STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

February 1, 2022

ADDENDUM # 1

To: Plan Holders

From: Josh Deyton, P.E.
Project Team Lead

DS JD

RE:	**Pay Item Addition, SP Addition, Roadway Plan Revision, Structure Plan Revision**
Contract ID:	DN00132
County:	Macon
Letting Date:	February 8, 2022

The above contract has experienced the following revisions:

1. Pay Item Addition

On page T-4 of the proposal, after item 0061 REFORESTATION, add the following pay item:

0079	3563000000-E	SP	TEMP *** WOVEN WIRE FENCE, COMPLETE W/POSTS (60)	270 LF

See attached page T-4 showing this revision.

2. SP Addition

On page G-49 of the proposal, add the following special provision:

SP8 R85 – TEMPORARY WOVEN WIRE FENCE

See attached page G-49 showing this SP addition.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 14
253 WEBSTER ROAD
SYLVA, NC 28779

Telephone: (828) 586-2141
Fax: (828) 586-4043
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
253 WEBSTER ROAD
SYLVA, NC 28779

3. <u>Roadway Plan Revision</u>

Sheet 4 of the roadway plans has been revised to show the addition of the Temporary Woven Wire fence item.

See attached sheet 4 showing this revision.

4. <u>Structure Plan Revision</u>

The structure plans have been revised to show the exterior cored slabs bolted down instead of connected to the cap with a dowel.

See attached structure sheets showing these revisions.

Please access ebs addenda files on Bid Express®.

Thank you for your attention to this matter.

County : Macon

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0057	6111000000-E	SP	IMPERVIOUS DIKE	50 LF		
0058	6114500000-N	1667	SPECIALIZED HAND MOWING	10 MHR		
0059	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	25 EA		
0060	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	2 EA		
0061	6123000000-E	1670	REFORESTATION	0.1 ACR		
0079	3563000000-E	SP	TEMP **" WOVEN WIRE FENCE, COMPLETE W/POSTS (60)	270 LF		
			STRUCTURE ITEMS			
0062	8035000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ********** (13+25.00 -L-)	Lump Sum	L.S.	
0063	8065000000-N	SP	ASBESTOS ASSESSMENT	Lump Sum	L.S.	
0064	8096000000-E	450	PILE EXCAVATION IN SOIL	35 LF		
0065	8097000000-E	450	PILE EXCAVATION NOT IN SOIL	45 LF		
0066	8112730000-N	450	PDA TESTING	1 EA		
0067	8121000000-N	412	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION ******** (13+25.00 -L-)	Lump Sum	L.S.	
0068	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	48.6 CY		
0069	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ********** (12+83.02 -L-)	Lump Sum	L.S.	
0070	8217000000-E	425	REINFORCING STEEL (BRIDGE)	5,846 LB		
0071	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (12X53)	14 EA		

the highway right of way shall be certified as a qualified flagger in accordance with Article 1150-3 of the *Standard Specifications,* even if flagging is not being performed as part of the traffic control.

Provide the name and contact information of all qualified work zone installers to the Engineer prior to or at the preconstruction conference. Additionally, provide a qualification statement that all other individuals participating in the setup, installation, and removal of temporary traffic control are qualified flaggers that have been properly trained through an NCDOT approved training agency.

TEMPORARY WOVEN WIRE FENCE:

(7-1-95) (Rev. 1-19-16) 866 SP8 R85

Description

Construct a temporary woven wire fence, posts, gates, and barbed wire at locations shown on the plans.

Materials

Use only fabric and posts that have been approved by the Engineer. Materials shall meet the requirements of Article 866-2 of the *2018 Standard Specifications*.

Construction Methods

Construct the fence in accordance with Subarticle 866-3(C) and the *Roadway Standard Drawing* 866.02. The fence shall be maintained with fabric taut and securely fastened to the posts at all times. Barbed wire shall be installed along the top of the posts and at any ditch locations as determined by the Engineer.

After the fence has served its purpose and is no longer needed, as determined by the Engineer, it will become the property of the Contractor and shall be removed and disposed of by him.

Measurement and Payment

Temporary __" Woven Wire Fence, Complete with Posts will be measured and paid as the actual number of linear feet of fence constructed and accepted, measured in place from center of end post to center of end post. Such price and payment will be full compensation for all materials, labor, fence maintenance, and incidentals including fence, posts, gates, and barbed wire necessary to satisfactorily complete the work.

Payment will be made under:

Pay Item	Pay Unit
Temporary __" Woven Wire Fence, Complete with Posts	Linear Foot

PROJECT REFERENCE NO.	SHEET NO.
14SP.2056I.1	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — Reece M. Schuler, 26960 — 1/18/2022

HYDRAULICS ENGINEER — Bradley S. Ridnour — 1/18/2022

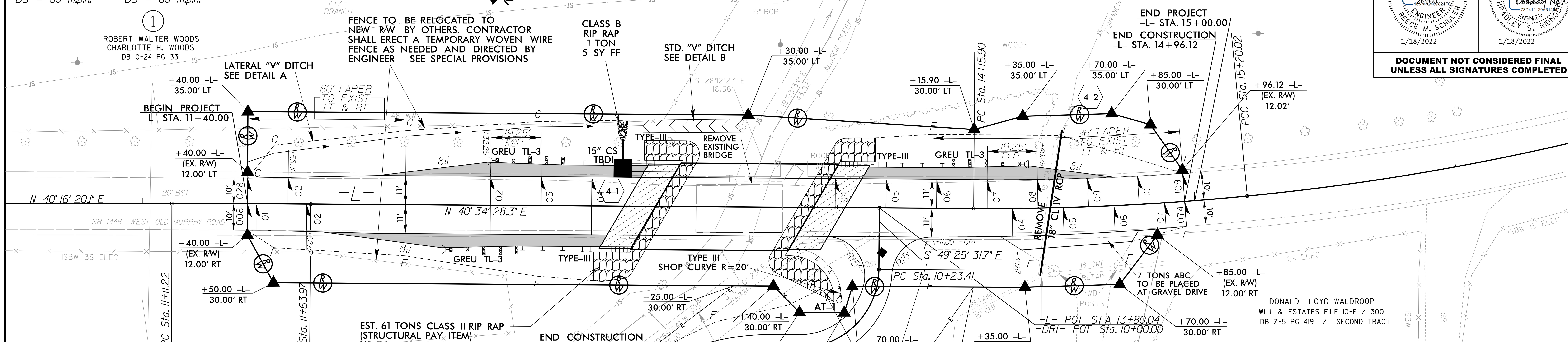
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

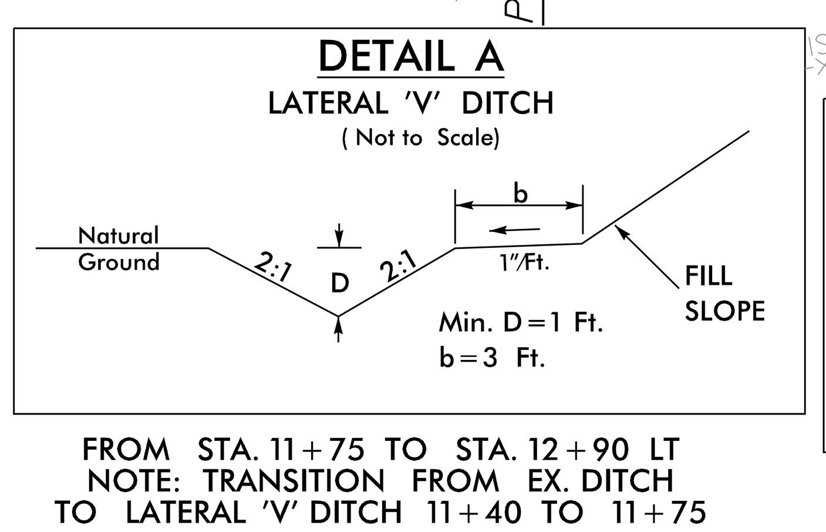
-L- CURVE DATA

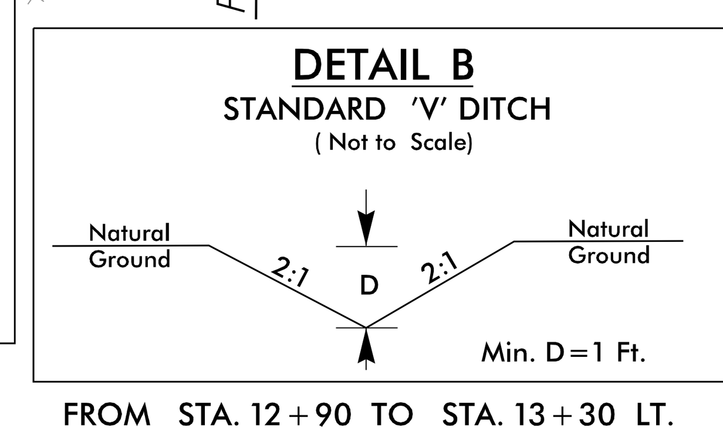
PI Sta 11+37.60	PI Sta 14+68.01
△ = 0° 18' 08.2" (RT)	△ = 5° 57' 55.9" (LT)
D = 0° 34' 22.6"	D = 5° 43' 46.5"
L = 52.76'	L = 104.12'
T = 26.38'	T = 52.11'
R = 10,000.00'	R = 1,000.00'
S.E. = 10% max.	S.E. = 10% max.
DS = 60 m.p.h.	DS = 60 m.p.h.

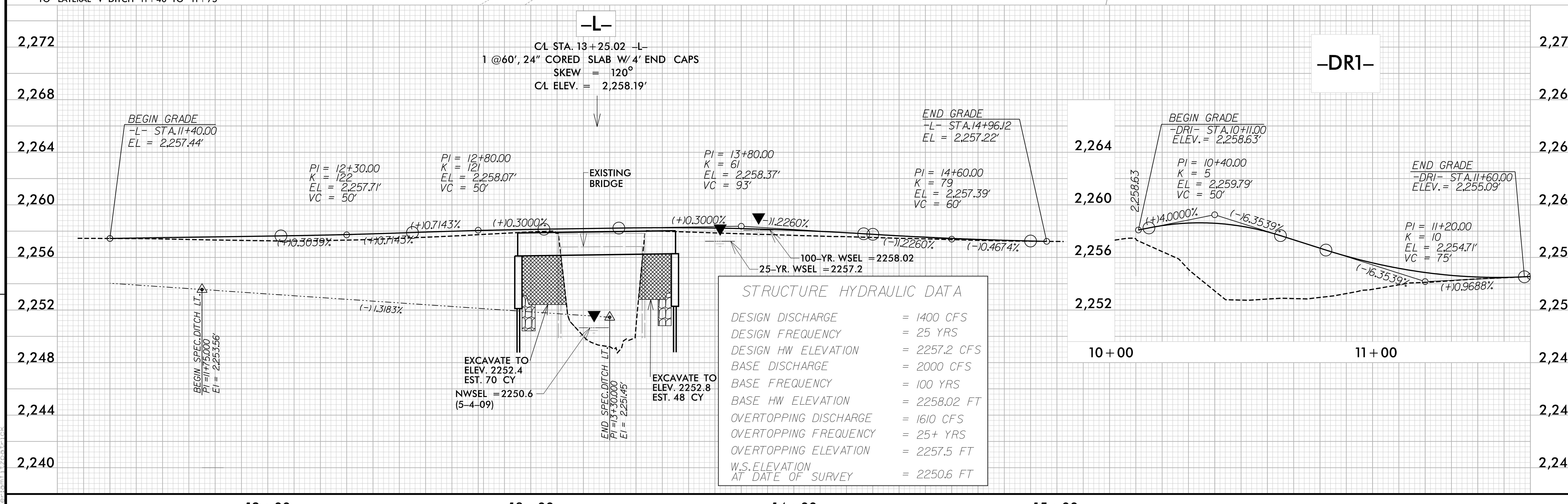
-DRI- CURVE DATA

PI Sta 10+53.41	PI Sta 11+13.11
△ = 90° 00' 00.0" (RT)	△ = 39° 53' 08.0" (LT)
D = 190° 59' 09.4"	D = 63° 39' 43.1"
L = 47.12'	L = 62.65'
T = 30.00'	T = 32.66'
R = 30.00'	R = 90.00'


NAD 83 / (2011)
ROBERT WALTER WOODS
CHARLOTTE H. WOODS
DB 0-24 PG 331
DUNG THI SON, ET. ALS.
DB R-31 PG 198
DB J-20 PG 175
FENCE TO BE RELOCATED TO NEW R/W BY OTHERS. CONTRACTOR SHALL ERECT A TEMPORARY WOVEN WIRE FENCE AS NEEDED AND DIRECTED BY ENGINEER – SEE SPECIAL PROVISIONS
CLASS B RIP RAP 1 TON 5 SY FF
STD. "V" DITCH SEE DETAIL B
LATERAL "V" DITCH SEE DETAIL A
BEGIN PROJECT -L- STA. 11+40.00
END PROJECT -L- STA. 15+00.00
END CONSTRUCTION -L- STA. 14+96.12
60' TAPER TO EXIST LT & RT
96' TAPER TO EXIST LT & RT
GREU TL-3
TYPE-III
15" CS TBD
REMOVE EXISTING BRIDGE
N 40° 16' 20.1" E
N 40° 34' 28.3" E
SR 1448 WEST OLD MURPHY ROAD
REMOVE 18" CL IV RCP
TYPE-III SHOP CURVE R=20'
S 49° 25' 31.7" E
PC Sta. 10+23.41
-L- POT STA 13+80.04
-DRI- POT Sta. 10+00.00
7 TONS ABC TO BE PLACED AT GRAVEL DRIVE
DONALD LLOYD WALDROOP
WILL & ESTATES FILE 10-E / 300
DB Z-5 PG 419 / SECOND TRACT
EST. 61 TONS CLASS II RIP RAP (STRUCTURAL PAY ITEM) UP TO ELEV. 2152.4 EST. EXCAVATION = 70 CY
END CONSTRUCTION -DRI- STA. 11+60.00
PT Sta. 11+43.11
PT Sta. 10+70.54
S 40° 34' 28.3" W
S 0° 41' 20.3" W
POT Sta. 11+63.88
PC Sta. 10+80.45
MRS. DOYLE DALRYMPLE
DB R-5 PG 501
EST. 65 TONS CLASS II RIP RAP (STRUCTURAL PAY ITEM) UP TO ELEV. 2152.8 EST. EXCAVATION = 48 CY
APPROXIMATE LOCATION OF PIPE JUNCTION
PC Sta. 11+11.22
PT Sta. 11+63.97
PC Sta. 14+15.90
PCC Sta. 15+20.02
PROPOSED FULL DEPTH PAVED SHOULDER
SHOULDER BERM & GUTTER -L- STA. 12+79 TO BEGIN BRIDGE LT






-L-
C/L STA. 13+25.02 -L-
1 @60', 24" CORED SLAB W/ 4' END CAPS
SKEW = 120°
C/L ELEV. = 2,258.19'
BEGIN GRADE -L- STA.11+40.00 EL = 2,257.44'
END GRADE -L- STA.14+96.12 EL = 2,257.22'
PI = 12+30.00 K = 122 EL = 2,257.71' VC = 50'
PI = 12+80.00 K = 121 EL = 2,258.07' VC = 50'
PI = 13+80.00 K = 61 EL = 2,258.37' VC = 93'
PI = 14+60.00 K = 79 EL = 2,257.39' VC = 60'
EXISTING BRIDGE
100-YR. WSEL = 2258.02
25-YR. WSEL = 2257.2
EXCAVATE TO ELEV. 2252.4 EST. 70 CY
EXCAVATE TO ELEV. 2252.8 EST. 48 CY
NWSEL = 2250.6 (5-4-09)
-DR1-
BEGIN GRADE -DRI- STA.10+11.00 ELEV.= 2,258.63'
END GRADE -DRI- STA.11+60.00 ELEV.= 2,255.09'
PI = 10+40.00 K = 5 EL = 2,259.79' VC = 50'
PI = 11+20.00 K = 10 EL = 2,254.71' VC = 75'
12+00
13+00
14+00
15+00
10+00
11+00

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2257.2 CFS
BASE DISCHARGE	= 2000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2258.02 FT
OVERTOPPING DISCHARGE	= 1610 CFS
OVERTOPPING FREQUENCY	= 25+ YRS
OVERTOPPING ELEVATION	= 2257.5 FT
W.S.ELEVATION AT DATE OF SURVEY	= 2250.6 FT

REVISIONS

CONTRACT: DN00132 TIP NO: 14SP.20561.1

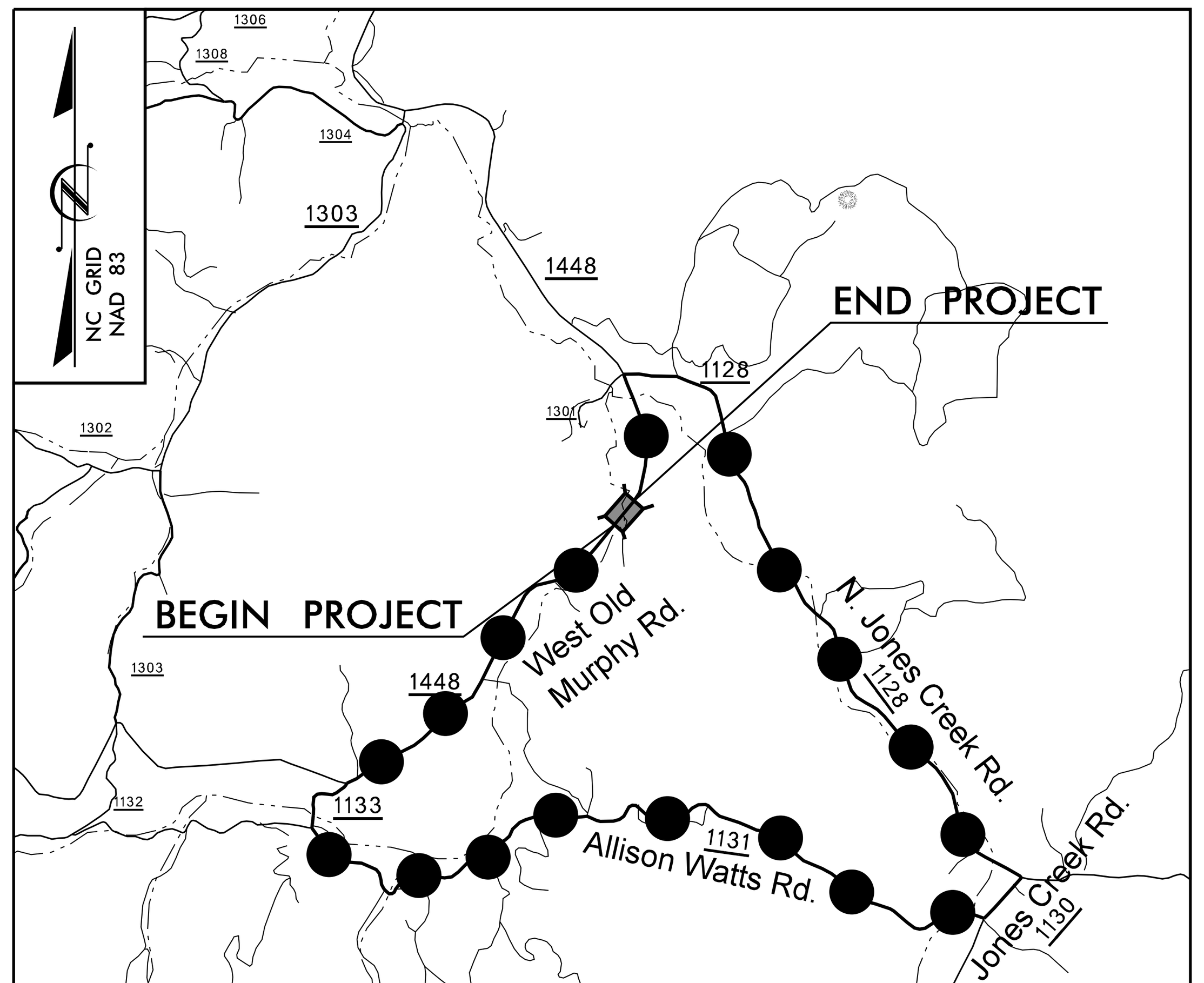
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20561.1		

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
14SP.20561.1	N/A	PE
14SP.20561.1	N/A	R/W
14SP.20561.1	N/A	CONST.

