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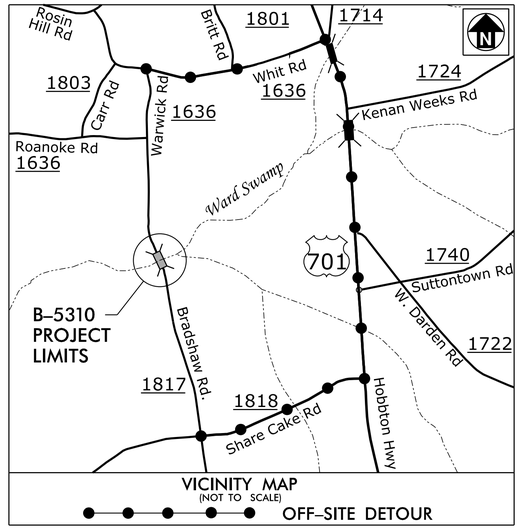
TIP PROJECT: B-5310

CONTRACT: DC00459



See Sheet 1A For Index of Sheets,
See Sheet 1B For Conventional Symbols

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5310	1	

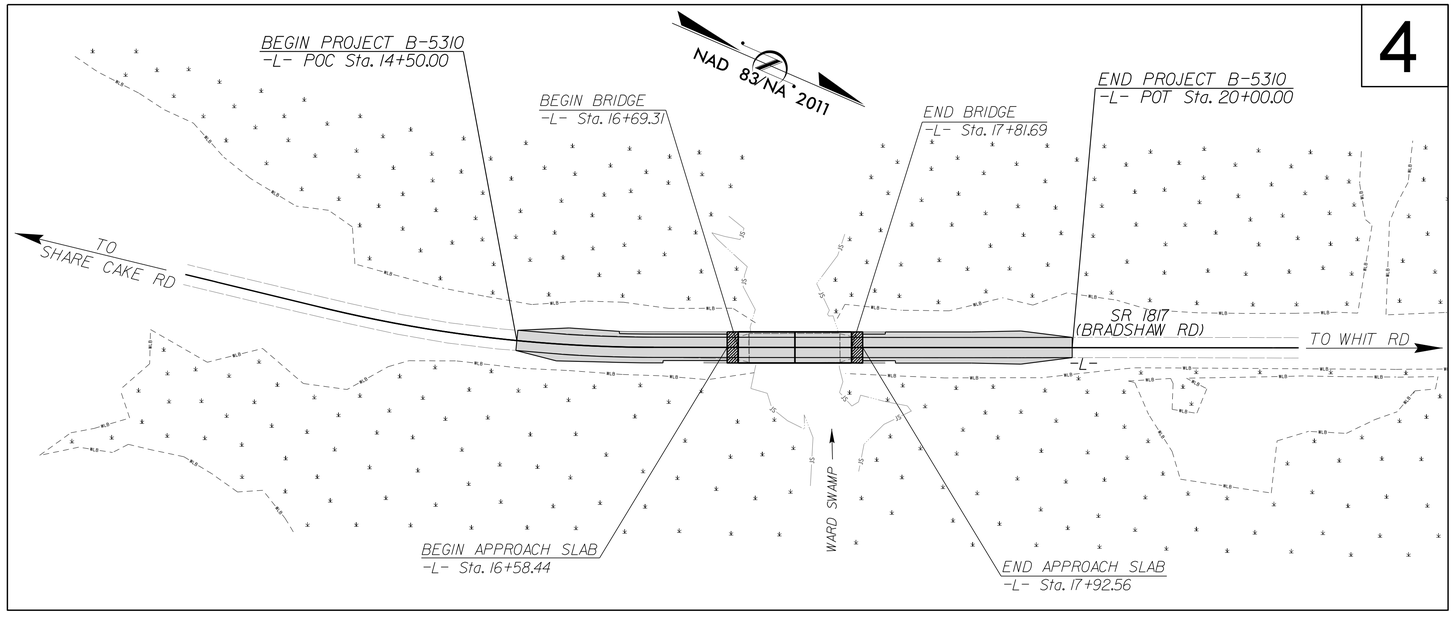
STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION
46024.1.1	BRZ-1817(001)	PE
46024.2.1	BRZ-1817(001)	R/W, UTL
46024.3.1	BRZ-1817(001)	CONST

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

LOCATION: BRIDGE NO. 188 OVER WARD SWAMP ON SR 1817 (BRADSHAW ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2023 = 280
ADT 2045 = 500
K = TBD
D = TBD
T = TBD
V = 55 MPH
* TTST N/A DUAL N/A
FUNC CLASS =
SUB REGIONAL TIER
LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT = 0.083 MILES

LENGTH STRUCTURE TIP PROJECT = 0.021 MILES

TOTAL LENGTH TIP PROJECT = 0.104 MILES

PLANS PREPARED FOR THE NCDOT BY:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com
LICENSE NO. F-0669

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 22, 2023

LETTING DATE:
JUNE 20, 2024

TIM JORDAN, PE
PROJECT ENGINEER

PADDY JORDAN
PROJECT DESIGN ENGINEER

DEREK PIELECH, PE
NCDOT CONTACT
DIVISION BRIDGE PROGRAM MANAGER

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER TIMOTHY LONDON
DocuSigned by: James Timothy London DB0B7EDB5...
5/22/2024 P.E.
SIGNATURE:

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER JASON J CORMIER
DocuSigned by: Jason J Cormier 29C22B5...
5/22/2024 P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

5/22/2024
10:52:49 AM
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bla104354

PROJECT REFERENCE	SHEET NO.
B–5310	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JOHNSON

Digitally signed by JAMES TIMOTHY JOHNSON
DN: cn=JAMES TIMOTHY JOHNSON, o=MOTT MACDONALD, ou=Engineering, email=JAMES.JOHNSON@MOTTMAC.COM, c=US
Date: 2024.03.06 07:35:43 -05'00'

3/6/2024

MOTT MACDONALD I & E, LLC
LICENSE NO. F–0669

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Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

GENERAL NOTES

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01–16–2024

GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE–IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEERS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS–SECTIONS PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE SOUTH RIVER ELECTRIC MC AND STAR COMMUNICATIONS.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

LIST OF ROADWAY STANDARD DRAWINGS

EFF. 01–16–2024

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	Method of Clearing III
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
275.01	Rock Plating
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 – MAJOR STRUCTURES	
423.01	Bridge Approach Fills – Type 1 Approach Fill For Bridge Abutment
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8 – INCIDENTALS	
815.02	Subsurface Drain
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames – Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

9/10/2021

PROJECT REFERENCE	SHEET NO.
B-5310	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:

- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)*
- U/G Telephone Cable (SUE – LOS C)*
- U/G Telephone Cable (SUE – LOS D)*
- U/G Telephone Conduit (SUE – LOS B)*
- U/G Telephone Conduit (SUE – LOS C)*
- U/G Telephone Conduit (SUE – LOS D)*
- U/G Fiber Optics Cable (SUE – LOS B)*
- U/G Fiber Optics Cable (SUE – LOS C)*
- U/G Fiber Optics Cable (SUE – LOS D)*

WATER:

- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)*
- U/G Water Line (SUE – LOS C)*
- U/G Water Line (SUE – LOS D)*
- Above Ground Water Line

TV:

- TV Pedestal
- TV Tower
- U/G TV Cable Hand Hole
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)*
- U/G TV Cable (SUE – LOS C)*
- U/G TV Cable (SUE – LOS D)*
- U/G Fiber Optic Cable (SUE – LOS B)*
- U/G Fiber Optic Cable (SUE – LOS C)*
- U/G Fiber Optic Cable (SUE – LOS D)*

GAS:

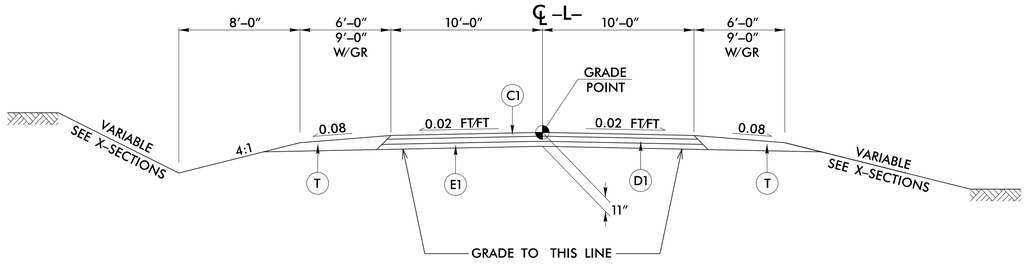
- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)*
- U/G Gas Line (SUE – LOS C)*
- U/G Gas Line (SUE – LOS D)*
- Above Ground Gas Line

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)*
- SS Force Main Line (SUE – LOS C)*
- SS Force Main Line (SUE – LOS D)*

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line (SUE – LOS B)*
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

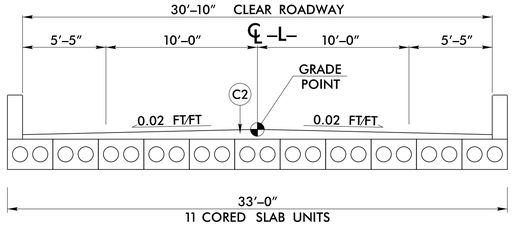


TYPICAL SECTION NO. 1

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1:
–L– STA 14+50.00 TO 15+00.00

USE TYPICAL SECTION NO. 1:
–L– STA 15+00.00 TO 16+69.31 (BEGIN BRIDGE)
–L– STA 17+81.69 (END BRIDGE) TO 19+50.00

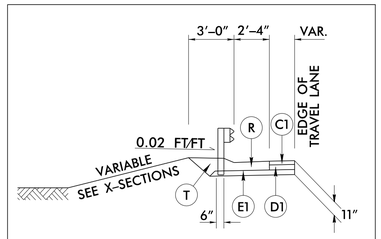
TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING:
–L– STA 19+50.00 TO 20+00.00



TYPICAL SECTION NO. 2

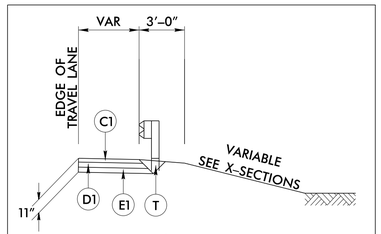
USE TYPICAL SECTION NO. 2:
–L– STA 16+69.31 (BEGIN BRIDGE) TO 17+81.69 (END BRIDGE)

NOTE: SEE STRUCTURE PLANS FOR PAVEMENT DEPTHS ON STRUCTURE



DETAIL FOR SHOULDER BERM GUTTER IN CONJUNCTION WITH GUARDRAIL

–L– STA 15+51.00 TO 16+58.44 LT
–L– STA 15+95.00 TO 16+58.44 RT
–L– STA 17+92.56 TO 18+15.00 LT
–L– STA 17+92.56 TO 18+25.00 RT



DETAIL FOR FULL DEPTH PAVED SHOULDER IN CONJUNCTION WITH GUARDRAIL

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1″ IN DEPTH OR GREATER THAN 1½″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE	SHEET NO.
B–5310	2A–1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JOSEPH THOMAS MOTT
Docusigned by: 3/6/2024
MOTT MACDONALD I & E, LLC LICENSE NO. F–0669

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 044590 ENGINEER ILENE LINDA WINKLER
Docusigned by: 3/8/2024

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MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

GRAPHIC SCALE
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PROJECT REFERENCE	SHEET NO.
B-5310	3B-1

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT-1	GREU TL-3	TYPE III						NO.	PERMITTED G	PERMITTED NG	
-L-	14+88.06	16+69.31	RT	181.25'			15+00.00	16+69.31	6'	9'						1	1								
-L-	15+00.56	16+69.31	LT	168.75'			16+69.31	15+00.00	6'	9'						1	1								
-L-	17+81.69	19+50.44	RT	168.75'			17+81.69	18+50.00	6'	9'						1	1								
-L-	17+81.69	19+50.44	LT	168.75'			19+00.00	17+81.69	6'	9'						1	1								
		SUBTOTAL		687.50'																					
		LESS ANCHOR DEDUCTIONS																							
		GREU TL-3 4 x 50.00' =		-200.00'																					
		TYPE III 4 x 18.75' =		-75.00'																					
		TOTAL		412.50'												4	4								10 ADDITIONAL GUARDRAIL POSTS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 14+50.00 TO 16+69.31 (BEGIN BRIDGE)	245		56		189
-L- 17+81.69 (END BRIDGE) TO 20+00.00	221		58		163
SUBTOTAL	466		114	0	352
WASTE IN LIEU OF BORROW					
PROJECT TOTAL	466		114	0	352
5% TO REPLACE BORROW					
GRAND TOTAL	466			0	352
SAY	490			0	

SUMMARY OF SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-L-	15+51.00	16+58.44	LT	107.44'
-L-	15+95.00	16+58.44	RT	63.44'
-L-	17+92.56	18+15.00	LT	22.44'
-L-	17+92.56	18+25.00	RT	32.44'
			TOTAL:	225.76'
			SAY:	240'

NOTE: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing and Removal of ExistingAsphalt Pavement will be paid for at the contract Lump Sum price for "Grading".

PROJECT REFERENCE	SHEET NO.
B-5310	3D-1

SUB–REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE PVC	DO NOT USE CAAP	DO NOT USE HDPE
								THICKNESS OR GAUGE											
16+40	RT	401	402	131.8′	129.1′	125.0′			24′							X			
15+78	LT	403	404	131.6′	128.9′	125.0′			20′							X			
18+10	RT	405	406	131.7′	128.9′	127.0′			16′							X			
18+10	LT	407	408	131.7′	128.9′	126.4′			20′							X			
TOTAL									80′										

C.S. PIPE SIZE 12"	15"	18"	24"	36"	42"	48"	THICKNESS OR GAUGE .064	.064	.064	.064	.079	.109	.109

R.C. PIPE (CLASS III) SIZE 15"	18"	24"	30"	36"	42"	48"

R.C. PIPE (CLASS IV) SIZE 12"	15"	18"	24"	30"	36"	42"	48"

***' R. C. PIPE (CLASS V)	***' R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	***' R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE

ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.

QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. 5.0' THRU 10.0' A	LIN. *FT. 10.0' AND ABOVE B
1		
1		
1		
1		
4		

C.B. STD. 840.01 OR STD. 840.02

FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G

CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET

G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35	15" DRAINAGE PIPE ELBOWS	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
			1	1	2				
			1	1	2				
			1	1	2				
			1	1	2				
			4	4	8				

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300–5".

J0R66165
R:\Roadway\Proj\B5310_rdy_psh3D-1.dgn
3/6/2024 7:36:57 AM

COMPUTED BY: Tyler C. Bottom DATE: 1/6/23
CHECKED BY: Jinyoung Park DATE: 2/3/2023

(12-17-19)

PROJECT NO.	SHEET NO.
B-5310	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	1.5:1	15+00	2.61:1	16+00	RT	1	*	180
-L-	2.27:1	17+92.50	2.74:1	18+50	RT	1	*	80
							TOTAL SY:	260

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

PROJECT REFERENCE	SHEET NO.
B-5310	4

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES THOMAS HORTON

Signed by: JAMES THOMAS HORTON DocuSigned by: 3/6/2024

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER TIMOTHY JOHNSON J. CORRIGAN

Signed by: TIMOTHY JOHNSON J. CORRIGAN DocuSigned by: 3/8/2024

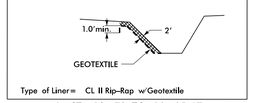
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

GRAPHIC SCALE
25' 0 25' 50'

DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner= CL II Rip-Rap w/Geotextile
-L- STA. 16+79 TO 16+85 LT
-L- STA. 17+62 TO 17+75 RT

NAD 83/2011

STATE OF NORTH CAROLINA
DB 1567 PG 211

PEGGY B AMAN
DB 1395 PG 714

1
UNKNOWN OWNER

3
PATRICIA TROUBLEFIELD, ET AL
DB 1468 PG 407

2
DEWEY T & PAMELA B GIDDENS
DB 1750 PG 128
TRACT 4
DB 1043 PG 130

4
DIANNE L SUMNER
DB 1567 PG 581
MB 49 PG 91

S 68°18'44" W 449.00'
S 40°00'24" W 160.71'
S 42°55'16" E 658.35'
N 65°59'44" E 200.50'
N 68°34'41" E 401.74'

C/L CREEK IS PROPERTY LINE
C/L CREEK IS PROPERTY LINE MB 49 PG 91 S 63°41'04" W 1064.80'

15+00
20+00

SR 1817 BRADSHAW RD
20' BST
60.00'

N 9° 41' 18.1" W
-L- PC Sta. 12+54.01
-L- POT Sta. 10+00.00

BEGIN PROJECT B-5310
-L- POT Sta. 14+50.00

BEGIN BRIDGE
-L- Sta. 16+69.31

BEGIN APPROACH SLAB
-L- Sta. 16+58.44

END APPROACH SLAB
-L- Sta. 17+92.56

END BRIDGE
-L- Sta. 17+81.69

END PROJECT B-5310
-L- POT Sta. 20+00.00

-L- PT Sta. 15+85.81

-L- POT Sta. 23+00.00

-L-
N 23°22'03.5" W

N 23°0'01" W 41.29'
N 20°31'57" W 138.52'
N 23°0'01" W 40.86'
N 20°31'57" W 135.85'

BM2

WOODS
WARD SWAMP
(REMNANTS OF FORMER BRIDGE STRUCTURE)
EXISTING R/W
RCP
IGR

CLASS 'B' RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE

BANK STABILIZATION
SEE DETAIL A
EST 15 TONS RIP RAP
EST 25 SY GEOTEXTILE

BANK STABILIZATION
SEE DETAIL A
EST 25 TONS RIP RAP
EST 45 SY GEOTEXTILE

50' TAPER

BEGIN SBG +51 LT
END SBG +15 LT
BEGIN SBG +95 RT
END SBG +25 RT

15" W/ELBOWS

GREU TL-3

ROCK PLATING
15+00 TO 16+00 RT
EST 180 SY

ROCK PLATING
17+92.50 TO 18+50 RT
EST 80 SY

CLASS II RIP RAP (TYP.)
(STRUCTURE PAY ITEM)

COTTON SPINDLE

BL-2
BL-3

-L-
PI Sta 14+20.69
△ = 13° 34' 45.4" (LT)
D = 4° 05' 33.2"
L = 331.80'
T = 166.68'
R = 1,400.00'

NOTE:
TYPE-III ANCHOR UNITS ON ALL FOUR BRIDGE CORNERS

PROJECT REFERENCE	SHEET NO.
B-5310	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES DOUGLAS HORTON

DocuSigned by: James Horton 3/6/2024

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 34364 ENGINEER KENNETH J. CORMIER

DocuSigned by: Kenneth Cormier 3/8/2024

MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:

MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

VERTICAL SCALE 5′ 0 5′ 10′

HORIZONTAL SCALE 25′ 0 25′ 50′

-L-

BEGIN GRADE
STA. 14+50.00
EL = 132.50′

PI = 15+50.00
EL = 131.66′
VC = 200′
K = 153

PI = 17+25.00
EL = 132.48′
VC = 150′
K = 151

PI = 19+00.00
EL = 131.56′
VC = 200′
K = 188

END GRADE
STA. 20+00.00
EL = 132.10′

BRIDGE ℄ STA. 17+25.5 -L-
21" CORED SLAB UNITS
2 SPAN: 1@55′, 1@55′ SKEW 90°
W14 DEEP CAPS
GP ELEV. = 132.29′

(−)0.8400% (+)0.4686% (−)0.5257% (+)0.5400%

EXCAVATE TO ELEV=123.0′ EST. 50 CY

EXCAVATE TO ELEV=123.0′ EST. 60 CY

3.5′ KEY DEPTH (TYP.)

CLASS II RIP RAP SLOPE 1.5:1 (NORMAL TO CAP) (2 FT. THICK) (TYP.)

