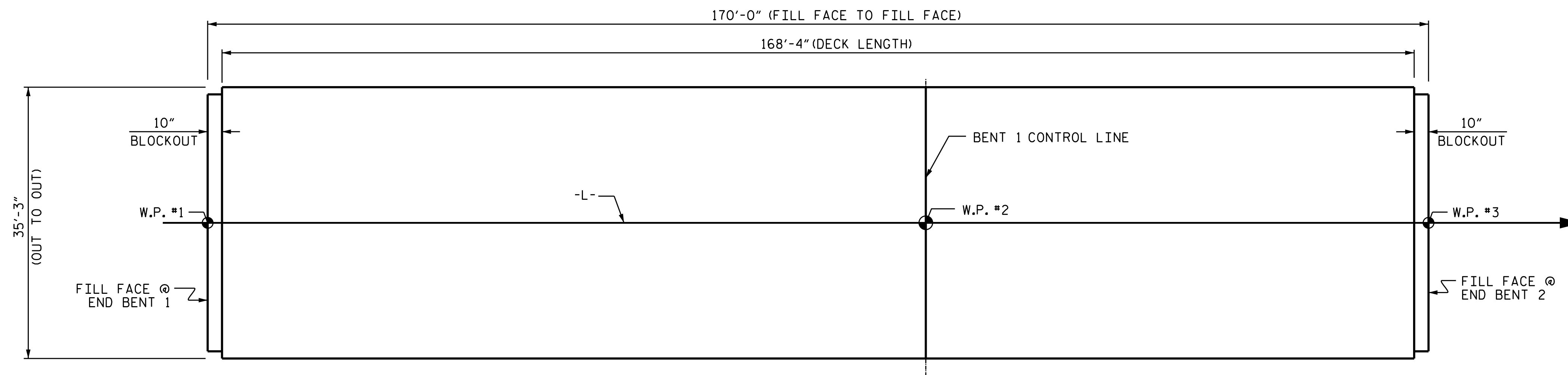
APPROACH SLABS	822	SQ.FT.
BRIDGE DECK	4,872	SQ.FT.
TOTAL	5,694	SQ.FT.

BAR TYPES		REINFORCING BAR SCHEDULE				
		SPANS "A & B"				
		BAR	No.	SIZE	TYPE	LENGTH
* A1	336	#5	STR.	34'-10"	12,207	
A2	336	#5	STR.	34'-10"	12,207	
B1	176	#5	STR.	43'-6"	7,985	
* B2	71	#6	STR.	19'-10"	2,115	
* B3	50	#4	STR.	25'-1"	838	
* B4	36	#5	STR.	18'-4"	688	
* B5	36	#5	STR.	45'-3"	1,699	
* B6	35	#5	STR.	14'-4"	523	
* B7	25	#4	STR.	33'-2"	554	
* B8	71	#6	STR.	13'-10"	1,475	
B9	39	#5	STR.	14'-4"	583	
K1	10	#4	STR.	34'-10"	233	
K2	6	#4	STR.	7'-0"	28	
K3	6	#4	STR.	8'-1"	32	
K4	12	#4	STR.	8'-6"	68	
K5	6	#4	STR.	7'-6"	30	
K6	4	#4	STR.	1'-11"	5	
K7	4	#4	STR.	2'-6"	7	
K8	8	#4	STR.	2'-8"	14	
K9	4	#4	STR.	2'-2"	6	
* S1	62	#4	2	10'-3"	425	
* S2	62	#4	2	11'-11"	494	
S3	62	#4	1	10'-7"	438	
REINFORCING STEEL					21,636	
* EPOXY COATED REINFORCING STEEL					21,018	

ALL BAR DIMENSIONS ARE OUT TO OUT

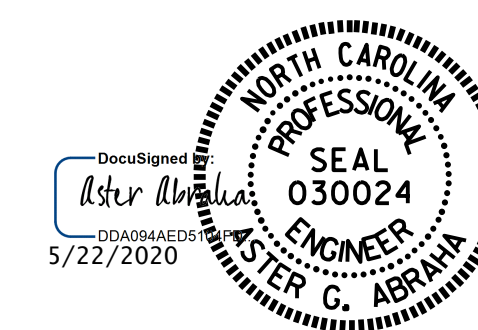
CLASS AA CONCRETE BREAKDOWN	
SPANS A & B	(CU. YDS.)
POUR #1	145.6
POUR #2	69.0
TOTAL	214.6

FOR LOCATION OF POURS SEE "POUR SEQUENCE SHEET"



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 5,934)

PROJECT NO. B-4931
EDGEcombe COUNTY
STATION: 16+99.00 -L-

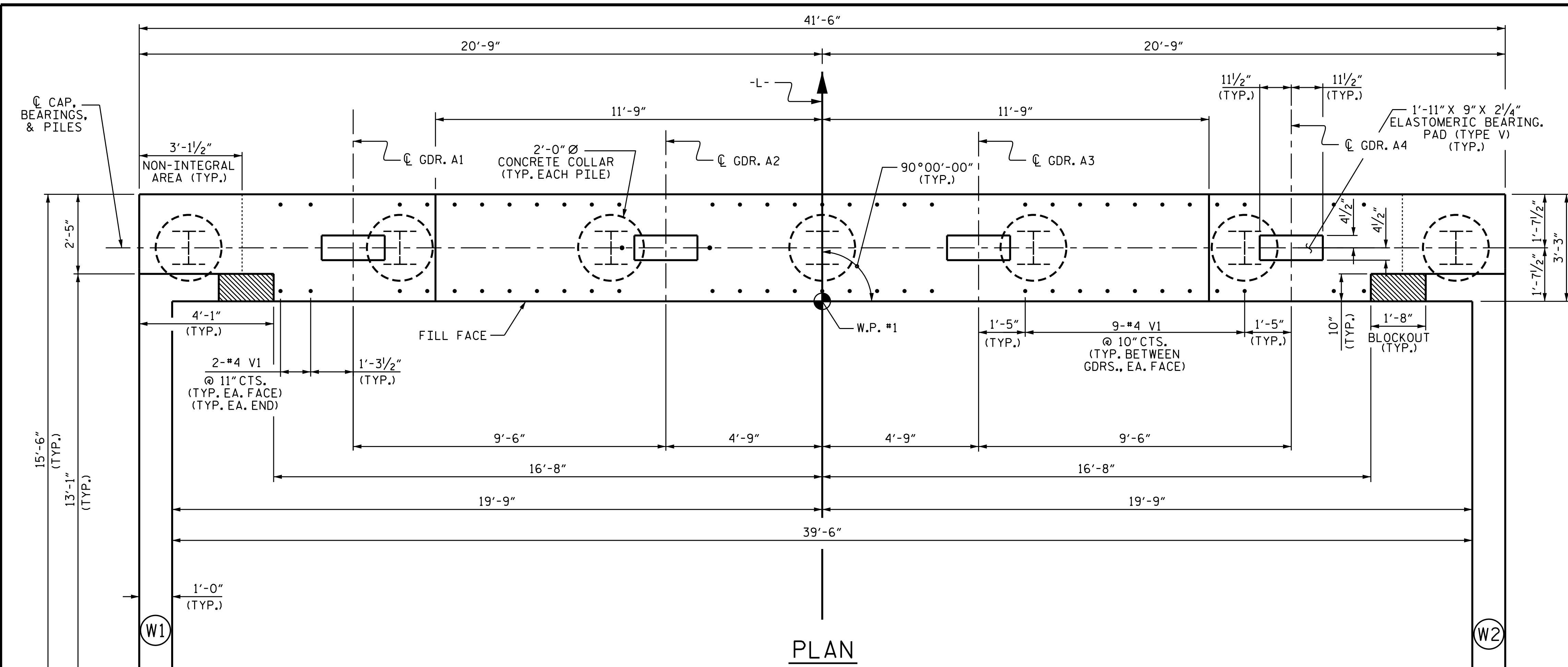


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUPERSTRUCTURE
BILL OF MATERIAL**

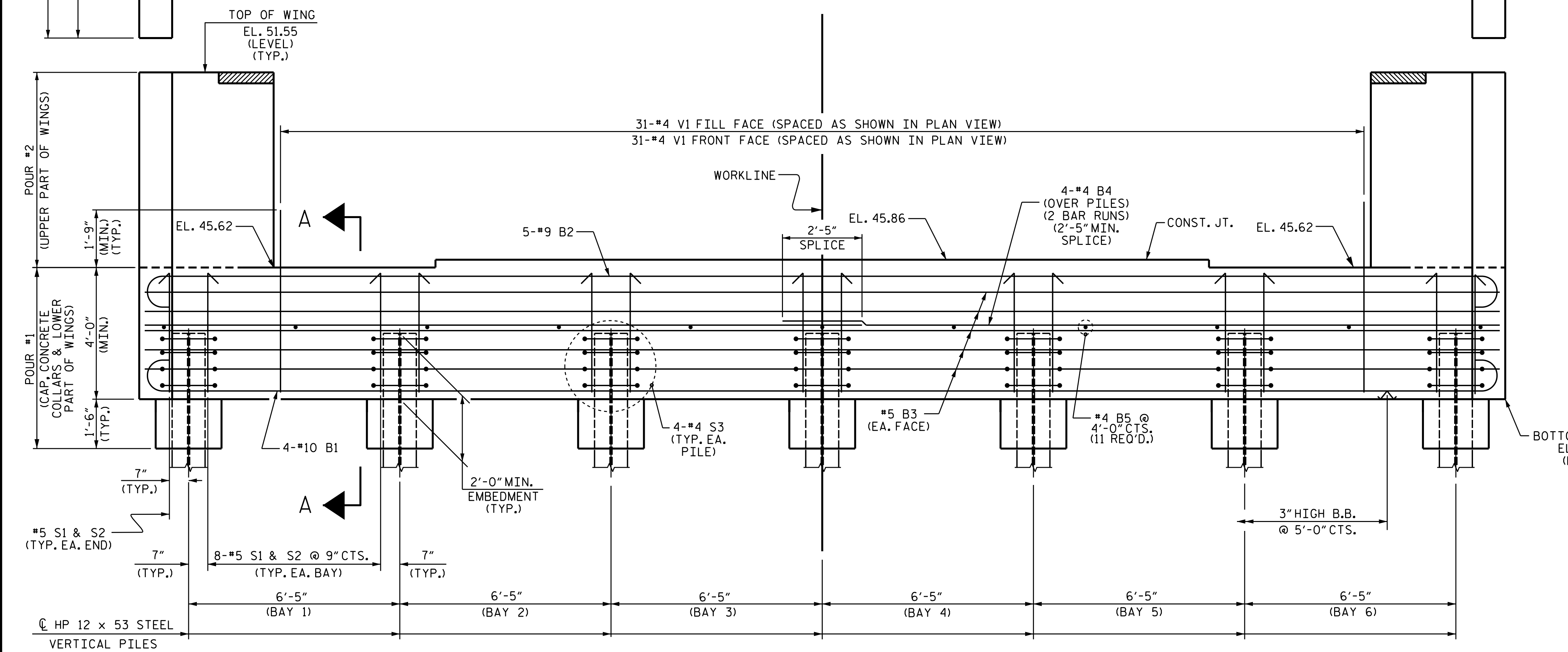
DRAWN BY : A. Y. GODFREY DATE : 04/2020
CHECKED BY : S. WANCE DATE : 04/2020
DESIGN ENGINEER OF RECORD: M. M. AHMED DATE : 11/2019

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			30



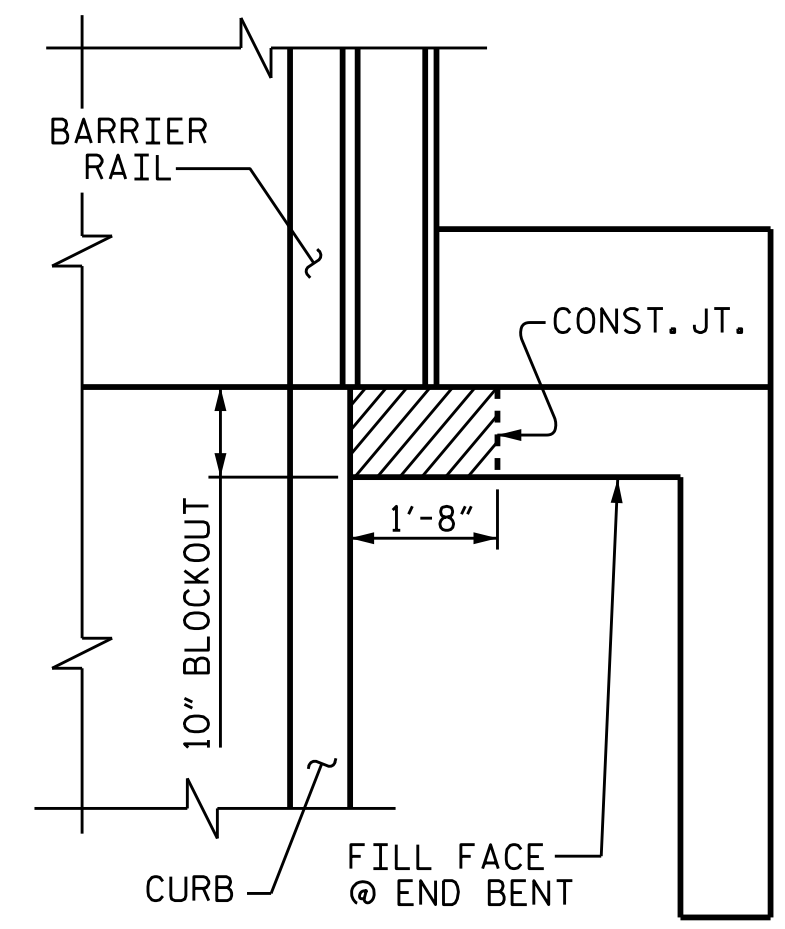
PLAN



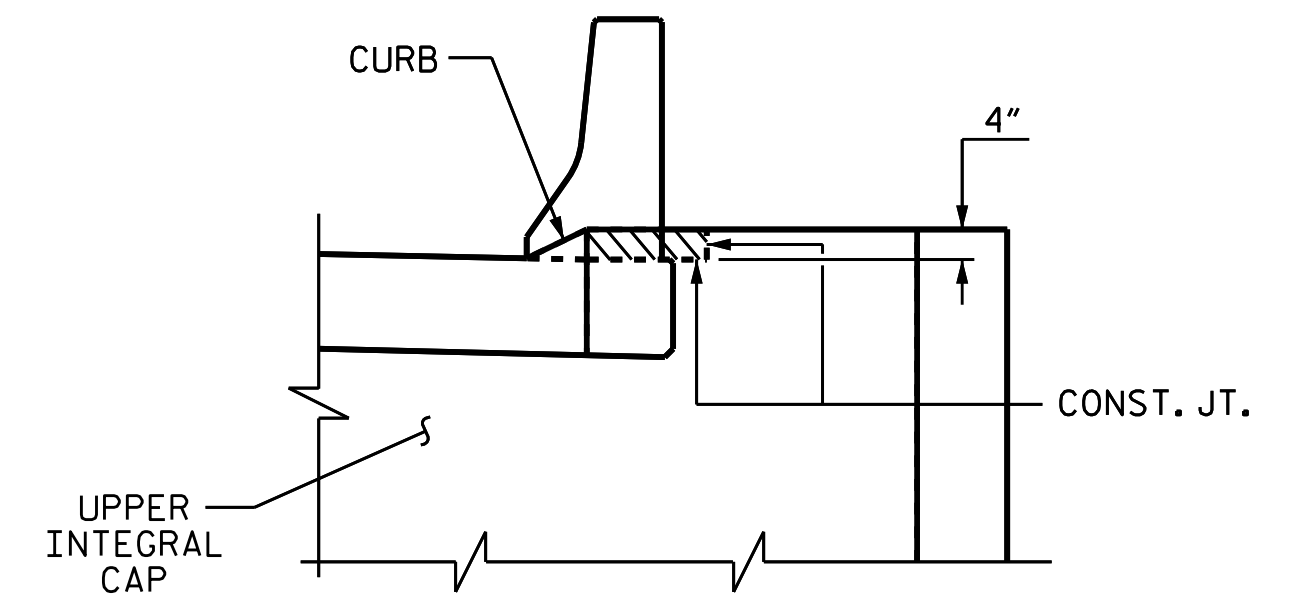
ELEVATION

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #4 V1 BARS.
 THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA AND NON-INTEGRAL AREA AT THE ENDS OF CAP, SHALL BE RAKED TO A DEPTH OF 1/4".
 THE UPPER PORTION OF THE INTEGRAL END BENT SHALL BE POURED WITH THE SUPERSTRUCTURE. SEE SUPERSTRUCTURE PLANS.



PLAN



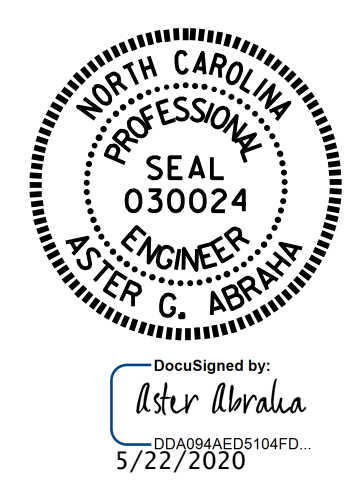
ELEVATION

BLOCKOUT IN WING WALL

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

PROJECT NO. B-4931
 EDGECOMBE COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 3



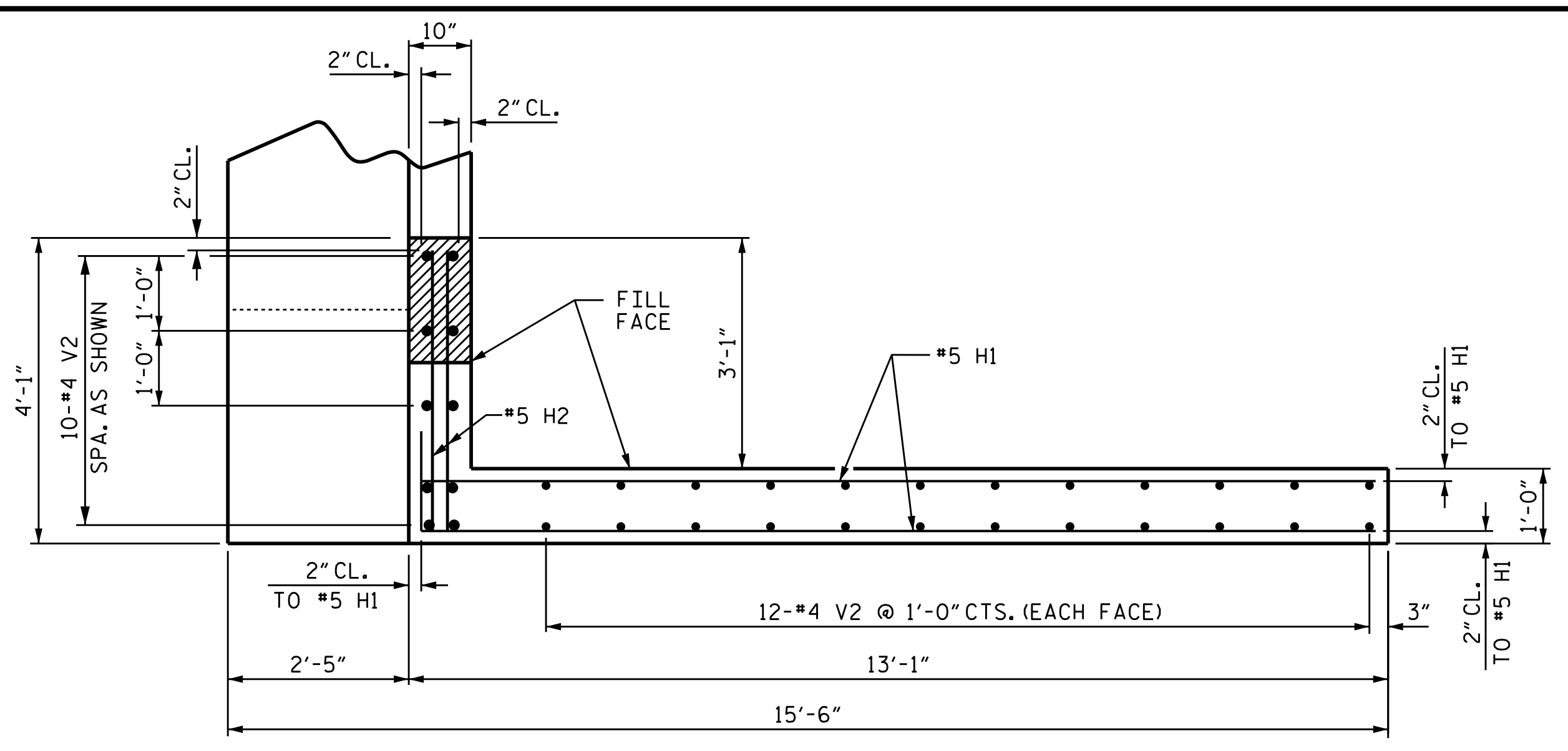
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT 1