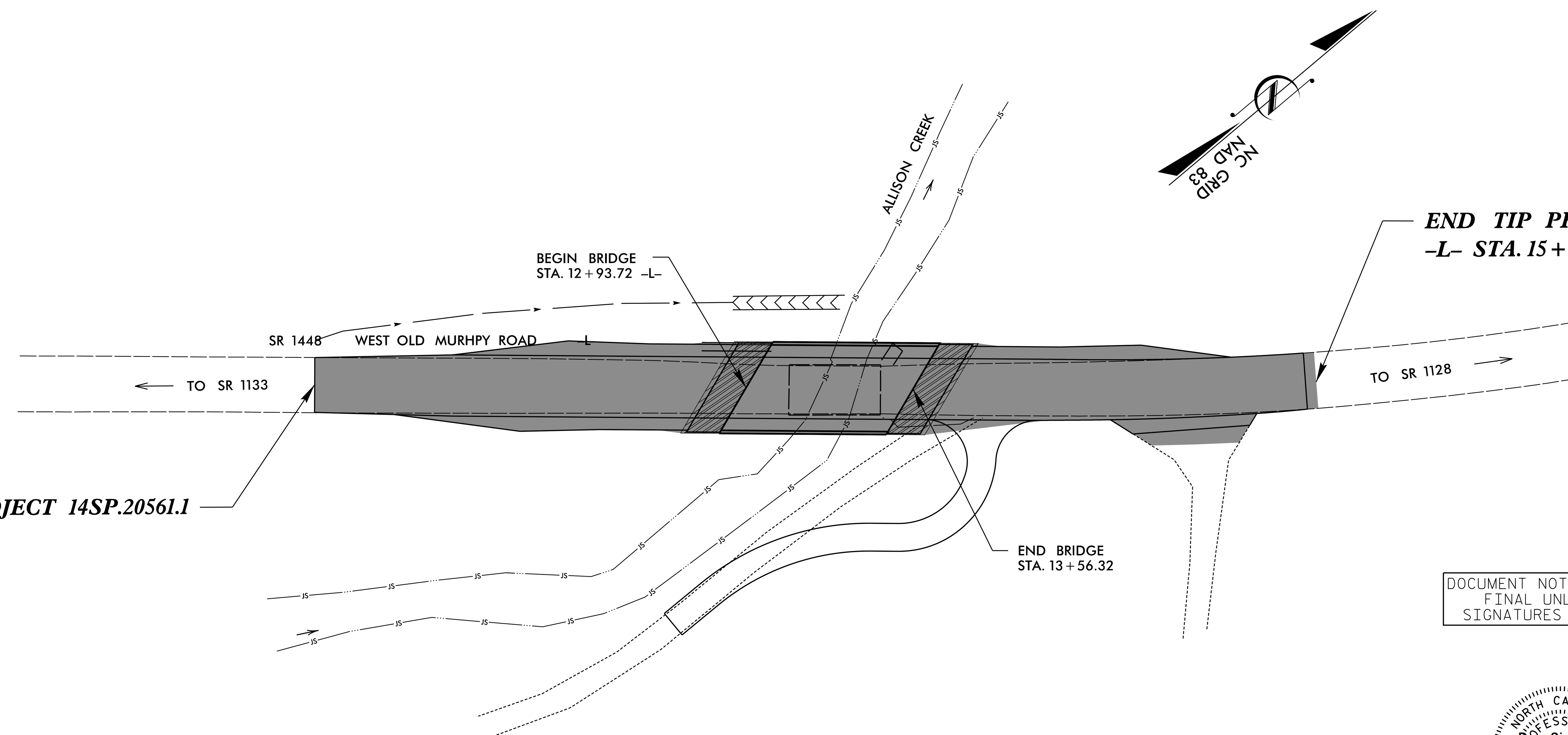
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

LOCATION: BRIDGE NO. 343 OVER ALLISON CREEK ON SR 1448 (WEST OLD MURPHY ROAD)



VICINITY MAP



END TIP PROJECT 14SP.20561.1
-L- STA. 15+00.00

BEGIN TIP PROJECT 14SP.20561.1
-L- STA. 11+40.00

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NORTH CAROLINA PROFESSIONAL SEAL ENGINEER
DocuSigned by: Hardy Willis
1/26/2022

V&M Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

STRUCTURE

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2011 = 590
ADT 2031 = 880
T = 7%
V = 55 MPH
FUNC CLASS = MINOR LOCAL COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 14SP.20561.1 = 0.056 MI
LENGTH STRUCTURE TIP PROJECT 14SP.20561.1 = 0.012 MI
TOTAL LENGTH OF TIP PROJECT 14SP.20561.1 = 0.068 MI

Prepared In the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2018 STANDARD SPECIFICATIONS

LETTING DATE :
FEBRUARY 8, 2022

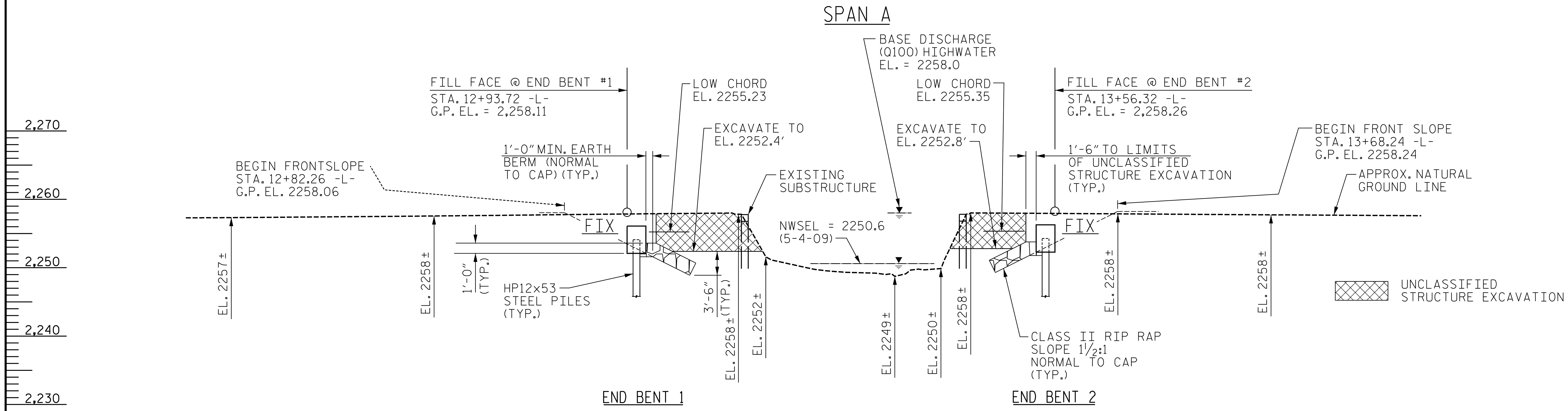
HARDY L. WILLIS, PE
PROJECT ENGINEER

JASON E. BARTLEY,EI
PROJECT DESIGN ENGINEER

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

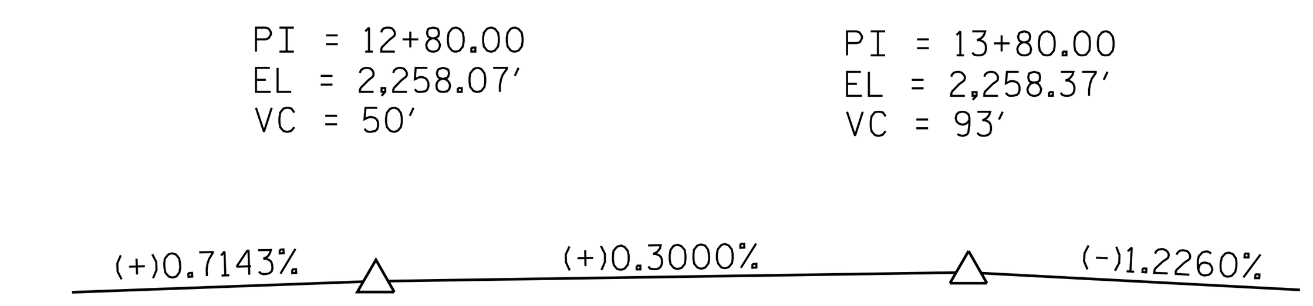
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SPAN A



SECTION ALONG C/L SURVEY -L-

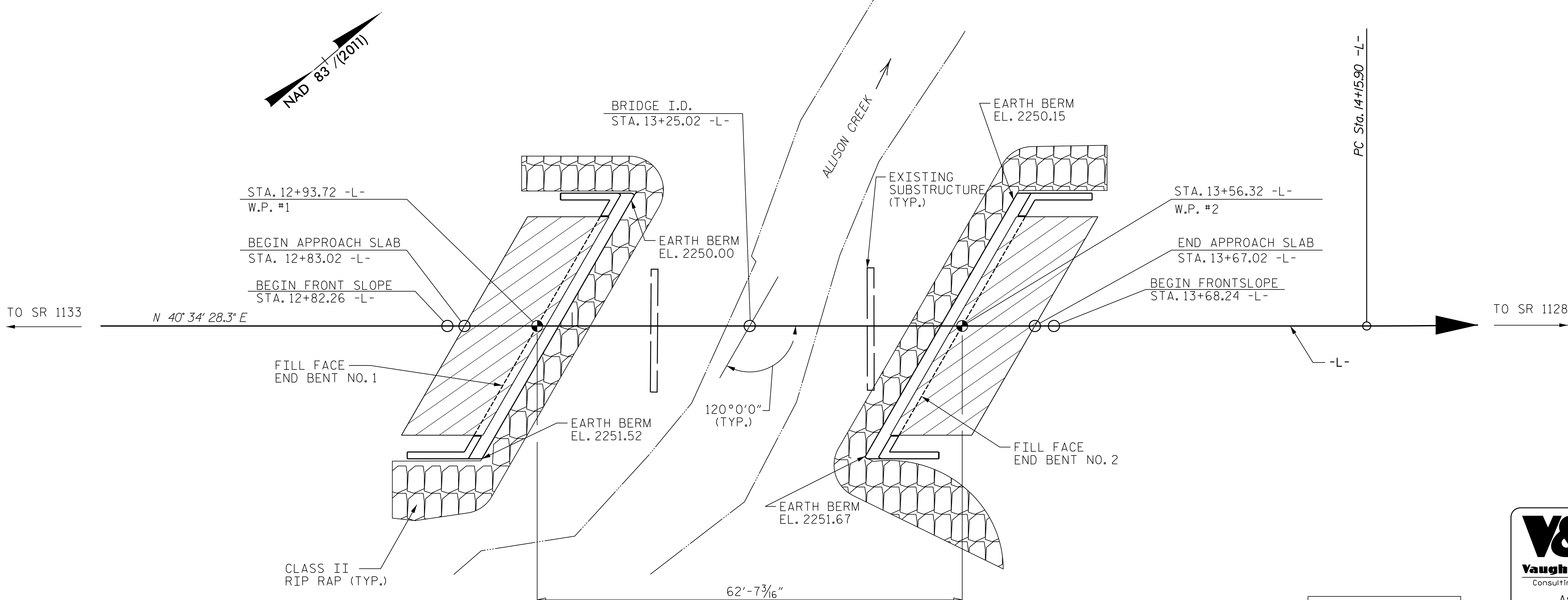
SECTIONS AT END BENTS ARE AT RIGHT ANGLES.



VERTICAL GRADE DATA -L-

PI Sta 14+68.01
Δ = 5° 57' 55.9" (LT)
D = 5° 43' 46.5"
L = 104.12'
T = 52.11'
R = 1,000.00'

HORIZONTAL CURVE DATA -L-



PLAN ALONG C/L SURVEY -L-

NOTES:
END BENTS ARE PARALLEL.
PILES NOT SHOWN IN PLAN VIEW FOR CLARITY.
CORED SLABS PARALLEL TO ℄ SURVEY -L-.

I HEREBY CERTIFY THAT THESE PLANS ARE THE AS-BUILT PLANS.

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 343

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER ALLISON CREEK
ON SR 1448 BETWEEN
SR 1133 AND SR 1128

Vaughn & Melton Consulting Engineers
Asheville, North Carolina 828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

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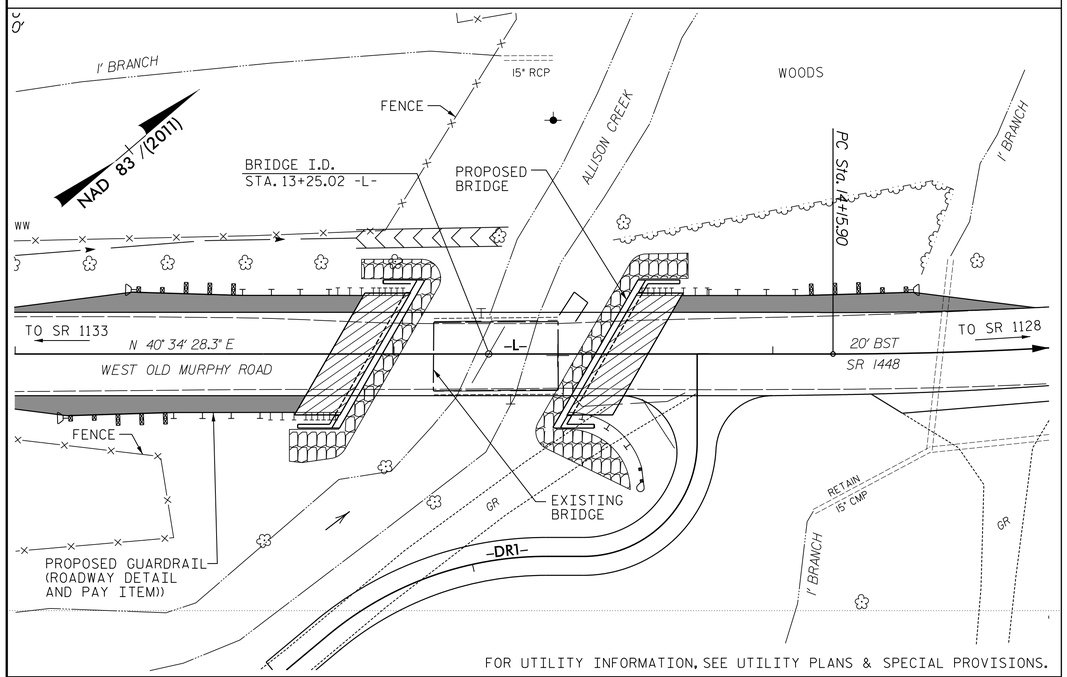
DocuSigned by: Hardy Willis
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
1/26/2022

DSG. ENG. OF RECORD.: JEB	DATE: 7/16
DWN. BY: MAF	DATE: 7/16
CHKD. BY: HLW	DATE: 7/16

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

BM-1 N 527433.17 E 662544.42 -L- STA.9+92.11 23.55' LT ELEV=2258.12 8"SPIKE IN BASE OF 15"PINE



FOR UTILITY INFORMATION, SEE UTILITY PLANS & SPECIAL PROVISIONS.

LOCATION SKETCH

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF 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 EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE, CONSISTING OF A SINGLE SPAN, 32'-0" LONG REINFORCED CONCRETE DECK ON STEEL I- BEAMS, 21'-1" WIDE, ON REINFORCED CONCRETE ABUTMENTS, AND LOCATED AT THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT.

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 SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 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.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

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 13+25.02."

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 & END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 80 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 & END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 135 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO. 1 & END BENT NO. 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRILLED IN PILES ARE REQUIRED FOR END BENT NO. 1 (RT). EXCAVATE HOLES AT PILE LOCATIONS TO A MINIMUM ELEVATION OF 2236.5 FT. FOR PILE EXCAVATIONS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

CONCRETE OR GROUT IS REQUIRED TO FILL HOLES FOR PILE EXCAVATIONS AT END BENT NO. 1.

TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	= 1400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2257.2 FT
BASE DISCHARGE	= 2000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2258.02 FT

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1610 CFS
OVERTOPPING FREQUENCY	= 25 + YRS
OVERTOPPING ELEVATION	= 2257.5 FT
DRAINAGE AREA	5.9 SQ. MI.
W.S. ELEVATION @ DATE OF SURVEY	2250.6' 5/4/09

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES		STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT	
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	EA.	LUMP SUM	CU. YARDS	LUMP SUM	LBS.	EACH	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YARDS	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE								LUMP SUM						120.29			LUMP SUM	11	660.00
END BENT 1			35.0	45.0		LUMP SUM	24.3		2914	7	7	154	7		61.0	46.0			
END BENT 2						LUMP SUM	24.3		2914	7	7	154	7		65.0	53.0			
TOTAL	LUMP SUM	LUMP SUM	35.0	45.0	1	LUMP SUM	48.6	LUMP SUM	5828	14	14	308	14	120.29	126.0	99.0	LUMP SUM	11	660.0

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

SHEET 2 OF 2

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

DocuSigned by: Hardy Wells
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25761 HARDY L. WELLS
CF02E3461...
1/26/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DSG. ENG. OF RECORD.: JEB DATE: 7/16
DWN. BY: MAF DATE: 7/16
CHKD. BY: HLW DATE: 7/16

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER ALLISON CREEK ON SR 1448 BETWEEN SR 1133 AND SR 1128

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

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	1.47	--	1.75	0.204	1.60	60′	EL	29.5	0.651	**1.47**	60′	EL	**1.77**	0.80	0.204	2.52	60′	EL	29.5	
		HL-93(Opr)	N/A	--	1.91	--	1.35	0.204	2.08	60′	EL	29.5	0.651	1.91	60′	EL	1.77	0.80	0.204	--	60′	EL	29.5	
		HS-20(Inv)	36.00	2	1.81	65.048	1.75	0.204	2.03	60′	EL	29.5	0.651	**1.81**	60′	EL	**1.77**	0.80	0.204	3.19	60′	EL	29.5	
		HS-20(Opr)	36.00	--	2.34	84.321	1.35	0.204	2.63	60′	EL	29.5	0.651	2.34	60′	EL	1.77	0.80	0.204	--	60′	EL	29.5	
LEGAL LOAD RATING	SV	SNSH	13.50	--	5.27	71.099	1.40	0.204	5.44	60′	EL	29.5	0.651	5.27	60′	EL	1.77	0.80	0.204	6.86	60′	EL	29.5	
		SNGARBS2	20.00	--	3.78	75.688	1.40	0.204	4.17	60′	EL	29.5	0.651	3.78	60′	EL	1.77	0.80	0.204	5.25	60′	EL	29.5	
		SNAGRIS2	22.00	--	3.53	77.601	1.40	0.204	4.02	60′	EL	29.5	0.651	3.53	60′	EL	1.77	0.80	0.204	5.04	60′	EL	29.5	
		SNCOTTS3	27.25	--	2.64	71.923	1.40	0.204	2.72	60′	EL	29.5	0.651	2.64	60′	EL	1.77	0.80	0.204	3.42	60′	EL	29.5	
		SNAGGRS4	34.93	--	2.21	77.204	1.40	0.204	2.31	60′	EL	29.5	0.651	2.21	60′	EL	1.77	0.80	0.204	2.91	60′	EL	29.5	
		SNS5A	35.55	--	2.25	79.978	1.40	0.204	2.26	60′	EL	29.5	0.651	2.25	60′	EL	1.77	0.80	0.204	2.84	60′	EL	29.5	
		SNS6A	39.95	--	2.08	83.013	1.40	0.204	2.10	60′	EL	29.5	0.651	2.08	60′	EL	1.77	0.80	0.204	2.65	60′	EL	29.5	
		SNS7B	42.00	--	1.99	83.767	1.40	0.204	1.99	60′	EL	29.5	0.651	2.04	60′	EL	1.77	0.80	0.204	2.51	60′	EL	29.5	
	TTST	TNAGRIT3	33.00	--	2.45	80.759	1.40	0.204	2.55	60′	EL	29.5	0.651	2.45	60′	EL	1.77	0.80	0.204	3.21	60′	EL	29.5	
		TNT4A	33.08	--	2.38	78.586	1.40	0.204	2.58	60′	EL	29.5	0.651	2.38	60′	EL	1.77	0.80	0.204	3.24	60′	EL	29.5	
		TNT6A	41.60	--	2.12	88.195	1.40	0.204	2.12	60′	EL	29.5	0.651	2.19	60′	EL	1.77	0.80	0.204	2.67	60′	EL	29.5	
		TNT7A	42.00	--	2.11	88.725	1.40	0.204	2.15	60′	EL	29.5	0.651	2.11	60′	EL	1.77	0.80	0.204	2.70	60′	EL	29.5	
		TNT7B	42.00	--	1.98	83.189	1.40	0.204	2.23	60′	EL	29.5	0.651	1.98	60′	EL	1.77	0.80	0.204	2.81	60′	EL	29.5	
		TNAGRIT4	43.00	--	1.91	82.316	1.40	0.204	2.11	60′	EL	29.5	0.651	1.91	60′	EL	1.77	0.80	0.204	2.66	60′	EL	29.5	
		TNAGT5A	45.00	--	1.91	86.145	1.40	0.204	1.99	60′	EL	29.5	0.651	1.91	60′	EL	1.77	0.80	0.204	2.49	60′	EL	29.5	
		TNAGT5B	45.00	3	1.82	81.762	1.40	0.204	1.95	60′	EL	29.5	0.651	**1.82**	60′	EL	**1.77**	0.80	0.204	2.46	60′	EL	29.5	

LOAD FACTORS:

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

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

FOR SPAN 'A'

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 60′ CORED SLAB UNIT 120° SKEW

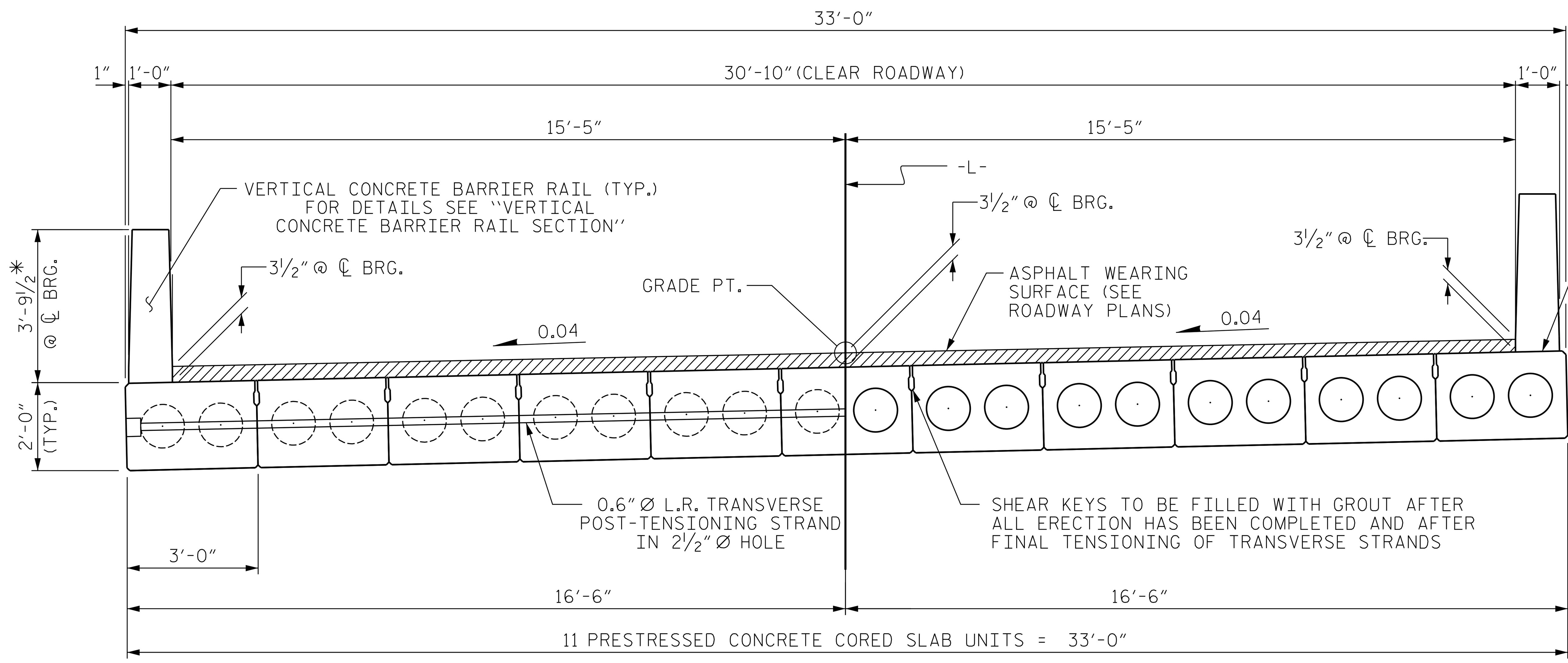
(NON-INTERSTATE TRAFFIC)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — DocuSigned by: Hardy Willis — 1/26/2022