NWS ELEV.=123.8′
DATE: 01-31-2022

EXCAVATION = 110 CY
(STRUCTURE PAY ITEM)

150 140 130 120 110 100

10 11 12 13 14 15 16 17 18 19 20 21 22 23

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1,300	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	125.7	FT
BASE DISCHARGE	=	2000	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	127.0	FT
OVERTOPPING DISCHARGE	=	8,800	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	131.8	FT
DATE OF SURVEY	=	1-31-2022	
W.S.ELEVATION AT DATE OF SURVEY	=	123.8	FT

3/6/2024 7:37:50 AM
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JDR66165

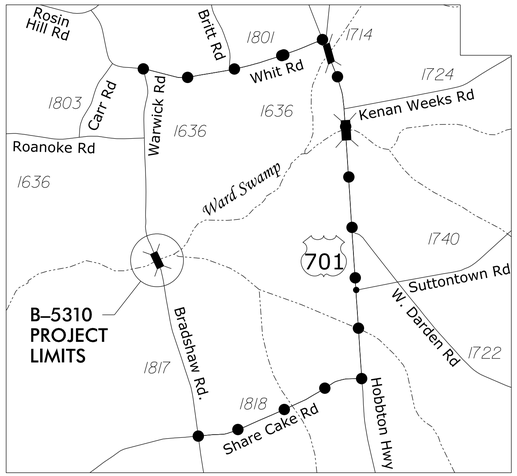
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5310	RW01	05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

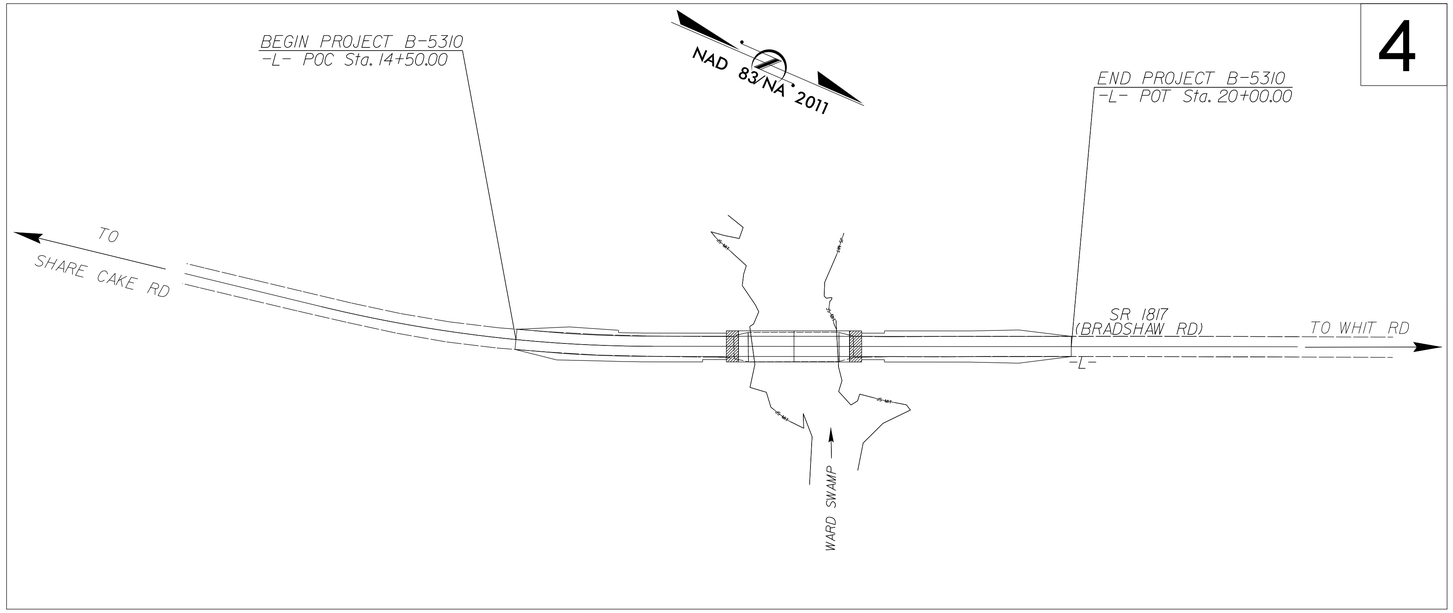
SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

SAMPSON COUNTY

LOCATION: BRIDGE NO. 188 OVER WARD SWAMP ON SR 1817 (BRADSHAW ROAD)



4



GRAPHIC SCALE
"FOR RW04 SHEET ONLY"

50 25 0 50 100
PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5310-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 520,393.854(ft) EASTING: 2,194,645.093(ft) ELEVATION: 140.33(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998719074
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5310-1" TO -L- STATION 10+00.00 IS S 15-38'38.05" E 2,062.54(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

LOCATION AND SURVEYS
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
01/22/2023	*06/20/2024*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

SIGNATURE: DocuSigned by: 9700CB2E1D21467... *Date:* 05/09/2024

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

TIP PROJECT: B-5310

09/08/99

09-MAY-2024 08:32
S:\Units\Div03\Projects\BRIDGE\Sampson\B5310-0188\Working\50 series row control sheets\B5310_LS_RW01_230418.dgn
mjduval AT LS-32872SL

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
B-5310	RW02C-1

Location and Surveys

LOCATION AND SURVEYS UNIT
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BL

POINT	DESC.	NORTH	EAST	ELEVATION
B53102	GPS CAP & REBAR	521581.4130	2194677.9310	159.60
B53101	GPS CAP & REBAR	520393.8540	2194645.0930	140.32
BL1	TRV CAP & REBAR	519789.4440	2194700.8500	134.27
BL2	TRV CAP & REBAR	519154.7000	2194971.3400	130.96
BL3	TRV CAP & REBAR	518747.2000	2195124.9040	132.71
BL4	TRV CAP & REBAR	518211.0050	2195219.8010	150.71

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	517653.638	2195330.705							
LINE			S 09°54'26.2" E	0.12					
PC	517653.516	2195330.726							
CURVE			N 09°47'59.0" W	332.91	00°12'54.2"(RT)	00°03'52.6"	332.91	166.45	88689.86
PT	517981.568	2195274.063							
LINE			N 09°41'31.9" W	683.65					
PC	518655.459	2195158.968							
CURVE			N 14°06'29.8" W	205.19	08°49'55.7"(LT)	04°18'00.7"	205.39	102.90	1332.40
PT	518854.456	2195108.952							
LINE			N 18°31'27.6" W	0.00					
PC	518854.457	2195108.952							
CURVE			N 20°58'02.5" W	160.51	04°53'09.8"(LT)	03°02'35.7"	160.55	80.33	1882.72
PT	519004.335	2195051.517							
LINE			N 23°24'37.4" W	701.33					
POT	519647.935	2194772.868							

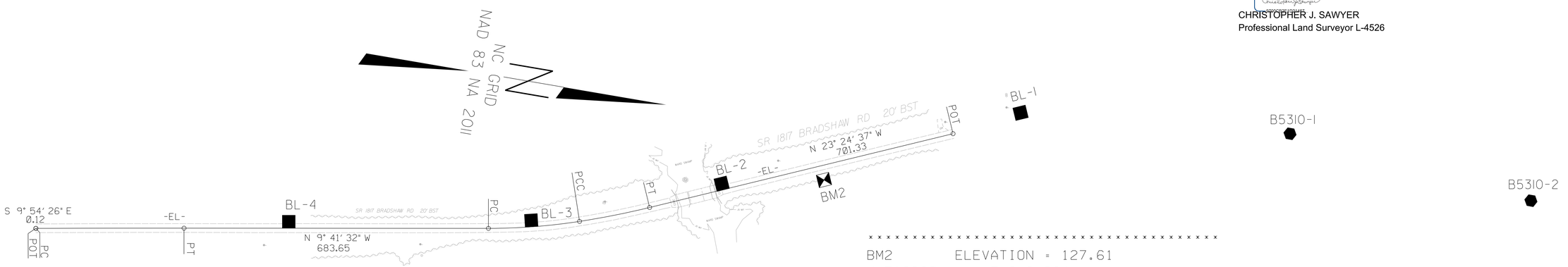
I, CHRISTOPHER J. SAWYER, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: ***AA***
Type of GPS field procedure: RTN
Dates of survey: SEPTEMBER 2016
Datum/Epoch:NAD 1983/NA 2011
Published/Fixed-control use: N/A FOR RTN
Localized around: "B5310-1"
Northing:520393.854
Easting:2194645.093
Combined grid factor:0.9998719074
Geoid model:G12NC
Units:US SURVEY FEET

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed SEPTEMBER 2016 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 1st day of May, 2023.

DocuSigned by:
Christopher J. Sawyer
CHRISTOPHER J. SAWYER
Professional Land Surveyor L-4526



BM2 ELEVATION = 127.61
N 519380 E 2194924
BL STATION 27+59.00 45 LEFT
RR SPIKE SET IN BASE OF 20" OAK

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/99

26-APR-2023 15:48
St Units\Civil03\Projects\BRIDGE\Sampson\B5310-0188\Working\150 series row control sheets\b5310_LS_RW02C-1_230418.dgn
mjduval AT LS-328726L

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5310	RW02D-1
Location and Surveys	

LOCATION AND SURVEYS UNIT
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

I, CHRISTOPHER J. SAWYER, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 1st day of May, 2023.

DocuSigned by:
Christopher Sawyer
9700CB2E1021467...

Professional Land Surveyor L-4526

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	518407.7158	2195201.2736
PC	12+54.01	518658.0258	2195158.0899
PT	15+85.81	518975.2939	2195063.6409
POT	23+00.00	519630.9034	2194780.3730

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/99

REVISIONS

25-APR-2023 08:10
$$USER$projects\BRIDGE\Samson\B5310-0188\Working\150 series row control sheets\B5310_LS_RW02D-1_230418.dgn
mduvall AT LS-328726

6/2/99

REVISIONS

PERMANENT EASEMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5310	RW03E-1

Location and Surveys

LOCATION AND SURVEYS UNITS
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-4526 CHRISTOPHER J. SAWYER

I , CHRISTOPHER J. SAWYER , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from SEPTEMBER, 2016, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 1st day of May, 2023.

CHRISTOPHER J. SAWYER
Professional Land Surveyor L-4526

L

ALIGN	STATION	OFFSET	NORTH	EAST	
L	14+50.00	29.67	518857.2798	2195139.6262	
L	15+15.00	45.00	518925.3446	2195132.2300	
L	15+65.00	-30.15	518944.5846	2195043.9059	
L	15+65.00	-45.00	518938.8961	2195030.1834	
L	15+90.00	-45.00	518961.2902	2195020.6707	
L	15+90.00	-29.79	518967.3225	2195034.6324	
L	16+30.00	50.00	519035.6891	2195092.0136	POINT NOT SET (UNDERWATER)
L	17+95.00	50.00	519187.1556	2195026.5697	
L	18+00.00	-29.75	519160.1155	2194951.3804	
L	18+00.00	-45.00	519154.0657	2194937.3786	
L	18+20.00	-45.00	519172.4253	2194929.4460	
L	18+20.00	-29.76	519178.4691	2194943.4341	
L	19+20.00	30.16	519294.0352	2194958.7814	

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED APRIL 12, 2023.

26-APR-2023 16:18
$$INTS\LDP\Projects\BRIDGE\Sampson\B5310-0188\Working\150 series row control sheets\B5310_LS_RW03E-1.230418.dgn
mjduval AT LS-328725

6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B5310	RW04

Location and Surveys

LOCATION AND SURVEYS UNIT
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, N.C., 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , CHRISTOPHER J. SAWYER , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from April 12, 2023, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 1st ~~day of~~ May, 2023.

CHRISTOPHER J. SAWYER
Professional Land Surveyor L-4526

STATE OF NORTH CAROLINA
DB 1567 PG 211

S 68°38'44" W
449.00'

S 42°55'16" E
658.95'

N 69°59'44" E
200.90'

N 58°34'17" E
401.94'

S 40°00'24" W
116.37'

15+00

20+00

BEGIN PROJECT B-5310
-L- POT Sta. 14+50.00

END PROJECT B-5310
-L- POT Sta. 20+00.00

UNKOWN OWNER

PATRICIA TROUBLEFIELD, ET AL
DB 1468 PG 407

COTTON SPINDLE

WOODS

WARD SWAMP

SR 1817 BRADSHAW RD 20' BST

-L- 14+50 30.33' LT
-L- 15+00 40' LT
-L- 15+65 30.15' LT 40' LT 45' LT
-L- 15+90 29.79' LT 40' LT 45' LR
-L- 18+00 29.75' LT 40' LT 45' LT
-L- 18+20 29.76' LT 40' LT 45' LT
-L- 19+50 40' LT
-L- 20+00 29.90' LT

PDE

EXISTING R/W

60.00'

-L- PC Sta. 12+54.01

N 9° 47' 18.1" W

+79.95
+29.86

-L- POT Sta. 10+00.00

-L- 14+50 29.67' RT
-L- 15+15 45' RT
-L- 16+30 50' RT NOT SET (UNDERWATER)
-L- 17+95 50' RT
-L- 19+20 30.16' RT

-L- PT Sta. 15+85.81

+20.92
29.69'
+26.71
30.31'

N 23° 22' 03.5" W

-L- POT Sta. 23+00.00

DEWEY T & PAMELA B GIDDENS
DB 1750 PG 128
TRACT 4
DB 1043 PG 130

DIANNE L SUMNER
DB 1567 PG 581
MB 49 PG 91

S 63°49'04" W
1064.80'

-L-
PI Sta 14+20.69
△ = 13° 34' 45.4" (LT)
D = 4° 05' 33.2"
L = 331.80'
T = 166.68'
R = 1,400.00'

NOTES:

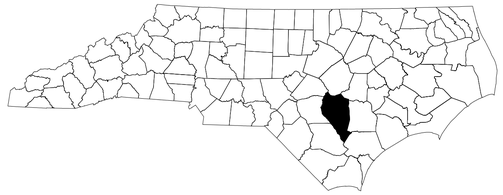
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED APRIL 12, 2023.

25-APR-2023 17:16
S:\Units\Div03\Projects\BRIDGE\Sampson\B5310-0188\Working\150 series row control sheets\B5310_LS_RW04_230418.dgn
mduval AT LS-3287251

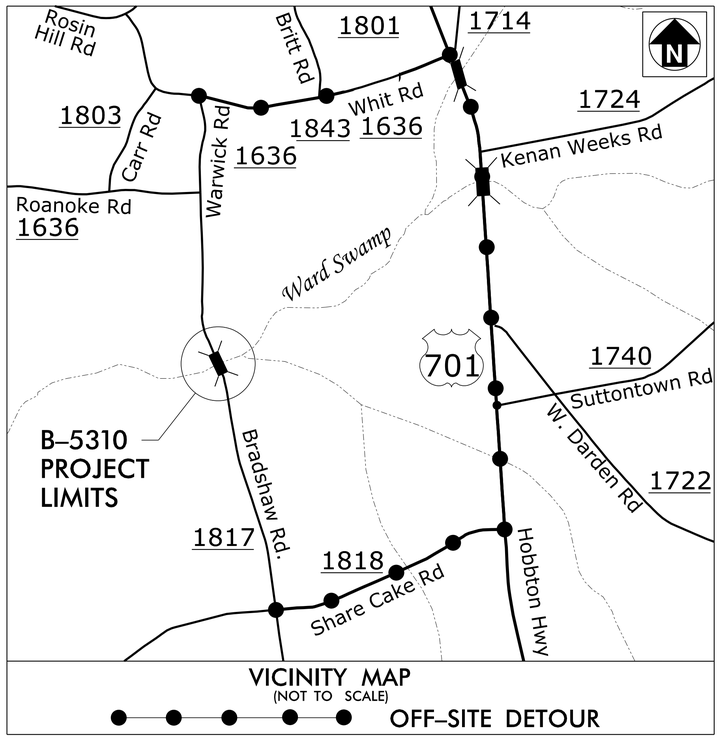
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SAMPSON COUNTY



LOCATION: BRIDGE NO. 188 OVER WARD SWAMP ON SR 1817 (BRADSHAW ROAD)



INDEX OF SHEETS

SHEET NO.
TMP–1

B–5310

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD

MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604

NC LICENSE NO. F–0669

NCDOT CONTACTS:

DEREK PIELECH, PE
NCDOT CONTACT
DIVISION BRIDGE
PROGRAM MANAGER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C645A...

DATE: 3/11/2024

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

1/4/2024
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ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

PROJ. REFERENCE NO.	SHEET NO.
B-5310	TMP-1A

PLANS PREPARED FOR THE NCDOT BY:
MOTT MACDONALD
MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604
NC LICENSE NO. F-0669

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C845A...
DATE: 3/11/2024

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
B-5310	TMB - 1B

PLANS PREPARED FOR THE NCDOT BY:
MOTT MACDONALD
MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604
NC LICENSE NO. F-0669

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

C) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

F) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

MISCELLANEOUS

G) COORDINATE WITH SAMPSON COUNTY SCHOOLS TRANSPORTATION DEPARTMENT AND SAMPSON COUNTY EMERGENCY SERVICES AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE

PHASING

STEP 1: USING RSD 1101.03, SHEET 1 OF 9, AND SHEETS TMP-3 AND TMP-4, PLACE TEMPORARY DETOUR SIGNS AND COVER

STEP 2: UNCOVER TEMPORARY DETOUR SIGNS AND CLOSE -L- TO TRAFFIC

STEP 3: CONSTRUCT -L- AND PROPOSED STRUCTURE

PLACE FINAL PAVEMENT MARKINGS ON -L-

STEP 4: REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN -L- TO TRAFFIC

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C645A...
DATE: 3/11/2024

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN: GENERAL NOTES & TEMPORARY TRAFFIC CONTROL PHASING

1/4/2024
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User:ST08227

PROJ. REFERENCE NO.	SHEET NO.
B-5310	TMP-2

PLANS PREPARED FOR THE NCDOT BY:
MOTT MACDONALD
MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604
NC LICENSE NO. F-0669

SIGN NUMBER: SP-1
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 3′-0″
HEIGHT: 2′-0″
TOTAL AREA: 6.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

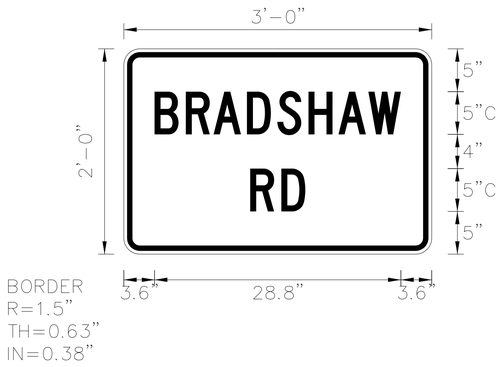
SYMBOL	X	Y	WID	HT

MAT'L: 0.080″ (2.0 mm) ALUMINUM

DESIGN BY: S COLEMAN CHECKED BY: D BISSETTE Mar 15, 2023
PROJECT ID: B-5310 LOCATION: WARD SWAMP AT BRADSHAW RD DIV: 3

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

Series/Size Text Length

		B	R	A	D	S	H	A	W																	C 2000
	3.6	3.7	3.3	3.9	3.6	3.7	3.5	3.5	3.8	3.6																28.8
		R	D																							C 2000
	14.8	3.7	2.8	14.8																						6.5

FILENAME: B-5310_TC_TMP_SignDesign

NORTH CAROLINA D.O.T. SIGN DETAIL

03/24/23 DATE SUBMITTED
SUBMITTAL:
☐ STAGING CONCEPT
☐ MIDPOINT
☒ PRE-FINAL
☐ FINAL
DO NOT USE FOR CONSTRUCTION

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C645A...
DATE: 3/11/2024

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

1/4/2024
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User:ST086227

PROJ. REFERENCE NO.	SHEET NO.
B-5310	TMP-3

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604
NC LICENSE NO. F-0669

Rosin Hill Rd
Houses Mill Rd
Whit Rd
Britt Rd
1801
1714
Massey Rd
1803
Whit Rd.
1843
Carr Rd
Kenan Weeks Rd
1636
Roanoke Rd
Ward Swamp
701
Suttontown Rd
1740
Rd.
1817
Bradshaw Rd
1722
W. Darden Rd
1818
Share Cake Rd
1817

OFF-SITE DETOUR ROUTE

SEE RSD 1101.03, SHEET 1 OF 9 FOR CLOSURE GENERAL NOTES AND SIGN PLACEMENT GUIDANCE

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C645A...
DATE: 3/11/2024

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFIC CONTROL DETOUR

1/4/2024
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User:ST086227

PROJ. REFERENCE NO.	SHEET NO.
B-5310	TMP-4

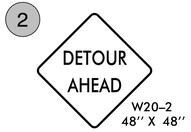
PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604
NC LICENSE NO. F-0669

1

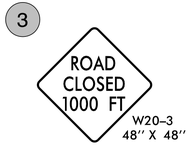
W20-3
48" X 48"

2



W20-2
48" X 48"

3



W20-3
48" X 48"

4

W20-3
48" X 48"

5

W20-3
48" X 48"

NEXT LEFT SP-4L 42" X 12"

6

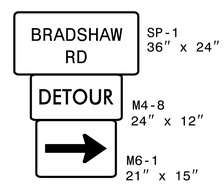
W20-3
48" X 48"

NEXT RIGHT SP-4R 42" X 12"

7

M4-8 A
24" X 18"

8

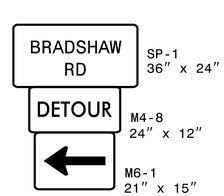


SP-1
36" x 24"

M4-8
24" x 12"

M6-1
21" x 15"

9



SP-1
36" x 24"

M4-8
24" x 12"

M6-1
21" x 15"

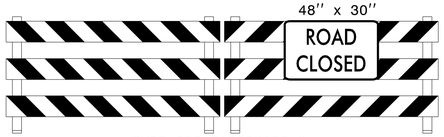
10

W20-3
48" X 48"

1.4 MILES W16-3P 30" X 24"

A

R11-2
48" x 30"



TYPE III BARRICADE(S)

B

R11-3
60" x 30"

M4-10R
48" x 18"

TYPE III BARRICADE

C

R11-3
60" x 30"

M4-10L
48" x 18"

TYPE III BARRICADE

D

R11-3
60" x 30"

TYPE III BARRICADE

APPROVED: DocuSigned by: Lori D. Stouchko FF586C7596C645A...