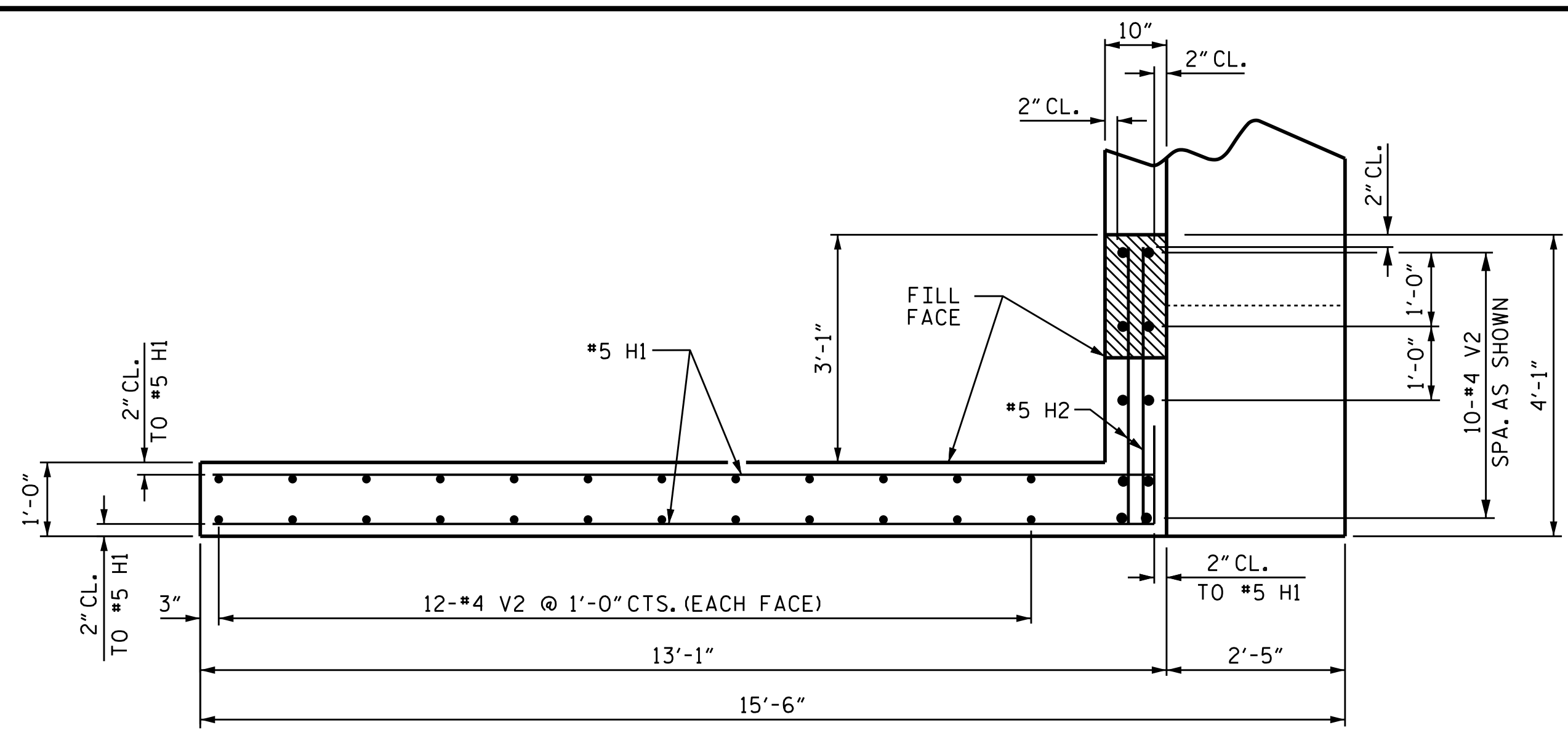
DRAWN BY: M.M. AHMED DATE: 11/19
 CHECKED BY: S. WANCE DATE: 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: 09/19

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			30

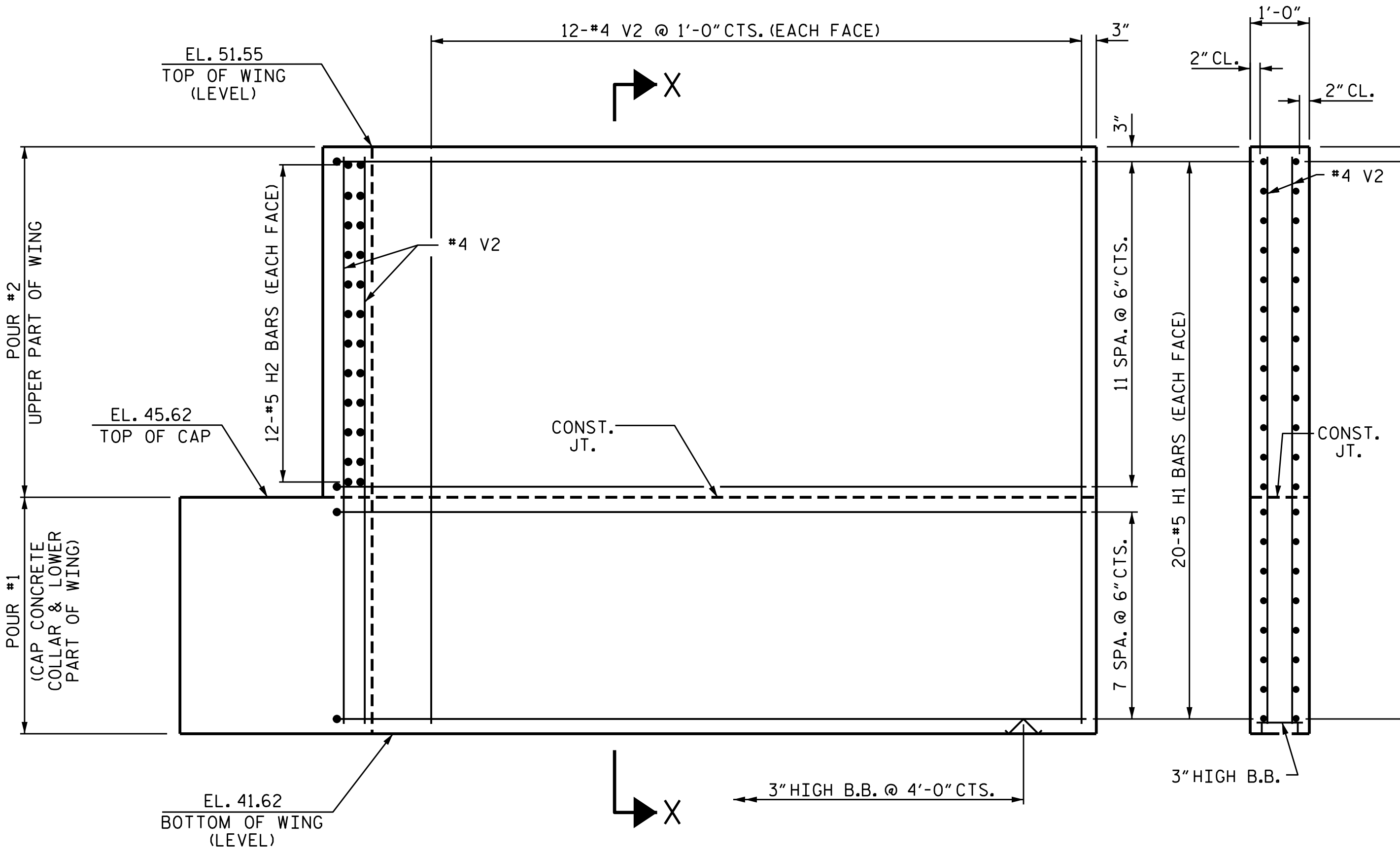
STR. #1



PLAN OF WING W1

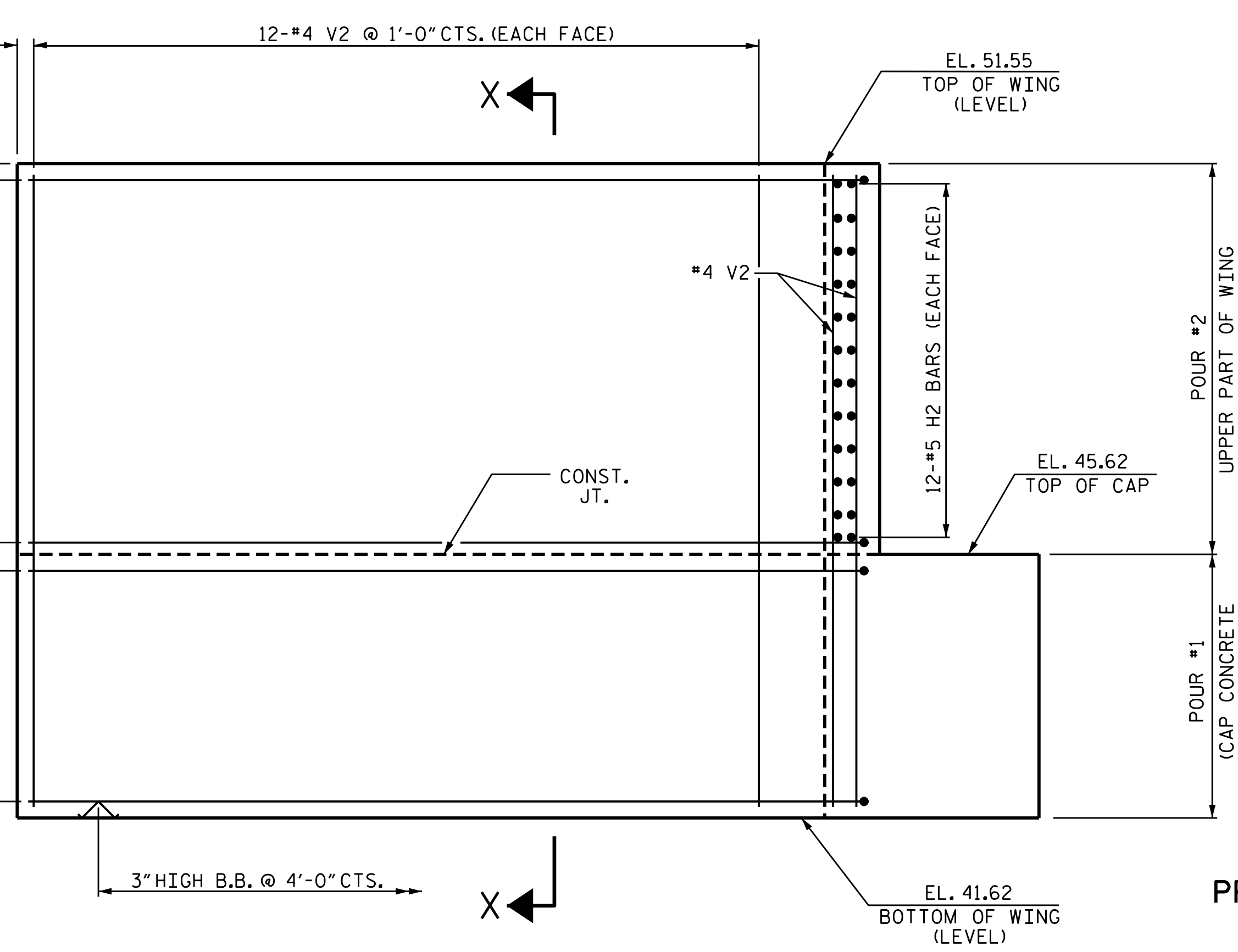


PLAN OF WING W2



ELEVATION OF WING W1

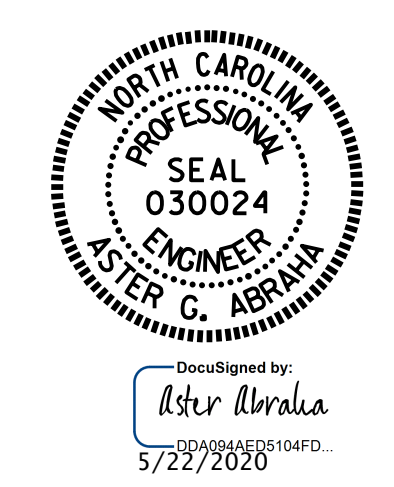
SECTION X-X



ELEVATION OF WING W2

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 3



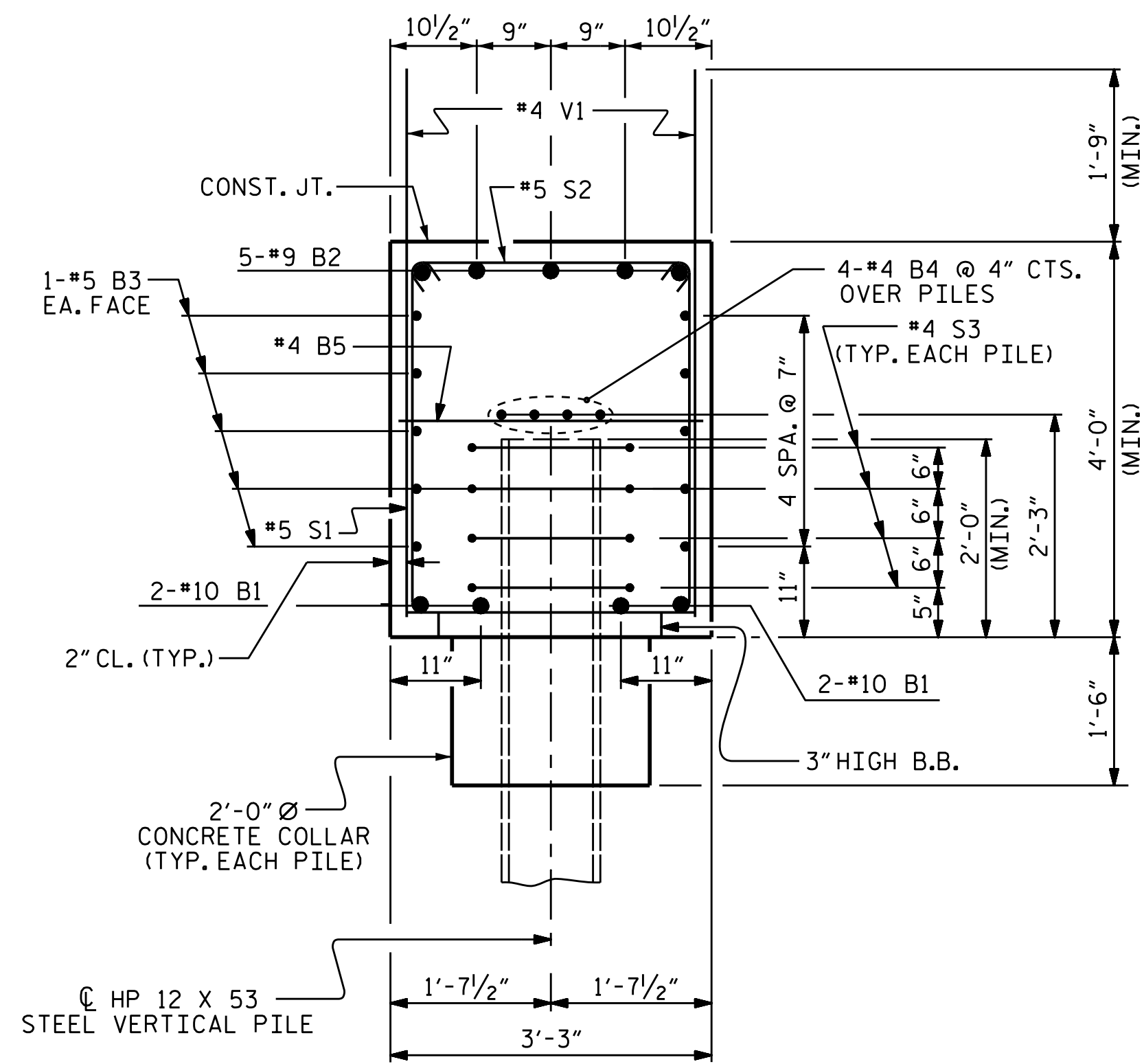
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT 1

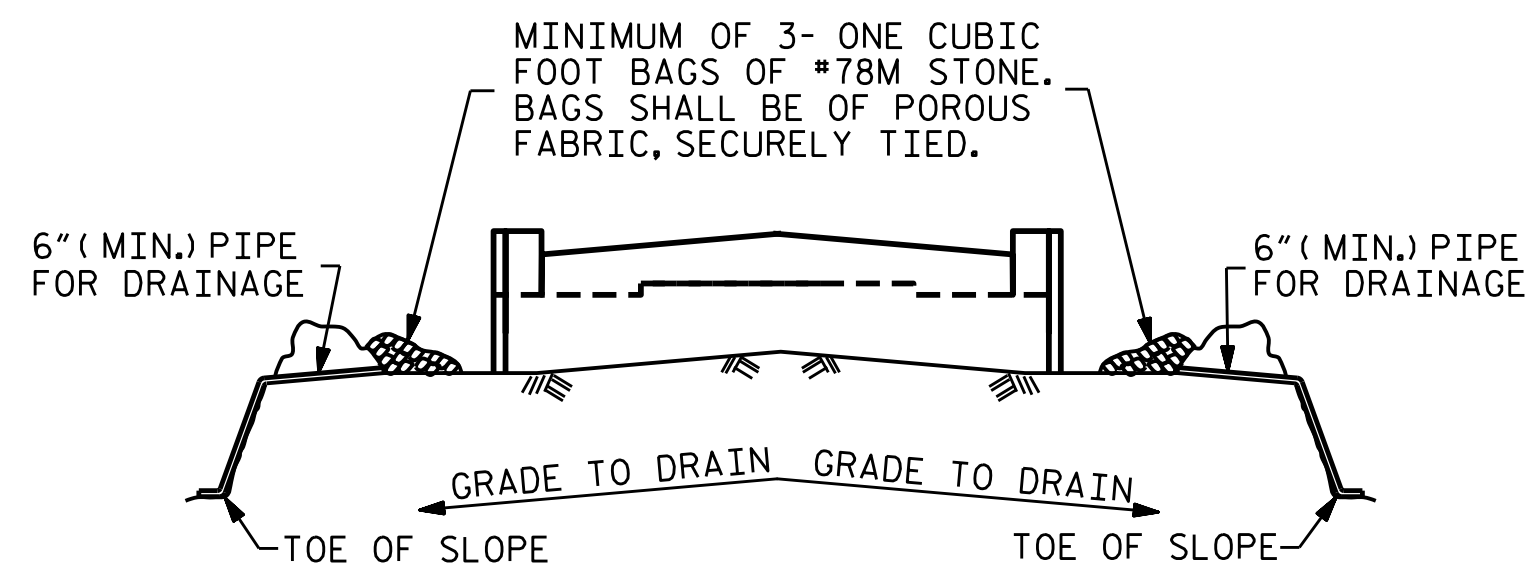
DRAWN BY: M.M. AHMED DATE: 12/12/19
 CHECKED BY: S. WANCE DATE: 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: 09/19

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			30



SECTION A-A



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.

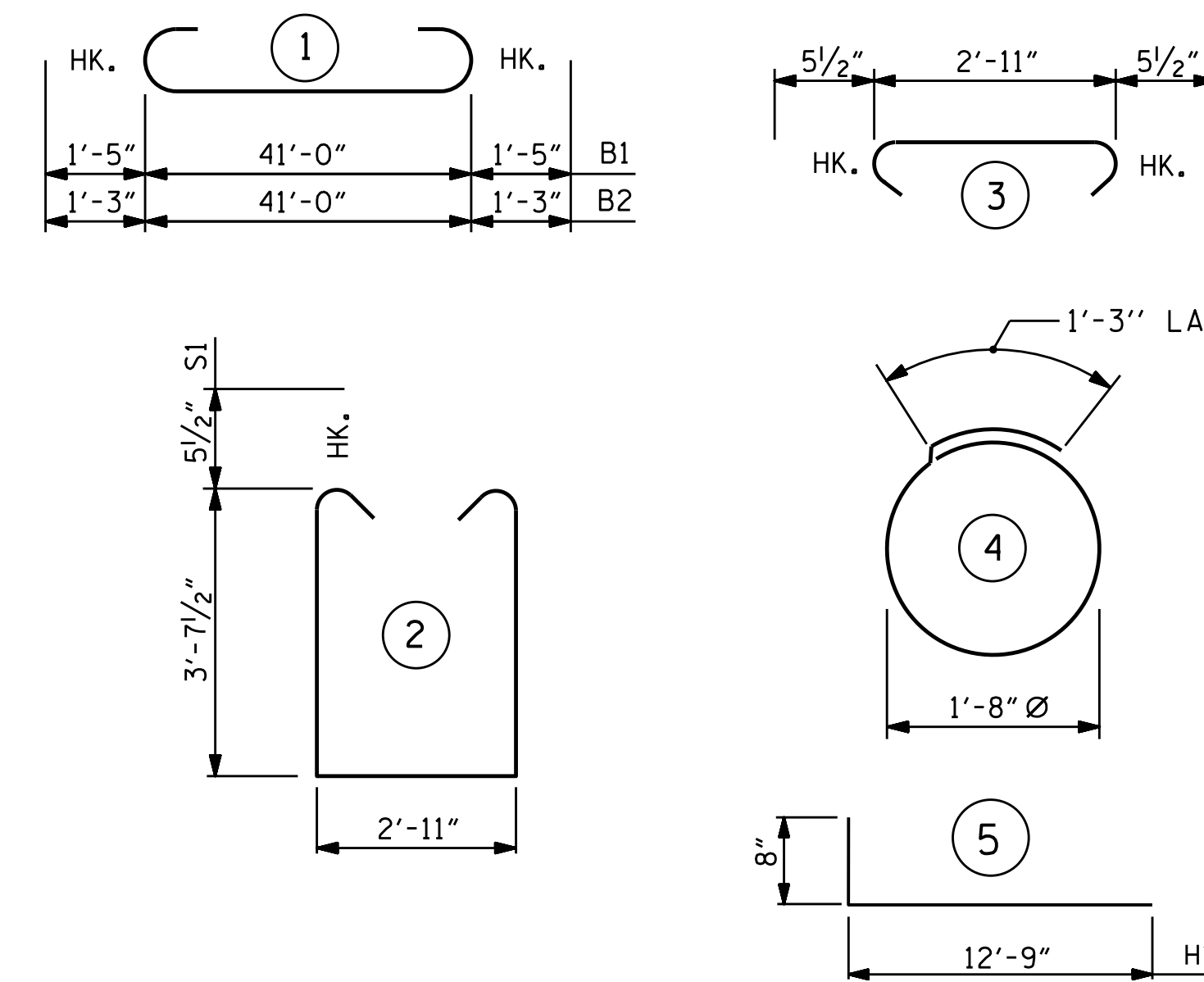
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

DRAWN BY : M.M. AHMED DATE : 12/13/19
 CHECKED BY : S. WANCE DATE : 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE : 09/19