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

ENGINEER OF RECORD: JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

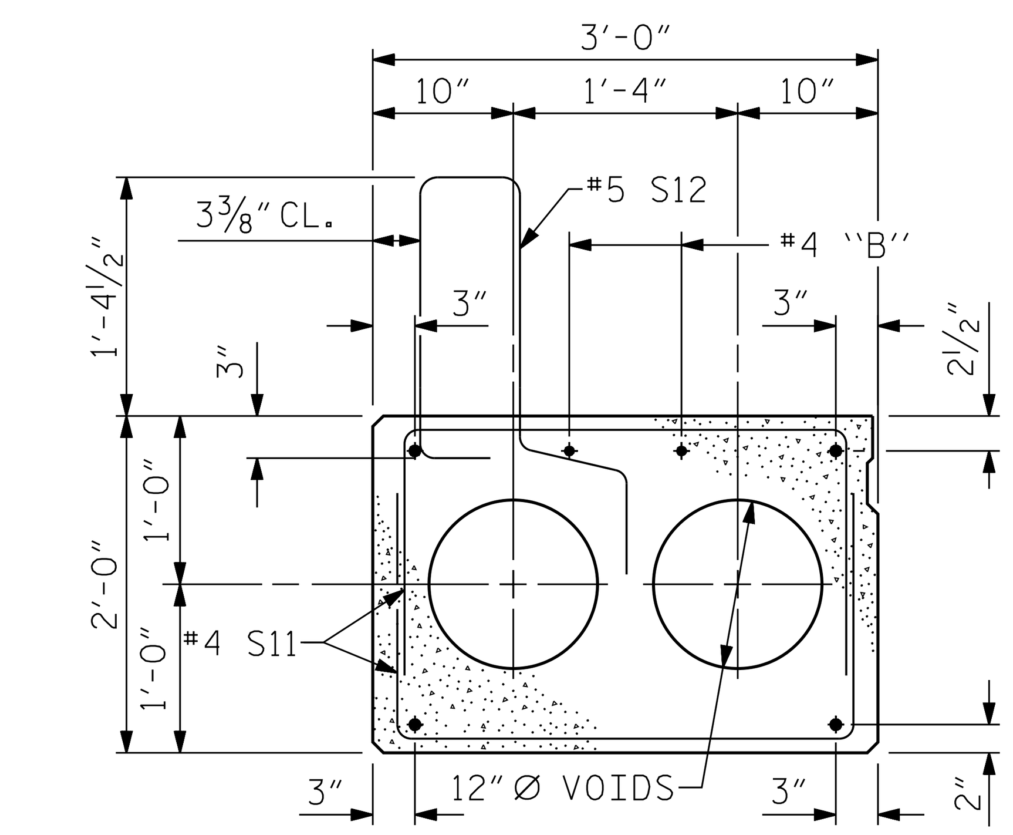


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

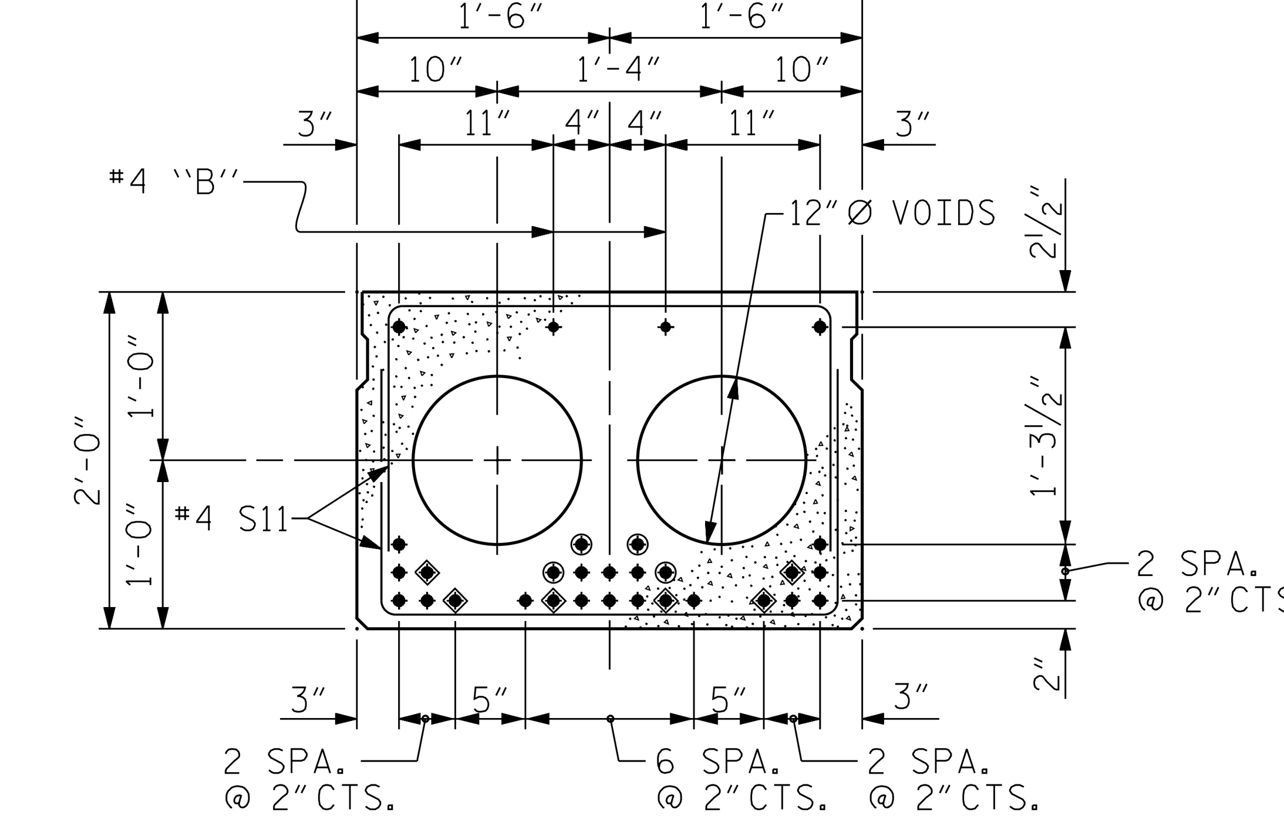
HALF SECTION
THROUGH VOIDS

✱ - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (60' UNIT)

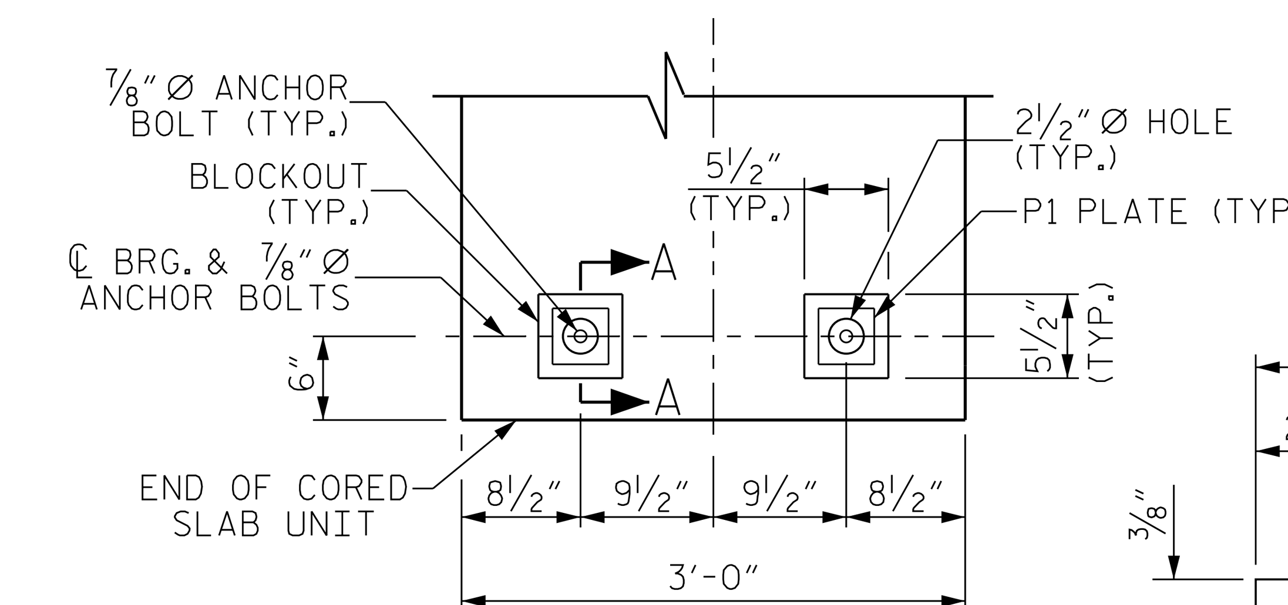
(24 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

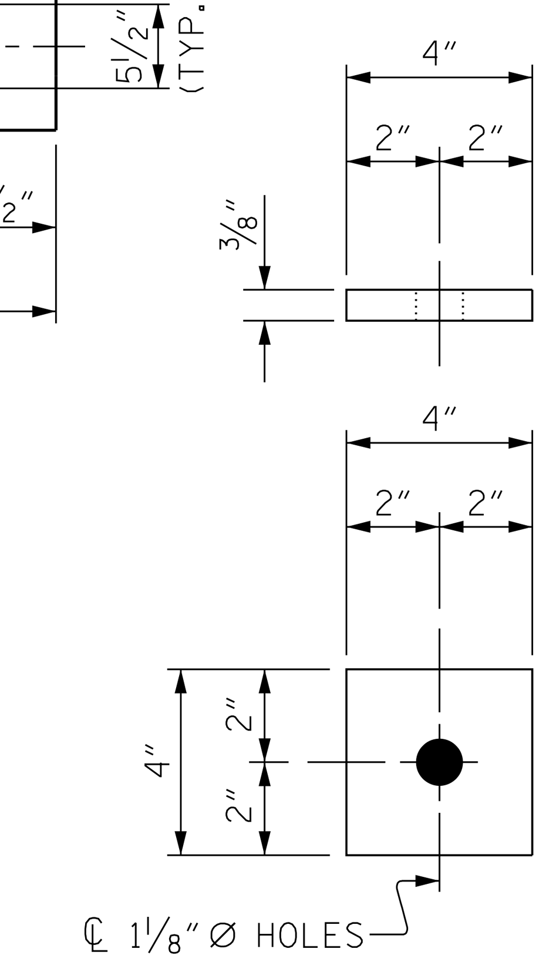
◈ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 16'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

◉ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

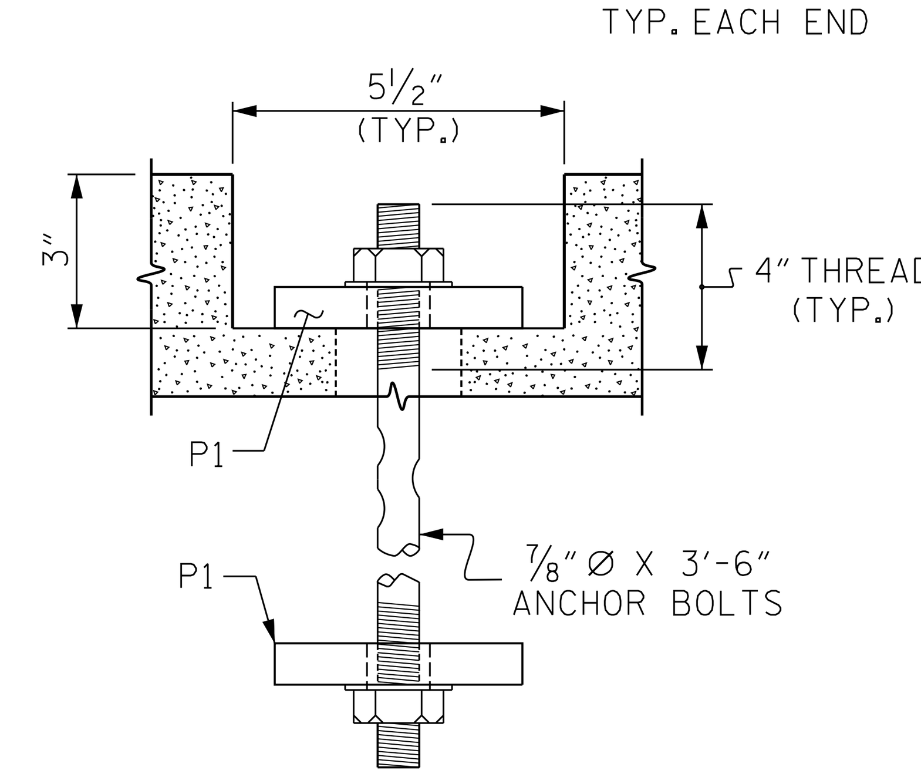


TYPICAL PLAN
TYP. EACH END



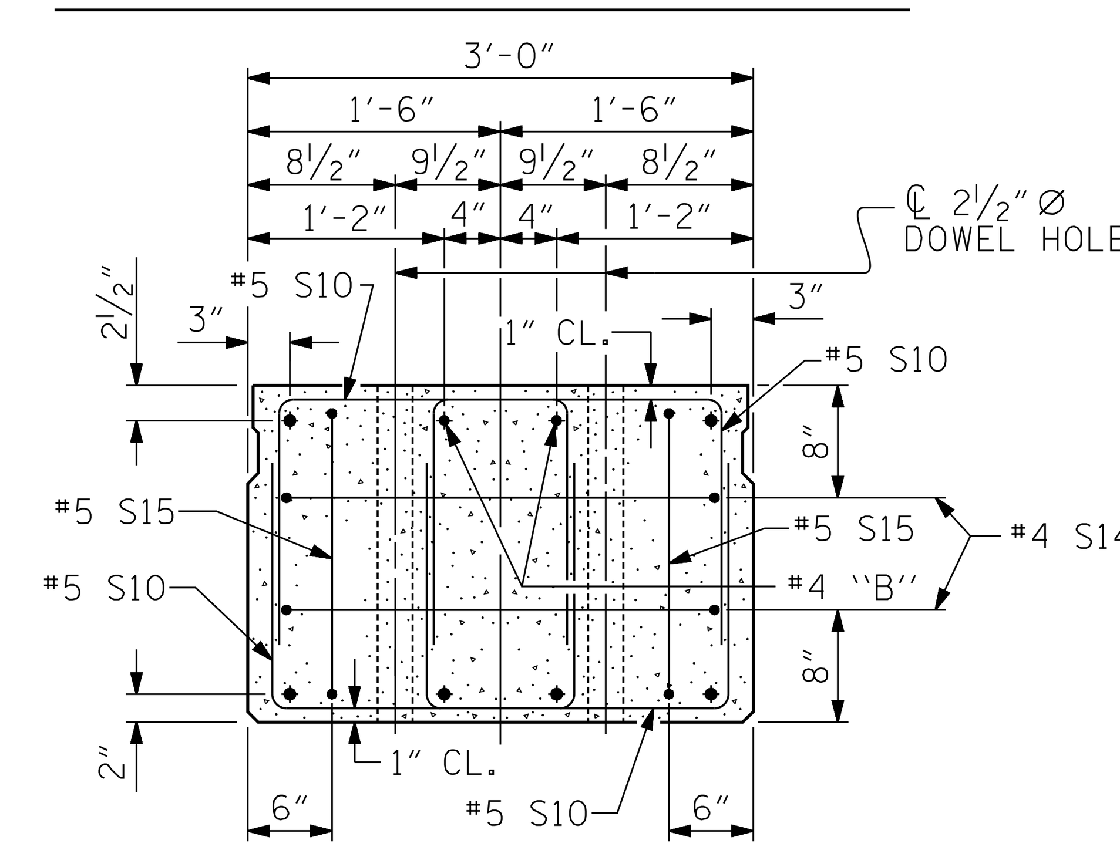
P1
(FIXED)
P1 (16 REQ'D.)

PLATE DETAILS



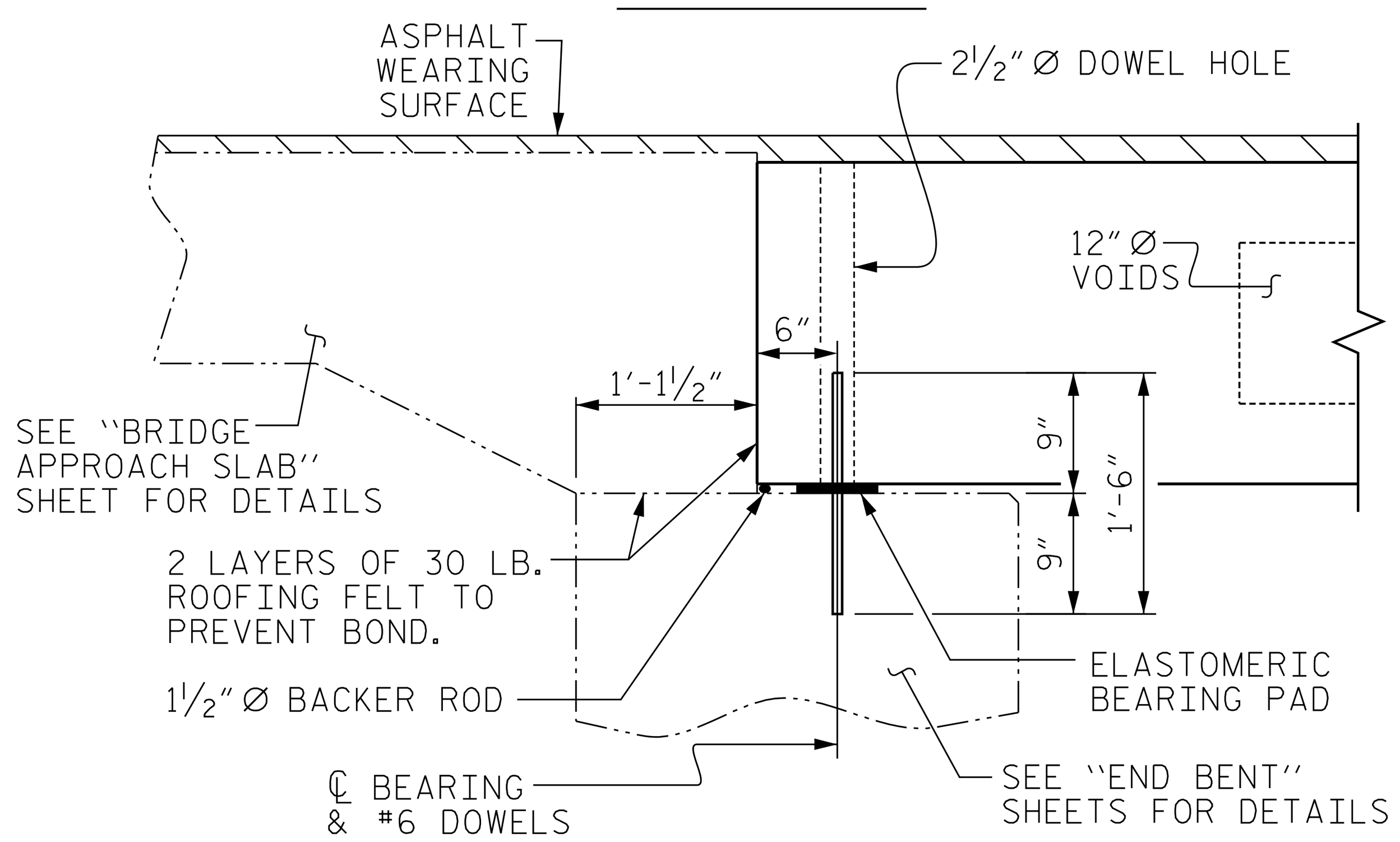
SECTION A-A
(FIXED)

BLOCKOUT DETAIL FOR ANCHOR BOLTS



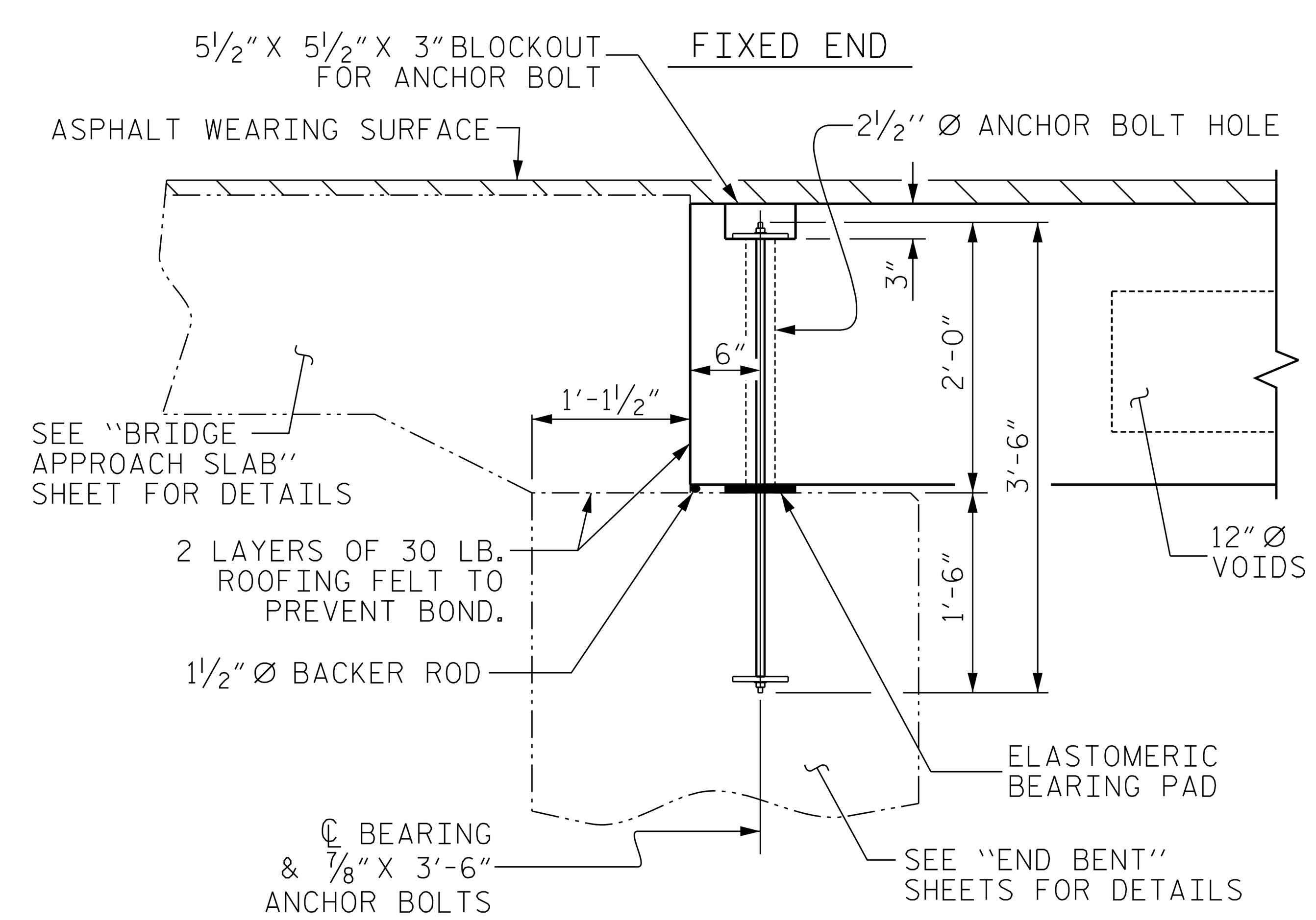
END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES.
(STRAND LAYOUT NOT SHOWN.)
INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