DATE: 3/11/2024

NORTH CAROLINA PROFESSIONAL SEAL 034437 ENGINEER LORI D. STOUCHKO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFIC CONTROL DETOUR

1/4/2024
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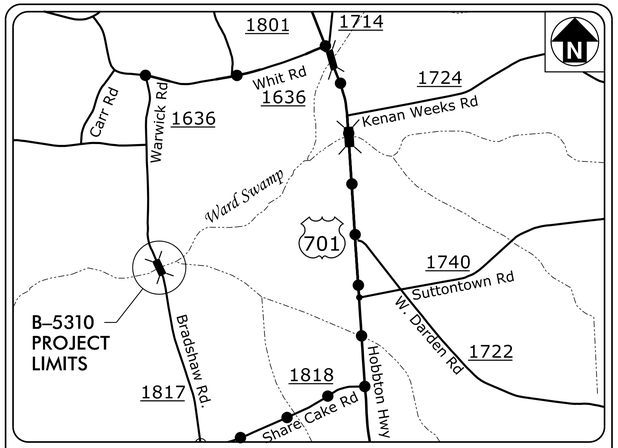
User:ST08227

PROJECT: B-5310

TIP B-5310



VICINITY MAP

NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

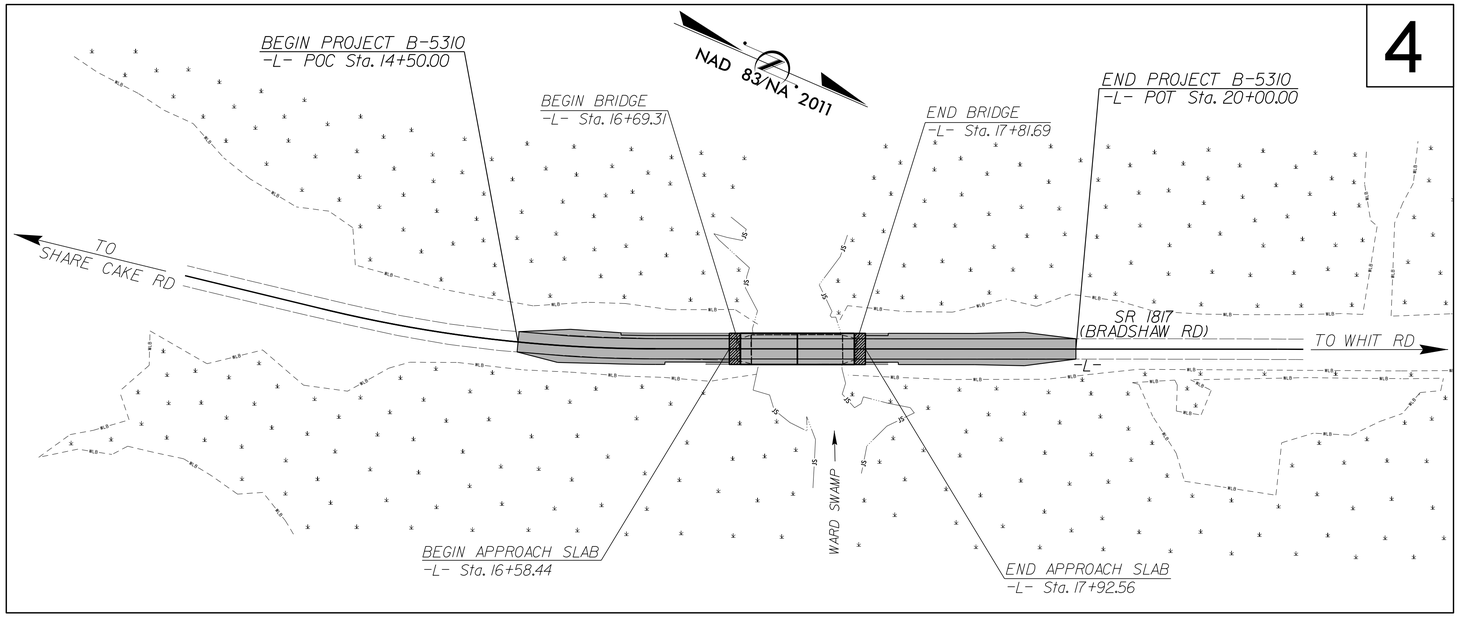
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

LOCATION: BRIDGE NO. 188 OVER WARD SWAMP ON SR 1817 (BRADSHAW ROAD)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5310	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

MOTT MACDONALD

Prepared in the Office of:

MOTT MACDONALD

930 Main Campus Dr., Suite 200
Fuquay-Varina, NC 27606
(919) 552-2253
(919) 552-2254 (Fax)
www.mottmac.com
NC License No. F-0669

Designed by:

TRENTON J CORMIER, PE ***3377***

NAME *LEVEL III CERTIFICATION NO.*

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

PROJECT REFERENCE NO.	SHEET NO.
B-5310	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

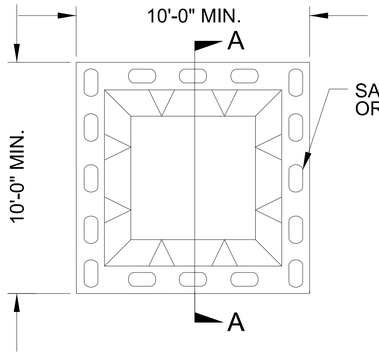
EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

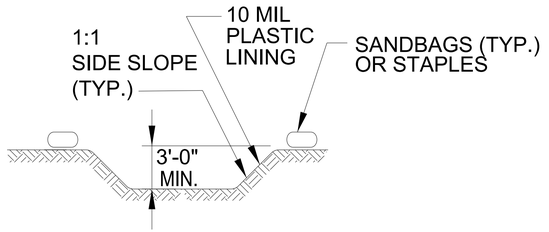
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	—EW—EW—EW—
1636.03	Coir Fiber Wattle Barrier	—CFW—CFW—CFW—

PROJECT REFERENCE NO.	SHEET NO.
B-5310	EC-02A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

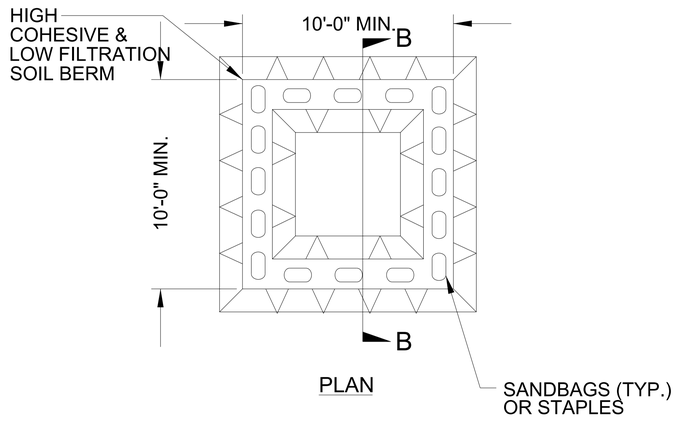
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

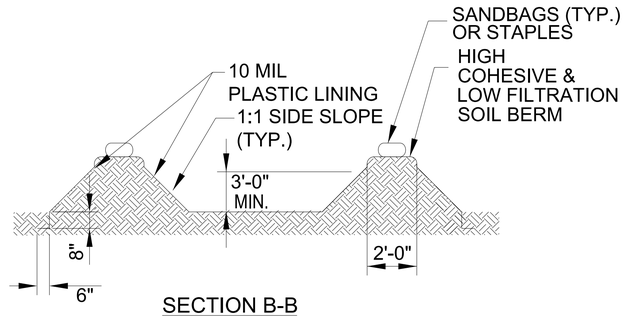
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



SECTION B-B

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-5310	EC-3

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

PROJECT REFERENCE NO.	SHEET NO.
B-5310	EC-4/CONST.4
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

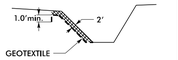
LEVEL III CERTIFIED BY:
TRENTON J CORMIER, PE
CERTIFICATION NUMBER: 3377
ISSUED: March 5, 2024

Prepared in the Office of:
MOTT MACDONALD
Mott MacDonald I & E, LLC
930 Main Campus Dr., STE 200
Raleigh, NC 27606
www.mottmac.com
NC License No. F-0669

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NAD 83/2011

DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner = CL II Rip-Rap w/Geotextile
-L- STA. 16+79 TO 16+85 LT
-L- STA. 17+62 TO 17+75 RT

STATE OF NORTH CAROLINA
DB 1567 PG 211

1 UNKNOWN OWNER

PEGGY B. AMAN
DB 1395 PG 716

3 PATRICIA TROUBLEFIELD, ET AL
DB 1468 PG 407

15+00

20+00

BEGIN PROJECT B-5310
-L- POT Sta. 14+50.00

END PROJECT B-5310
-L- POT Sta. 20+00.00

BEGIN BRIDGE
-L- Sta. 16+59.31

IMPERVIOUS DIKE FOR ABUTMENT REMOVAL

BANK STABILIZATION
SEE DETAIL A
EST. 15 TONS RIP RAP
EST 25 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE

50' TAPER

BEGIN SBG
±51 LT

15" W/ELBOWS

GREU TL-3

TB 2GI

END SBG
15 LT

END SBG
+25 RT

WARD SWAMP

ROCK PLATING
15+00 TO 16+00 RT
EST 180 SY

-L- PT Sta. 15+85.81

BEGIN SBG
+95 RT

CLASS 'B' RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE

CLASS II RIP RAP (TYP.)
(STRUCTURE PAY ITEM)

BEGIN APPROACH SLAB
-L- Sta. 16+58.44

END APPROACH SLAB
-L- Sta. 17+92.56

END BRIDGE
-L- Sta. 17+81.69

ROCK PLATING
17+92.50 TO 18+50 RT
EST 80 SY

BANK STABILIZATION
SEE DETAIL A
EST 25 TONS RIP RAP
EST 45 SY GEOTEXTILE

-L- PC Sta. 12+54.01

-L- POT Sta. 10+00.00

N 9° 47' 18.1" W

-L- SR 1817 BRADSHAW RD
20' BST

N 23° 22' 03.5" W

-L- POT Sta. 23+00.00

BM2

2 DEWEY T & PAMELA B GIDDENS
DB 1750 PG 128
TRACT 4
DB 1043 PG 130

4 DIANNE L. SUMNER
DB 1567 PG 581
MB 49 PG 91

UTILIZE FLOATING TURBIDITY CURTAIN ALONG SHORELINE AND AROUND BENTS FOR EXISTING BENT REMOVAL AND PROPOSED BENT INSTALLATION, AS DIRECTED BY ENGINEER

THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

-L-
PI Sta 14+20.69
△ = 13° 34' 45.4" (LT)
D = 4° 05' 33.2"
L = 331.80'
T = 166.68'
R = 1,400.00'

NOTE:
TYPE-III ANCHOR UNITS ON ALL FOUR BRIDGE CORNERS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES IN ACCORDANCE WITH THE "SOIL STABILIZATION TIMEFRAMES", SEE EC-3.

NOTE:
PRIOR TO INSTALLATION OF EROSION CONTROL DEVICES, CONTRACTOR SHALL VERIFY BOUNDARIES OF JURISDICTIONAL AREAS AND DELINEATE WITH SAFETY FENCE OR FLAGGING.

3/5/2024
R:\Erosion Control\B5310_hyd_ec_cg_psh04.dgn
default

PROJECT REFERENCE NO.	SHEET NO.
B-5310	EC-5/CONST.4
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
TRENTON J CORMIER, PE
CERTIFICATION NUMBER: 3377
ISSUED: MARCH 5, 2024

Prepared in the Office of:
MOTT MACDONALD
Mott MacDonald I & E, LLC
930 Main Campus Dr., STE 200
Raleigh, NC 27606
www.mottmac.com
NC License No. F-0669

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

NAD 83/2011

STATE OF NORTH CAROLINA
DB 1567 PG 211

1
UNKNOWN OWNER

PEGGY B AMAN
DB 1395 PG 714

15+00

20+00

3
PATRICIA TROUBLEFIELD, ET AL
DB 1468 PG 407

BEGIN PROJECT B-5310
-L- POT Sta. 14+50.00

BEGIN BRIDGE
-L- Sta. 16+69.31

END PROJECT B-5310
-L- POT Sta. 20+00.00

BANK STABILIZATION
SEE DETAIL A
EST 15 TONS RIP RAP
EST 25 SY GEOTEXTILE

WARD SWAMP

CLASS 'B' RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE

50' TAPER

BEGIN SBG
+51 LT

GREU TL-3

15" W/ELBOWS

END SBG
+15 LT

END SBG
+25 RT

SR 1817 BRADSHAW RD
20' BST

-L-
N 9° 47' 18.1" W

-L- PC Sta. 12+54.01

-L- POT Sta. 10+00.00

-L-
N 23° 22' 03.5" W

SR 1817 BRADSHAW RD
20' BST

EXISTING R/W 24" RCP

-L- POT Sta. 23+00.00

BM2

WOODS

ROCK PLATING
15+00 TO 16+00 RT
EST 180 SY

-L- PT Sta. 15+85.81

BEGIN SBG
+95 RT

15" W/ELBOWS

CLASS 'B' RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE

CLASS II RIP RAP (TYP.)
(STRUCTURE PAY ITEM)

(REMNANTS OF FORMER BRIDGE STRUCTURE)

ROCK PLATING
17+92.50 TO 18+50 RT
EST 80 SY

END APPROACH SLAB
-L- Sta. 17+92.56

END BRIDGE
-L- Sta. 17+81.69

BANK STABILIZATION
SEE DETAIL A
EST 25 TONS RIP RAP
EST 45 SY GEOTEXTILE

BEGIN APPROACH SLAB
-L- Sta. 16+58.44

2
DEWEY T & PAMELA B GIDDENS
DB 1750 PG 128
TRACT 4
DB 1043 PG 130

4
DIANNE L SUMNER
DB 1567 PG 581
MB 49 PG 91

THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

-L-
PI Sta 14+20.69
△ = 13° 34' 45.4" (LT)
D = 4° 05' 33.2"
L = 331.80'
T = 166.68'
R = 1,400.00'

NOTE:
TYPE-III ANCHOR UNITS ON ALL FOUR BRIDGE CORNERS

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS TYPE-C, AS DIRECTED, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES IN ACCORDANCE WITH THE "SOIL STABILIZATION TIMEFRAMES", SEE EC-3.

3/5/2024
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default

T.I.P.: B-5310

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING AND PAVEMENT MARKING PLAN
DUPLIN COUNTY

TIP NO.	SHEET NO.
B-5310	SIGN-1

APPROVED: DocuSigned by: David Bissette 01F5041EA7684D1...

DATE: 3/5/2024

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 030864 ENGINEER DAVID W. BISSETTE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6	EA.

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1828 (CYPRESS CREEK RD)	THERMOPLASTIC	RAISED

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OHTERWISE NOTED ON PLANS.

F) SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION		
T1	WHITE EDGELINE	(4", 90 MILS)	THERMOPLASTIC
T11	YELLOW SINGLE CENTER	(4", 90 MILS)	THERMOPLASTIC
T12	10 FT. YELLOW SKIP	(4", 90 MILS)	THERMOPLASTIC
T13	YELLOW DOUBLE CENTER	(4", 90 MILS)	THERMOPLASTIC
MA	YELLOW/YELLOW		PERMANENT RASIED MARKER

NCDOT CONTACT:

DEREK PIELECH, PE DIVISION BRIDGE PROGRAM MANAGER

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: MOTT MACDONALD

DAVID W BISSETTE, PE PRINCIPAL PROJECT MANAGER

SAM COLEMAN, PE PROJECT ENGINEER

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD

MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604

NC LICENSE NO. F-0669

3/5/2024
3:56:26 PM
User-BTS82185
T:\5310_2017_NCDOT_BridgeDesign_LSA\Proj\B-5310\Signing\CADD\Signing Layout Plans\B-5310_Sgn_SGN_01.dgn

TIP NO.	SHEET NO.
B-5310	SIGN-2

APPROVED: DocuSigned by: David Bissette 01F5041EA7684D1...

DATE: 3/5/2024

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 030864 ENGINEER DAVID W. BISSETTE

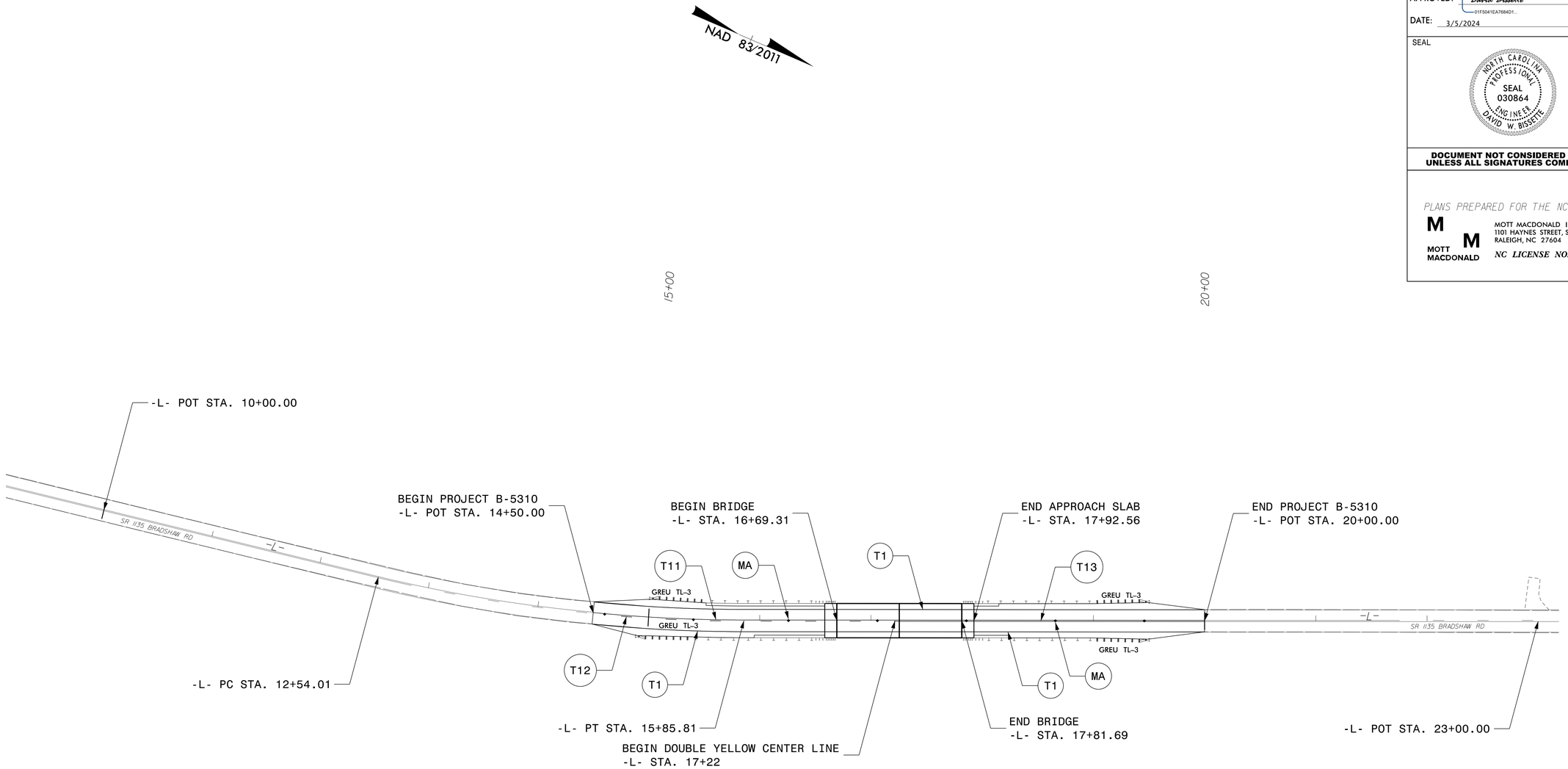
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD

MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604

NC LICENSE NO. F-0669



PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION		
T1	WHITE EDGELINE	(4″, 90 MILS)	THERMOPLASTIC
T11	YELLOW SINGLE CENTER	(4″, 90 MILS)	THERMOPLASTIC
T12	10 FT. YELLOW SKIP	(4″, 90 MILS)	THERMOPLASTIC
T13	YELLOW DOUBLE CENTER	(4″, 90 MILS)	THERMOPLASTIC
MA	YELLOW/YELLOW		PERMANENT RASIED MARKER

PAVEMENT MARKING DETAIL

3/5/2024
Date: 3/5/2024
User:BIS82185
C:\Users\BIS82185\OneDrive - Mott MacDonald\Desktop\Signing Layout Plans\B-5310_Sgn_SGN_02.dgn

PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 DISPOSAL OF SUPPORT, U-CHANNEL

NAD 83/2011

15+00

20+00

SR 1135 BRADSHAW RD

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

SR 1135 BRADSHAW RD

TIP NO.	SHEET NO.
B-5310	SIGN-3

APPROVED: DocuSigned by: David Bissette 01F5041EA7684D1...

DATE: 3/5/2024

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 030864 ENGINEER DAVID W. BISSETTE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED FOR THE NCDOT BY:

MOTT MACDONALD

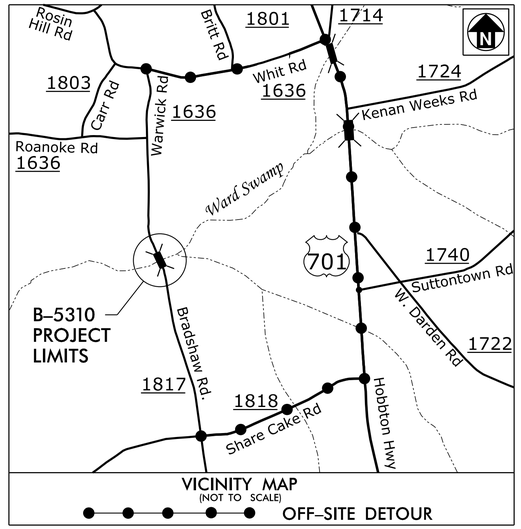
MOTT MACDONALD I & E, LLC
1101 HAYNES STREET, SUITE 101
RALEIGH, NC 27604

NC LICENSE NO. F-0669

EXISTING SIGN DETAIL

TIP PROJECT: B-5310

CONTRACT: DC00459



See Sheet 1A For Index of Sheets,
See Sheet 1B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
SAMPSON COUNTY

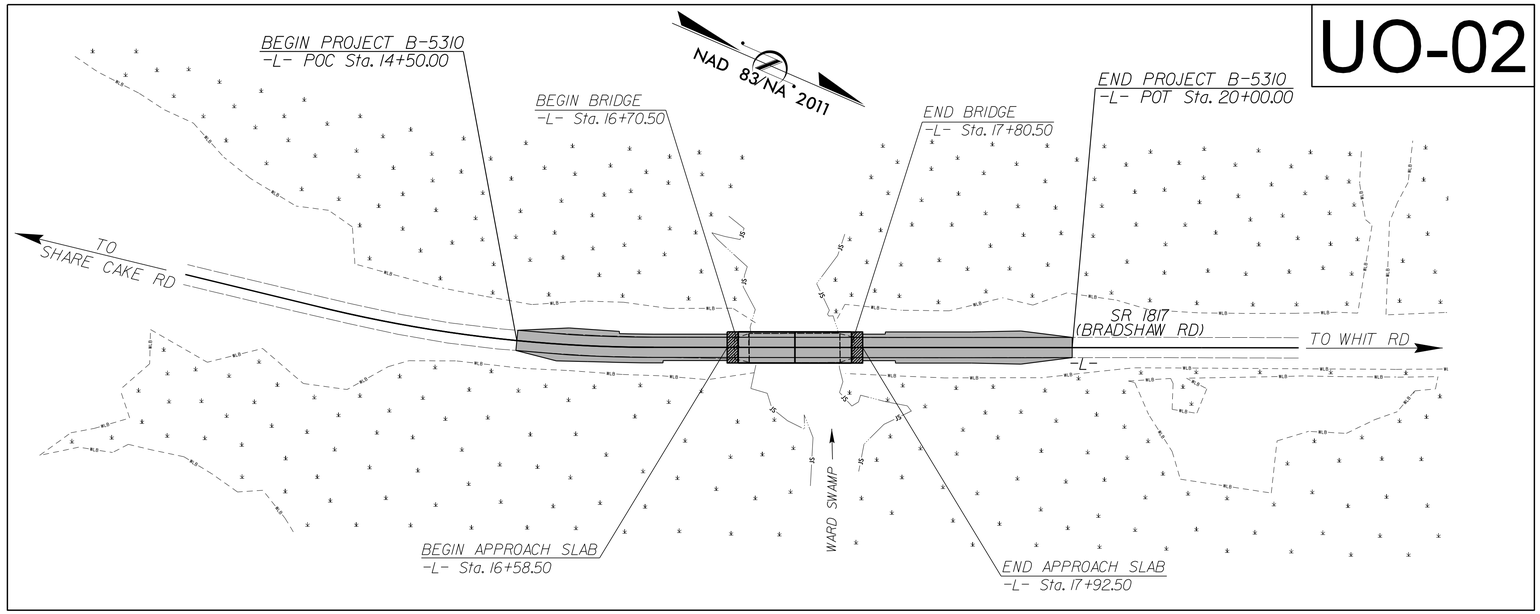
T.I.P. NO.	SHEET NO.
B–5310	UO–01

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

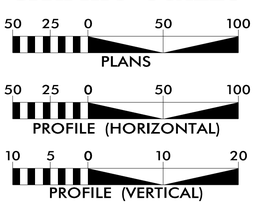
LOCATION: BRIDGE NO. 188 OVER WARD SWAMP ON SR 1817 (BRADSHAW ROAD)