22-MAY-2020 10:07
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 qabr.aha

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

INTEGRAL END BENT #1

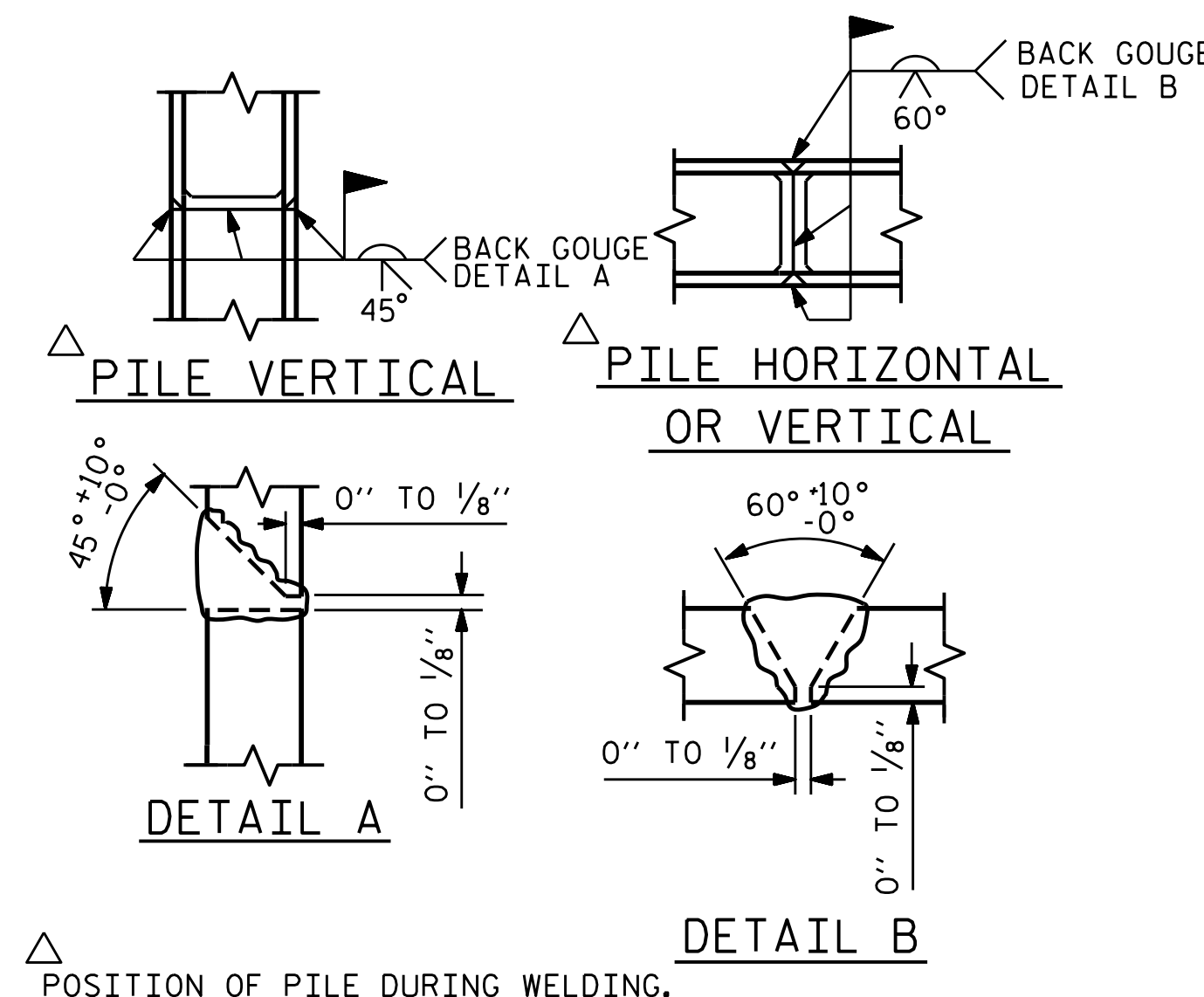
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	43'-10"	754
B2	5	#9	1	43'-6"	740
B3	10	#5	STR	41'-0"	428
B4	8	#4	STR	21'-10"	117
B5	11	#4	STR	2'-11"	21
H1	80	#5	5	13'-5"	1119
H2	48	#5	STR	3'-9"	188
S1	50	#5	2	11'-1"	578
S2	50	#5	3	3'-10"	200
S3	28	#4	4	6'-6"	122
V1	62	#4	STR	5'-7"	231
V2	68	#4	STR	9'-7"	435

REINFORCING STEEL = 4933 LBS

CLASS A CONCRETE
 POUR #1 (CAP, CONCRETE COLLARS & LOWER PART OF WINGS) 25.5 C.Y.
 POUR #2 (UPPER PART OF WINGS) 6.9 C.Y.
 TOTAL 32.4 C.Y.

HP 12 x 53 STEEL PILES
 No. 7 245 LIN FT.

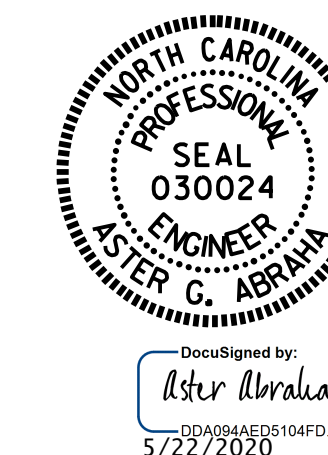
PILE REDRIVES 4 EA.



PILE SPLICE DETAILS

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 3 OF 3

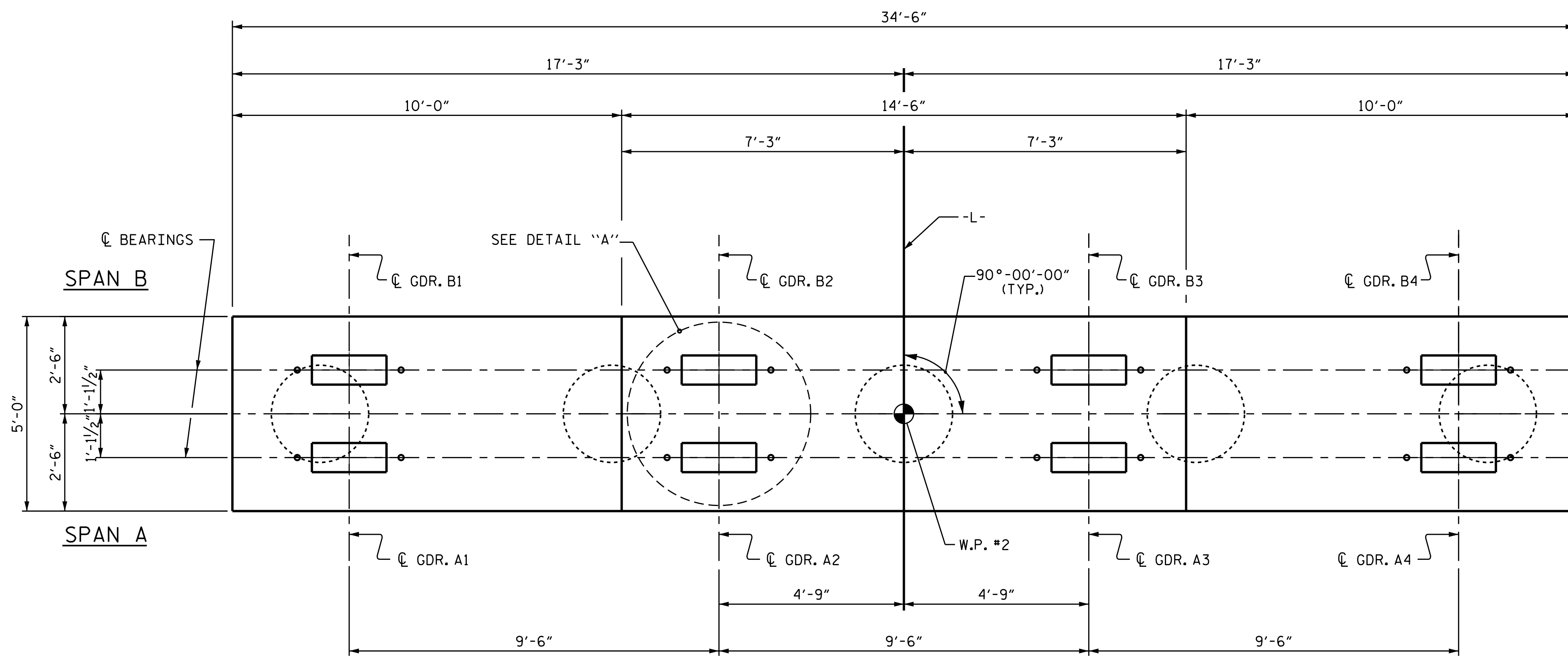


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT 1

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

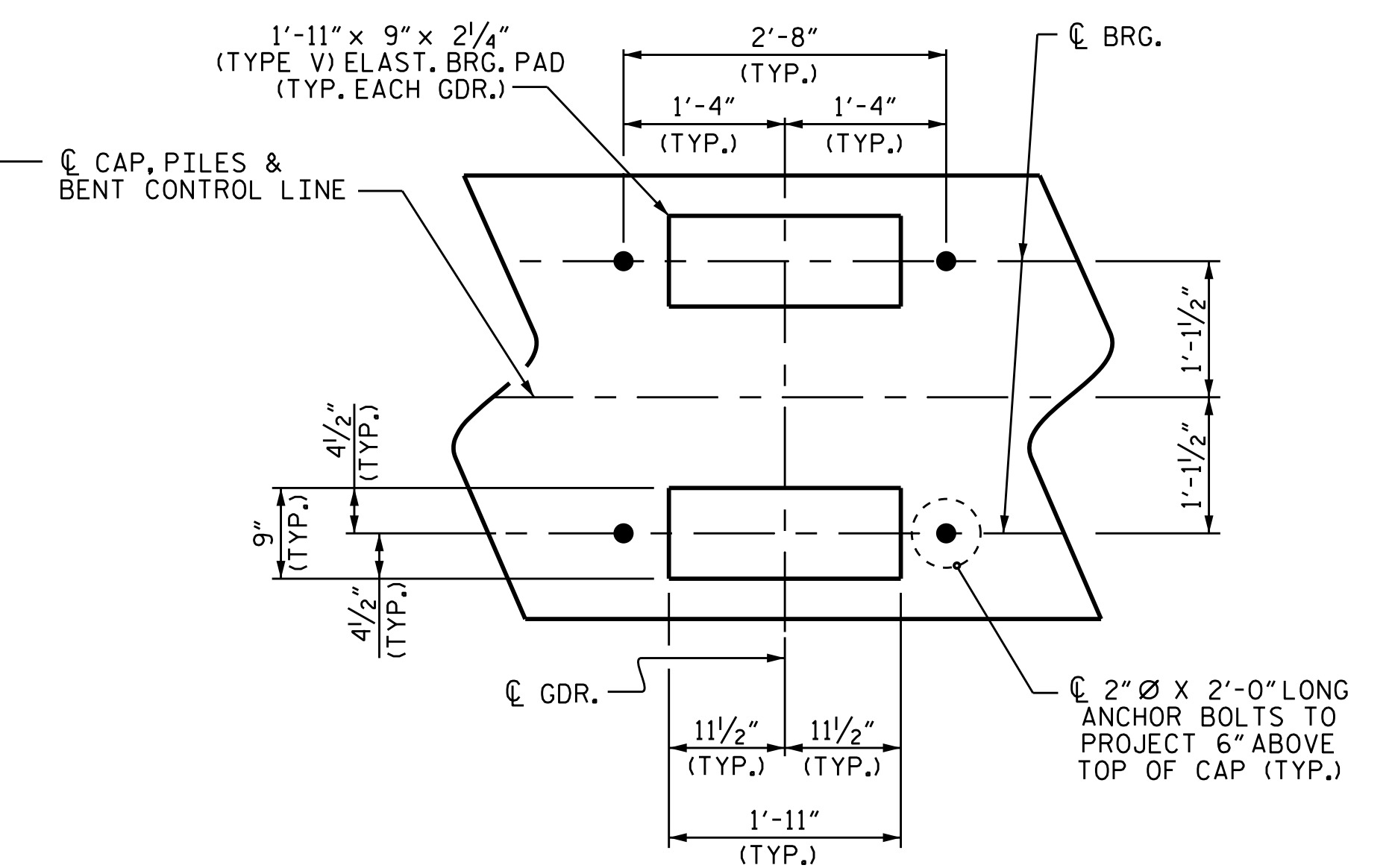
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS 30
2			4			



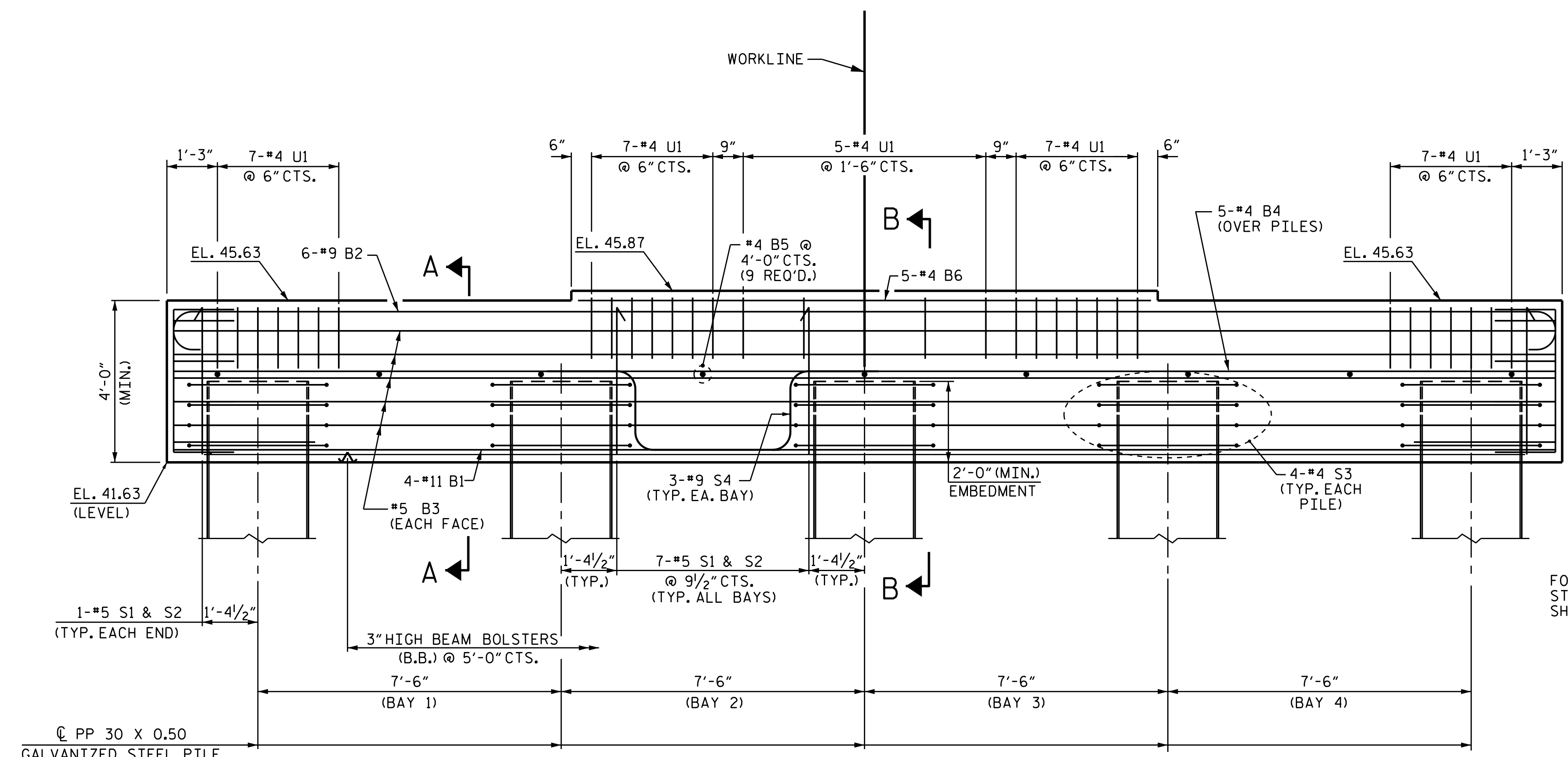
PLAN

NOTES:

STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
 FOR 30" STEEL PIPE PILE DETAILS, SEE SHEET 3 OF 3.
 GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 80 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



DETAIL "A"
(TYP. EA. GDR.)

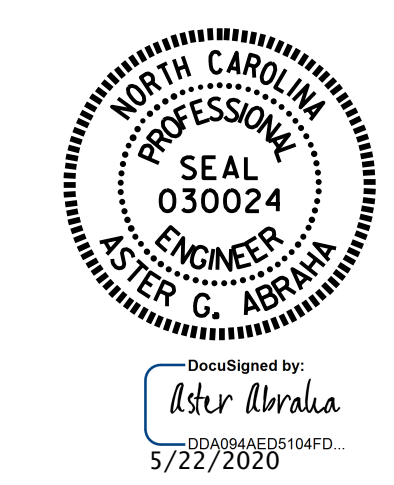


ELEVATION

FOR ADDITIONAL REINFORCING STEEL IN ENDS OF CAP, SEE SHEET 2 OF 3.

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 3



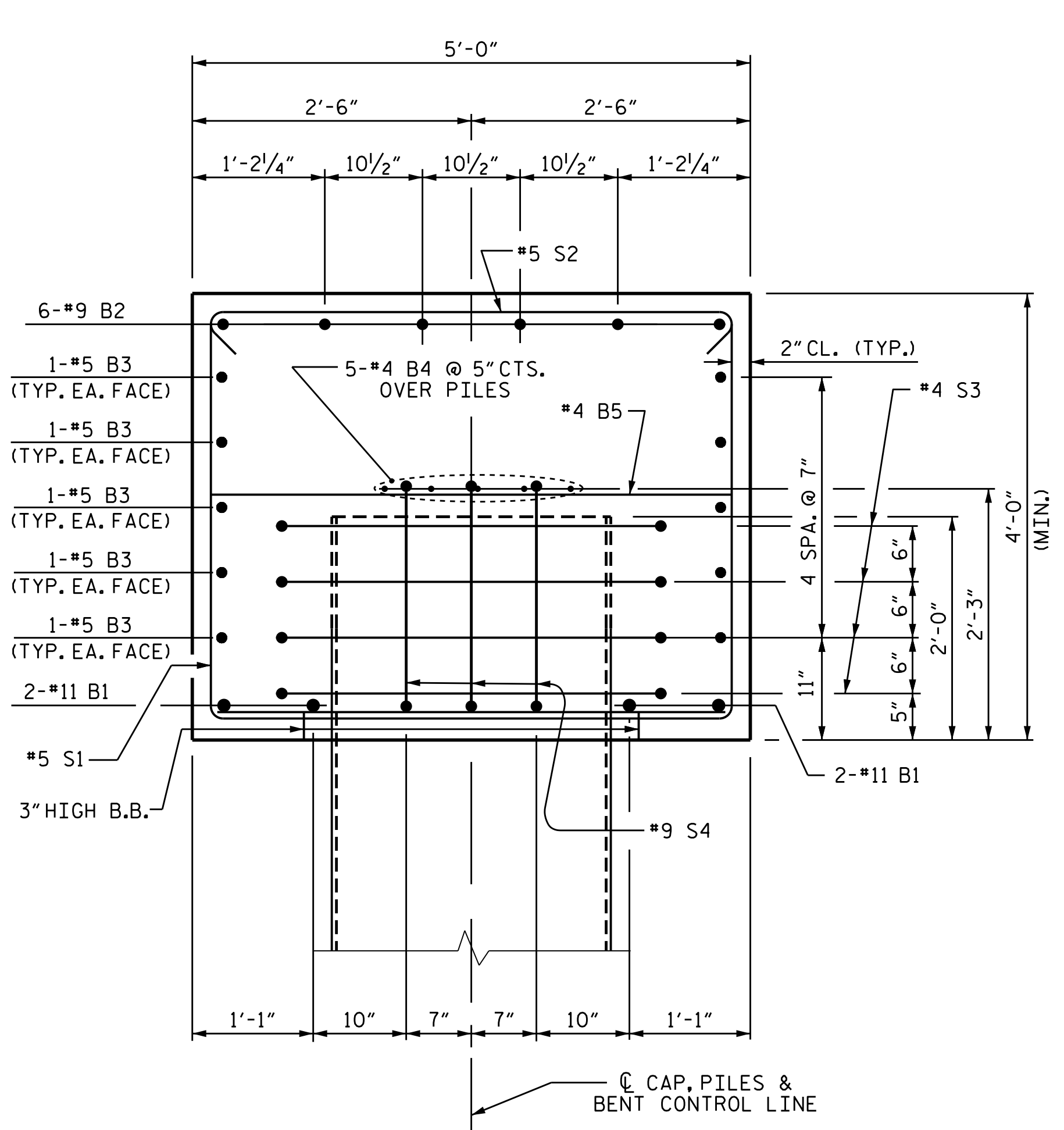
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