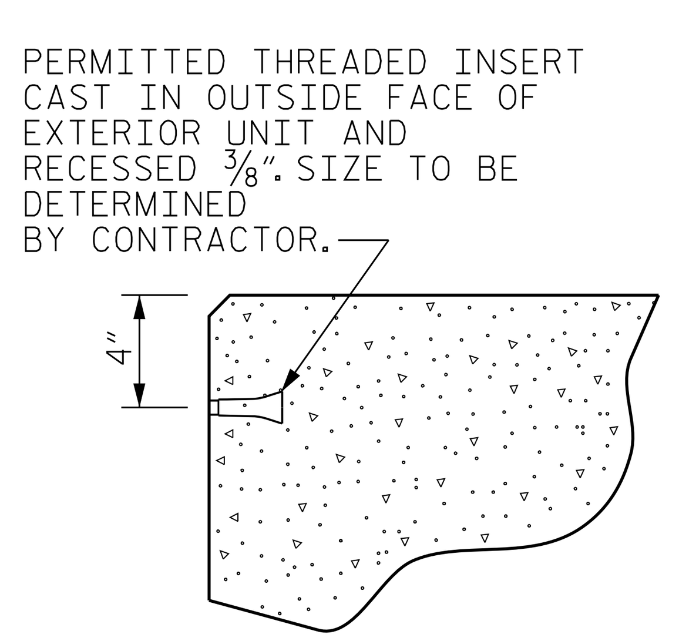
SECTION AT END BENT

FOR INTERIOR SLABS

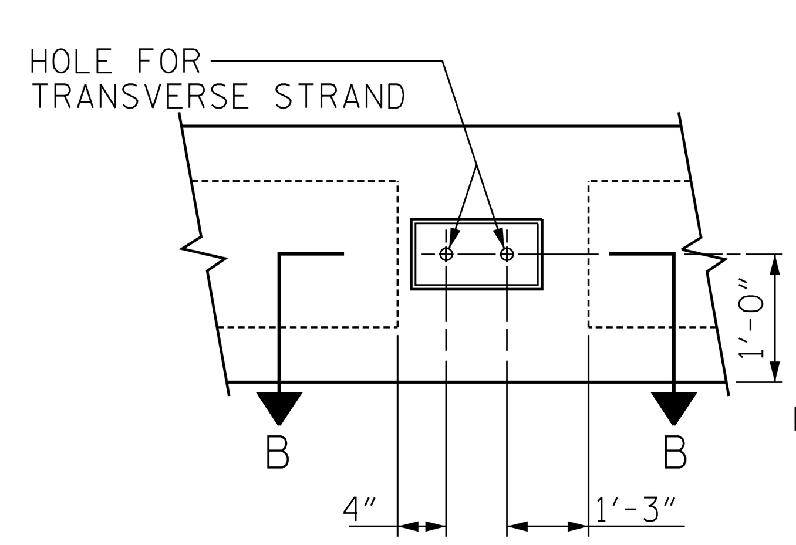


SECTION AT END BENT

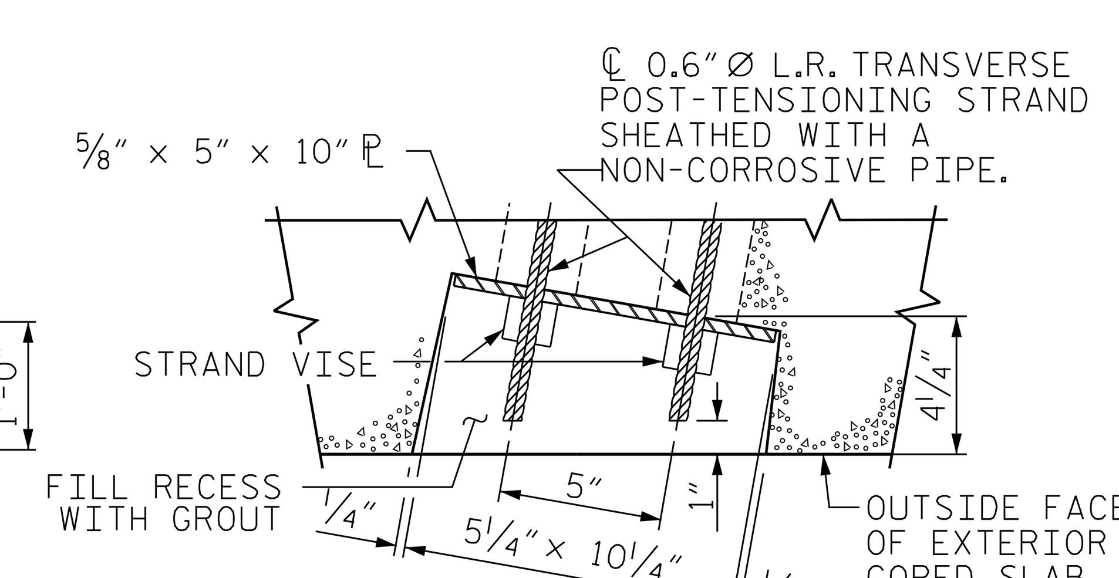
FOR EXTERIOR SLABS



THREADED INSERT DETAIL

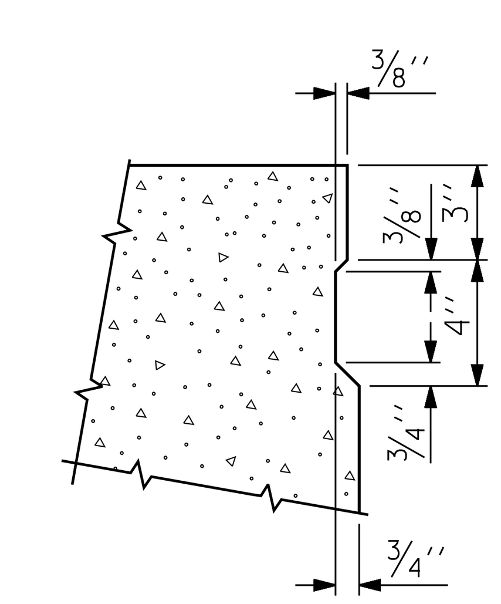


ELEVATION VIEW



SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

ENGINEER OF RECORD: JEB			
ASSEMBLED BY : MAF		DATE : 7/16	
CHECKED BY : HLW		DATE : 7/16	
DRAWN BY : MAA 6/10	REV. 9/14		MAA/TMG
CHECKED BY : MKT 7/10			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-

SHEET 1 OF 3

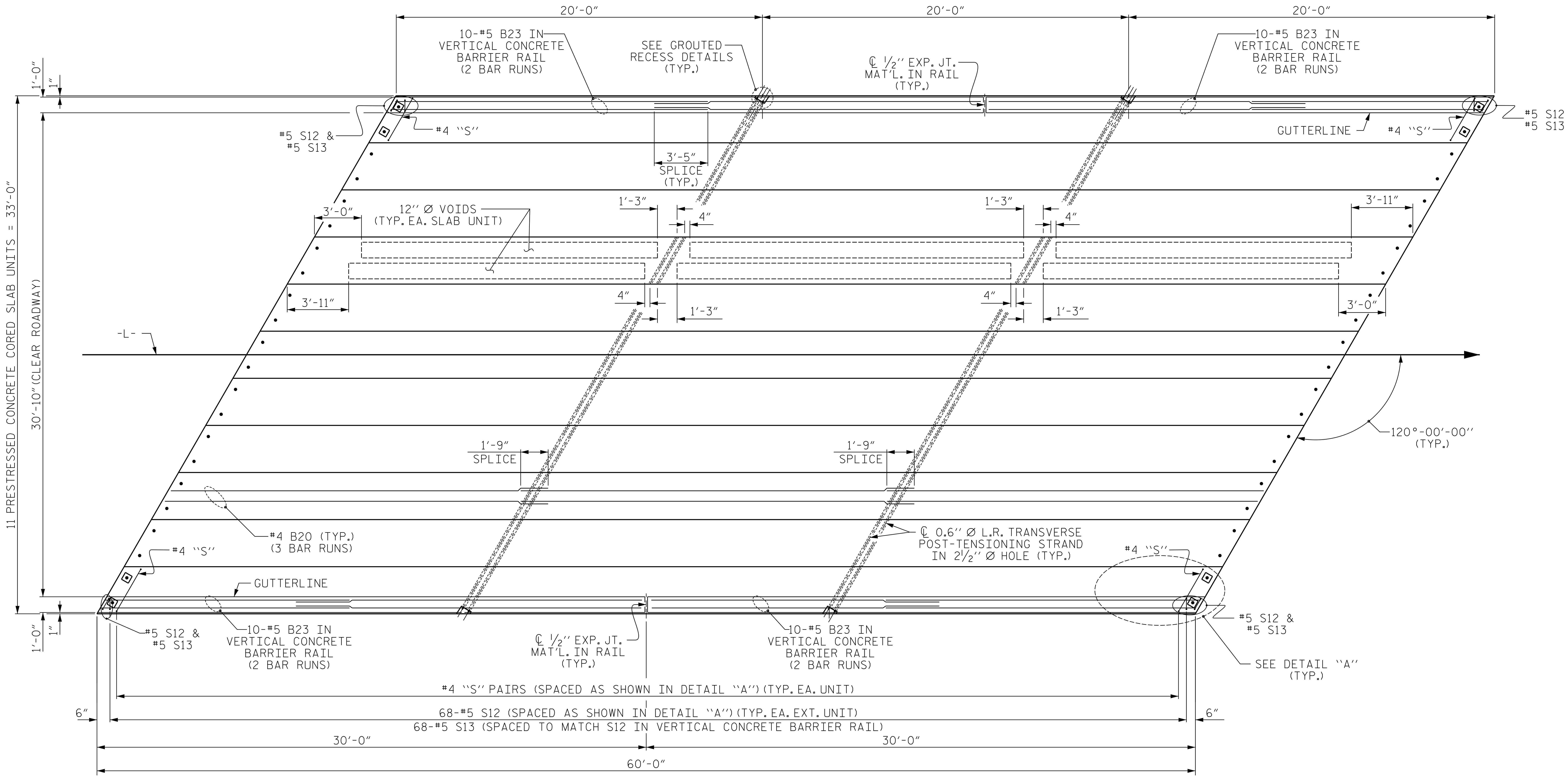
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

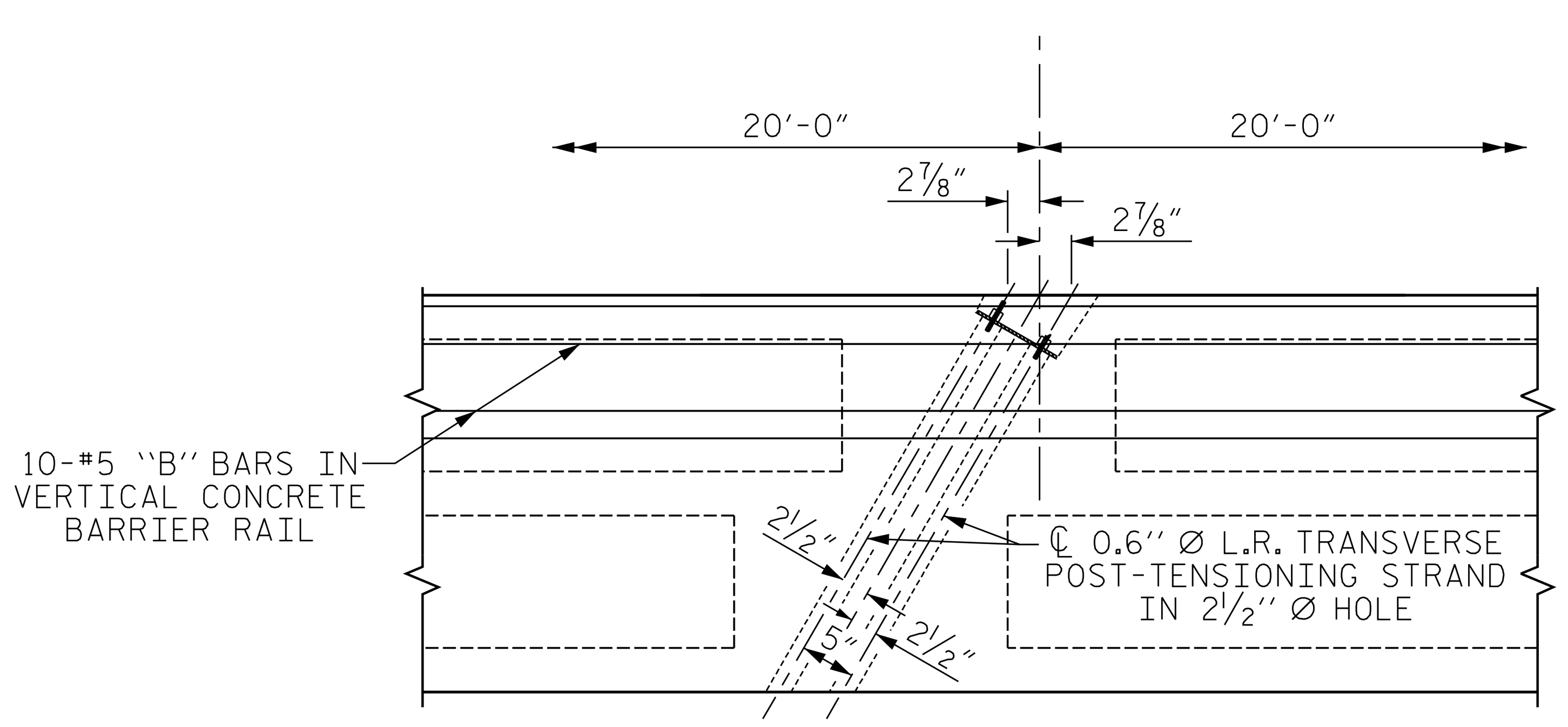
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

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

STD. NO. 24PCS4_33_120S

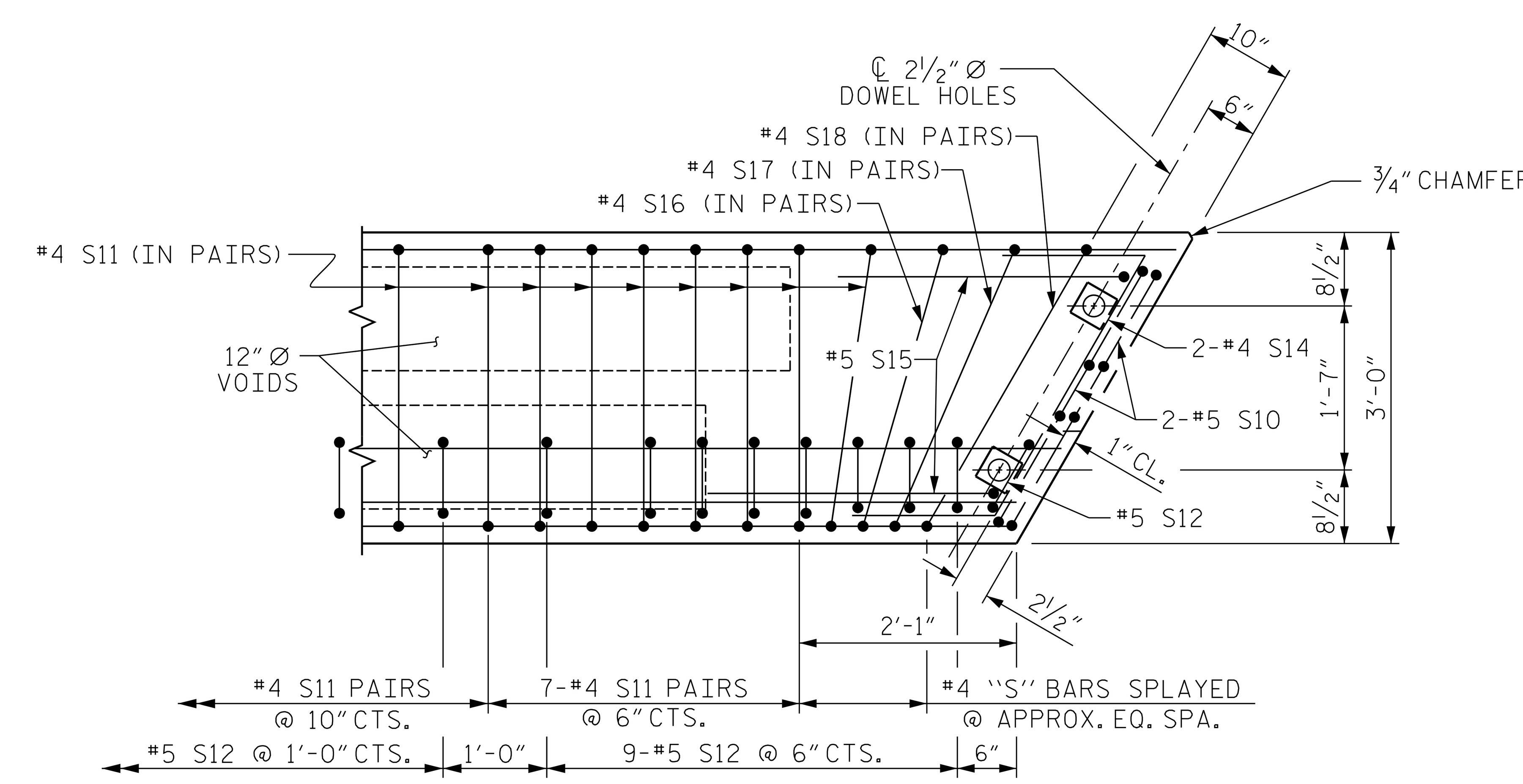


PLAN OF UNIT



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES



DETAIL "A"

(SIMILAR EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-

SHEET 2 OF 3

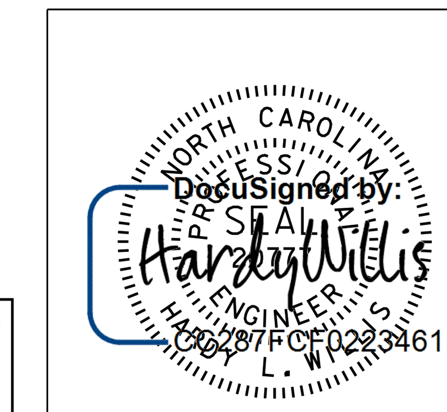
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 60' UNIT
30'-10" CLEAR ROADWAY
120° SKEW

ENGINEER OF RECORD:	JEB		
ASSEMBLED BY :	MAF	DATE :	7/16
CHECKED BY :	HLW	DATE :	7/16

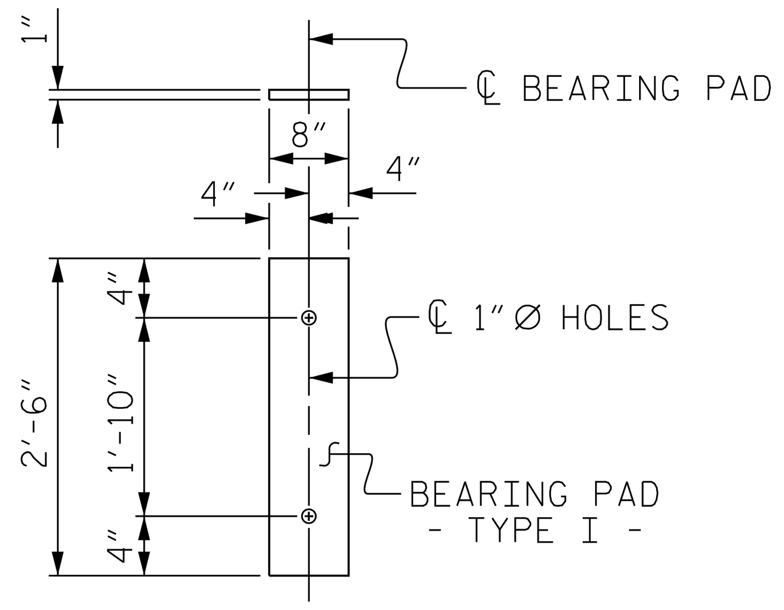
DRAWN BY : MAA 6/10	REV. 12/5/11	MAA/AAC
CHECKED BY : MKT 7/10	REV. 8/14	MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-5
1			3					TOTAL SHEETS
2			4					13

STD. NO. 24PCS_33_120S_60L



FIXED END
(TYPE I - 22 REQ'D)

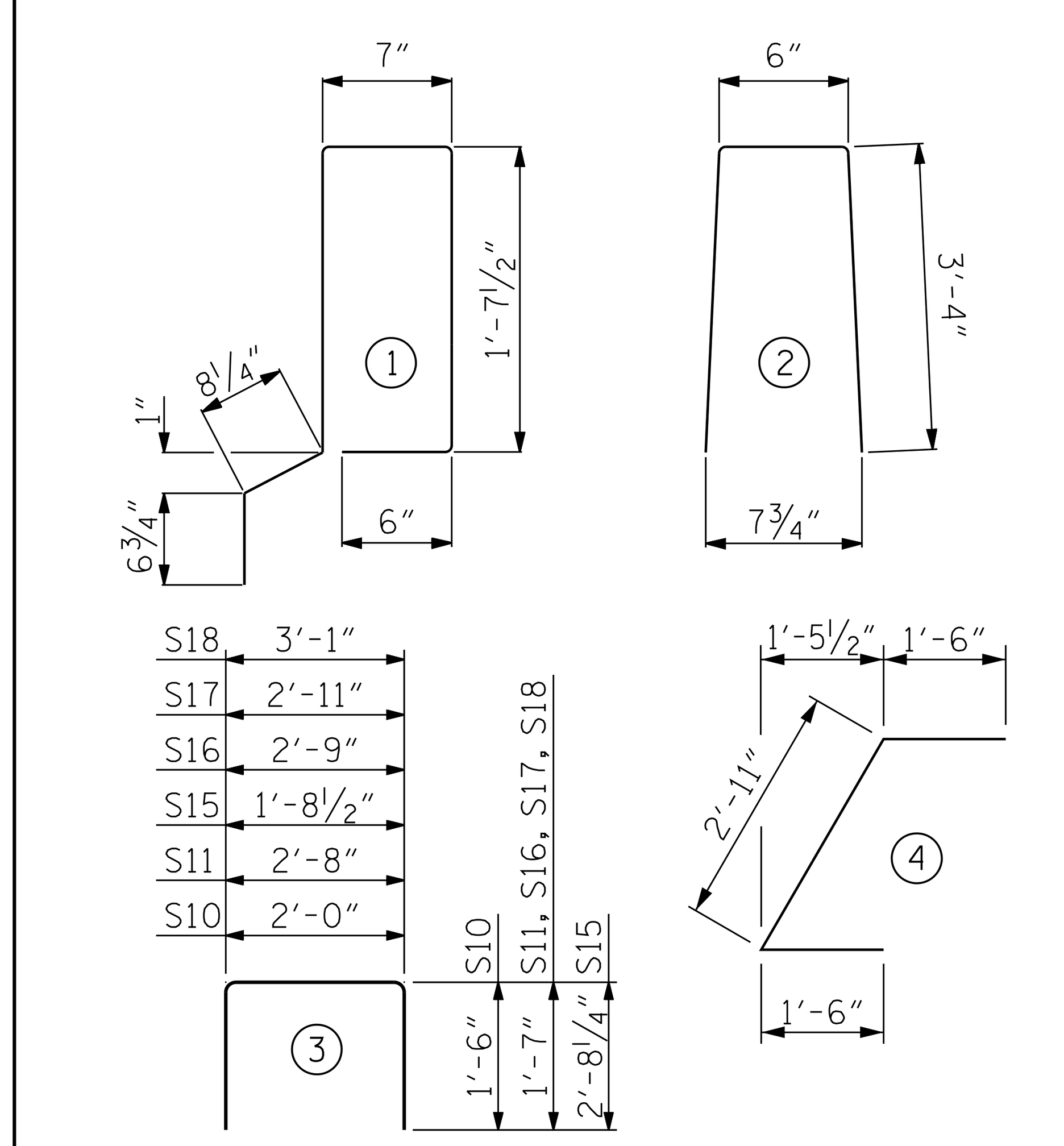
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B20	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	5'-0"	42	5'-0"	42
S11	146	#4	3	5'-10"	569	5'-10"	569
∗S12	70	#5	1	5'-7"	408		
S14	4	#4	4	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17
REINFORCING STEEL		LBS.			791		791
∗EPOXY COATED REINFORCING STEEL		LBS.			408		
6000 P.S.I. CONCRETE		CU. YDS.			10.4		10.4
0.6"Ø L.R. STRANDS		No.			24		24

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"
60' CORED SLAB UNIT	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1⅞" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD∗∗	½" ↓
FINAL CAMBER	1⅜" ↑

∗∗ INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED

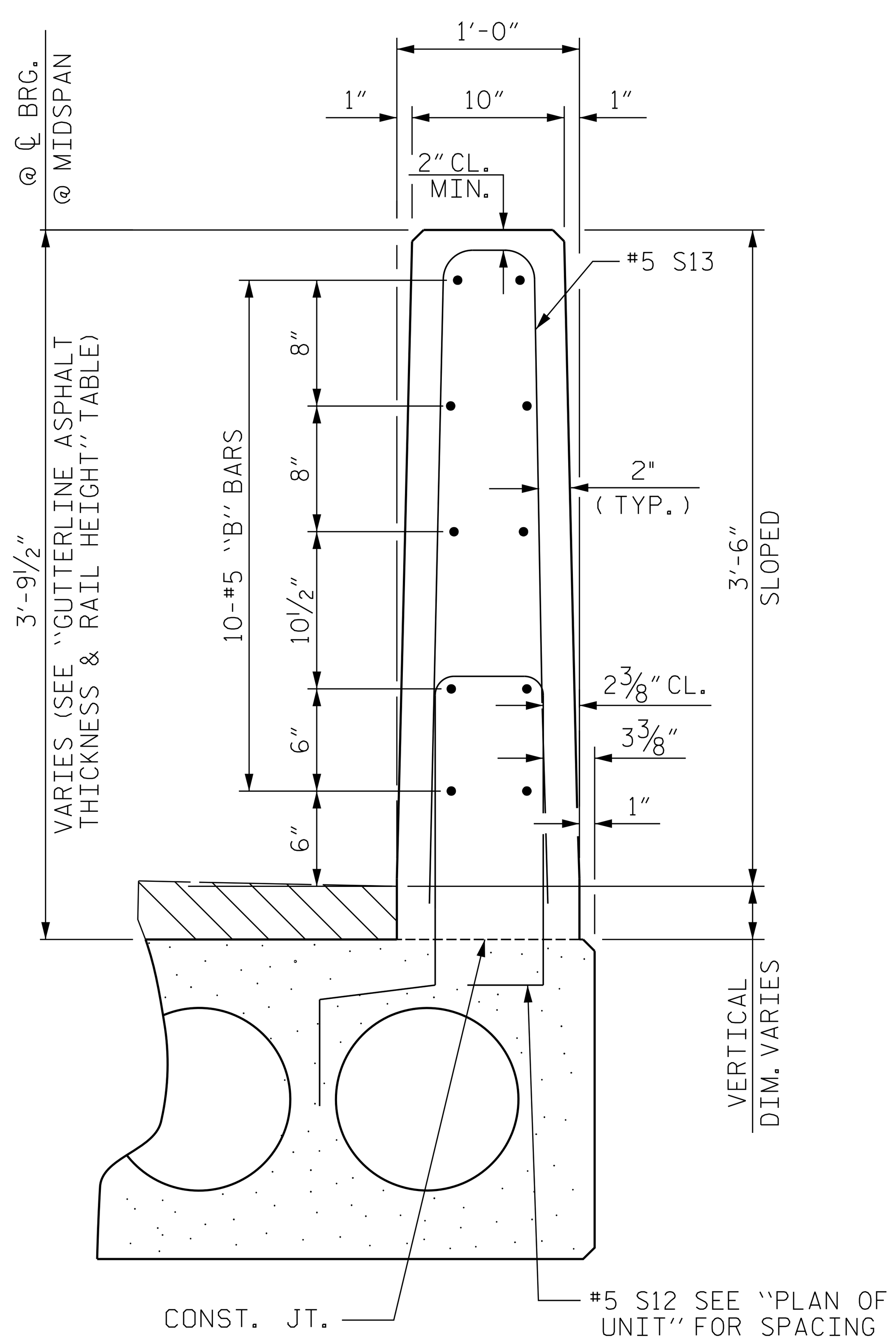
	NUMBER	LENGTH	TOTAL LENGTH
60' UNIT			
EXTERIOR C.S.	2	60'-0"	120
INTERIOR C.S.	9	60'-0"	540
TOTAL	11		660