TYPE OF WORK: UTILITIES BY OTHERS

UO-02



GRAPHIC SCALES



INDEX OF SHEETS

UTILITY OWNERS WITH CONFLICTS

(A) POWER – SOUTH RIVER EMC
(B) COMMUNICATION – STAR COMMUNICATION

PREPARED IN THE OFFICE OF:

MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552–2253
(919) 552–2254 (Fax)
www.mottmac.com
LICENSE NO. F–0669

DIVISION OF HIGHWAYS
UTILITIES UNIT – DIV. 3
5501 BARBADOS BLVD.
CASTLE HAYNE, NC 28429
PHONE (919) 341–2000
FAX (910) 675–0143

TIMOTHY G. GODWIN — DIVISION UTILITY ENGINEER
ERIC MATUSZEWSKI — DIVISION UTILITY COORDINATOR
FELTON PERRY — PROJECT UTILITY COORDINATOR

09/08/99
5/16/2024
G:\3866\95_2017_NCDOT_BridgeDesign_LSA\Proj\B-5310\Utilities\Engineering\UBO\Proj\B5310_ut_tsh_UB001.dgn
CONTRACT: DC00459

PROJECT REFERENCE	SHEET NO.
B-5310	UO-02
THIS SHEET CORRESPONDS TO RDY-4	

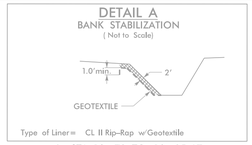
UTILITIES BY OTHERS

NOTE:
ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

VERTICAL SCALE 5' 0 5' 10' | HORIZONTAL SCALE 25' 0 25' 50'

NAD 83/2011

DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner= CL II Rip-Rap w/Geotextile
-L- STA. 16+79 TO 16+85 LT
-L- STA. 17+62 TO 17+75 RT

STATE OF NORTH CAROLINA
DB 1567 PG 211

PEGGY B AMAN
DB 1395 PG 714

1
UNKNOWN OWNER

3
PATRICIA TROUBLEFIELD, ET AL
DB 1468 PG 407

2
DEWEY T & PAMELA B GIDDENS
DB 1750 PG 128
TRACT 4
DB 1043 PG 130

4
DIANNE L SUMNER
DB 1567 PG 581
MB 49 PG 91

SOUTH RIVER WILL DEAD END EXISTING OVERHEAD LINE AND REINSTALL AFTER CONSTRUCTION IS COMPLETE

SOUTH RIVER WILL DEAD END EXISTING OVERHEAD LINE AND REINSTALL AFTER CONSTRUCTION IS COMPLETE

STAR COMMUNICATION LINES ARE ABANDONED

BEGIN PROJECT B-5310
-L- POT Sta. 14+50.00

BEGIN BRIDGE
-L- Sta. 16+69.31

END PROJECT B-5310
-L- POT Sta. 20+00.00

-L- POT Sta. 10+00.00

-L- PC Sta. 12+54.01

-L- PT Sta. 15+85.81

BEGIN APPROACH SLAB
-L- Sta. 16+58.44

END APPROACH SLAB
-L- Sta. 17+92.56

END BRIDGE
-L- Sta. 17+81.69

-L- POT Sta. 23+00.00

SR 1817 BRADSHAW RD
20' BST

N 23°22'03.5" W

-L-
PI Sta 14+20.69
Δ = 13° 34' 45.4" (LT)
D = 4°05' 33.2"
L = 331.80'
T = 166.68'
R = 1,400.00'

NOTE:
TYPE-III ANCHOR UNITS ON ALL FOUR BRIDGE CORNERS

CONTRACTOR SHALL CONTACT THE RESIDENT ENGINEER TO COORDINATE WITH SOUTH RIVER AFTER CONSTRUCTION TO REPLACE OVERHEAD LINES.

3/7/2024
3:27:45 PM
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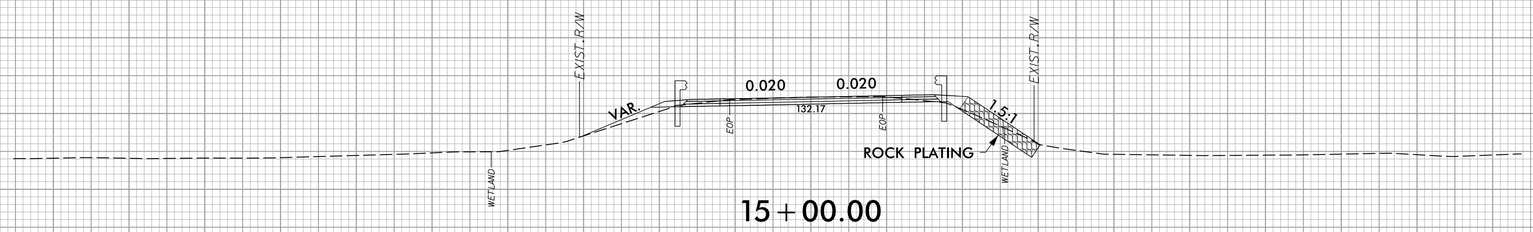
0 5 10	PROJECT REFERENCE	SHEET NO.
	B-5310	X-1



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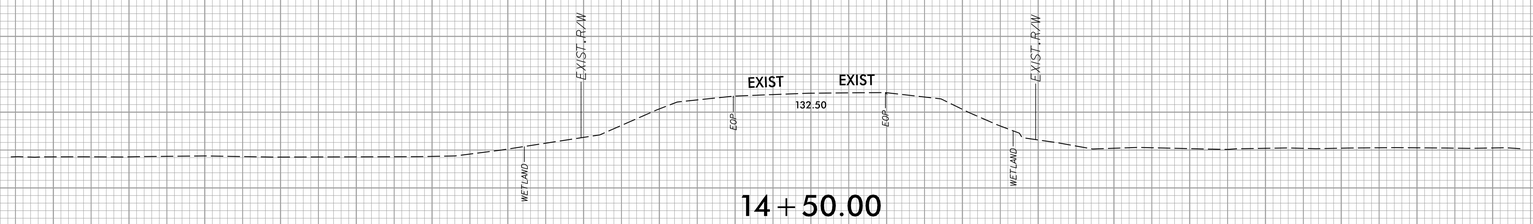
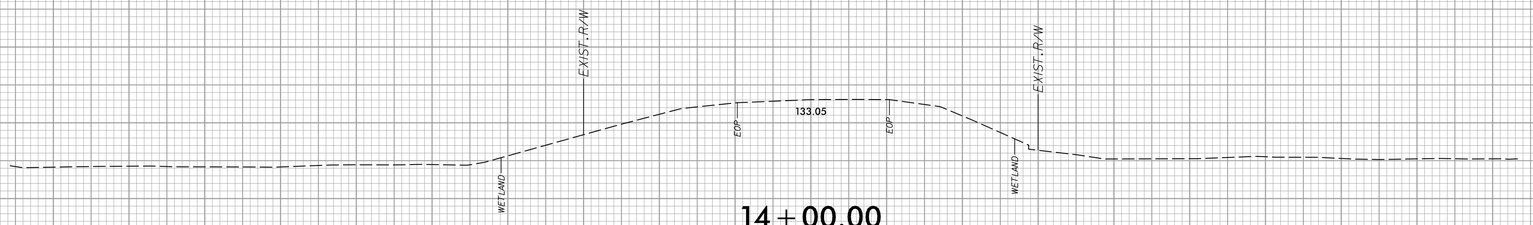


14+50.00



14+00.00

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JOR6616S

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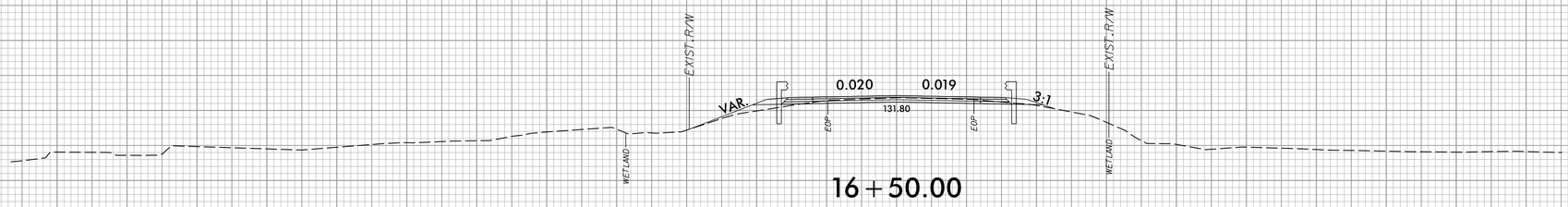
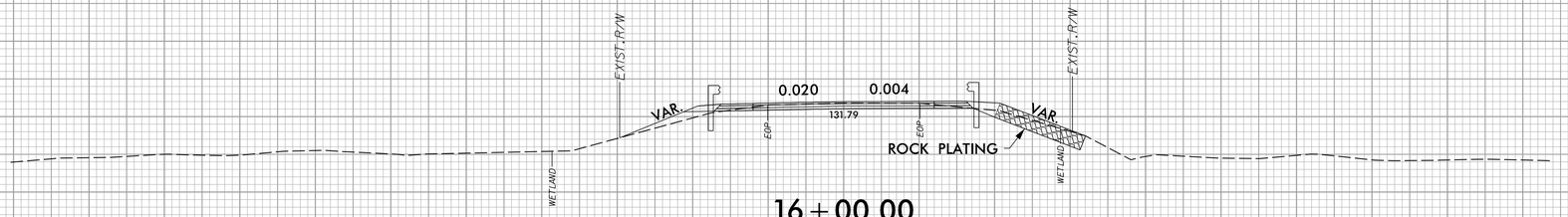
	B-5310	X-2

BEGIN BRIDGE 16+69.31



16+50.00



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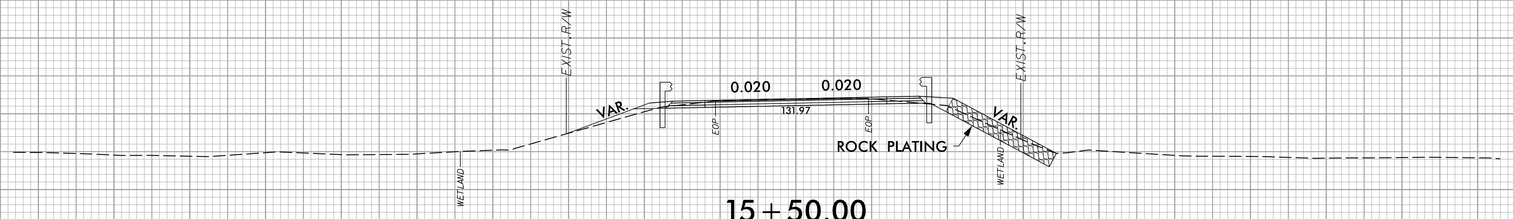

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	B-5310	X-3

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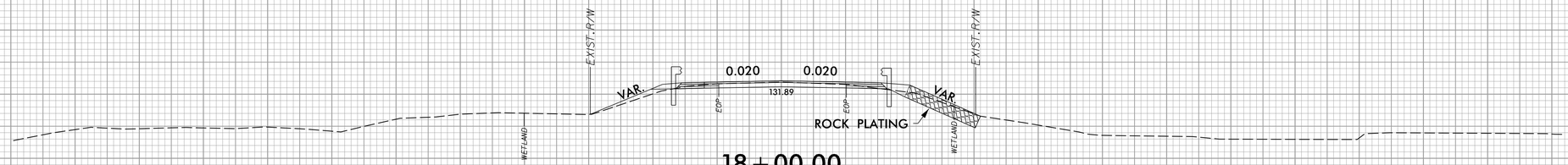
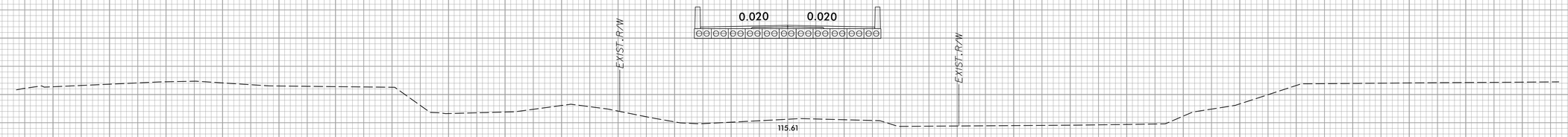
140 130 120 110



18+00.00

END BRIDGE 17+81.69



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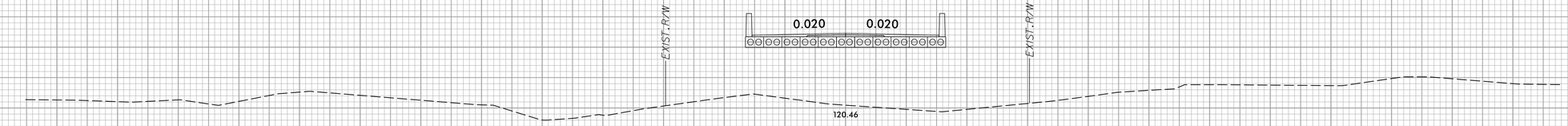

17+00.00

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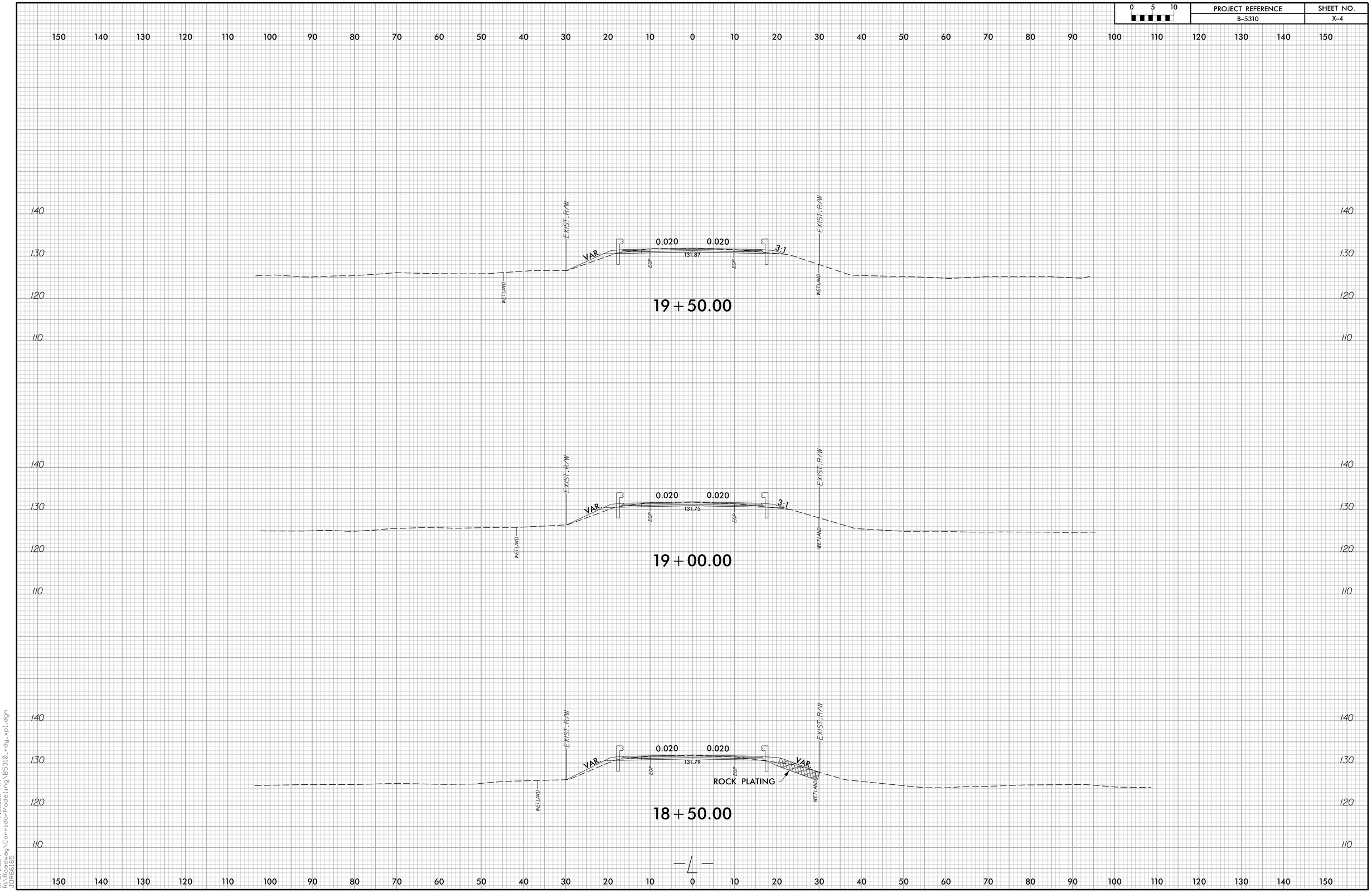
	B-5310	X-4



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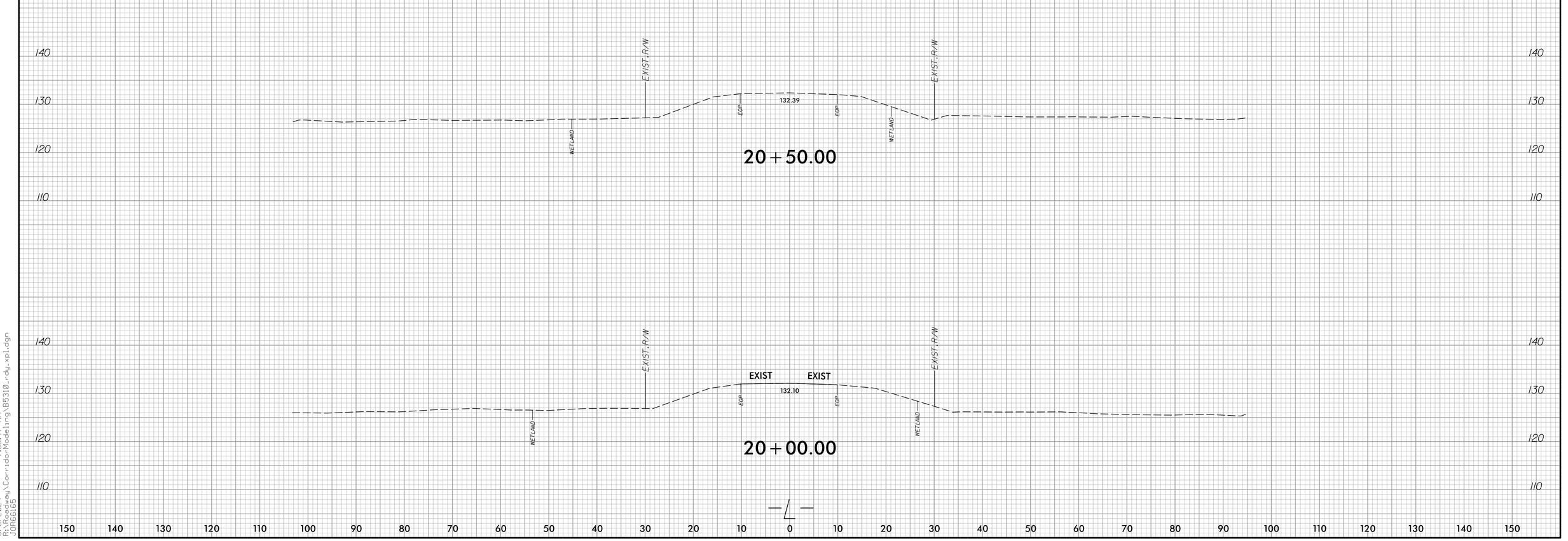

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JOR6616S

F.A. PROJECT NO. BRZ-1817(001)