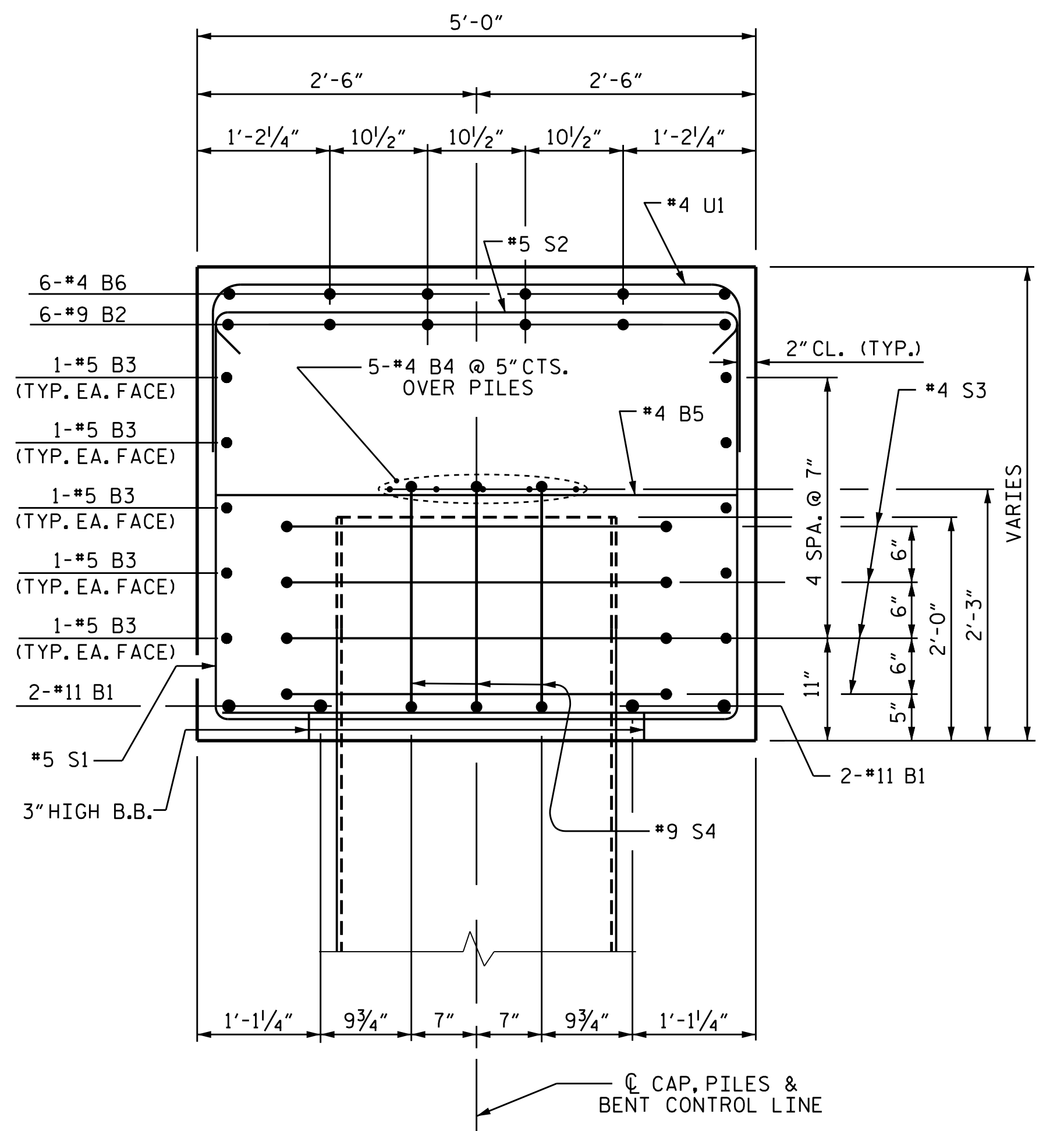
DRAWN BY: M.M. AHMED DATE: JAN 2020
 CHECKED BY: S. WANCE DATE: JAN 2020
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: -

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

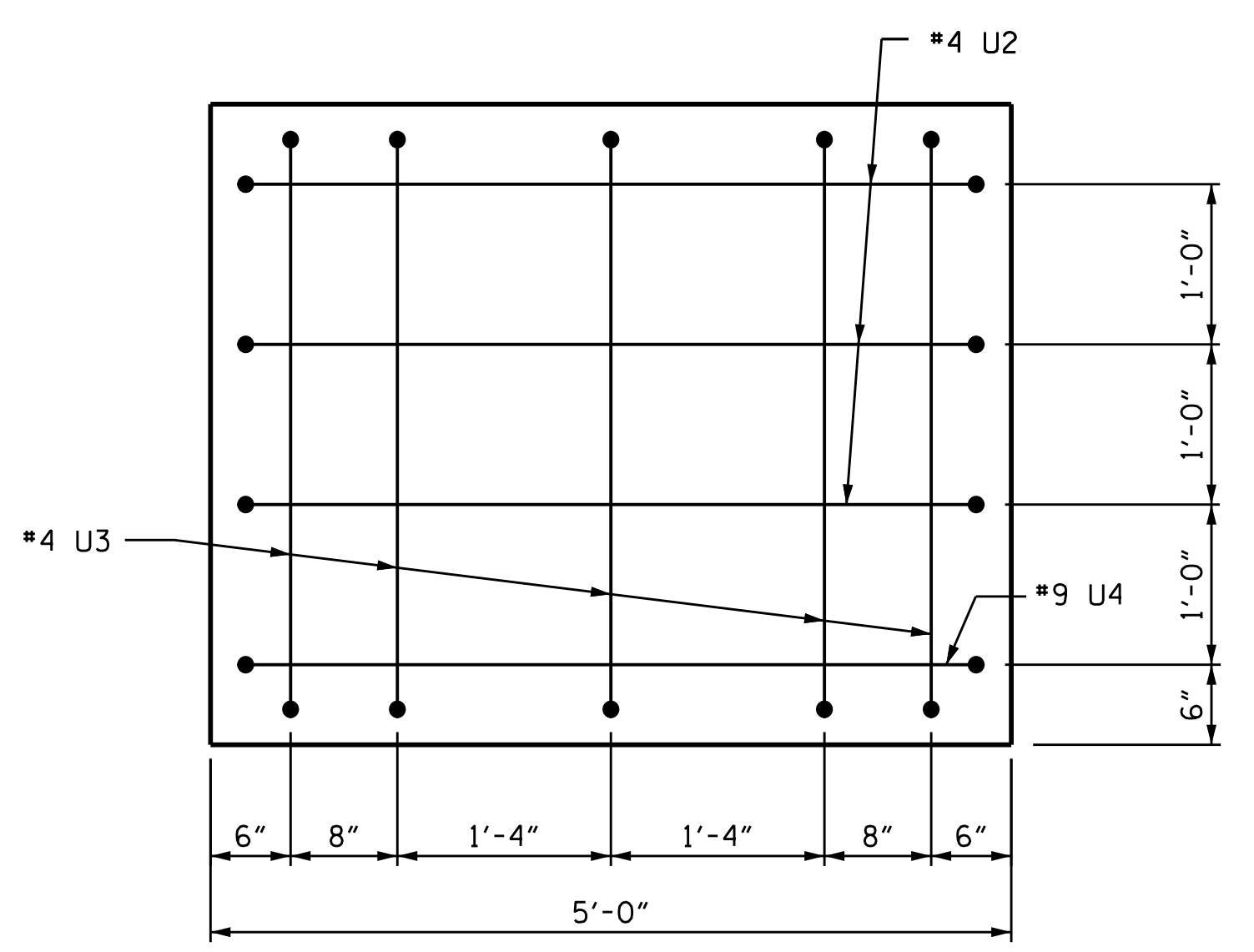
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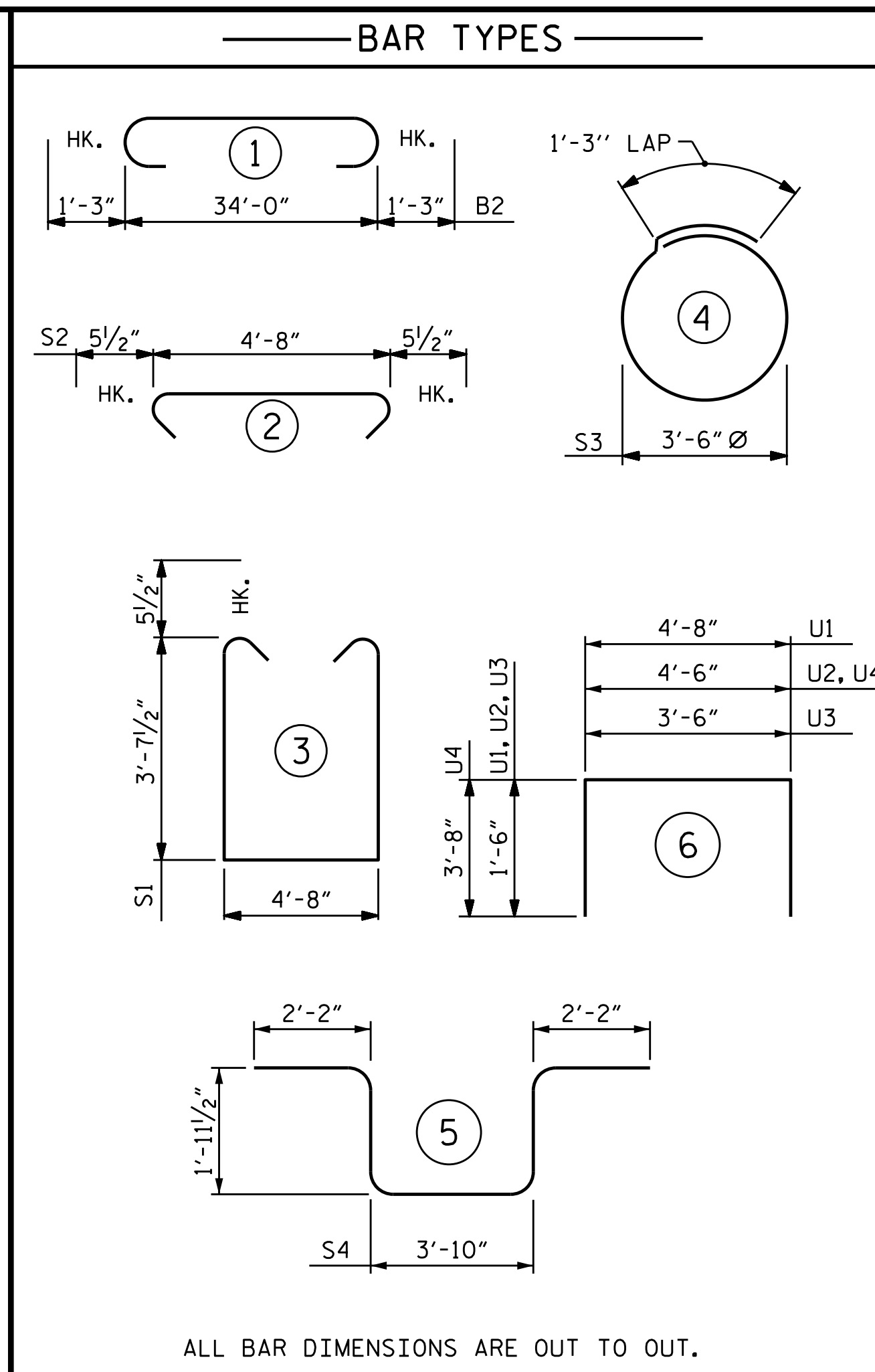
SECTION A-A



SECTION B-B



END OF CAP VIEW
(TYPICAL BOTH ENDS)



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#11	STR	34'-2"	726
B2	6	#9	1	36'-6"	745
B3	10	#5	STR	34'-2"	356
B4	5	#4	STR	34'-2"	114
B5	9	#4	STR	4'-8"	28
B6	6	#4	STR	14'-2"	57
S1	30	#5	3	12'-10"	402
S2	30	#5	2	5'-7"	175
S3	20	#4	4	12'-3"	164
S4	12	#9	5	12'-3"	500
U1	33	#4	6	7'-8"	169
U2	6	#4	6	7'-6"	30
U3	10	#4	6	6'-6"	43
U4	2	#9	6	11'-10"	80

REINFORCING STEEL _____ 3589 LBS

CLASS A CONCRETE

TOTAL CLASS A CONCRETE _____ ▲ 24.5 C.Y.

30" STEEL PIPE PILES

No. 5 _____ LIN. FT. 575

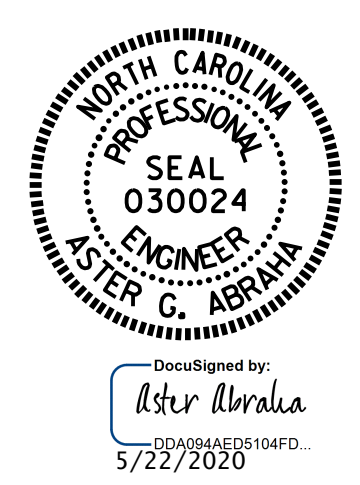
PILE REDRIVES _____ EA. 3

▲ CONCRETE DISPLACED BY THE 30" STEEL PIPE PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

DRAWN BY : M.M. AHMED DATE : JAN 2020
 CHECKED BY : S. WANCE DATE : JAN 2020
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE : -

22-MAY-2020 10:07
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DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED



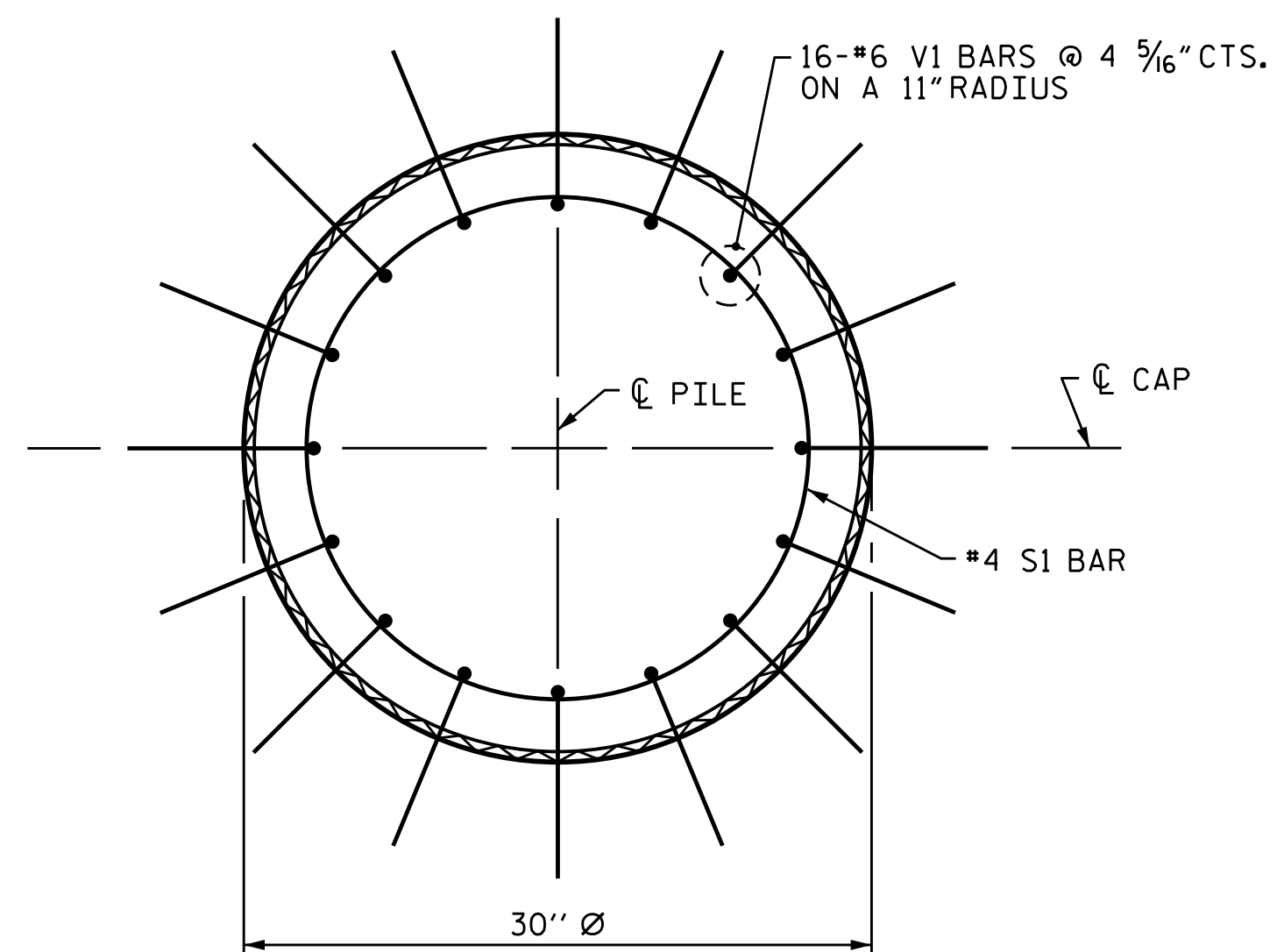
PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 3

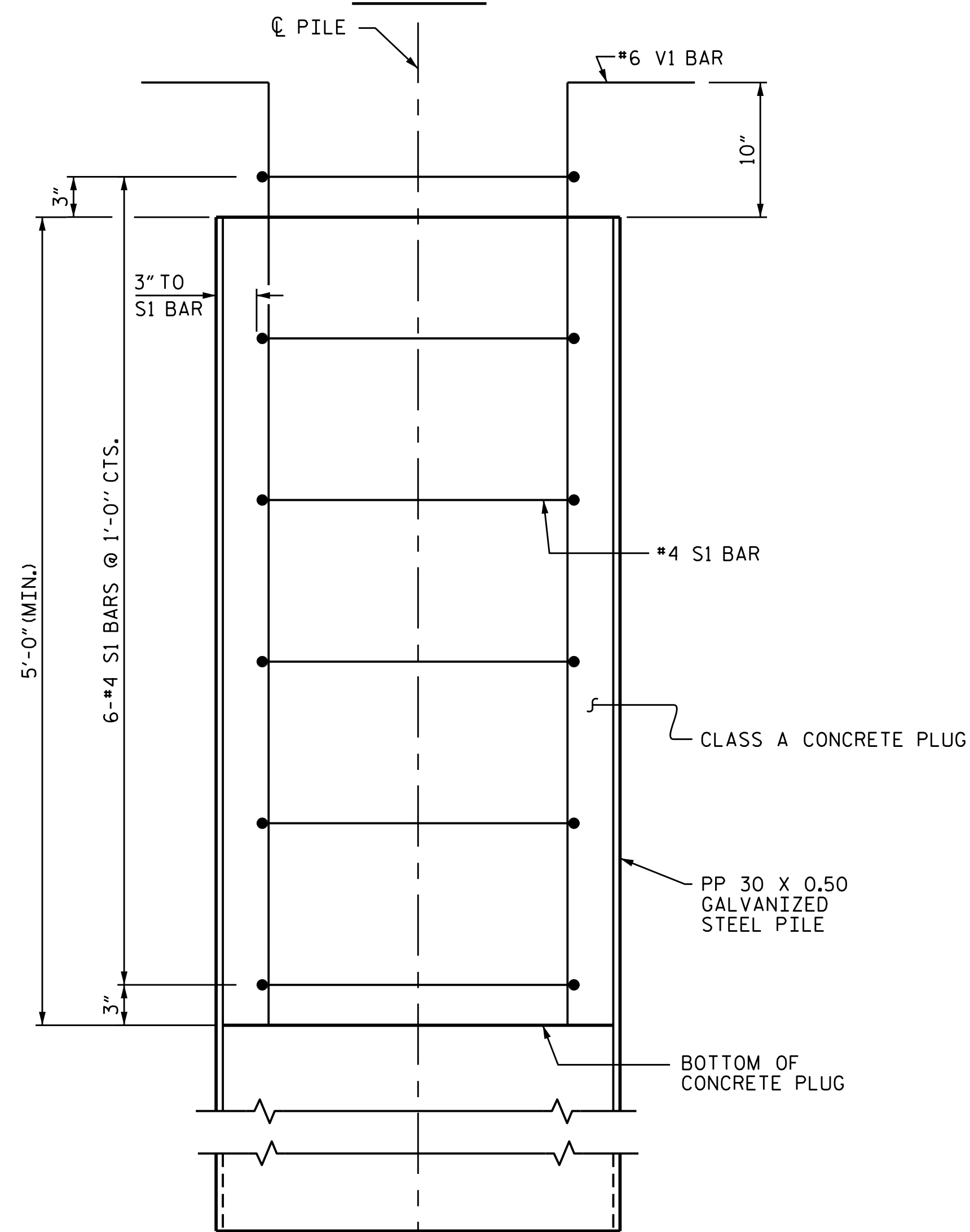
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			30

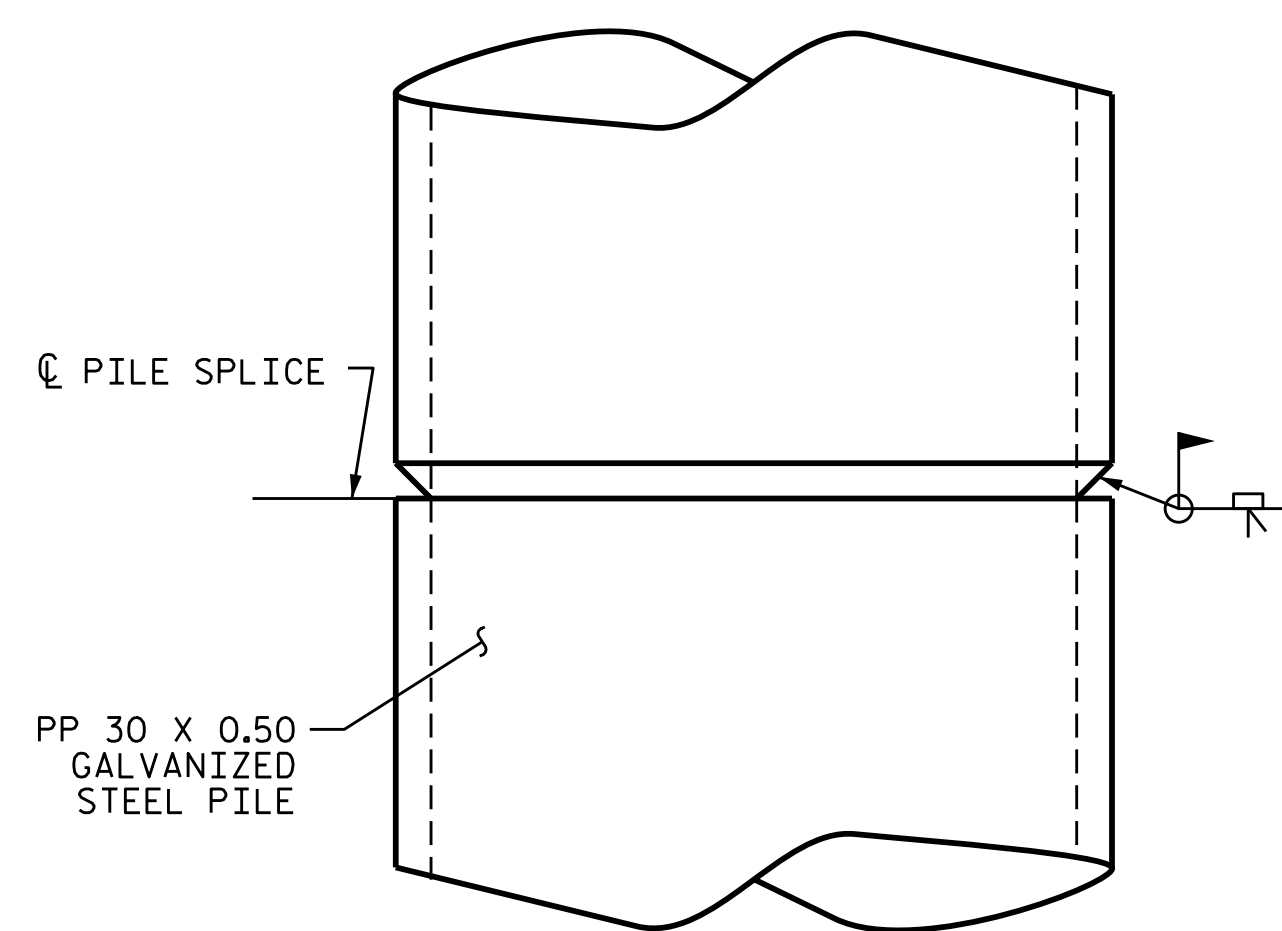


PLAN



ELEVATION

PP 30 X 0.50 GALVANIZED STEEL PILE
(OPEN ENDED)



PIPE PILE SPLICE DETAIL

NOTES

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

GALVANIZE THE TOP OF EACH STEEL PIPE PILE A MINIMUM OF 80 FEET, IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED.