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

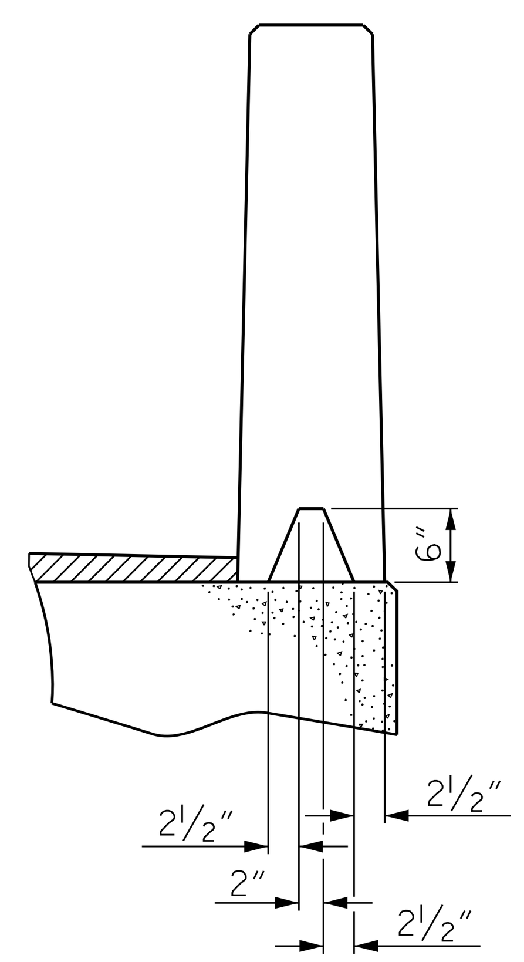
BAR	BARS PER PAIR OF EXTERIOR UNITS 60' UNIT	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
∗B23	80	80	#5	STR	16'-11"	1412
∗S13	140	140	#5	2	7'-2"	1046
∗EPOXY COATED REINFORCING STEEL				LBS.		2458
CLASS AA CONCRETE				CU.YDS.		15.5
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		120.29

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

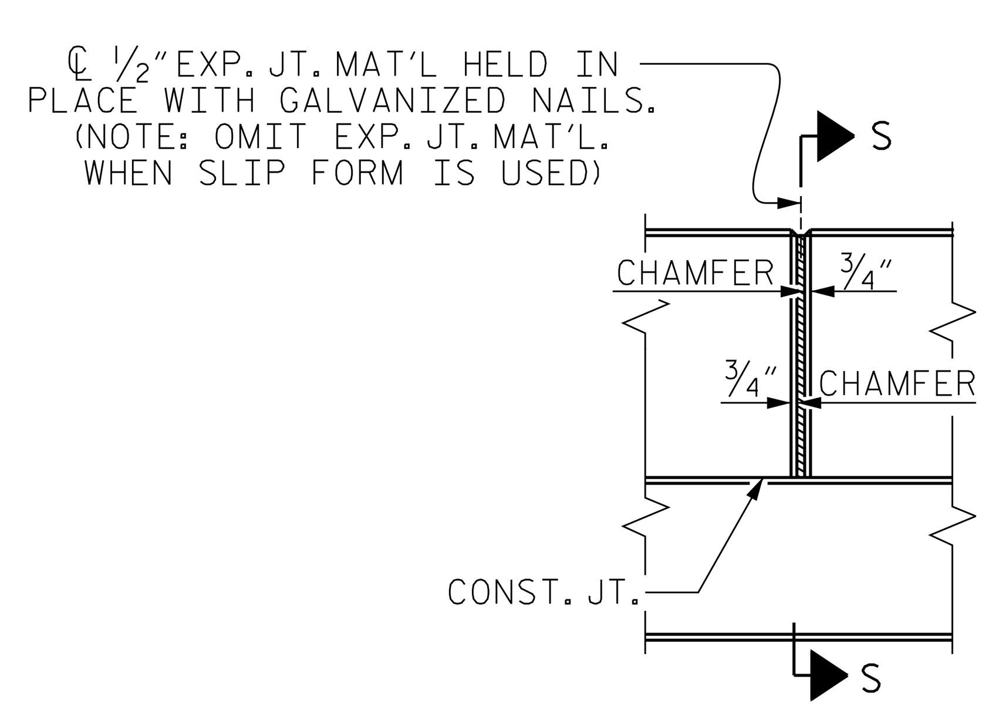
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
60' UNITS	2⅛"	3'-8⅛"



SECTION THRU RAIL

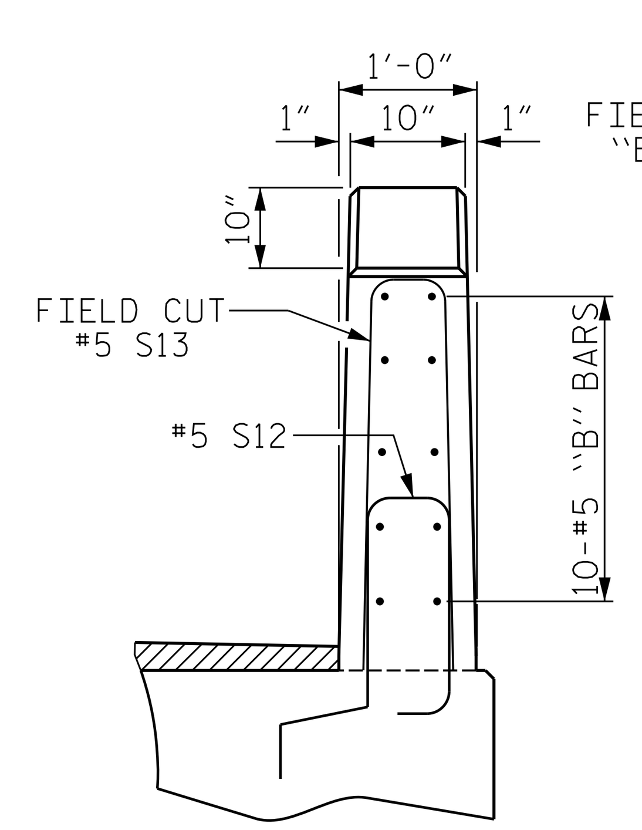


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

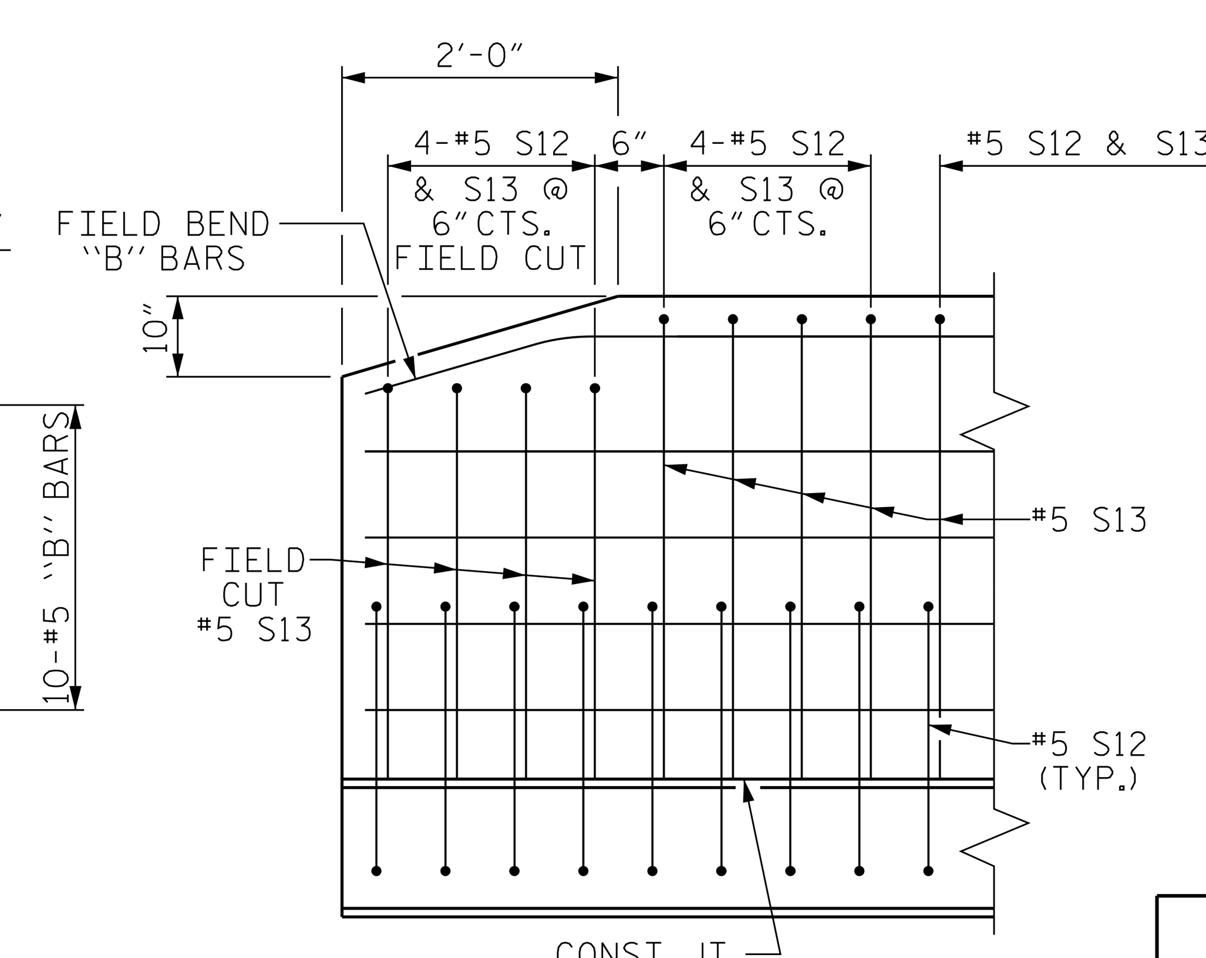


ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS



END VIEW



SIDE VIEW

END OF RAIL DETAILS

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½"Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A 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.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PAYMENT FOR ANCHOR BOLTS, NUTS, WASHERS AND HOLD-DOWN PLATES SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE CORED SLAB UNITS.

CONCRETE RELEASE STRENGTH

UNIT	PSI
60' UNITS	4800

GRADE 270 STRANDS

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

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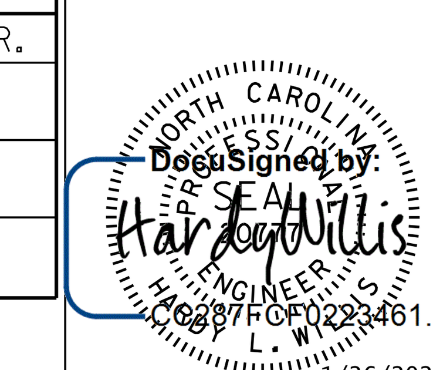


PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

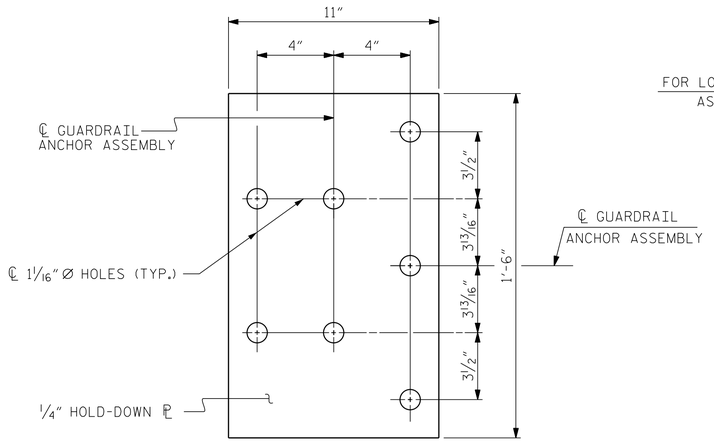
STANDARD

3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT

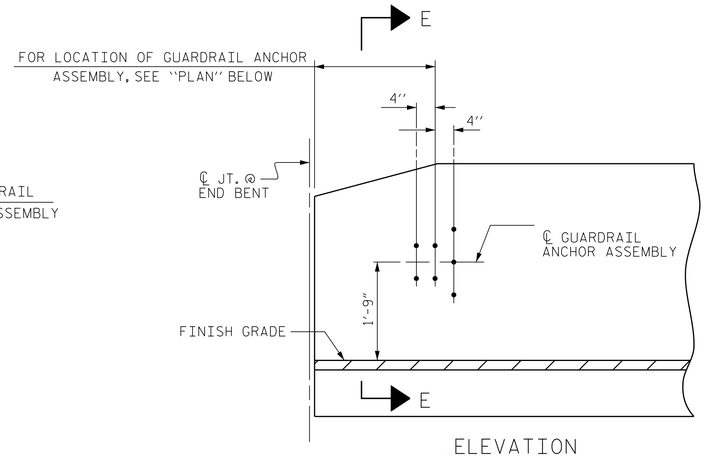
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			13

ENGINEER OF RECORD: JEB			
ASSEMBLED BY :	MAF	DATE :	7/16
CHECKED BY :	HLW	DATE :	7/16
DRAWN BY : MAA	6/10	REV. 5/18	MAA/THC
CHECKED BY : MKT	7/10		

STD. NO. 24PCS3_33_60&120S



PLAN



ELEVATION

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4'' HOLD DOWN PLATE AND 7 - 7/8'' Ø BOLTS WITH NUTS AND WASHERS.

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 7/8'' 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.)

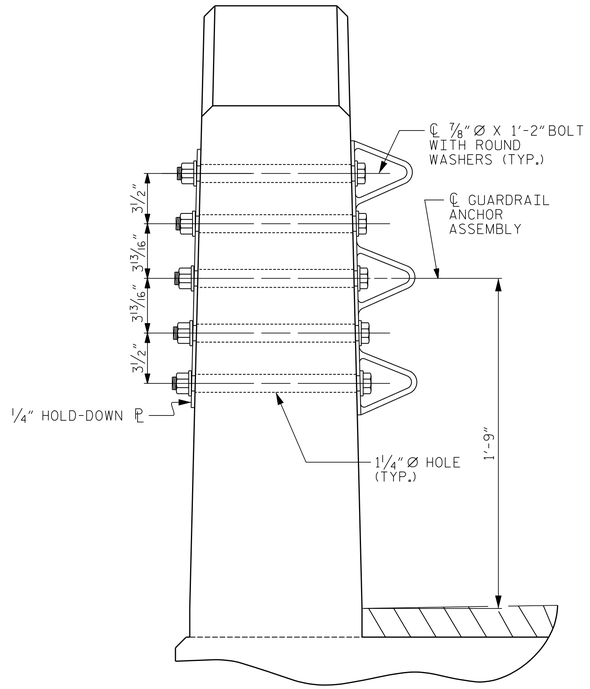
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 VERTICAL CONCRETE BARRIER RAIL.

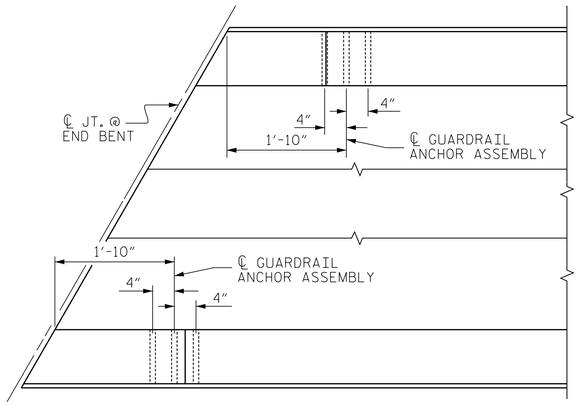
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.



SECTION E-E

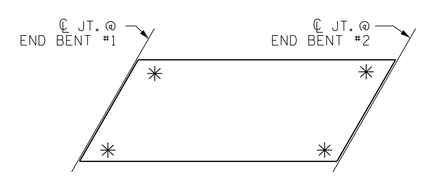
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

ENGINEER OF RECORD : JEB			
ASSEMBLED BY : MAF		DATE : 7/16	
CHECKED BY : HLW		DATE : 7/16	
DRAWN BY : MAA 5/10	REV. 1/15	MAA/TMG	
CHECKED BY : GM 5/10	REV. 12/17	MAA/THC	
	REV. 5/18	MAA/THC	

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL L-4638

DocuSigned by: Harry Willis

1/26/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			13

(SHT 1a) STD. NO. GRA3

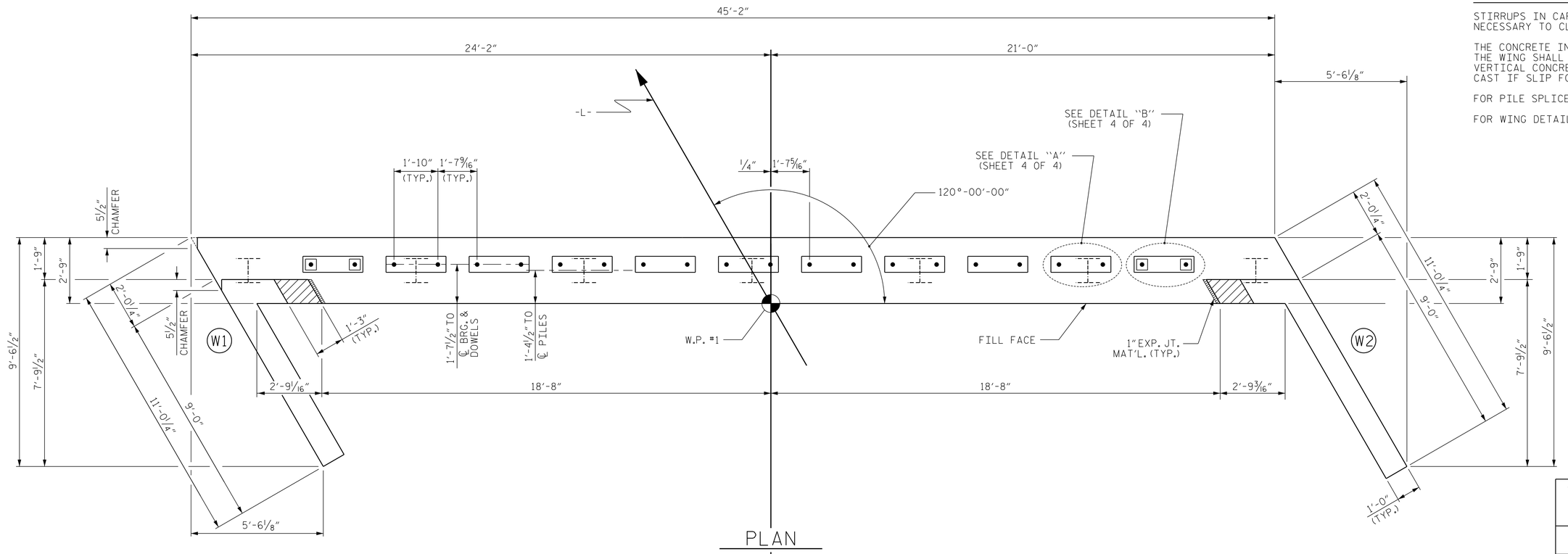
NOTES

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

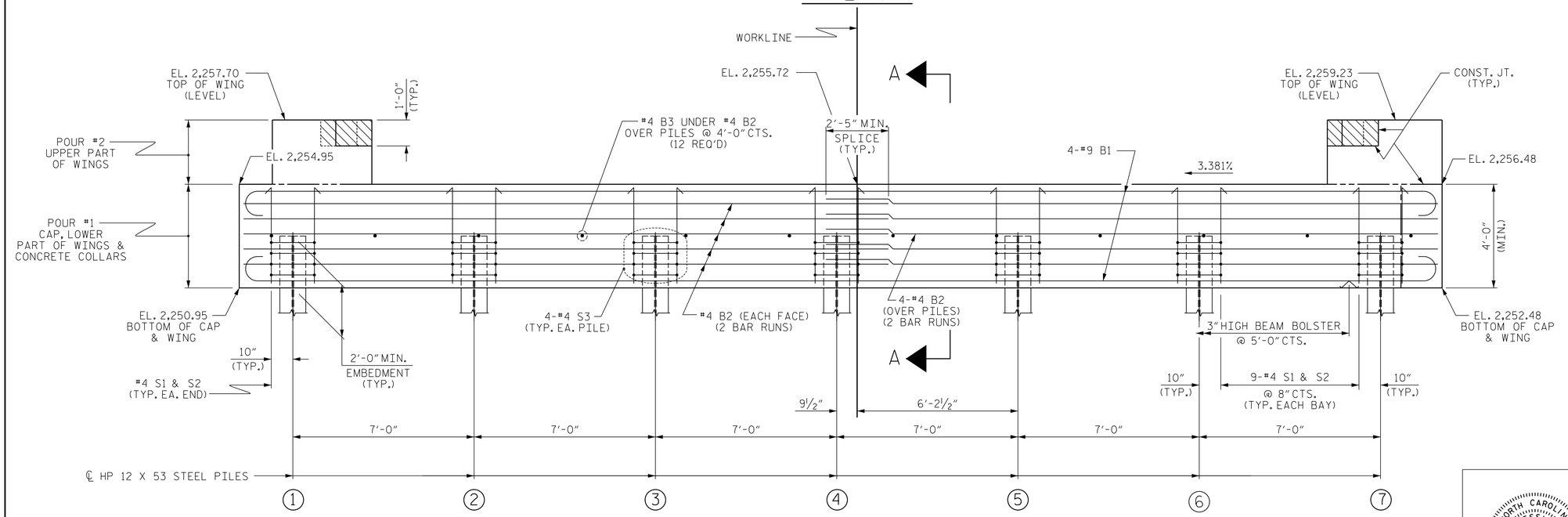
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS	
1	2253.01
2	2253.25
3	2253.49
4	2253.73
5	2253.97
6	2254.21
7	2254.45

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

ENGINEER OF RECORD : JEB			
ASSEMBLED BY : MAF	DATE : 7/16		
CHECKED BY : HLW	DATE : 7/16		
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG		
CHECKED BY : AAC 12/11			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER L.L. WILLIS 46461 REGISTERED