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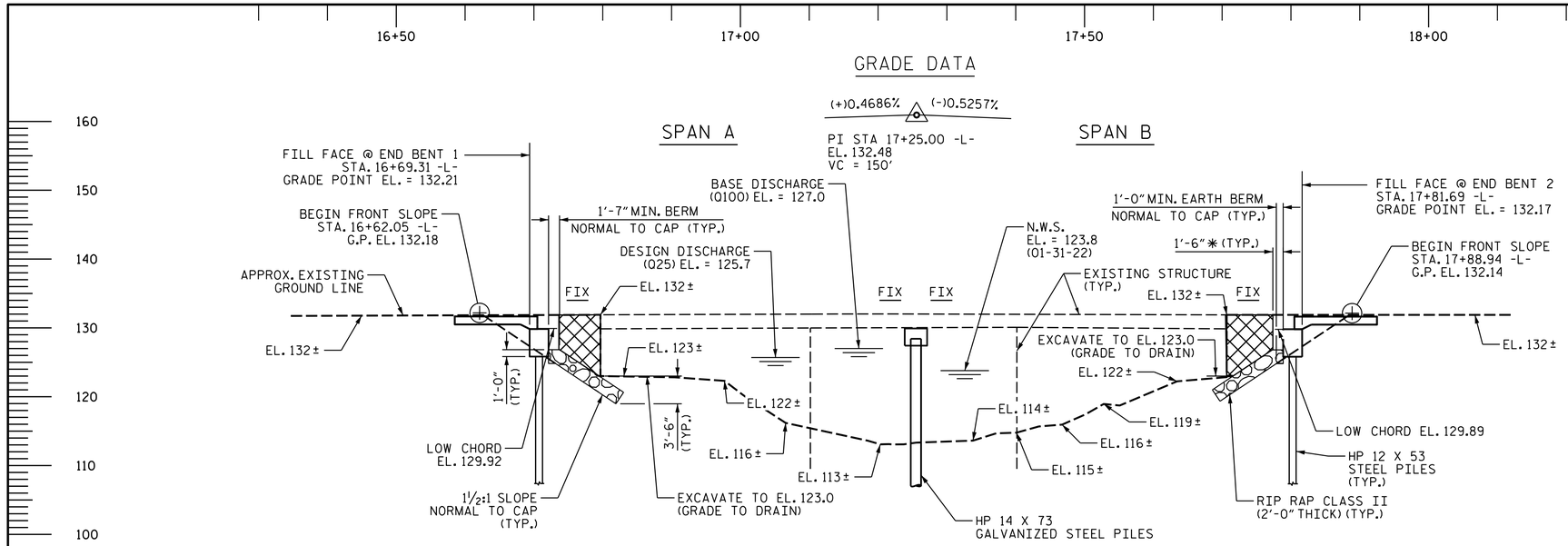
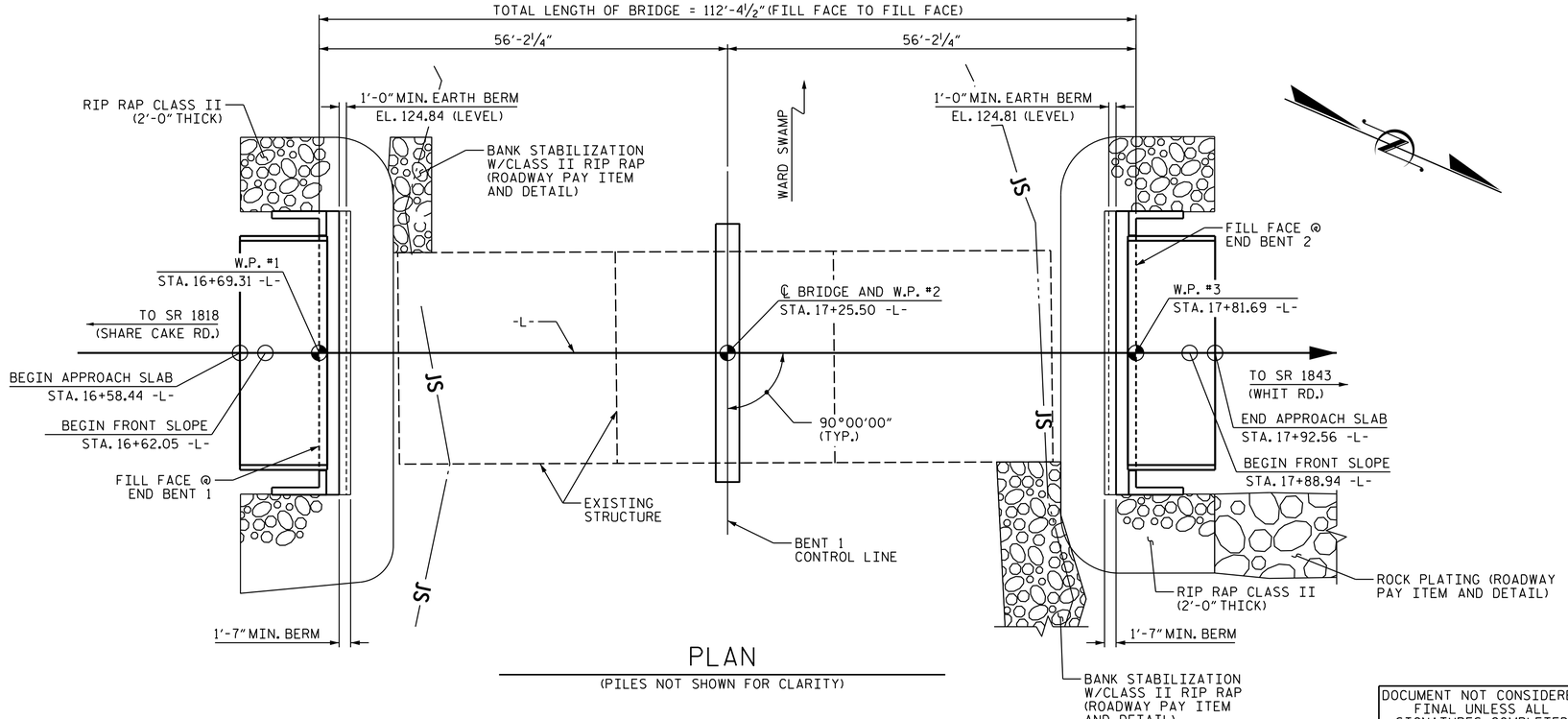


UNCLASSIFIED STRUCTURE EXCAVATION

* TO LIMIT OF UNCLASSIFIED STRUCTURE EXCAVATION (TYP.) (NORMAL TO CAP)

SECTION ALONG -L-



PLAN

(PILES NOT SHOWN FOR CLARITY)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

SHEET 1 OF 3 REPLACE BRIDGE #810188

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE ON SR 1817 (BRADSHAW RD.) OVER WARD SWAMP BETWEEN SR 1818 AND SR 1843

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

DRAWN BY: N. K. KAVANI DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
MOTT MACDONALD
930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
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LICENSE NO. F-0669

NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JASON M. ROBINSON
3/7/2024

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SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Lenth per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
					Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent 1, Piles 1-7	71	126.84	50	N/A	N/A	95	11						
Bent 1, Piles 1-8	125	128.42	60	107	90.0	175							
End Bent 2, Piles 1-7	71	126.81	55	N/A	N/A	95							

**Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

$$^{**}RDR = \frac{Factored\ Resistance + Factored\ Downdrag\ Load + Factored\ Dead\ Load}{Dynamic\ Resistance\ Factor} + Nominal\ Downdrag\ Resistance + \frac{Nominal\ Scour\ Resistance}{Scour\ Resistance\ Factor}$$

SUMMARY OF PDA/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Pile Driving Analyzer (PDA)				Pile Order Lengths	
End Bent/ Bent No	PDA Testing Required? YES or MAYBE	PDA Test Pile Length FT	Total PDA Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or PDA
EB1	MAYBE	55	2		
B1	YES	65			
EB2	MAYBE	60			

*EST = Pile order lengths from estimated pile lengths; PDA = Pile order lengths based on PDA testing. For groups of end bents/bents with pile order lengths based on PDA testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the PDA.

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent 1, Piles 1-7	71			0.75			
Bent 1, Piles 1-8	125			0.75		8	1.00
End Bent 2, Piles 1-7	71			0.75			

*Factored Dead Load is factored weight of pile above the ground line.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jinyoung Park PE#032171) on 3/30/23.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer will determine the need for PDA Testing when PDAs may be required.

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.5 -L-

NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JINYOUNG PARK ROBINSON

DocuSigned by: Jinyoung Park Robinson

3/7/2024

SIGNATURE DATE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE FOUNDATION TABLES

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

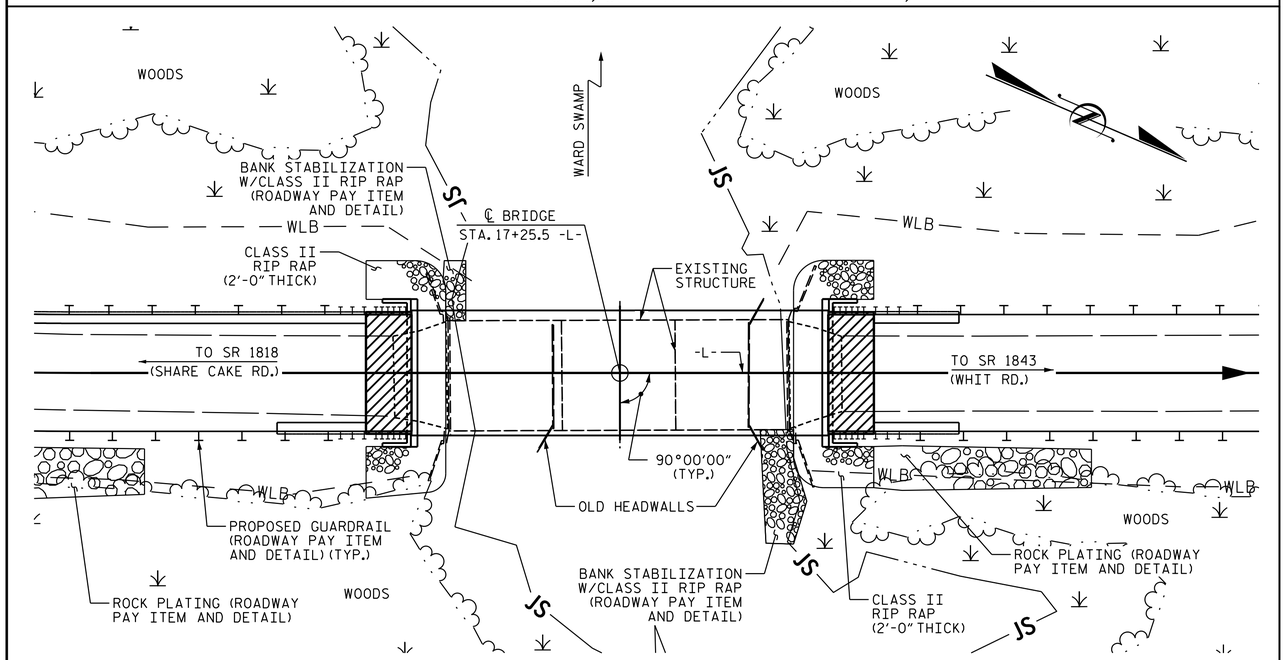
REVISIONS

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

SHEET NO. S-2

TOTAL SHEETS 16

BM2: RR SPIKE SET IN 20" OAK; 32.7' RT. STA. 20+12.38 -L-, ELEV. 127.61



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

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.

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

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 EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

THE EXISTING STRUCTURE CONSISTING OF 3 SPANS (30'-6", 30'-0", 30'-6") CONCRETE DECK ON PRESTRESSED CONCRETE CHANNEL BEAMS; CLEAR ROADWAY WIDTH OF 29'-1" ON TIMBER ABUTMENTS WITH PRESTRESSED CONCRETE CAPS ON TIMBER PILES WITH STEEL CRUNCH BENTS AND PRESTRESSED CONCRETE INTERIOR BENT CAPS ON TIMBER PILES WITH CONCRETE ENCASEMENTS, LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. 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 COSTS 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.

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

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

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET 1 OF 3 SHALL BE EXCAVATED FOR A DISTANCE OF 40 FT EACH SIDE OF THE CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS ELEVATION 109.5 SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR INTERIOR BENT 1, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STATION 17+25.50 -L-	ASBESTOS ASSESSMENT	DYNAMIC PILE TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 17+25.50 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 GALVANIZED STEEL PILES	HP 12 X 53 STEEL PILES		HP 14 X 73 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONC. CORED SLABS	
	LUMP SUM	LUMP SUM	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EA.	EA.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	LIN. FT.	TON	S.Y.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE						LUMP SUM									220.5			LUMP SUM	22	1210
END BENT 1					21.6		2636	7		7	350					123	136			
BENT 1					10.7		2136		8			8	480							
END BENT 2					21.6		2636	7		7	385					118	131			
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	53.9	LUMP SUM	7408	14	8	14	735	8	480	11	220.5	241	267	LUMP SUM	22	1210

HYDRAULIC DATA:

DESIGN DISCHARGE	= 1,300 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YEAR
DESIGN HIGH WATER ELEVATION	= 125.7
DRAINAGE AREA	= 16.4 SQ. MI.
BASE DISCHARGE (Q 100)	= 2,000 CFS
BASE HIGH WATER ELEVATION	= 127.0

OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE	= 8,800 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 131.8 *

* SAG AT APPROX. -L- STA. 18+99 CL.
WS EL. TAKEN AT RIVER STATION 5412

SAMPLE BAR REPLACEMENT	
SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30"(SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.

FOUNDATION RECCOMENDATION NOTES:

FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE ON SR 1817
(BRADSHAW RD.)
OVER WARD SWAMP
BETWEEN SR 1818 AND SR 1843

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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LICENSE NO. F-0669

NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JUSTIN M. ROBINSON
D6BA6B8...
3/7/2024

DRAWN BY: L. L. BLANKENSHIP DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

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

LOAD TYPE		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		HL-93(Inv)	N/A	1	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	**1.05**	55'	EL	**27**	
		HL-93(Opr)	N/A	--	1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	**1.32**	55'	EL	**27**	
		HS-20(Opr)	36.000	--	1.9	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.9	55'	EL	5.4	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.776	37.476	1.4	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.4	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.4	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.4	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.4	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550	--	1.16	41.255	1.4	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.4	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
		SNS7B	42.000	--	1.028	43.175	1.4	0.275	1.5	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.32	43.556	1.4	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075	--	1.33	43.979	1.4	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.4	0.275	1.6	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.4	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.4	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000	--	1.101	47.33	1.4	0.275	1.6	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNAGT5A	45.000	--	1.031	46.405	1.4	0.275	1.5	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
		TNAGT5B	45.000	3	1.013	45.582	1.4	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	**1.01**	55'	EL	**27**	
EMERGENCY VEHICLE (EV)		EV2	28.750	--	1.617	46.483	1.3	0.275	2.37	55'	EL	27	0.523	2.27	55'	EL	5.4	0.80	0.275	1.62	55'	EL	27	
		EV3	43.000	4	1.049	45.107	1.3	0.275	1.54	55'	EL	27	0.523	1.53	55'	EL	5.4	0.80	0.275	**1.05**	55'	EL	**27**	

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:

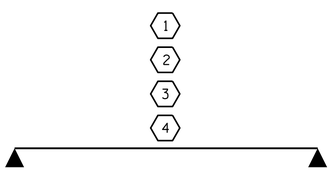
1.
2.
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)
(2) DESIGN LOAD RATING (HS-20)
(3) LEGAL LOAD RATING **
(4) EMERGENCY VEHICLE LOAD RATING **
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY
FOR SPANS A & B

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR 55' CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)

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

DRAWN BY: N. K. KAVANI DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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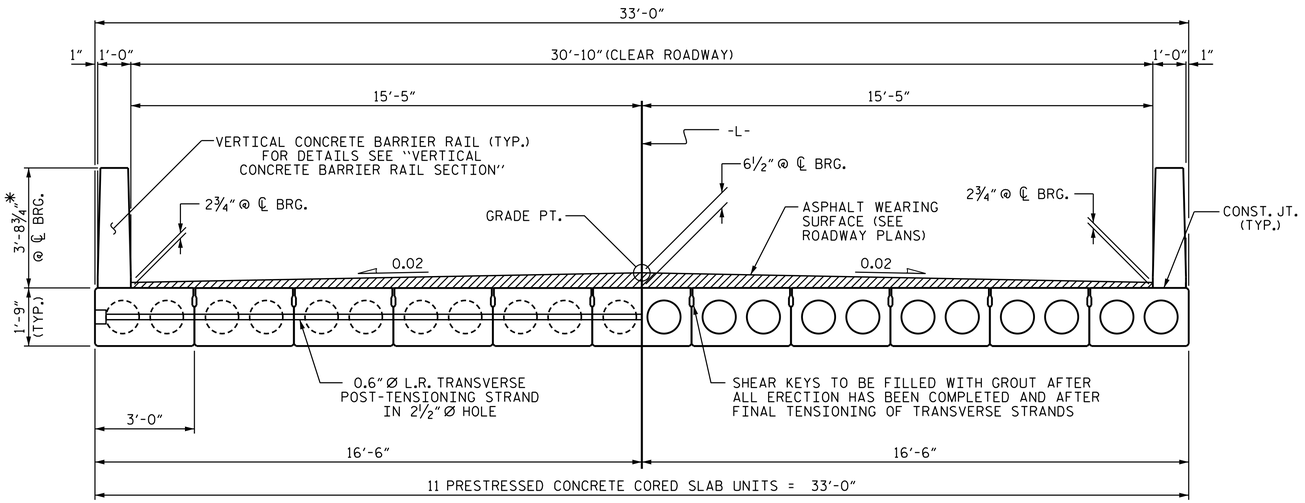
NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER Justin M. Robinson
3/7/2024

STD. NO. 21LRFR1_90S_55L

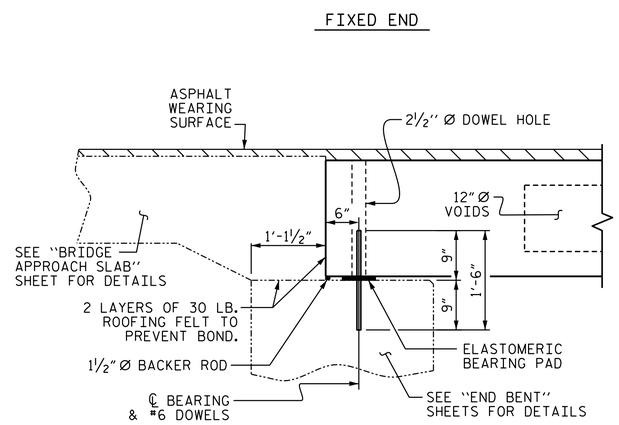


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

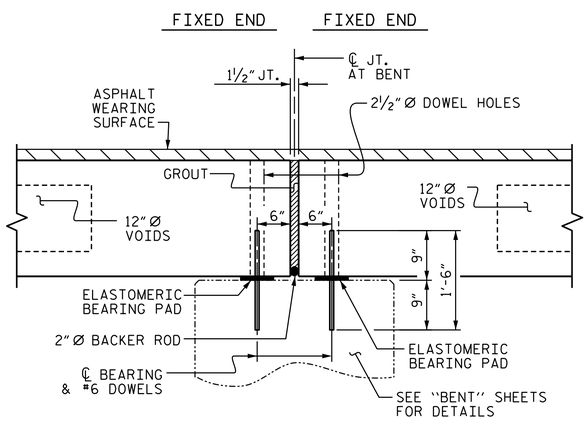
HALF SECTION
THROUGH VOIDS

TYPICAL SECTION

* - 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.



SECTION AT END BENT



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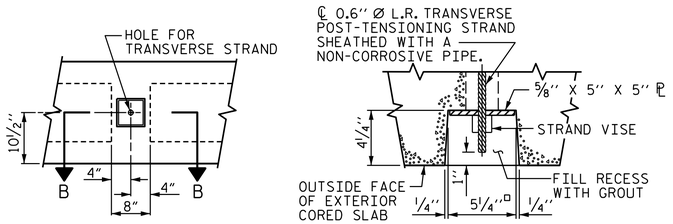
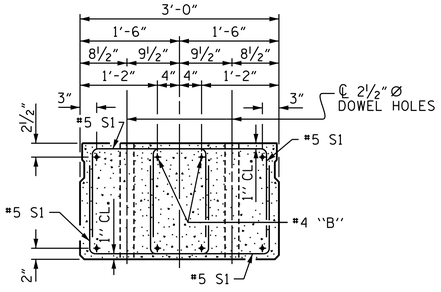


ELEVATION VIEW

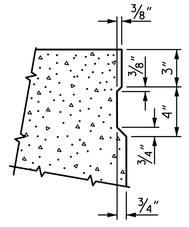
SECTION B-B

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



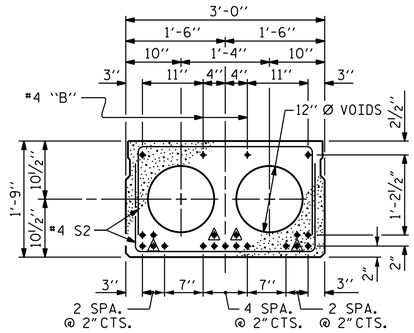
END ELEVATION

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.