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

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

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

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

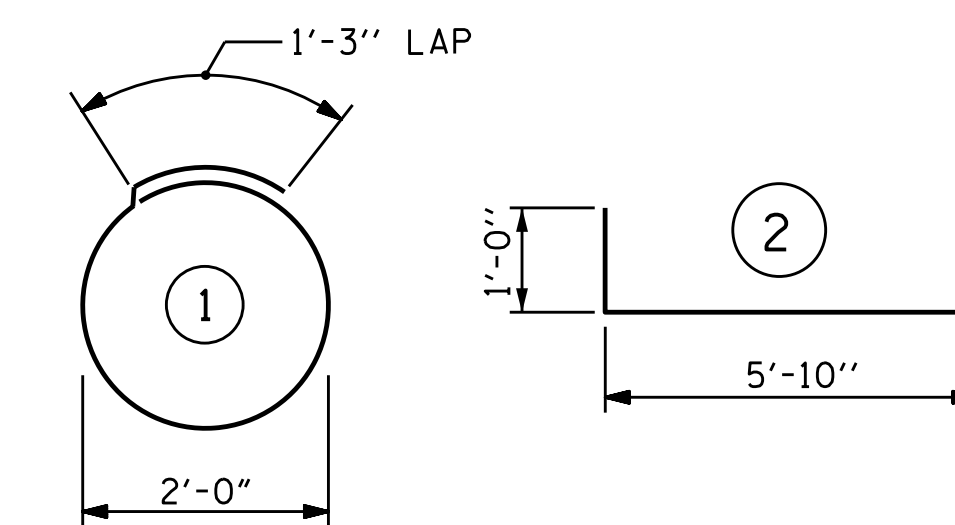
THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 30 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE
PP 30 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	7'-7"	30
V1	16	#6	2	6'-10"	164
REINFORCING STEEL =				194	lbs

CLASS A CONCRETE	
5'-0" MINIMUM PLUG	0.8 CY

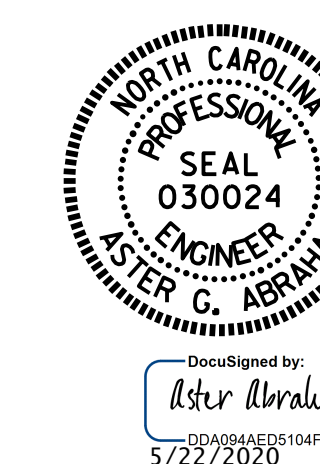
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-4931
EDGECOMBE COUNTY
 STATION: 16+99.00 -L-

SHEET 3 OF 3

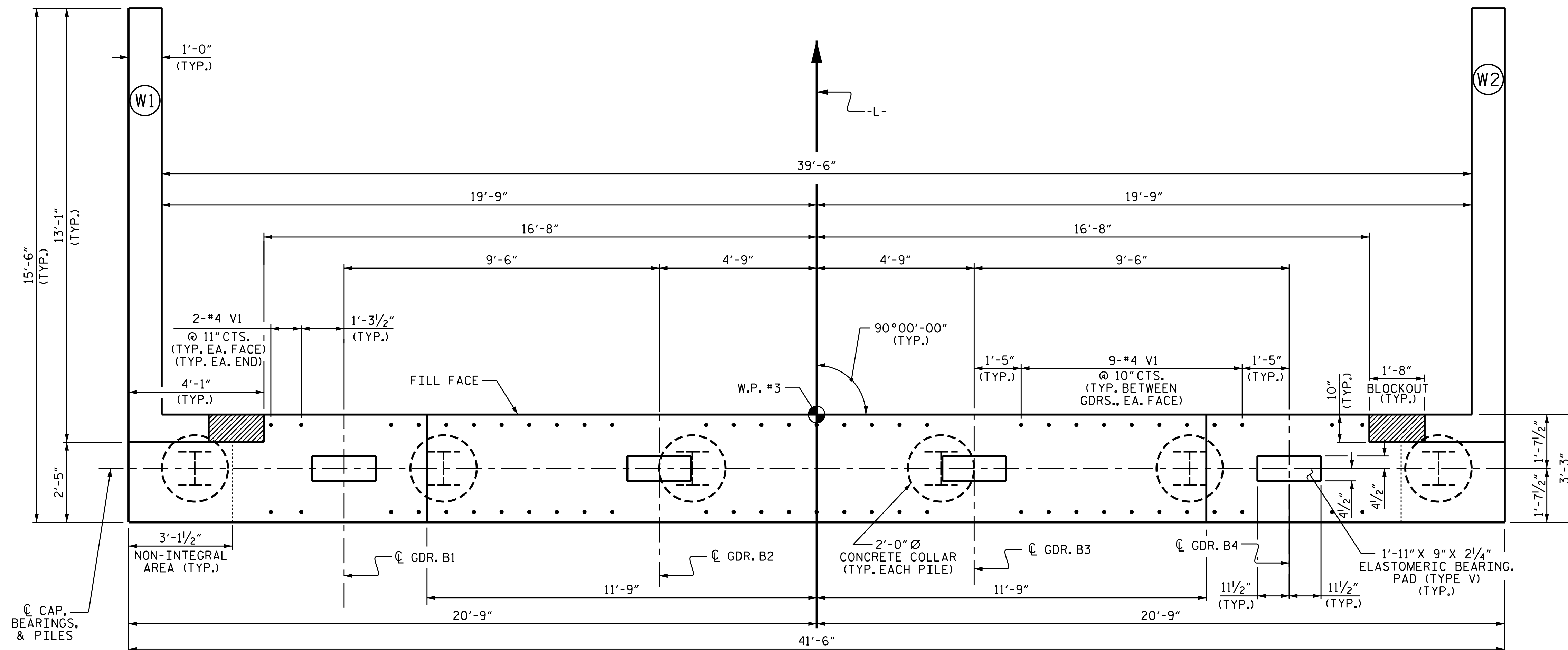


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 30" STEEL PIPE PILE

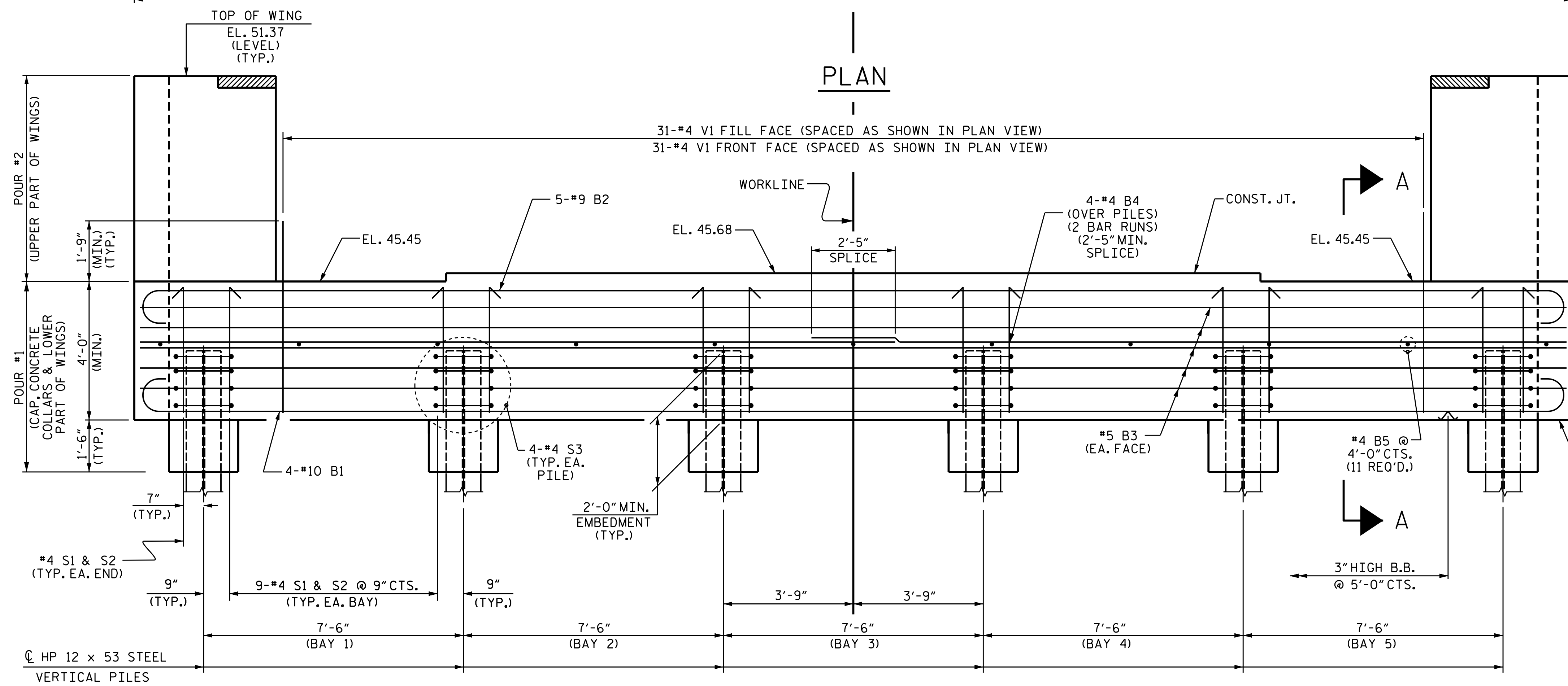
ASSEMBLED BY :	M.M. AHMED	DATE :	JAN 2020
CHECKED BY :	S. WANCE	DATE :	JAN 2020
DRAWN BY :	TLA	8/05	REV. 5/1/06R
CHECKED BY :	GM	9/05	REV. 10/1/11
			REV. 12/17
			MAA/KMM
			MAA/GM
			MAA/THC

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			30



PLAN



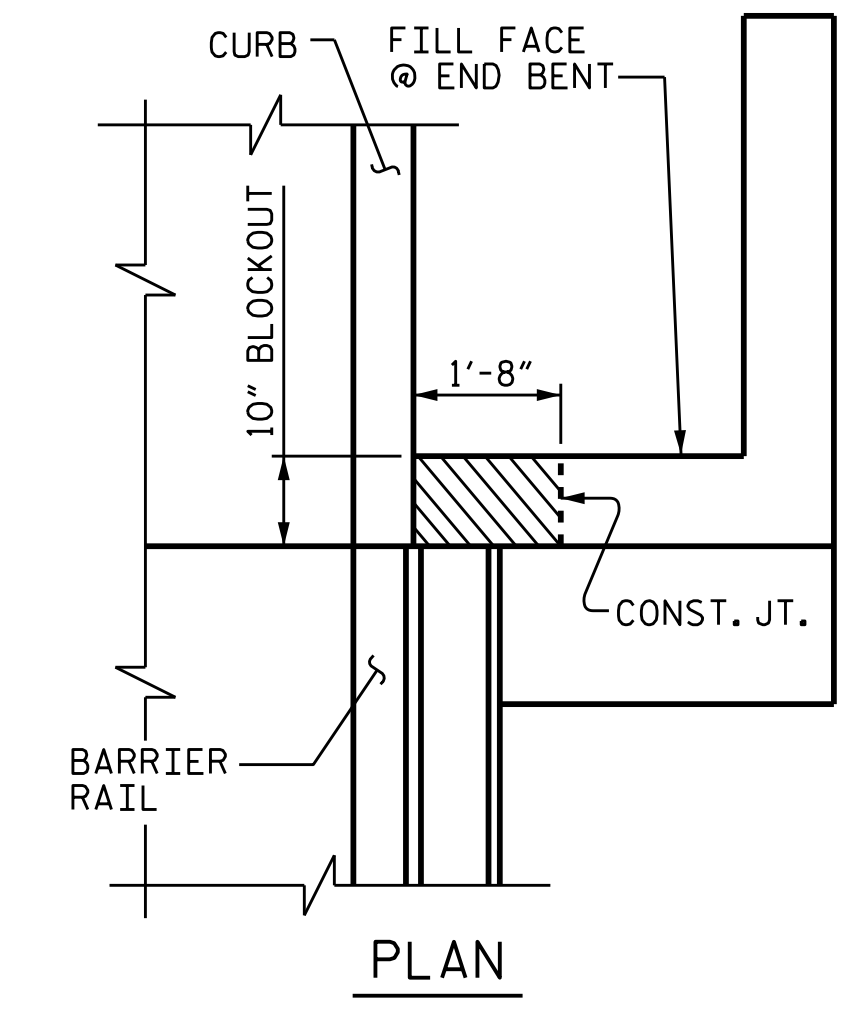
ELEVATION

NOTES

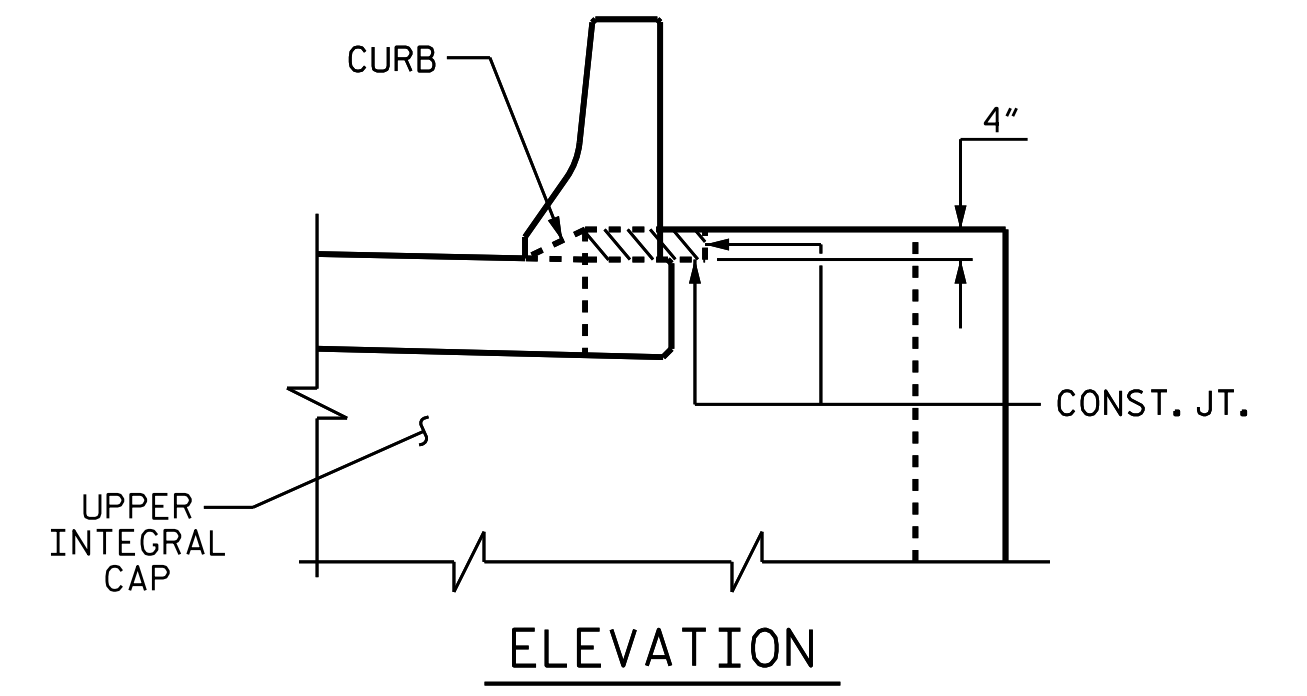
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR #4 V1 BARS.

THE TOP SURFACE OF POUR #1 OF THE END BENT CAP AND WINGS, EXCLUDING THE BEARING AREA AND NON-INTEGRAL AREA AT THE ENDS OF CAP, SHALL BE RAKED TO A DEPTH OF 1/4".

THE UPPER PORTION OF THE INTEGRAL END BENT SHALL BE POURED WITH THE SUPERSTRUCTURE. SEE SUPERSTRUCTURE PLANS.



PLAN



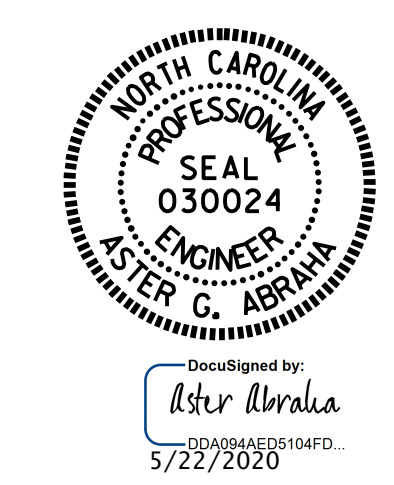
ELEVATION

BLOCKOUT IN WING WALL

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 3



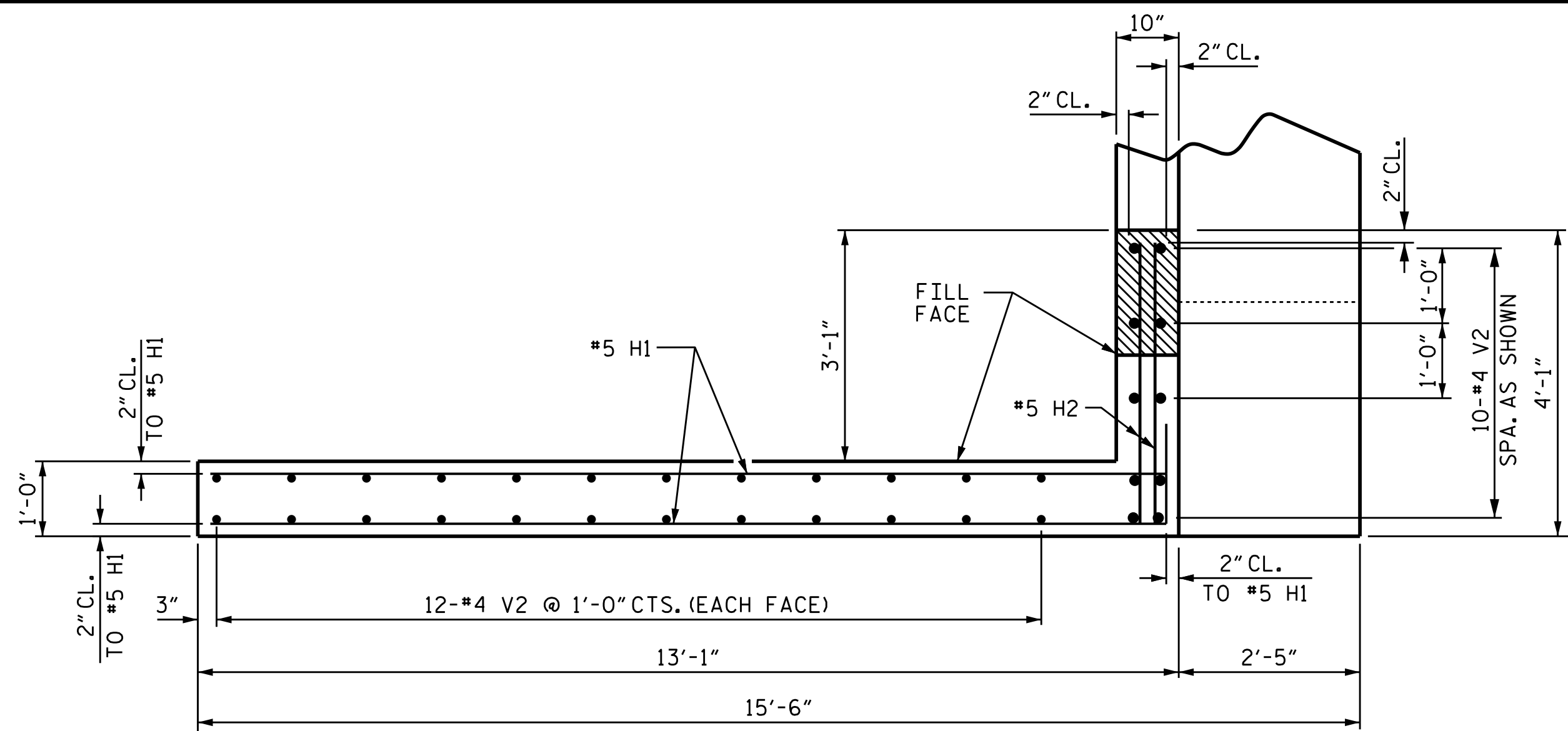
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 INTEGRAL
 END BENT 2**