DocuSigned by: Hardy Willis 1/26/2022

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			13

STD. NO. EB_33_120S4

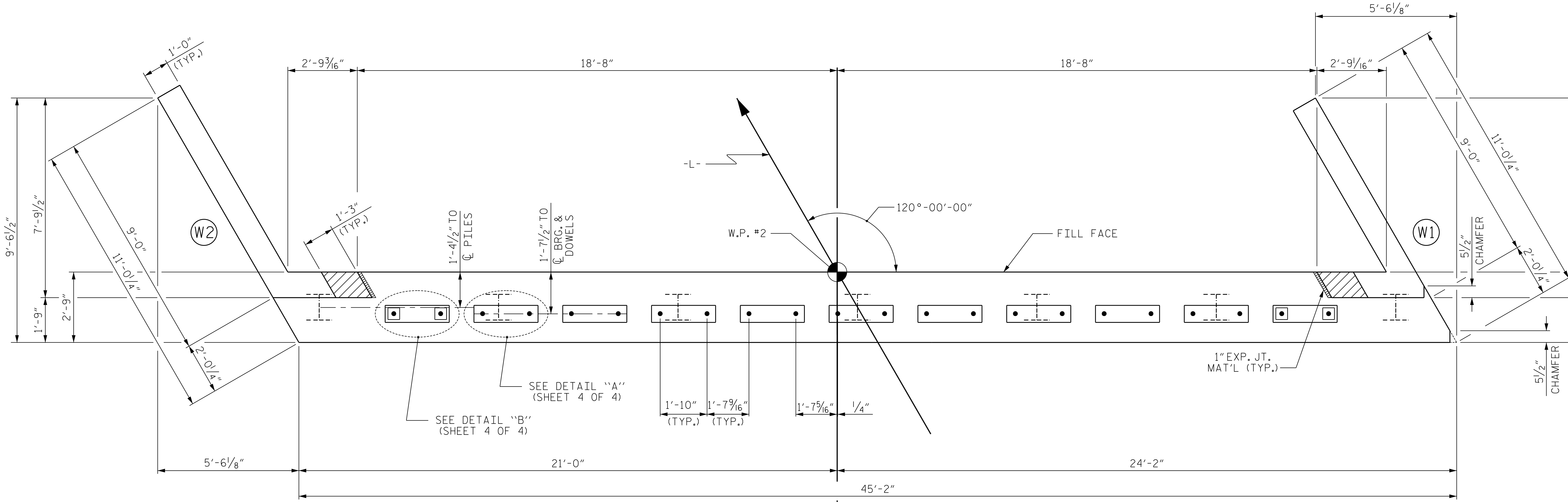
NOTES

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

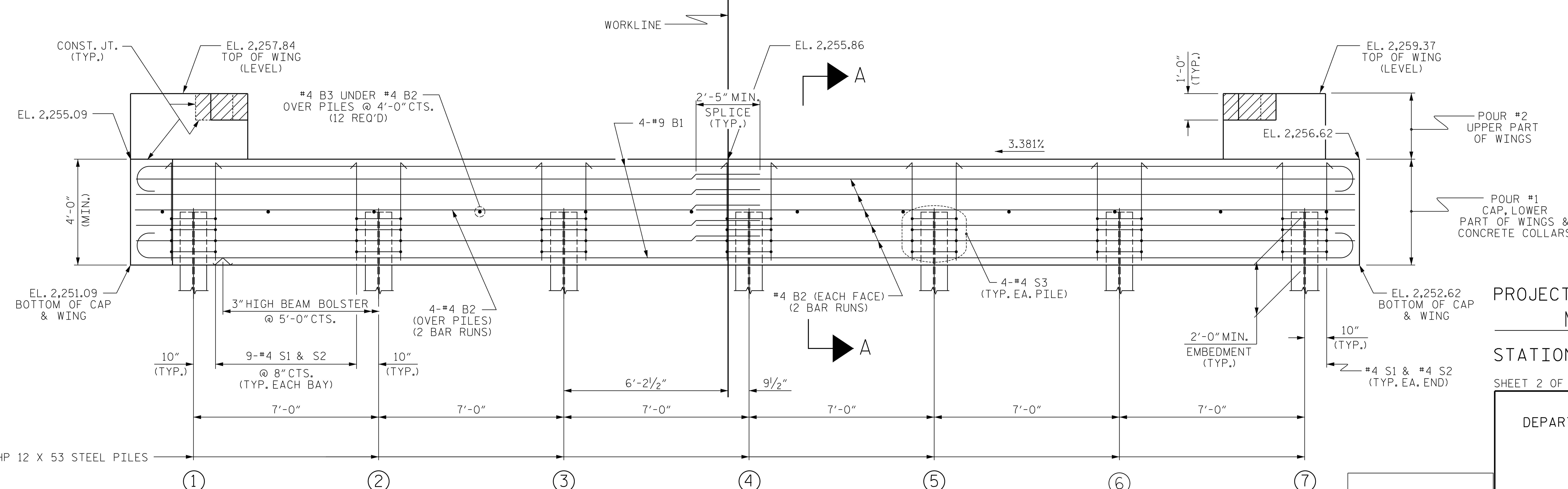
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

TOP OF PILE ELEVATIONS

Pile	Elevation
1	2,253.15
2	2,253.39
3	2,253.63
4	2,253.87
5	2,254.11
6	2,254.35
7	2,254.59

PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

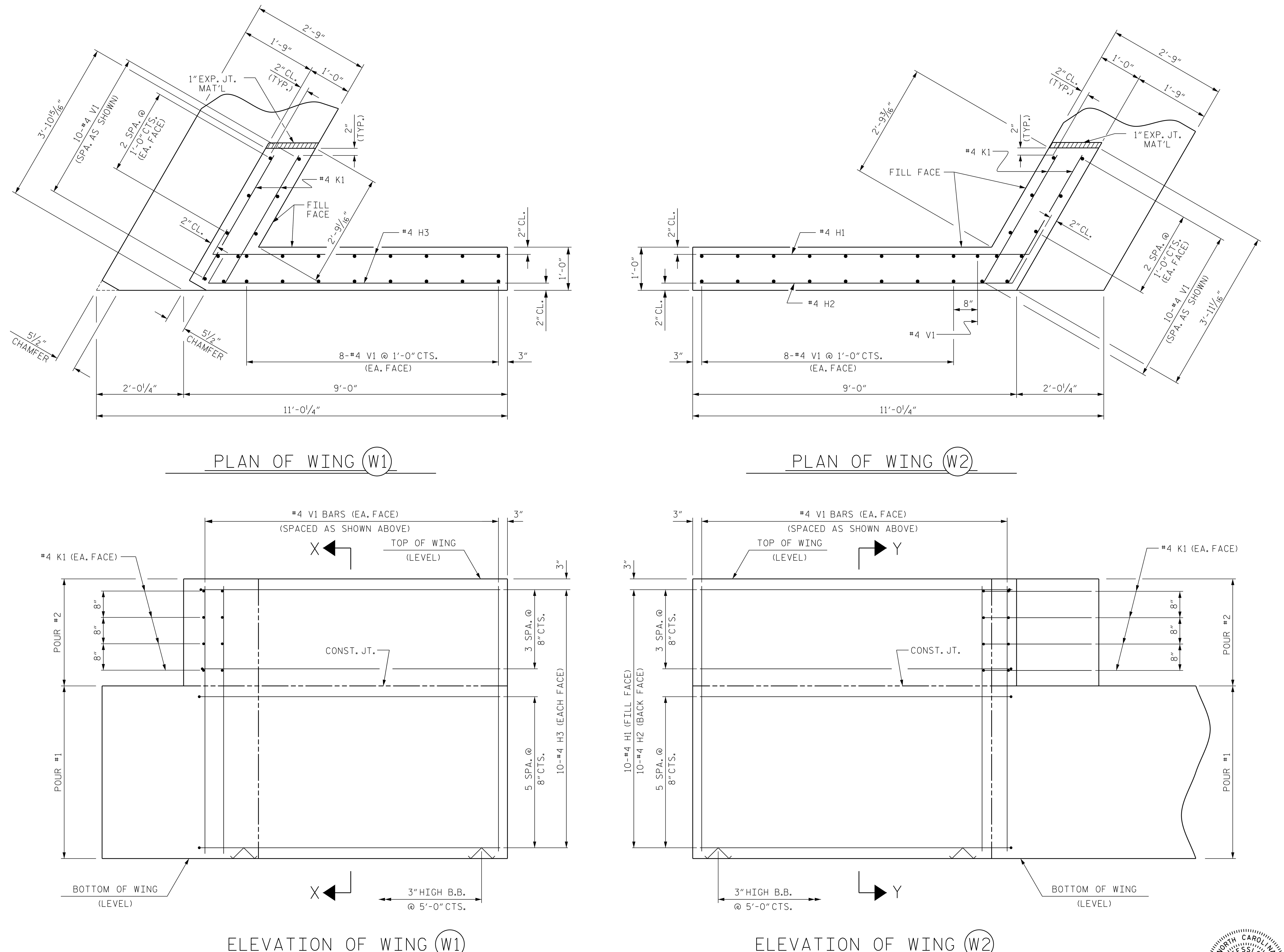
REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-9
1			3					TOTAL SHEETS
2			4					13

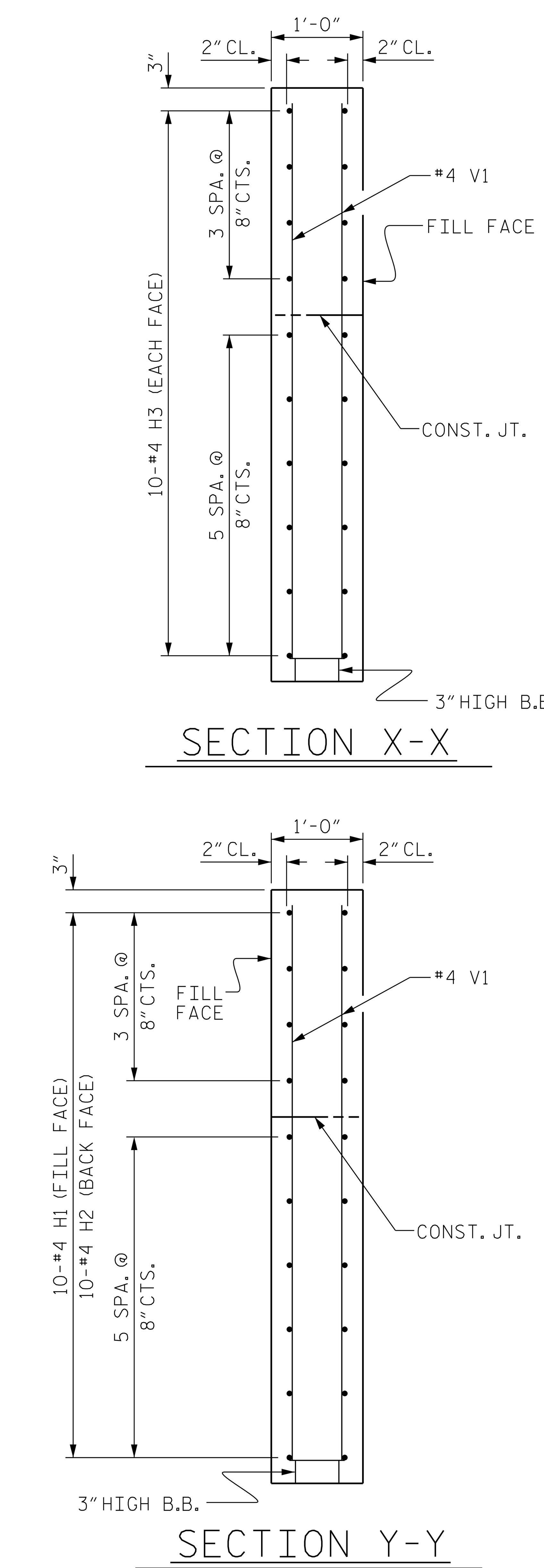
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL — L. WILLIS
DocuSigned by: Hardy Willis
1/26/2022

ENGINEER OF RECORD : JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11
REV. 4/15 MAA/TMG

STD. NO. EB_33_120S4





WING DETAILS

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			13

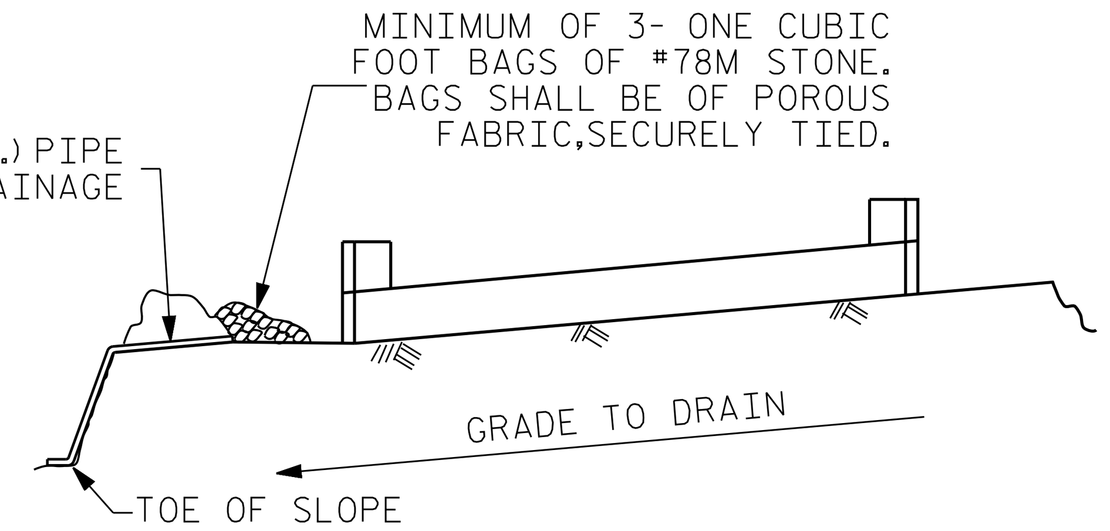
ENGINEER OF RECORD : JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16

DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11
REV. 4/15 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DocuSigned by: Hardy Willis
C6387FCF0223461...
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL
1/26/2022

STD. NO. EB_33_120S4

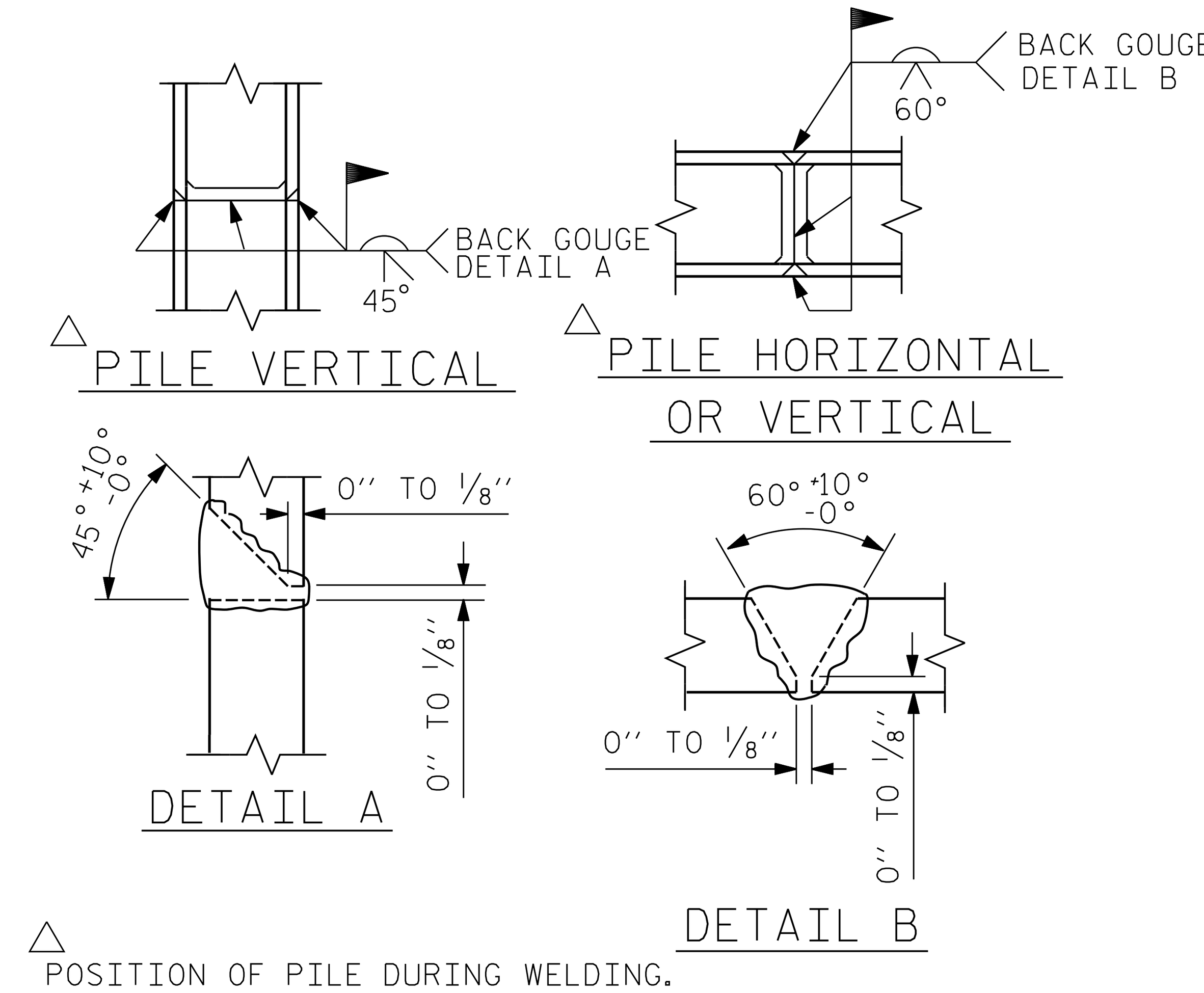


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

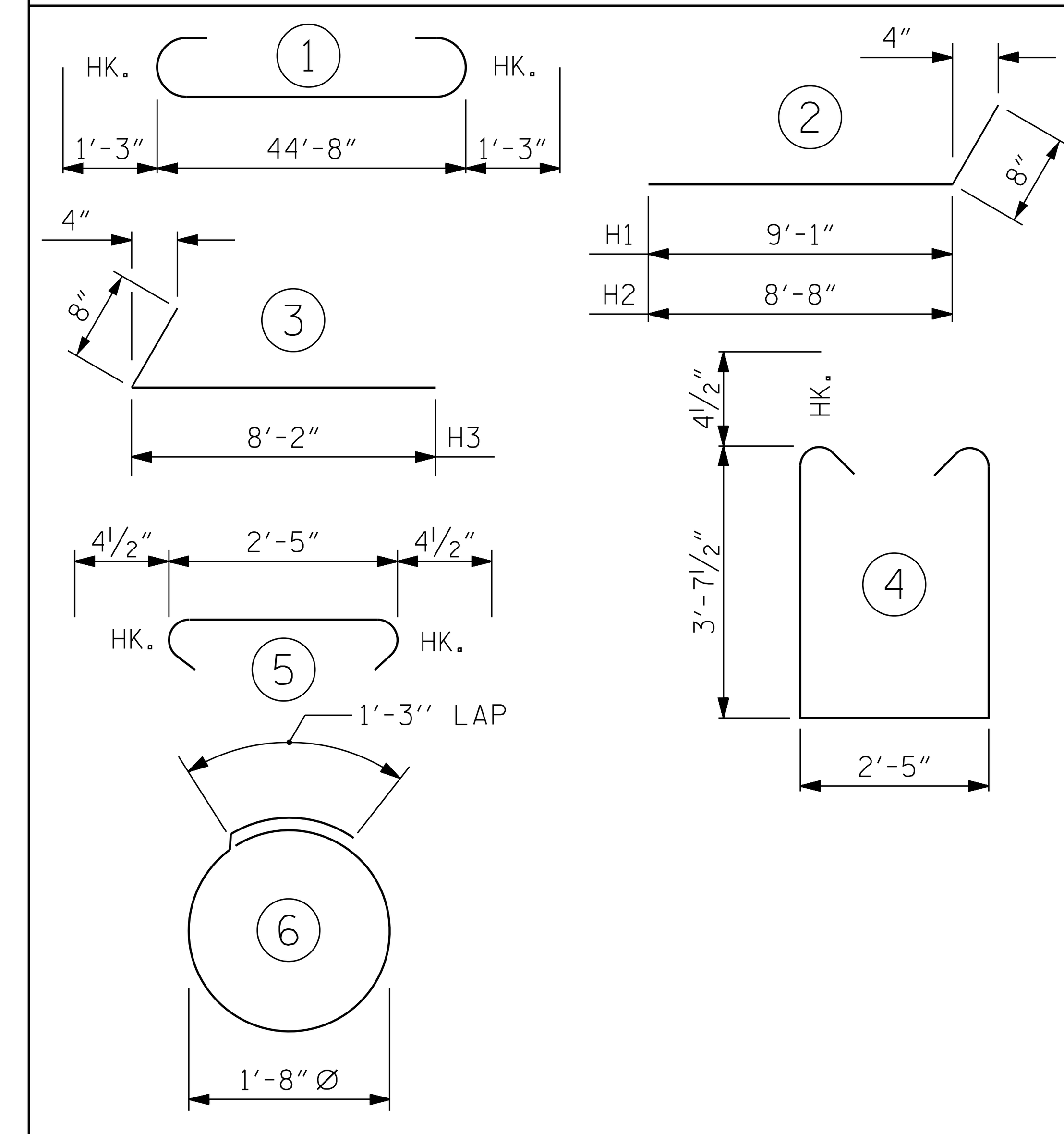
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