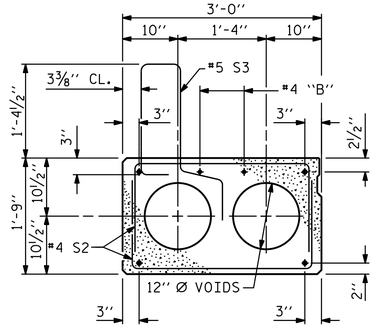
SHEAR KEY DETAIL

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



INTERIOR SLAB SECTION (55′ UNIT)

(19 STRANDS REQUIRED)



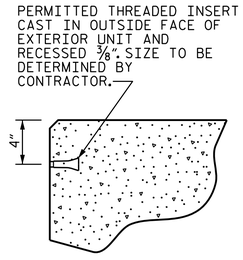
EXT. SLAB SECTION

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

0.6″ Ø LOW RELAXATION STRAND LAYOUT

△ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6′-0″ FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND



THREADED INSERT DETAIL

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3′-0″ X 1′-9″ PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			16

DRAWN BY: N. K. KAVANI DATE: 4-2023
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NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JOHN M. ROBINSON
3/7/2024

STD. NO. 21″PCS2_33_90S

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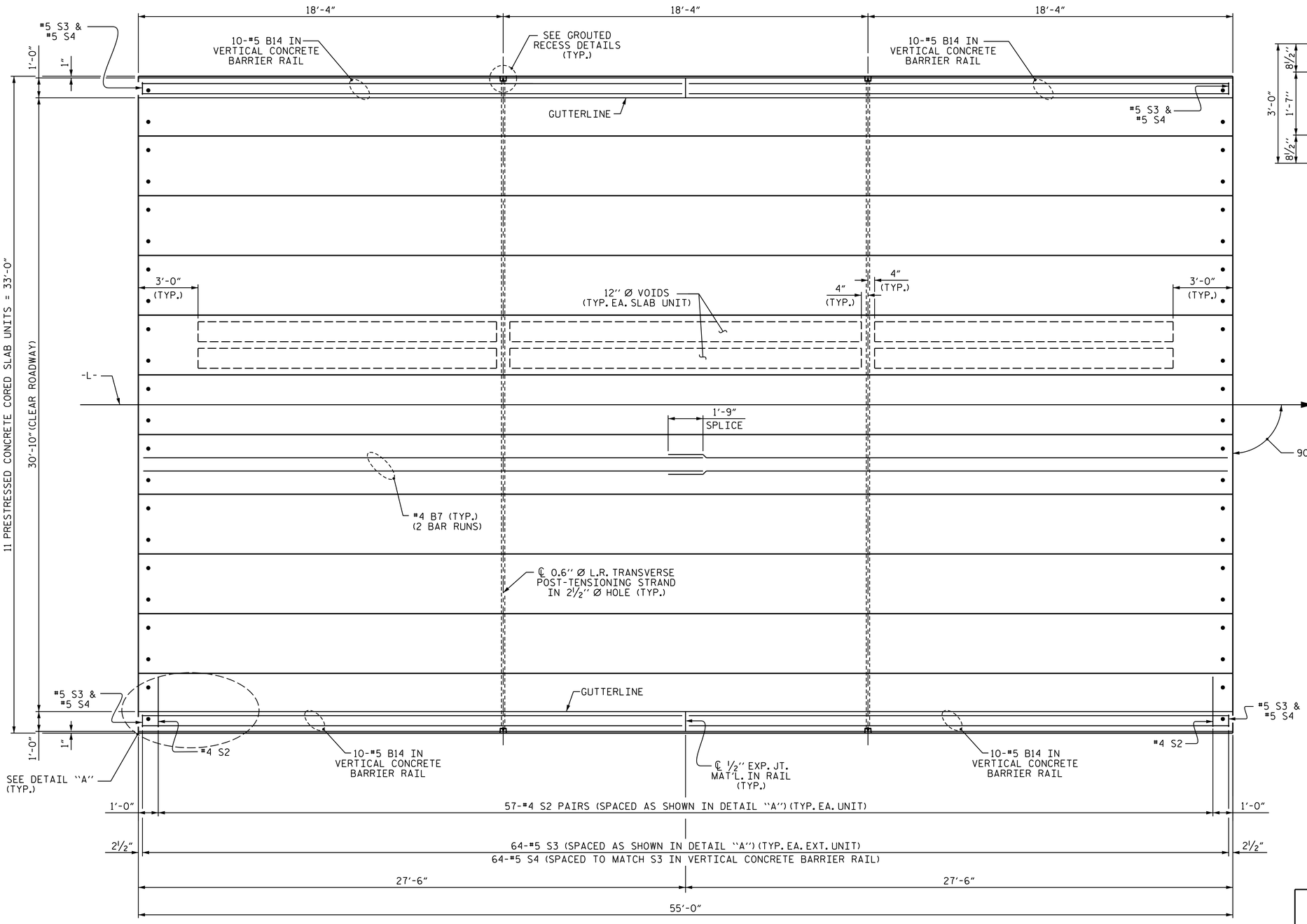
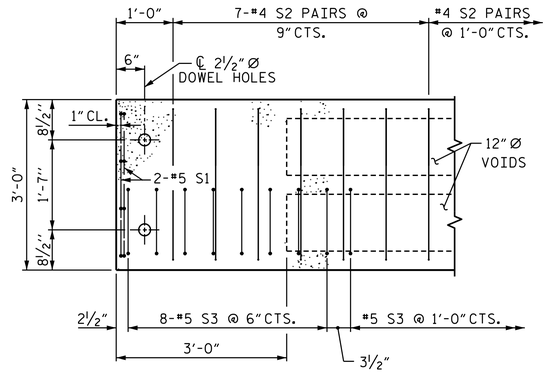


PLAN OF UNIT



DETAIL ″A″

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55′ UNIT 30′-10″ CLEAR ROADWAY 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			16

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3/7/2024

STD. NO. 21″PCS_33_90S_55L

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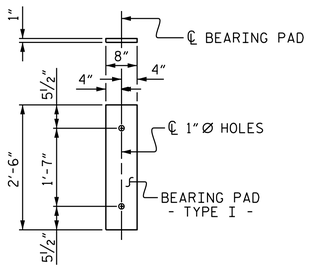


FIXED END
(TYPE I - 44 REQ'D)

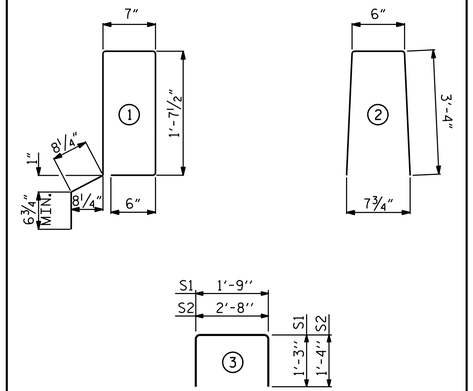
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
✳ S3	64	#5	1	5'-7"	373		
REINFORCING STEEL			LBS.		516		516
✳ EPOXY COATED REINFORCING STEEL			LBS.		373		
6500 P.S.I. CONCRETE			CU. YDS.		7.8		7.8
0.6"Ø L.R. STRANDS			No.		19		19

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

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.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL 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.

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.

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.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
55' UNITS	1⅝"	3'-7⅝"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	55' UNIT					
✳B14	40	80	#5	STR	27'-1"	2260
✳ S4	128	256	#5	2	7'-2"	1914
✳ EPOXY COATED REINFORCING STEEL				LBS.		4174
CLASS AA CONCRETE				CU.YDS.		28.2
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		220.5

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 1'-9"
55' CORED SLAB UNIT	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1½" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✳✳	⅜" ↓
FINAL CAMBER	1⅛" ↑

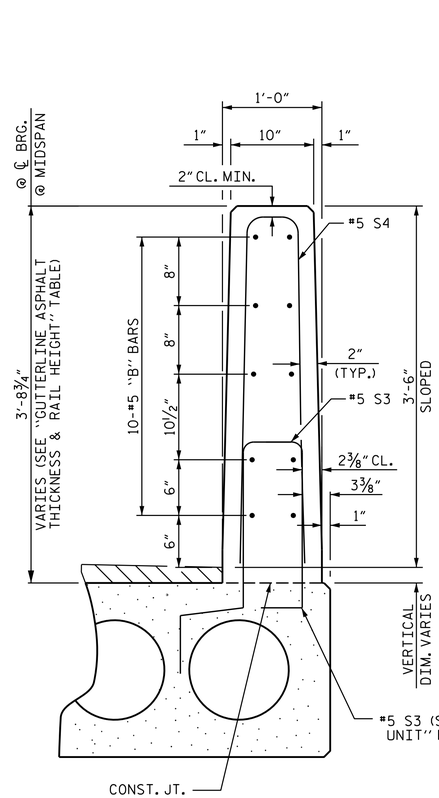
✳✳ INCLUDES FUTURE WEARING SURFACE

CONCRETE RELEASE STRENGTH

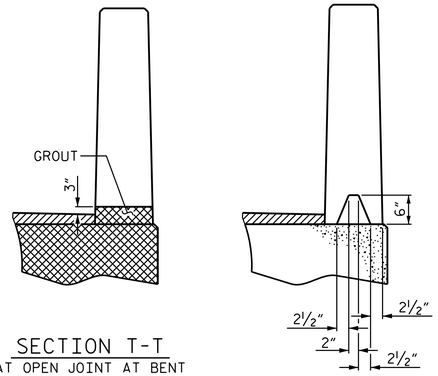
UNIT	PSI
55' UNITS	4900

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	4	55'-0"	220
INTERIOR C.S.	18	55'-0"	990
TOTAL			1210

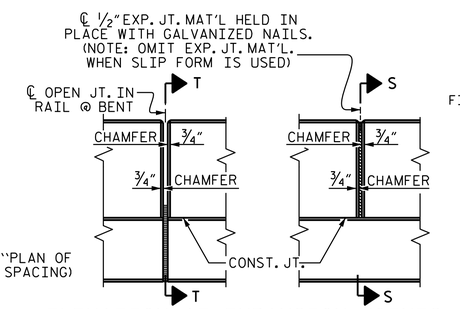


VERTICAL CONCRETE BARRIER RAIL SECTION

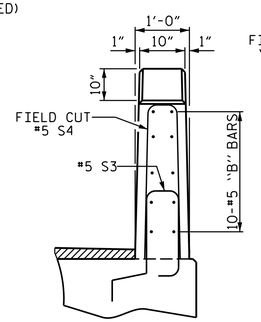


SECTION T-T
AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

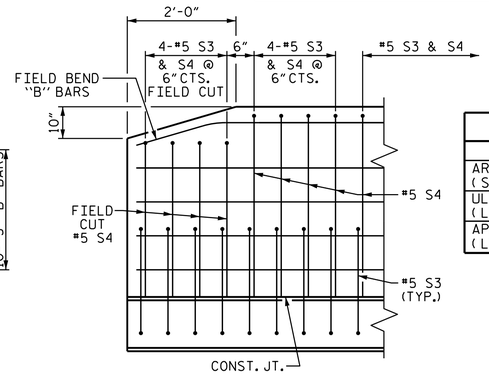
SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS



END VIEW



SIDE VIEW

END OF RAIL DETAILS

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

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			16

STD. NO. 21"PCS3_33_90S

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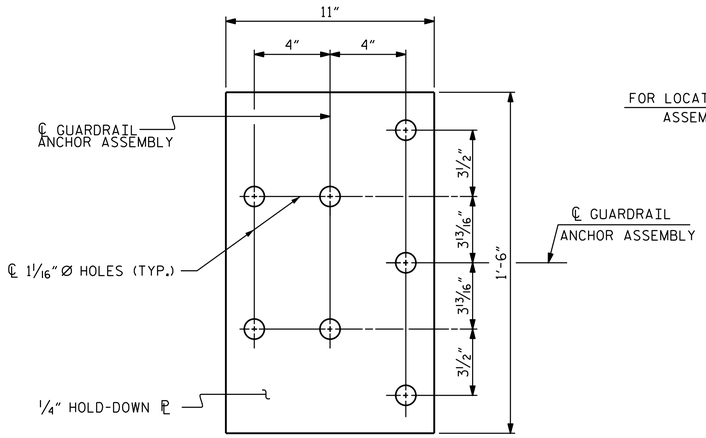
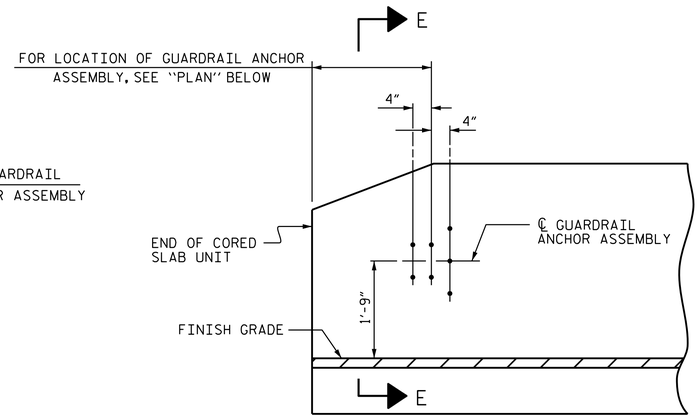


PLAN



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.)

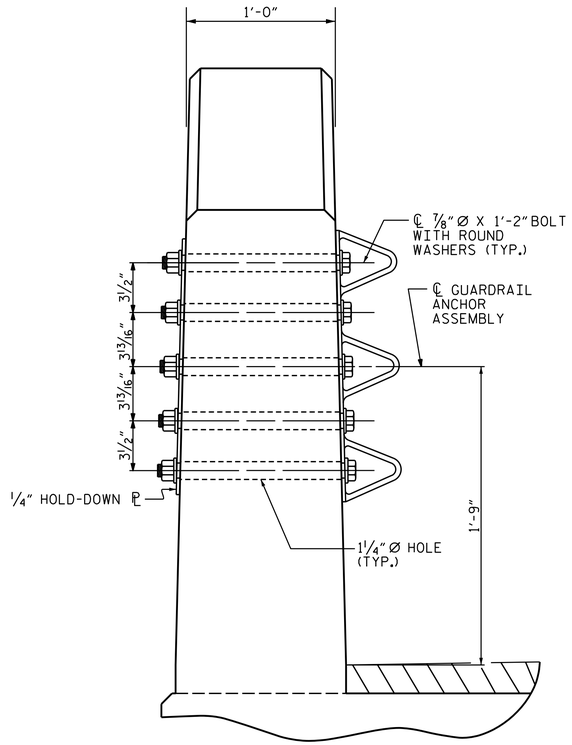
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

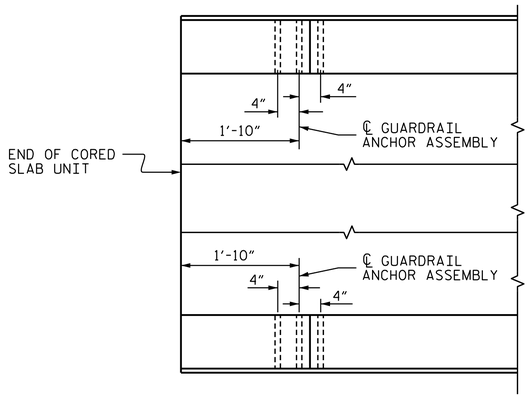
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

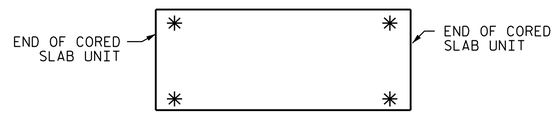
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

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-8
1			3			TOTAL SHEETS
2			4			16

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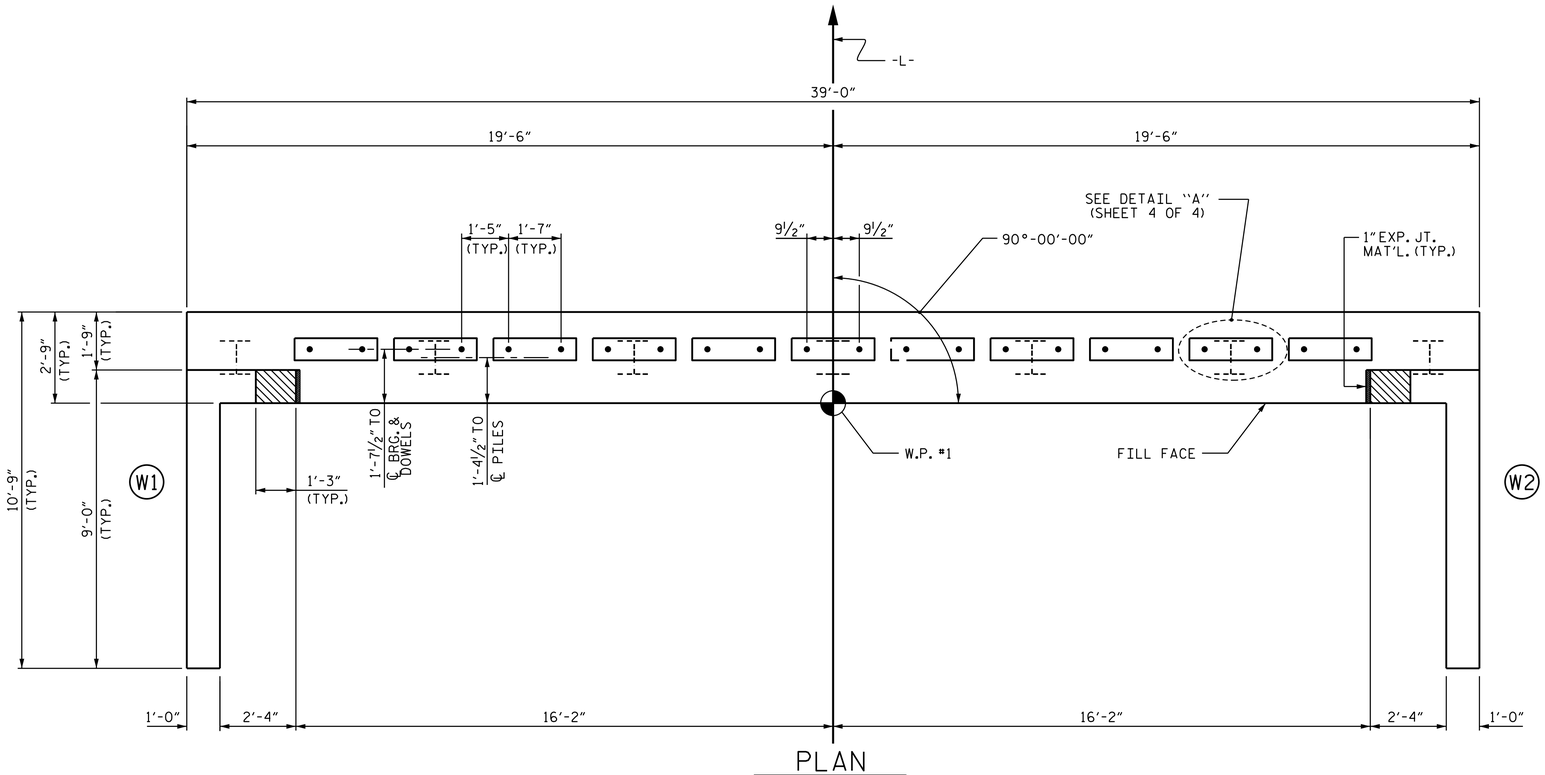
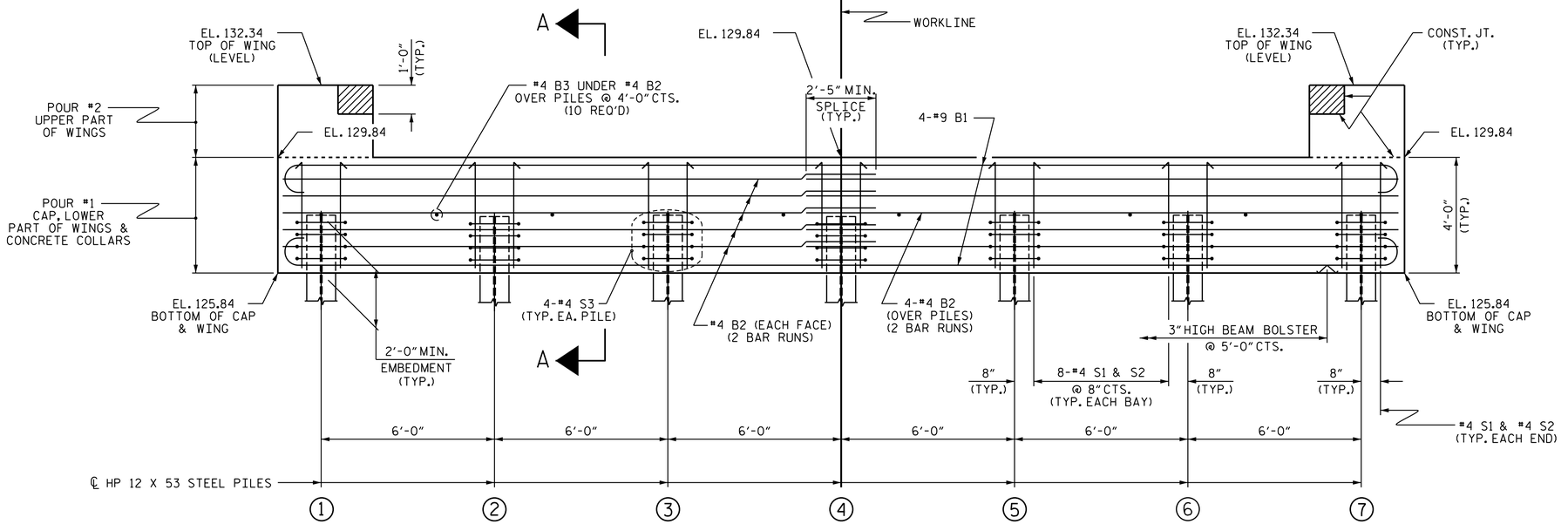


PLAN



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.

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.