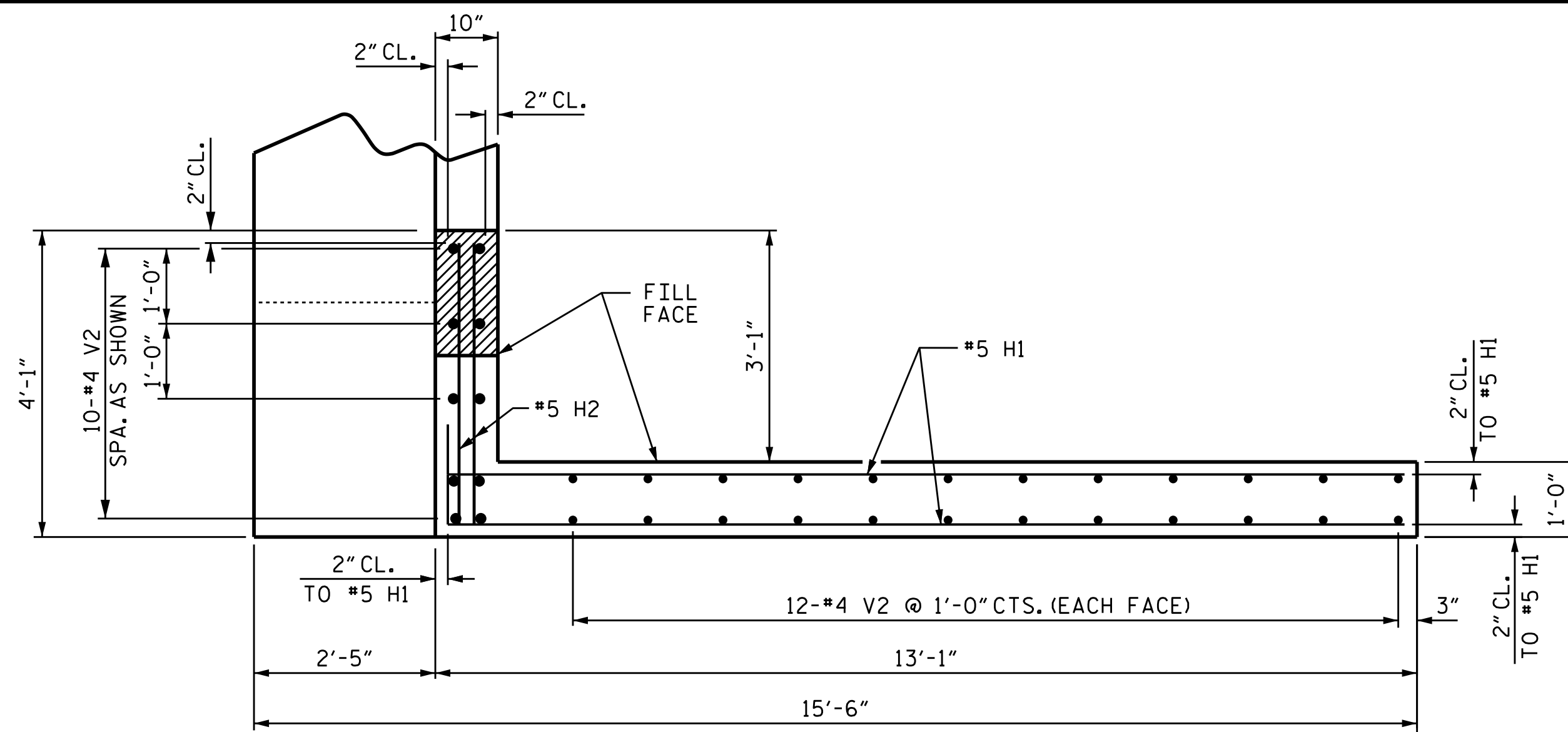
DRAWN BY: M.M. AHMED DATE: 12/19
 CHECKED BY: S. WANCE DATE: 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: 09/19

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

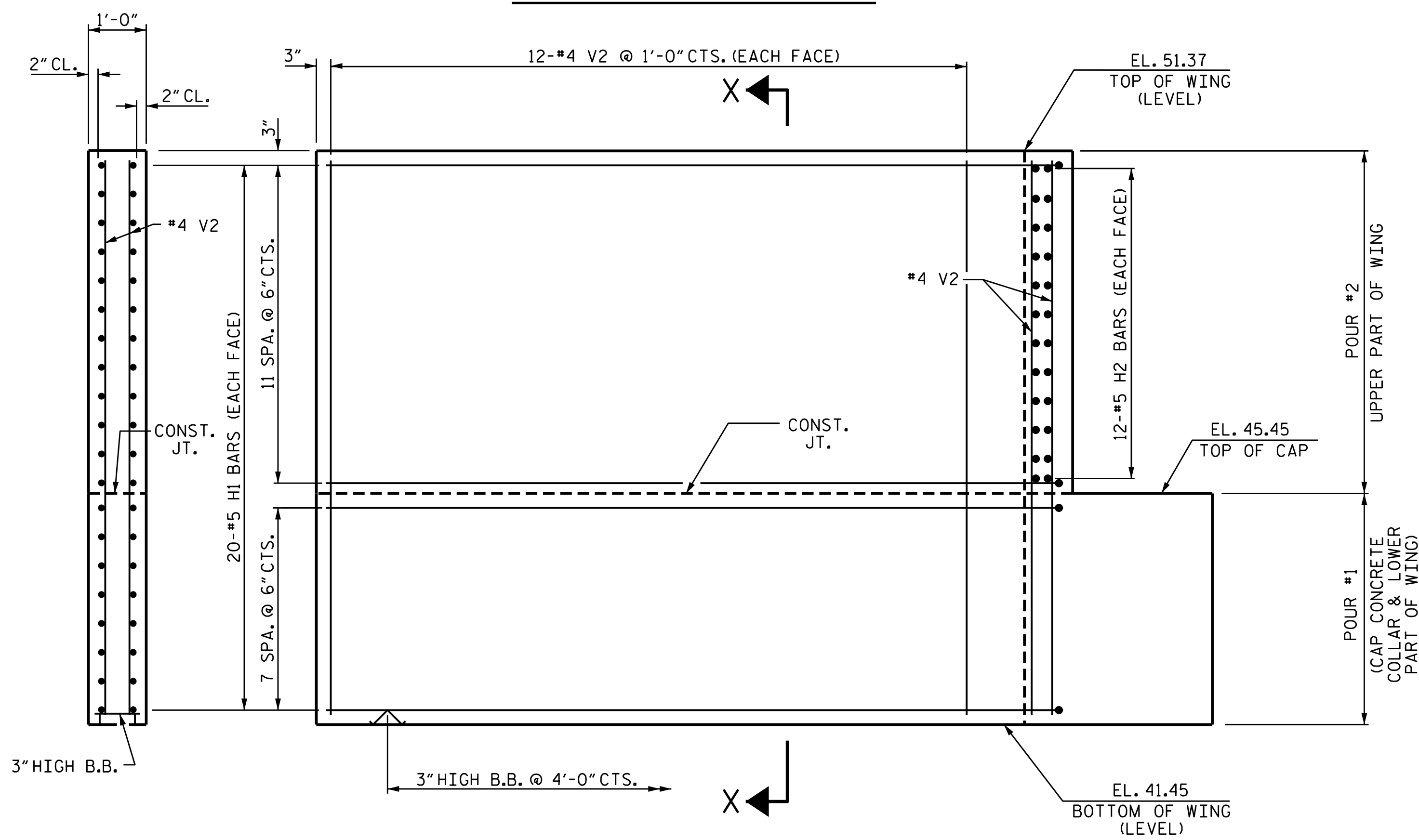
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			30



PLAN OF WING W1

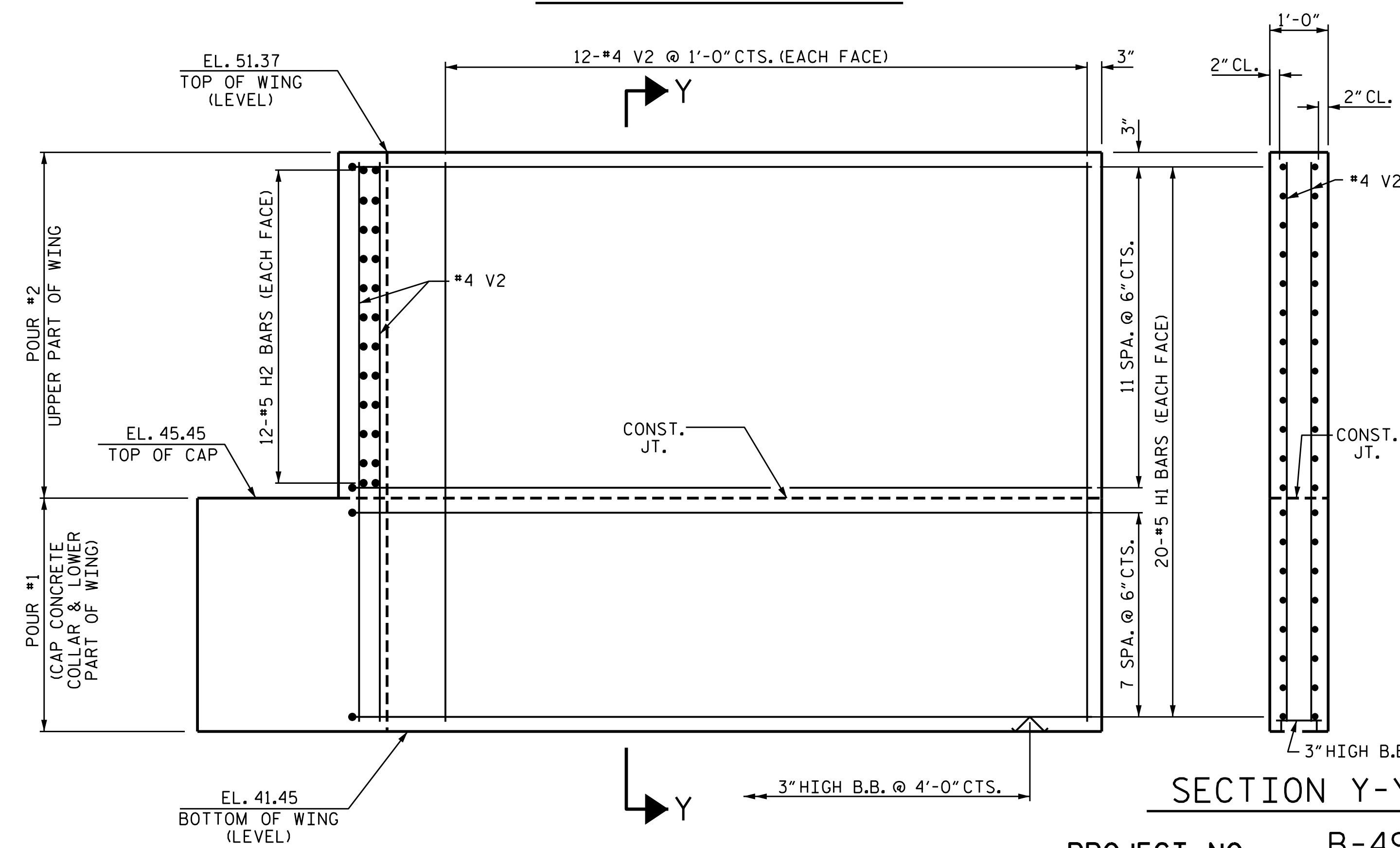


PLAN OF WING W2



SECTION X-X

ELEVATION OF WING W1

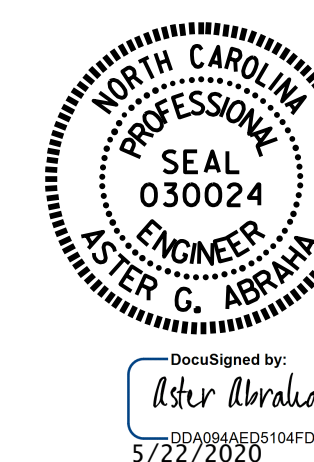


ELEVATION OF WING W2

SECTION Y-Y

PROJECT NO. B-4931
EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 3

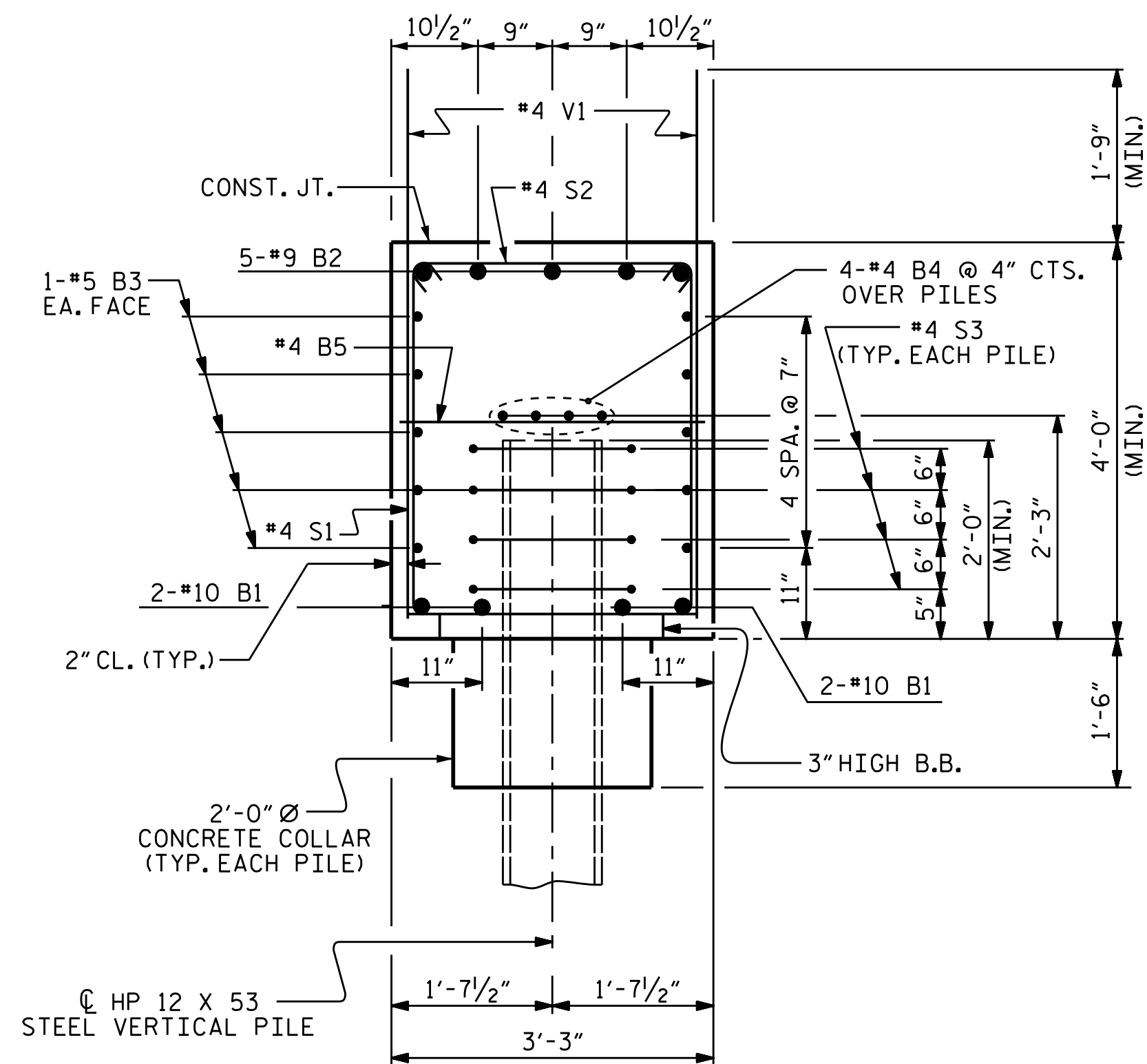


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 INTEGRAL
 END BENT 2

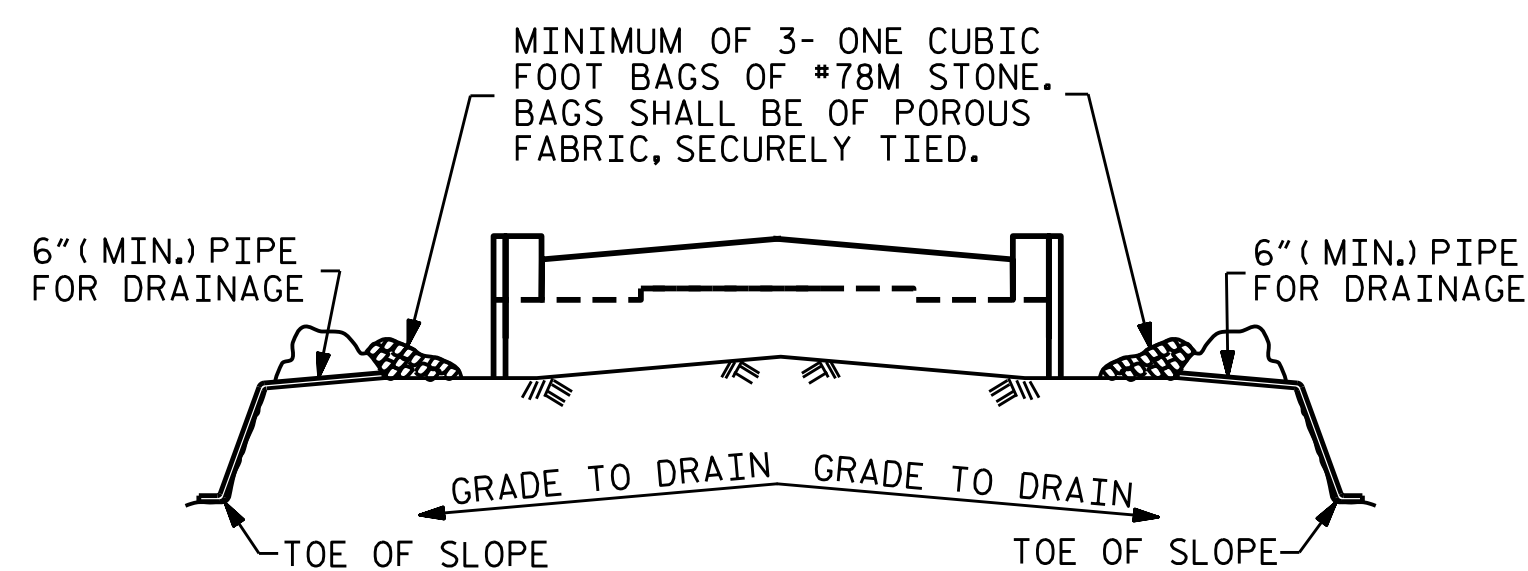
DRAWN BY: M.M. AHMED DATE: 12/20/19
 CHECKED BY: S. WANCE DATE: 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE: 09/19

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			30 SHEETS
2			4			



SECTION A-A



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

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.

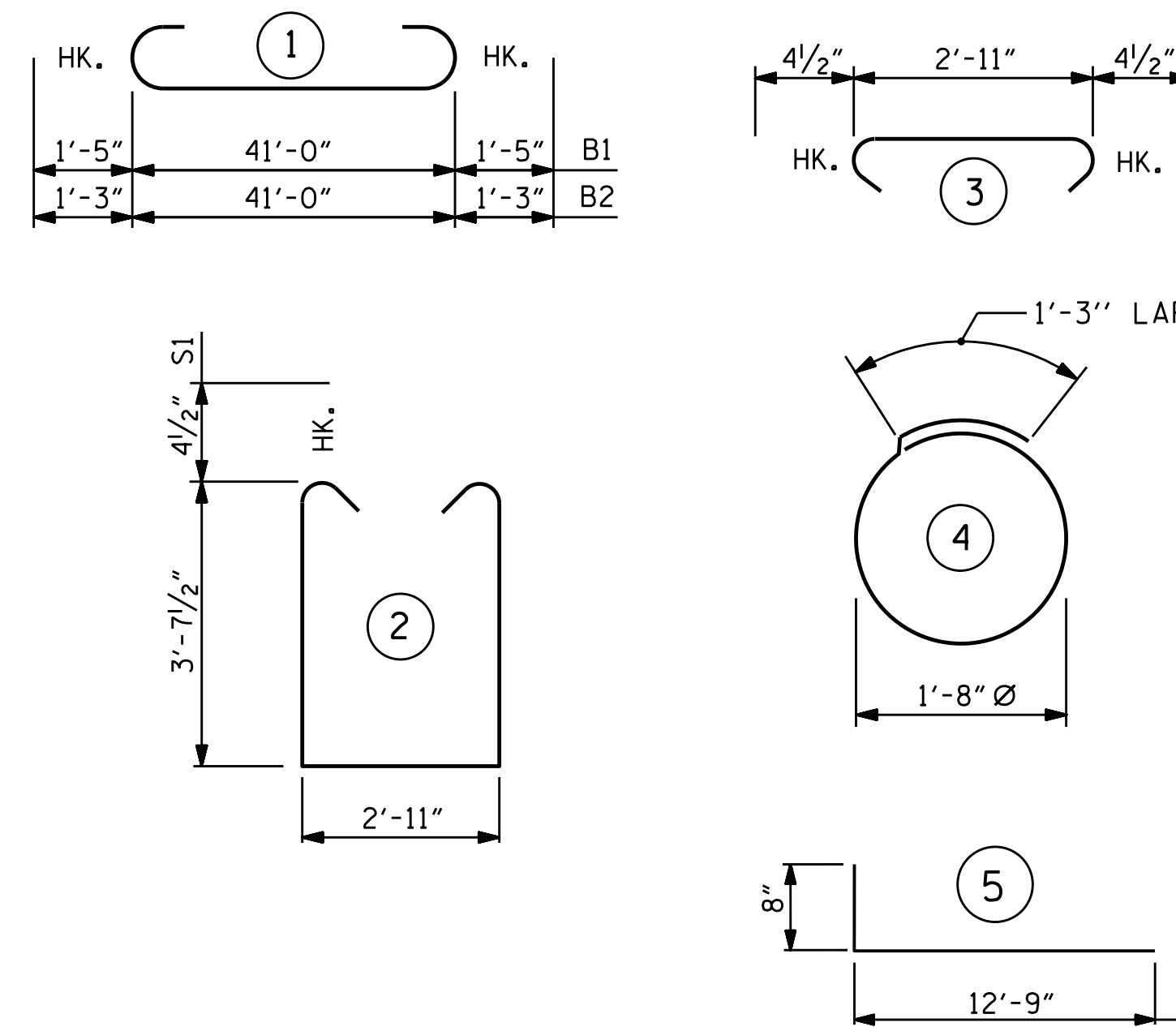
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