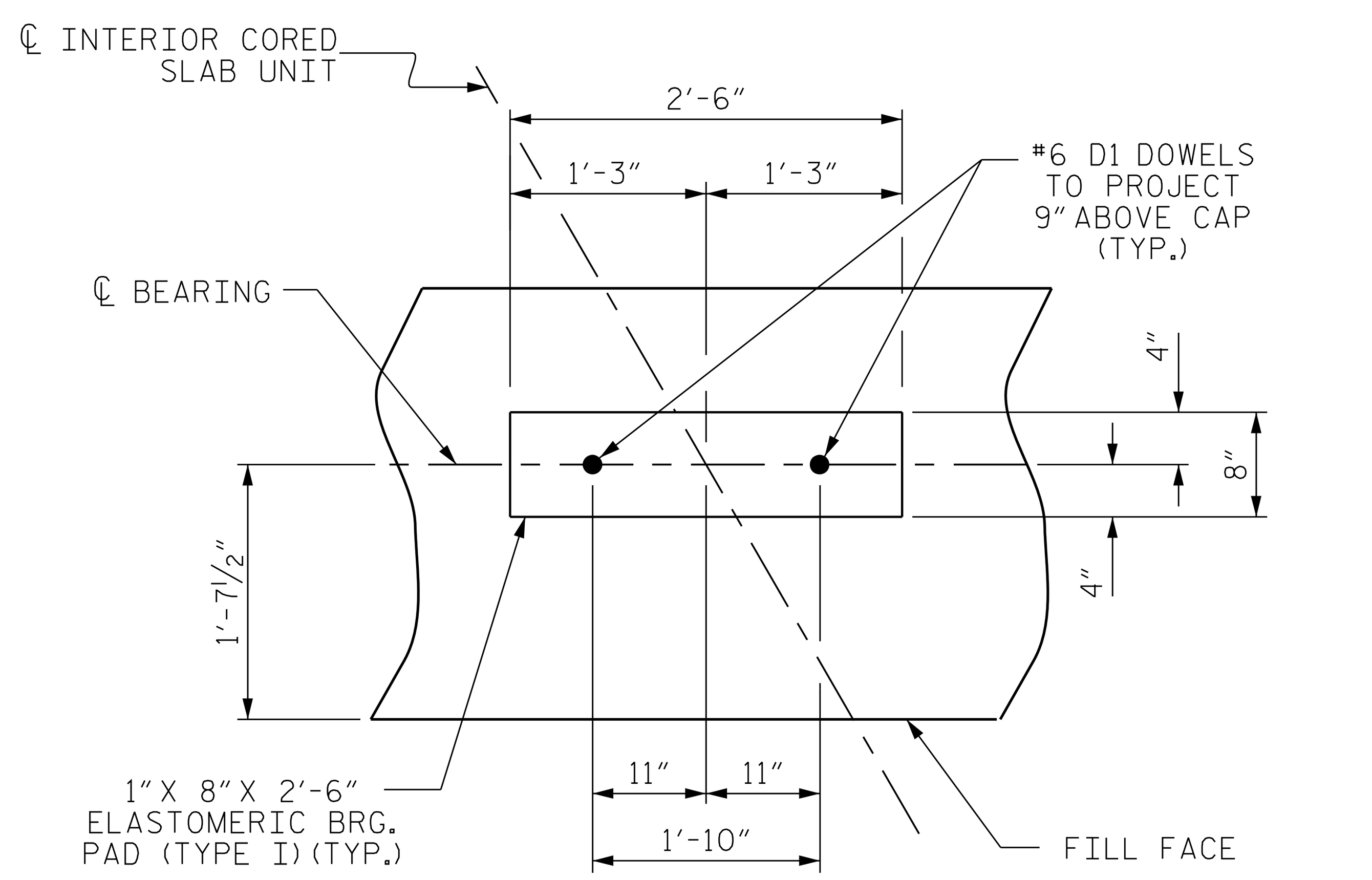
BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	47'-2"	1283
B2	28	#4	STR	23'-8"	443
B3	12	#4	STR	2'-5"	19
D1	18	#6	STR	1'-6"	41
H1	10	#4	2	9'-9"	65
H2	10	#4	2	9'-4"	62
H3	20	#4	3	8'-10"	118
K1	16	#4	STR	3'-3"	35
S1	56	#4	4	10'-5"	390
S2	56	#4	5	3'-2"	118
S3	28	#4	6	6'-6"	122
V1	53	#4	STR	6'-2"	218

REINFORCING STEEL (FOR ONE END BENT) 2914 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

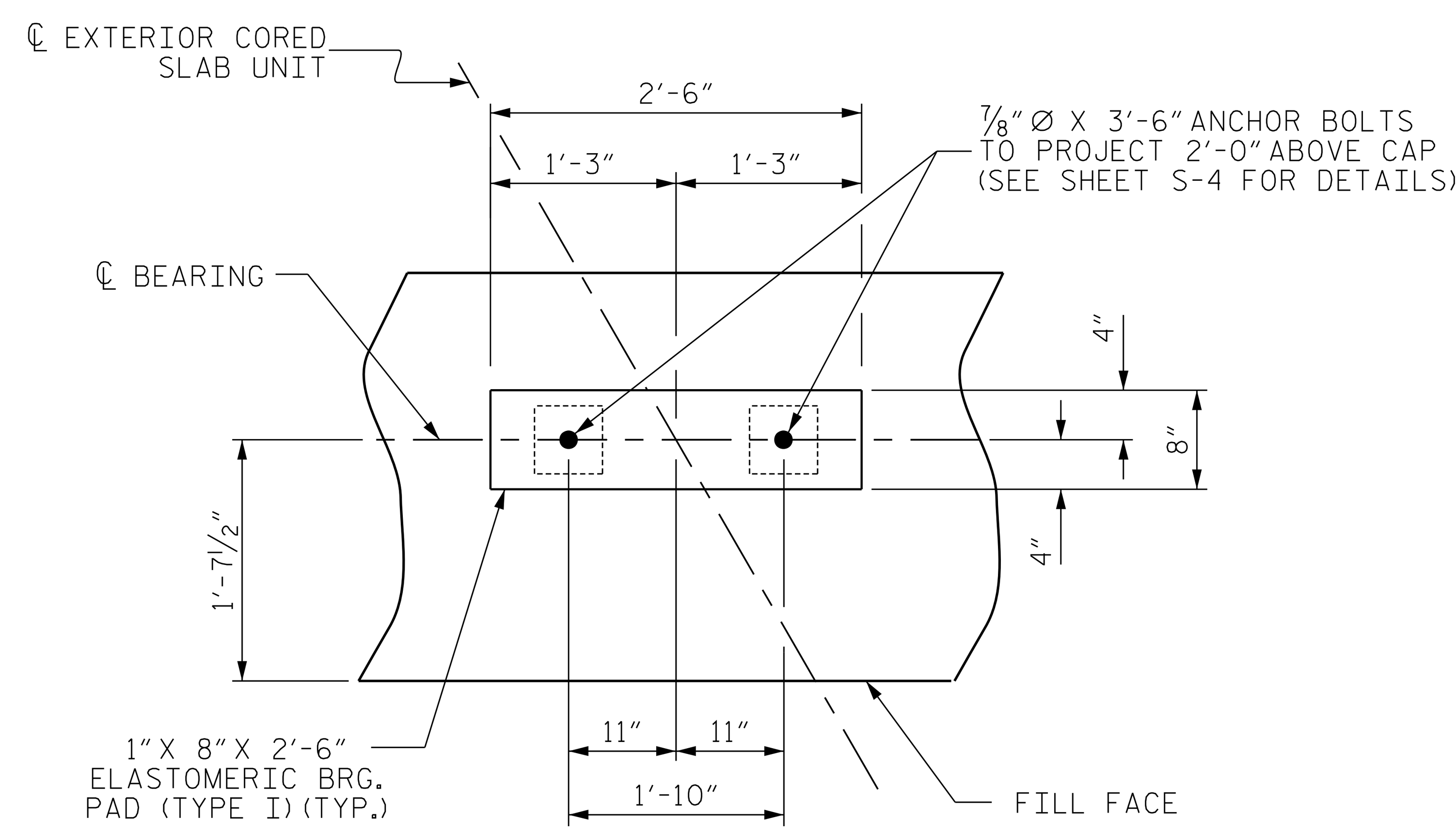
POUR #1	CAP, LOWER PART OF WINGS & COLLARS	21.9 C.Y.
POUR #2	UPPER PART OF WINGS	2.4 C.Y.
TOTAL CLASS A CONCRETE		24.3 C.Y.

END BENT No. 1	END BENT No. 2
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 7
HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 154	HP 12 X 53 STEEL PILES NO: 7 LIN. FT.= 154
STEEL PILE POINTS NO: 7	STEEL PILE POINTS NO: 7
PILE EXCAVATION IN SOIL 35 LIN. FT. NOT IN SOIL 45 LIN. FT.	



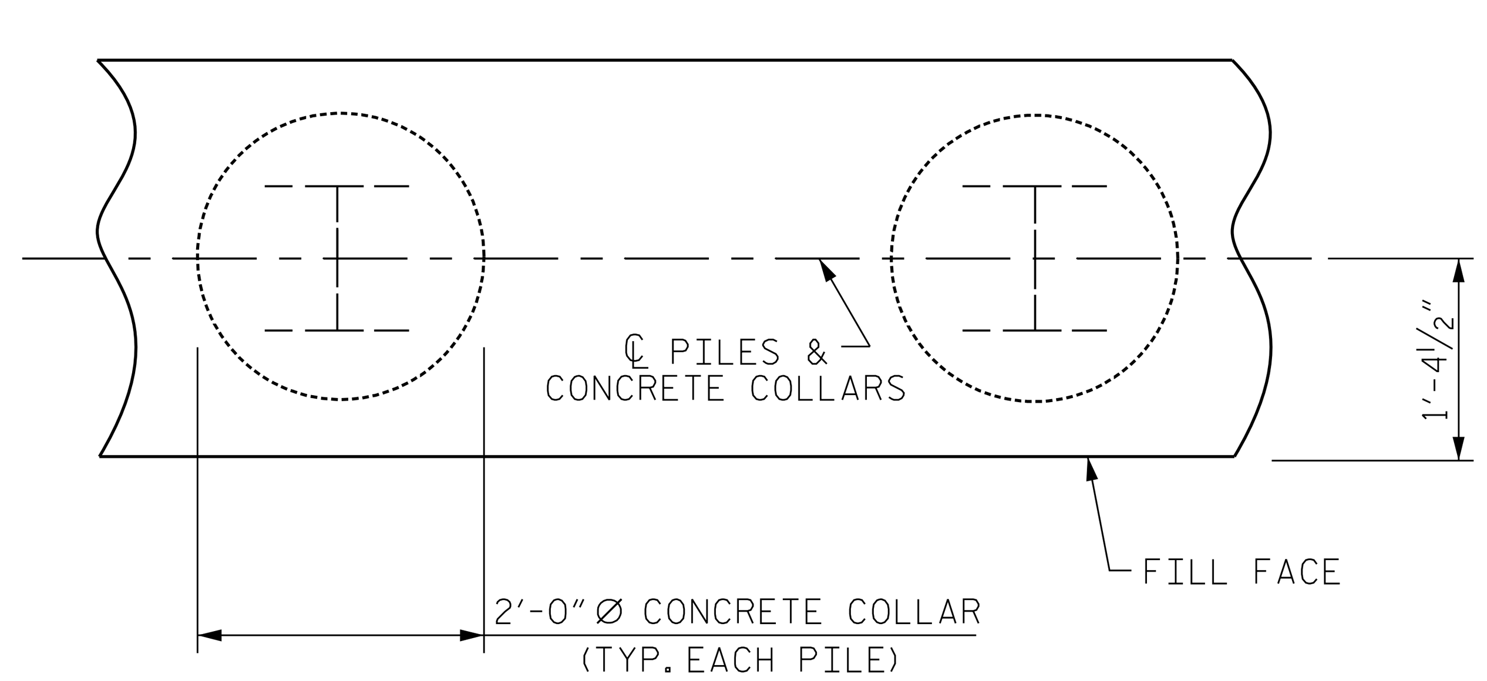
DETAIL "A"

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

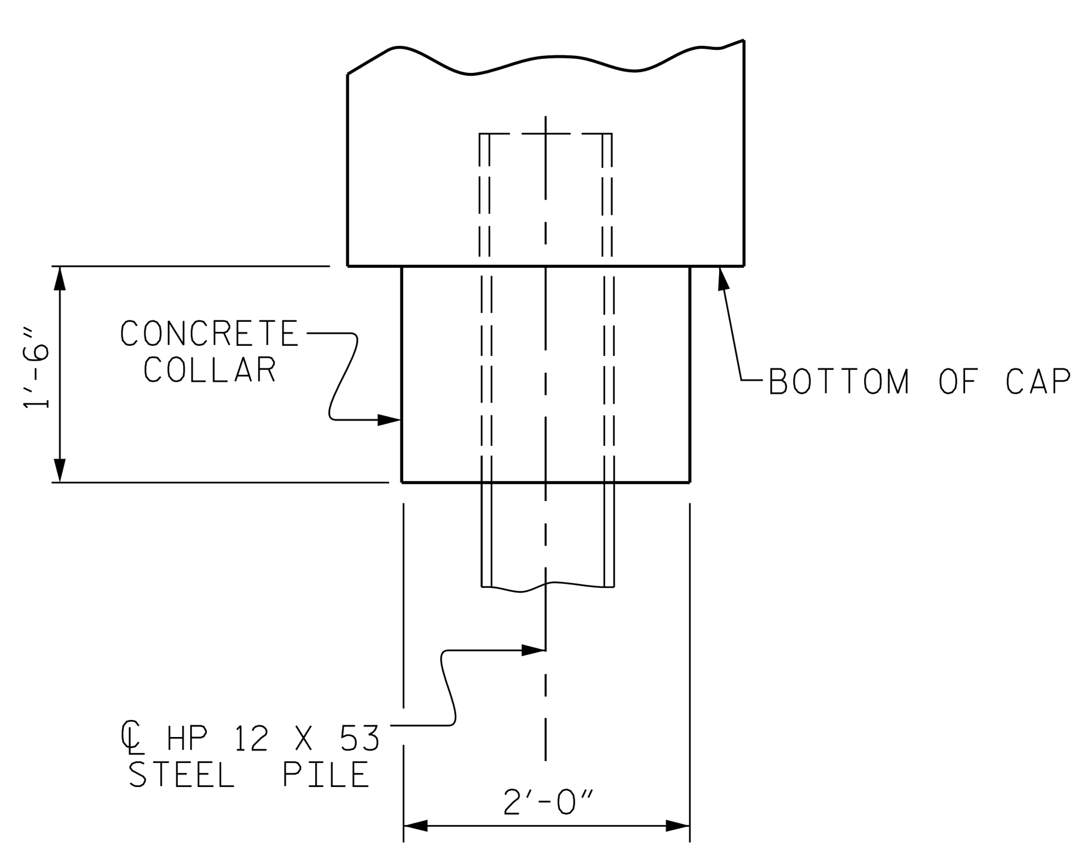


DETAIL "B"

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



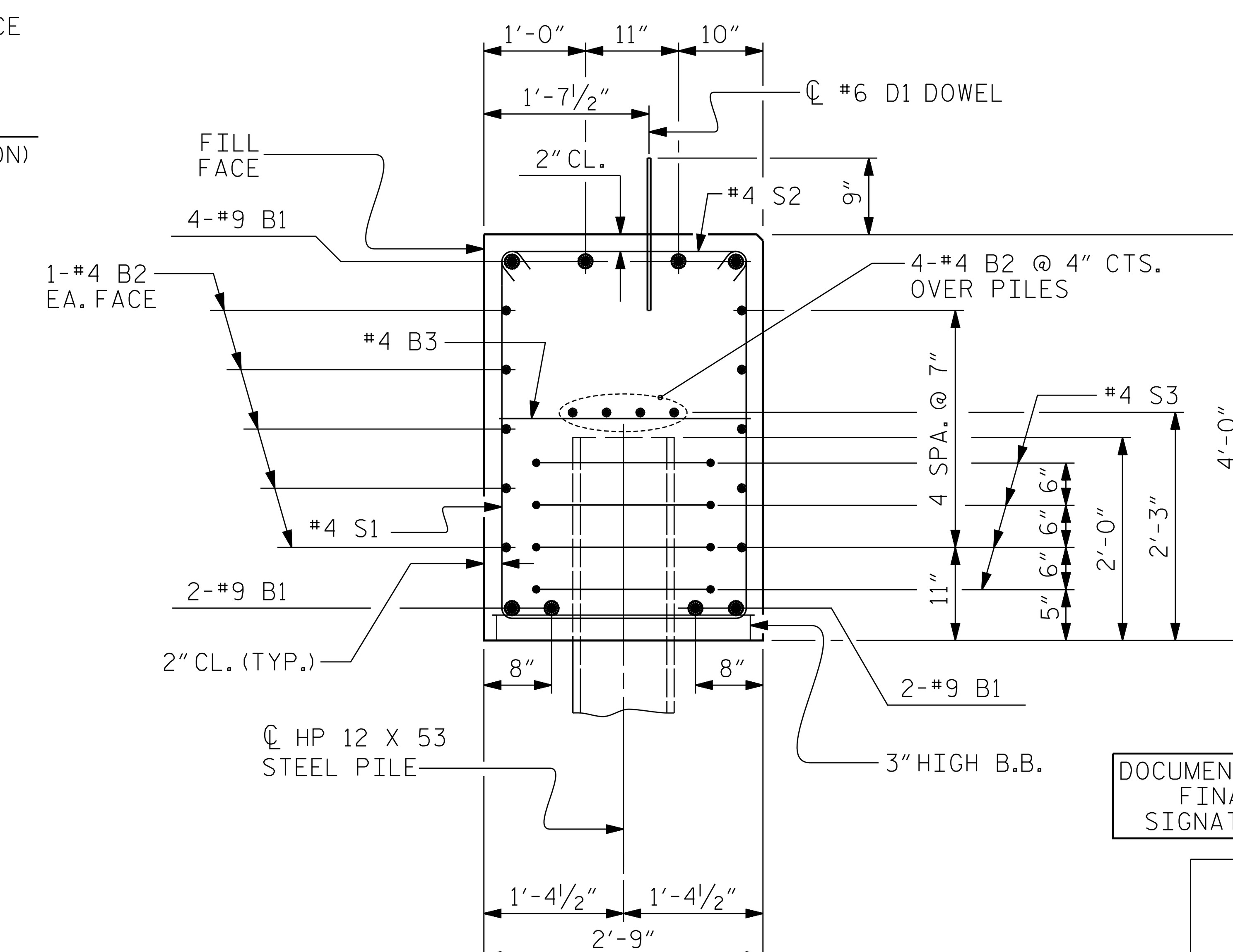
PLAN



ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

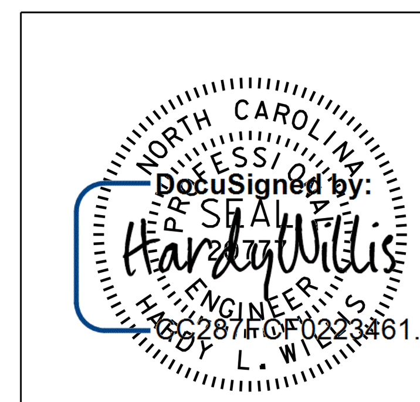
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NO. 14SP.20561.1
MACON COUNTY
STATION: 13+25.02 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

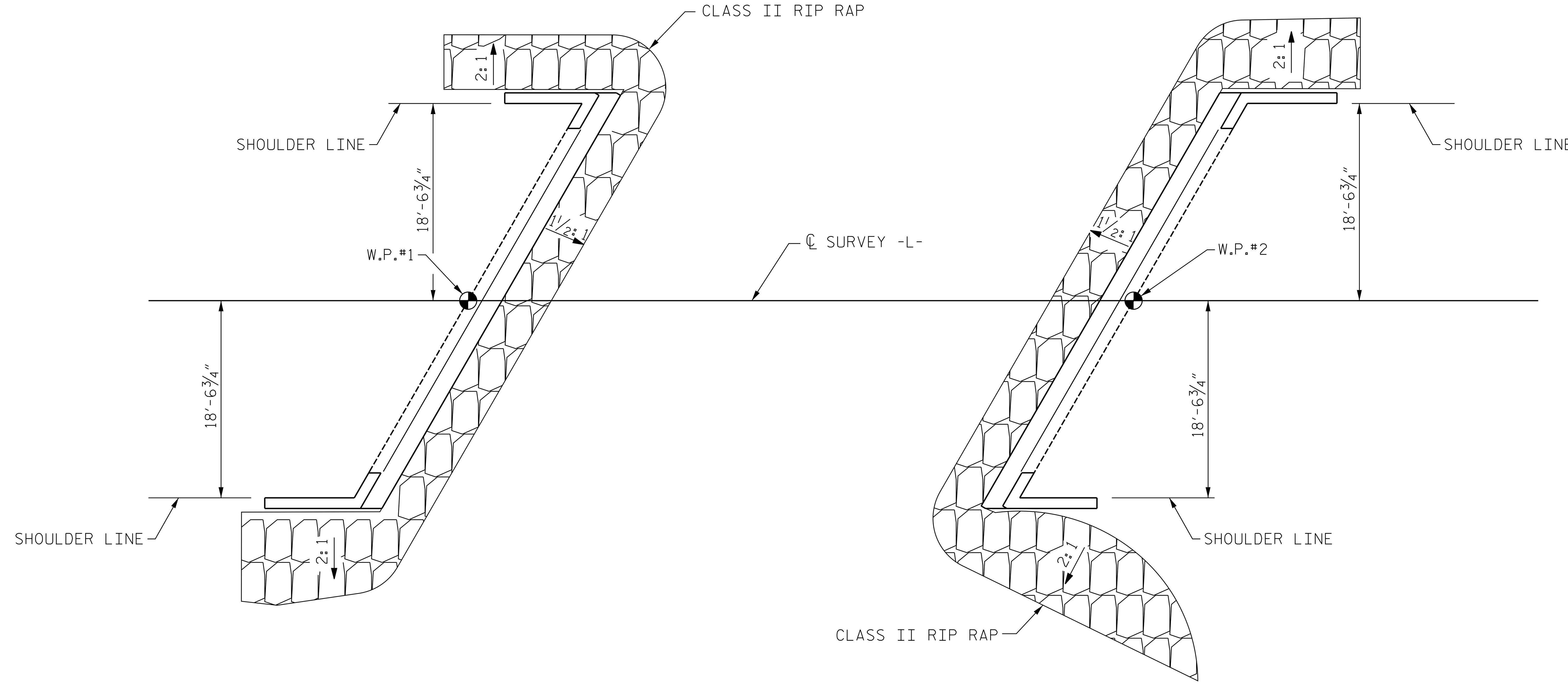
END BENT No. 1 & 2 DETAILS

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-11
1			3				TOTAL SHEETS
2			4				13

ENGINEER OF RECORD :	JEB		
ASSEMBLED BY :	MAF	DATE :	7/16
CHECKED BY :	HLW	DATE :	7/16
DRAWN BY : WJH 12/11	REV. 4/17	MAA/THC	
CHECKED BY : AAC 12/11			