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			16

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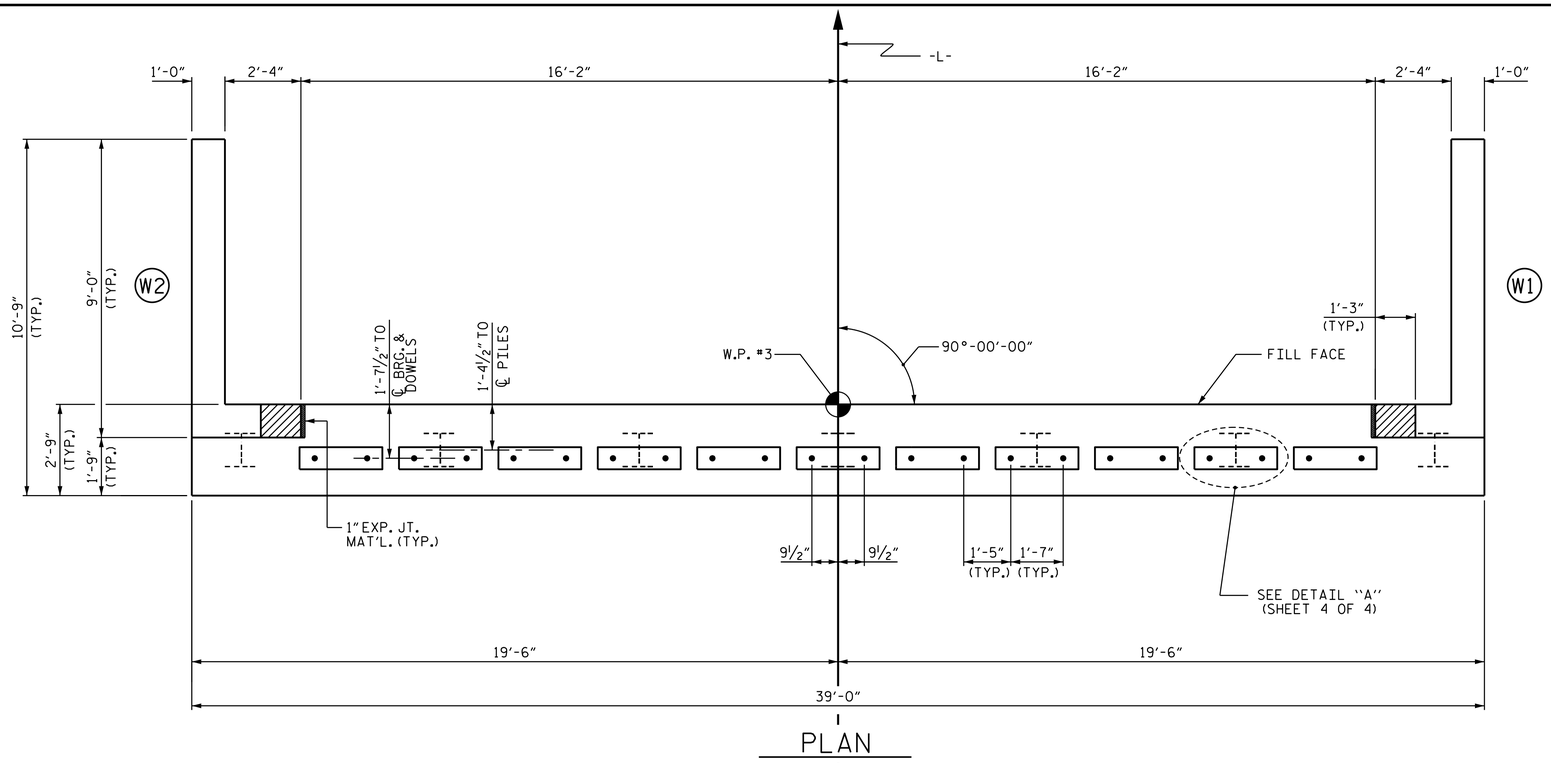

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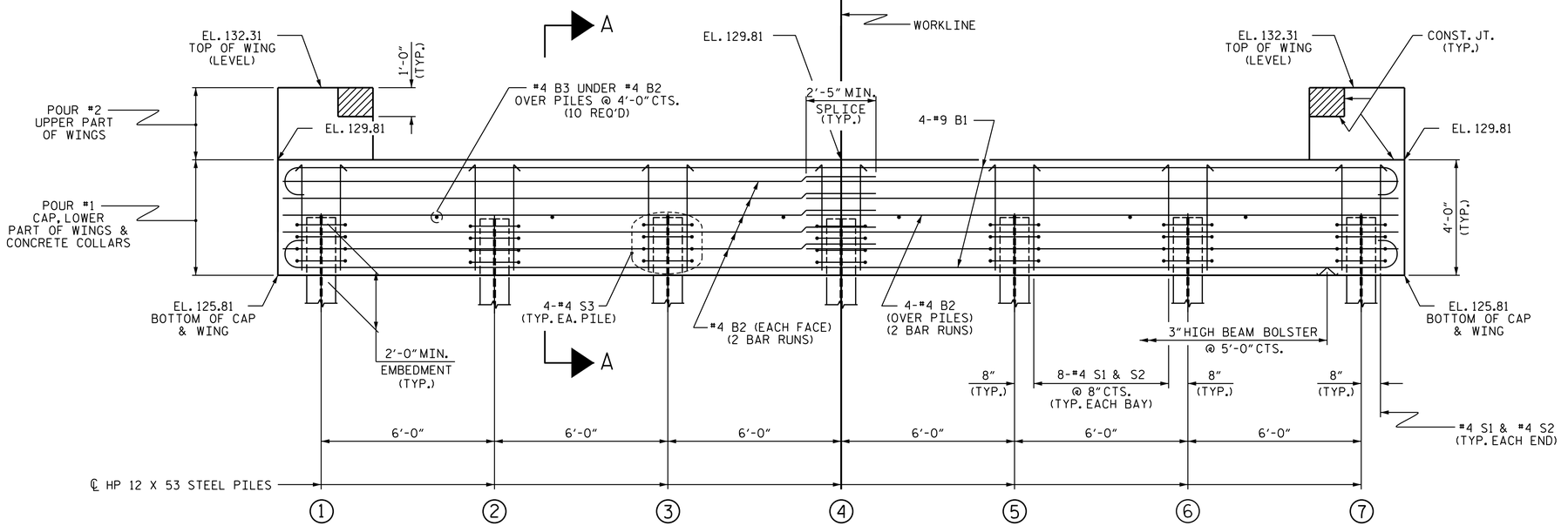

ELEVATION

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.

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.

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -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-10
1			3		TOTAL SHEETS
2			4		16

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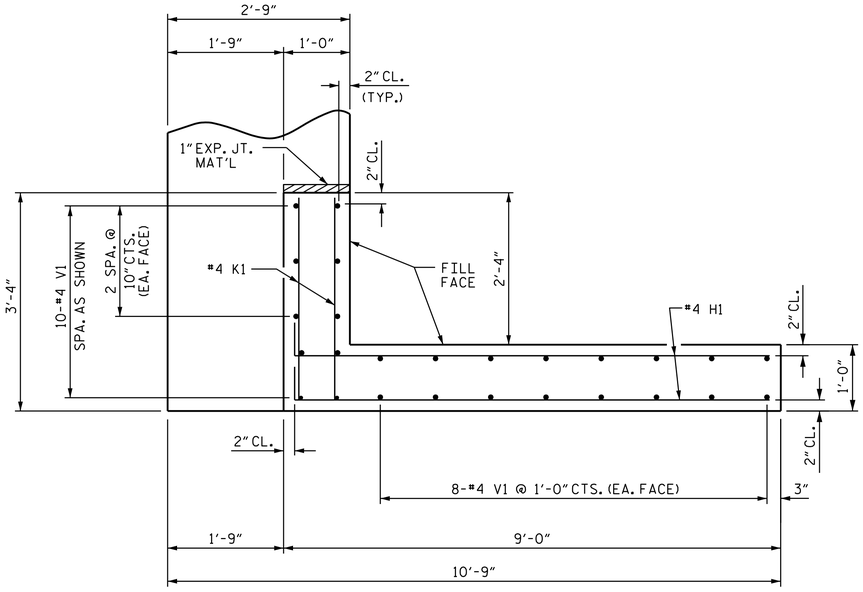
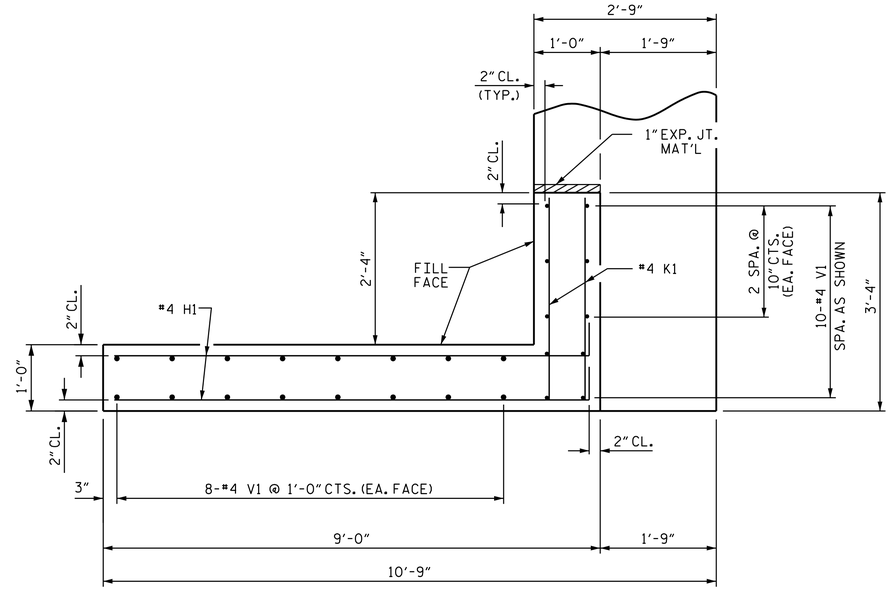
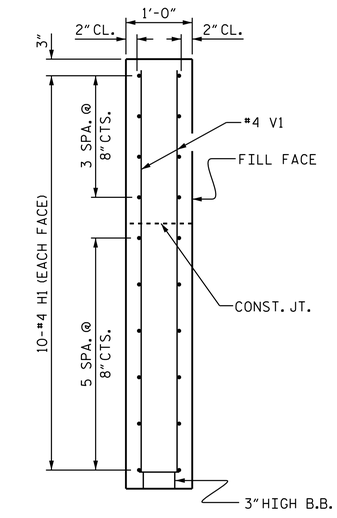


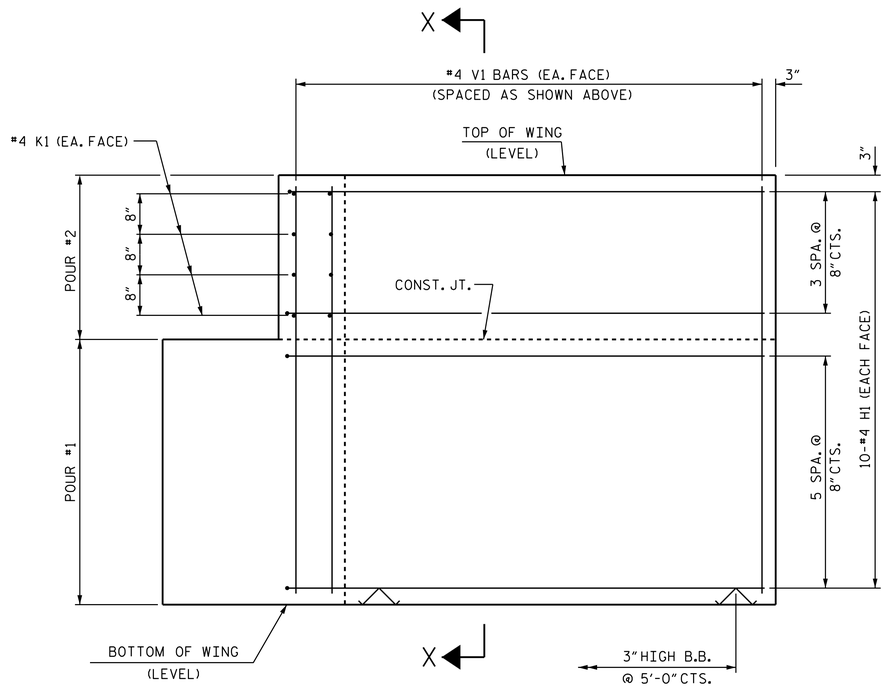
PLAN OF WING (W1)



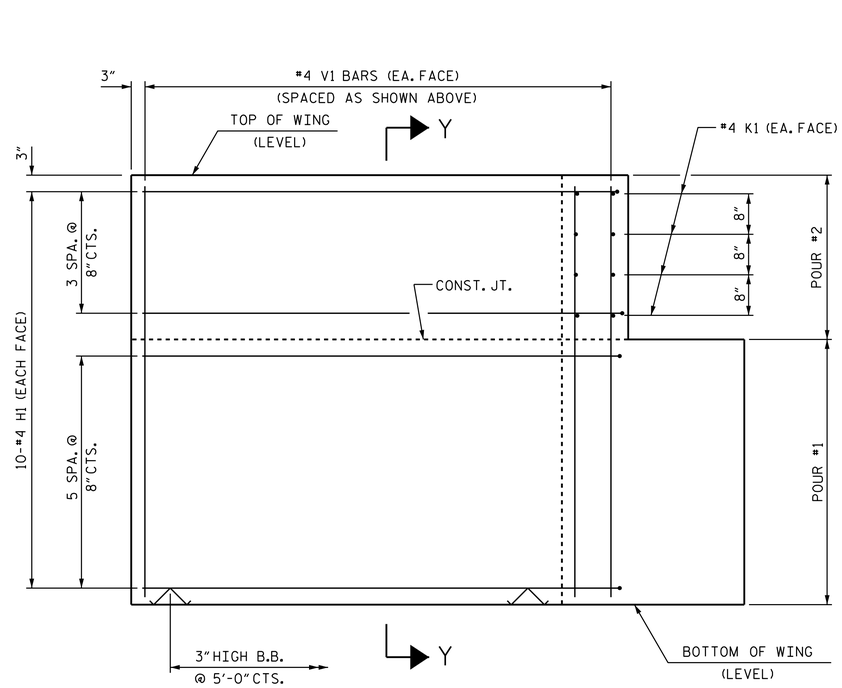
PLAN OF WING (W2)



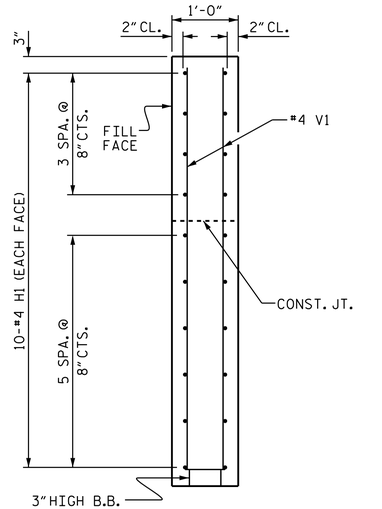
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

WING DETAILS

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

SHEET 3 OF 4

DRAWN BY:	N. K. KAVANI — DATE: 4-2023
CHECKED BY:	J. T. WILLIAMS — DATE: 4-2023
DESIGN ENGINEER OF RECORD:	J. M. ROBINSON — DATE: 4-2023

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PLANS PREPARED BY:
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LICENSE NO. F-0669

NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JUSTIN M. ROBINSON
3/7/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			16

STD. NO. EB_33_90S4

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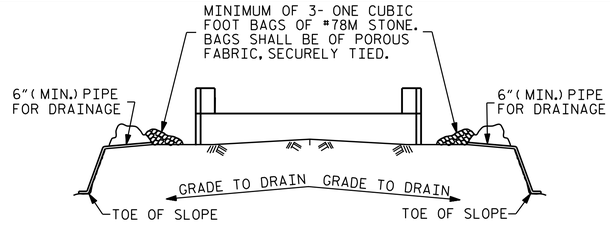
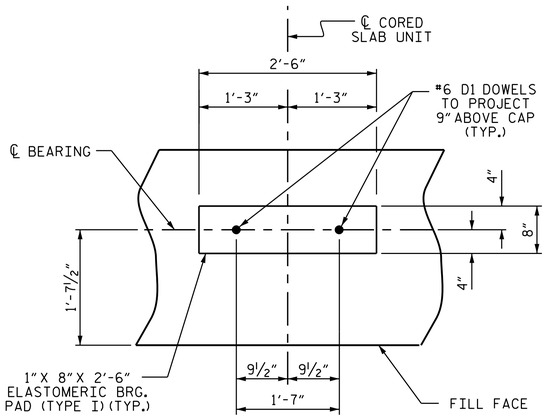


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

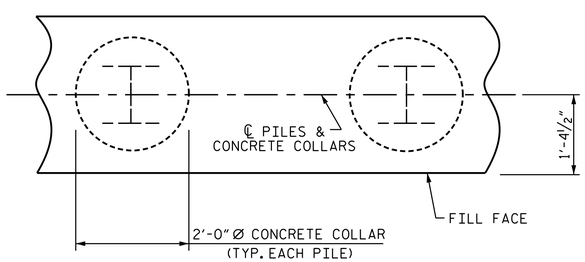
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

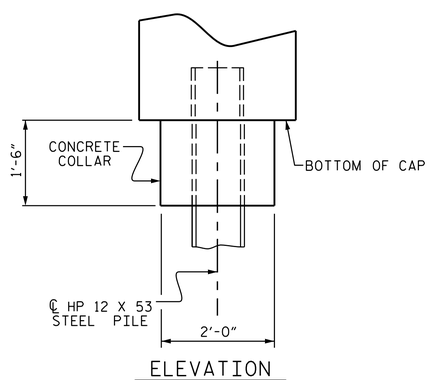


DETAIL "A"

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



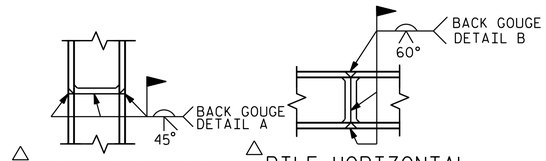
PLAN

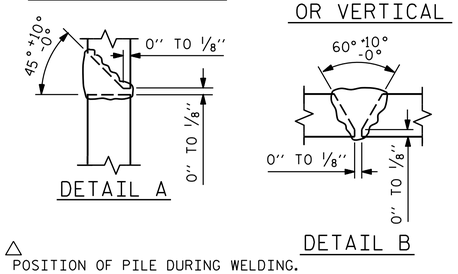


ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

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

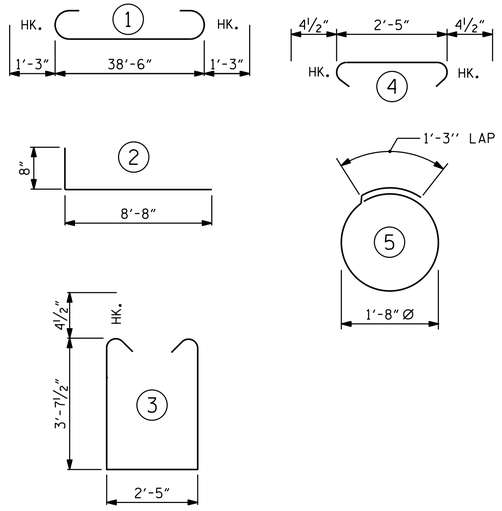




△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE END BENT (2 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-2"	214

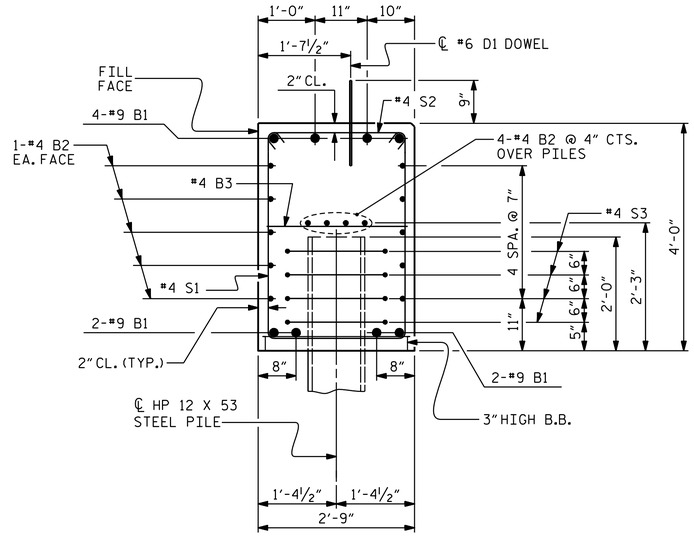
REINFORCING STEEL (FOR ONE END BENT) 2636 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 19.5 C.Y.

POUR #2 UPPER PART OF WINGS 2.1 C.Y.

TOTAL CLASS A CONCRETE 21.6 C.Y.



SECTION A-A

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

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039313 JOSHUA MICHAEL ROBINSON
3/7/2024

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 4 OF 4

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-12
1			3			TOTAL SHEETS
2			4			16

DRAWN BY: N. K. KAVANI DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

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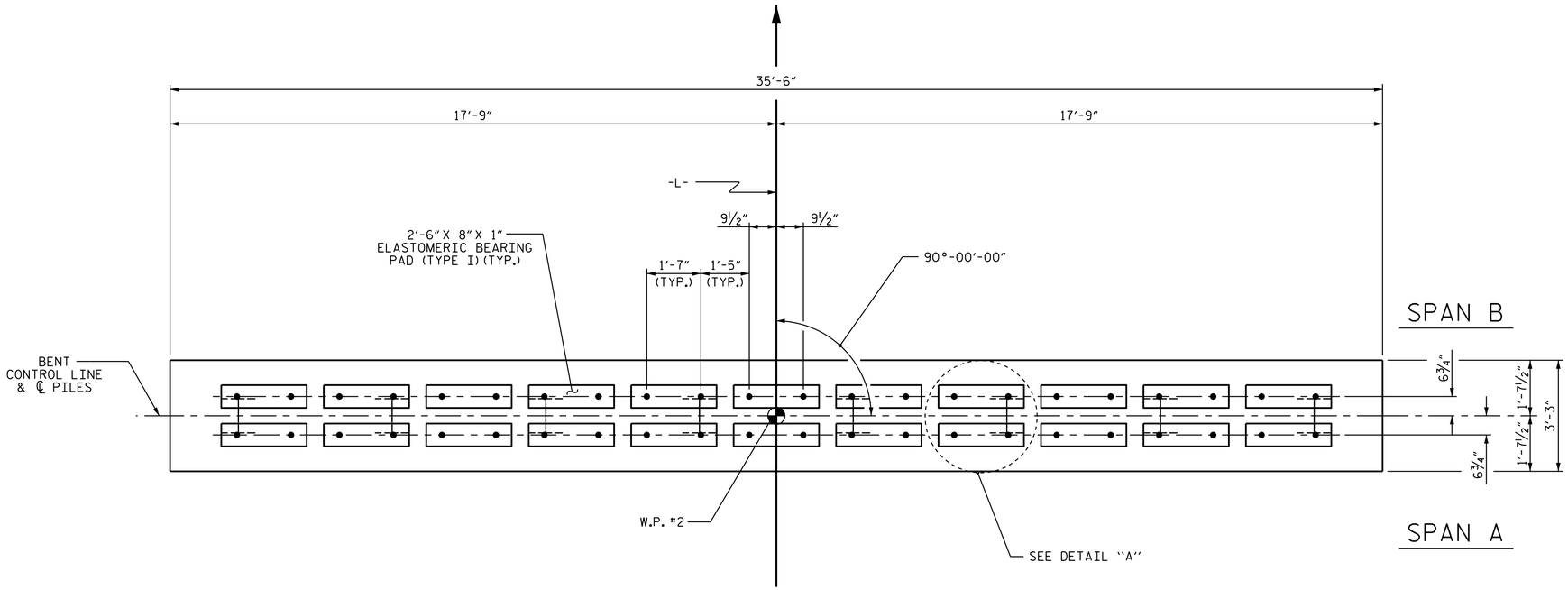
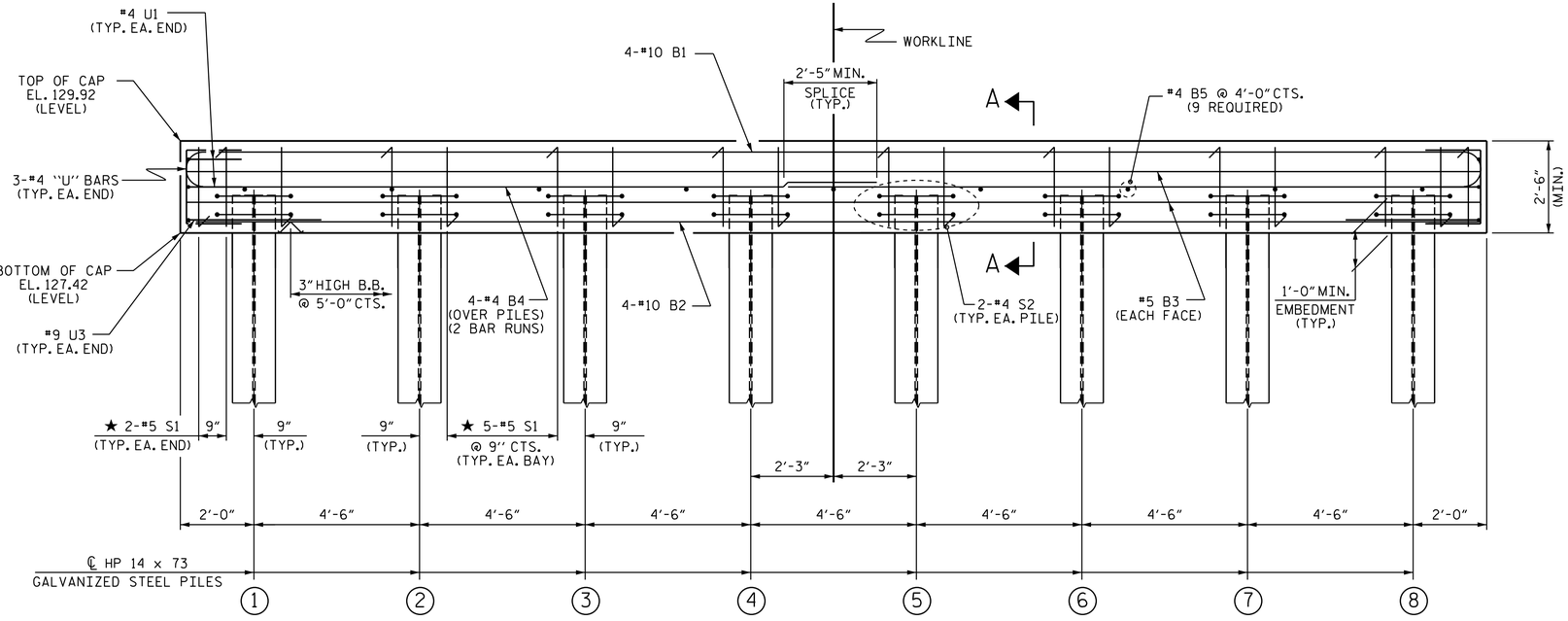