DRAWN BY : M.M. AHMED DATE : 12/20/19
 CHECKED BY : S. WANCE DATE : 01/20
 DESIGN ENGINEER OF RECORD: M.M. AHMED DATE : 09/19

22-MAY-2020 10:07
 R:\Structures\Plans\B4931.SMU.Ebs*.320022.dgn
 qabr.aha

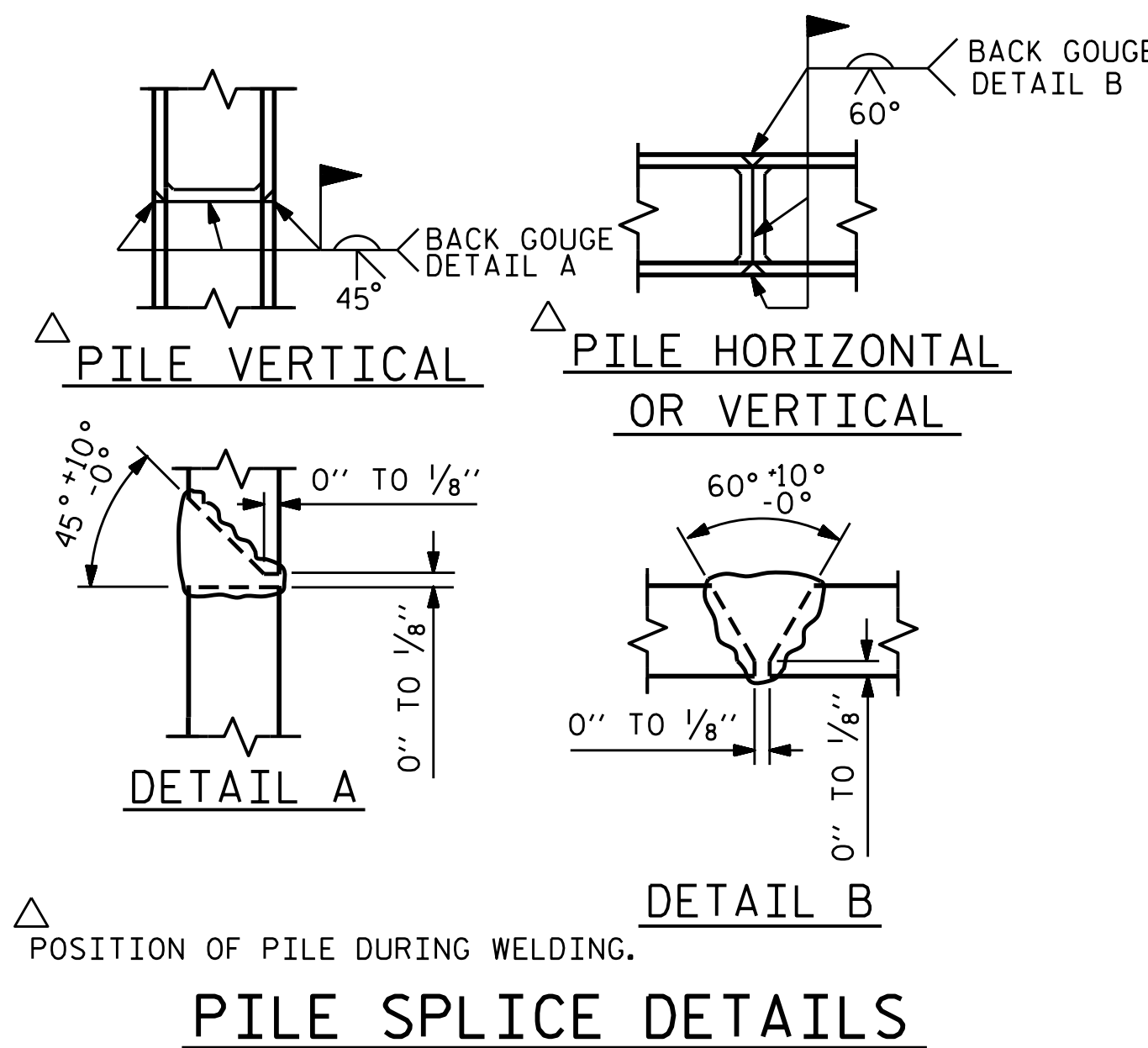
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

INTEGRAL END BENT #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	43'-10"	754
B2	5	#9	1	43'-6"	740
B3	10	#5	STR	41'-0"	428
B4	8	#4	STR	21'-10"	117
B5	11	#4	STR	2'-11"	21
H1	80	#5	5	13'-5"	1119
H2	48	#5	STR	3'-9"	188
S1	47	#4	2	10'-11"	343
S2	47	#4	3	3'-8"	115
S3	24	#4	4	6'-6"	104
V1	62	#4	STR	5'-7"	231
V2	68	#4	STR	9'-7"	435
REINFORCING STEEL					= 4595 LBS
CLASS A CONCRETE					
POUR #1 (CAP, CONCRETE COLLARS & LOWER PART OF WINGS)					25.3 C.Y.
POUR #2 (UPPER PART OF WINGS)					6.9 C.Y.
TOTAL					32.2 C.Y.
HP 12 x 53 STEEL PILES					
No. 6					390 LIN FT.
PILE REDRIVES					3 EA.

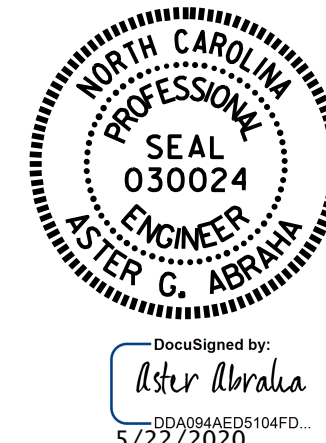


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 3 OF 3



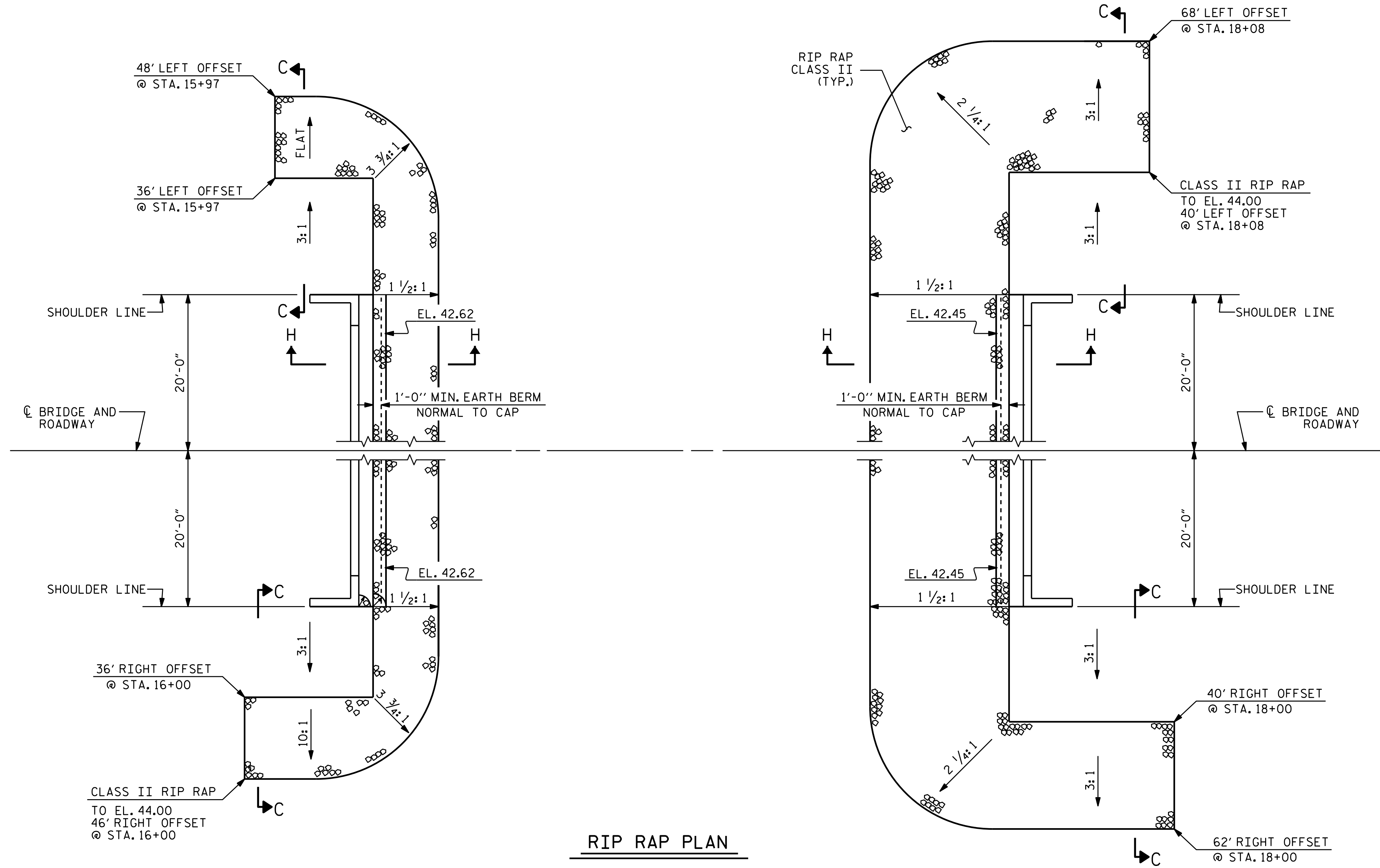
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 INTEGRAL
 END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS 30
2			4			

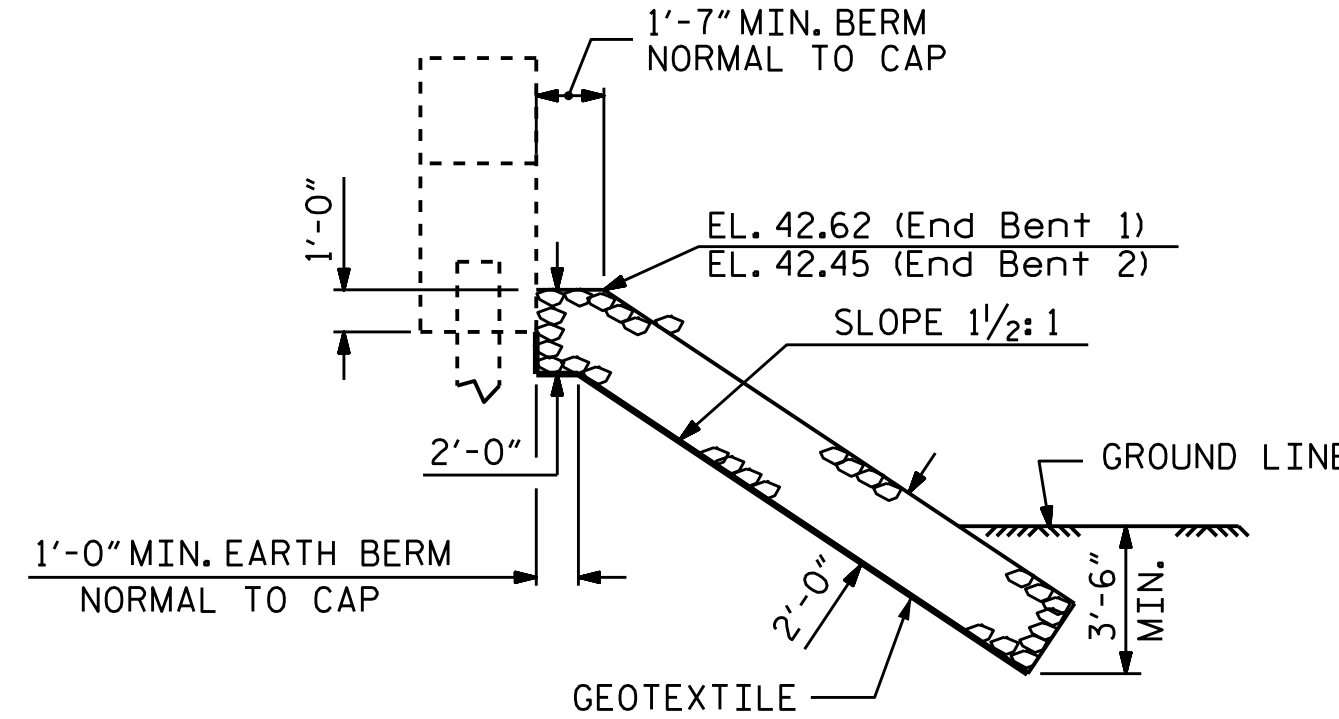
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

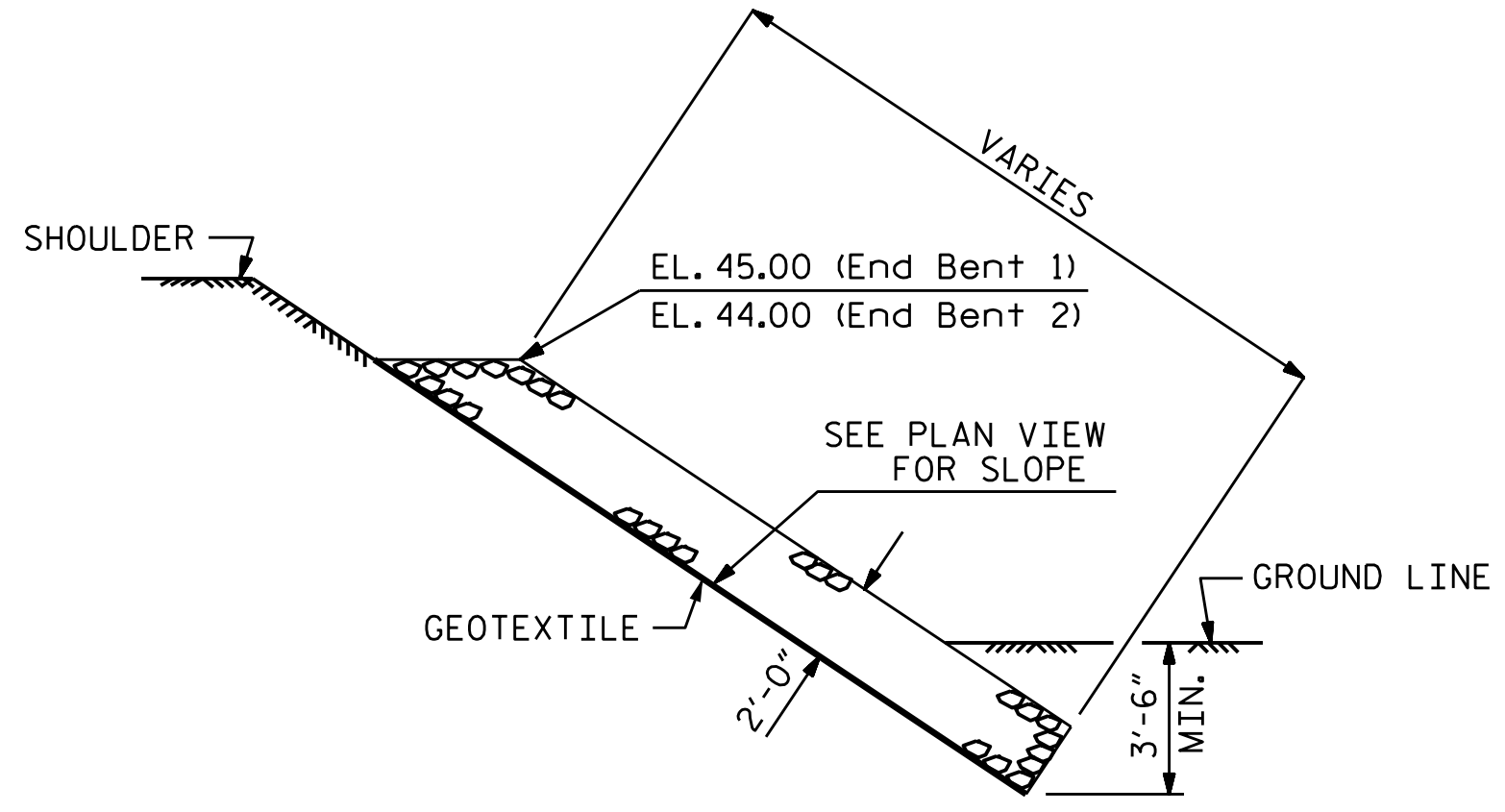


ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+99.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	118	131
END BENT 2	413	458

RIP RAP PLAN

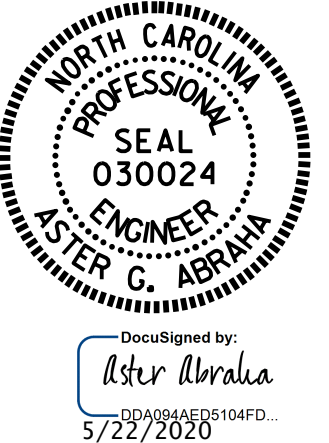


SECTION H-H



SECTION C-C

PROJECT NO. B-4931
EDGEcombe COUNTY
STATION: 16+99.00 -L-



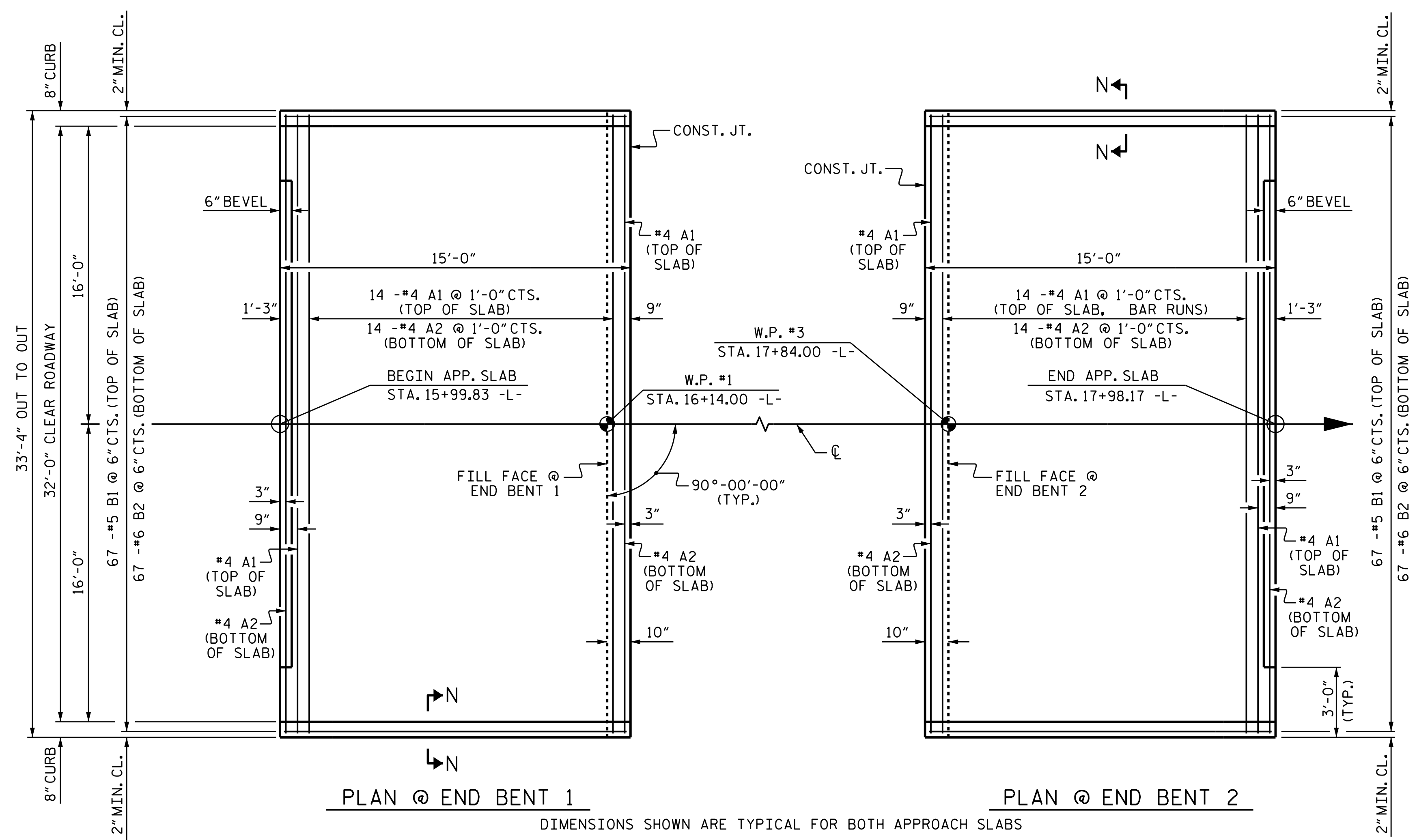
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