STD. NO. EB_33_120S4

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

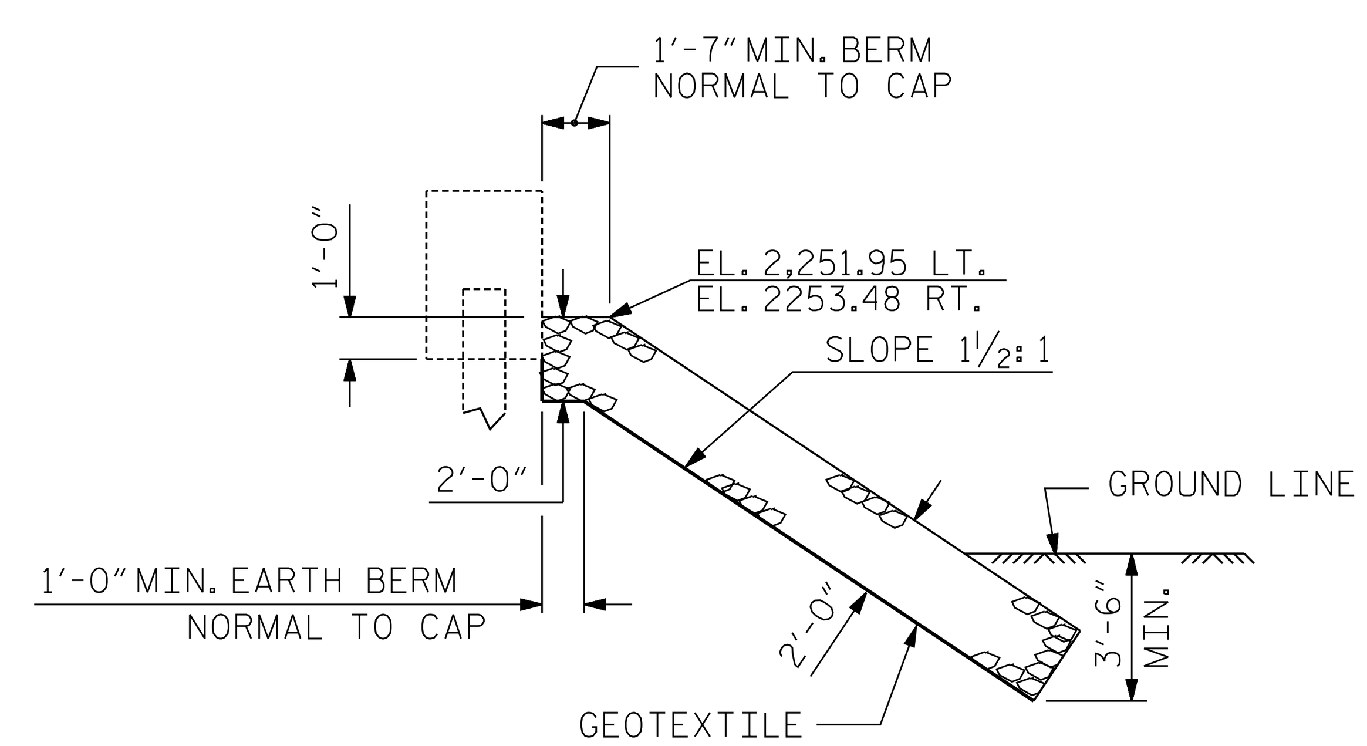


END BENT #1

END BENT #2

PLAN

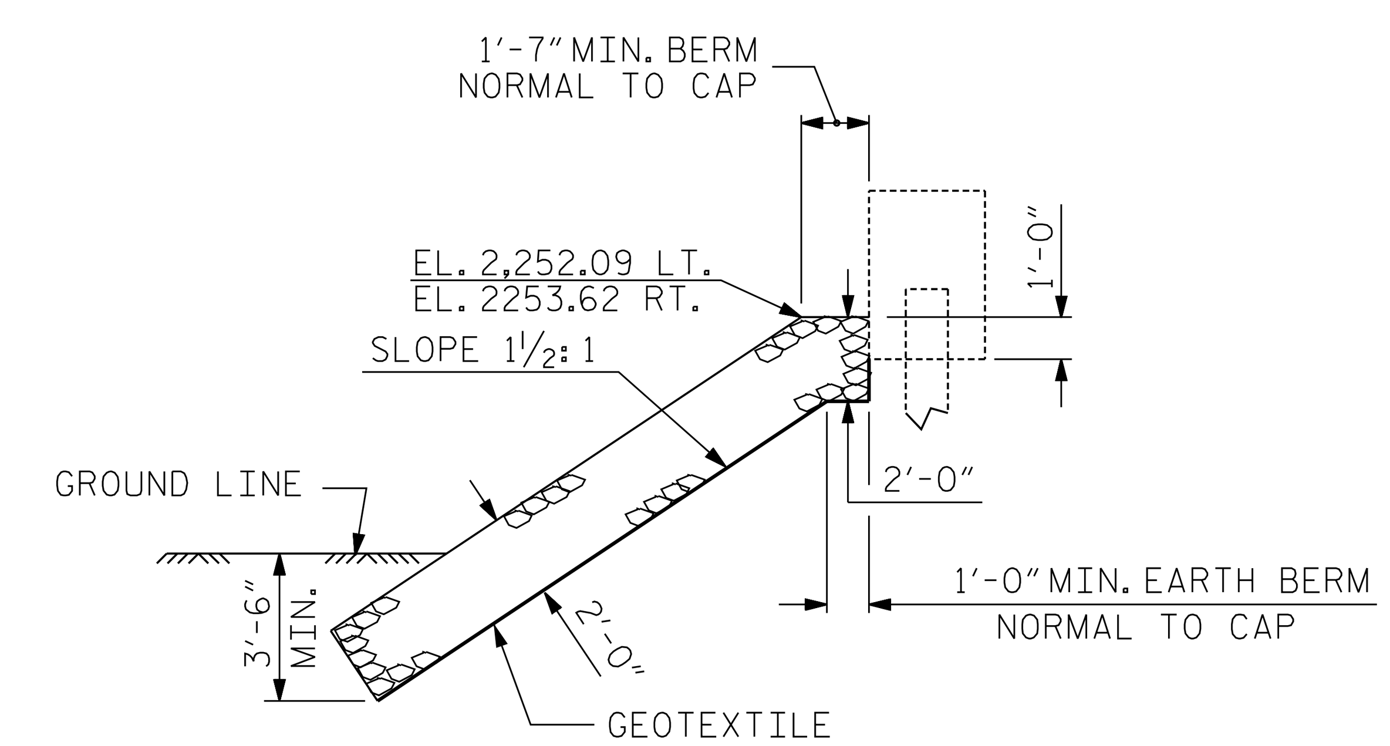
ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+25.02 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	61	46
END BENT 2	65	53



℄ SECTION

BERM RIP RAPPED

END BENT NO. 1



℄ SECTION

BERM RIP RAPPED

END BENT NO. 2

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828·253·2796
Boone, NC 828·355·9933
Tri-Cities, TN 423·467·8401
Knoxville, TN 865·546·5800
Spartanburg, SC 864·574·4775
Charleston, SC 843·974·5650
Middlesboro, KY 606·248·6600
Atlanta, GA 770·627·3509
Raleigh, NC 919·977·9455
Charlotte, NC 704·357·0488

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER HARDY L. WILLIS
DocuSigned by: Hardy Willis
06C28A7CFD223461...
1/26/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

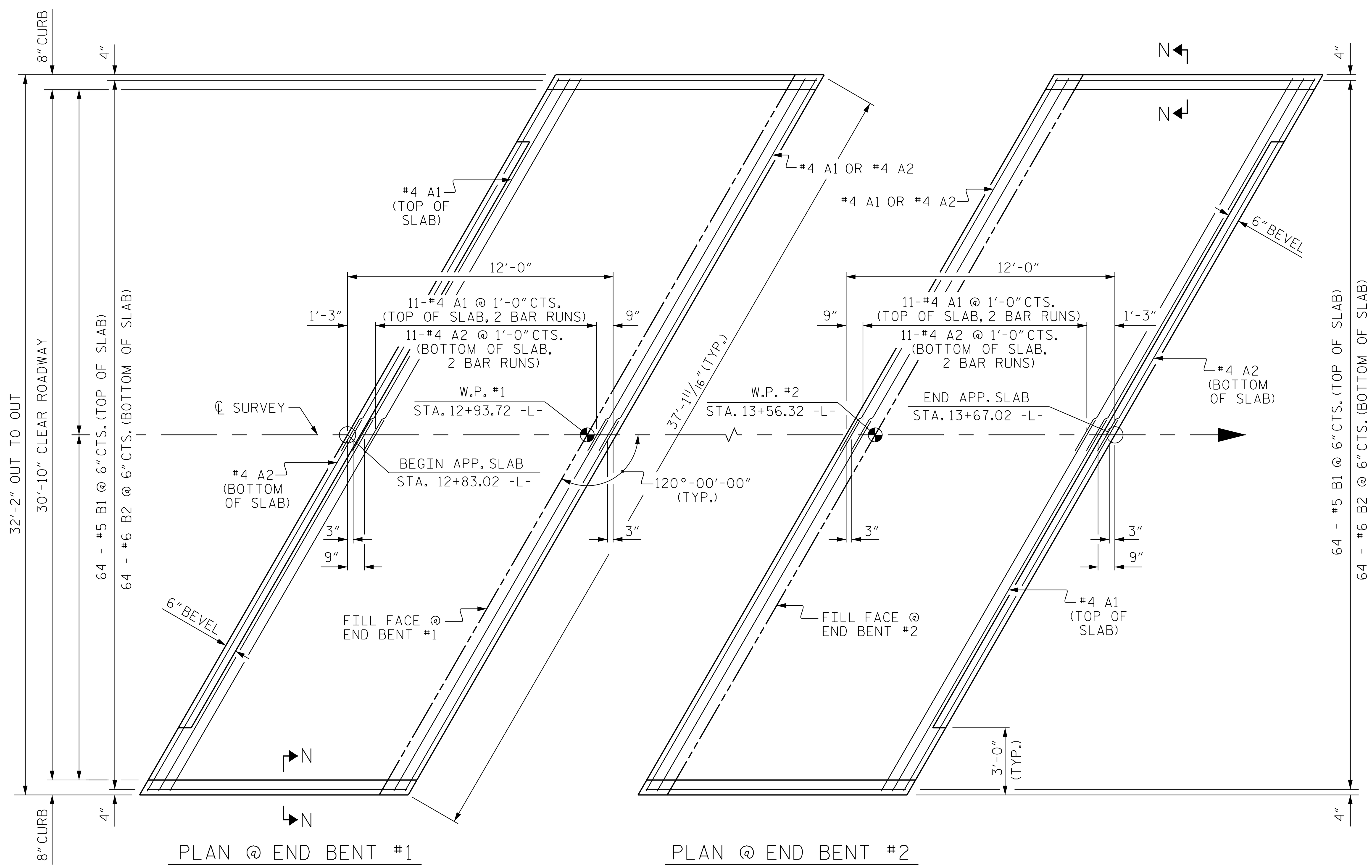
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			13

ENGINEER OF RECORD : JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16

DRAWN BY : REK 1/84
CHECKED BY : RDU 1/84

REV. 10/1/11 MAA/GM
REV. 12/21/11 MAA/GM
REV. 12/17 MAA/THC

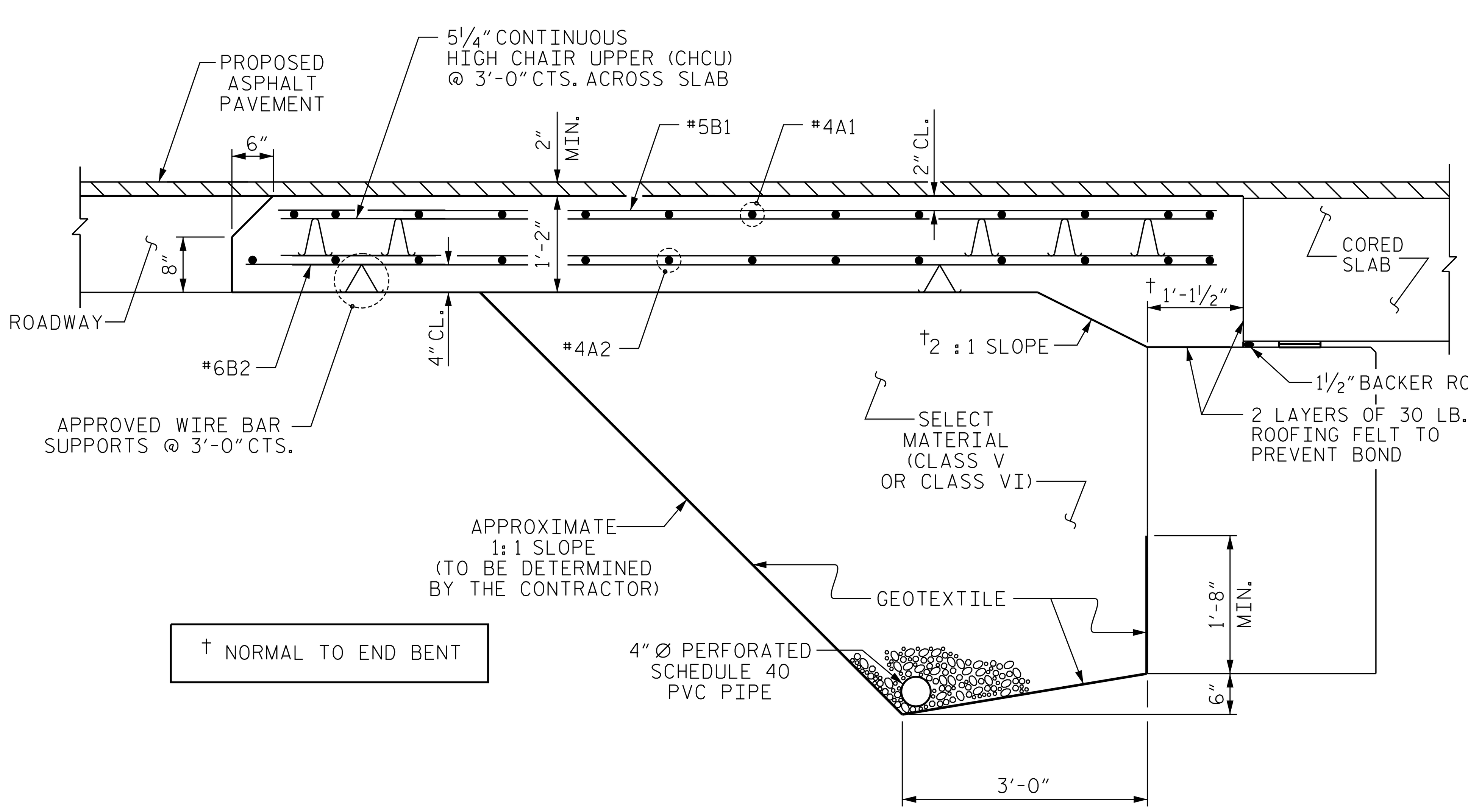
STD. NO. RR1 (Sht 3)



PLAN @ END BENT #1

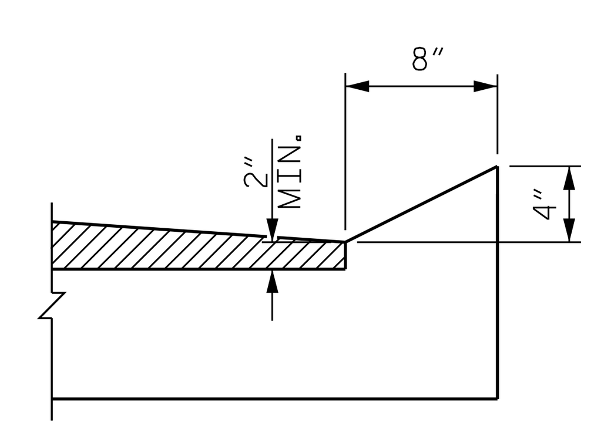
PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

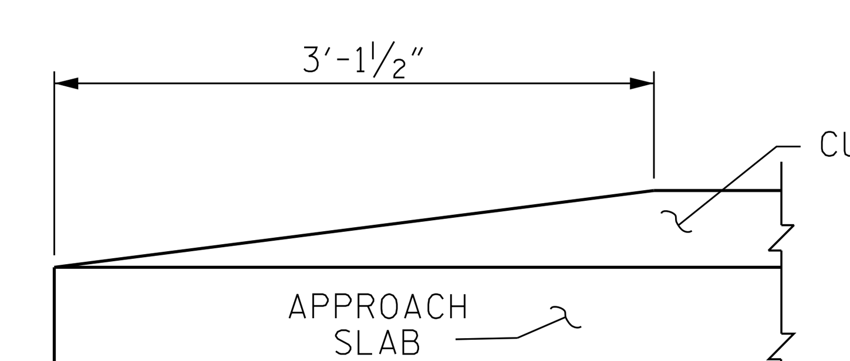


SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

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

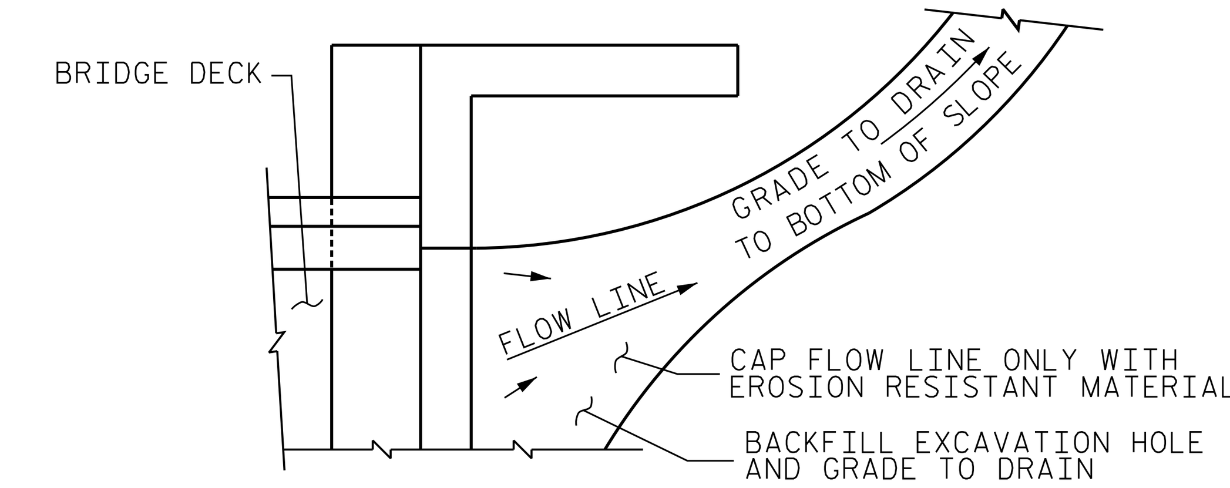
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

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

FOR THE 4" 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.

APPROACH SLAB GROOVING IS NOT 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

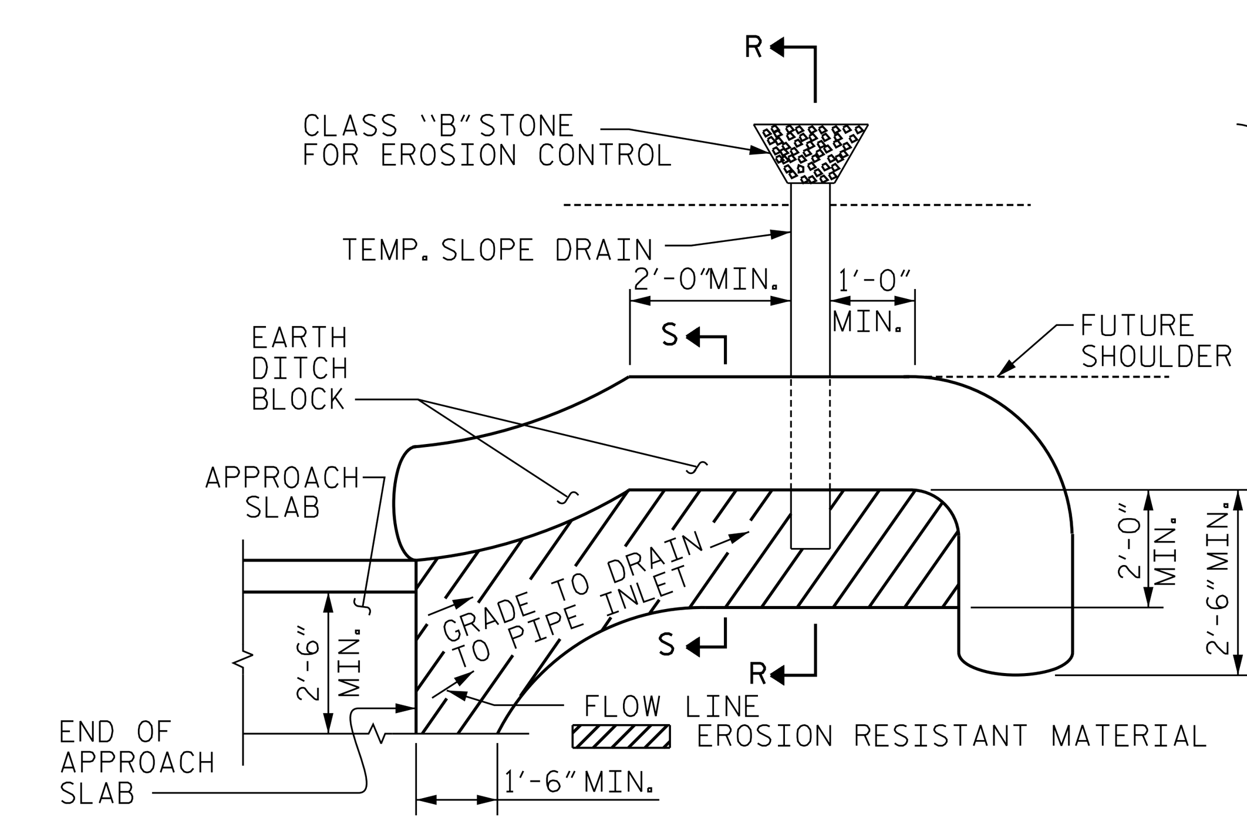
BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	19'-5"	337
A2	26	#4	STR	19'-4"	336
* B1	64	#5	STR	11'-1"	740
B2	64	#6	STR	11'-7"	1,113
REINFORCING STEEL				LBS.	1,449
* EPOXY COATED REINFORCING STEEL				LBS.	1,077
CLASS AA CONCRETE				C.Y.	19.8

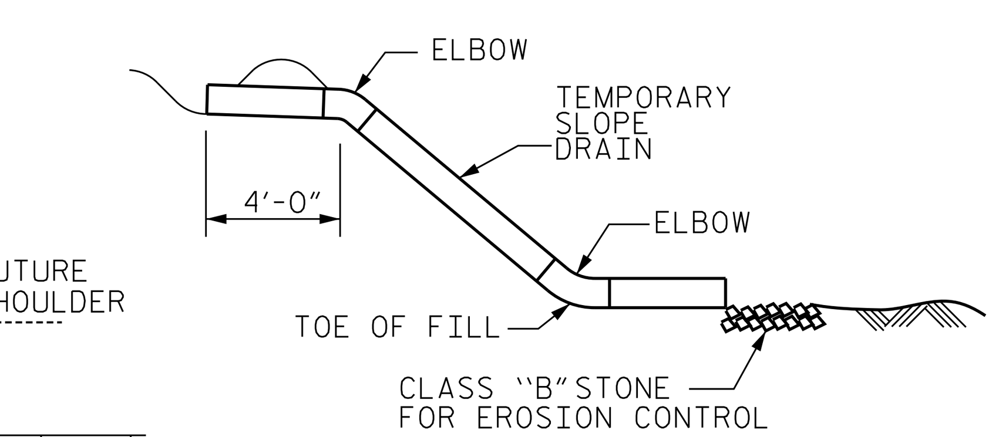
APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	19'-5"	337
A2	26	#4	STR	19'-4"	336
* B1	64	#5	STR	11'-1"	740
B2	64	#6	STR	11'-7"	1,113
REINFORCING STEEL				LBS.	1,449
* EPOXY COATED REINFORCING STEEL				LBS.	1,077
CLASS AA CONCRETE				C.Y.	19.8

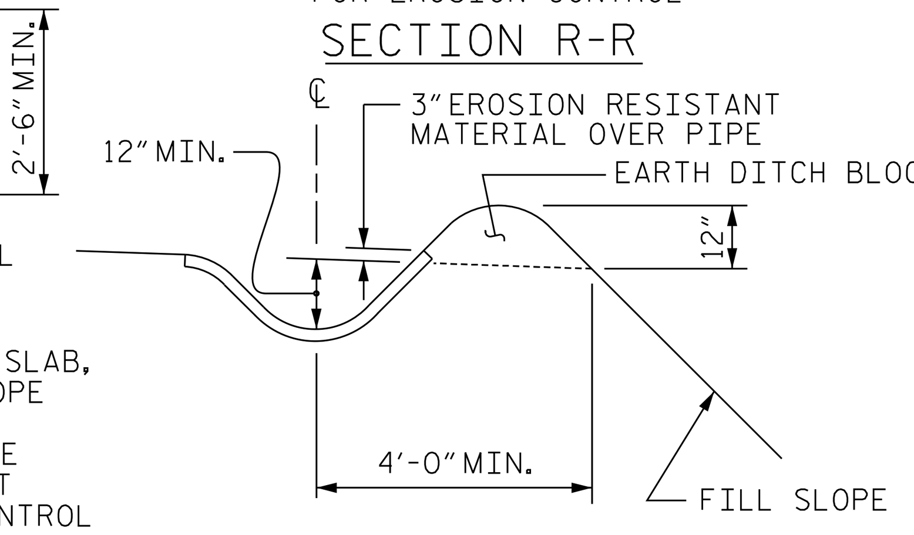


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028461 — L. WILLIS
DocuSigned by: Hardy Willis
1/26/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER)

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

ENGINEER OF RECORD : JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16
DRAWN BY : SHS/MAA 5-09 REV. 12-17 MAA/THC
CHECKED BY : BCH 5-09 REV. 08-19 BNB/THC

(SHT 1c) STD. NO. BAS6

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 2018 "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 ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" 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

STD. NO. SN

REV. 6-16-95 EEM (✓) RGW REV. 5-7-03 RWW (✓) JTE REV. 10-1-11 MAA (✓) GM
REV. 8-16-99 RWW (✓) LES REV. 5-1-06 TLA (✓) GM REV. 12-17 MAA (✓) THC