PLAN



ELEVATION

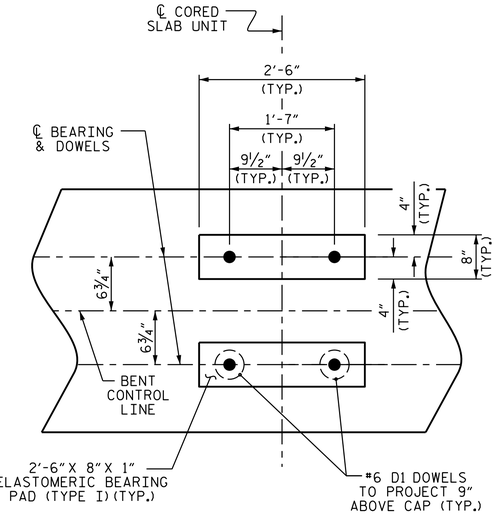
FOR SECTION A-A, SEE SHEET 2 OF 2

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			16

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NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JOSHUA T. WILLIAMS

3/7/2024

DRAWN BY:	N. K. KAVANI	DATE: 4-2023
CHECKED BY:	J. T. WILLIAMS	DATE: 4-2023
DESIGN ENGINEER OF RECORD:	J. M. ROBINSON	DATE: 4-2023

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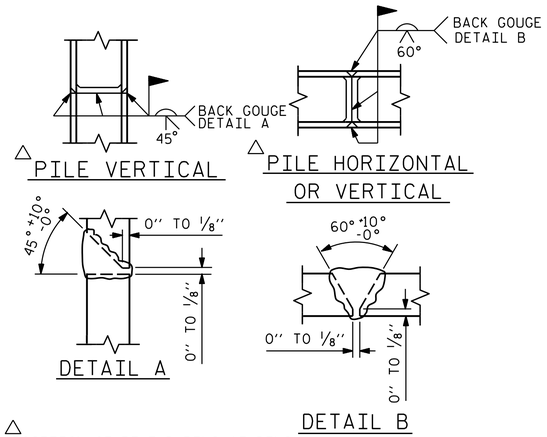
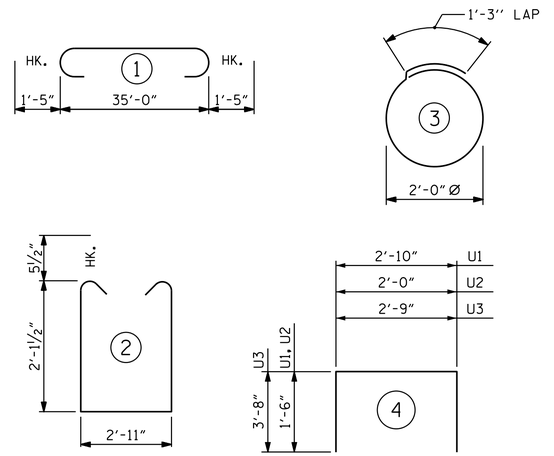


△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

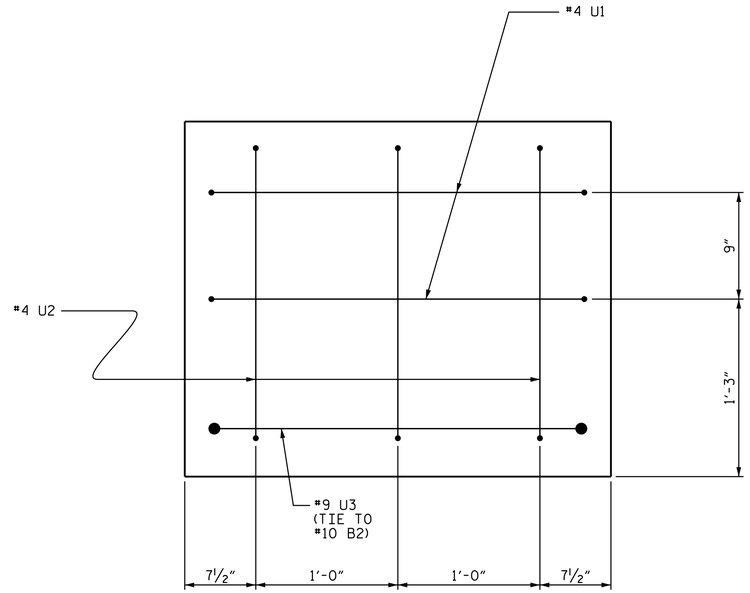
BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69

REINFORCING STEEL 2136 LBS

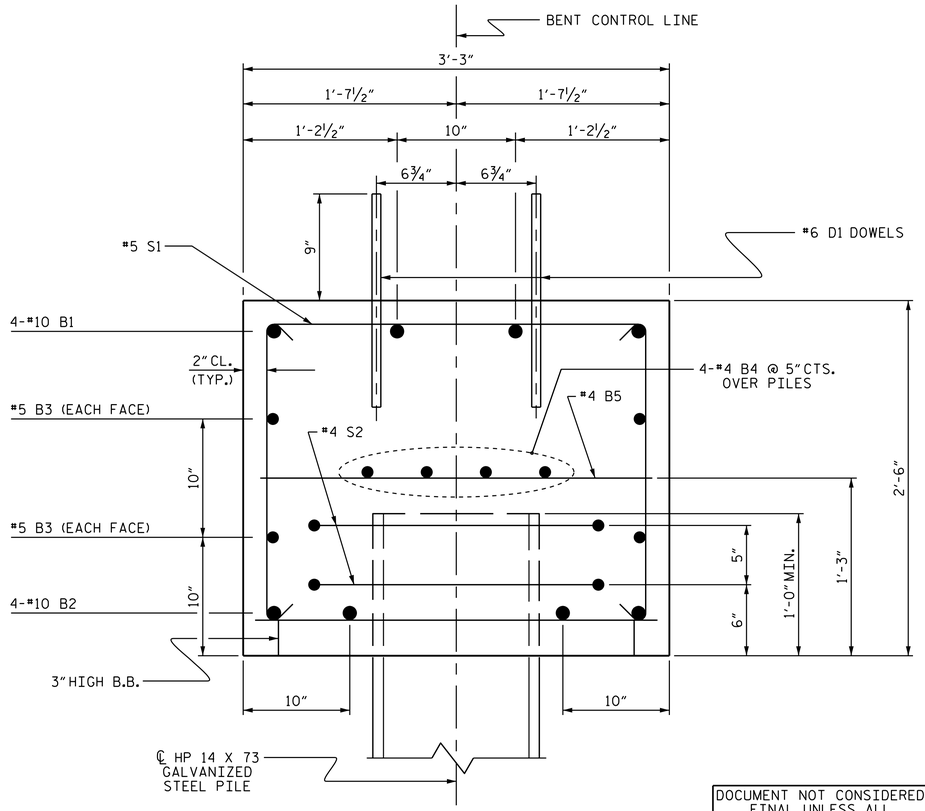
CLASS A CONCRETE BREAKDOWN

TOTAL CLASS A CONCRETE 10.7 C.Y.



END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION A-A

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NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JOSEPH M. ROBINSON
3/7/2024

PROJECT NO. B-5310
SAMPSON COUNTY
STATION: 17+25.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			16

DRAWN BY: N. K. KAVANI DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

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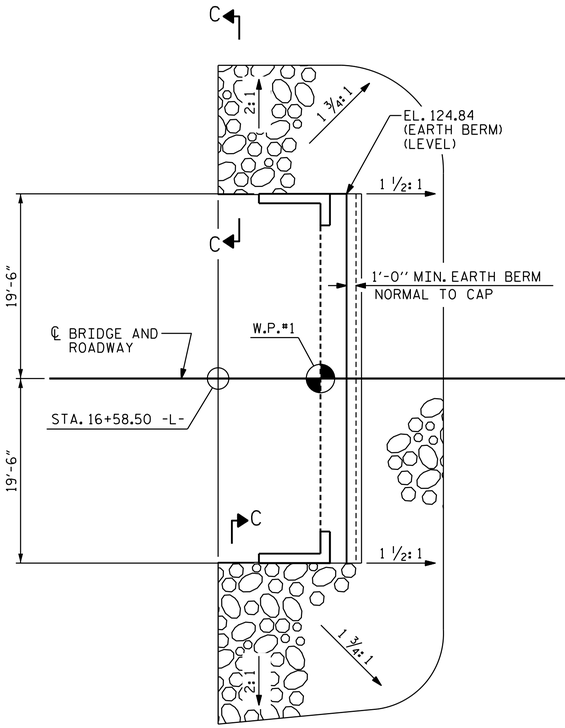
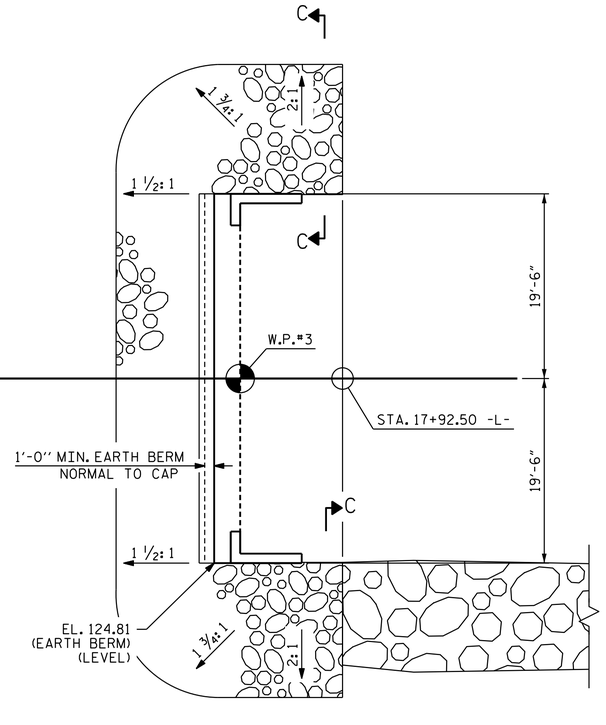
STD. NO. 14"HP_BT_33_90S_<60'

NOTES :

FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

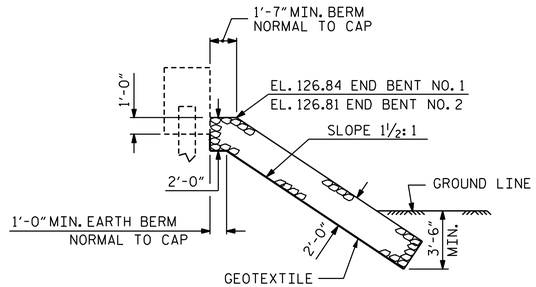


END BENT 1



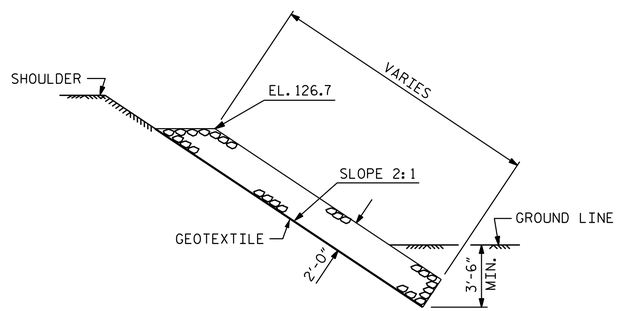
END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+25.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	123	136
END BENT 2	118	131



℄ SECTION

BERM RIP RAPPED



SECTION C-C

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			16

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039313 JOSHUA MATTHEW ROBINSON
3/7/2024

DRAWN BY:	L. L. BLANKENSHIP	DATE:	4-2023
CHECKED BY:	J. T. WILLIAMS	DATE:	4-2023
DESIGN ENGINEER OF RECORD:	J. M. ROBINSON	DATE:	4-2023

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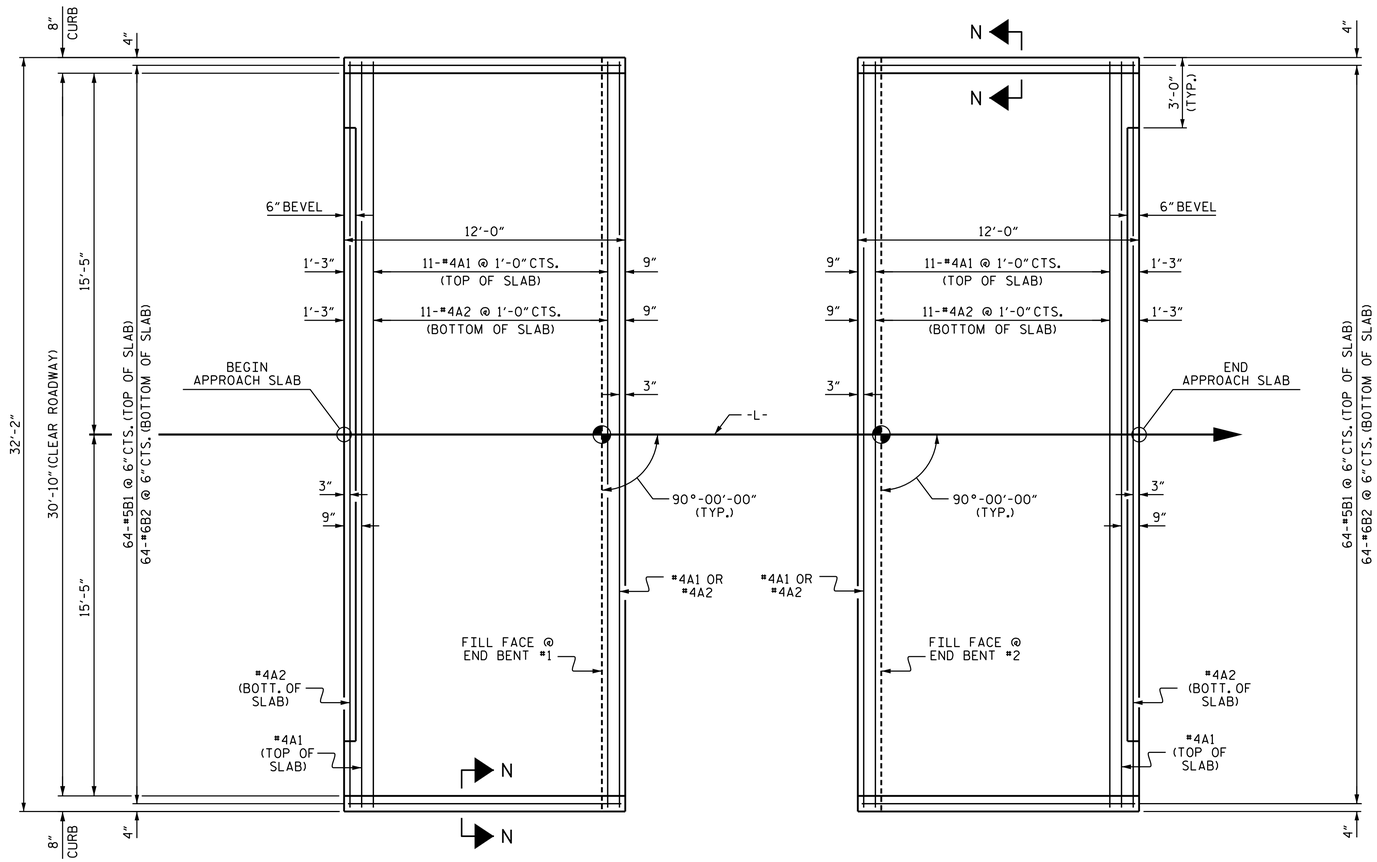
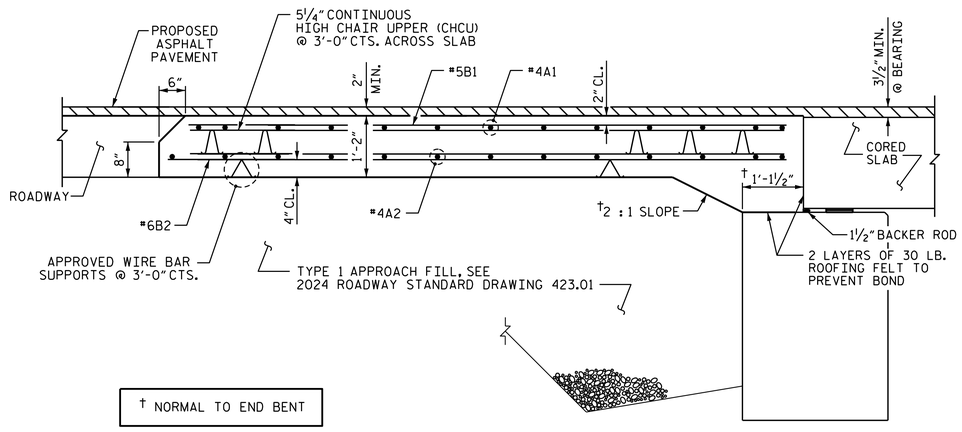


PLAN @ END BENT #1

PLAN @ END BENT #2

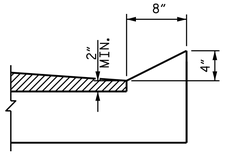
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



† NORMAL TO END BENT

SECTION THRU SLAB

(TYPE I (2024) APPROACH FILL)



SECTION N-N

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

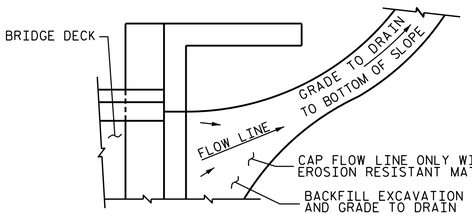
BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
✱ EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C.Y.	18.4

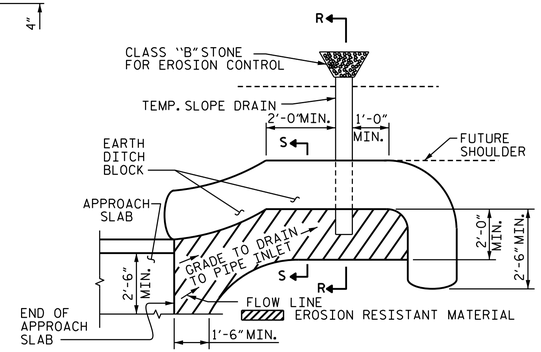
APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
✱ A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
✱ B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
✱ EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C.Y.	18.4



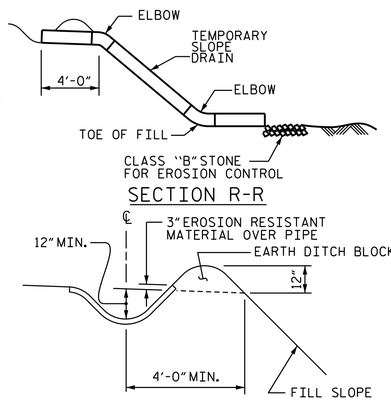
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



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)

PROJECT NO. B-5310

SAMPSON COUNTY

STATION: 17+25.50 -L-

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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NORTH CAROLINA PROFESSIONAL SEAL 039313 ENGINEER JOSEPH MARK ROBINSON
3/7/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
90° SKEW

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

SHEET NO. S-16

TOTAL SHEETS 16

STD. NO. BAS_33_90S

DRAWN BY: N. K. KAVANI DATE: 4-2023
CHECKED BY: J. T. WILLIAMS DATE: 4-2023
DESIGN ENGINEER OF RECORD: J. M. ROBINSON DATE: 4-2023

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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE AASHTO
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 AASHTO
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 2024 "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" ∅ SHEAR STUDS FOR THE ¾" ∅ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" ∅ STUDS FOR 4 - ¾" ∅ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" ∅ STUDS ALONG THE BEAM AS SHOWN FOR ¾" ∅ STUDS BASED ON THE RATIO OF 3 - ⅞"∅ STUDS FOR 4 - ¾" ∅ 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" 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.