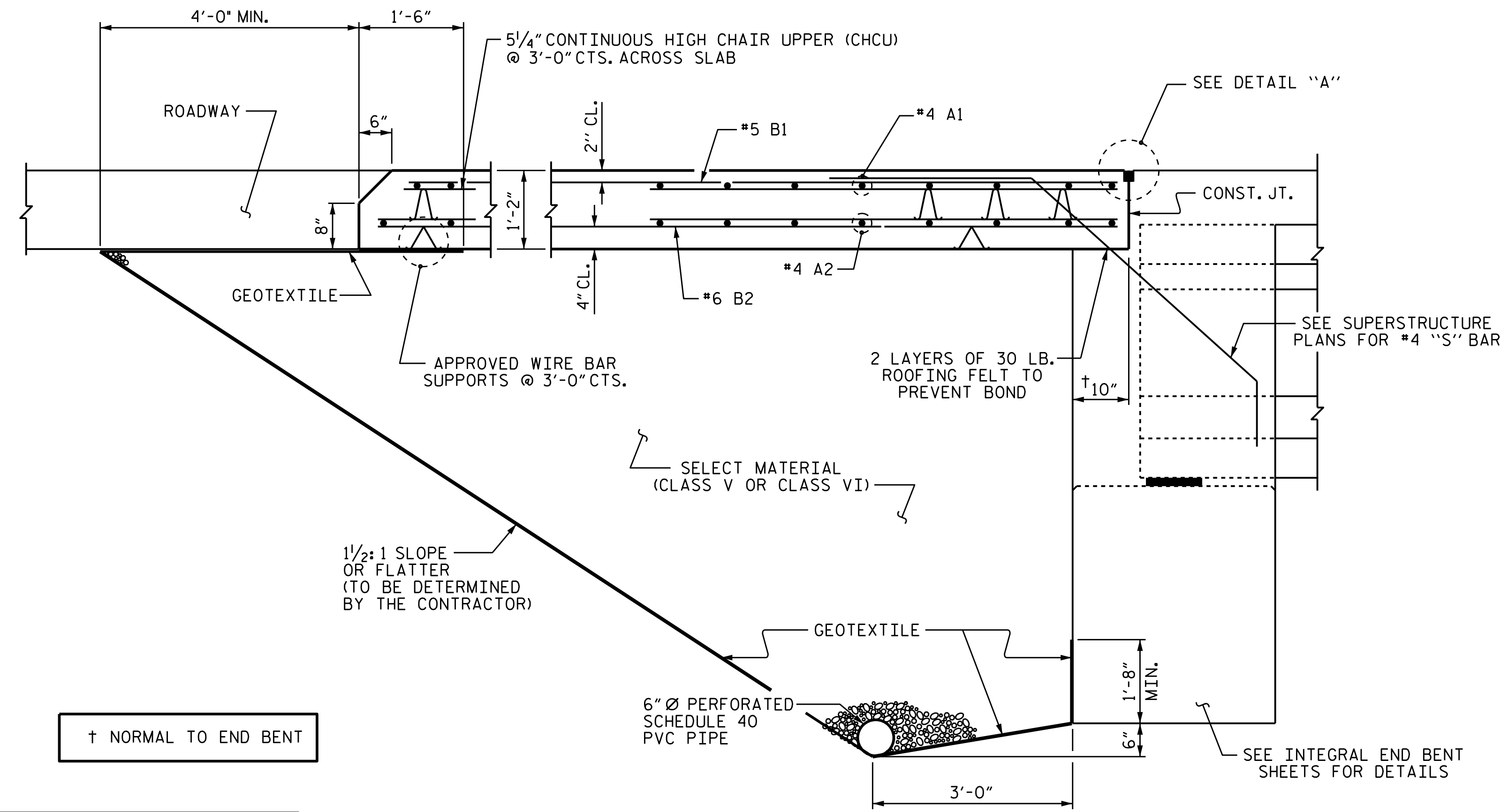
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			30

ASSEMBLED BY : S. WANCE DATE : 12/2019
CHECKED BY : A. Y. GODFREY DATE : 01/2020
DRAWN BY : REK 1/84 REV. 10/17/11 MAA/GM
CHECKED BY : RDU 1/84 REV. 12/21/11 MAA/GM
REV. 12/17 MAA/THC

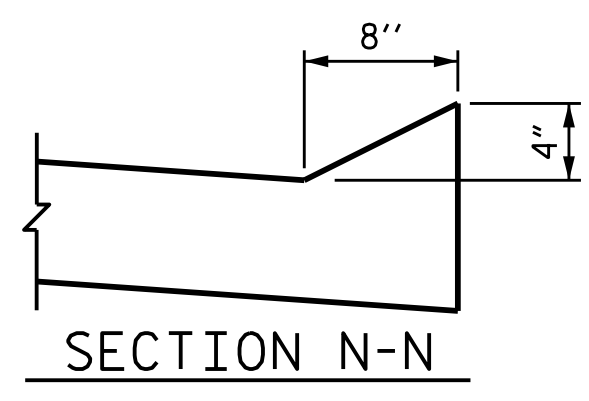
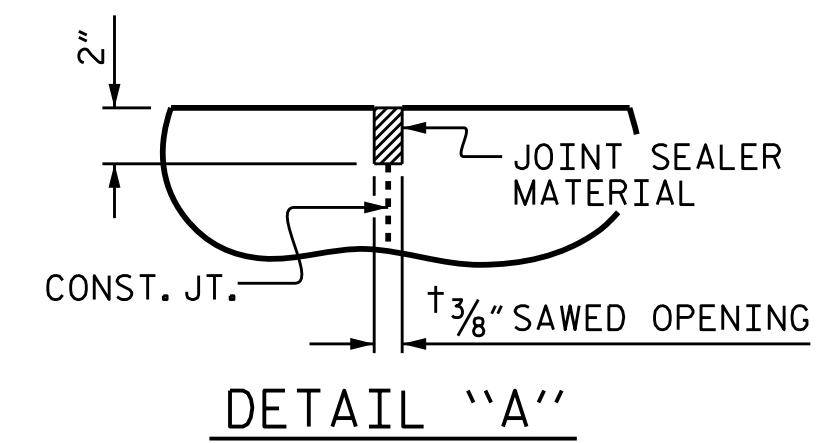
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



PLAN @ END BENT 1
 PLAN @ END BENT 2
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB
 (TYPE I - STANDARD APPROACH FILL)



NOTES

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

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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

SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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.

AT THE CONTRACTORS OPTION, "TYPE A - ALTERNATE APPROACH FILL" IN LIEU OF "TYPE I - STANDARD APPROACH FILL" MAY BE CONSTRUCTED AT NO ADDITIONAL COST TO THE DEPARTMENT. SEE SHEET 2 OF 2 FOR DETAILS AND NOTES.

BILL OF MATERIAL

FOR ONE APPROACH SLAB (2 REQ'D)

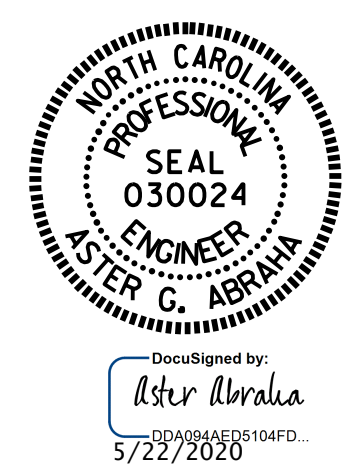
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	16	#4	STR	33'-0"	353
A2	16	#4	STR	33'-0"	353
* B1	67	#5	STR	14'-2"	990
B2	67	#6	STR	14'-8"	1476
REINFORCING STEEL				1829	LBS.
* EPOXY COATED REINFORCING STEEL				1343	LBS.
CLASS AA CONCRETE				21.6	C. Y.

SPLICE LENGTHS

BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

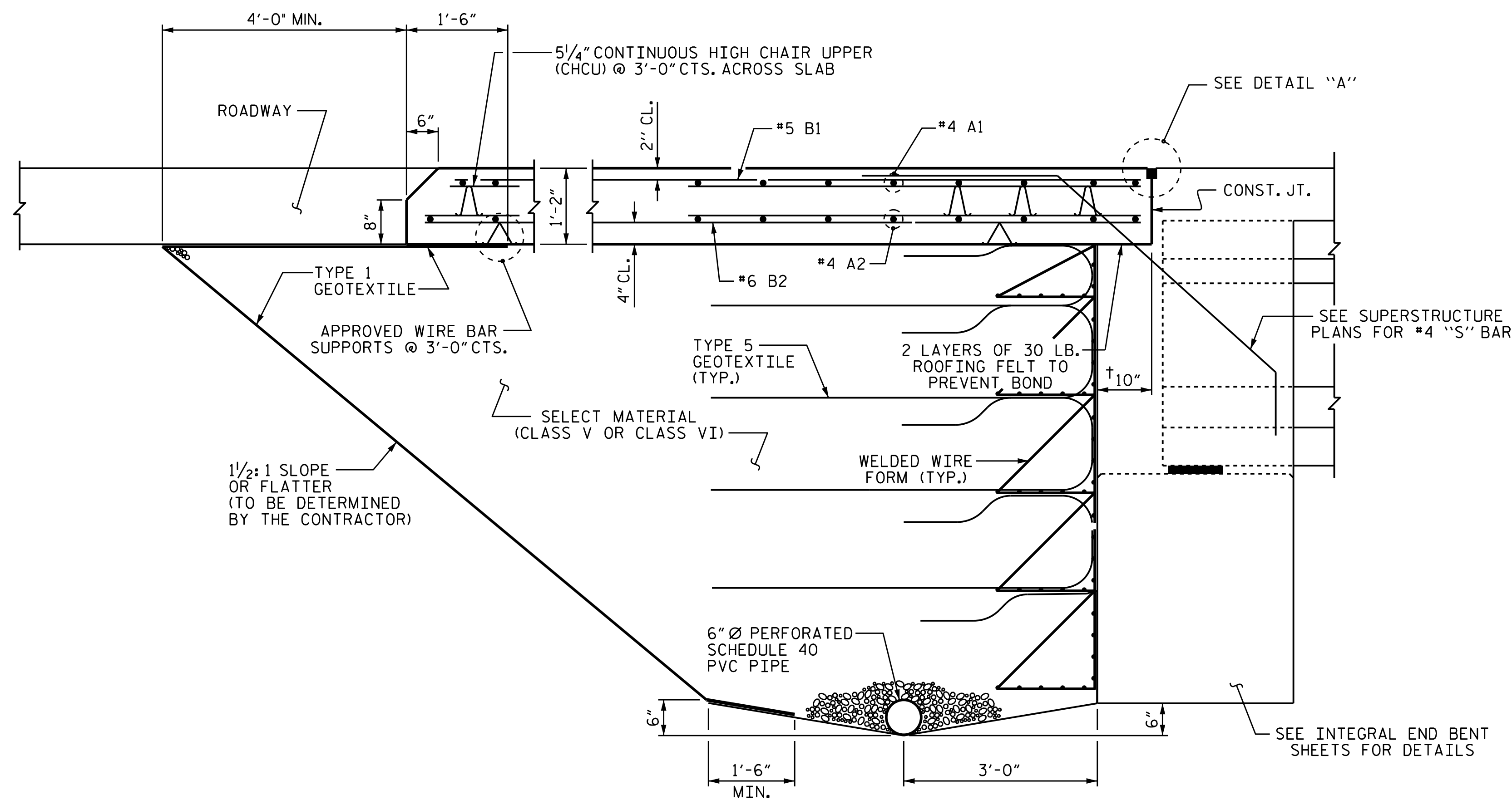
ASSEMBLED BY : S. WANCE	DATE : 12/2019
CHECKED BY : A. G. ABRAHA	DATE : 01/2020
DRAWN BY : TLA 10/05	REV. 12/21/11 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			30



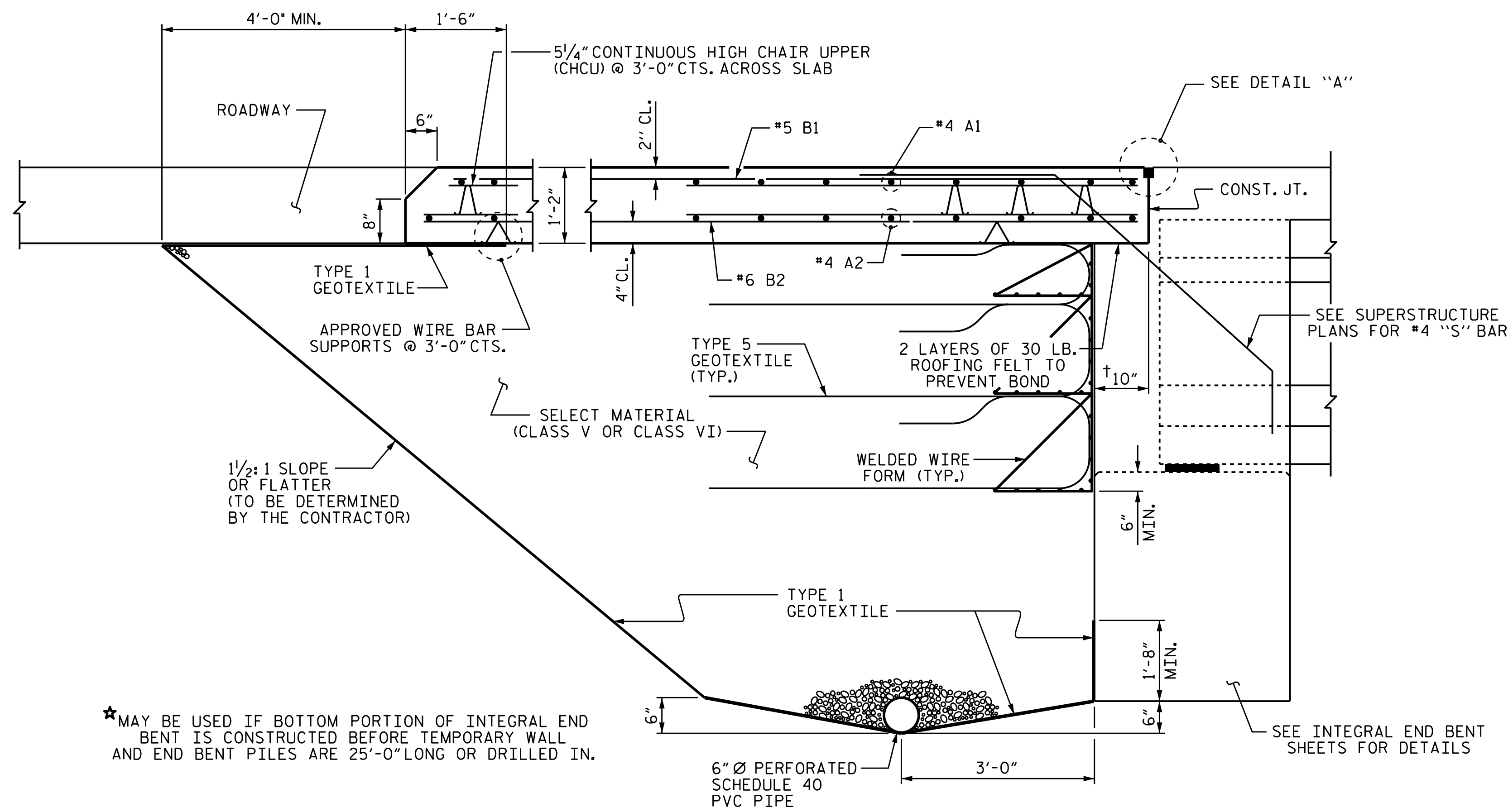
PROJECT NO. B-4931
 EDGEcombe COUNTY
 STATION: 16+99.00 -L-

SHEET 1 OF 2
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR INTEGRAL ABUTMENT
 WITH FLEXIBLE PAVEMENT



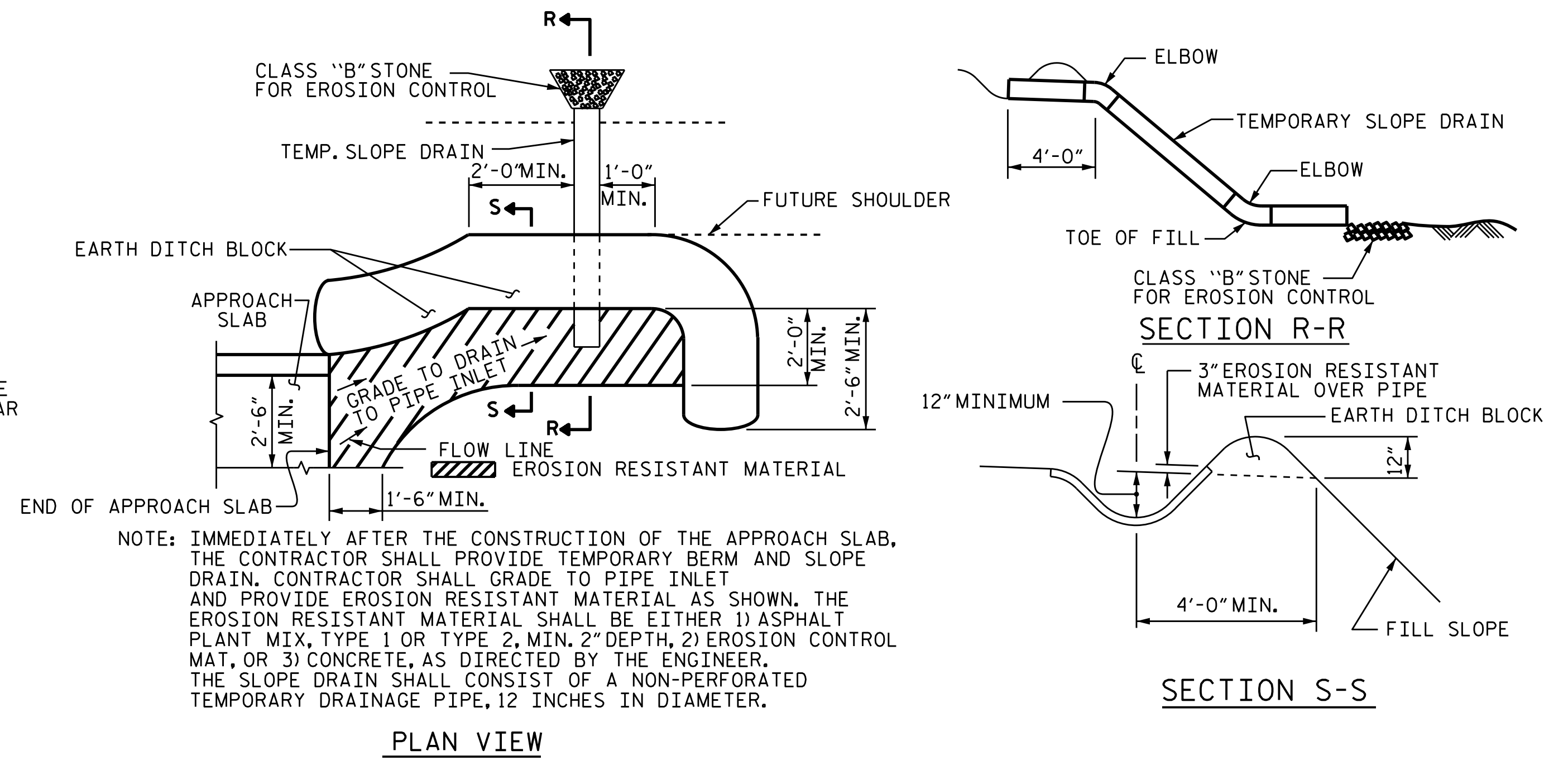
SECTION THRU SLAB

(TYPE A - ALTERNATE APPROACH FILL)



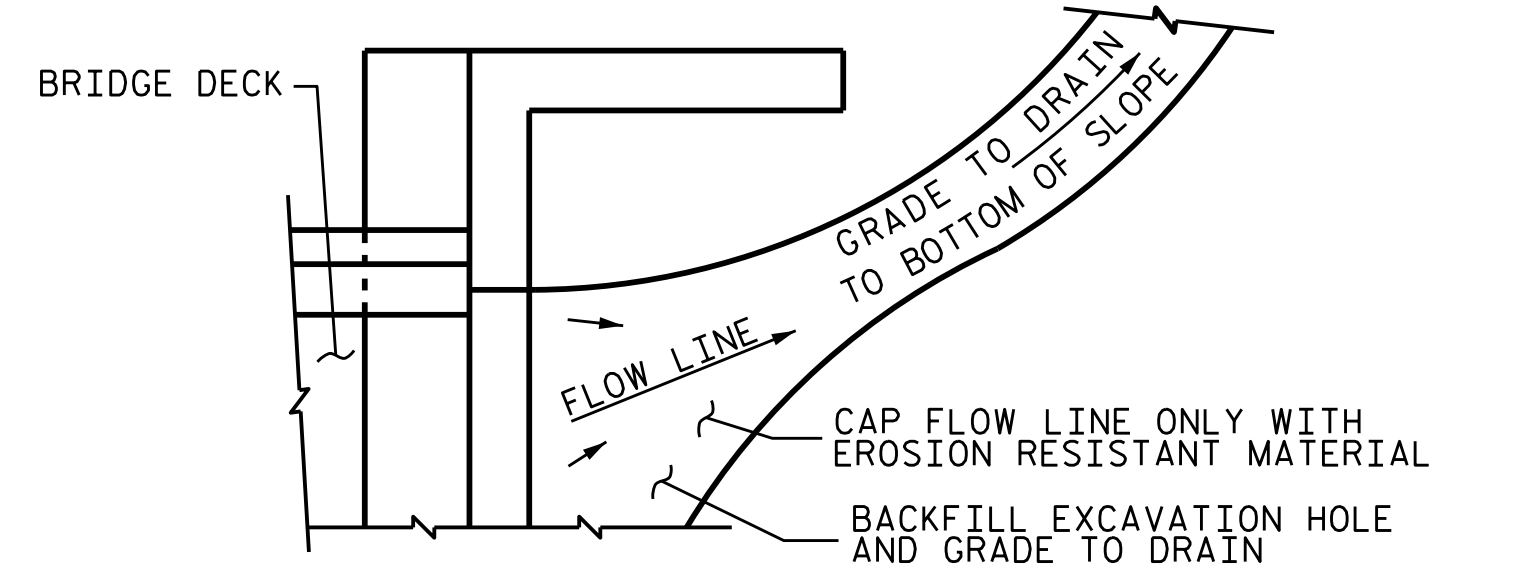
SECTION THRU SLAB

(TYPE A - ALTERNATE APPROACH FILL)



TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

TEMPORARY DRAINAGE DETAIL

NOTES

- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- FOR TEMPORARY GEOTEXTILE WALL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, WELDED WIRE FORM, AND SELECT MATERIAL, SEE ROADWAY PLANS.
- GEOTEXTILE (TYPE 1 OR TYPE 5) SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
- SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
- SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- FOR THE 6" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.
- 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.

PROJECT NO. B-4931
EDGECOMBE COUNTY
 STATION: 16+99.00 -L-

SHEET 2 OF 2



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

ASSEMBLED BY : S. WANCE	DATE : 12/2019
CHECKED BY : A. G. ABRAHA	DATE : 01/2020
DRAWN BY : TLA 10/05	REV. 12/21/11 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED