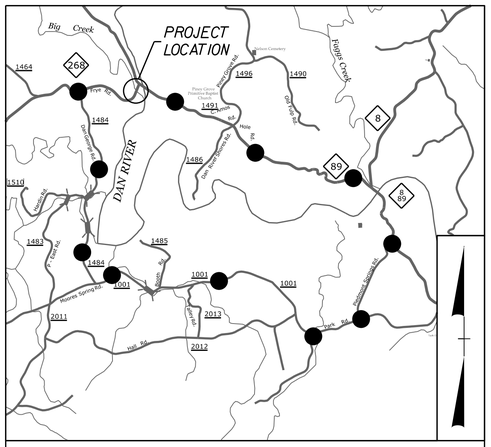
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09/08/99

TIP PROJECT: BR–0102

CONTRACT: DI00391

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

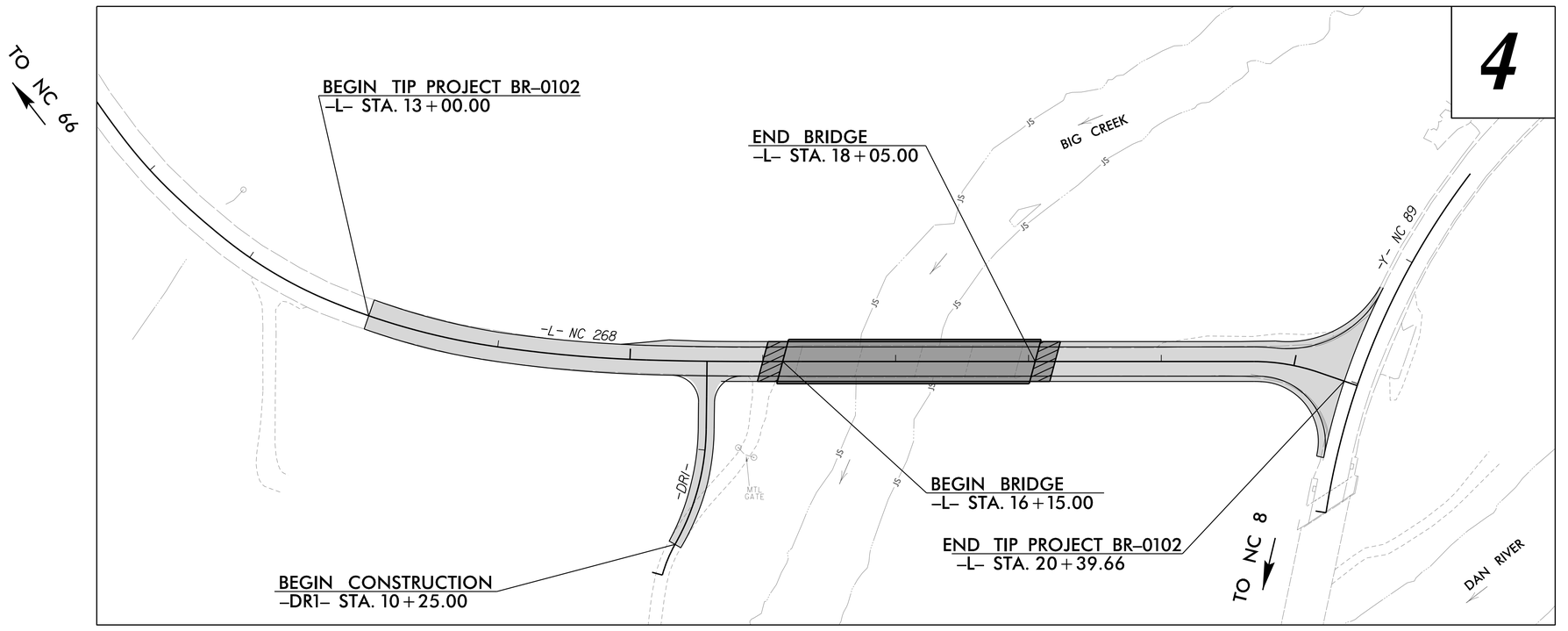
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR–0102	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
67102.1.1		PE
67102.2.1		RW/UTIL
67102.3.1		CONST

LOCATION: BRIDGE #840037 ON NC–268 OVER BIG CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE

NAD 83/2011

● DETOUR ROUTE



THIS PROJECT DOES NOT FALL WITHIN ANY MUNICIPAL BOUNDARIES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 2.5 0 5 10
PROFILE (VERTICAL)

DESIGN DATA

ADT 2026 = 1360
ADT 2046 = 1620
K = 10%
D = 60%
V = 40 MPH
* TTST = 3% DUAL 4%
FUNC CLASS = REGIONAL TIER
SPEED LIMIT = 55 MPH (STAT.)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR–0102 = 0.104 MILES

LENGTH STRUCTURES TIP PROJECT BR–0102 = 0.036 MILES

TOTAL LENGTH TIP PROJECT BR–0102 = 0.140 MILES

NCDOT CONTACT: JEREMY L. KEATON, PE, PLS
PROJECT MANAGER, DIVISION 9

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
FIRM NO. C-5176
1000 Social St. Suite 800.
Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.com

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 31, 2023

LETTING DATE: NOVEMBER 18, 2026

FAITH JAHNKE, PE
PROJECT ENGINEER

JOSHUA JERNIGAN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
10/1/2026
NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG
Signed by: He Yang
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
10/1/2026
NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE
DocuSigned by: Faith Jahnke
SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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faith.jahnke

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	1A

ROADWAY DESIGN ENGINEER

8/26/2026

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

Signed by: Faith E. Jahnke

DOCUSIGNED

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-3	ROADWAY DETAILS
3B-1	ROADWAY SUMMARY
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 5	PLAN AND PROFILE SHEET
RW-01 THRU RW-0X	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-5	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-10	CROSS-SECTIONS
S-1 THRU S-31	STRUCTURE PLANS

EFF. 01-16-2024
REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
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 1
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.20	Frames and Wide Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation
862.03	Structure Anchor Units (Use Detail in Lieu of Standard for Sheet 8 of 9)
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
REVISED:

GRADE LINE:
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 METHOD II.

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

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

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.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE AND CENTURY LINK.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

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coreyhark

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	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) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — 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 — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

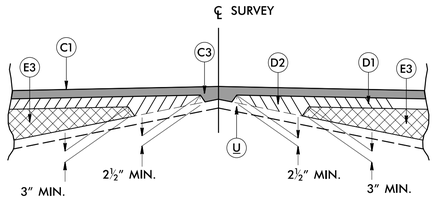
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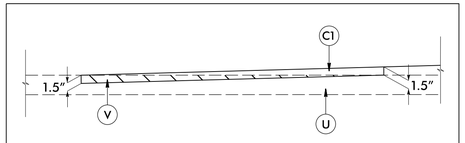
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	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.
C3	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 TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT GREATER THAN 5½" IN DEPTH OR LESS THAN 3" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	1½" MILLING OF BITUMINOUS PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

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



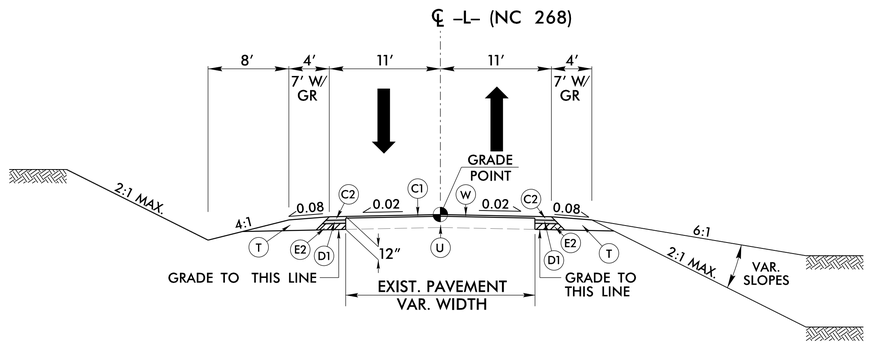
(W) Detail Showing Method of Wedging



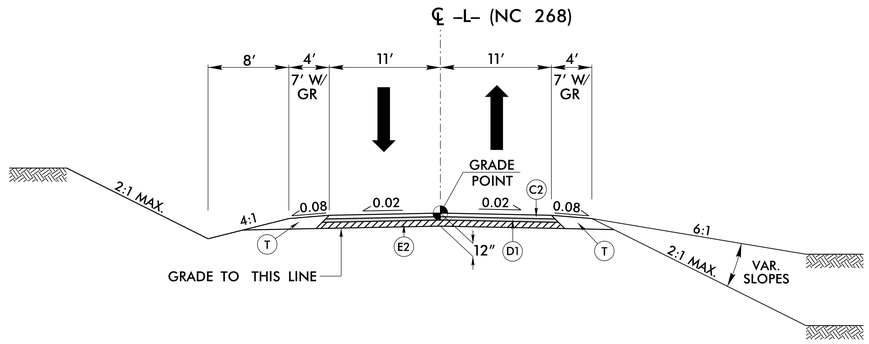
INCIDENTAL MILLING PAVEMENT KEY–IN DETAIL (TIE–IN)

–L– Sta. 13+00.00 TO Sta. 13+75.00
–L– Sta. 19+64.66 TO Sta. 20+39.66

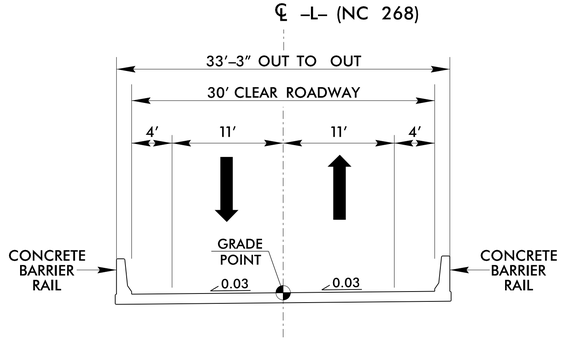
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TYPICAL SECTION NO. 1

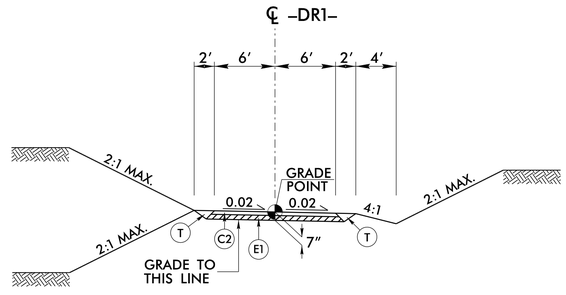


TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 3

SEE STRUCTURE PLANS FOR STRUCTURE CONSTRUCTION DETAILS.



TYPICAL SECTION NO. 4

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	2A-1

ROADWAY DESIGN ENGINEER

8/26/2026

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

Signed by: Faith E. Jahnke

PAVEMENT DESIGN ENGINEER

8/26/2026

NORTH CAROLINA PROFESSIONAL SEAL 057979 ENGINEER JEREMY L. KEATON

Docusigned by: Jeremy Keaton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

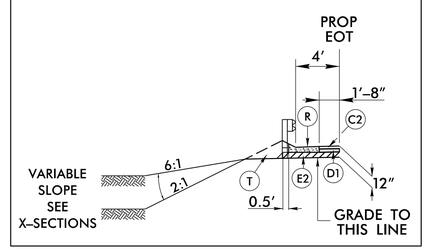
Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-576
1000 Social St., Suite 800,
Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6776

NOTE: PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS

USE TYPICAL SECTION NO. 1
–L– STA. 13+00.00 TO STA. 15+15.00
–L– STA. 18+55.00 TO STA. 20+39.66

SHOULDER BERM GUTTER PARTIAL TYPICAL



USE PARTIAL TYPICAL IN CONJUNCTION WITH TYP #2
–L– LT STA. 18+24.00 TO STA. 18+48.00

USE TYPICAL SECTION NO. 2
–L– STA. 15+15.00 TO STA. 16+15.00 (BEGIN BRIDGE)
–L– STA. 18+05.00 (END BRIDGE) TO STA. 18+55.00

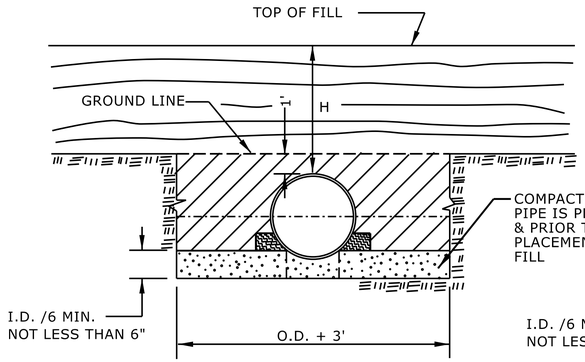
USE TYPICAL SECTION NO. 3
–L– STA. 16+15.00 (BEGIN BRIDGE) TO STA. 18+05.00 (END BRIDGE)

USE TYPICAL SECTION NO. 4
–DR1– STA. 10+25.00 TO STA. 11+55.81

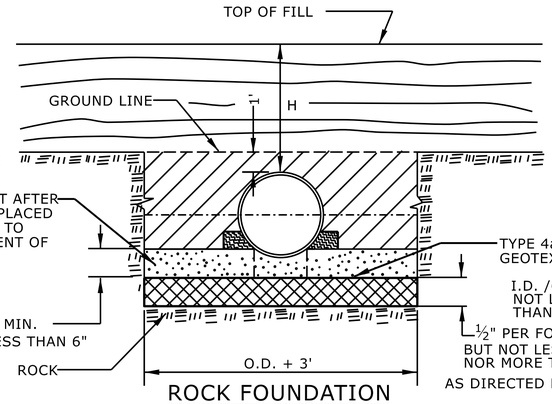
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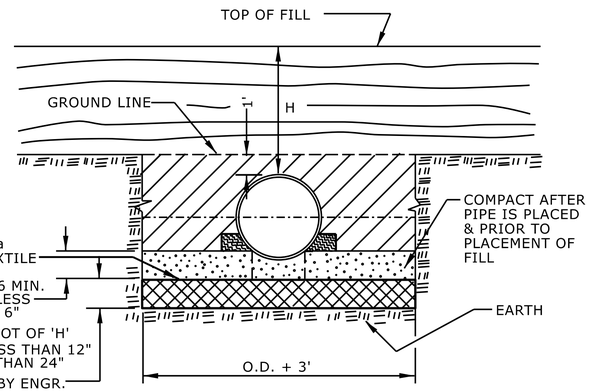
PROJECT REFERENCE NO.	SHEET NO.
BR-0102	2C-1



NORMAL EARTH FOUNDATION

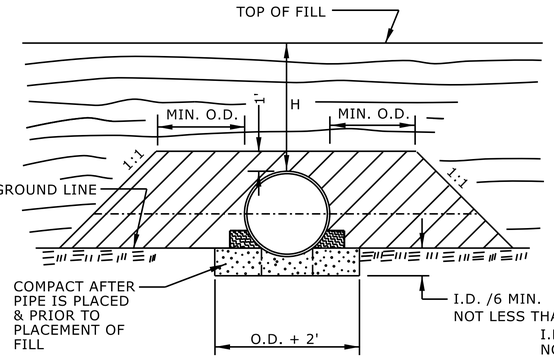


ROCK FOUNDATION

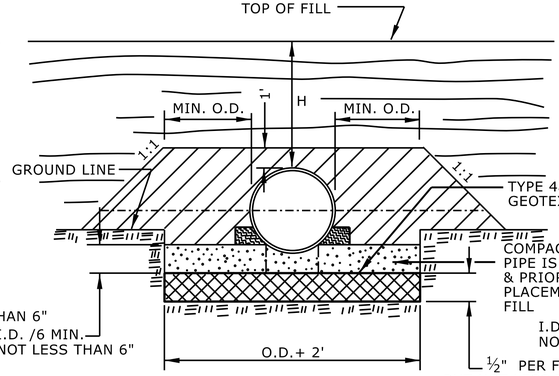


UNSUITABLE MATERIAL FOUNDATION

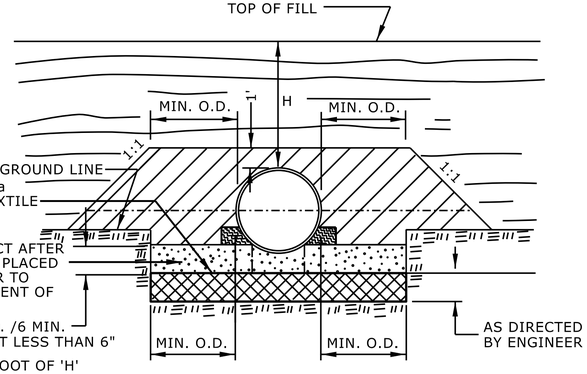
PIPE IN TRENCH



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

8/26/2026
NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER
Signed Nicole M Hackler
588432303416 4C5...

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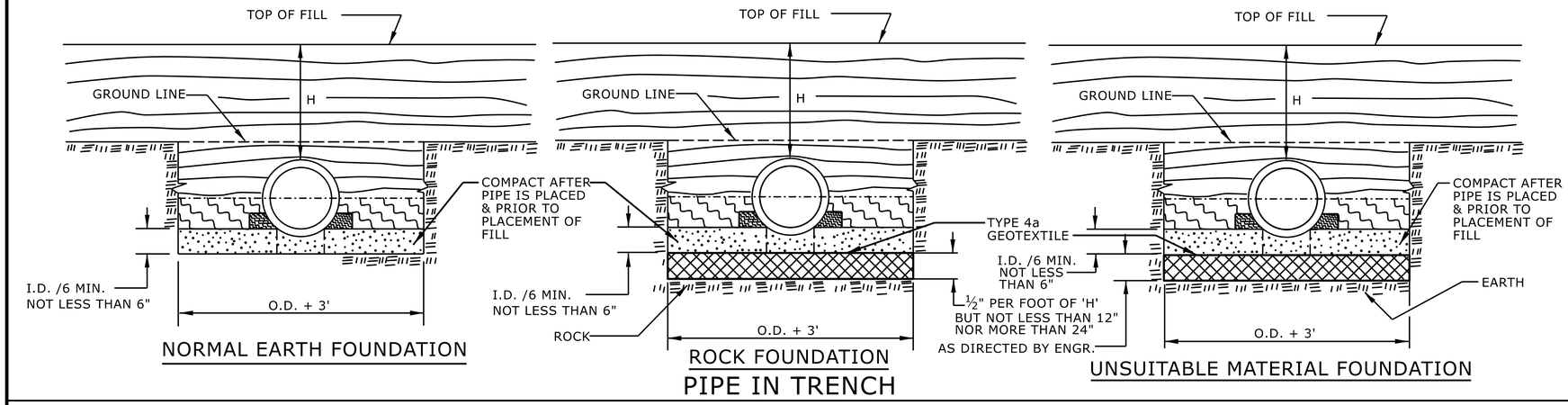
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
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SEE TITLE BLOCK

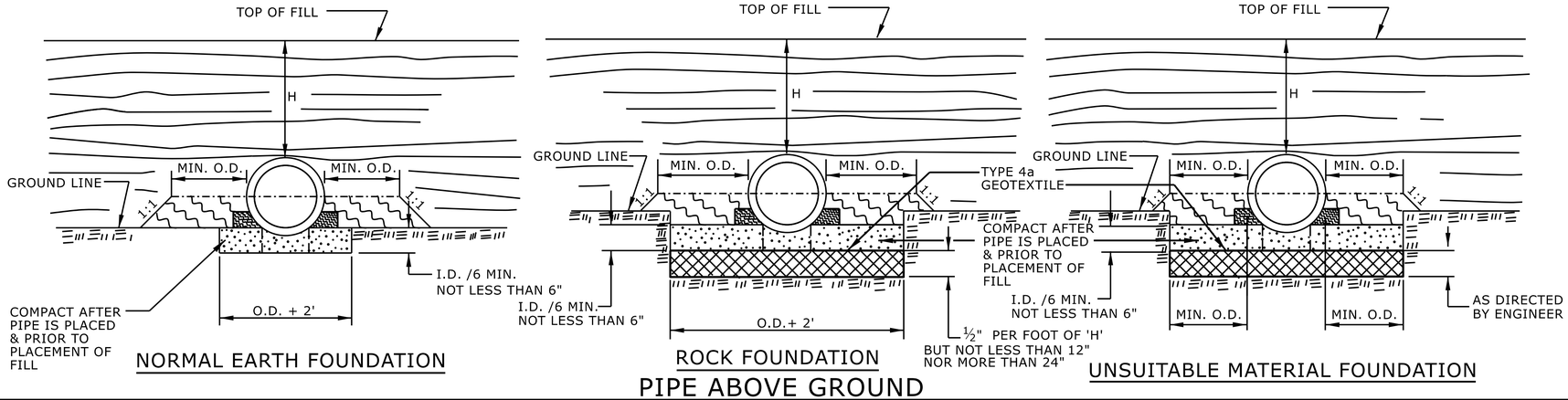
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

Docusign Envelope ID: E1718E48-8F6D-8EC7-8214-B6B72C75B196

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	2C-2



PIPE IN TRENCH



PIPE ABOVE GROUND

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

8/26/2026

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by: Nicole M Hackler

58843230341B4C5...

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CONTRACTS STANDARDS AND DEVELOPMENT UNIT

Office 919-707-6950 FAX 919-250-4119

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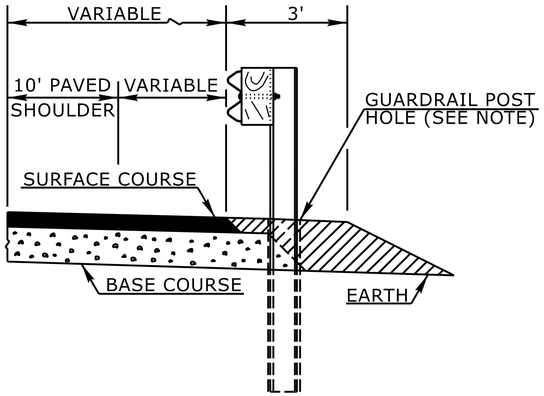
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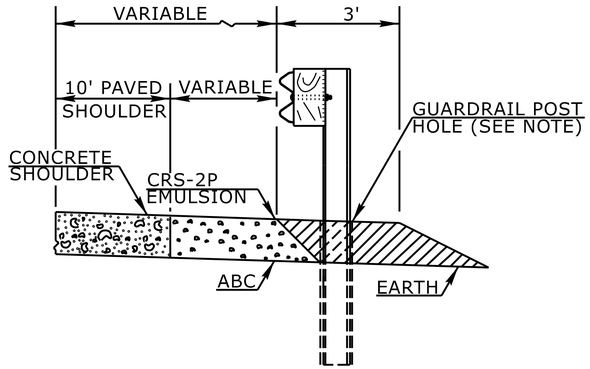
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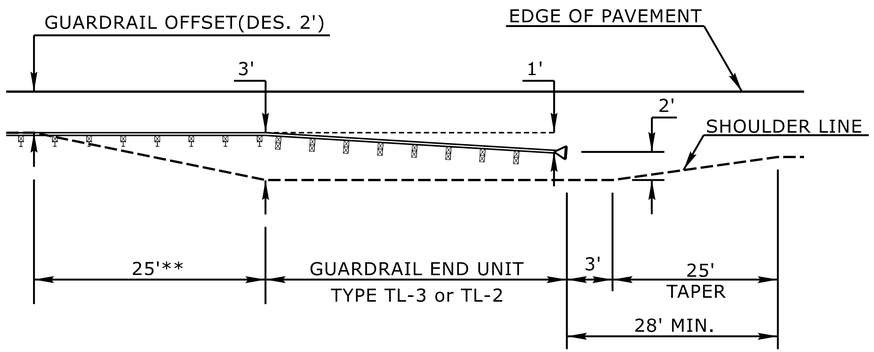
PROJECT REFERENCE NO.	SHEET NO.
BR-0102	2C-3



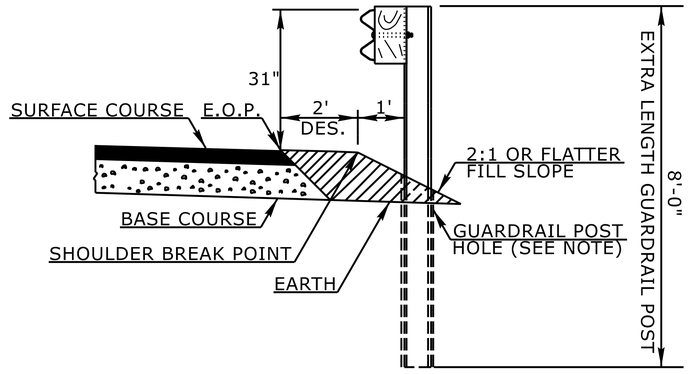
FLEXIBLE PAVED SHOULDER



CONCRETE PAVED SHOULDER



8' GUARDRAIL POST ON 2:1 SLOPE-END UNIT TRANSITION*
PLAN VIEW



8' GUARDRAIL POST ON 2:1 SLOPE*

* THE 8' GUARDRAIL POST ON 2:1 SLOPE DETAIL IS INTENDED FOR USE ONLY IN SEVERELY CONSTRAINED AREAS WITH A POSTED SPEED ≤ 60 MPH. GUARDRAIL END UNITS MAY NOT BE PLACED ON THE 2:1 SLOPE AND MUST TRANSITION TO THE SHOULDER.
** 8' GUARDRAIL POST SHOULD BE USED IN THIS RANGE

NOTE:
WHEN WOODEN GUARDRAIL POSTS ARE USED, DRILL HOLES THROUGH EARTH MATERIAL AND BASE COURSE.THE POST MAY THEN BE DRIVEN TO THE PROPER DEPTH. DRILL THE HOLE OF SUFFICIENT SIZE TO ACCOMMODATE THE PARTICULAR POST BEING USED. BACKFILL AND TAMP HOLES USING THE EXCAVATED MATERIAL.

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 11OF 15

862D01

8/26/2026
NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M HACKLER
Signed by: Nicole M Hackler
58843203D34164C5...

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CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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ORIGINAL BY: L.SMITH DATE: 10-14-2025
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

6/21/08

COMPUTED BY: DJH DATE: 8/30/2024
CHECKED BY: JLJ DATE: 8/30/2024

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	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

SUMMARY
GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-2	M-350	B-77	CAT-1	BIC	TYPE-III	AT-1	EA	G	NG				
-L-	15+68.22	16+10.97	RT	22.875'	56.25'		16+10.97		4'-0"	7'-0"									1				1							SHOP CURVE R=20'
-L-	15+31.36	16+19.03	LT	87.5'				15+90.00	4'-0"	7'-0"		25'		0.5'			1		1										
-L-	18+00.97	20+39.66	RT	168.75'	81.25'			18+00.97	4'-0"	7'-0"									1										SHOP CURVE R=45'
-L-	18+07.95	19+82.95	LT	175'			19+00.00		4'-0"	7'-0"	25'		0.5'				1		1										
-Y-		REPLACEMENT OF EXISTING		62.5'															1									163		
		SUBTOTAL:		516.625'	137.5'																									
		LESS ANCHOR DEDUCTIONS (-)																												
		(5) TYPE B-77 @ 22.875' EA.		114.375'																										
		(2) GREU TL-2 @ 25.0' EA.		50.0'																										
ADDITIONAL GR POST: 5 EA		(1) GREU AT-1 @ 6.25' EA.			6.25'																									
PROJECT TOTALS:				362.5'	131.25'												2		5				1					163		

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- STA. 13+00.00 TO STA. 16+15.00	181		286	105	
-L- STA. 18+05.00 TO STA. 20+39.66	21		376	355	
SUBTOTAL	202		662	460	
-DR1- STA. 10+25.00 TO STA. 11+55.81			86	2	
SUBTOTAL	84		86	2	
SHEET TOTALS	286		749	463	
PROJECT TOTALS	286		749	463	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				23	
GRAND TOTAL	286			486	
SAY	290			490	

CONTINGENCY UNDERCUT EXCAVATION = 450 CY
CONTINGENCY SELECT GRANULAR MATERIAL = 400 CY
CONTINGENCY GEOTEXTILE FOR SOIL STABILIZATION = 400 SY

APPROXIMATE QUANTITIES ONLY. FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

SUMMARY OF ASPHALT PAVEMENT REMOVAL

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	13+00.00	14+41.00	LT	8.42
-L-	15+15.00	16+27.00	CL	263.02
-L-	17+93.00	18+55.00	CL	151.22
-L-	19+22.00	23+36.00	LT	12.07
-L-	19+59.00	20+20.00	RT	6.89
			TOTAL:	433.20
			SAY:	440

SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LF
-L-	18+24	18+48	LT	24.0'
			TOTAL:	24.0'
			SAY:	24.0'

18 MAY 2026 14:52
BR0102_3B1_sundgn
ZDS/dwk

41INFRA072024A

COMPUTED BY:	HY	DATE:	1/8/2025
CHECKED BY:	PMH	DATE:	1/8/2025

PROJECT NO.	SHEET NO.
BR-0102	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 12	15	18	24	30	36	42	48		R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	
L 13+99	24 RT	0401																32							
L 15+63	31 RT	0402																52							
L 18+31	15 LT	0403		785.6																					
		0403	0404		781.6	781.2												8							
L 18+43	15 LT	0404		785.2																					
		0404	0405		781.2	768.5			40																
L 14+00	20 RT																								
SHEET TOTALS									40									92							
PROJECT TOTALS									40									92							

LINE & STATION	FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28
L 13+99	0401																					
L 15+63	0402																					
L 18+31	0403					1																
	0403	0404																				
L 18+43	0404					1																
	0404	0405																				
L 14+00																						
SHEET TOTALS						2																
PROJECT TOTALS						2																

LINE & STATION	FROM	TO	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54
L 13+99	0401																				
L 15+63	0402																				
L 18+31	0403			1												1					
	0403	0404																			
L 18+43	0404			1												1					
	0404	0405																			
L 14+00																					
SHEET TOTALS				2												2					
PROJECT TOTALS				2												2					

LINE & STATION	FROM	TO	CONVERT EXISTING C.B. TO J.B.	CONVERT EXISTING C.B. TO D.I.	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.		15" DRAINAGE PIPE ELBOW	BERM DITCH OUTLET STD. 850.10 (PER EACH)	BERM DITCH OUTLET STD. 850.11 (PER EACH)	MODIFIED CONC. FLUME	PREFORMED SCOUR HOLE (PER EACH)	ENERGY DISSIPATION BASIN		FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 13+99	0401																				
L 15+63	0402																				
L 18+31	0403																				
	0403	0404																			
L 18+43	0404																				
	0404	0405								2											
L 14+00																				19	
SHEET TOTALS										2										19	
PROJECT TOTALS										2										19	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

COMPUTED BY: A. Suttle, PG DATE: 05/20/2025 CHECKED BY: M. Mulla, PE DATE: 05/21/2025	(9-17-24)	PROJECT NO. BR-0102	SHEET NO. 3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU1	12	100	200	300		
			TOTAL CY/TONS/SY:		100	200**	300**	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
*AST = Aggregate Stabilization
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

Docusign Envelope ID: 2A09E845-AFC7-88E4-822E-A9AA529CC9B2

8/17/99

-L-

PI Sta 10+34.85	PI Sta 10+95.75	PI Sta 11+49.04	PI Sta 12+23.09	PI Sta 13+33.86	PI Sta 14+55.19	PI Sta 15+51.23	PI Sta 19+94.83
△ = 5° 30' 15.6" (LT)	△ = 8° 31' 42.9" (LT)	△ = 5° 12' 33.9" (LT)	△ = 16° 23' 07.0" (LT)	△ = 14° 01' 58.7" (LT)	△ = 6° 33' 59.3" (LT)	△ = 1° 46' 41.3" (LT)	△ = 18° 58' 17.5" (RT)
D = 7° 54' 10.3"	D = 16° 22' 12.8"	D = 9° 32' 57.5"	D = 17° 37' 46.1"	D = 10° 54' 48.5"	D = 5° 43' 46.5"	D = 2° 17' 30.6"	D = 38° 11' 49.9"
L = 69.65'	L = 52.10'	L = 54.55'	L = 92.94'	L = 128.58'	L = 114.61'	L = 77.59'	L = 49.67'
T = 34.85'	T = 26.10'	T = 27.30'	T = 46.79'	T = 64.62'	T = 57.37'	T = 38.80'	T = 25.06'
R = 725.00'	R = 350.00'	R = 600.00'	R = 325.00'	R = 525.00'	R = 1,000.00'	R = 2,500.00'	R = 150.00'
SE = Exist.	SE = Exist.	SE = Exist.	SE = Exist.	SE = 06	SE = 06	SE = 03	SE = RC
RO = N/A	RO = N/A	RO = N/A	RO = N/A	RO = 126'	RO = 126'	RO = 63'	RO = 42'

-Y-

PI Sta 11+42.99
△ = 28° 38' 52.4" (RT)
D = 10° 13' 53.0"
L = 280.00'
T = 142.99'
R = 560.00'
SE = Exist.
RO = N/A

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
10/1/2026
NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE
DocuSigned by: Faith Jahnke
BD02D2A0B2D2A4A...

HYDRAULICS ENGINEER
10/1/2026
NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG
Signed by: He Yang
8A0A0A0A0A0A0A0...

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Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800, Raleigh, NC 27609
Voice: (919) 732-9883
Fax: (919) 732-6776

PC -L- Sta. 10+00.00

PCC -L- Sta. 10+69.65

PCC -L- Sta. 11+21.75

PCC -L- Sta. 11+76.30

PCC -L- Sta. 12+69.24

PCC -L- Sta. 13+97.83

PCC -L- Sta. 15+12.43

BEGIN PROJECT BR-0102
POC -L- Sta.13+00.00

BM-2

BL-4

BL-3

BL-2

BL-1

10

15

20

TO OMAR DR & PHILIP MOUNT PL

EXISTING R/W

U.S. HWY 158 (MADISON RD)

WOODS

SPRING

-L- +90.00
EX. R/W

-L- +00.00
56.00' RT

DAN GEORGE
ALMA GEORGE
DB 322 PG 674

PUE

TIE TO EXISTING DITCH

-L- +25.00
EX. R/W

100' TAPER TO EX.

2' INC. TYP.

50' TAPER TO EX.

-L- +80.00
EX. R/W

REMOVE

RCP-III

R=10' TYP.

R=20' TYP.

UNDEFINED SOIL PATH

WELL

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 4-2

-L- +50.00
50.00' RT

-L- +51.00
72.00' RT
61.00' RT

-L- +63.00
72.00' RT
61.00' RT

-L- +25.00
62.21' RT

-DRI- +10.00
15.00' LT

-DRI- +10.00
15.00' RT

PT -DRI- Sta. 11+15.69
N 68° 18' 41.3" W (AH)

PC -DRI- Sta. 10+00.00

MAINTAIN DRIVE ACCESS THROUGHOUT CONSTRUCTION

S 23°23'00" E
80.05'

2

JERRY F. CULLER
LEONA Y. CULLER
DB 322 PG 677

SEE DETAIL 4-1
68 TON CL II RIP-RAP
69 SY GEOTEXTILE

POT -DRI- Sta. 11+66.81=
POC -L- Sta.15+58.08

PT -L- Sta. 15+90.02

BEGIN BRIDGE
-L- Sta.16+15.00

-L- +50.00
57.00' LT

RIP RAP AT EMBANKMENT
SEE DETAIL 4-3
CL II RIP RAP
TO EL 785.0'

-L- +80.00
38.00' LT

21' INC. TYP.

+35.43

GREU TL-2

TYPE B-77

N 20°57' 23.4" E

AT-1

MTL GATE

DO NOT DISTURB GATE

BEGIN TAPER TO EX.
(LT/RT) +75.00

BEGIN CONSTRUCTION
-DRI- P.R.C. Sta.10+25.00

1

LAURELYN G. DOSSETT LIVING TRUST DATED 01-13-2022
DB 747 PG 294

PC -L- Sta. 19+69.77

RIP RAP AT EMBANKMENT
SEE DETAIL 4-6
CL II RIP RAP
ALONG EXISTING SWALE

-L- +90.00
65.00' LT

CL II RIP RAP
TO EL 776.0'
(STRUCTURES
PAY ITEM)

GRADE TO DRAIN

RIP RAP AT EMBANKMENT
SEE DETAIL 4-5
CL II RIP RAP
TO TOP OF BANK

END BRIDGE
-L- Sta.18+05.00

CL II RIP RAP
TO EL 781.0'
(STRUCTURES
PAY ITEM)
RIP RAP AT EMBANKMENT
SEE DETAIL 4-4
CL II RIP RAP
TO EL 786.0'

-L- +16.00
68.00' RT

-L- +25.00
45.00' RT
EX. R/W

TYPE B-77

-L- +50.75
EX. R/W

RIP RAP

N 12°56' 33" W
562.01'

MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

3

TREES TO BE REMOVED DURING CONSTRUCTION

-L- +87.88
47.00' LT

R=80'

±85.53

2 TON CL B RIP-RAP
7 SY GEOTEXTILE

-L- +50.00
65.00' LT
EX. R/W

15" W/ ELBOWS

-L- +50.00
45.00' LT

SBG FROM
18+24 -L- LT TO
18+48 -L- LT

0402
TB 2GI

0403
TB 2GI

0404
TB 2GI

15" RCP-III

-L- +80.00
66.62' RT

-L- +20.00
68.00' RT

MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

2 TON CL B RIP-RAP
7 SY GEOTEXTILE

REPLACE GRAU B-77 AND GUARDRAIL IN EXISTING LOCATION

PT -Y- Sta. 12+80.00

MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

PT -L- Sta. 20+19.43
N 39° 55' 40.9" E (AH)

END PROJECT BR-0102
POT -L- Sta.20+39.66

POT -L- Sta. 20+50.00=
POC -Y- Sta. 10+98.52

REMOVE 163 LF OF EXISTING GUARDRAIL

-Y- +60.07

RIP RAP

BM-1

PC -Y- Sta. 10+00.00

-Y-

TO FRANCISCO

TO DANBURY

CONC

EIP

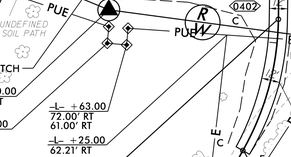
EIP (BENT)

DAN RIVER

-DRI-

PI Sta 10+12.57	PI Sta 10+71.33
△ = 14° 19' 26.2" (RT)	△ = 28° 51' 58.0" (LT)
D = 57° 17' 44.8"	D = 31° 49' 51.6"
L = 25.00'	L = 90.69'
T = 12.57'	T = 46.33'
R = 100.00'	R = 180.00'

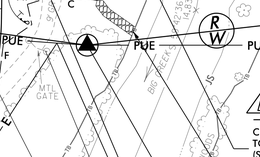
DETAIL 4-1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL II Rip-Rap
Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM STA. 14+50 TO STA. 16+10.54 -L- LT

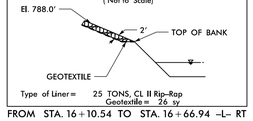
DETAIL 4-2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=0.5 Ft.

FROM STA. 13+50 TO STA. 16+26.55 -L- RT

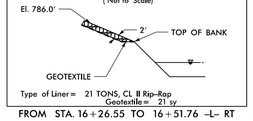
DETAIL 4-3
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 25 TONS, CL II Rip-Rap
Geotextile = 26 sy

FROM STA. 16+10.54 TO STA. 16+66.94 -L- RT

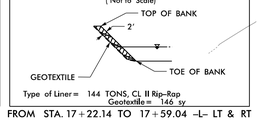
DETAIL 4-4
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 21 TONS, CL II Rip-Rap
Geotextile = 21 sy

FROM STA. 16+26.55 TO 16+51.76 -L- RT

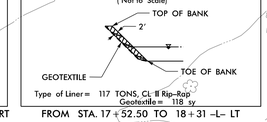
DETAIL 4-5
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 144 TONS, CL II Rip-Rap
Geotextile = 146 sy

FROM STA. 17+22.14 TO 17+59.04 -L- LT & RT

DETAIL 4-6
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 117 TONS, CL II Rip-Rap
Geotextile = 118 sy

FROM STA. 17+52.50 TO 18+31 -L- LT

01-OCT-2026 09:46
B-0102_2026_10_01.dgn
Faith.Jahnke

Docusign Envelope ID: 2A09E845-AFC7-88E4-822E-A9AA529CC9B2

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

5/28/99

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Sosloff St., Suite 805
Raleigh, NC 27609
Voice (919) 732-3883
Fax (919) 732-6776

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	5

ROADWAY DESIGN ENGINEER
8/26/2026
NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE
Signed by: Faith E. Jahnke
DocuSigned by:

HYDRAULICS ENGINEER
8/27/2026
NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG
Signed by: He Yang
DocuSigned by:

SHEET NUMBERS MAY BE AUTOMATICALLY UPDATED

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM-2
N: 983785
E: 1621155
ELEV = 839.29'

BM-1
-Y- STA.11+05
152' RIGHT
ELEV = 765.79'

BEGIN PROJECT BR-0102
-L- Sta.13+00.00
EL. = 808.20'

PI = 13+85.00
EL = 803.70'
VC = 120'
K = 583

PI = 15+20.00
EL = 796.27'
VC = 150'
K = 68

BEGIN DITCH GRADE
STA.14+50 -L- FT
EL. 797.38 FT

-L- STA. 15+58.08 =
-DR1- STA. 11+66.81
EL. = 795.12'

END DITCH GRADE
STA.16+26.56 -L- RT
EL. 786.00 FT

BEGIN BRIDGE
-L- Sta.16+15.00
EL. = 793.14'

END BRIDGE
-L- Sta.18+05.00
EL. = 786.87'

END PROJECT BR-0102
-L- Sta.20+39.66
EL. = 781.43'

PI = 18+80.00
EL = 784.39'
VC = 110'
K = 76

PROPOSED GRADE

(-)5.2941%
(-)5.5000%
(-)9.0000%
(-)5.2480%
(-)4.0420%
(-)7.7740%
(-)5.5000%
(-)13.3000%
(-)5.9031%
(-)13.3000%
(-)1.8571%

BEGIN DITCH GRADE
STA.13+50 -L- FT
EL.805.42 -L- RT

PI =14+50.00 -L- LT
El = 796.42 FT

PI =15+00.00 -L- LT
El = 794.76 FT

PI =15+50.00 -L- LT
El = 792.73 FT

PI =16+00.00 -L- LT
El = 788.85 FT

(-) 8.0361%

END DITCH GRADE
STA.16+10.54 -L- LT
EL.788.00 FT.

EXISTING GROUND

1.5:1
CLASS II RIP RAP KEYED IN 3.5'
BANK STABILIZATION CLASS II RIP RAP VAR. ALONG EXISTING BANK

1.5:1
CLASS II RIP RAP KEYED IN 3.5'
BANK STABILIZATION CLASS II RIP RAP VAR. ALONG EXISTING BANK

NWSEL = 753.4 FT
WSEL = 752.0 FT (SURVEYED 2/8/23)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 6500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 764.6	FT
BASE DISCHARGE	= 7400	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 765.6	FT
OVERTOPPING DISCHARGE	= 31500	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 782.2	FT
DATE OF SURVEY	= 2/8/23	
W.S.ELEVATION AT DATE OF SURVEY	= 752.0	FT

-L- HWY 268 (LYNCHBURG RD.)

LEFT DITCH
RIGHT DITCH

BEGIN CONSTRUCTION
-DR1- Sta.10+25.00
EL. = 778.92'

PI = 10+60.00
EL = 783.47'
VC = 70'
K = 16
DS = 25 MPH

(+)5.0000%
(+)17.4826%
(+)2.0000%
(-)3.0000%

EXISTING GROUND
PROPOSED GRADE

END CONSTRUCTION
-DR1- Sta.11+55.81
EL. = 795.45'

PI = 11+25.00
EL = 794.83'
VC = 60'
K = 4
DS = 15 MPH

795.12
CL -L-

-DR1-

18 MAY 2026 14:15
BR0102_roadway_plan_sheet_11.psh.dgn
psheetpark

6/2/99

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	RW02C-1

Location and Surveys

INSERT CONSULTANT'S NAME

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3877 LAND SURVEYOR MICHAEL L. MOTSINGER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Michael L. Motsinger, PLS, certify that the Project Control was [performed/verified] under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

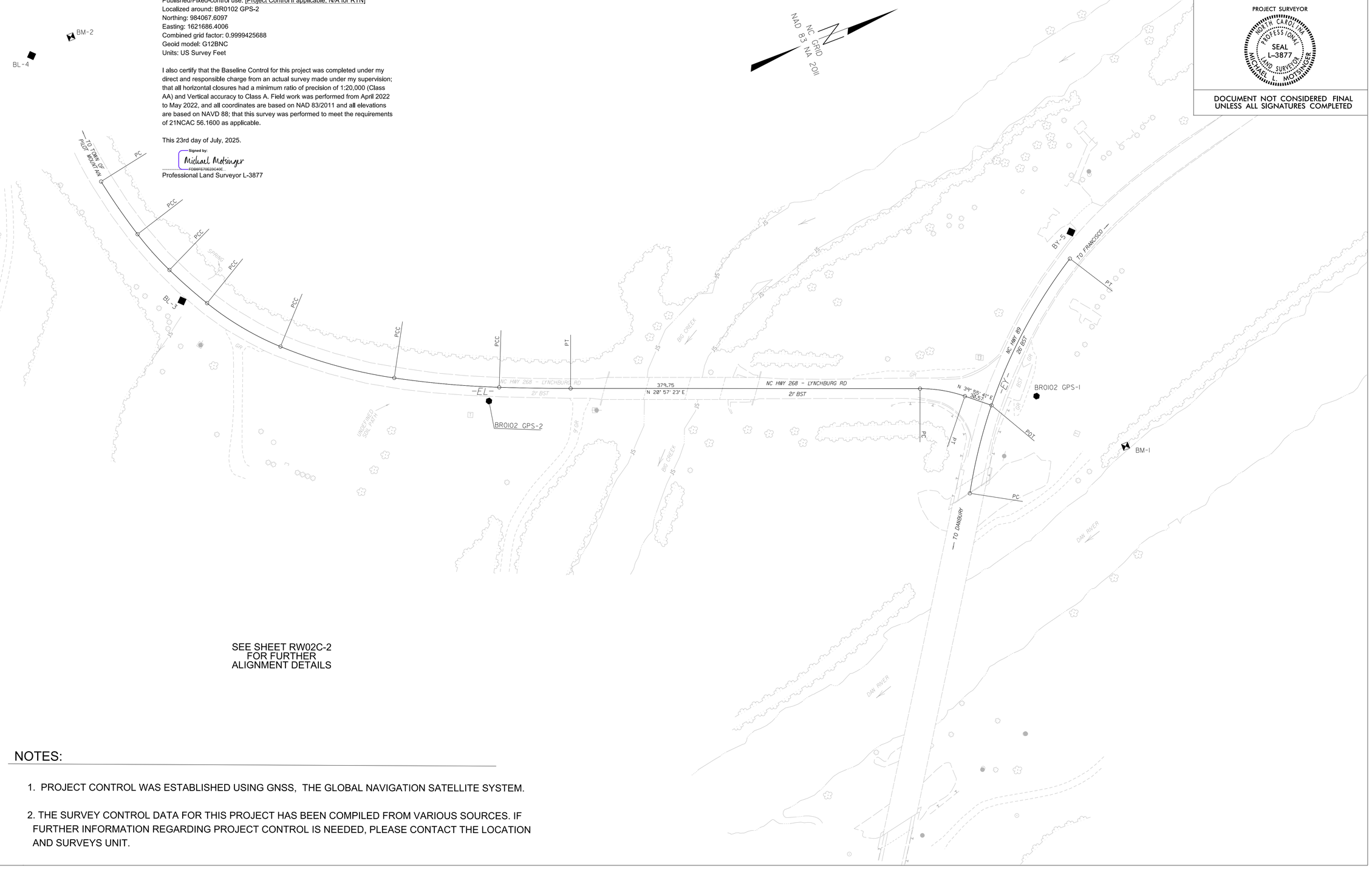
Class of survey: ***AA***
Type of GPS field procedure: [Static, OPUS, RTN]
Dates of survey: April 2022 - May 2022
Datum/Epoch: NAD83/2011
Published/Fixed-control use: [Project Control if applicable, N/A for RTN]
Localized around: BR0102 GPS-2
Northing: 984067.6097
Easting: 1621686.4006
Combined grid factor: 0.9999425688
Geoid model: G12BNC
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 from April 2022 to May 2022, 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 23rd day of July, 2025.

Signed by:
Michael Motsinger
FD86FE70E23C40E...

Professional Land Surveyor L-3877



SEE SHEET RW02C-2
FOR FURTHER
ALIGNMENT DETAILS

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.

28-JUL-2025 10:44
S:\Units\Div09\Winston\Ruths Computer\Bridge\Division_Low Impact\BR0102\Right of Way\survey control sheets\BR0102_LS_rw02c-1.dgn
Jaturbeville AT LS-345560L

SURVEY CONTROL SHEET

BASELINE AND BENCHMARKS

BL

POINT	DESC.	NORTH	EAST	ELEVATION
4	BL-4	983737.3396	1621158.3897	835.36
3	BL-3	983794.8893	1621465.6159	817.28
2	BR0102-GPS2	984067.6097	1621686.4006	795.97
1	BR1002-GPS1	984625.3097	1621893.9654	778.94

BY

POINT	DESC.	NORTH	EAST	ELEVATION
5	BY-5	984723.9641	1621740.8525	781.74

```
****************************************
BM#1       ELEVATION = 765.79'
N 984696       E 1621979
RAILROAD SPIKE IN 24" BIRCH
****************************************
****************************************
BM#2       ELEVATION = 839.29'
N 983785       E 1621155
RAILROAD SPIKE IN 12" MAPLE
****************************************
```

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	983759.032	1621313.159							
CURVE			N 76°12'34.3" E	69.62	05°30'15.6"(LT)	07°54'10.3"	69.65	34.85	725.00
PCC	983775.629	1621380.775							
CURVE			N 69°11'35.1" E	52.05	08°31'42.9"(LT)	16°22'12.8"	52.10	26.10	350.00
PCC	983794.118	1621429.431							
CURVE			N 62°19'26.7" E	54.53	05°12'33.9"(LT)	09°32'57.5"	54.55	27.30	600.00
PCC	983819.447	1621477.726							
CURVE			N 51°31'36.3" E	92.63	16°23'07.0"(LT)	17°37'46.1"	92.94	46.79	325.00
PCC	983877.074	1621550.242							
CURVE			N 36°19'03.4" E	128.26	14°01'58.7"(LT)	10°54'48.5"	128.58	64.62	525.00
PCC	983980.422	1621626.207							
CURVE			N 26°01'04.4" E	114.54	06°33'59.3"(LT)	05°43'46.5"	114.61	57.37	1000.00
PCC	984083.358	1621676.452							
CURVE			N 21°50'44.0" E	77.58	01°46'41.3"(LT)	02°17'30.6"	77.59	38.80	2500.00
PT	984155.369	1621705.321							
LINE			N 20°57'23.4" E	379.75					
PC	984509.996	1621841.141							
CURVE			N 30°26'32.1" E	49.44	18°58'17.5"(RT)	38°11'49.9"	49.67	25.06	150.00
PT	984552.620	1621866.191							
LINE			N 39°55'40.9" E	30.57					
POT	984576.061	1621885.810							

EY

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	984519.980	1621966.659							
CURVE			N 45°58'09.7" W	277.09	28°38'52.4"(RT)	10°13'53.0"	280.00	142.99	560.00
PT	984712.571	1621767.438							

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.

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	RW02C-2

Location and Surveys

INSERT CONSULTANT'S NAME

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3877 LAND SURVEYOR MICHAEL L. MOTSINGER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Michael L. Motsinger, PLS, certify that the Project Control was [performed/verified] 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: [Static,_OPUS,_RTN]
Dates of survey: April 2022 - May 2022
Datum/Epoch: NAD83/2011
Published/Fixed-control use: [Project_Control_if_applicable,_N/A_for_RTN]
Localized around: BR0102 GPS-2
Northing: 984067.6097
Easting: 1621686.4006
Combined grid factor: 0.9999425688
Geoid model: G12BNC
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 from April 2022 to May 2022, 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 23rd day of July, 2025.

Signed by:
Michael Motsinger
F2B8EE29E29C4DE...

Professional Land Surveyor L-3877

6/2/99

REVISIONS

28-JUL-2025 10:46
S:\Units\Div.09\Winston\Ruths Computer\Bridge\Division_LowImpact\BR0102\Right of Way\survey control sheets\BR0102_LS_rw02c-2.dgn
Jaturbeville AT LS-345560L

Docusign Envelope ID: 4A9E90A2-A347-4280-A60E-FA4B3EC90203

6/2/99

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	RW02D-1

Location and Surveys

Stantec
ONE WEST FOURTH ST., SUITE 820
WINSTON SALEM, N.C. 27101
LICENSE NO.: F-0672
www.stantec.com

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3834 LAND SURVEYOR CLINTON B. OSBORNE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Clinton B. Osborne, 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 30th day of September, 2025.

DocuSigned by:
Clinton B. Osborne
0A6F68085F0449B...

Professional Land Surveyor L-3834

L

TYPE	STATION	NORTH	EAST
PC	10+00.00	983759.0324	1621313.1591
PCC	10+69.65	983775.6286	1621380.7753
PCC	11+21.75	983794.1178	1621429.4308
PCC	11+76.30	983819.4472	1621477.7256
PCC	12+69.24	983877.0745	1621550.2424
PCC	13+97.83	983980.4217	1621626.2074
PCC	15+12.43	984083.3576	1621676.4523
PT	15+90.02	984155.3691	1621705.3214
PC	19+69.77	984509.9956	1621841.1409
PT	20+19.43	984552.6204	1621866.1910
POT	20+50.00	984576.0607	1621885.8096

Y

TYPE	STATION	NORTH	EAST
PC	10+00.00	984519.9803	1621966.6588
PT	12+80.00	984712.5714	1621767.4382

DR1

TYPE	STATION	NORTH	EAST
PC	10+00.00	984036.6970	1621831.8098
PRC	10+25.00	984053.8271	1621813.6905
PT	11+15.69	984106.7227	1621741.2099
POT	11+66.81	984125.6152	1621693.7073

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.

30-SEP-2025 10:31
U:\25k30350\survey\drawing\dgn\BR0102_ls_rw02d-1.dgn
osborne
A1_OSBORNEC_L

Docusign Envelope ID: 4A9E90A2-A347-4280-A60E-FA4B3EC90203

6/2/99

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	RW03E-1

Location and Surveys

Stantec
ONE WEST FOURTH ST., SUITE 820
WINSTON SALEM, N.C. 27101
LICENSE NO.: F-0672
www.stantec.com

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-3834 CLINTON B. OSBORNE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Clinton B. Osborne , 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 6/30/25 to 8/19/25, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30th day of September, 2025.

DocuSigned by:
Clinton B. Osborne
0A6F6B085F6449B...

Professional Land Surveyor L-3834

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+80.00	30.30	983949.3090	1621643.1252
L	14+25.00	-29.70	984018.1218	1621612.8966
L	14+50.00	50.00	984004.4019	1621695.3622
L	15+80.00	-38.00	984159.7523	1621666.2873
L	16+20.00	68.00	984159.0452	1621779.5459
L	16+50.00	-57.00	984231.7682	1621673.5442
L	17+90.00	-65.00	984365.3688	1621716.1456
L	18+25.00	45.00	984358.7111	1621831.3874
L	18+25.00	30.30	984363.9687	1621817.6598
L	18+50.00	-65.00	984421.3999	1621737.6052
L	18+50.00	-29.70	984408.7745	1621770.5702

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+90.00	30.30	983801.1030	1621505.7739
L	12+00.00	56.00	983785.9584	1621529.4231
L	14+51.00	61.00	984000.4773	1621705.6924
L	14+51.00	72.00	983995.6114	1621715.5576
L	14+63.00	72.00	984007.1822	1621721.1788
L	14+63.00	61.00	984011.9294	1621711.2559
L	19+16.00	68.00	984435.4655	1621885.4130
L	19+50.75	43.18	984476.7955	1621874.6593

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 6/30/25 TO 8/19/25 .

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	RW04

Location and Surveys

Stantec
ONE WEST FOURTH ST., SUITE 820
WINSTON SALEM, N.C. 27101
LICENSE NO.: F-0672
www.stantec.com

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3834 LAND SURVEYOR CLINTON B. OSBORNE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

PI Sta 10+34.85
△ = 5° 30' 15.6" (LT)
D = 7° 54' 10.3"
L = 69.65'
T = 34.85'
R = 725.00'
SE = Exist.
RO = N/A

PI Sta 10+95.75
△ = 8° 31' 42.9" (LT)
D = 16° 22' 12.8"
L = 52.10'
T = 26.10'
R = 350.00'
SE = Exist.
RO = N/A

PI Sta 11+49.04
△ = 5° 12' 33.9" (LT)
D = 9° 32' 57.5"
L = 54.55'
T = 27.30'
R = 600.00'
SE = Exist.
RO = N/A

PI Sta 12+23.09
△ = 16° 23' 07.0" (LT)
D = 11° 37' 46.1"
L = 92.94'
T = 46.79'
R = 325.00'
SE = Exist.
RO = N/A

PI Sta 13+33.86
△ = 14° 01' 58.7" (LT)
D = 10° 54' 48.5"
L = 128.58'
T = 64.62'
R = 525.00'
SE = 06
RO = 126'

PI Sta 14+55.19
△ = 6° 33' 59.3" (LT)
D = 5° 43' 46.5"
L = 114.61'
T = 57.37'
R = 1,000.00'
SE = 06
RO = 126'

PI Sta 15+51.23
△ = 1° 46' 41.3" (LT)
D = 2° 17' 30.6"
L = 77.59'
T = 38.80'
R = 2,500.00'
SE = 03
RO = 63'

PI Sta 19+94.83
△ = 18° 58' 17.5" (RT)
D = 38° 11' 49.9"
L = 49.67'
T = 25.06'
R = 150.00'
SE = RC
RO = 42'

-Y-

PI Sta 11+42.99
△ = 28° 38' 52.4" (RT)
D = 10° 13' 53.0"
L = 280.00'
T = 142.99'
R = 560.00'
SE = Exist.
RO = N/A

NAD 83 NC GRID NA 2011

PC -L- Sta. 10+00.00
PCC -L- Sta. 10+69.65
PCC -L- Sta. 11+21.75
PCC -L- Sta. 11+76.30
PCC -L- Sta. 12+69.24
PCC -L- Sta. 13+97.83
PC -DRI- Sta. 10+00.00
PT -DRI- Sta. 11+15.69
N 68° 18' 41.3" W (AH)
PC -L- Sta. 15+58.08
PT -L- Sta. 15+90.02
PC -L- Sta. 19+69.77
PC -Y- Sta. 10+00.00
PT -Y- Sta. 12+80.00
PT -L- Sta. 20+19.43
N 39° 55' 40.9" E (AH)
END PROJECT BR-0102
-L- Sta. 20+39.66
POT -L- Sta. 20+50.00=
POC -Y- Sta. 10+98.52
BEGIN PROJECT BR-0102
-L- Sta. 13+00.00
POT -DRI- Sta. 11+66.81=
POC -L- Sta. 15+58.08
BEGIN BRIDGE
-L- Sta. 16+15+/-
END BRIDGE
-L- Sta. 18+05+/-
BEGIN CONSTRUCTION
-DRI- PRC Sta. 10+25.00

1
LAURELYN G. DOSSETT LIVING TRUST DATED 01-13-2022
DB 747 PG 294

2
JERRY F. CULLER
LEONA Y. CULLER
DB 322 PG 677

3
MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

DAN GEORGE
ALMA GEORGE
DB 322 PG 674

MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

-L- +25.00
29.70' LT (EX. R/W)

-L- +90.00
30.30' RT (EX. R/W)

-L- +00.00
56.00' RT

-L- +80.00
30.30' RT (EX. R/W)

-L- +50.00
50.00' RT

-L- +51.00
72.00' RT
61.00' RT

-L- +63.00
72.00' RT
61.00' RT

-L- +25.00
62.21' RT

-DRI- +10.00
15.00' LT

-DRI- +10.00
15.00' RT

-L- +00.00
66.62' RT

-L- +20.00
68.00' RT

-L- +50.00
57.00' LT

-L- +80.00
38.00' LT

-L- +90.00
65.00' LT

-L- +50.00
65.00' LT
29.70' LT (EX. R/W)

-L- +50.00
45.00' LT

-L- +87.88
47.00' LT

-L- +25.00
45.00' RT
30.30' RT (EX. R/W)

-L- +16.00
68.00' RT

-L- +50.75
43.18' RT (EX. R/W)

+47.55
29.70'

+49.19
36.99'

+78.40
69.20'

+44.70
59.45'

+26.87
30.03'

+12.98
30.03'

S 52°40'29" E
287.32'

S 23°23'00" E
80.05'

S 45°29'56" E
377.08'

N 33°24'46" W
56.44'

N 19°42'36" E
14.83'

N 12°56'33" W
562.01'

N 17°42'59" E
62.89'

N 39°47'47" W
153.94'

N 49°38'48" W
180.13'

N 34°24'50" E
(3.70')

N 20°57' 23.4" E

R/W

E

EIP

CONC

EIP (BENT)

EXISTING R/W

EXISTING R/W CONC

PUE

WOODS

CONC DECK

NC HWY 268 - LYNCHBURG RD

TO TOWN OF PILOT MOUNTAIN

TO FRANCISCO

TO DANBURY

BRO102 GPS-1

BRO102 GPS-2

BL-4

BL-3

BK-5

-DRI-

PI Sta 10+12.57
△ = 14° 19' 26.2" (RT)
D = 57° 17' 44.8"
L = 25.00'
T = 12.57'
R = 100.00'

PI Sta 10+71.33
△ = 28° 51' 58.0" (LT)
D = 31° 49' 51.6"
L = 90.69'
T = 46.33'
R = 180.00'

I, Clinton B. Osborne, 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 06/30/2025 to 08/19/2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 30 day of September, 2025.

DocuSigned by:
Clinton B. Osborne
0A6F6B085F6449B...

Professional Land Surveyor L-3834

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 6/30/25 TO 8/19/25.

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osborne

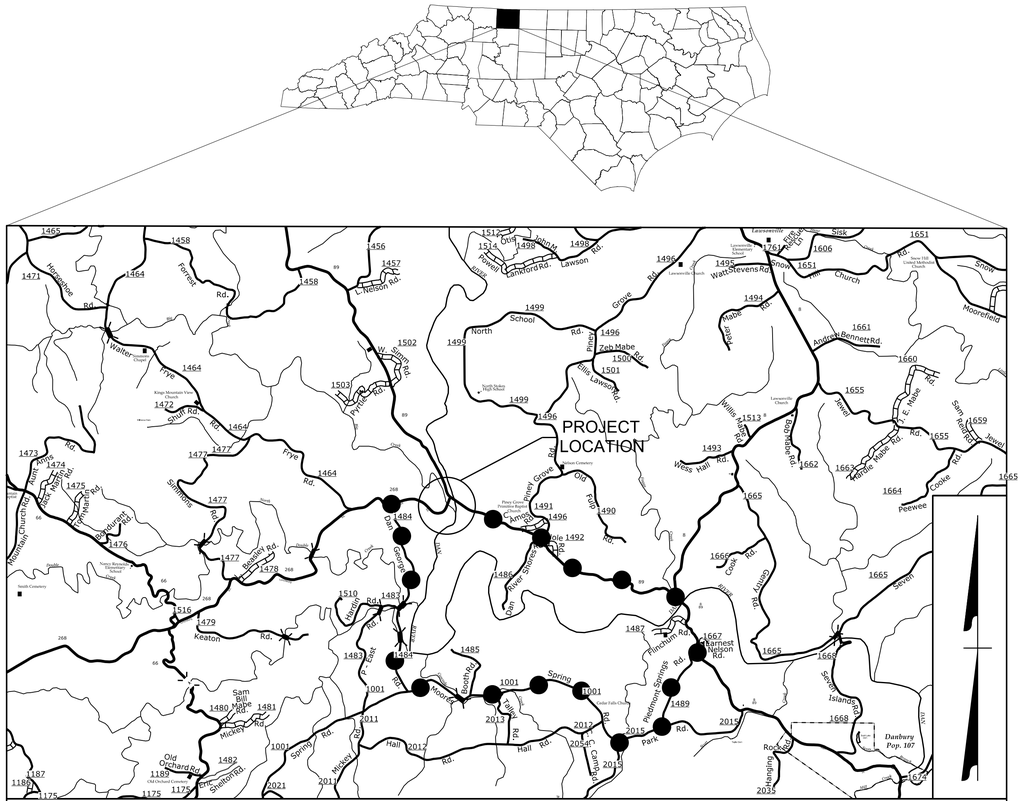
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

STOKES COUNTY

LOCATION: BRIDGE #840037 ON NC–268 OVER BIG CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE



VICINITY MAP

● DETOUR ROUTE

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, PHASING, AND GENERAL NOTES)
TMP-2	SPECIAL SIGN DESIGN(S)
TMP-3	TEMPORARY DETOUR DETAIL

SHEET NO.
TMP-1

BR-0102

PROJECT:



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

PLANS PREPARED BY:

FAITH JAHNKE, PE
TRAFFIC CONTROL DESIGN ENGINEER

DEVON HOYLE, EI
TRAFFIC CONTROL DESIGNER

NCDOT CONTACTS:

JEREMY KEATON, PE, PLS
BRIDGE PROGRAM MANAGER - DIVISION 9

JEREMY M. GUY, PE
DIVISION CONSTRUCTION ENGINEER

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176
1000 Social St. Suite 800.
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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PROJ. REFERENCE NO.	SHEET NO.
BR-0102	TMP-1A

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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
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
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

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

SIGNALS

EXISTING | PROPOSED | TEMPORARY | PORTABLE

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: Signed by: Faith E. Jahnke 89EBFA046C06445... DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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

ROADWAY STANDARD DRAWINGS & LEGEND

5/19/2026
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PROJ. REFERENCE NO.	SHEET NO.
BR-0102	TMP-1B

MANAGEMENT STRATEGIES

BRIDGE #840037 ON NC-268 REPLACEMENT TO BE PERFORMED UNDER ROAD CLOSURE

LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION

PHASING

STEP 1:

IMPLEMENT OFF-SITE DETOUR AND ROAD CLOSURE FOR NC-268 AT BRIDGE #840037 AS SHOWN ON SHEET TMP-3 AND IN ACCORDANCE WITH THE GENERAL NOTES. COVER ALL ADVANCE WARNING SIGNS AND DETOUR SIGNS PRIOR TO ROAD CLOSURE.

STEP 2:

WITH NC-268 CLOSED TO TRAFFIC, PLACE BARRICADES AS SHOWN ON TMP-2 AND CONSTRUCT ALL OF -DR1-.

STEP 3:

ONCE -DR1- IS COMPLETE, SHIFT BARRICADES AS SHOWN ON TMP-2 AND PREFORM ALL BRIDGE REPLACEMENT OPERATIONS. PRIOR TO OPENING THE ROADWAY TO TRAFFICE, PLACE FINAL PAVEMENT MARKINGS.

STEP 4:

UPON COMPLETION OF BRIDGE WORK, REMOVE THE ROAD CLOSURE AND DETOUR SIGNS AND OPEN NC-268 TO TRAFFIC.

GENERAL NOTES / LOCAL 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.

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

D) COVER OR REMOVE SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD COLSURE IS NOT IN OPERATION.
AND
COVER OR REMOVE SIGNS AND DEVICES REQUIRED FOR THE OFF-SITE DETOUR WHEN DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKING AND MARKERS

G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE, AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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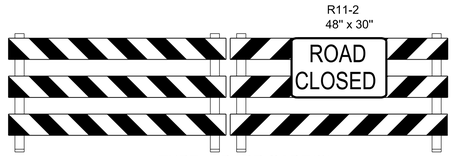
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

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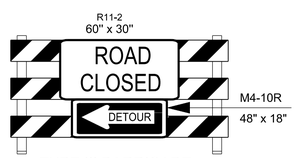
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PROJ. REFERENCE NO.	SHEET NO.
BR-0102	TMP-2



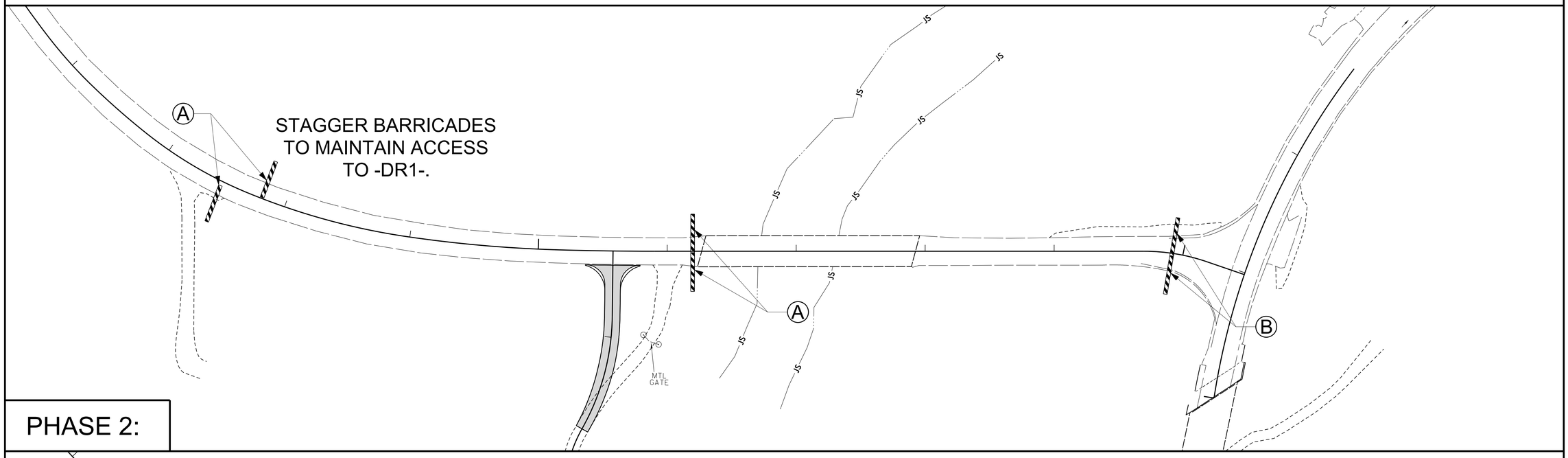
TYPE III BARRICADE(S)

Ⓐ

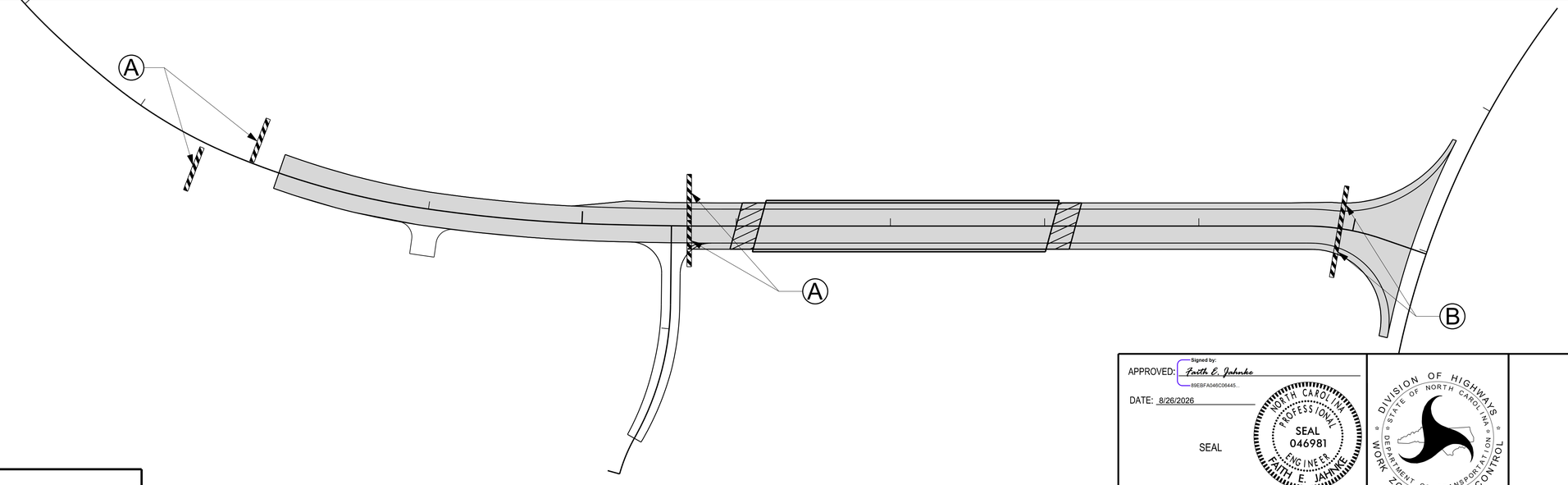


TYPE III BARRICADE
(PLACED ON WINGS)

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PHASE 2:



PHASE 3:

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

BARRICADE DETAIL SHEET

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PROJ. REFERENCE NO.	SHEET NO.
BR-0102	TMP-3



TYPE III BARRICADE
(PLACED ON WINGS)

Ⓒ



Ⓓ



Ⓔ



Ⓕ



Ⓖ

Ⓗ



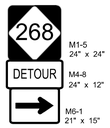
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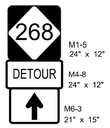
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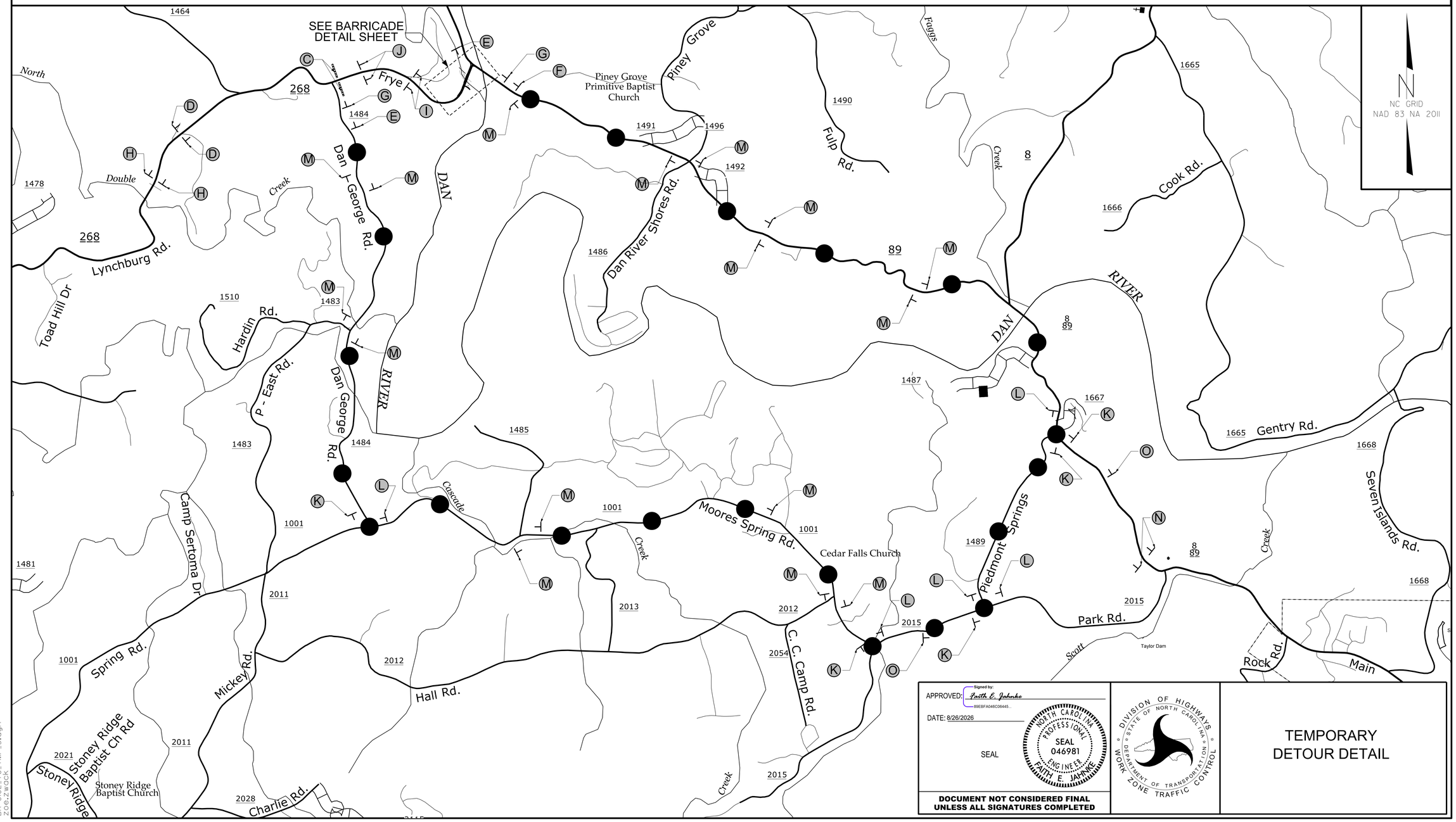
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APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TEMPORARY DETOUR DETAIL

19-MAY-2026 10:28
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PROJECT: BR-0102

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

LOCATION: REPLACE BRIDGE #840037 ON NC-268 OVER BIG CREEK

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

TIP NO.	SHEET NO.
BR-0102	PMP-1

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046981 FAITH E. JAHNKE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1251.01	RAISED PAVEMENT MARKERS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL & BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	INTEGRATED MULTIPOLYMER (4", 90 MIL)
IM1	WHITE EDGELINE
IM5	2FT.-6FT./SP WHITE MINISKIP
IM13	YELLOW DOUBLE CENTER
	PAVEMENT MARKERS
MA	YELLOW & YELLOW PERMANENT RAISED
ME	YELLOW & YELLOW SNOWPLOWABLE

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
NC 268	INTEGRATED MULTIPOLYMER	SNOWPLOWABLE
NC 268 (BRIDGE)	INTEGRATED MULTIPOLYMER	PERMANENT RAISED

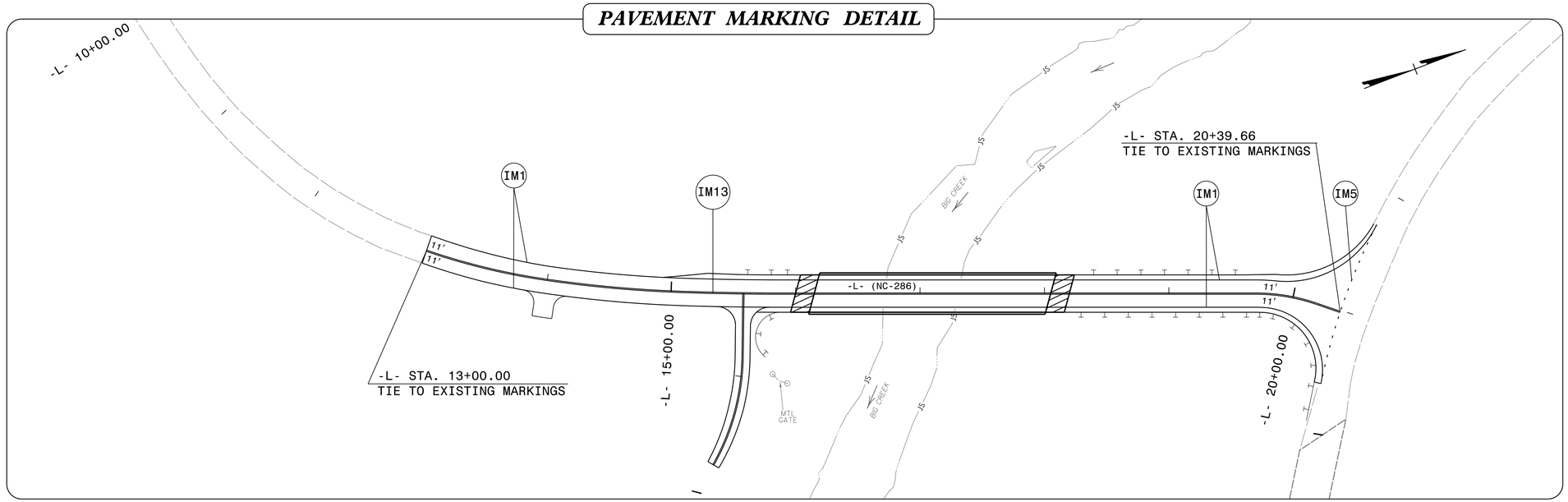
B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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) REMOVE RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING PAVEMENT MARKING MATERIAL.

PAVEMENT MARKING DETAIL



Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St. Suite 800.
Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6776
FAITH JAHNKE, PE — PROJECT ENGINEER
DEVON HOYLE, EI — PROJECT DESIGNER

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

INDEX

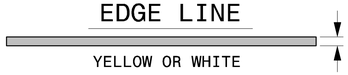
PMP-1	PAVEMENT MARKING PLAN TITLE, SCHEDULE, QUANTITIES AND PAVEMENT MARKING DETAIL.
PMP-2	LINE TYPES AND OFFSETS DETAIL
PMP-3	INSTALLATION SPACING DETAIL

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PROJECT REFERENCE NO.	SHEET NO.
BR-0102	PMP-2

CONTINUOUS LINES

EDGE LINE


YELLOW OR WHITE

LANE LINE

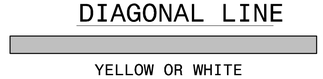

WHITE

CENTER LINE

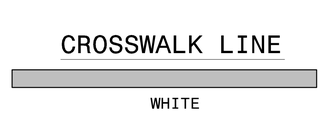

YELLOW

GORE LINE


WHITE

DIAGONAL LINE


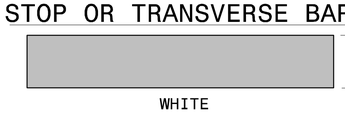
YELLOW OR WHITE

CROSSWALK LINE


WHITE

RxR LINE


WHITE

STOP OR TRANSVERSE BAR


WHITE

10′-30′/SP SKIP LINE

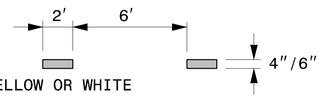
UNLESS OTHERWISED SHOWN, USE 10′-30′/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



YELLOW OR WHITE

2′-6′/SP MINI-SKIP LINE

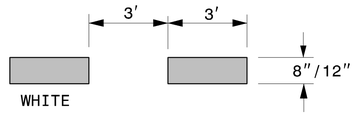
UNLESS OTHERWISED SHOWN, USE 2′-6′/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND BICYCLE LANE EXTENSIONS.



YELLOW OR WHITE

3′-3′/SP MINI-SKIP LINE

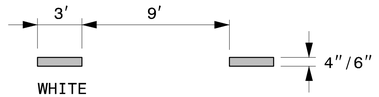
UNLESS OTHERWISED SHOWN, USE 3′-3′/SP MINI-SKIPS FOR THE WHITE EDGE LINE ENTENSIONS AT ROUNDABOUTS.



WHITE

3′-9′/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3′-9′/SP MINI-SKIPS FOR MINI-SKIP LANE LINES, LINE EXTENSIONS THROUGH TAPERS, AND MINI-SKIPS USED FOR BICYCLE LANE LINES.



WHITE

GENERAL NOTES:

1- USE 6″ LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.

2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

PAVEMENT MARKINGS

LINE TYPES AND OFFSETS

SHEET 1 OF 2

1205D01

8/26/2026
NORTH CAROLINA PROFESSIONAL SEAL 042546 ENGINEER MATTHEW V. SPRINGER
Signed by: Matthew V Springer, PE
BC60F6E8B584403...

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

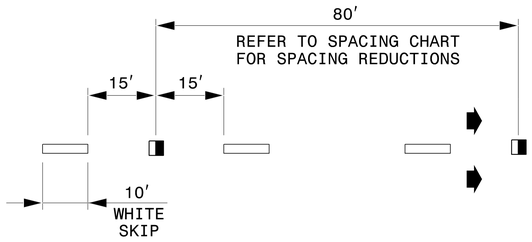
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ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

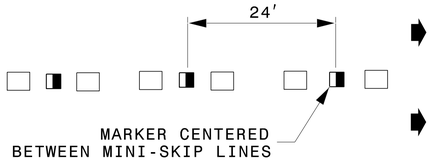
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PROJECT REFERENCE NO.	SHEET NO.
BR-0102	PMP-3

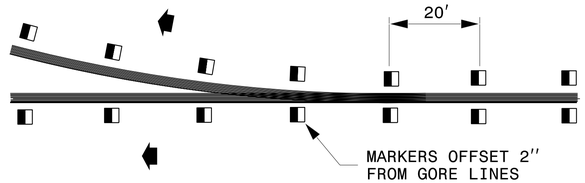
10′-30′/SP SKIP LINE



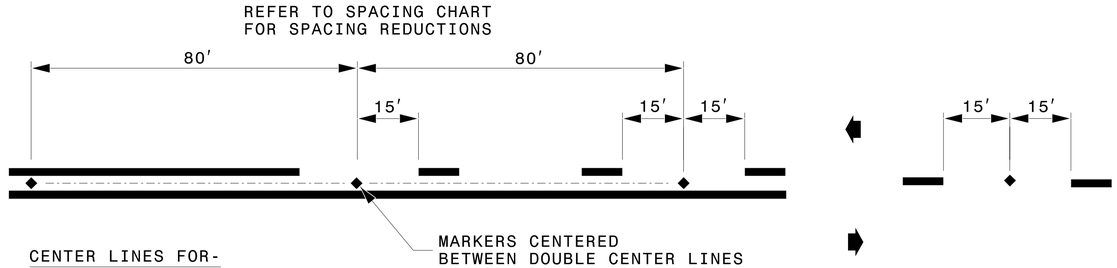
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

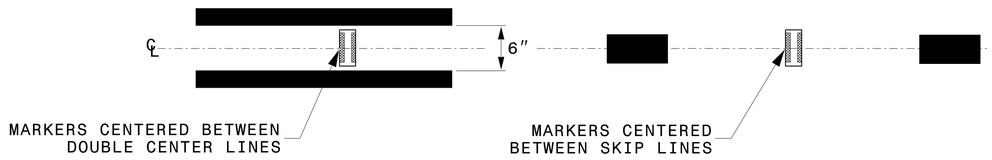


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

RAISED PAVEMENT MARKERS

INSTALLATION SPACING

SHEET 2 OF 3

1250D01

8/26/2026
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042546 MATTHEW V. SPRINGER
Signed by: Matthew V Springer, PE
BC60F6E8B584403...

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

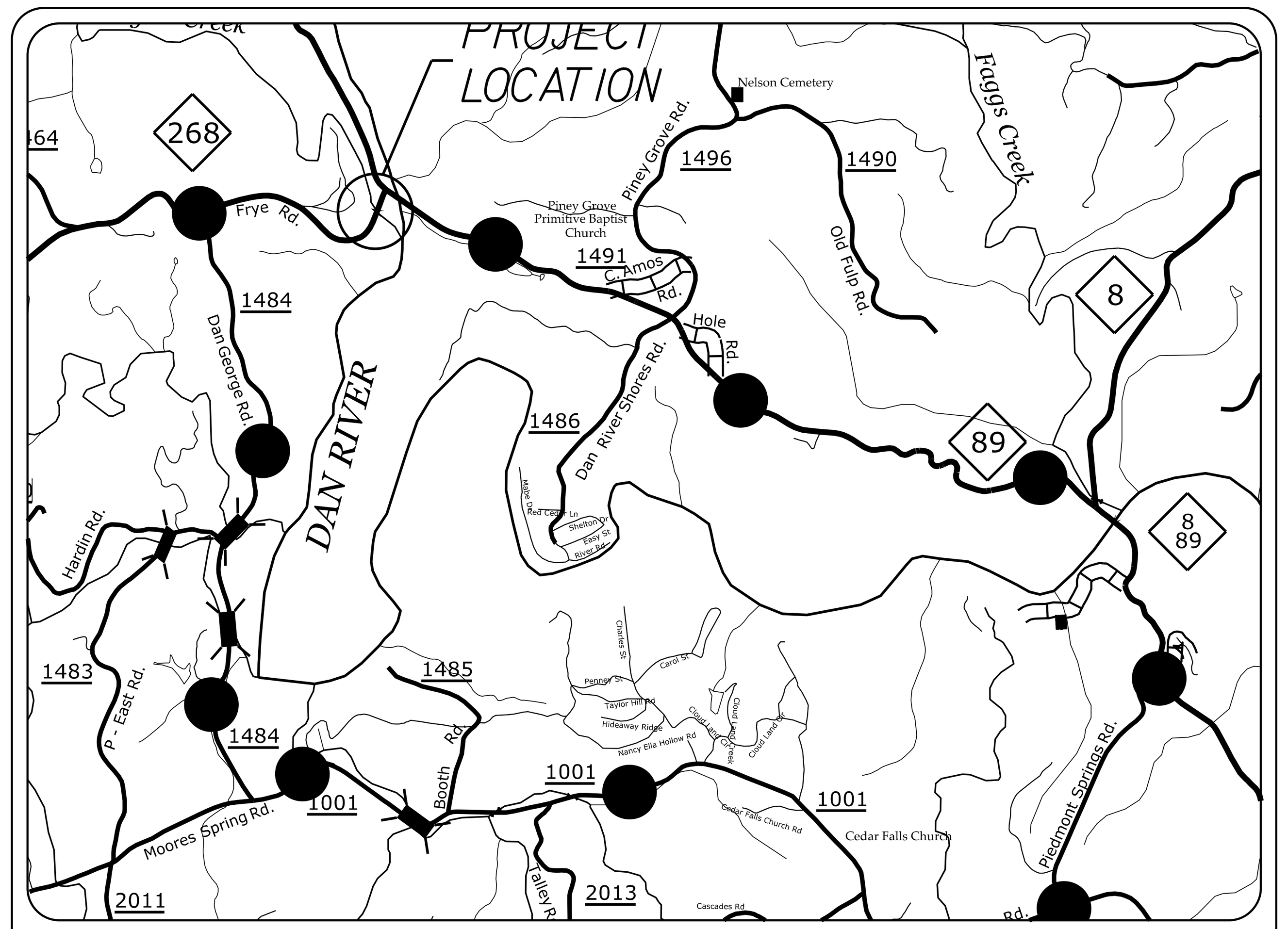
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ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

TIP PROJECT: BR-0102

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0102	EC-1	

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

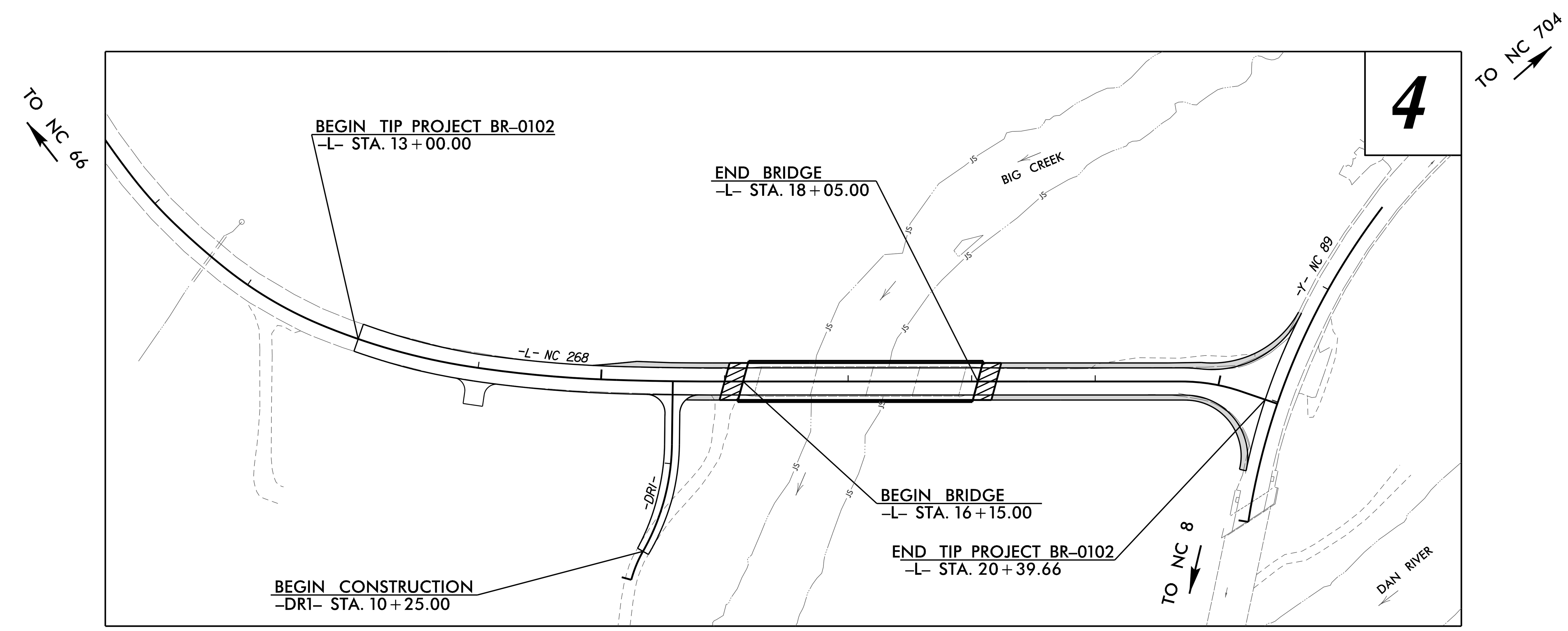
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

STOKES COUNTY

NAD 83/2011

LOCATION: BRIDGE #840037 ON NC-268 OVER BIG CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE



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

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG 010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.

SUMMIT
DESIGN AND ENGINEERING SERVICES

Prepared In the Office of:

1000 Social St. Suite 800.
Raleigh, NC 27609
Voice: (919)732-3883
Fax: (919)732-6776
www.summitde.com

2024 STANDARD SPECIFICATIONS

Designed by:

HE YANG	4408
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.

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he.yang

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	EC-2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

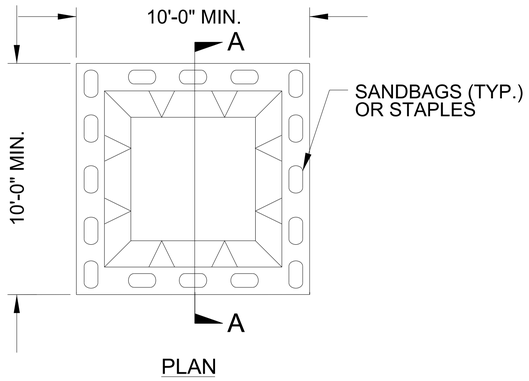
EROSION & SEDIMENT CONTROL LEGEND

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

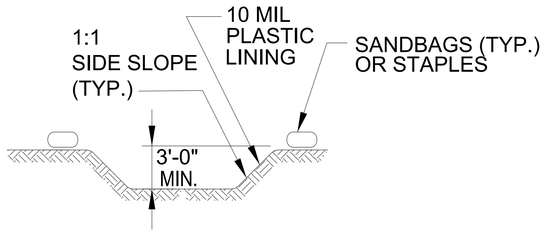
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet 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.
BR-0102	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A



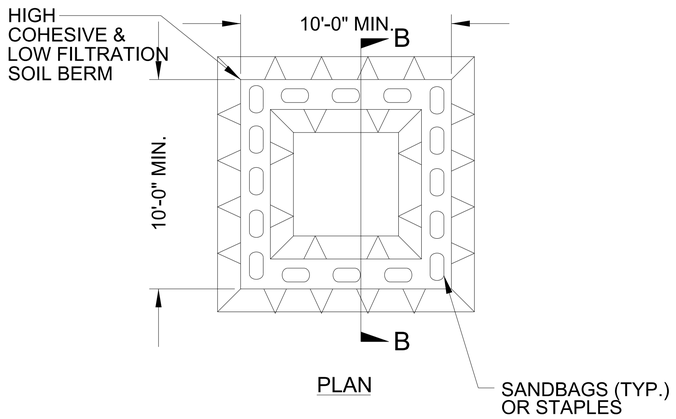
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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.

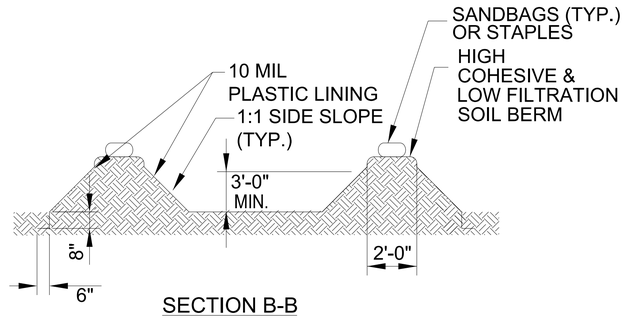
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

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 CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	EC-3

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE Nos C-5176
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(919) 732-3883
(919) 732-6676 (FAX)

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.
BR-0102	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

DITCH MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
UTILIZE EXCELSIOR MATERIAL FOR DITCH MATTING					
4	-L-	13+50	14+50	RT	40
4	-L-	14+50	15+50	RT	40
4	-L-	15+50	16+27	RT	25
			SUBTOTAL		105

SLOPE MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	18+00	19+00	LT	234
4	-L-	18+00	19+50	RT	441
			SUBTOTAL		675
SUBTOTAL OF DITCH MATTING & SLOPE MATTING					780
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					2000
				TOTAL	2780
				SAY	2800

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE Nos C-5176
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Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

-L-

PI Sta 10+34.85	PI Sta 10+95.75	PI Sta 11+49.04	PI Sta 12+23.09	PI Sta 13+33.86	PI Sta 14+55.19	PI Sta 15+51.23	PI Sta 19+94.83
Δ = 5° 30' 15.6" (LT)	Δ = 8° 31' 42.9" (LT)	Δ = 5° 12' 33.9" (LT)	Δ = 16° 23' 07.0" (LT)	Δ = 14° 01' 58.7" (LT)	Δ = 6° 33' 59.3" (LT)	Δ = 1° 46' 41.3" (LT)	Δ = 18° 58' 17.5" (RT)
D = 7° 54' 10.3"	D = 16° 22' 12.8"	D = 9° 32' 57.5"	D = 17° 37' 46.1"	D = 10° 54' 48.5"	D = 5° 43' 46.5"	D = 2° 17' 30.6"	D = 38° 11' 49.9"
L = 69.65'	L = 52.10'	L = 54.55'	L = 92.94'	L = 128.58'	L = 114.61'	L = 77.59'	L = 49.67'
T = 34.85'	T = 26.10'	T = 27.30'	T = 46.79'	T = 64.62'	T = 57.37'	T = 38.80'	T = 25.06'
R = 725.00'	R = 350.00'	R = 600.00'	R = 325.00'	R = 525.00'	R = 1,000.00'	R = 2,500.00'	R = 150.00'
SE = Exist.	SE = Exist.	SE = Exist.	SE = Exist.	SE = 06	SE = 06	SE = 03	SE = RC
RO = N/A	RO = N/A	RO = N/A	RO = N/A	RO = 126'	RO = 126'	RO = 63'	RO = 42'

-Y-

PI Sta 11+42.99
Δ = 28° 38' 52.4" (RT)
D = 10° 13' 53.0"
L = 280.00'
T = 142.99'
R = 560.00'
SE = Exist.
RO = N/A

NAD 83/2011

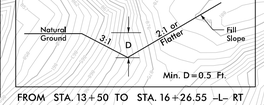
DETAIL 4-1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL II Rip-Rap
Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM STA. 14+50 TO STA. 16+10.54 -L- LT

DETAIL 4-2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=0.5 Ft.

FROM STA. 13+50 TO STA. 16+26.55 -L- RT

PC -L- Sta. 10+00.00
PCC -L- Sta. 10+69.65
PCC -L- Sta. 11+21.75
PCC -L- Sta. 11+76.30
PCC -L- Sta. 12+69.24
PCC -L- Sta. 13+97.83
PC -L- Sta. 19+69.77
PC -DRI- Sta. 10+00.00
PT -DRI- Sta. 11+15.69
N 68° 18' 41.3" W (AH)
PC -Y- Sta. 10+00.00
PT -Y- Sta. 12+80.00
PT -L- Sta. 20+19.43
N 39° 55' 40.9" E (AH)
END PROJECT BR-0102
POT -L- Sta. 20+39.66
POT -L- Sta. 20+50.00=
POC -Y- Sta. 10+98.52

BEGIN PROJECT BR-0102
POC -L- Sta.13+00.00

POT -DRI- Sta. 11+66.81=
POC -L- Sta.15+58.08

PT -L- Sta. 15+90.02
BEGIN BRIDGE
-L- Sta.16+15.00

END BRIDGE
-L- Sta.18+05.00

BEGIN CONSTRUCTION
-DRI- P.R.C. Sta.10+25.00

1
LAURELYN G. DOSSETT LIVING TRUST DATED 01-13-2022
DB 747 PG 294

2
DAN GEORGE
ALMA GEORGE
DB 322 PG 674

3
MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

-L- +90.00
EX. R/W

-L- +00.00
56.00' RT

-L- +51.00
72.00' RT
61.00' RT

-L- +63.00
72.00' RT
61.00' RT

-L- +16.00
68.00' RT

-L- +50.75
EX. R/W

-Y- +60.07

100' TAPER TO EX.
50' TAPER TO EX.
21' INC. TYP.
20' TYP.
15' TYP.

TYPE B-77
TB 2GI
GREU TL-2
15" W/ ELBOWS
15" RCP-III

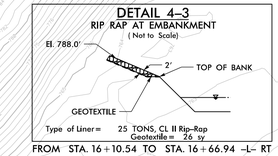
GRADE TO DRAIN
TREES TO BE REMOVED DURING CONSTRUCTION
REMOVE 163 LF OF EXISTING GUARDRAIL
REPLACE GRAU B-77 AND GUARDRAIL IN EXISTING LOCATION
MAINTAIN DRIVE ACCESS THROUGHOUT CONSTRUCTION
FLOATING TURBIDITY CURTAIN
DO NOT DISTURB GATE
BEGIN TAPER TO EX. (LT/RT) +75.00

BR0102 GPS-1
BR0102 GPS-2

-DRI-

PI Sta 10+12.57	PI Sta 10+71.33
Δ = 14° 19' 26.2" (RT)	Δ = 28° 51' 58.0" (LT)
D = 57° 17' 44.8"	D = 31° 49' 51.6"
L = 25.00'	L = 90.69'
T = 12.57'	T = 46.33'
R = 100.00'	R = 180.00'

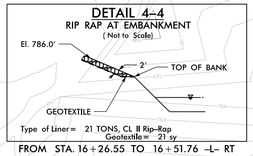
DETAIL 4-3
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 25 TONS, CL II Rip-Rap
Geotextile = 26 sy

FROM STA. 16+10.54 TO STA. 16+66.94 -L- RT

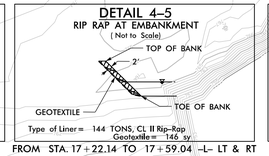
DETAIL 4-4
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 21 TONS, CL II Rip-Rap
Geotextile = 21 sy

FROM STA. 16+26.55 TO 16+51.76 -L- RT

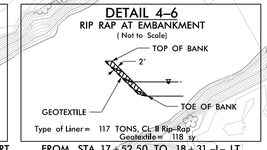
DETAIL 4-5
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 144 TONS, CL II Rip-Rap
Geotextile = 146 sy

FROM STA. 17+22.14 TO 17+59.04 -L- LT & RT

DETAIL 4-6
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 117 TONS, CL II Rip-Rap
Geotextile = 118 sy

FROM STA. 17+52.50 TO 18+31 -L- LT

(2) ENVIRONMENTALLY SENSITIVE AREA

CLEARING AND GRUBBING
EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

PAVEMENT REMOVAL

*DESIGN EXCEPTION REQUIRED

30-SEP-2026 16:17
BR-0102_EC_pst1_4.dgn
Roadway

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared in the Office of: SUMMIT Design and Engineering Services
NC FIRM LICENSE Nos C-5176
1000 Social St., Suite 800,
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

NAD 83/2011

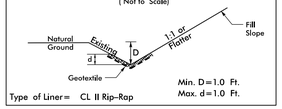
-L-

PI Sta 10+34.85	PI Sta 10+95.75	PI Sta 11+49.04	PI Sta 12+23.09	PI Sta 13+33.86	PI Sta 14+55.19	PI Sta 15+51.23	PI Sta 19+94.83
△ = 5° 30' 15.6" (LT)	△ = 8° 31' 42.9" (LT)	△ = 5° 12' 33.9" (LT)	△ = 16° 23' 07.0" (LT)	△ = 14° 01' 58.7" (LT)	△ = 6° 33' 59.3" (LT)	△ = 1° 46' 41.3" (LT)	△ = 18° 58' 17.5" (RT)
D = 7° 54' 10.3"	D = 16° 22' 12.8"	D = 9° 32' 57.5"	D = 17° 37' 46.1"	D = 10° 54' 48.5"	D = 5° 43' 46.5"	D = 2° 17' 30.6"	D = 38° 11' 49.9"
L = 69.65'	L = 52.10'	L = 54.55'	L = 92.94'	L = 128.58'	L = 114.61'	L = 77.59'	L = 49.67'
T = 34.85'	T = 26.10'	T = 27.30'	T = 46.79'	T = 64.62'	T = 57.37'	T = 38.80'	T = 25.06'
R = 725.00'	R = 350.00'	R = 600.00'	R = 325.00'	R = 525.00'	R = 1,000.00'	R = 2,500.00'	R = 150.00'
SE = Exist.	SE = Exist.	SE = Exist.	SE = Exist.	SE = 06	SE = 06	SE = 03	SE = RC
RO = N/A	RO = N/A	RO = N/A	RO = N/A	RO = 126'	RO = 126'	RO = 63'	RO = 42'

-Y-

PI Sta 11+42.99
△ = 28° 38' 52.4" (RT)
D = 10° 13' 53.0"
L = 280.00'
T = 142.99'
R = 560.00'
SE = Exist.
RO = N/A

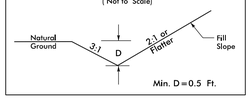
DETAIL 4-1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL II Rip-Rap
Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM STA. 14+50 TO STA. 16+10.54 -L- LT

DETAIL 4-2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=0.5 Ft.

FROM STA. 13+50 TO STA. 16+26.55 -L- RT

PC -L- Sta. 10+00.00
PCC -L- Sta. 10+69.65
PCC -L- Sta. 11+21.75
PCC -L- Sta. 11+76.30
PCC -L- Sta. 15+12.43
BEGIN PROJECT BR-0102
POC -L- Sta.13+00.00
PC -L- Sta. 19+69.77
POT -DRI- Sta. 11+66.81=
POC -L- Sta.15+58.08
PT -L- Sta. 15+90.02
BEGIN BRIDGE
-L- Sta.16+15.00
END BRIDGE
-L- Sta.18+05.00
PCC -L- Sta. 12+69.24
PCC -L- Sta. 13+97.83
PT -DRI- Sta. 11+15.69
N 68° 18' 41.3" W (AH)
PC -DRI- Sta. 10+00.00
PT -Y- Sta. 12+80.00
PT -L- Sta. 20+19.43
N 39° 55' 40.9" E (AH)
END PROJECT BR-0102
POT -L- Sta. 20+39.66
POT -L- Sta. 20+50.00=
POC -Y- Sta. 10+98.52
PC -Y- Sta. 10+00.00
BEGIN CONSTRUCTION
-DRI- P.R.C. Sta.10+25.00

1
LAURELYN G. DOSSETT LIVING TRUST DATED 01-13-2022
DB 747 PG 294

2
JERRY F. CULLER
LEONA Y. CULLER
DB 322 PG 677

3
MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

DAN GEORGE
ALMA GEORGE
DB 322 PG 674

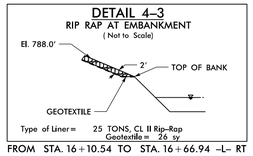
MABE LIVING TRUST
DATED 01-23-2013
DB 637 PG 890

TO OWEN DR & PILOT MOUNTAIN RD
EXISTING R/W
NC HWY 268 (UNKNOWN RD)
SPRING
WOODS
BL-3
BL-4
-L- +90.00 EX. R/W
-L- +00.00 56.00' RT
W/L
PUE
-L-
100' TAPER TO EX.
50' TAPER TO EX.
21' INC. TYP.
RCP-III
R=10' TYP.
R=20' TYP.
UNDEFINED SOIL PATH
WELL
BRO102
-L- +63.00 72.00' RT 61.00' RT
-L- +51.00 72.00' RT 61.00' RT
FLOATING TURBIDITY CURTAIN
MAINTAIN DRIVE ACCESS THROUGHOUT CONSTRUCTION
S 23°23'00" E 80.05'
S 46°29'58" E 317.06'
DO NOT DISTURB GATE
BEGIN TAPER TO EX. (LT/RT) +75.00
GRADE TO DRAIN
TREES TO BE REMOVED DURING CONSTRUCTION
BIG CREEK
N 32°04'41" W 80.48'
TYPE B-77
15" W/ ELBOWS
TB 2GI
GREU TL-2
15" RCP-III
-L- +16.00 68.00' RT
-L- +50.75 EX. R/W
REMOVE 163 LF OF EXISTING GUARDRAIL
REPLACE GRAU B-77 AND GUARDRAIL IN EXISTING LOCATION
-Y- +60.07
RIP RAP
TO FRANCISCO
TO DANBURY
DAN RIVER
N 12°56'33" W 562.01'
R=80'
±85.33'
CONC
EIP
EIP (BENT)
EXISTING R/W

-DRI-

PI Sta 10+12.57	PI Sta 10+71.33
△ = 14° 19' 26.2" (RT)	△ = 28° 51' 58.0" (LT)
D = 57° 17' 44.8"	D = 31° 49' 51.6"
L = 25.00'	L = 90.69'
T = 12.57'	T = 46.33'
R = 100.00'	R = 180.00'

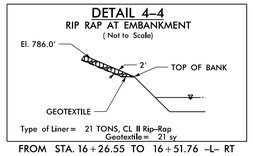
DETAIL 4-3
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 25 TONS, CL II Rip-Rap
Geotextile = 26 sy

FROM STA. 16+10.54 TO STA. 16+66.94 -L- RT

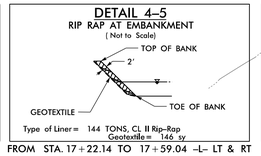
DETAIL 4-4
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 21 TONS, CL II Rip-Rap
Geotextile = 21 sy

FROM STA. 16+26.55 TO 16+51.76 -L- RT

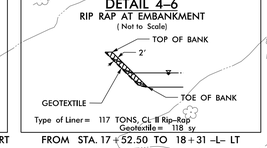
DETAIL 4-5
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 144 TONS, CL II Rip-Rap
Geotextile = 146 sy

FROM STA. 17+22.14 TO 17+59.04 -L- LT & RT

DETAIL 4-6
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 117 TONS, CL II Rip-Rap
Geotextile = 118 sy

FROM STA. 17+52.50 TO 18+31 -L- LT

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

PLACE MATTING FOR EROSION CONTROL ON SLOPE AS WORK ALLOWS. SEE SHEET EC-3A FOR STATION RANGES.

PAVEMENT REMOVAL

*DESIGN EXCEPTION REQUIRED

30-SEP-2026 16:23
BR-0102_EC_pst1.dgn
pruong

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

TIP PROJECT: BR-0102

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SIGNING PLAN
STOKES COUNTY

LOCATION: BRIDGE #840037 ON NC-268 OVER BIG CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE

TIP PROJECT NO.	SHEET NO.
BR-0102	SIGN-1

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445... (Faith E. Jahnke)

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
1000 Social St. Suite 800.
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

GENERAL NOTES

SIGNS FURNISHED BY CONTRACTOR

WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.

WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.

THE BACKGROUND FOR TYPE 'D' AND 'E' SIGNS SHALL BE TYPE 'C' REFLECTIVE SHEETING.

ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TWO U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.

CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE THE ACTUAL DATE THE DEPARTMENT SIGNS WILL BE REQUIRED.

IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.

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
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNEL SUPPORTS

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4025000000-E	901	CONTRACTOR FURNISHED, TYPE D SIGN	21	SF
4025000000-E	901	CONTRACTOR FURNISHED, TYPE E SIGN	21	SF
4025000000-E	901	CONTRACTOR FURNISHED, TYPE F SIGN	14	SF
4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	135	LF
4096000000-N	904	SIGN ERECTION, TYPE D	2	EA
4102000000-N	904	SIGN ERECTION, TYPE E	4	EA
4108000000-N	904	SIGN ERECTION, TYPE F	4	EA
4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	10	EA

PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D (GROUND MOUNTED)
3 SIGN ERECTION, TYPE E (GROUND MOUNTED)
4 SIGN ERECTION, TYPE F (GROUND MOUNTED)

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Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

DEVON HOYLE, EI — *PROJECT DESIGNER*
FAITH E. JAHNKE, PE — *PROJECT DESIGN ENGINEER*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

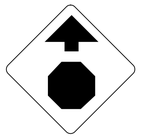
INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	TYPE E SIGNS
SIGN-2A	TYPE F SIGNS
SIGN-3	SPECIAL SIGN DESIGNS
SIGN-4	EXISTING AND PROPOSED SIGNS

26-AUG-2026 09:55
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zoezwack

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

401 QUANTITY REQ'D: 1



W3-1
30" X 30"
ONE "U" POST PER SIGN

402 QUANTITY REQ'D: 1



W1-2R
30" X 30"
ONE "U" POST PER SIGN

403 QUANTITY REQ'D: 1



W13-1P
18" X 18"
MOUNT BELOW SIGN 402 IN 1 INSTALLATION

404 QUANTITY REQ'D: 1



R1-1
30" X 30"
ONE "U" POST PER SIGN

TIP NO.	SHEET NO.
BR-0102	SIGN-2

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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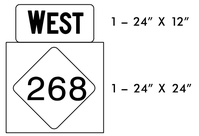
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1000 Social St, Suite 800,
Pittsboro, NC 27529
(919) 732-6676 (FAX)

19-MAY-2026 08:48
BR-0102_SIGN_2A.dgn
zoe.zwack

TYPE "E" SIGNS

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

501 QUANTITY REQ'D: 1

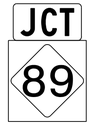


1 – 24″ X 12″

1 – 24″ X 24″

ONE "U" POST PER SIGN

502 QUANTITY REQ'D: 1



1 – 21″ X 15″

1 – 24″ X 24″

ONE "U" POST PER SIGN

TIP NO.	SHEET NO.
BR-0102	SIGN-2A

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DATE: 8/26/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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Raleigh, NC 27609
(919) 732-5888
(919) 732-5676 (FAX)

TYPE "F" SIGNS

19-MAY-2026 08:48
BR-0102_SIGN_2B.dgn
zoe.zwack

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

TIP NO.	SHEET NO.
BR-0102	SIGN-3

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445... DATE: 8/26/2026

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NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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NC FIRM LICENSE No: C-576
1000 Social St., Suite 800-L
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1
SIGN WIDTH: 5'-6"
HEIGHT: 2'-6"
TOTAL AREA: 13.8 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0.1"
WIDTH: 0.9"
RADII: 3.9"
NO. Z BARS:
LENGTH:

BACKG COLOR: Brown
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type A	50.9	6	6	9.4

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: DJH CHECKED BY: ZAZ Mar 03, 2026
PROJECT ID: BR-0102 LOCATION: DIV: 9

USE NOTES:

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade A, B, or C reflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																														Series/Size Text Length
		H	a	n	g	i	n	g		R	o	c	k																	D 2000
	5.7	5.1	4.6	4.4	4.8	2.2	4.4	3.6	6	4.7	4.4	4.3	3.8	7.9																52.4
		S	t	a	t	e		P	a	r	k																			D 2000
	5.8	4.4	2.8	4	2.8	3.5	6	4.6	4.6	3	3.8	20.6																		39.5

FILENAME: BR-0102_SIGN_3

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 302
TYPE: D
QUANTITY: 1
SIGN WIDTH: 4'-6"
HEIGHT: 1'-6"
TOTAL AREA: 6.8 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0.08"
WIDTH: 0.68"
RADII: 1.43"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

DESIGN BY: DJH CHECKED BY: ZAZ Mar 03, 2026
PROJECT ID: BR-0102 LOCATION: DIV: 9

USE NOTES:

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade A, B, or C reflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																														Series/Size Text Length
		D	a	n		R	i	v	e	r																				D 2000
	8.4	5	4.6	3.5	6	5	1.7	4.7	4.4	2.3	8.4																			37.1

FILENAME: BR-0102_SIGN_3

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGNS

Docusign Envelope ID: 048A21CD-3203-8E46-8380-AE1147D89620

TIP NO.	SHEET NO.
BR-0102	SIGN-4

APPROVED: Signed by: Faith E. Jahnke 89EBFA046C06445...

DATE: 8/26/2026

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NORTH CAROLINA PROFESSIONAL SEAL 046981 ENGINEER FAITH E. JAHNKE

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NC FIRM LICENSE No: C-576
1000 Social St, Suite 800,
Raleigh, NC 27609
(919) 757-3883
(919) 752-6676 (FAX)

NAD 83/2011

10 15 20

TO TOWN OF PILOT MOUNTAIN

NC HWY 268 - LYNCHBURG RD

BIG CREEK

INSTALL
SEE NOTE 4
-L- STA.14+44+/-

WEST 501 268

SEE NOTE 1

WEST 268

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

SEE NOTE 1

35 M.P.H.

INSTALL
SEE NOTE 3
-L- STA.18+62+/-

35 M.P.H. 402 403

RETAIN
WEST 268

TO FRANCISCO

NC HWY 66 BST

RETAIN H

RETAIN WEST 89

RETAIN EAST 89

HANGING ROCK STATE PARK

SEE NOTE 1

MTN GATE

BIG CREEK

SEE NOTE 1

SEE NOTE 1

404 STOP

INSTALL
SEE NOTE 3
-L- STA.19+86+/-

STOP

SEE NOTE 1

Dan River

SEE NOTE 1

401

INSTALL
SEE NOTE 3
-L- STA.14+22+/-

SEE NOTE 1

HANGING ROCK STATE PARK 301

INSTALL
SEE NOTE 2
-L- STA.14+84+/-

JCT 89

SEE NOTE 1

303 Dan River

INSTALL
SEE NOTE 2
-Y- STA.10+48+/-

TO DANBURY

DAN RIVER

JCT 502 89

INSTALL
SEE NOTE 4
-L- STA.15+82+/-

DAN RIVER

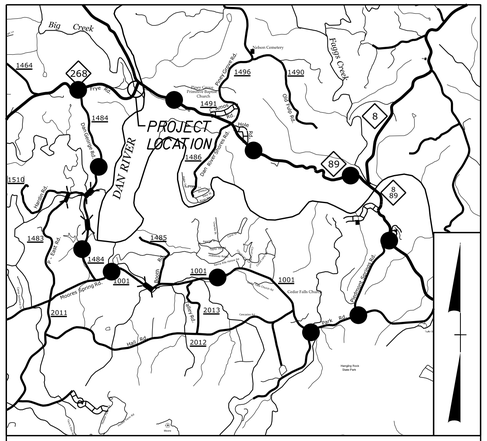
PROJECT NOTES

1 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
2 SIGN ERECTION, TYPE D (GROUND MOUNTED)
3 SIGN ERECTION, TYPE E (GROUND MOUNTED)
4 SIGN ERECTION, TYPE F (GROUND MOUNTED)

EXISTING AND PROPOSED SIGNS

09/08/99

TIP PROJECT: BR–0102



VICINITY MAP

DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
STOKES COUNTY

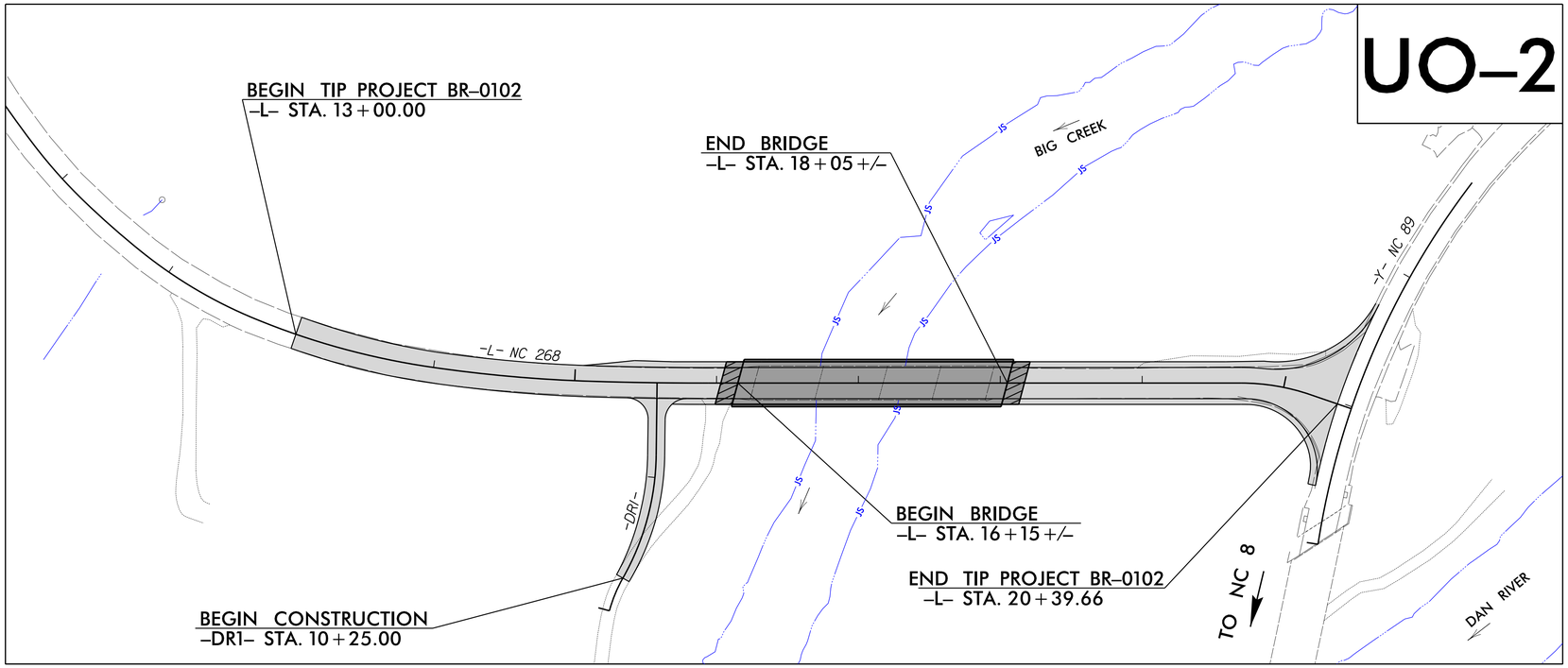
LOCATION: BRIDGE #840037 ON NC 268 OVER BIG CREEK

TYPE OF WORK: POWER & COMMUNICATIONS

T.I.P. NO.	SHEET NO.
BR–0102	UO–1

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.

NAD 83/2011



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UO–1	*TITLE SHEET*
UO–2	*UBO PLAN SHEET*

UTILITY OWNERS WITH CONFLICTS

(A) POWER – DUKE ENERGY

(B) COMMUNICATIONS – MCNC

(C) COMMUNICATIONS – BRIGHTSPEED

(D) COMMUNICATIONS – RSN

PREPARED IN THE OFFICE OF:

TELICS
1598 WESTBROOK PLAZA DR.
SUITE 202
WINSTON-SALEM, NC 27103
(336) 705-8844

CORY WOOD – *UTILITY PROJECT MANAGER*

CORY WOOD – *PROJECT UTILITY COORDINATOR*

DIVISION OF HIGHWAYS
DIVISION 9
375 SILAS CREEK PARKWAY
WINSTON SALEM, NC 27127

JOSHUA A. MCMAHAN – *DIVISION UTILITY ENGINEER*

LOU PORTER – *ASST. DIVISION UTILITY ENGINEER*

01-APR-2025 11:19
D:\Utility Work - Telics\BR-0102\BR-0102_ut_tsh_UO1_psh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
BR-0102	UO-2

THIS SHEET CORRESPONDS TO RDY-4

UTILITIES BY OTHERS

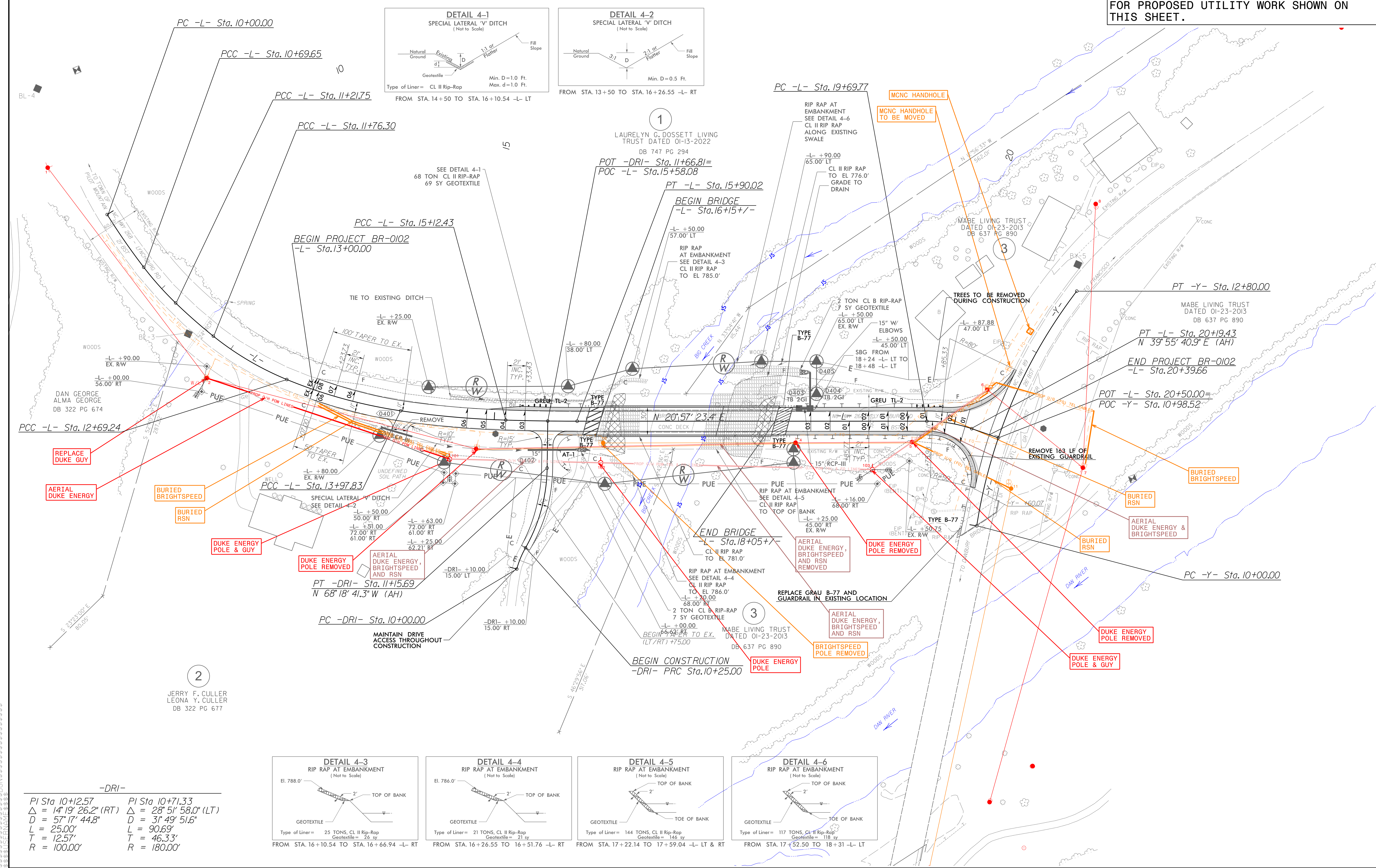
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

-L-

PI Sta 10+34.85	PI Sta 10+95.75	PI Sta 11+49.04	PI Sta 12+23.09	PI Sta 13+33.86	PI Sta 14+55.19	PI Sta 15+51.23	PI Sta 19+94.83
Δ = 5° 30′ 15.6″ (LT)	Δ = 8° 31′ 42.9″ (LT)	Δ = 5° 12′ 33.9″ (LT)	Δ = 16° 23′ 07.0″ (LT)	Δ = 14° 01′ 58.7″ (LT)	Δ = 6° 33′ 59.3″ (LT)	Δ = 1° 46′ 41.3″ (LT)	Δ = 18° 58′ 17.5″ (RT)
D = 7° 54′ 10.3″	D = 16° 22′ 12.8″	D = 9° 32′ 57.5″	D = 17° 37′ 46.1″	D = 10° 54′ 48.5″	D = 5° 43′ 46.5″	D = 2° 17′ 30.6″	D = 38° 11′ 49.9″
L = 69.65′	L = 52.10′	L = 54.55′	L = 92.94′	L = 128.58′	L = 114.61′	L = 77.59′	L = 49.67′
T = 34.85′	T = 26.10′	T = 27.30′	T = 46.79′	T = 64.62′	T = 57.37′	T = 38.80′	T = 25.06′
R = 725.00′	R = 350.00′	R = 600.00′	R = 325.00′	R = 525.00′	R = 1,000.00′	R = 2,500.00′	R = 150.00′
SE = Exist.	SE = Exist.	SE = Exist.	SE = Exist.	SE = 06	SE = 06	SE = 03	SE = RC
RO = N/A	RO = N/A	RO = N/A	RO = N/A	RO = 126′	RO = 126′	RO = 63′	RO = 42′

-Y-

PI Sta 11+42.99
Δ = 28° 38′ 52.4″ (RT)
D = 10° 13′ 53.0″
L = 280.00′
T = 142.99′
R = 560.00′
SE = Exist.
RO = N/A



-DRI-

PI Sta 10+12.57	PI Sta 10+71.33
Δ = 14° 19′ 26.2″ (RT)	Δ = 28° 51′ 58.0″ (LT)
D = 57° 17′ 44.8″	D = 31° 49′ 51.6″
L = 25.00′	L = 90.69′
T = 12.57′	T = 46.33′
R = 100.00′	R = 180.00′

5/26/20

BR-0102
X-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
STOKES COUNTY



PLANS PREPARED BY:
SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St. Suite 800,
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

BR-0102 CROSS SECTIONS INDEX OF SHEETS

ALIGNMENT	SHEETS
-L-	X-2 THRU X-7
-DR1-	X-8 THRU X-10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
13+50.00	0	0
14+00.00	8	2
14+50.00	48	5
15+00.00	81	20
15+50.00	37	63
16+00.00	7	159

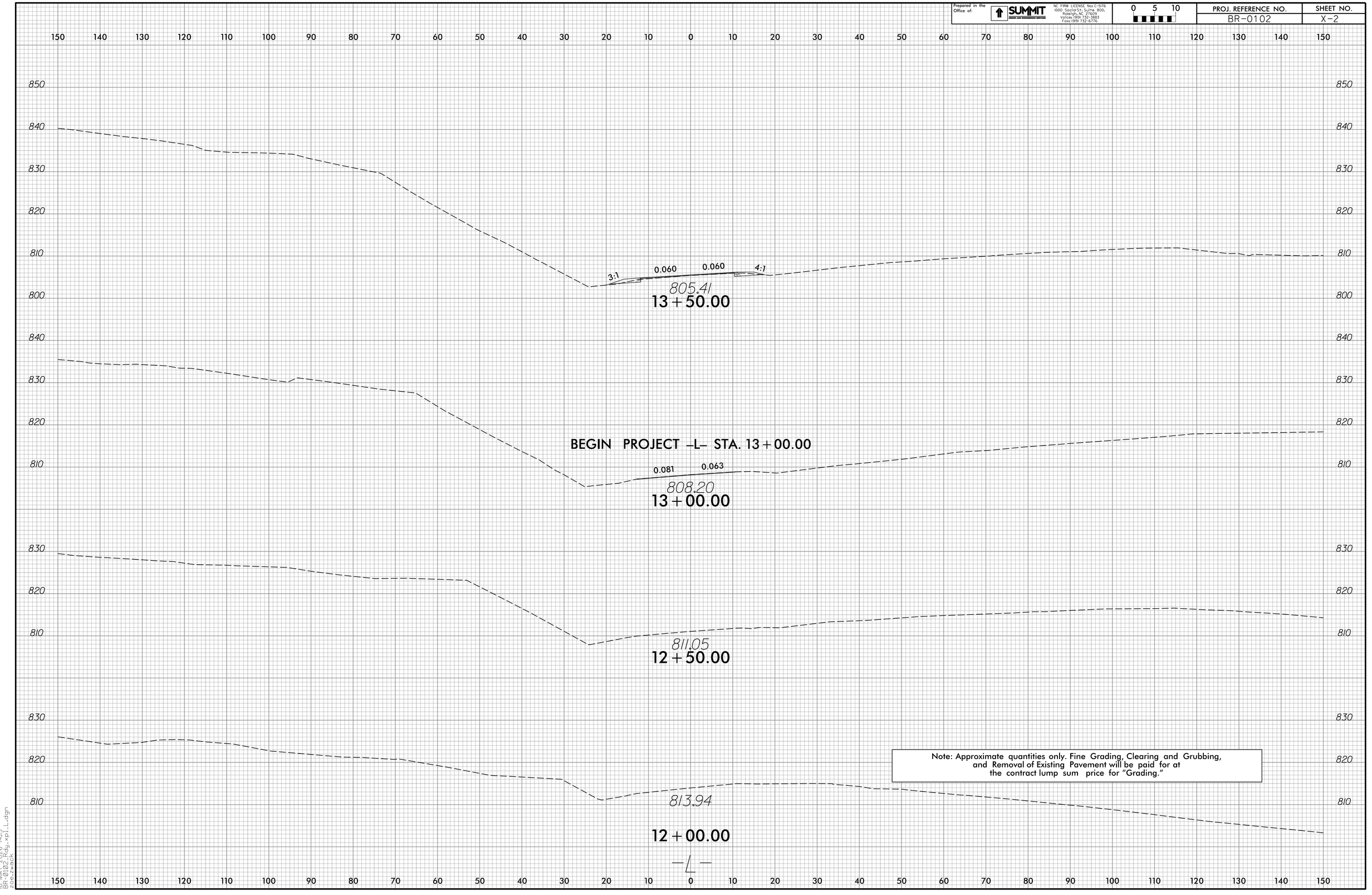
Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
18+50.00	0	0
19+00.00	6	249
19+50.00	6	91
20+00.00	7	4

Station Dr1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+25.00	0	0
10+50.00	10	0
10+75.00	23	0
11+00.00	33	0
11+25.00	17	1
11+50.00	1	74

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Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6776

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-2



Note: Approximate quantities only. Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

18-MAY-2026 14:15
BR-0102_Rdy_xs1_v4.dgn
zoe.zwick

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0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

850 840 830 820 810 800 790

3:1 0.060 0.060 4:1 2:1

799.70

796.42

14+50.00

850 840 830 820 810 800

3:1 0.060 0.060 4:1 DRIVEWAY

802.63

14+00.00

—L—

18-MAY-2026 14:15
BR-0102-Rdwy-pll.dgn
zoe.zwack

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0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820 810 800 790 780

-DR1-

0.030 0.030

2:1

793.15

15+50.00

860 850 840 830 820 810 800 790 780

0.046 0.046

3:1

4:1

2:1

796.50

793.47

15+00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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zoe.zwack

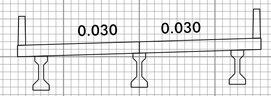
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Fax: (919) 732-6776

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

830 820 810 800 790 780 770 760 750

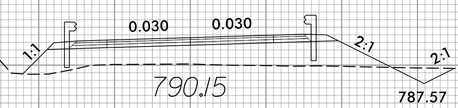


771.86

16+50.00

850 840 830 820 810 800 790 780 770

BEGIN BRIDGE –L– STA. 16+15+/–



790.15

787.57

16+00.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

18-MAY-2026 14:15
BR-0102_Rdy-pll.dgn
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0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-6

END BRIDGE –L– STA. 18+05+/–

0.030 0.030

785.44

18+00.00

0.030 0.030

764.53

17+50.00

0.030 0.030

750.71

17+00.00

–L–

18-MAY-2026 14:15
BR-0102_Rdy_rpt_L.dgn
zoe.zwack

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Fax: (919) 732-6776

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-7

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

790
780
770

END PROJECT –L– STA. 20+39.66

4:1 0.016 0.016 2:1

781.83

20+00.00

790
780
770

3:1 0.001 0.020 2:1

782.73

19+50.00

790
780
770

0.020 0.003

3:1 2:1

783.78

19+00.00

790
780
770
760

0.020 0.027

2:1 2:1

784.64

18+50.00

–L–

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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zoe.zwick

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BR-0102	X-8

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

795
790
785
780
775
770
765
760

BEGIN CONSTRUCTION –DR1– STA. 10+25.00

2:1 0.020 0.020 2:1

778.92

10+25.00

775.87

10+00.00


–DR1–

795
790
785
780
775
770
765
760

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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zoe.zwack

PROJ. REFERENCE NO.	SHEET NO.
BR-0102	X-9



6/23/16

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zoe.zwack

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BR-0102	X-10

END CONSTRUCTION –DR1– STA. 11+55.81

0.020 0.020

3:1

2:1

791.69

11+50.00

EXT. SHLD 0.020 0.020

2:1

793.16

11+25.00

2:1 0.020 0.020 EXT. SHLD

791.61

11+00.00

–DRI–

18-MAY-2026 14:15
BR-0102_Fig-rdp-DR1.dgn
cscarroll

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TIP PROJECT: BR–0102

CONTRACT:

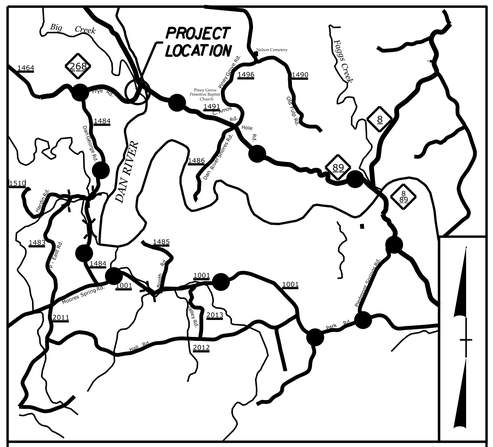
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR–0102		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
67102.1.1		PE
67102.2.1		RW/UTIL
67102.3.1		CONST

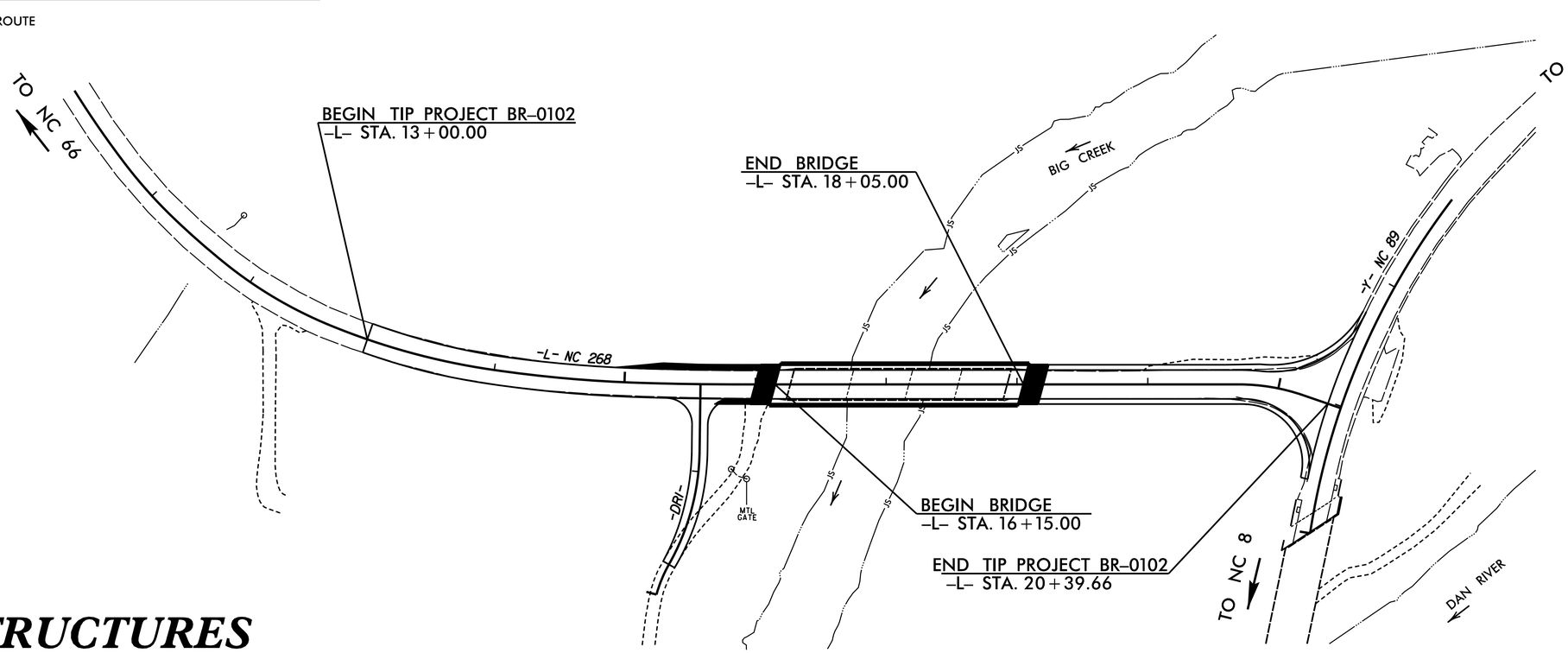
LOCATION: BRIDGE #840037 ON NC–268 OVER BIG CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE



VICINITY MAP

● DETOUR ROUTE

NAD 83/2011



STRUCTURES

THIS PROJECT DOES NOT FALL WITHIN ANY MUNICIPAL BOUNDARIES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 2.5 0 5 10

DESIGN DATA

ADT 2026 = 1360
ADT 2046 = 1620
K = 10%
D = 60%
V = 40 MPH
* TTST = 3% DUAL 4%
FUNC CLASS = REGIONAL TIER
SPEED LIMIT = 55 MPH (STAT.)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR–0102 = 0.104 MILES

LENGTH STRUCTURES TIP PROJECT BR–0102 = 0.036 MILES

TOTAL LENGTH TIP PROJECT BR–0102 = 0.140 MILES

NCDOT CONTACT: JEREMY L. KEATON, PE, PLS
PROJECT MANAGER, DIVISION 9

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FIRM NO. C-5176

2024 STANDARD SPECIFICATIONS

LETTING DATE:
NOVEMBER 17, 2026

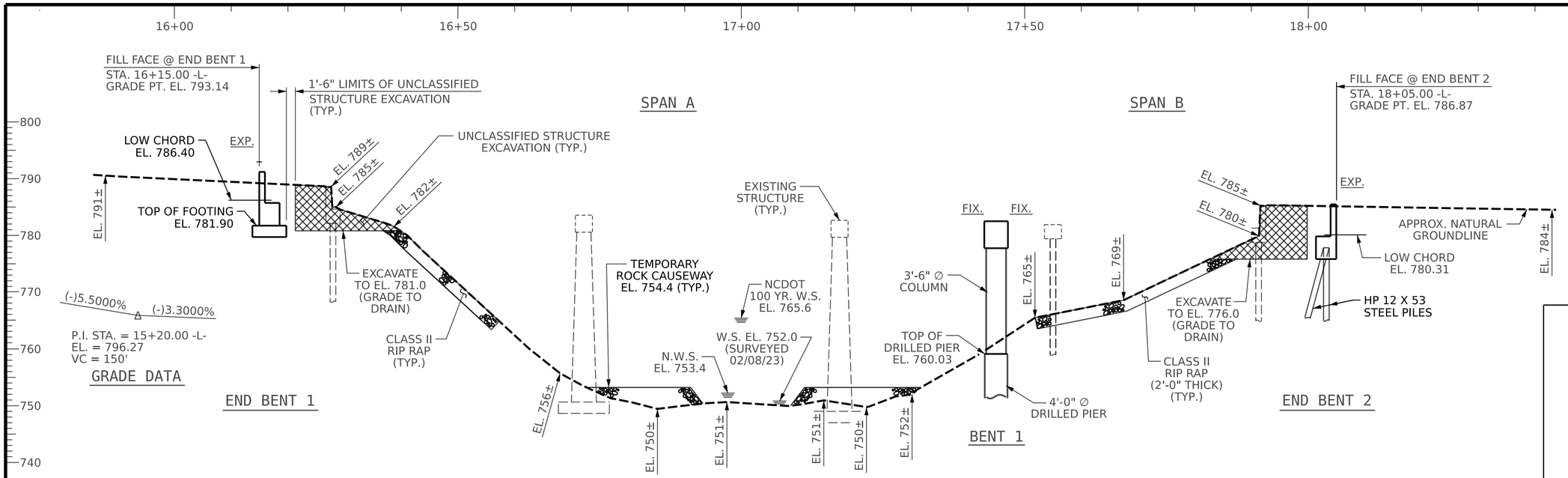
JENNIFER R. McROY, PE
PROJECT ENGINEER

GREGORY W. DICKEY, PE
PROJECT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
541E88AC897A4C...

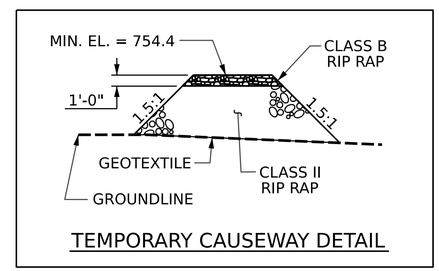
STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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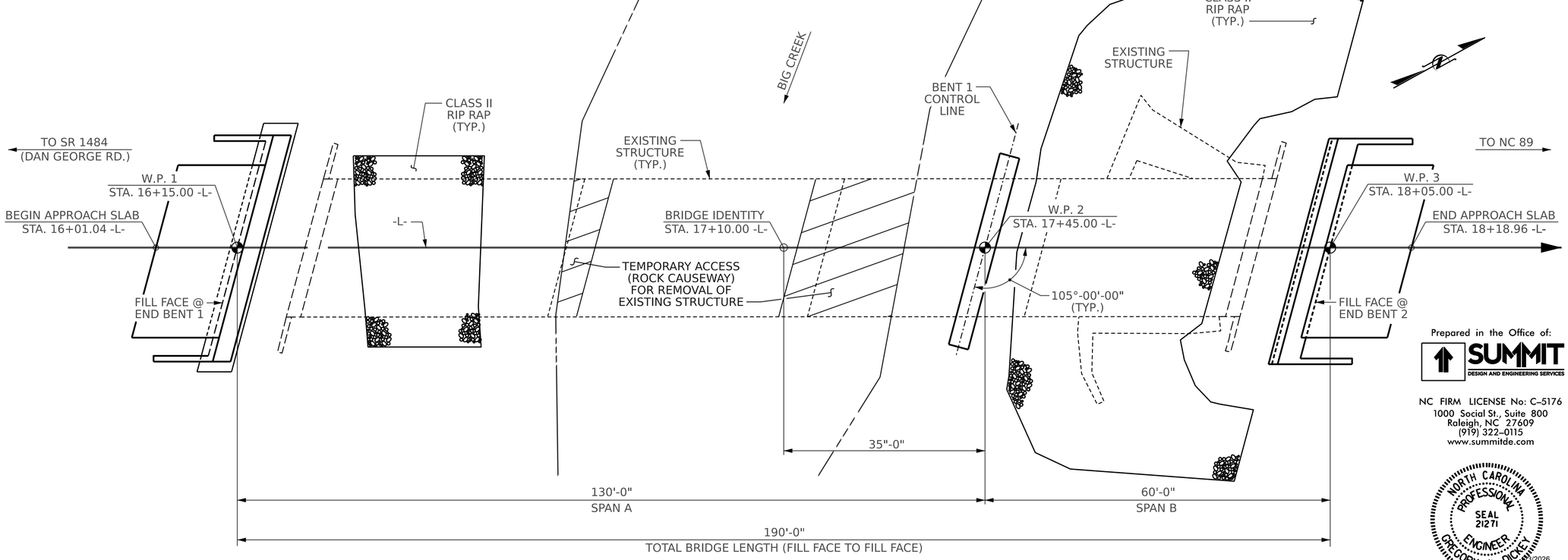


SECTION ALONG -L-

(SECTION AT RIGHT ANGLES TO BENT AND END BENTS)



TEMPORARY CAUSEWAY DETAIL



PLAN

(PILES NOT SHOWN FOR CLARITY)

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

DRAWN BY : B.M. WILSON DATE : 02/2026
CHECKED BY : G.W. DICKEY DATE : 02/2026
DESIGN ENGINEER OF RECORD : G.W. DICKEY DATE : 02/2026

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1000 Social St., Suite 800
Raleigh, NC 27609
(919) 322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
02/2026
DocuSigned by: Gregory W. Dickey
541EB8AC897741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

SHEET 1 OF 5 REPLACES BRIDGE 840037

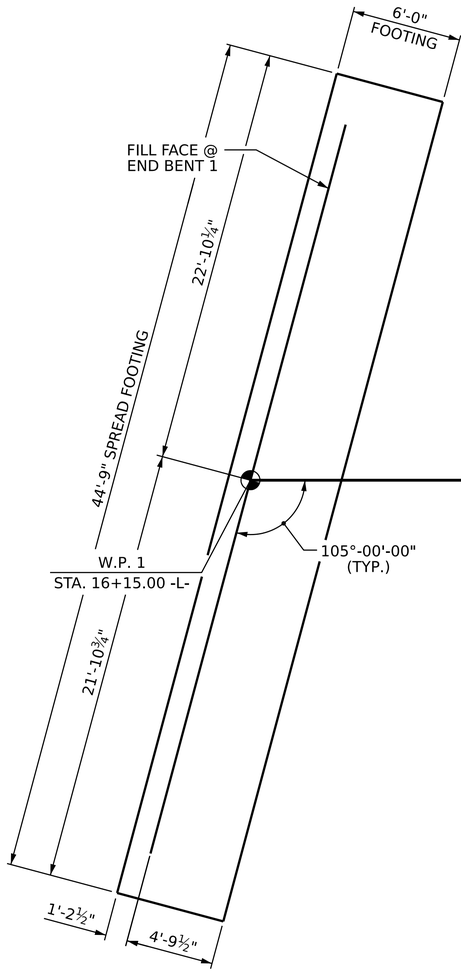
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

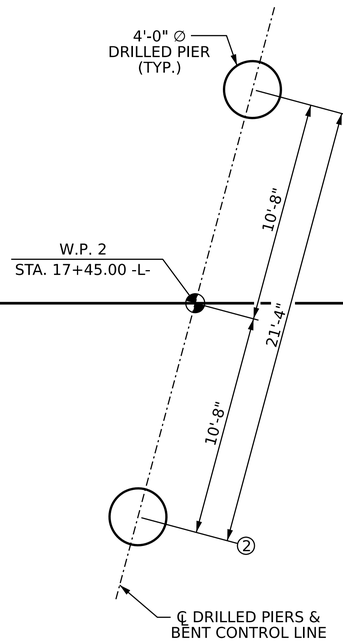
FOR BRIDGE OVER BIG CREEK
ON NC 268 BETWEEN
SR 1484(DAN GEORGE RD.)
& NC 89

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

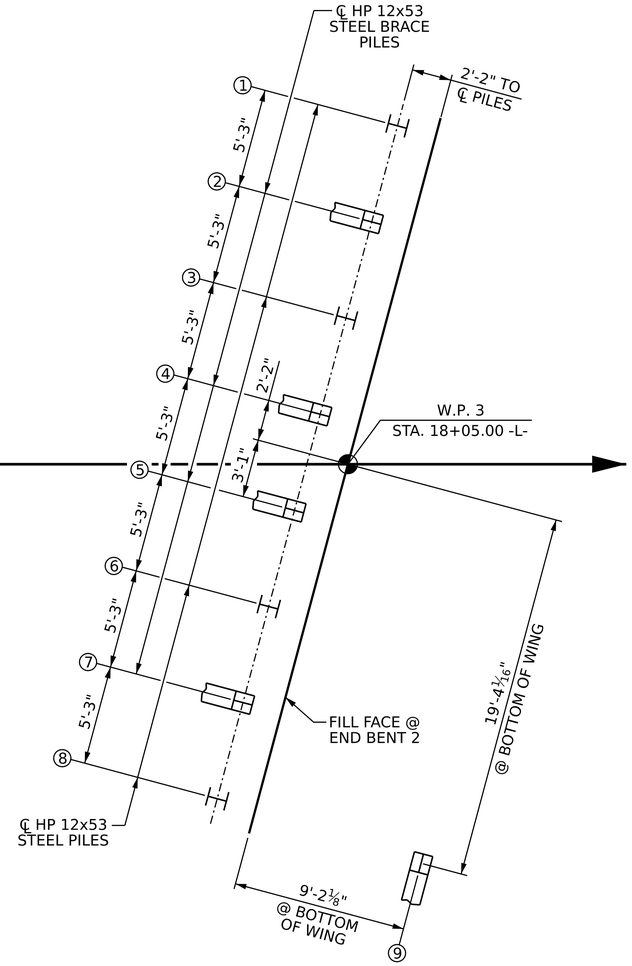
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END BENT 1



BENT 1



END BENT 2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES & DRILLED PIERS ARE SHOWN TO THE CENTERLINE OF PILES & DRILLED PIERS.

NOTES

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

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

FILL HOLES FOR PILE EXCAVATION AT END BENT 2 WITH CONCRETE.

THE SPREAD FOOTING AT END BENT 1 IS TO BE DESIGNED FOR A FACTORED RESISTANCE OF 10 KSF. CHECK FIELD CONDITIONS FOR THE REQUIRED BEARING RESISTANCE OF 30 KSF BEFORE PLACING CONCRETE.

KEY IN SPREAD FOOTINGS AT END BENT 1 AT LEAST 12" INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

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NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919) 322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey 541EB8AC897741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FOUNDATION LAYOUT

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

DRAWN BY : B.M. WILSON DATE : 02/2026
CHECKED BY : J.R. MCROY DATE : 02/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 02/2026

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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")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 2 (Piles 1-8)	8	140	See Structure Plans	25			233							
TOTAL QUANTITY:														

$$* RDR = \frac{Factored\ Resistance + Factored\ Drag\ Load + Factored\ Dead\ Load}{Dynamic\ Resistance\ Factor} + Nominal\ Drag\ Load\ Resistance + Nominal\ Resistance\ from\ Scourable\ Material$$

** 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.

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 KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 2 (Piles 1-8)	140			0.6		

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

SUMMARY OF DRILLED PIER INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pier(s) #(-#) (e.g., "Bent 1, Piers 1-3")	Number of Piers per Line	Factored Resistance per Pier KIPS	Required Drilled Pier Tip Elevation FT	Required Tip Resistance per Pier KSF	Scour Critical Elevation FT	Minimum Drilled Pier Penetration Into Rock per Pier LIN FT	Drilled Pier Length* per Pier LIN FT	Drilled Pier Length Not In Soil* per Pier LIN FT	Drilled Pier Length In Soil* per Pier LIN FT	Permanent Steel Casing Required? YES	Permanent Steel Casing Tip Elevation (Elevation Not To Extend Casing Below) FT	Permanent Steel Casing Length** per Pier LIN FT
Bent 1 (Piers 1-2)	2	1111	737.00	10	746.00	10		12	13	YES	748.00	14
TOTAL QUANTITY:								24	26			28

* Drilled Pier Length, Drilled Pier Length Not in Soil and Drilled Pier Length in Soil represent estimated drilled pier quantities and are measured and paid for as either "____ Dia. Drilled Piers" or "____ Dia. Drilled Piers Not in Soil" and "____ Dia. Drilled Piers in Soil" in accordance with Article 411-7 of the NCDOT Standard Specifications. For bents with a not in soil pay item, drilled piers through air or water will be paid at the contract unit price for "__Dia. Drilled Piers in Soil."

** Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation and is measured and paid for as "Permanent Steel Casing for ____ Dia. Drilled Pier" in accordance with Article 411-7 of the NCDOT Standard Specifications.

SUMMARY OF DRILLED PIER TESTING

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pier(s) #(-#) (e.g., "Bent 1, Piers 1-3")	Standard Penetration Test (SPT) EACH	Crosshole Sonic Logging (CSL) EACH	Thermal Integrity Profiler (TIP) EACH	Shaft Inspection Device (SID) EACH	Pile Integrity Test (PIT) EACH
Bent 1 (Piers 1-2)		1			
TOTAL QUANTITY:		1			

PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Daniel P. Gallo, #052028) on 10-16-2025.
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 may adjust the quantity for DPT Testing, Pipe Pile Plates, Permanent Steel Casing, SPTs, TIPs, CSL Testing, SID Inspections and PITs when necessary.

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY

DocuSigned by: Gregory W. Dickey 541EB8AC897741C...

6/3/2026

SIGNATURE DATE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PILE AND DRILLED PIER FOUNDATION TABLES

DRAWN BY: B. M. WILSON DATE: 02/2026
CHECKED BY: G. W. DICKEY DATE: 02/2026
DESIGN ENGINEER OF RECORD: G. W. DICKEY DATE: 02/2026

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2			4		

SHEET NO. S-3

TOTAL SHEETS 32

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SUMMARY OF SPREAD FOOTING INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Footing(s) #(-#) (e.g., "Bent 1, Footing 1-2")	Factored Bearing Resistance KSF	Footing Dimensions (Length x Width) FT x FT	Required Bearing Resistance KSF	Scour Critical Elevation FT	Minimum Bottom of Footing (Footing No Higher Than) Elevation FT
End Bent 1, Footing 1	10	42.5 FT X 6 FT	30		779.90

NOTES:

1. The Micropile and Spread Footing Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Daniel P. Gallo, #052028) on 10-15-2025.

DRAWN BY: B. M. WILSON DATE: 02/2026
CHECKED BY: G. W. DICKEY DATE: 02/2026
DESIGN ENGINEER OF RECORD: G. W. DICKEY DATE: 02/2026

PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 4 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY

DocuSigned by: Gregory W. Dickey 541EB8AC897741C...

10/3/2026

SIGNATURE DATE

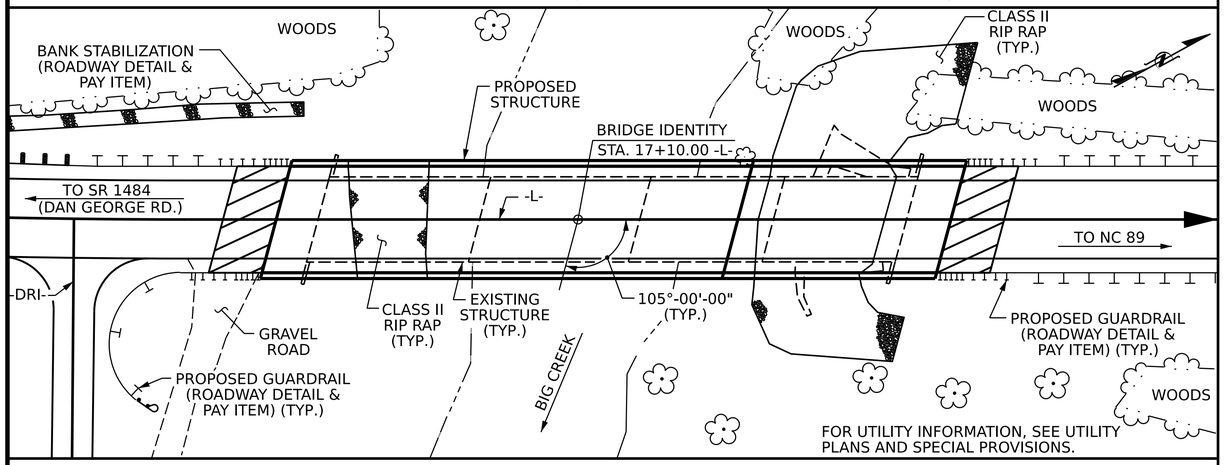
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SPREAD FOOTING FOUNDATION TABLE

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

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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.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH ''HEC 18-EVALUATING SCOUR AT BRIDGES.''

THE EXISTING STRUCTURE CONSISTING OF 4 SPANS, 1 @ 45'-5", 1 @ 45'-0", 1 @ 37'-6" AND 1 @ 37'-11" WITH A REINFORCED CONCRETE DECK ON PRESTRESSED CONCRETE GIRDERS WITH REINFORCED CONCRETE CAP ON CONCRETE PILES WITH A CLEAR ROADWAY OF 24'-0" LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING THE CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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 COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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

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

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

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

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35' OF EACH SIDE OF CENTERLINE ROADWAY AT END BENT 1 AND 30' OF EACH SIDE OF CENTERLINE ROADWAY AT END BENT 2 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.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS AT STA. 17+10.00 -L-.

THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION 746.00
SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

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

HYDRAULIC DATA

DESIGN DISCHARGE	= 6500 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 764.6 FT.
DRAINAGE AREA	= 44.8 SQ. MI.
BASE DISCHARGE (Q100)	= 7400 C.F.S.
BASE HIGH WATER ELEVATION	= 765.6 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 31500 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 782.2 FT. *

* BRIDGE DOES NOT OVERTOP, SEE ADDITIONAL INFORMATION

W.S. EL. TAKEN @ RIVER STATION 740

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMP. ACCESS @ STA. 17+10.00 -L-	REMOVAL OF EXISTING STRUCTURE @ STA. 17+10.00 -L-	ASBESTOS ASSESSMENT	4'-0" ∅ DRILLED PIERS IN SOIL	4'-0" ∅ DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" ∅ DRILLED PIER	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOOR	CLASS A CONCRETE	BRIDGE APPROACH SLABS @ STA. 17+10.00 -L-
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM					LUMP SUM	6,243.0	5,782.0		LUMP SUM
END BENT 1											64.1	
BENT 1				26	24	28	1				38.0	
END BENT 2											43.7	
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	26	24	28	1	LUMP SUM	6,243.0	5,782.0	145.8	LUMP SUM

	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	FIB 63" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES		CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARING	FOAM JOINT SEALS
	LBS.	LBS.	NO.	LIN. FT.	EACH	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE			8	743.0				375.7				
END BENT 1	8,035								85	95		
BENT 1	11,539	2,059										
END BENT 2	5,568				9	9	225.0		390	435		
TOTAL	25,142	2,059	8	743.0	9	9	225.0	375.7	475	530	LUMP SUM	LUMP SUM

DRAWN BY : M.K. BEARD DATE : 02/2025
CHECKED BY : G.W. DICKEY DATE : 02/2025
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 02/2025

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SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
541EB8AC897741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

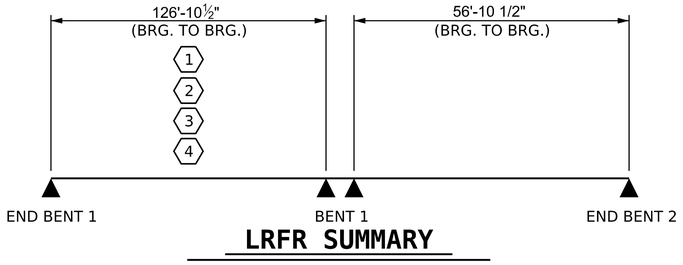
GENERAL DRAWING
FOR BRIDGE OVER BIG CREEK
ON NC 286 BETWEEN
SR 1484 (DAN GEORGE RD.)
& NC 89

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1			3			TOTAL SHEETS
2			4			32

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LOAD AND RESISTANCE FACTOR RATING (LRFR) 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						
							LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	1	1.08	--	1.75	0.76	1.44	A	ER	63.44	0.90	1.33	A	I	12.12	0.80	0.76	1.08	A	ER	63.44	
		HL-93 (OPERATING)	N/A		1.75	--	1.35	0.76	1.87	A	ER	63.44	0.90	1.75	A	I	12.12	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.60	57.60	1.75	0.76	2.14	A	ER	63.44	0.90	1.93	A	I	12.12	0.80	0.76	1.60	A	ER	63.44	
		HS-20 (OPERATING)	36.000		2.54	91.44	1.35	0.76	2.77	A	ER	63.44	0.90	2.54	A	I	12.12	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		3.91	52.79	1.40	0.76	6.53	A	ER	63.44	0.90	6.31	A	I	12.12	0.80	0.76	3.91	A	ER	63.44	
		SNGARBS2	20.000		2.79	55.80	1.40	0.76	4.65	A	ER	63.44	0.90	4.35	A	I	12.12	0.80	0.76	2.79	A	ER	63.44	
		SNAGRIS2	22.000		2.59	56.98	1.40	0.76	4.32	A	ER	63.44	0.90	3.99	A	I	12.12	0.80	0.76	2.59	A	ER	63.44	
		SNCOTTS3	27.250		1.94	52.87	1.40	0.76	3.24	A	ER	63.44	0.90	3.07	A	I	12.12	0.80	0.76	1.94	A	ER	63.44	
		SNAGGRS4	34.925		1.57	54.83	1.40	0.76	2.63	A	ER	63.44	0.90	2.46	A	I	12.12	0.80	0.76	1.57	A	ER	63.44	
		SNS5A	35.550		1.54	54.75	1.40	0.76	2.57	A	ER	63.44	0.90	2.45	A	I	12.12	0.80	0.76	1.54	A	ER	63.44	
		SNS6A	39.950		1.39	55.53	1.40	0.76	2.33	A	ER	63.44	0.90	2.20	A	I	12.12	0.80	0.76	1.39	A	ER	63.44	
		SNS7B	42.000		1.32	55.44	1.40	0.76	2.20	A	ER	63.44	0.90	2.12	A	I	12.12	0.80	0.76	1.32	A	ER	63.44	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.69	55.77	1.40	0.76	2.83	A	ER	63.44	0.90	2.67	A	I	12.12	0.80	0.76	1.69	A	ER	63.44	
		TNT4A	33.075		1.70	56.23	1.40	0.76	2.83	A	ER	63.44	0.90	2.62	A	I	12.12	0.80	0.76	1.70	A	ER	63.44	
		TNT6A	41.600		1.37	56.99	1.40	0.76	2.28	A	ER	63.44	0.90	2.21	A	I	12.12	0.80	0.76	1.37	A	ER	63.44	
		TNT7A	42.000		1.37	57.54	1.40	0.76	2.28	A	ER	63.44	0.90	2.18	A	I	12.12	0.80	0.76	1.37	A	ER	63.44	
		TNT7B	42.000		1.39	58.38	1.40	0.76	2.32	A	ER	63.44	0.90	2.10	A	I	12.12	0.80	0.76	1.39	A	ER	63.44	
		TNAGRIT4	43.000		1.34	57.62	1.40	0.76	2.24	A	ER	63.44	0.90	2.04	A	I	12.12	0.80	0.76	1.34	A	ER	63.44	
		TNAGT5A	45.000		1.27	57.15	1.40	0.76	2.12	A	ER	63.44	0.90	1.98	A	I	12.12	0.80	0.76	1.27	A	ER	63.44	
		TNAGT5B	45.000	3	1.26	56.71	1.40	0.76	2.11	A	ER	63.44	0.90	1.93	A	I	12.12	0.80	0.76	1.26	A	ER	63.44	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.95	56.06	1.30	0.76	3.51	A	ER	63.44	0.90	3.24	A	I	12.12	0.80	0.76	1.95	A	ER	63.44	
		EV3	43.000	4	1.29	55.47	1.30	0.76	2.32	A	ER	63.44	0.90	2.13	A	I	12.12	0.80	0.76	1.29	A	ER	63.44	



LRFR SUMMARY

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γDC	γDW
	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

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
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Raleigh, NC 27609
(919)322-0115
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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541EBBAC897741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

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

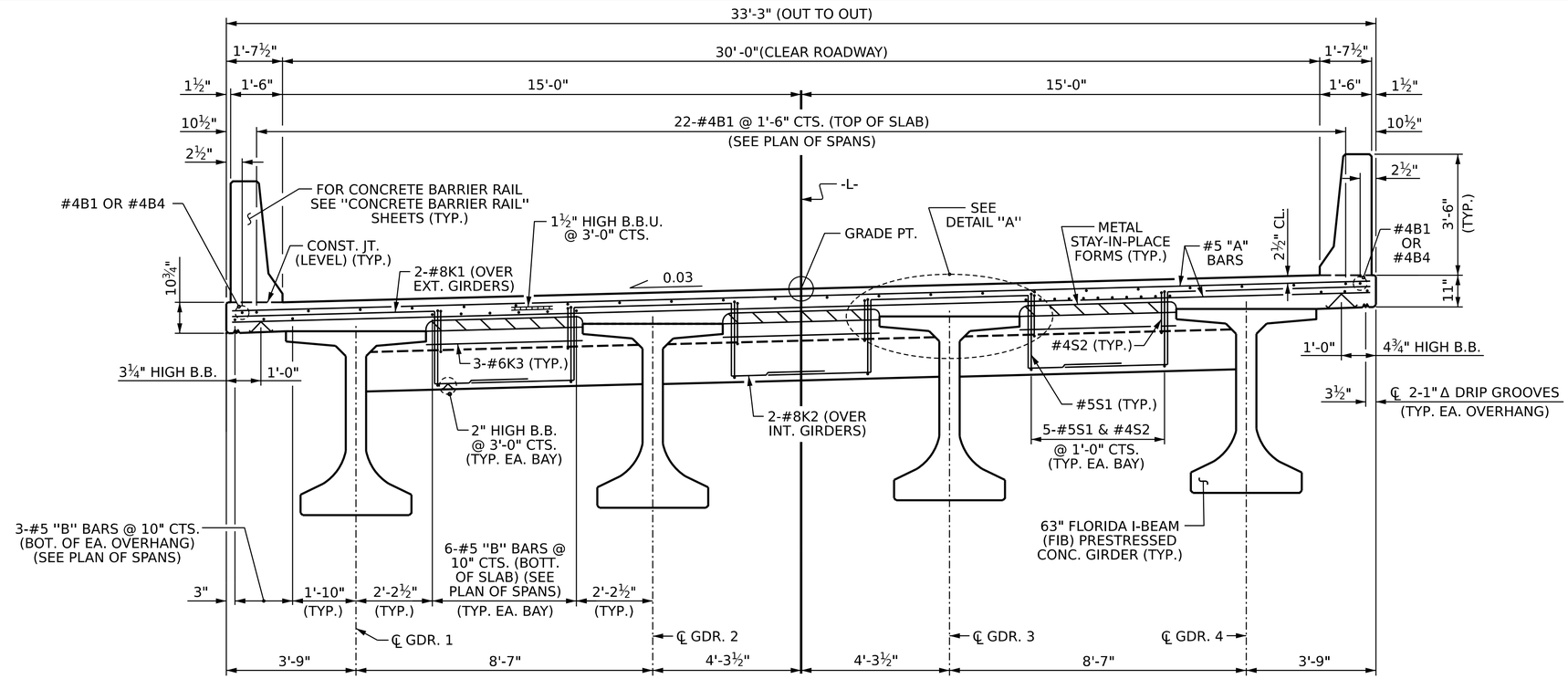
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32

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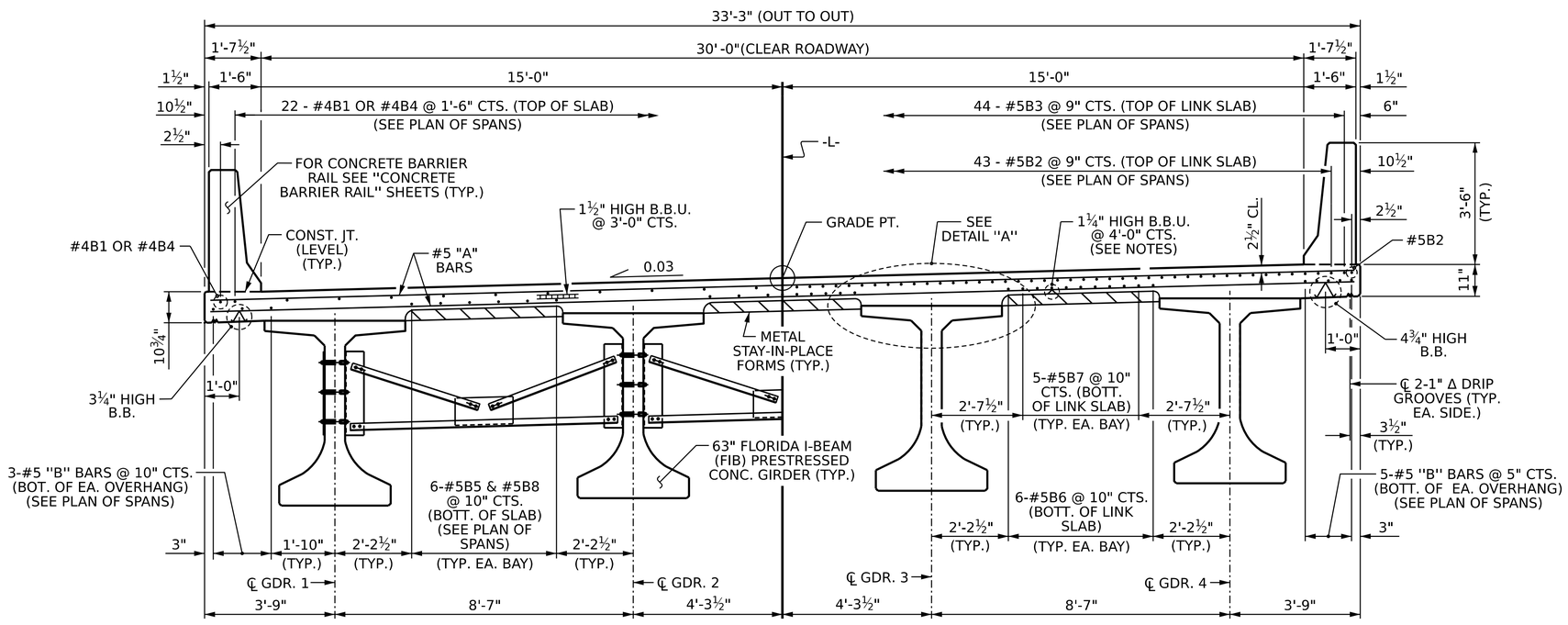
ASSEMBLED BY: M.K. BEARD DATE : 2/11/2025
CHECKED BY : G.W. DICKEY DATE : 06/2025
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM
REV. 10/1/11 MAA/GM
REV. 04/23 BNB/AAI

STD. NO. LRFR1

Docusign Envelope ID: 3CA9EC29-8FED-8D3E-8160-95F9F93F8C85



TYPICAL SECTION @ END BENTS



HALF SECTION @ MID SPAN

HALF SECTION - LINK SLAB @ BENT

TYPICAL SECTION

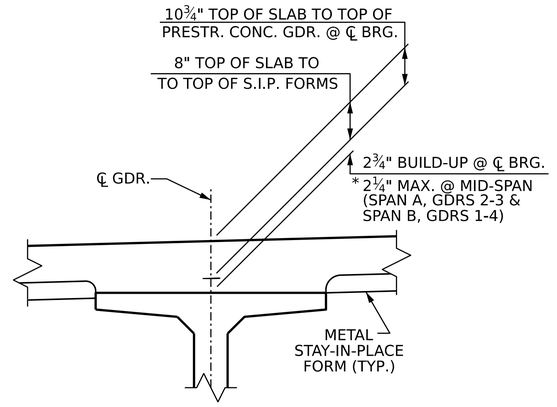
NOTES

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF ''A'' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF ''A'' BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

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

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

FOR ADDITIONAL INFORMATION ON DECK SLAB REINFORCEMENT, SEE ''PLAN OF SPAN'' SHEETS.



DETAIL "A"

*BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADELINE ELEVATIONS

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
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PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 1 OF 2

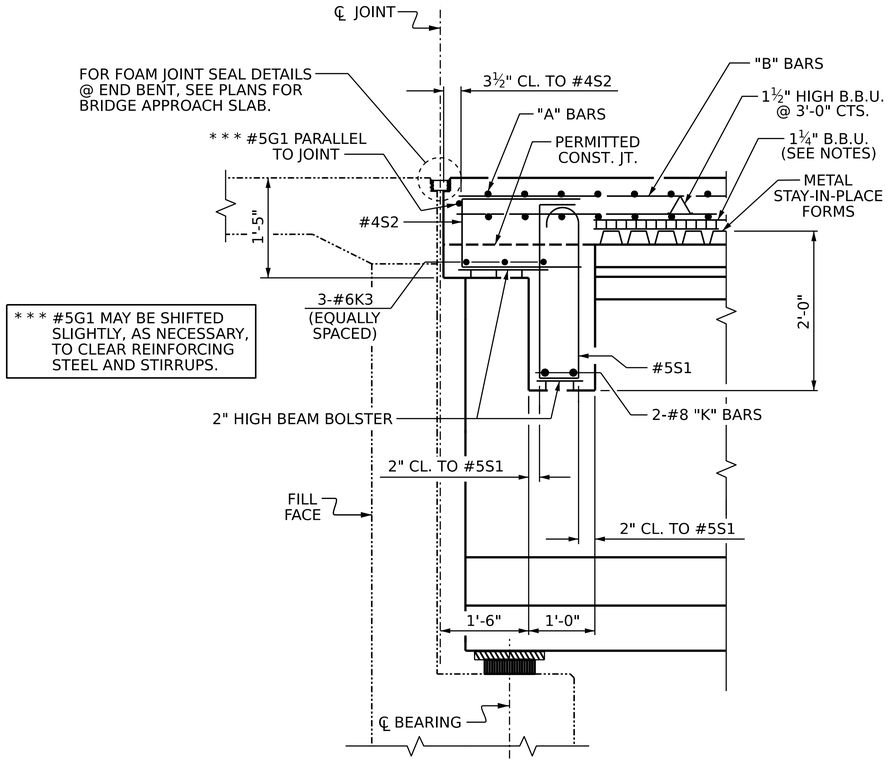
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			32

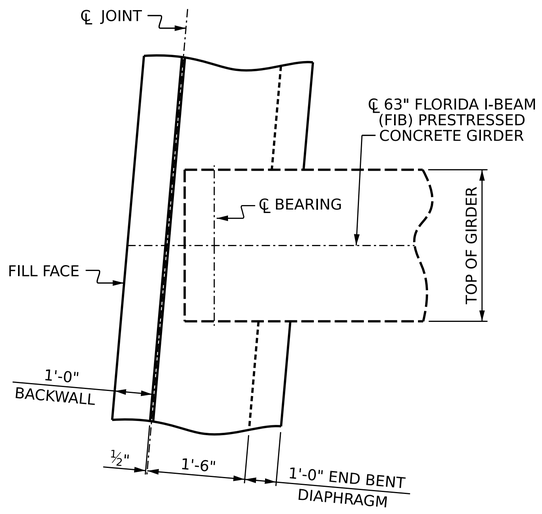
DRAWN BY : M.K. BEARD DATE : 02/2025
CHECKED BY : G.W. DICKEY DATE : 05/2025
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 05/2025

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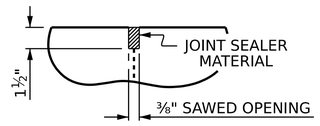
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SECTION @ END BENT

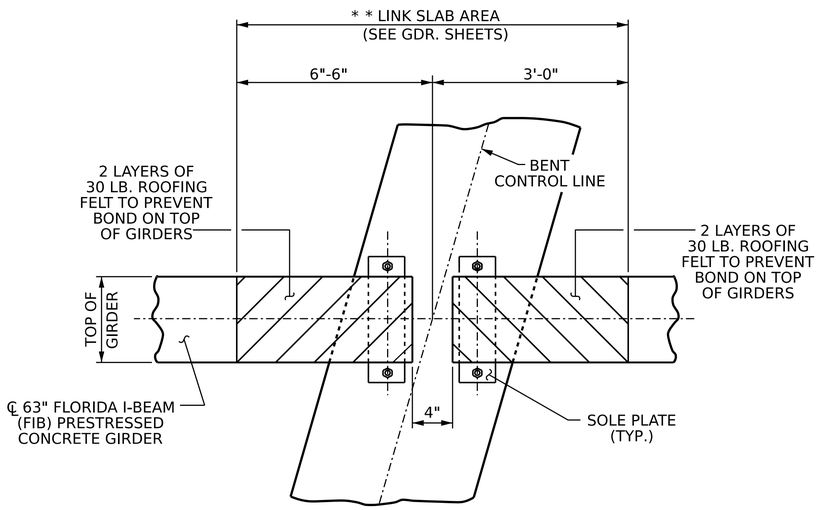


PLAN @ END BENT DIAPHRAGM



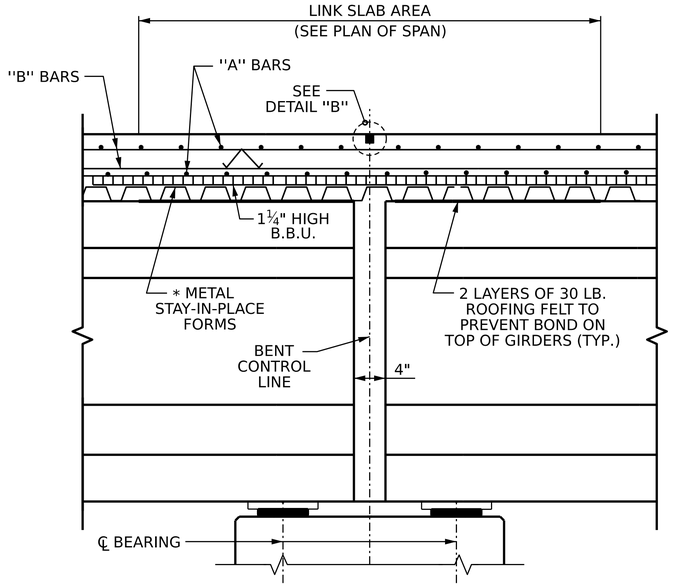
DETAIL "B"

A 1½" DEEP, ⅜" WIDE CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE LINK SLAB DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.



PLAN @ BENT 1

* * THE TOP OF GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.



SECTION @ LINK SLAB

* METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE GIRDER FLANGES IN THE REGION OF THE LINK SLAB.

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DocuSigned by: Gregory W. Dickey
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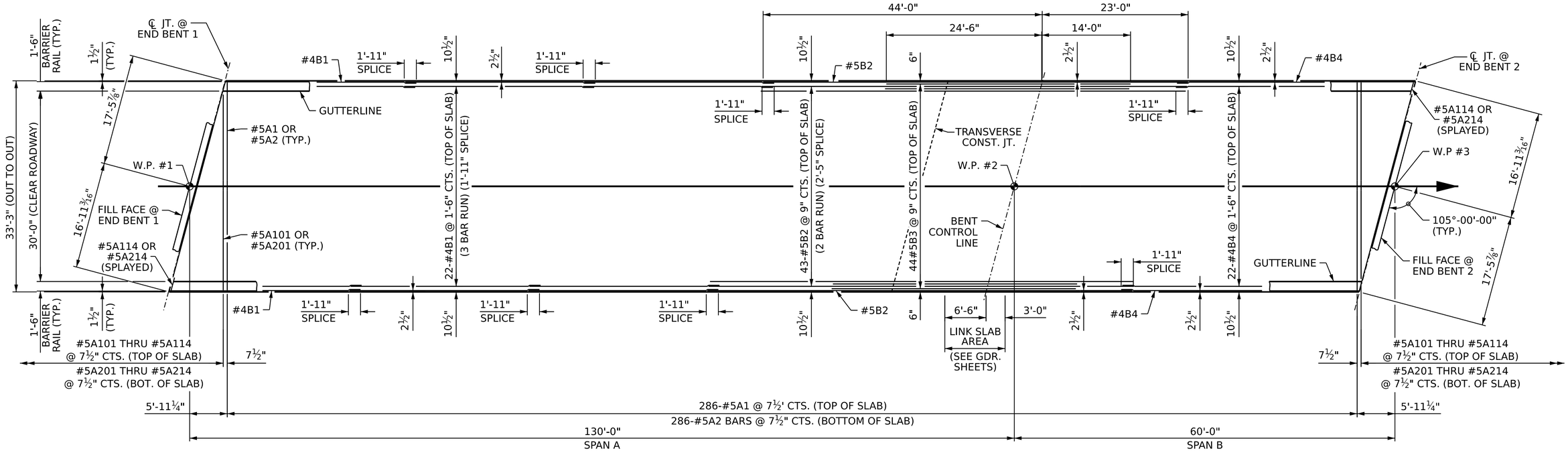
PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

TYPICAL SECTION DETAILS

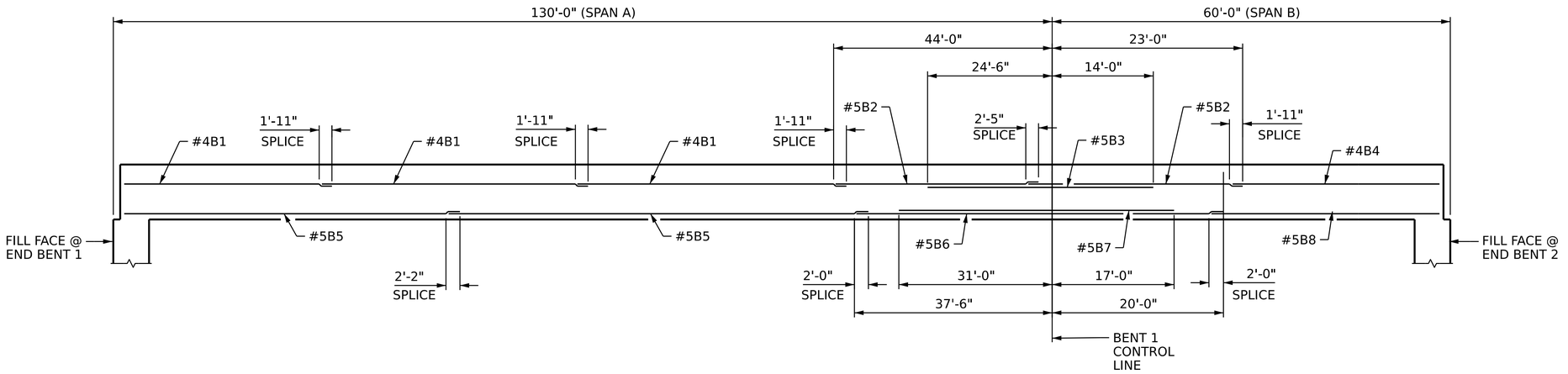
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			32

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PLAN OF SPANS A AND B

"A" BARS AND TOP "B" BARS ONLY



SCHEMATIC DIAGRAM OF SLAB

FOR "B" BARS IN BOTTOM OF SLAB, SEE SHEET S-10

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DocuSigned by: Gregory W. Dickey 541EB8ACB97741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

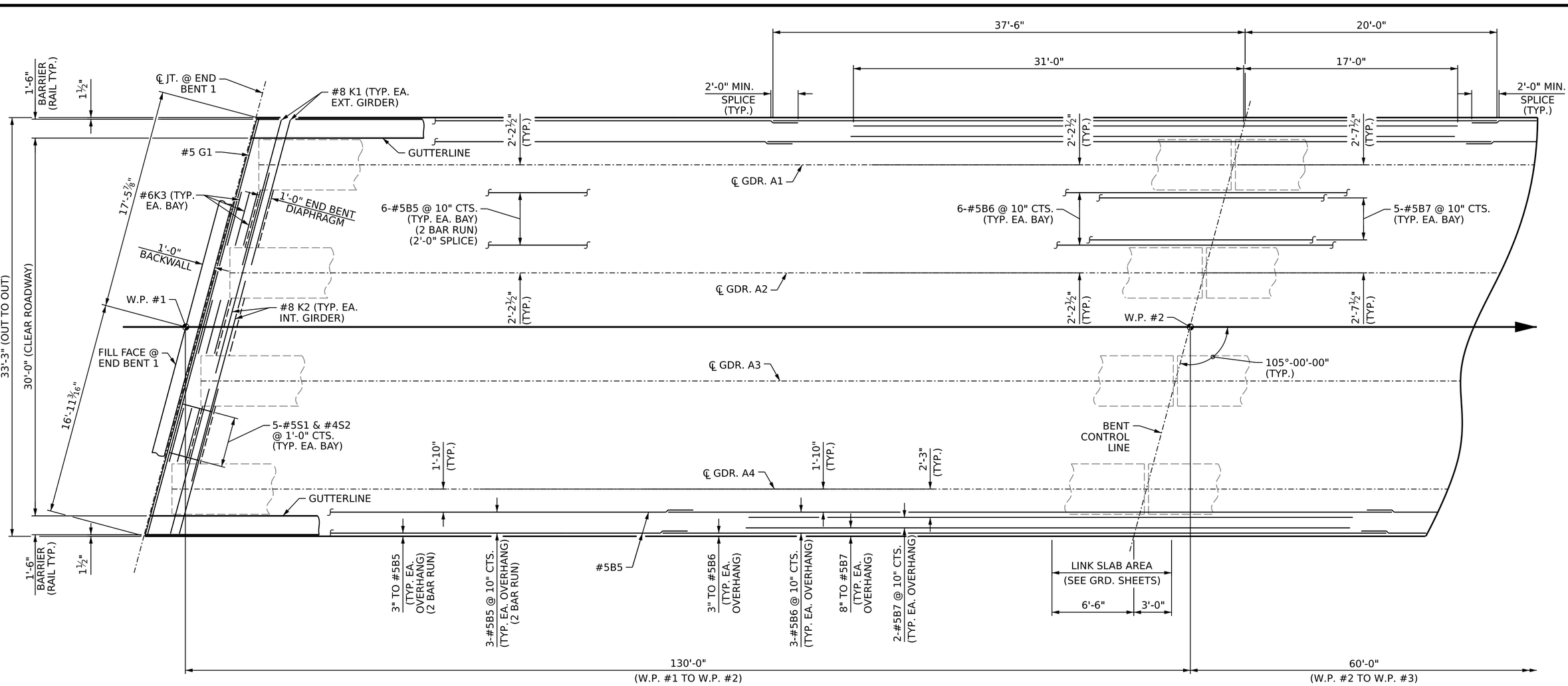
PLAN OF SPANS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
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DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 02/2026

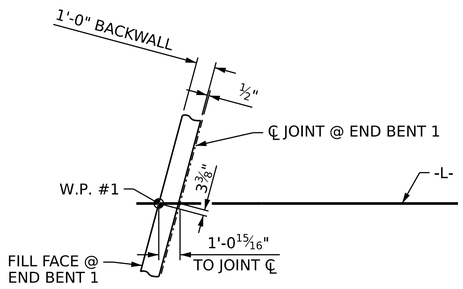
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PLAN OF SPAN A

SHOWING BOTTOM "B" BARS, SEE SHEET 1 OF 3 FOR "A" BARS AND TOP "B" BARS IN SLAB



DETAIL "A"

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STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

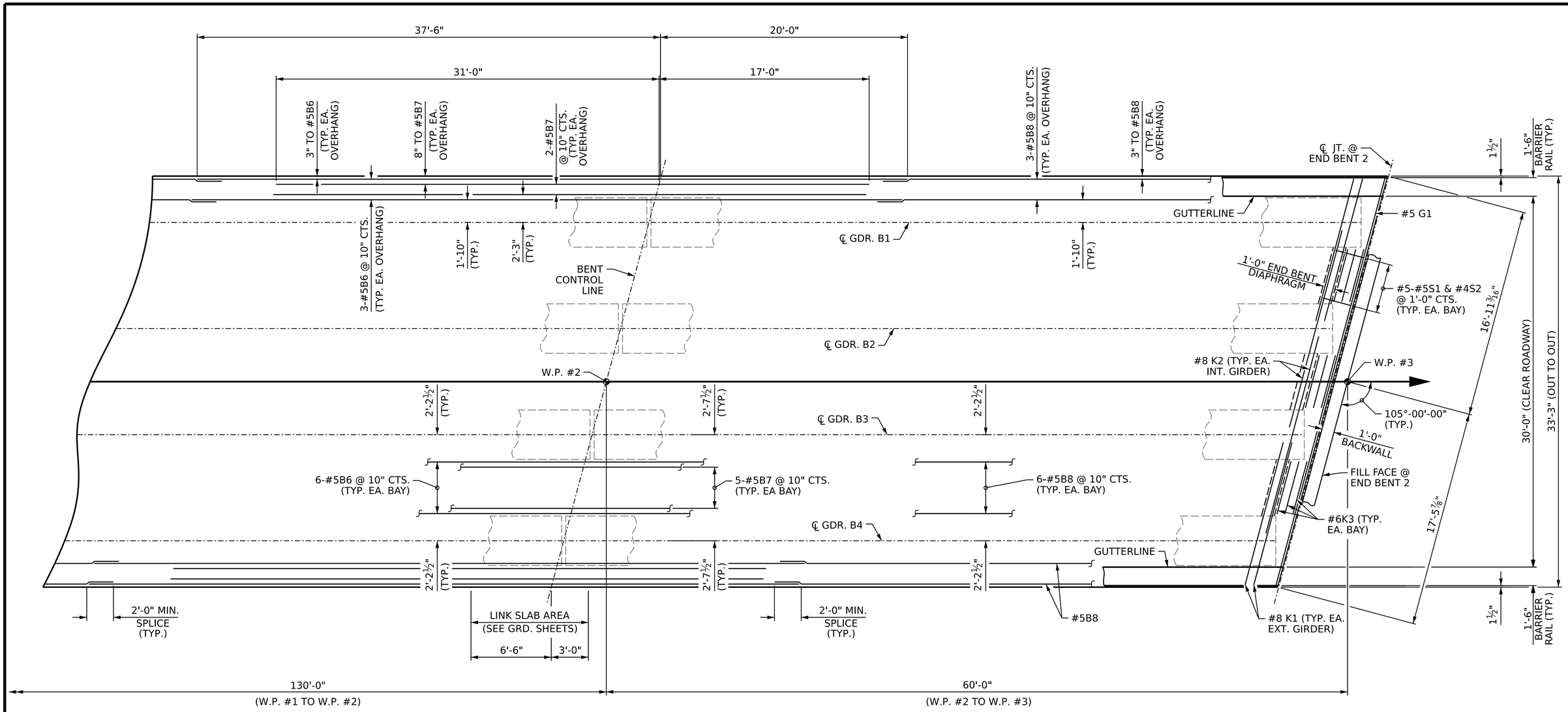
SUPERSTRUCTURE

PLAN OF SPANS

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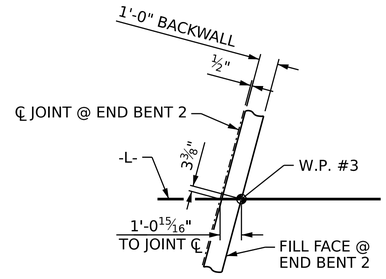
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CHECKED BY : G.W. DICKEY DATE : 02/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 02/2026

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PLAN OF SPAN B

SHOWING BOTTOM "B" BARS, SEE SHEET 1 OF 3 FOR "A" BARS AND TOP "B" BARS IN SLAB



DETAIL "B"

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PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

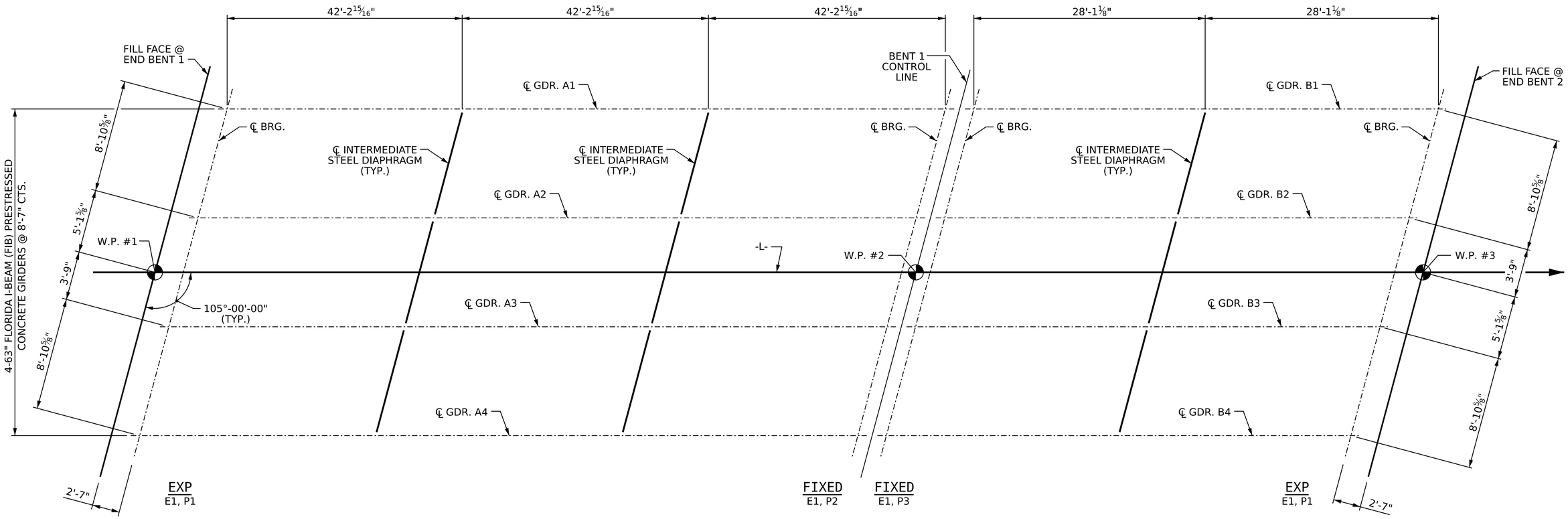
PLAN OF SPANS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			32

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FRAMING PLAN

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STOKES COUNTY
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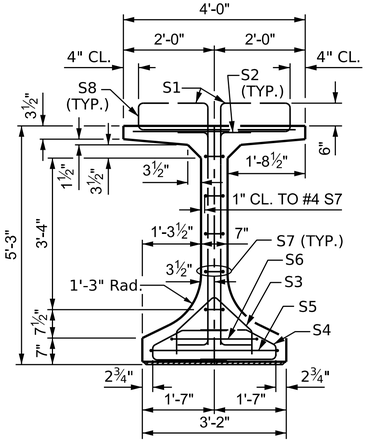
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
FRAMING PLAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			32

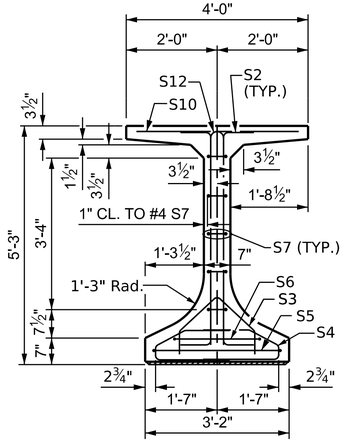
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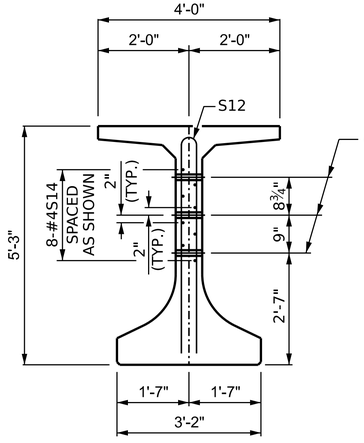
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SECTION A-A

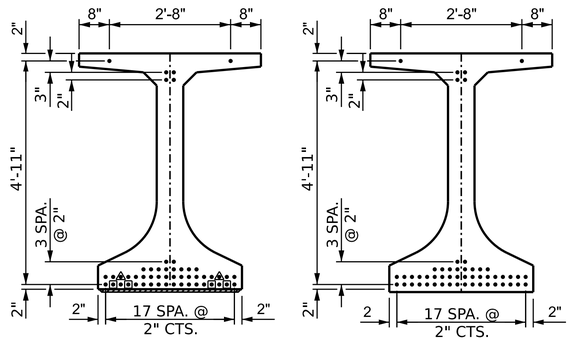


SECTION B-B



SECTION C-C

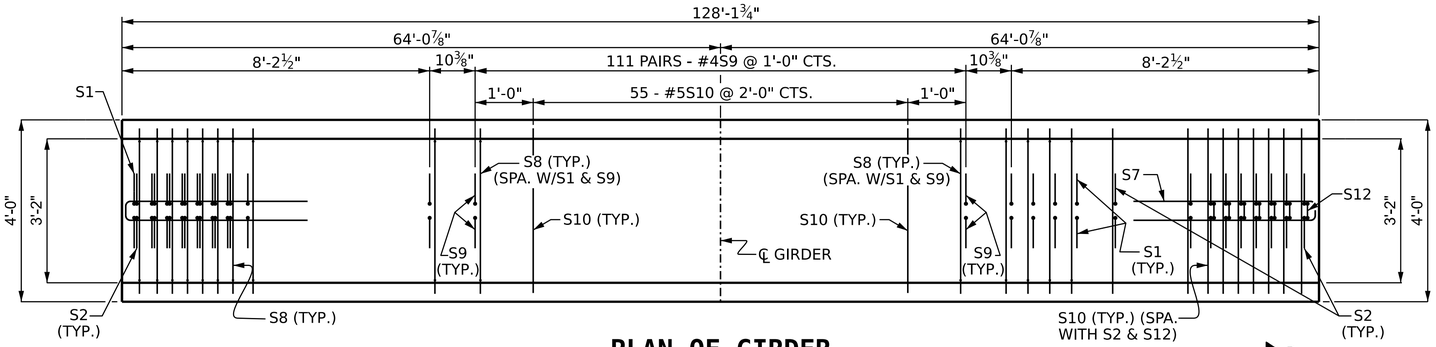
(S8, S9 AND S10 BARS NOT SHOWN)



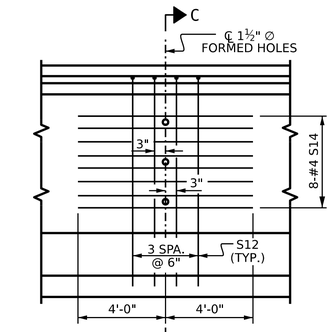
0.6" ∅LOW RELAXATION STRAND LAYOUT

DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 3'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER

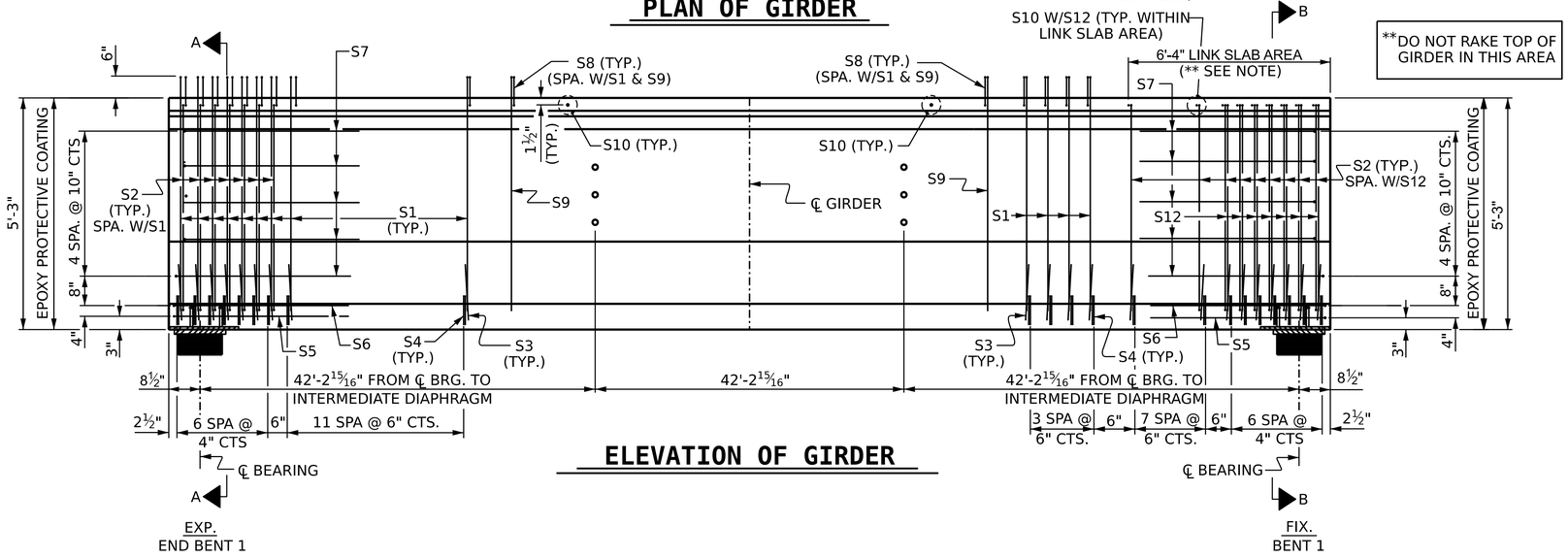


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE STEEL DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 - 4



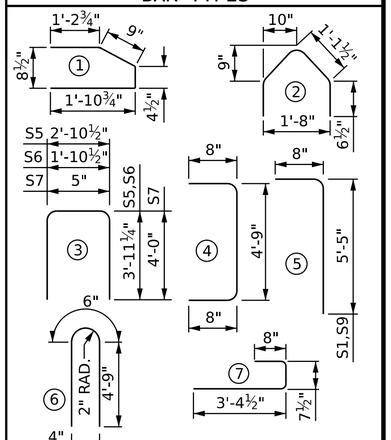
ELEVATION OF GIRDER

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

REINFORCING STEEL FOR ONE GDR

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	46	#5	5	6'-1"	292
S2	44	#5	4	6'-1"	279
S3	38	#3	2	3'-4"	48
S4	76	#3	1	4'-3"	121
S5	2	#5	3	10'-9"	22
S6	2	#5	3	9'-9"	20
S7	10	#4	3	8'-5"	56
S8	268	#5	7	4'-8"	1304
S9	222	#4	5	6'-1"	902
S10	70	#5	STR	3'-8"	268
S12	15	#5	6	10'-0"	156
S14	16	#4	STR	8'-0"	86

BAR TYPES



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

REINFORCING STEEL	8000 PSI CONCRETE	0.6" ∅ L.R. STRANDS
LB.	C.Y.	No.
3554	32.8	52

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	128'-1¾"	512'-7"

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6/3/2026

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PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

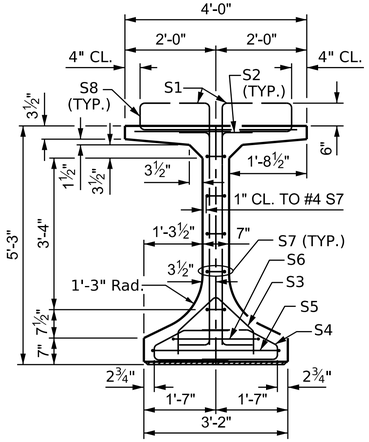
63" FIB PRESTRESSED CONCRETE GIRDER LINK SLAB - SPAN A

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			32

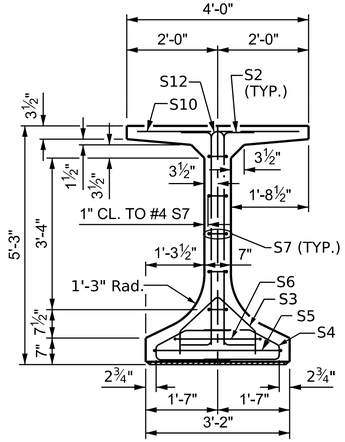
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CHECKED BY : G.W. DICKEY	DATE : 02/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY	DATE : 02/2026

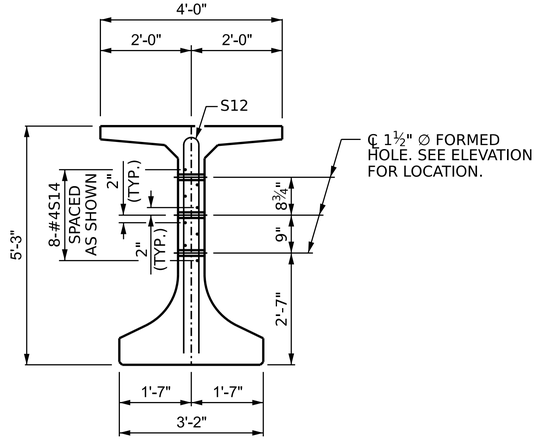
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SECTION A-A

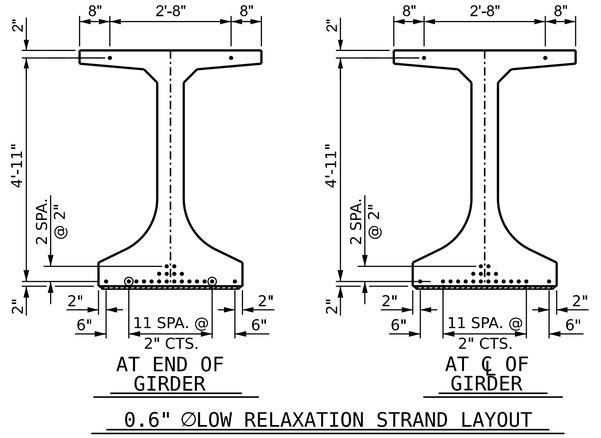


SECTION B-B



SECTION C-C

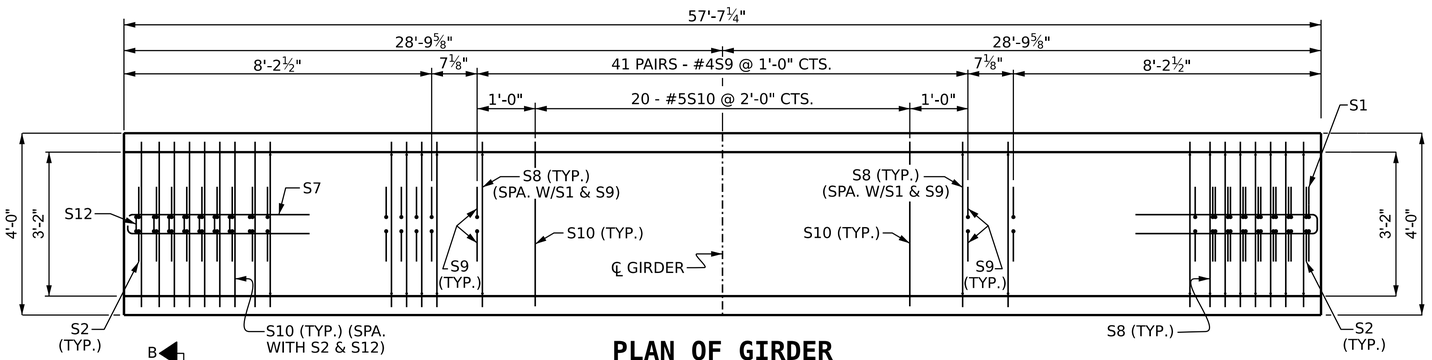
(S8, S9 AND S10 BARS NOT SHOWN)



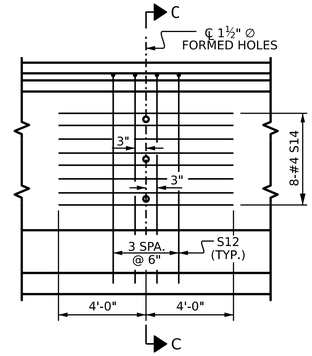
0.6" ∅LOW RELAXATION STRAND LAYOUT

DEBONDING LEGEND

- FULLY BONDED STRANDS
- ⊙ STRANDS DEBONDED FOR 9'-0" FROM END OF GIRDER

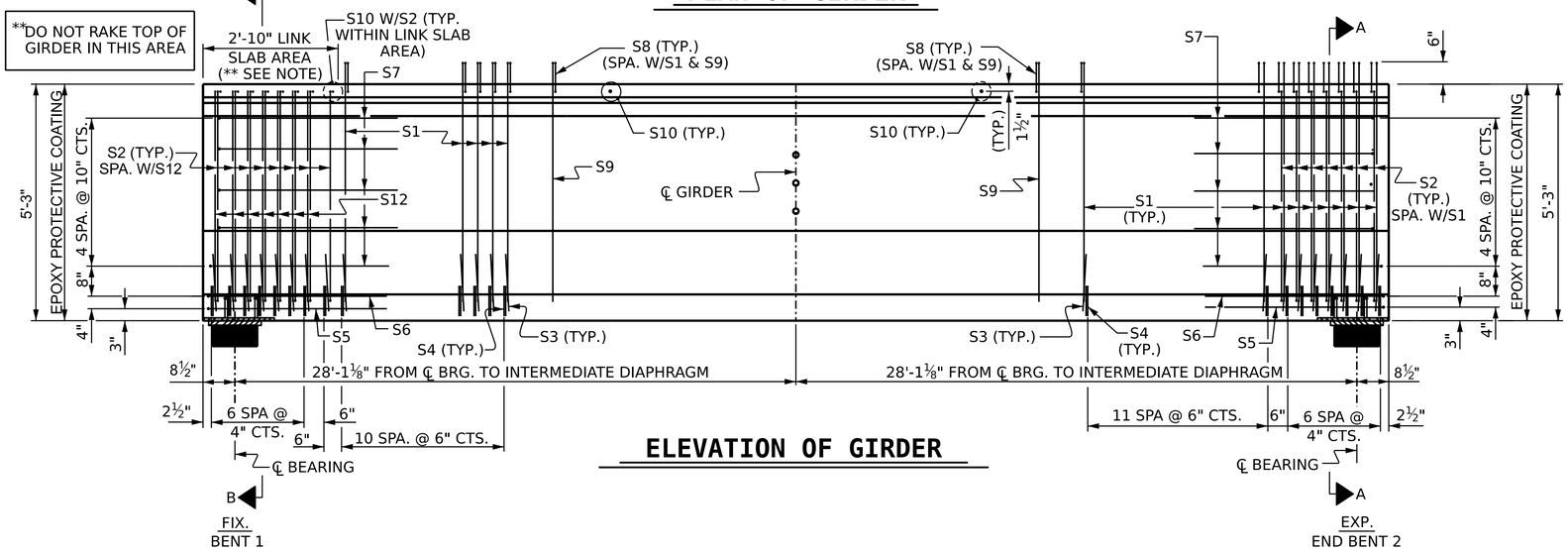


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE STEEL DIAPHRAGM REINFORCING STEEL FOR GIRDER Nos. 1 - 4



ELEVATION OF GIRDER

0.6" ∅ L.R. GRADE 270 STRANDS

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

REINFORCING STEEL FOR ONE GDR

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	60	#5	5	6'-1"	381
S2	30	#5	4	6'-1"	190
S3	38	#3	2	3'-4"	48
S4	76	#3	1	4'-3"	121
S5	2	#5	3	10'-9"	22
S6	2	#5	3	9'-9"	20
S7	10	#4	3	8'-5"	56
S8	142	#5	7	4'-8"	691
S9	82	#4	5	6'-1"	333
S10	28	#5	STR	3'-8"	107
S12	11	#5	6	10'-0"	115
S14	8	#4	STR	8'-0"	43

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

REINFORCING STEEL	5000 PSI CONCRETE	0.6" ∅ L.R. STRANDS
LB.	C.Y.	No.
2127	14.9	22

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	57'-7¼"	230-5"

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541E88AC897741C...

PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

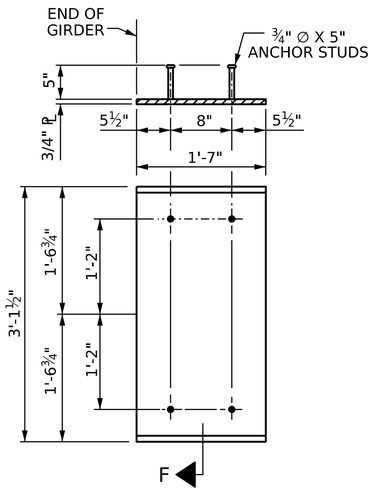
63" FIB PRESTRESSED CONCRETE GIRDER LINK SLAB - SPAN B

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			32

ASSEMBLED BY : B.M. WILSON	DATE : 01/2026
CHECKED BY : G.W. DICKEY	DATE : 02/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY	DATE : 02/2026

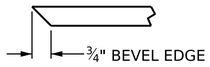
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EMBEDDED PLATE "B-1" DETAILS FOR FIB GIRDER

(2 REQ'D PER GIRDER)



SECTION "F"

(SEE NOTES)

NOTES

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

ALL REINFORCING STEEL SHALL BE GRADE 60.

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

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

ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 0R APPROVED EQUAL, AND SHALL MEET THE TYPE ``B'' REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6400 PSI FOR SPAN A AND 4000 PSI FOR SPAN B.

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

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF ¼".

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 lbs.

THE TOP OF GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS/STUDS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.

ASSEMBLED BY : M.K. BEARD	DATE : 04/2025
CHECKED BY : G.W. DICKEY	DATE : 05/2025
DRAWN BY : BNB 08/21	
CHECKED BY : AAI 10/21	

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541EB8AC897741C...

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PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

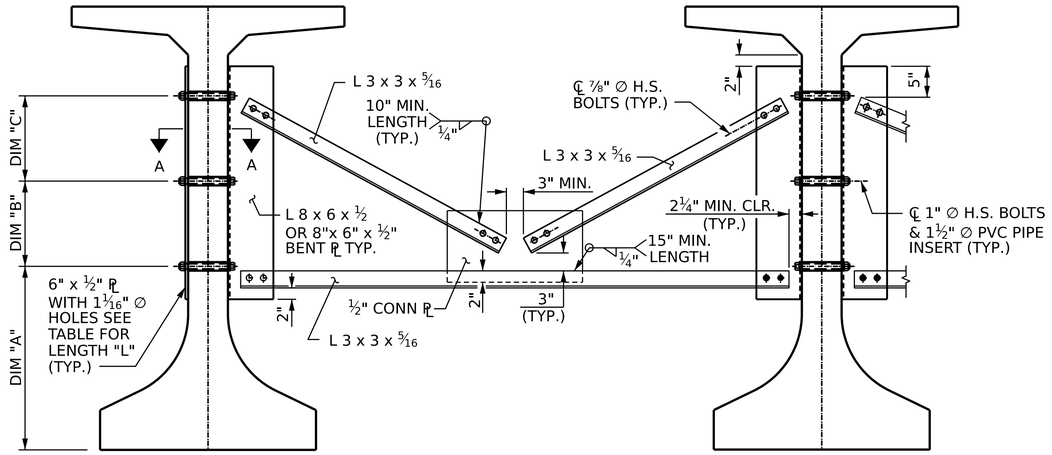
STANDARD

FLORIDA I-BEAM

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1			3			TOTAL SHEETS
2			4			32

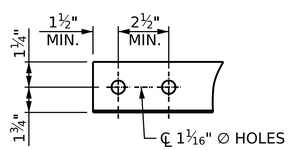
STD.NO. FIB SHT. 1A

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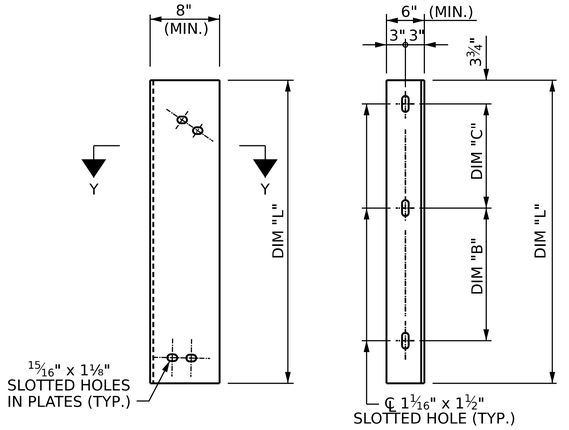
PART SECTION AT INTERMEDIATE DIAPHRAGM

(63" FIB SHOWN)

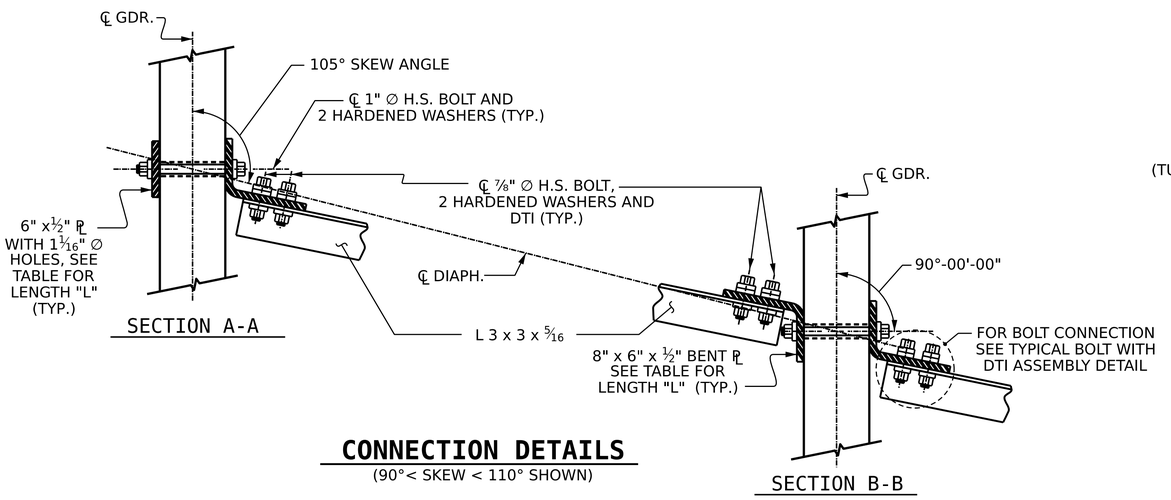


ANGLE END

(L 3 x 3 x 5/16)

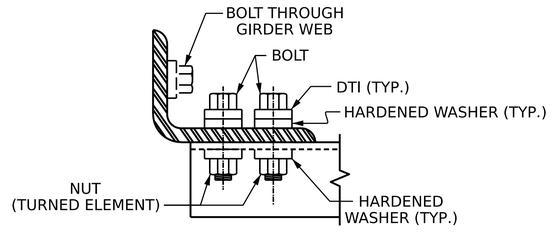


CONNECTOR PLATE DETAIL



CONNECTION DETAILS

(90°< SKEW < 110° SHOWN)



BOLT WITH DTI ASSEMBLY DETAIL

STRUCTURAL STEEL NOTES

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

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

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL ¼ TURN.

THE PLATES, BENT PLATES, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

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

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

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼" PROJECTION BEYOND THE NUT.

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

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

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

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

TABLE

GIRDER TYPE	DIM "A"	DIM "B"	DIM "C"	DIM "L"
63" FIB	2'-7"	9"	8 3/4"	2'-2"

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
541E8BACB97741C...

PROJECT NO. BR-0102
STOKES COUNTY
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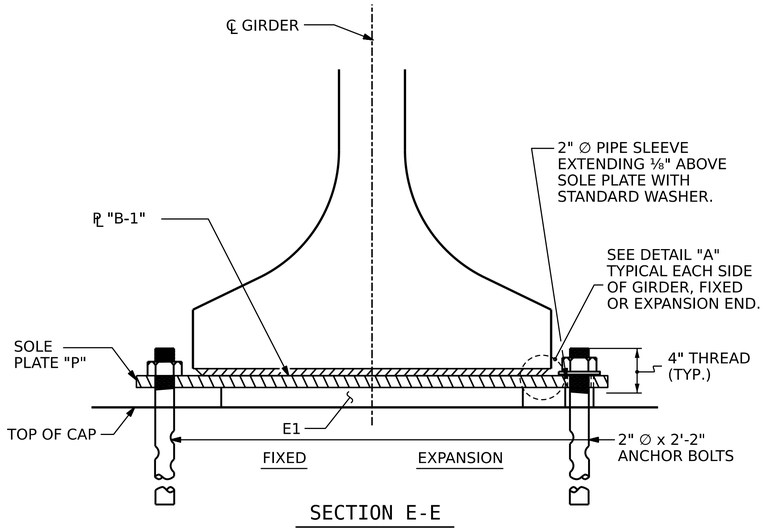
INTERMEDIATE STEEL DIAPHRAGM FOR 63" FIB

ASSEMBLED BY : M.K. BEARD	DATE : 04/2025
CHECKED BY : G.W. DICKEY	DATE : 05/2025
DRAWN BY : BNB 08/21	REV. --/--
CHECKED BY : AAI 08/21	REV. --/--

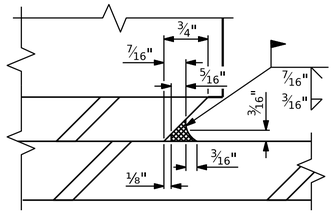
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SECTION E-E



DETAIL "A"

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE VIII	390 K

MAXIMUM ALLOWABLE EXPANSION LENGTH	
TYPE VIII	225 FT.

NOTES

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

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

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

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

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

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

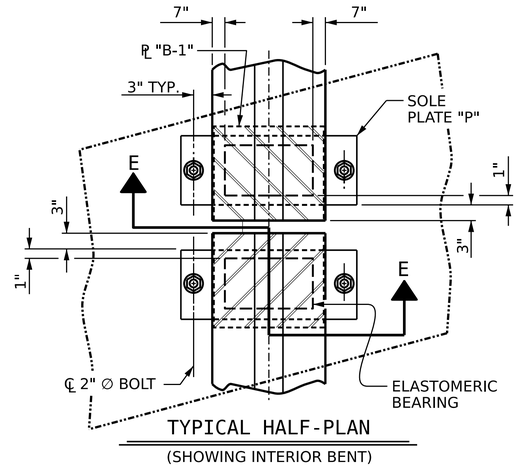
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

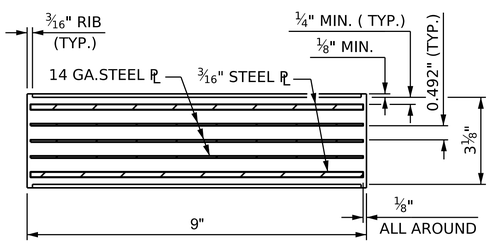
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

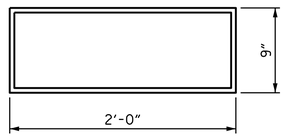
ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.



TYPICAL HALF-PLAN
(SHOWING INTERIOR BENT)

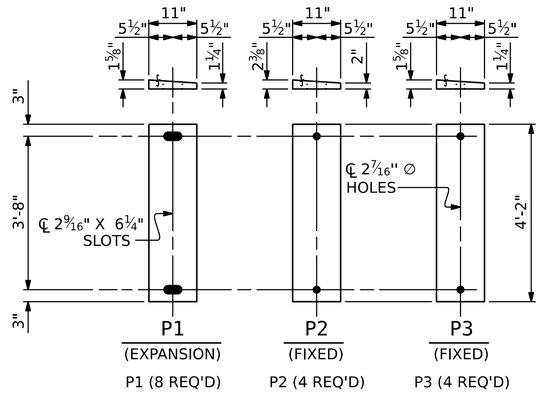


TYPICAL SECTION OF ELASTOMERIC BEARINGS



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

TYPE VIII



P1 (8 REQ'D) P2 (4 REQ'D) P3 (4 REQ'D)

SOLE PLATE DETAILS ("P")

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PROJECT NO. BR-0102
STOKES COUNTY
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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ELASTOMERIC BEARING DETAILS
FIB SUPERSTRUCTURE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 04/2025
CHECKED BY : G.W. DICKEY DATE : 05/2025
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 05/2025

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STD. NO. EB5 (SHEET 1)

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DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN A

0.6" Ø LOW RELAXATION	GIRDER 1																																												
FORTIETH POINTS	0	.025	.050	.075	.100	.125	.150	.175	.200	.225	.250	.275	.300	.325	.350	.375	.400	.425	.450	.475	.500	.525	.550	.575	.600	.625	.650	.675	.700	.725	.750	.775	.800	.825	.850	.875	.900	.925	.950	.975	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.028	0.057	0.085	0.113	0.132	0.151	0.170	0.189	0.200	0.212	0.224	0.236	0.242	0.248	0.255	0.261	0.263	0.265	0.267	0.269	0.267	0.265	0.263	0.261	0.255	0.248	0.242	0.236	0.224	0.212	0.200	0.189	0.170	0.151	0.132	0.113	0.085	0.057	0.028	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.017	0.033	0.050	0.066	0.082	0.098	0.113	0.129	0.141	0.153	0.166	0.178	0.186	0.193	0.201	0.209	0.211	0.214	0.217	0.219	0.217	0.214	0.211	0.209	0.201	0.193	0.186	0.178	0.166	0.153	0.141	0.129	0.113	0.098	0.082	0.066	0.050	0.033	0.017	0
FINAL CAMBER ↑	0	1/8"	1/4"	7/16"	9/16"	5/8"	5/8"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	5/8"	5/8"	9/16"	7/16"	1/4"	1/8"	0

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

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN A

0.6" Ø LOW RELAXATION	GIRDERS 2 & 3																																											
FORTIETH POINTS	0	.025	.050	.075	.100	.125	.150	.175	.200	.225	.250	.275	.300	.325	.350	.375	.400	.425	.450	.475	.500	.525	.550	.575	.600	.625	.650	.675	.700	.725	.750	.775	.800	.825	.850	.875	.900	.925	.950	.975	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.028	0.057	0.085	0.113	0.132	0.151	0.170	0.189	0.200	0.212	0.224	0.236	0.242	0.248	0.255	0.261	0.263	0.265	0.267	0.269	0.267	0.265	0.263	0.261	0.255	0.248	0.242	0.236	0.224	0.212	0.200	0.189	0.170	0.151	0.132	0.113	0.085	0.057	0.028	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.017	0.034	0.052	0.069	0.085	0.101	0.117	0.134	0.146	0.159	0.171	0.184	0.192	0.200	0.208	0.216	0.219	0.222	0.225	0.227	0.225	0.222	0.219	0.216	0.208	0.200	0.192	0.184	0.171	0.159	0.146	0.134	0.117	0.101	0.085	0.069	0.052	0.034	0.017	0
FINAL CAMBER ↑	0	1/8"	1/4"	3/8"	1/2"	9/16"	5/8"	5/8"	11/16	5/8"	5/8"	5/8"	5/8"	5/8"	9/16"	9/16"	9/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	9/16"	9/16"	9/16"	5/8"	5/8"	5/8"	5/8"	5/8"	11/16"	5/8"	5/8"	9/16"	1/2"	3/8"	1/4"	1/8"	0

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

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN A

0.6" Ø LOW RELAXATION	GIRDER 4																																											
FORTIETH POINTS	0	.025	.050	.075	.100	.125	.150	.175	.200	.225	.250	.275	.300	.325	.350	.375	.400	.425	.450	.475	.500	.525	.550	.575	.600	.625	.650	.675	.700	.725	.750	.775	.800	.825	.850	.875	.900	.925	.950	.975	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.028	0.057	0.085	0.113	0.132	0.151	0.170	0.189	0.200	0.212	0.224	0.236	0.242	0.248	0.255	0.261	0.263	0.265	0.267	0.269	0.267	0.265	0.263	0.261	0.255	0.248	0.242	0.236	0.224	0.212	0.200	0.189	0.170	0.151	0.132	0.113	0.085	0.057	0.028	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.017	0.034	0.051	0.067	0.083	0.099	0.115	0.131	0.143	0.156	0.168	0.180	0.188	0.196	0.204	0.212	0.215	0.217	0.220	0.223	0.220	0.217	0.215	0.212	0.204	0.196	0.188	0.180	0.168	0.156	0.143	0.131	0.115	0.099	0.083	0.067	0.051	0.034	0.017	0
FINAL CAMBER ↑	0	1/8"	1/4"	7/16"	9/16"	9/16"	5/8"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	5/8"	5/8"	5/8"	9/16"	9/16"	9/16"	9/16"	9/16"	9/16"	9/16"	9/16"	9/16"	5/8"	5/8"	5/8"	11/16"	11/16"	11/16"	11/16"	11/16"	11/16"	5/8"	9/16"	9/16"	7/16"	1/4"	1/8"	0

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

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN B

0.6" Ø LOW RELAXATION	GIRDER 1																					
TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.010	0.020	0.028	0.035	0.041	0.046	0.049	0.052	0.053	0.055	0.053	0.052	0.049	0.046	0.041	0.035	0.028	0.020	0.010	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.001	0.003	0.004	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.010	0.010	0.009	0.008	0.007	0.006	0.004	0.003	0.001	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	3/8"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	3/8"	3/8"	1/4"	3/16"	1/8"	0

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

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN B

0.6" Ø LOW RELAXATION	GIRDERS 2 & 3																					
TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.010	0.020	0.028	0.035	0.041	0.046	0.049	0.052	0.053	0.055	0.053	0.052	0.049	0.046	0.041	0.035	0.028	0.020	0.010	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.002	0.003	0.005	0.006	0.007	0.009	0.009	0.010	0.010	0.011	0.010	0.010	0.009	0.009	0.007	0.006	0.005	0.003	0.002	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	3/8"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	3/8"	3/8"	1/4"	3/16"	1/8"	0

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

DEAD LOAD DEFLECTION TABLE FOR GIRDERS - SPAN B

0.6" Ø LOW RELAXATION	GIRDER 4																					
TWENTIETH POINTS	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.0
CAMBER (GIRDER ALONE IN PLACE) ↑	0	0.010	0.020	0.028	0.035	0.041	0.046	0.049	0.052	0.053	0.055	0.053	0.052	0.049	0.046	0.041	0.035	0.028	0.020	0.010	0
* DEFLECTION DUE TO SUPERIMPOSED D.L. ↓	0	0.002	0.003	0.005	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.010	0.010	0.009	0.008	0.007	0.006	0.005	0.003	0.002	0
FINAL CAMBER ↑	0	1/8"	3/16"	1/4"	3/8"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	3/8"	3/8"	1/4"	3/16"	1/8"	0

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

DRAWN BY : M.K. BEARD DATE : 04/2025
CHECKED BY : G.W. DICKEY DATE : 05/2025
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 05/2025

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919) 322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey
541EB8ACB97741C...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

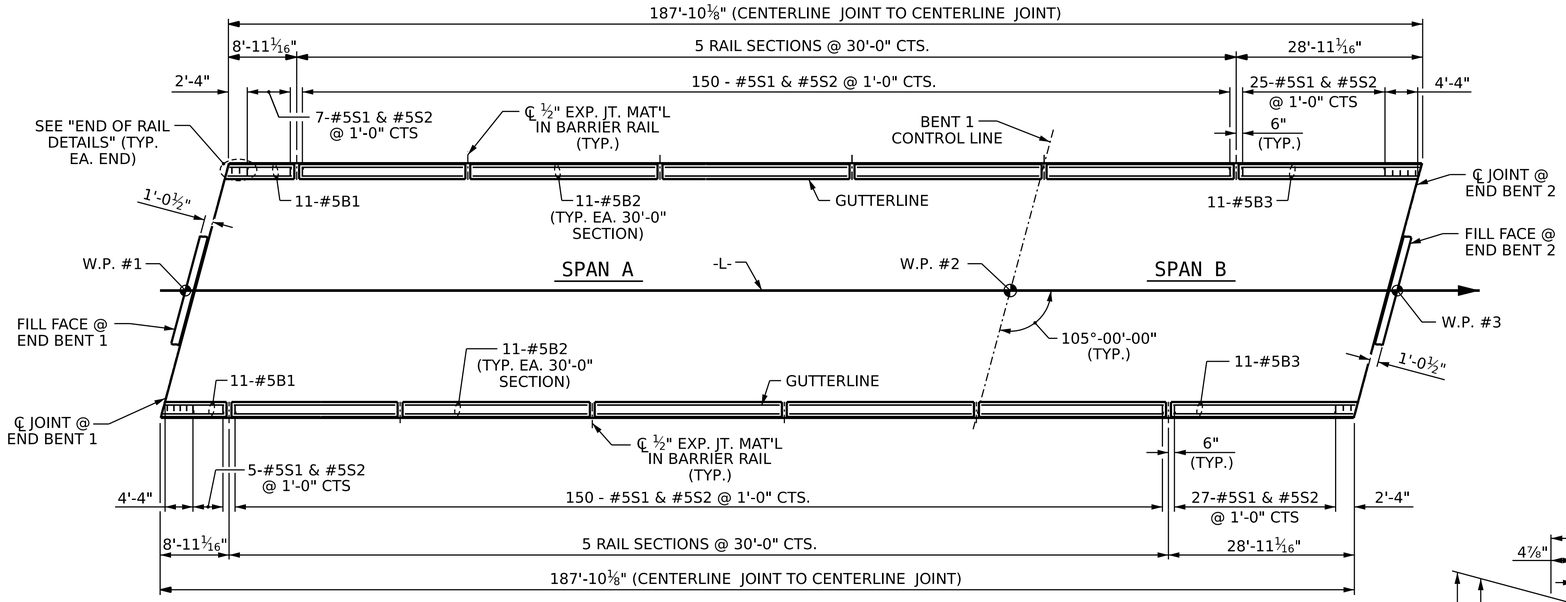
PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			32

Docusign Envelope ID: 3CA9EC29-8FED-8D3E-8160-95F9F93F8C85



PLAN OF CONCRETE BARRIER RAIL

NOTES

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

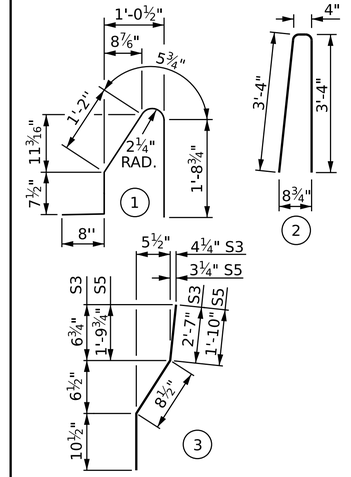
WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3, S4, S5 AND S6 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3, S4, S5 AND S6 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

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. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

BAR TYPES



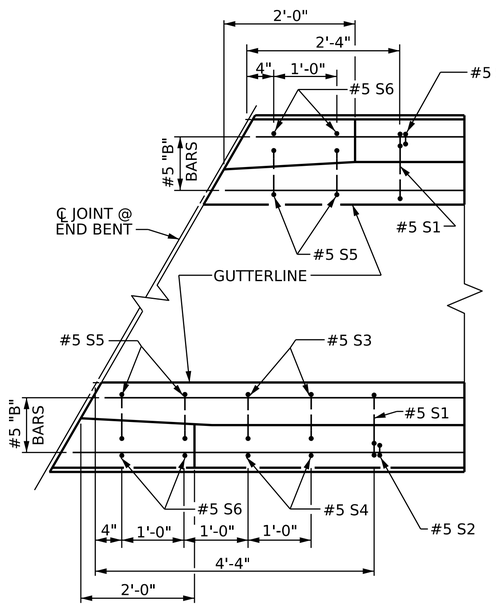
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

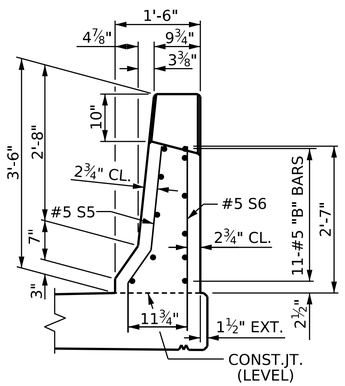
FOR CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	22	#5	STR	8'-5"	193
* B2	110	#5	STR	29'-7"	3394
* B3	22	#5	STR	28'-1"	644
* S1	364	#5	1	4'-8"	1772
* S2	364	#5	2	7'-0"	2658
* S3	4	#5	3	4'-2"	17
* S4	4	#5	STR	4'-0"	17
* S5	8	#5	3	3'-5"	29
* S6	8	#5	STR	3'-3"	27

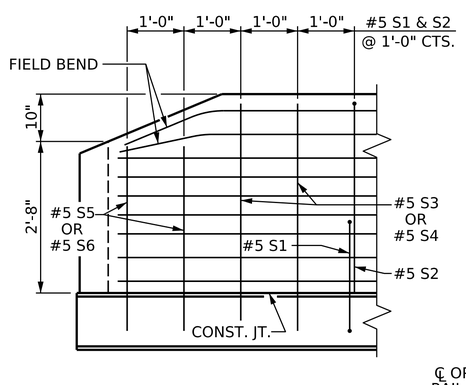
* EPOXY COATED REINFORCING STEEL	8751 LBS.
CLASS AA CONCRETE	51.0 CU. YDS.
CONCRETE BARRIER RAIL	375.7 LIN. FT.



PLAN



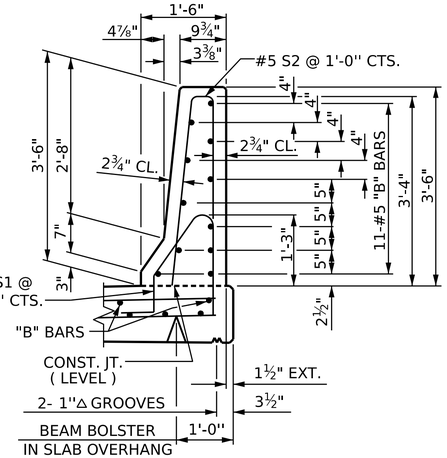
END VIEW



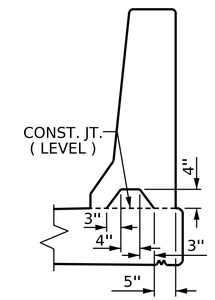
SIDE VIEW

END OF RAIL DETAILS

FOR ADHESIVE ANCHORING AT SAWED JOINTS

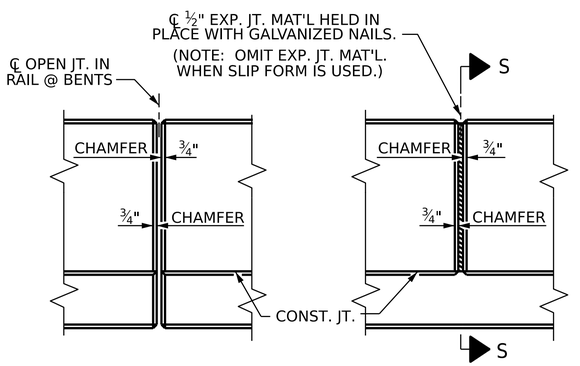


SECTION THRU RAIL



SECTION S-S

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



ELEVATION AT EXPANSION JOINTS

BARRIER RAIL DETAILS

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SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541E88AC897741C...

PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

CONCRETE BARRIER RAIL

ASSEMBLED BY: M.K. BEARD	DATE : 02/2026
CHECKED BY : G.W. DICKEY	DATE : 02/2026

DRAWN BY : ARB	5/87	REV. 7/12 MAA/GM
CHECKED BY : SJD	9/87	REV. 6/13 MAA/GM
		REV. 12/17 MAA/THC

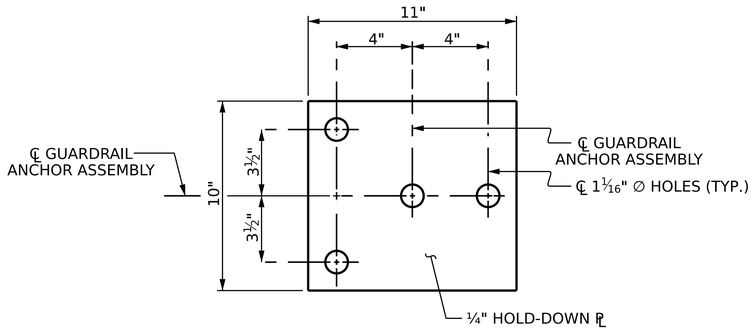
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NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		

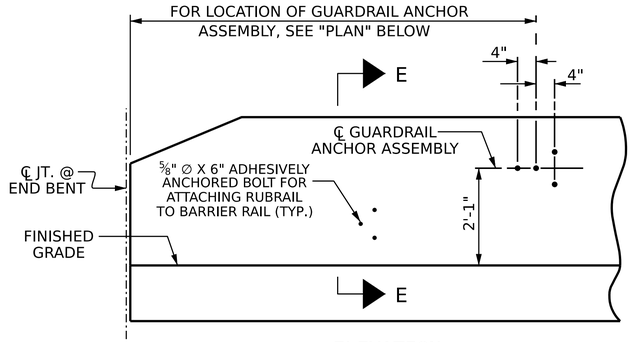
SHEET NO. S-19

TOTAL SHEETS 32

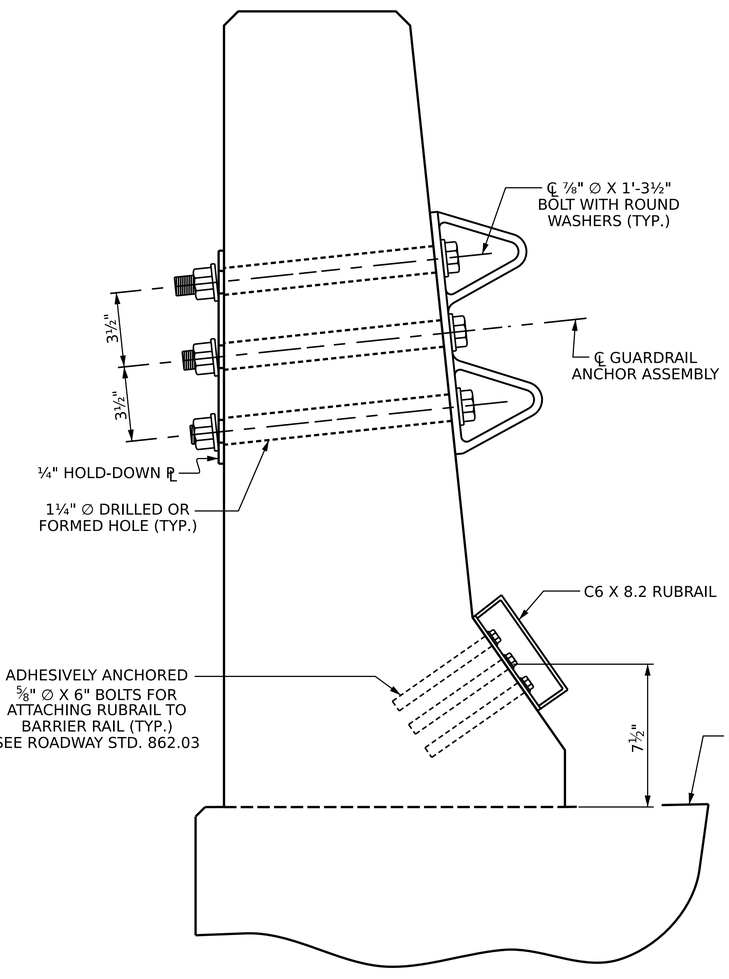
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PLAN

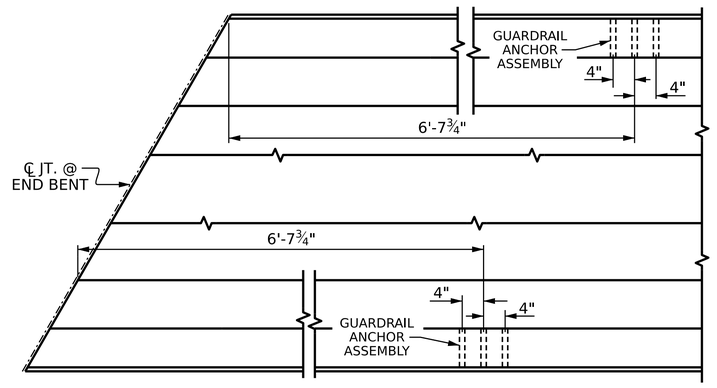


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A ¼" HOLD-DOWN PLATE AND 4 -⅞"∅ BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

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

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE ⅞" ∅ GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

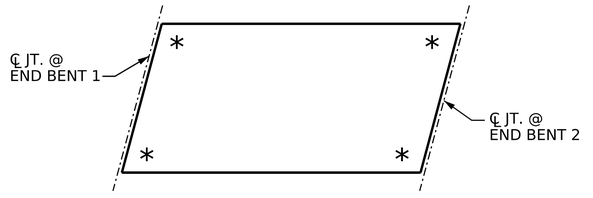
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

THE 1¼'' ∅ HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE ⅝" ∅ X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ⅝" ∅ BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

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Raleigh, NC 27609
(919) 322–0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541E88AC8977414C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

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

ASSEMBLED BY : M.K. BEARD	DATE : 04/2025
CHECKED BY : G.W. DICKEY	DATE : 05/2025

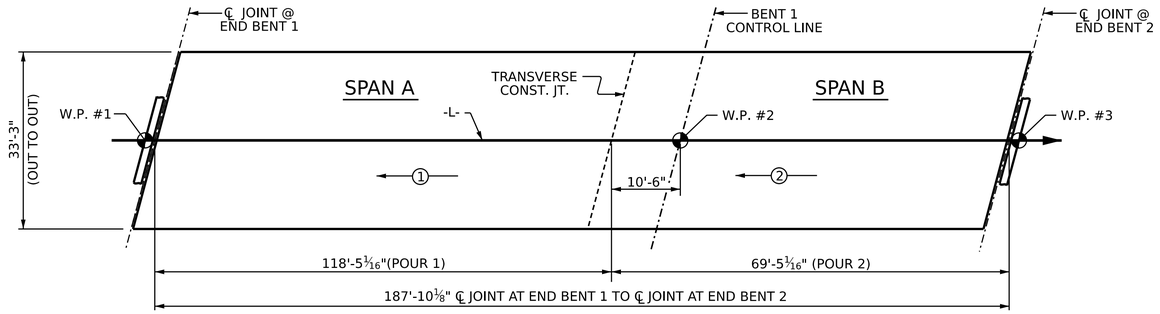
DRAWN BY : TLA 5/06	REV. 6/13 MAA/GM
CHECKED BY : GM 5/06	REV. 12/17 MAA/THC
	REV. 6/22 BNB/AAI

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			32

STD. NO. GRA2

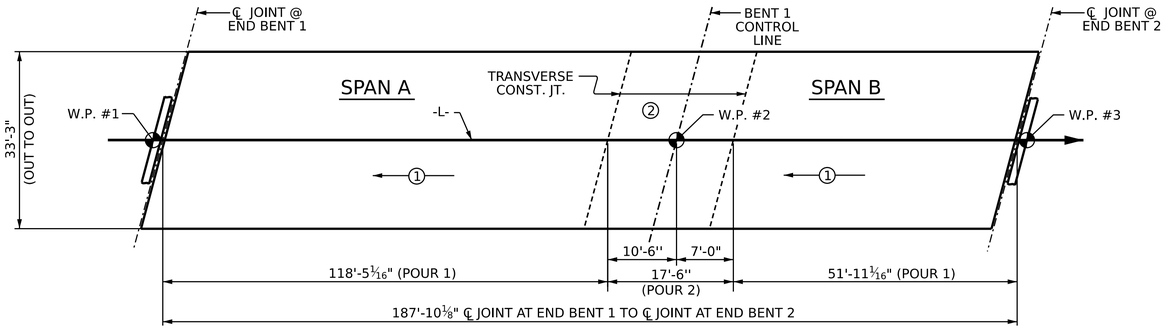
Docusign Envelope ID: 3CA9EC29-8FED-8D3E-8160-95F9F93F8C85



POURING SEQUENCE AND LAYOUT FOR COMPUTING AREA OF REINFORCE CONCRETE DECK SLAB

(LINK SLAB) (6,243 SQ. FT.)

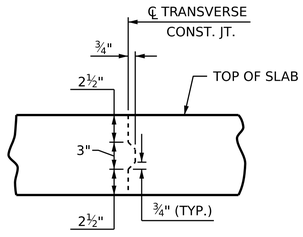
←(#)— = INDICATES POUR NUMBER AND DIRECTION OF POUR



OPTIONAL POUR SEQUENCE

←(#)— = INDICATES POUR NUMBER AND DIRECTION OF POUR

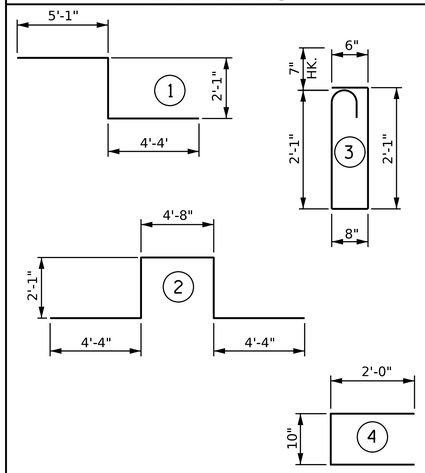
POUR #2 CAN NOT BE STARTED UNTIL BOTH ADJACENT #1 POURS REACH A MINIMUM 3000 PSI.



TRANSVERSE CONSTRUCTION JOINT DETAIL

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL
SPANS A & B

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	286	#5	STR	32'-11"	9,819	A208	2	#5	STR	14'-11"	31
A2	286	#5	STR	32'-11"	9,819	A209	2	#5	STR	12'-7"	26
						A210	2	#5	STR	10'-3"	21
* A101	2	#5	STR	31'-3"	65	A211	2	#5	STR	7'-11"	17
* A102	2	#5	STR	28'-11"	60	A212	2	#5	STR	5'-7"	12
* A103	2	#5	STR	26'-7"	55	A213	2	#5	STR	3'-3"	7
* A104	2	#5	STR	24'-3"	51	A214	2	#5	STR	2'-0"	4
* A105	2	#5	STR	21'-11"	46						
* A106	2	#5	STR	19'-7"	41	* B1	72	#4	STR	30'-2"	1,451
* A107	2	#5	STR	17'-3"	36	* B2	90	#5	STR	34'-8"	3,254
* A108	2	#5	STR	14'-11"	31	* B3	44	#5	STR	38'-6"	1,767
* A109	2	#5	STR	12'-7"	26	* B4	24	#4	STR	37'-8"	604
* A110	2	#5	STR	10'-3"	21	B5	48	#5	STR	47'-8"	2,386
* A111	2	#5	STR	7'-11"	17	B6	24	#5	STR	57'-6"	1,439
* A112	2	#5	STR	5'-7"	12	B7	19	#5	STR	48'-0"	951
* A113	2	#5	STR	3'-3"	7	B8	24	#5	STR	40'-9"	1,020
* A114	2	#5	STR	2'-0"	4						
						* K1	8	#8	1	12'-4"	263
A201	2	#5	STR	31'-3"	65	* K2	8	#8	2	17'-6"	374
A202	2	#5	STR	28'-11"	60	* K3	18	#6	STR	4'-5"	119
A203	2	#5	STR	26'-7"	55						
A204	2	#5	STR	24'-3"	51	* G1	2	#5	STR	33'-11"	71
A205	2	#5	STR	21'-11"	46						
A206	2	#5	STR	19'-7"	41	* S1	30	#5	3	6'-0"	188
A207	2	#5	STR	17'-3"	36	* S2	30	#4	4	4'-10"	97

REINFORCING STEEL	16,087 LBS.
* EPOXY COATED REINFORCING STEEL	18,479 LBS.

CLASS AA CONCRETE BREAKDOWN

POUR #1	126.2 CU. YDS.
POUR #2	75.4 CU. YDS.
CLASS AA CONCRETE	201.6 CU. YDS.

GROOVING BRIDGE FLOORS

APPROACH SLABS	747 SQ.FT.
BRIDGE DECK	5,035 SQ.FT.
TOTAL	5,782 SQ.FT.

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

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

SUPERSTRUCTURE BILL OF MATERIAL

	CLASS AA CONCRETE	REINFORCING STEEL	* EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
TOTALS * *	201.6	16,087	18,479

* * QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY 6/3/2026

DocuSigned by: Gregory W. Dickey 541EB8AC89774...

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PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

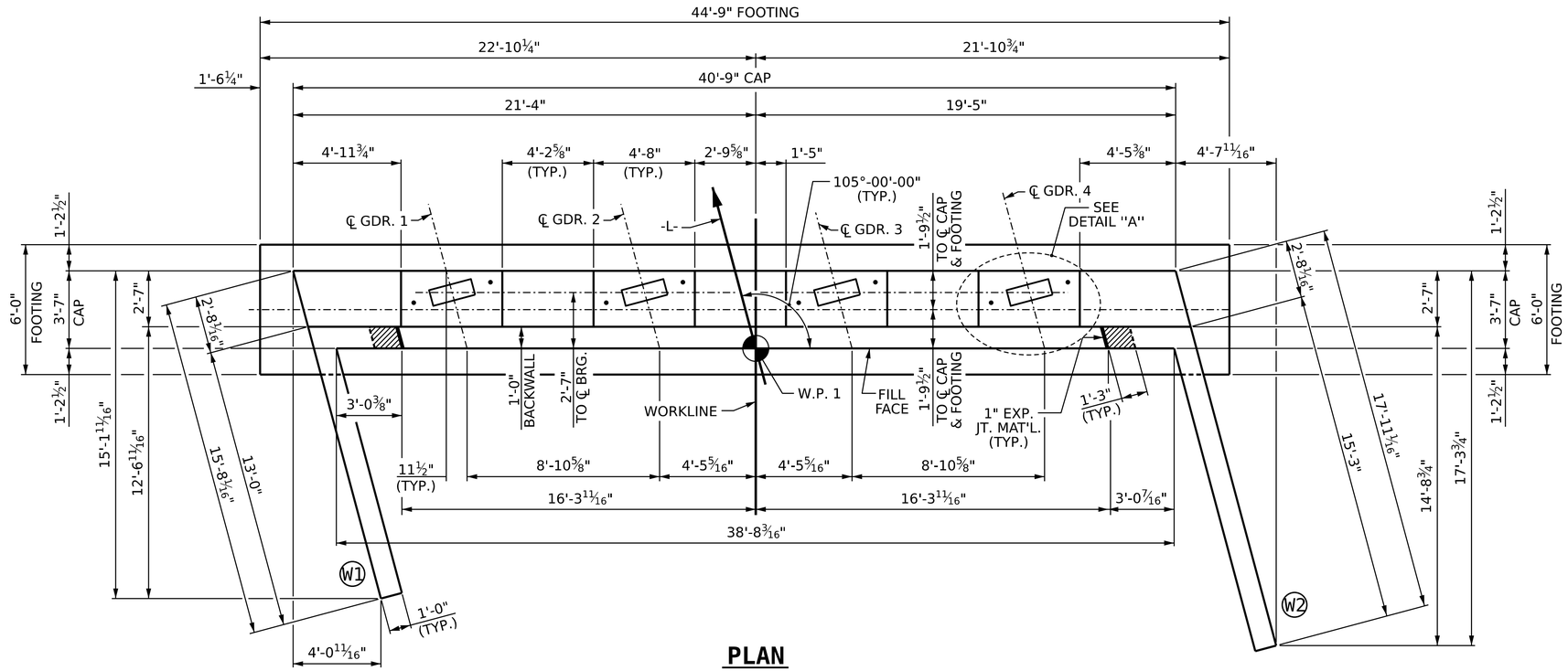
SUPERSTRUCTURE

BILL OF MATERIAL

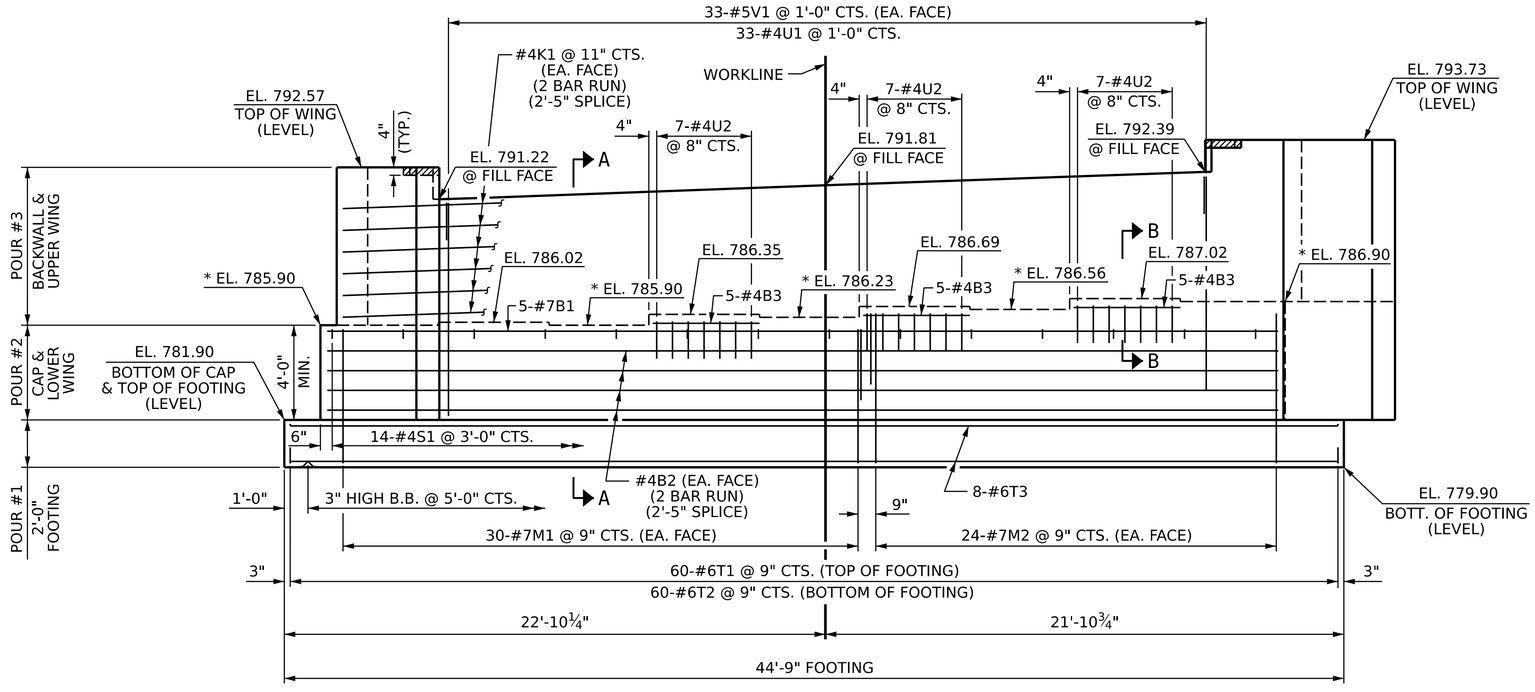
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DRAWN BY : B.M. WILSON DATE : 01/2026
CHECKED BY : G.W. DICKEY DATE : 02/2026
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PLAN



ELEVATION

FOR "SECTION A-A" & "SECTION B-B", SEE SHEET 3 OF 3.
FOR LOCATION OF ELEVATION BETWEEN BRIDGE SEAT BUILD-UPS, SEE "SECTION A-A".

NOTES

"U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

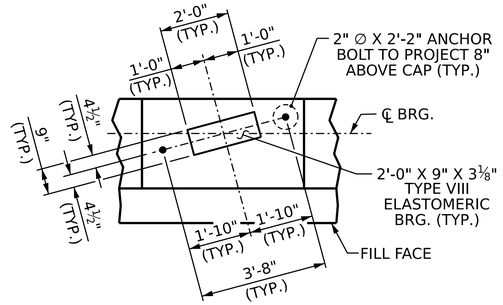
THE TOP SURFACE AREA OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THE MEMBRANCE CURING COMPOUND METHOD SHALL NOT BE USED.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

FOR WING DETAILS, SEE SHEET 2 OF 3.

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



DETAIL "A"

(TYP. EA. GIRDER)

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY

6/3/2026

DocuSigned by: Gregory W. Dickey
541EB8AC807741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

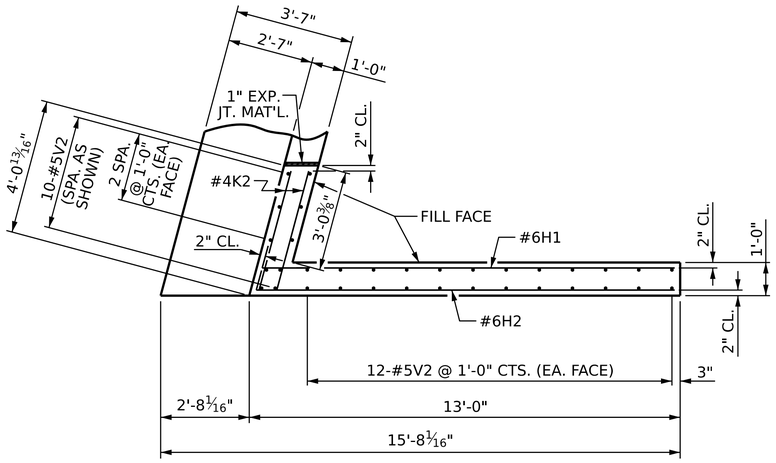
END BENT 1

DRAWN BY :	M.K. BEARD	DATE :	02/2026
CHECKED BY :	G.W. DICKEY	DATE :	03/2026
DESIGN ENGINEER OF RECORD:	G.W. DICKEY	DATE :	03/2026

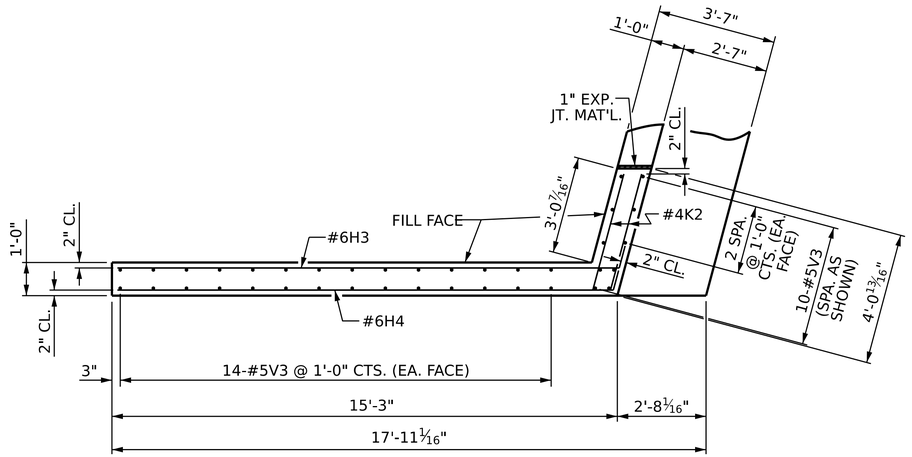
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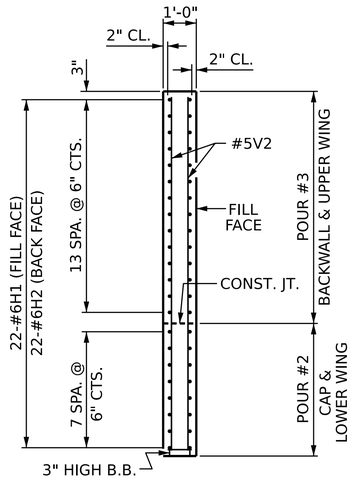
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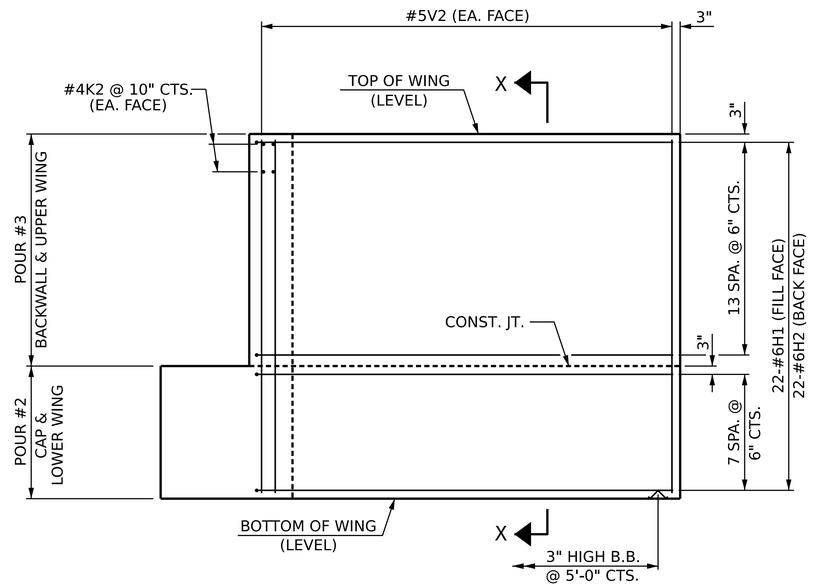
PLAN OF WING W1



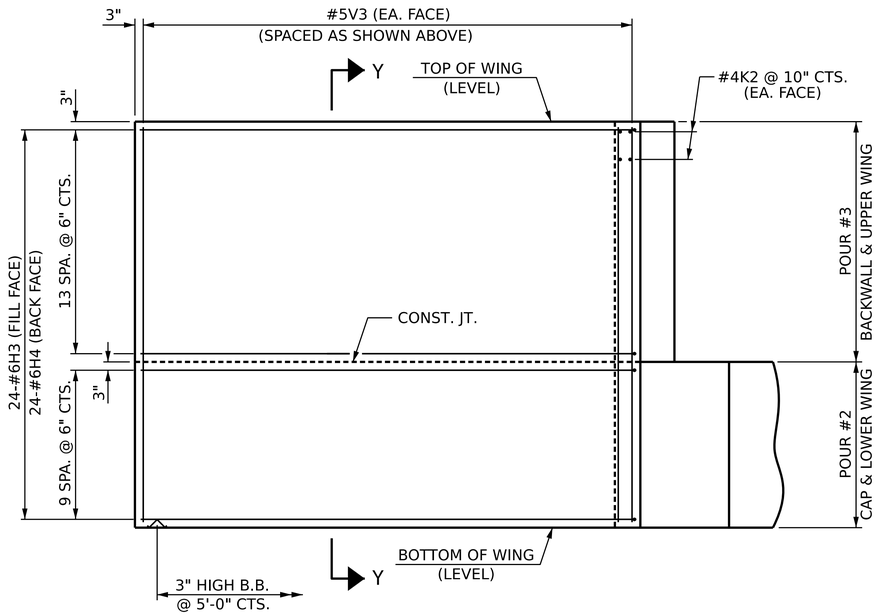
PLAN OF WING W2



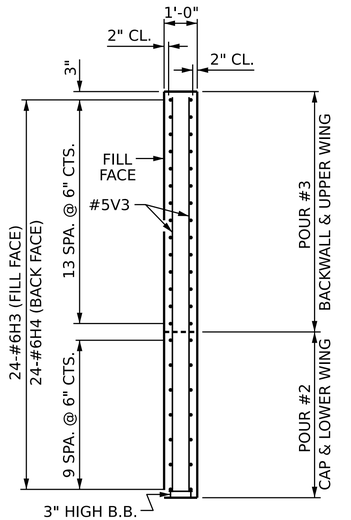
SECTION X-X



ELEVATION OF WING W1



ELEVATION OF WING W2



SECTION Y-Y

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DocuSigned by: Gregory W. Dickey
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STATION: 17+10.00 -L-
SHEET 2 OF 3

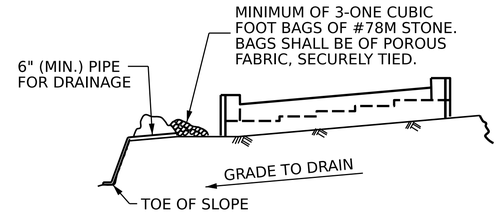
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
WING DETAILS

DRAWN BY : M.K. BEARD DATE : 02/2026
CHECKED BY : G.W. DICKEY DATE : 03/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 03/2026

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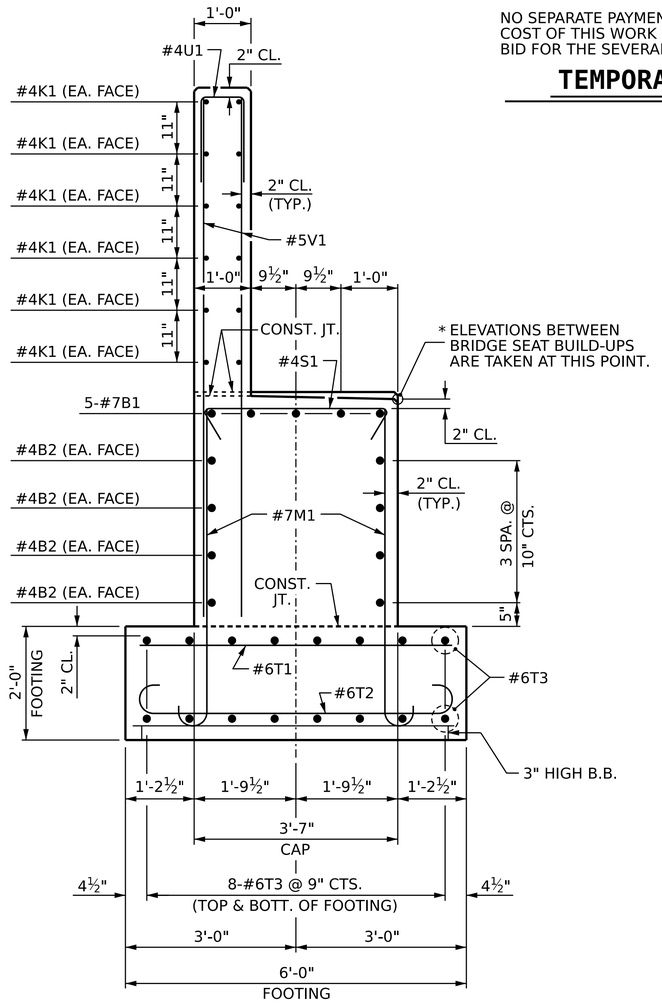


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY OR CORRAGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

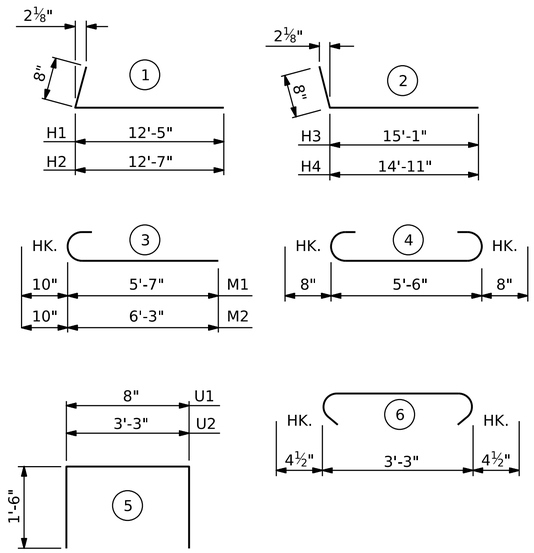
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#7	STR	40'-4"	412
B2	16	#4	STR	21'-5"	229
B3	15	#4	STR	4'-4"	43
H1	22	#6	1	13'-1"	432
H2	22	#6	1	13'-3"	438
H3	24	#6	2	15'-9"	568
H4	24	#6	2	15'-7"	562
K1	24	#4	STR	21'-5"	343
K2	8	#4	STR	3'-8"	20
M1	60	#7	3	6'-5"	787
M2	48	#7	3	7'-1"	695
S1	14	#4	6	4'-0"	37
T1	60	#6	STR	5'-6"	496
T2	60	#6	4	6'-10"	616
T3	16	#6	STR	44'-3"	1063
U1	33	#4	5	3'-8"	81
U2	21	#4	5	6'-3"	88
V1	33	#5	STR	9'-0"	310
V2	34	#5	STR	10'-4"	366
V3	38	#5	STR	11'-4"	449

REINFORCING STEEL 8,035 LBS.

CLASS A CONCRETE

POUR #1: (FOOTING)	19.9 C.Y.
POUR #2 (CAP & LOWER PART OF WINGS)	29.1 C.Y.
POUR #3 (BACKWALL & UPPER PART OF WINGS)	15.1 C.Y.
TOTAL CLASS A CONCRETE	64.1 C.Y.

DRAWN BY : M.K. BEARD DATE : 02/2026
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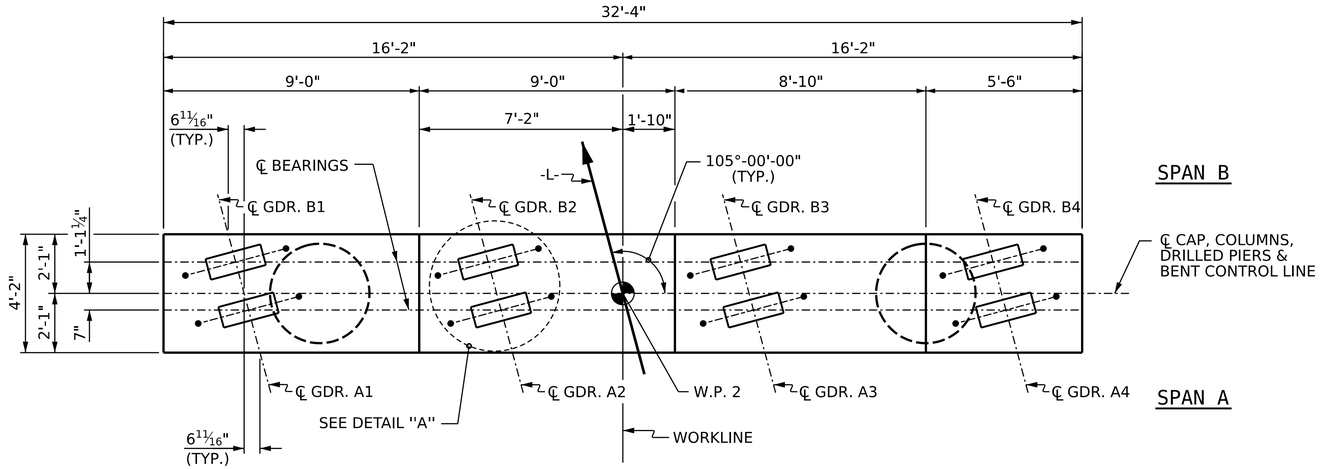
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PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 3 OF 3

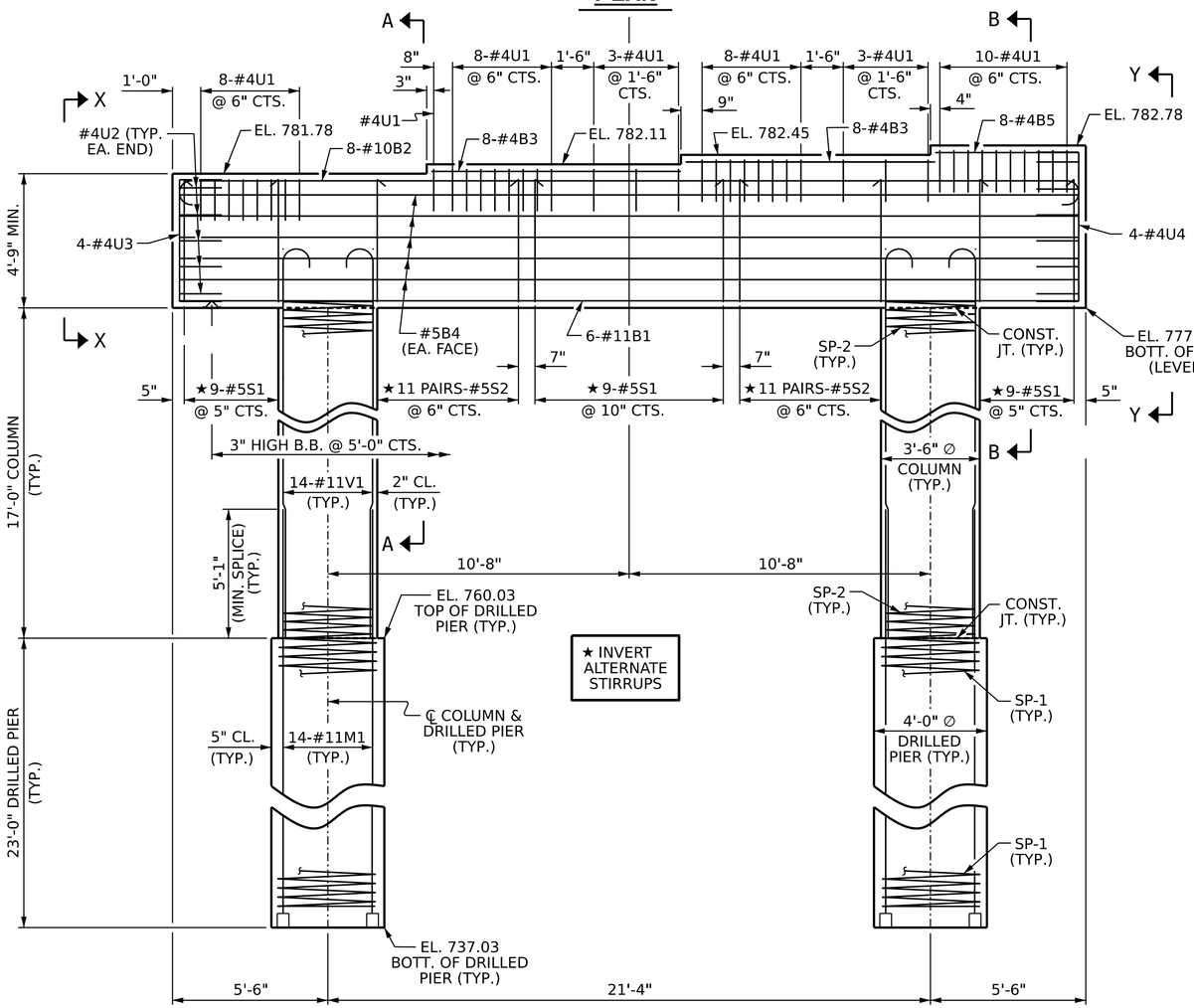
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1 DETAILS

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
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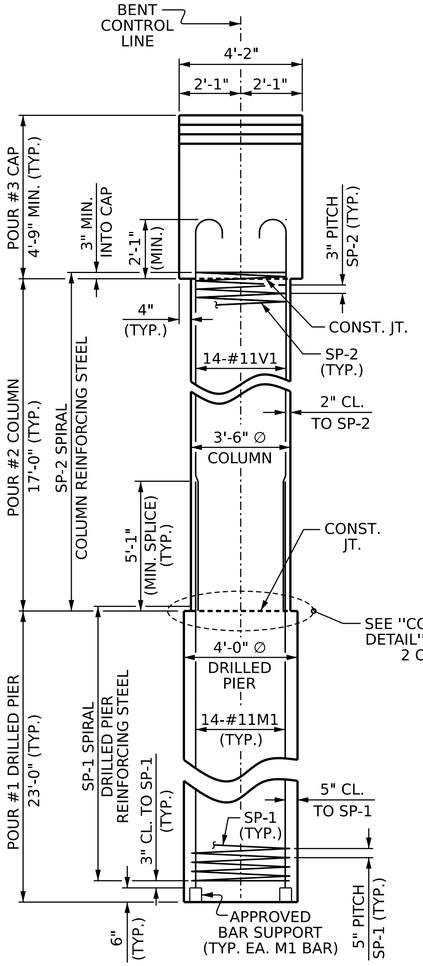


PLAN

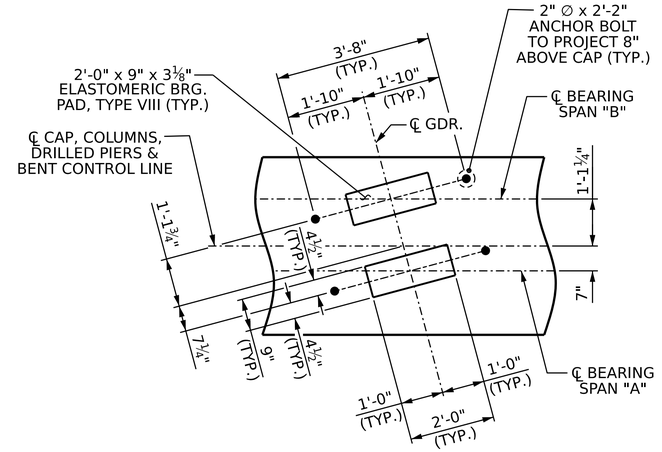


ELEVATION

DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN AND DRILLED PIER.



END ELEVATION



DETAIL "A"

(TYP. EA. GDR.)

NOTES

STIRRUPS & "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

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

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

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

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

FOR DRILLED PIER INSTALLATION INFORMATION, SEE PILE AND DRILLED PIER FOUNDATION TABLES, SHEET S-3.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE CENTERLINE BEARINGS ARE NOT SYMMETRICAL ABOUT THE CENTERLINE OF CAP.

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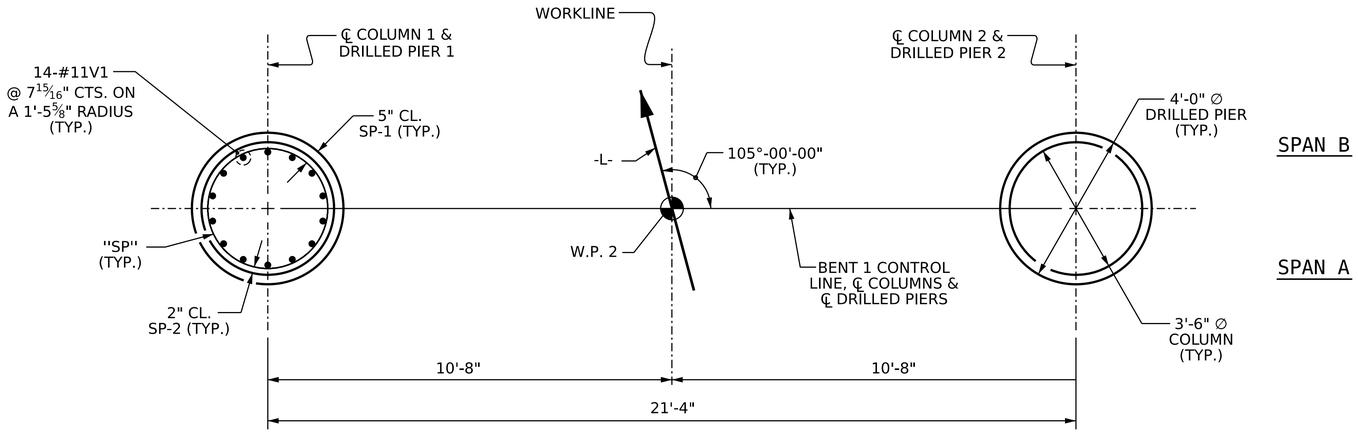
NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
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STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT 1

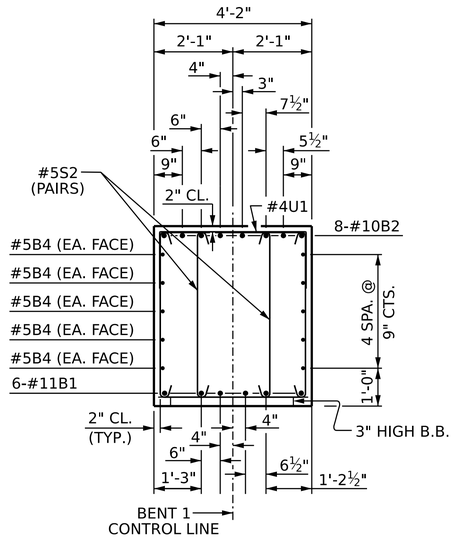
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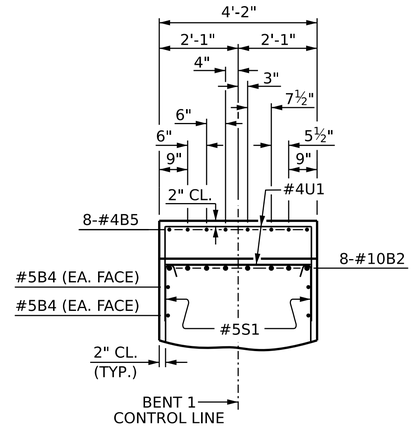


PLAN OF DRILLED PIERS & COLUMNS

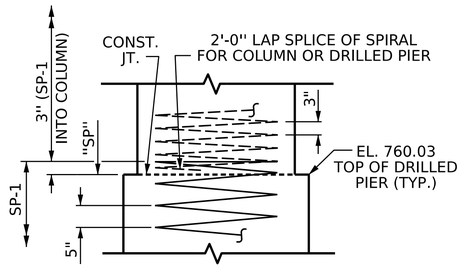
(REINFORCING STEEL IS TYPICAL FOR EACH COLUMN & DRILLED PIER)



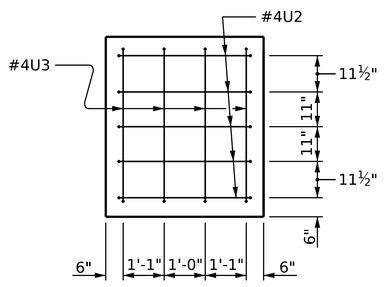
SECTION A-A



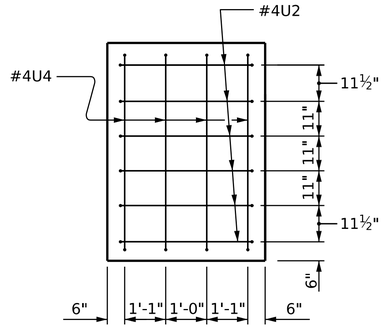
SECTION B-B



CONSTRUCTION JOINT DETAIL

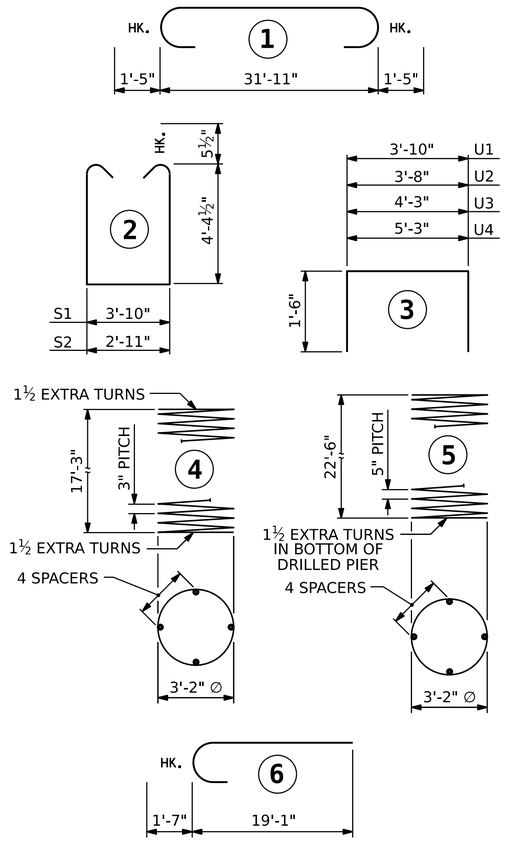


VIEW X-X



VIEW Y-Y

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

* * THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

* * * THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	31'-11"	1017
B2	8	#10	1	34'-9"	1196
B3	16	#4	STR	8'-8"	92
B4	10	#5	STR	31'-11"	333
B5	8	#4	STR	5'-1"	27
M1	28	#11	STR	30'-7"	4,624
S1	27	#5	2	13'-6"	380
S2	44	#5	2	12'-7"	577
U1	41	#4	3	6'-10"	187
U2	11	#4	3	6'-8"	49
U3	4	#4	3	10'-3"	27
U4	4	#4	3	11'-3"	30
V1	28	#11	6	20'-8"	3,074

REINFORCING STEEL	11,539 LBS.

SP-1	2	* * *	5	543'-7"	1,134
SP-2	2	* *	4	692'-5"	925

SPIRAL COLUMN REINFORCING STEEL	2,059 LBS.

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	12.1 C.Y.
POUR #3 (CAP)	25.9 C.Y.
TOTAL CLASS A CONCRETE	38.0 C.Y.

DRILLED PIERS CONCRETE	
POUR #1	21.4 C.Y.

DRAWN BY : M.K. BEARD DATE : 03/2026
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STATION: 17+10.00 -L-
SHEET 2 OF 2

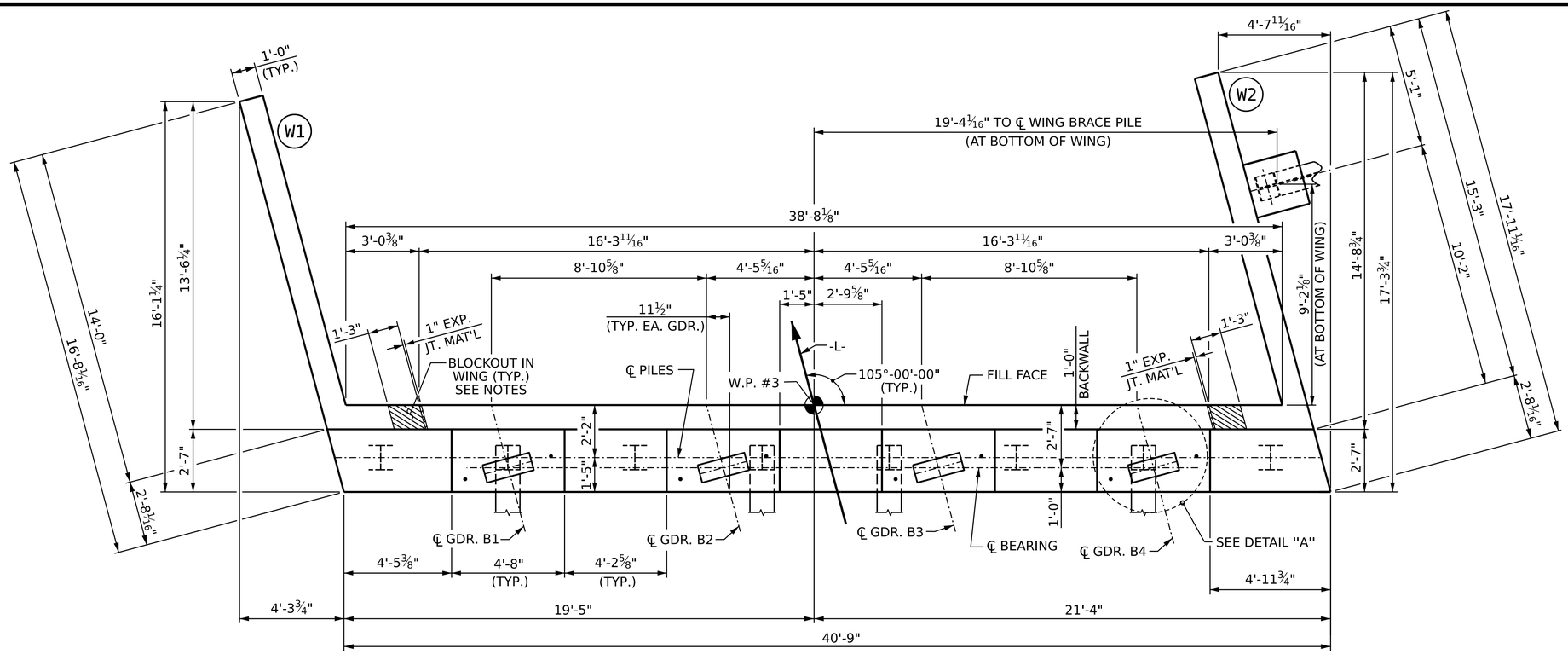
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

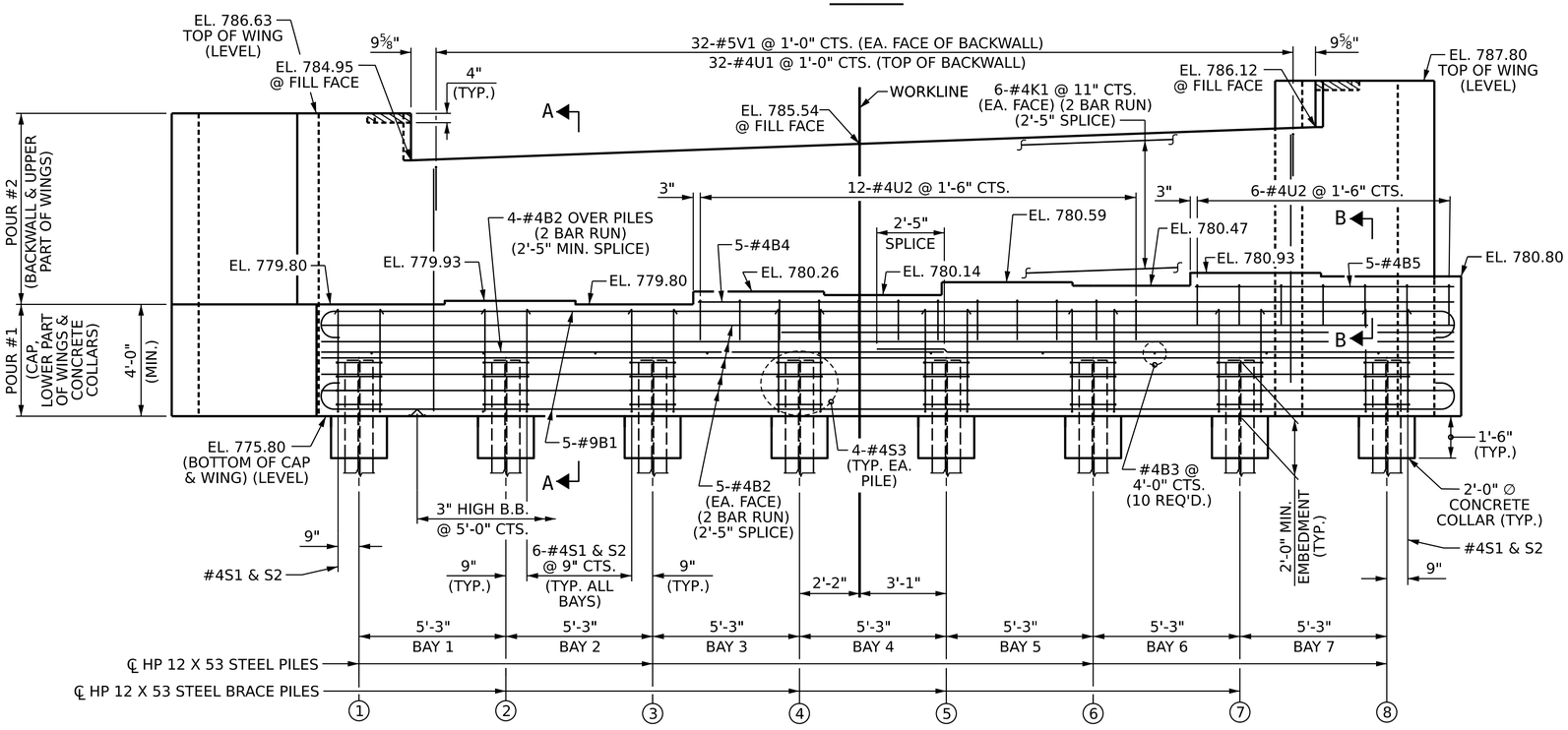
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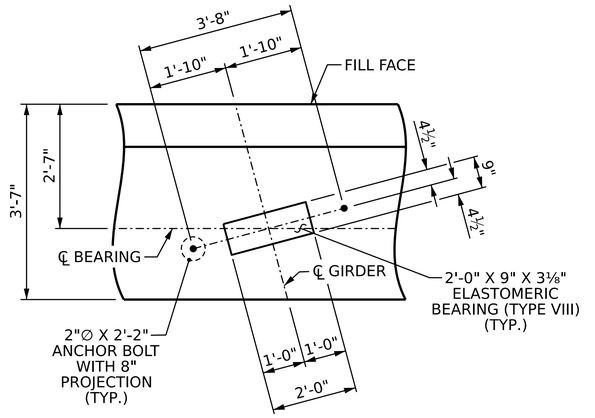


PLAN



ELEVATION

(BRACE PILE IN WING NOT SHOWN FOR CLARITY)



DETAIL "A"

(TYP. EA. GDR.)

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

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

FOR "SECTION A-A"AND "SECTION B-B", SEE SHEET 3 OF 3.

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STOKES COUNTY

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SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

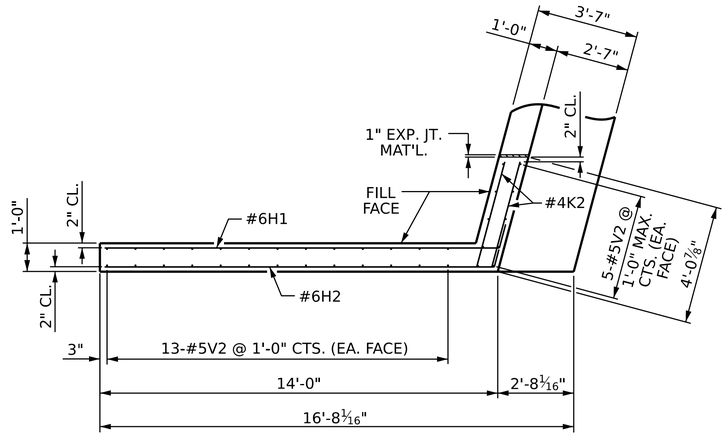
END BENT 2

DRAWN BY : M.K. BEARD DATE : 03/2026
CHECKED BY : G.W. DICKEY DATE : 03/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 03/2026

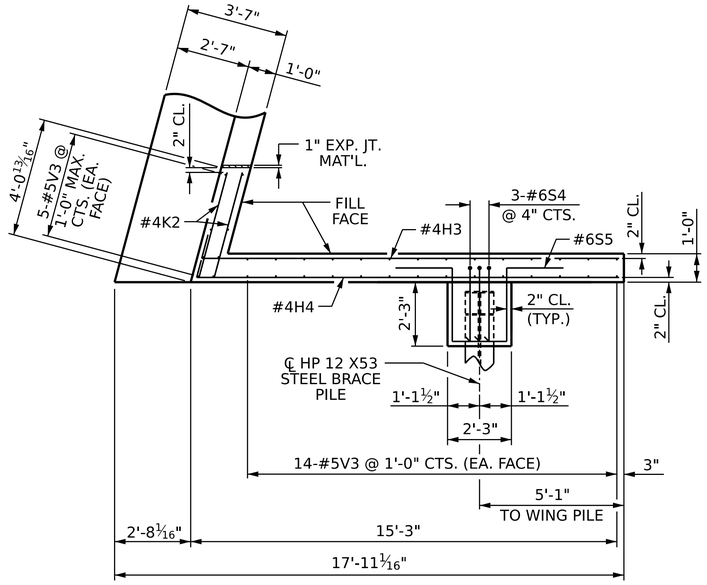
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			32

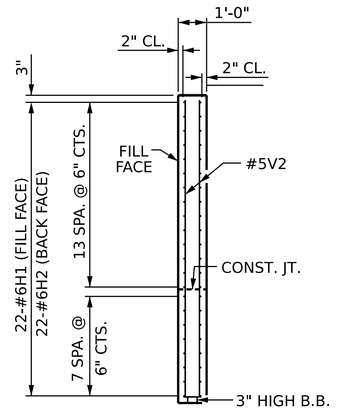
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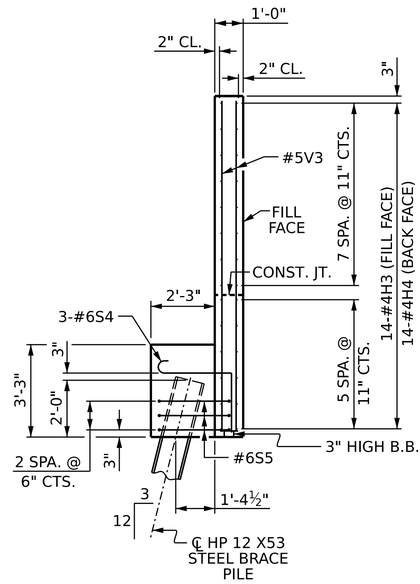
PLAN OF WING W1



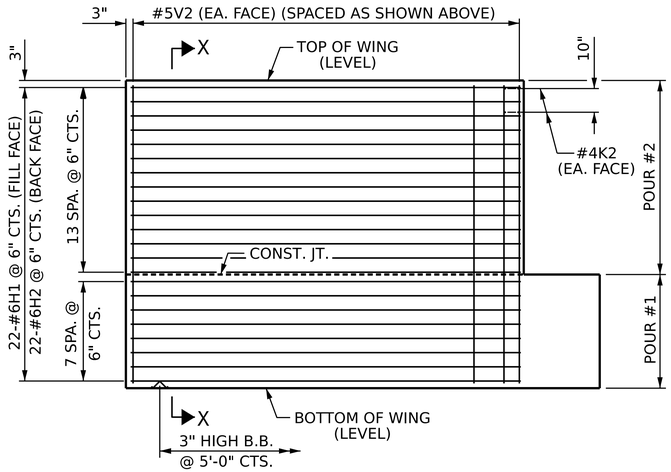
PLAN OF WING W2



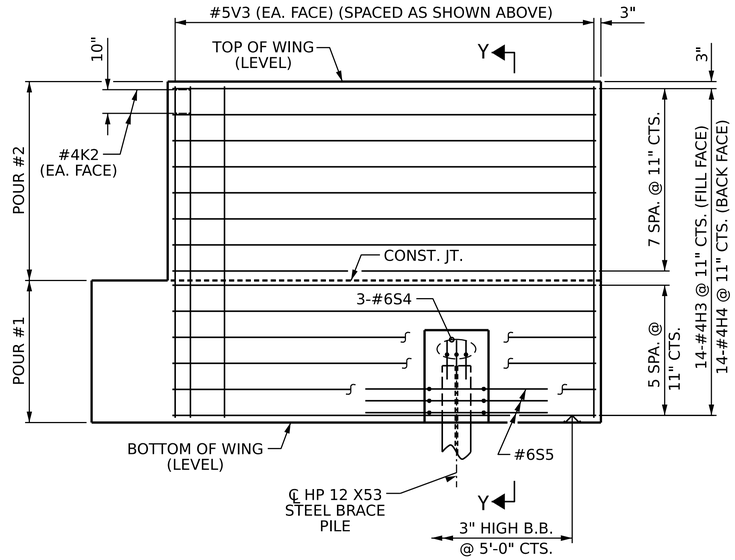
SECTION X-X



SECTION Y-Y



ELEVATION OF WING W1



ELEVATION OF WING W2

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY

6/3/2026

DocuSigned by: Gregory W. Dickey
541EB8AC897741C...

PROJECT NO. BR-0102

STOKES COUNTY

STATION: 17+10.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

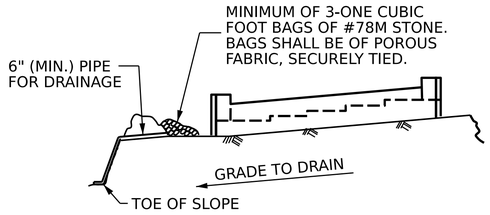
END BENT 2 WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : M.K. BEARD DATE : 03/2026
CHECKED BY : G.W. DICKEY DATE : 03/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 03/2026

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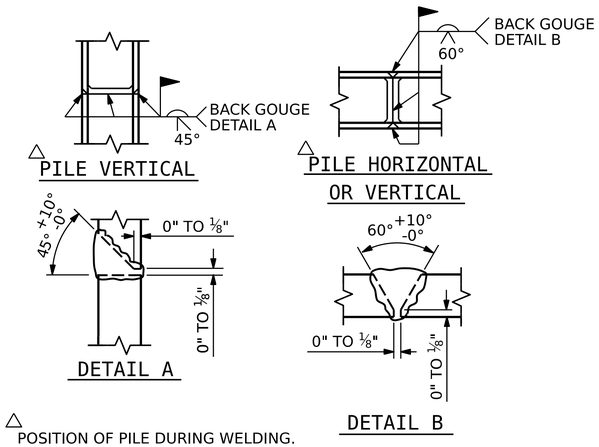


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY OR CORRAGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

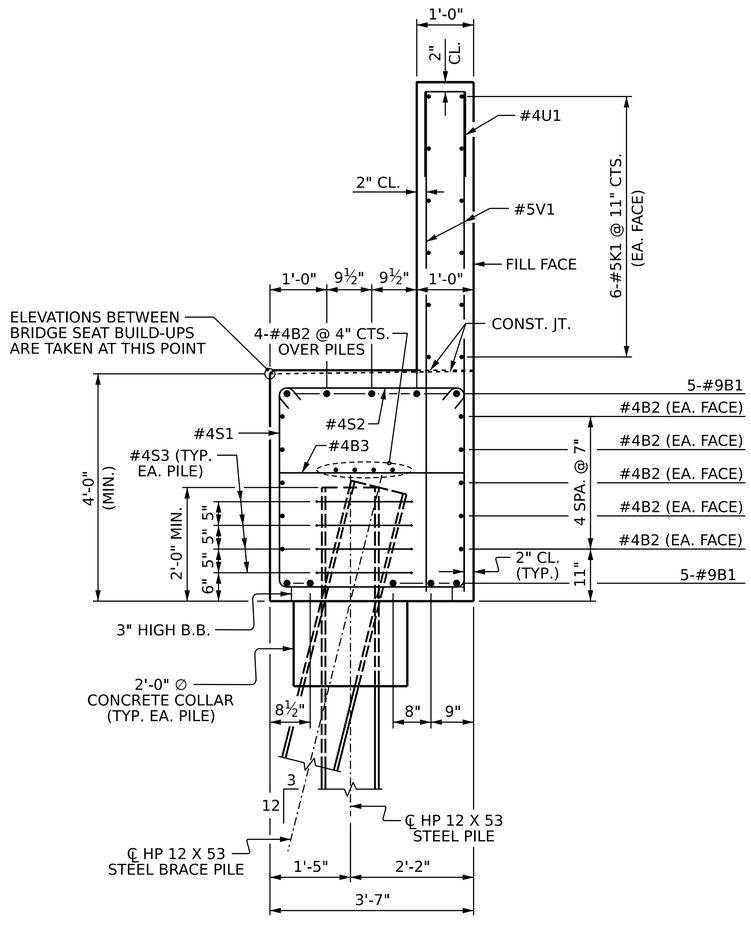
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

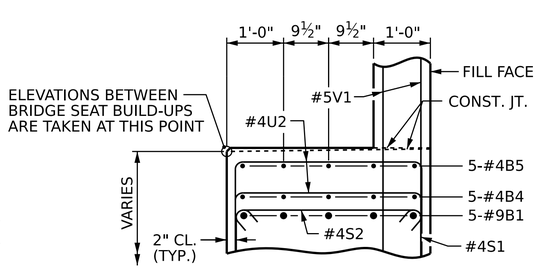


△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

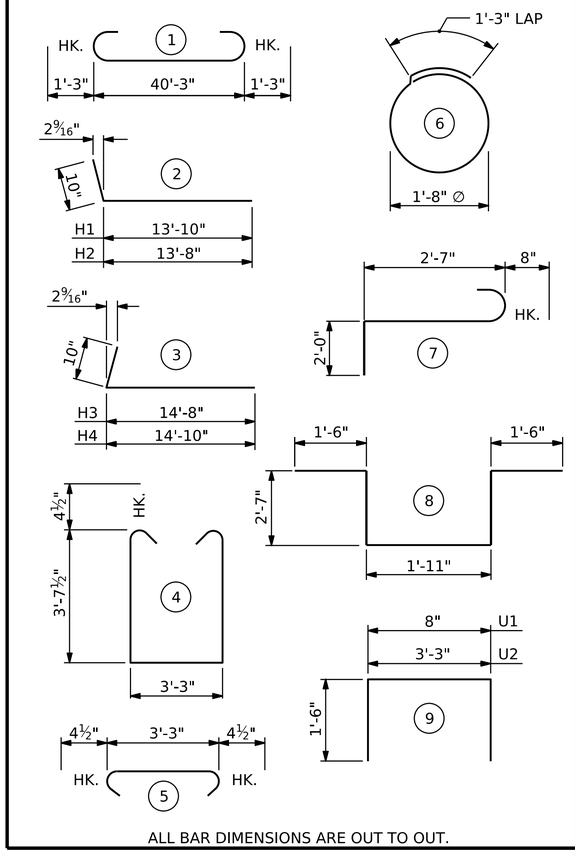


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#9	1	42'-9"	1454
B2	28	#4	STR	21'-7"	404
B3	10	#4	STR	3'-3"	22
B4	5	#4	STR	26'-1"	87
B5	5	#4	STR	8'-4"	28
H1	22	#6	2	14'-8"	485
H2	22	#6	2	14'-6"	479
H3	14	#4	3	15'-6"	145
H4	14	#4	3	15'-8"	147
K1	24	#4	STR	21'-7"	346
K2	8	#4	STR	3'-7"	19
S1	44	#4	4	11'-3"	331
S2	44	#4	5	4'-0"	118
S3	32	#4	6	6'-6"	139
S4	3	#6	7	5'-3"	24
S5	3	#6	8	10'-1"	45
U1	32	#4	9	3'-8"	78
U2	18	#4	9	6'-3"	75
V1	32	#5	STR	8'-8"	289
V2	36	#5	STR	10'-5"	391
V3	38	#5	STR	11'-8"	462

REINFORCING STEEL 5,568 LBS.

CLASS A CONCRETE

POUR #1:
(CAP, LOWER PART OF WINGS & CONCRETE COLLARS) 30.3 C.Y.

POUR #2:
(BACKWALL & UPPER PART OF WINGS) 13.4 C.Y.

TOTAL CLASS A CONCRETE 43.7 C.Y.

DRAWN BY : M.K. BEARD DATE : 03/2026
CHECKED BY : G.W. DICKEY DATE : 03/2026
DESIGN ENGINEER OF RECORD: G.W. DICKEY DATE : 03/2026

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
541EB8AC6977141C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

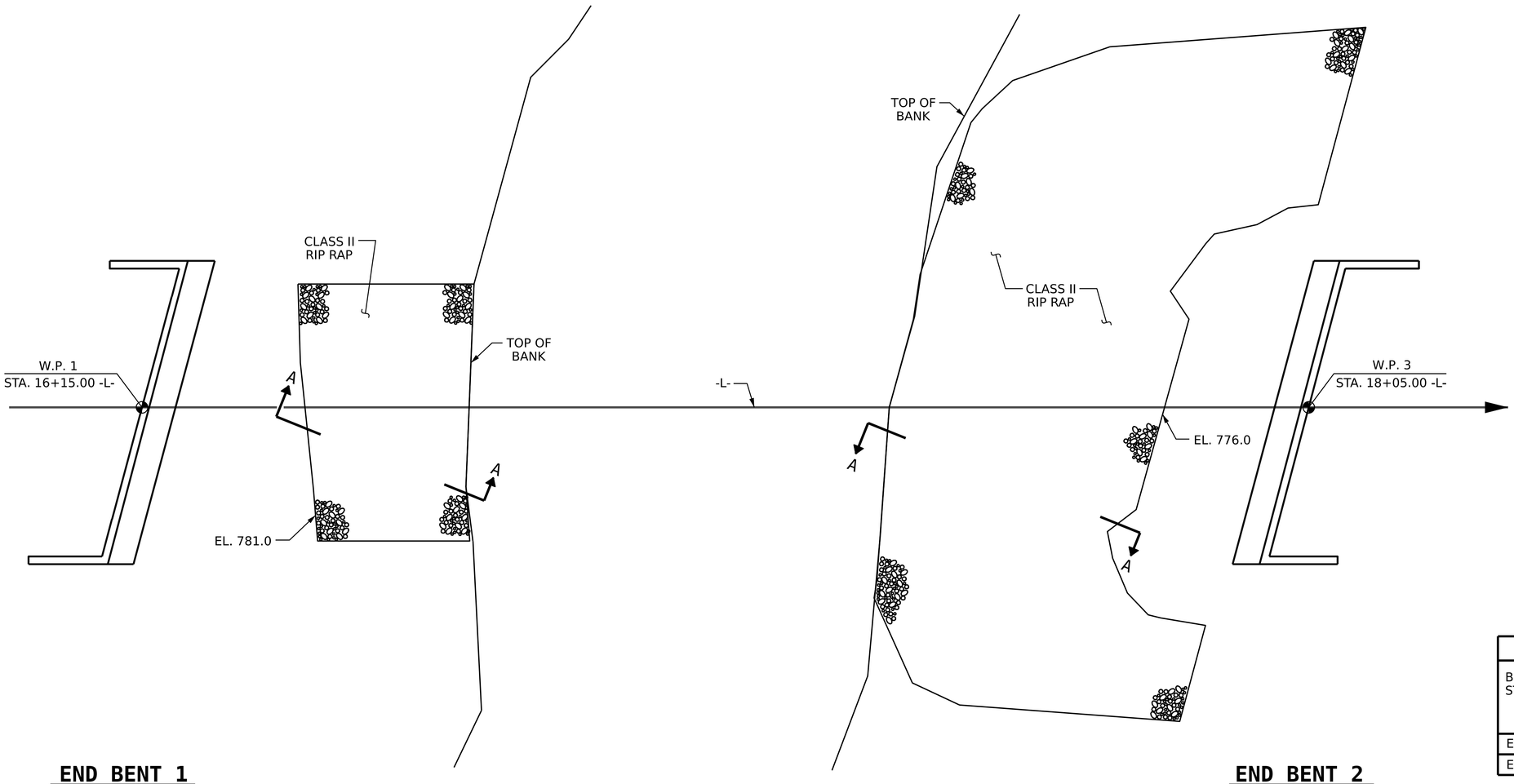
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE

END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			32

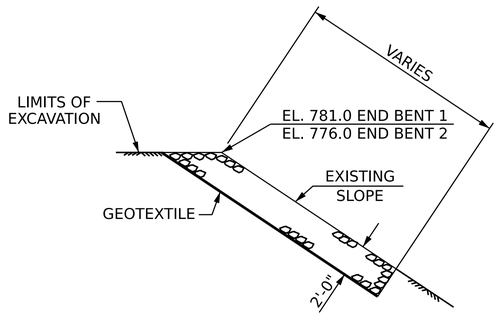
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END BENT 1

END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+10.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	85	95
END BENT 2	390	435



SECTION A-A

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6/3/2026
DocuSigned by: Gregory W. Dickey 541E88AC897741C...

PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

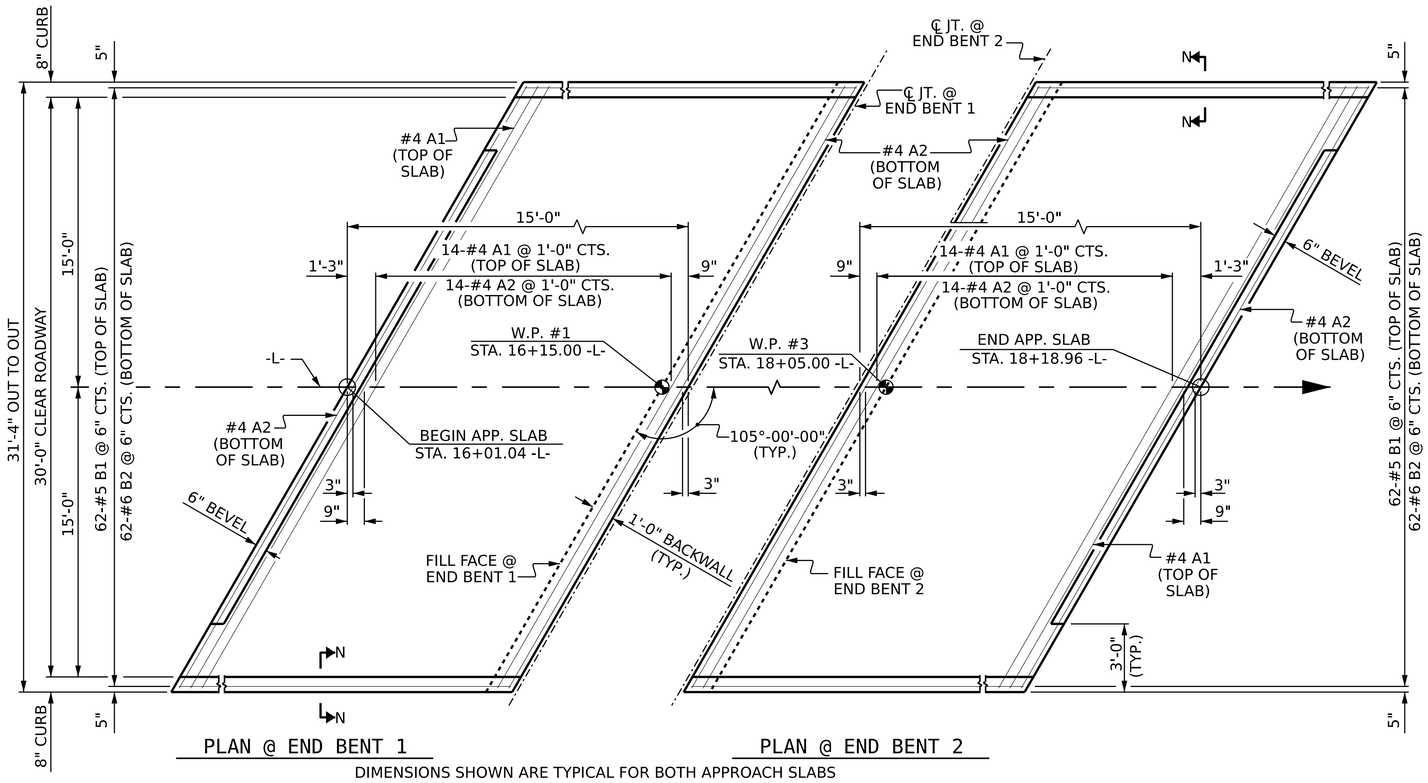
RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			32

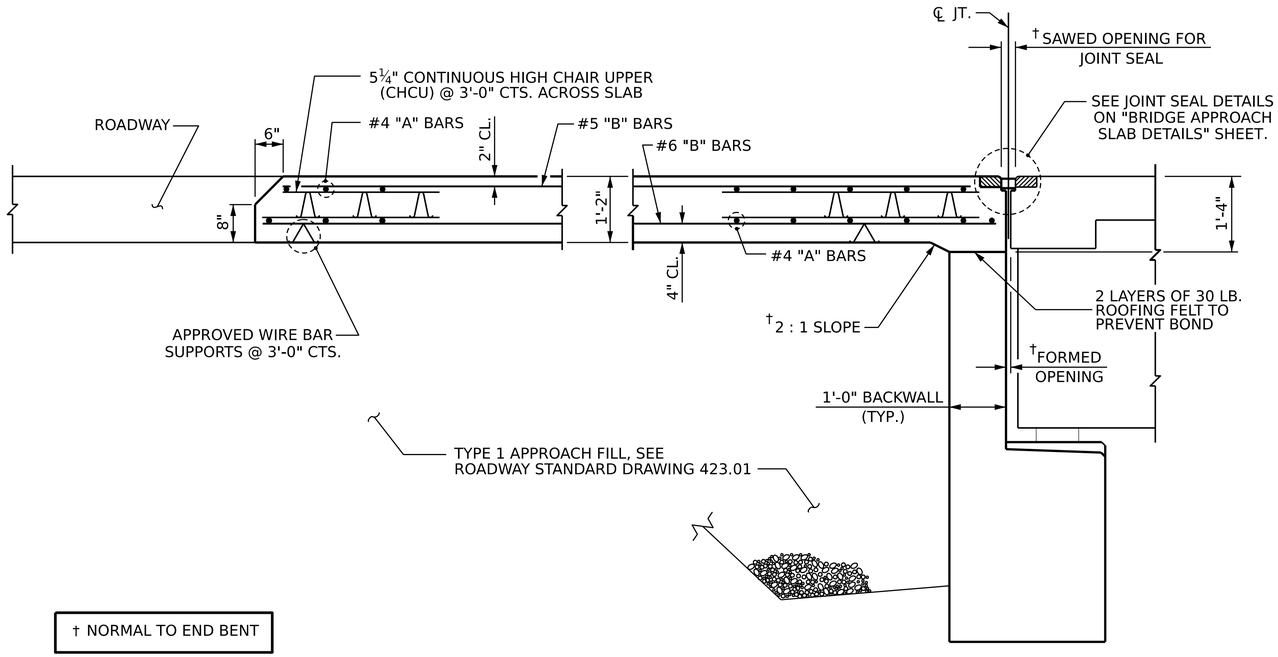
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ASSEMBLED BY : M.K. BEARD DATE : 02/2026
CHECKED BY : G.W. DICKEY DATE : 04/2026
DESIGN ENGINEER OF RECORD : G.W. DICKEY DATE : 04/2026

Docusign Envelope ID: 3CA9EC29-8FED-8D3E-8160-95F9F93F8C85

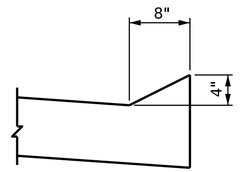


DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

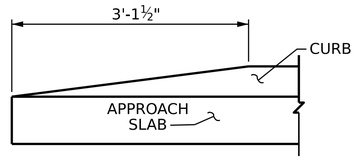


† NORMAL TO END BENT

SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL OR PARAPET AND END POST.

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.

WITH FOAM JOINT SEAL

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL

APPROACH SLAB @ END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	15	#4	STR	32'-1"	321
A2	16	#4	STR	32'-1"	343
*B1	62	#5	STR	13'-9"	889
B2	62	#6	STR	14'-8"	1366

REINFORCING STEEL	LBS. 1709
* EPOXY COATED REINFORCING STEEL	LBS. 1210
CLASS AA CONCRETE	C. Y. 20.3

APPROACH SLAB @ END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	15	#4	STR	32'-1"	321
A2	16	#4	STR	32'-1"	343
*B1	62	#5	STR	13'-9"	889
B2	62	#6	STR	14'-8"	1366

REINFORCING STEEL	LBS. 1709
* EPOXY COATED REINFORCING STEEL	LBS. 1210
CLASS AA CONCRETE	C. Y. 20.3

SPLICE LENGTHS

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

ASSEMBLED BY : M.K. BEARD DATE : 01/2026
CHECKED BY : G.W. DICKEY DATE : 02/2026
DRAWN BY : EEM 3/95
CHECKED BY : VAP 3/95
REV. 12/17 MAA/THC
REV. 06/19 BNB/THC
REV. 07/23 BNB/SNM

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6/3/2026
DocuSigned by: Gregory W. Dickey
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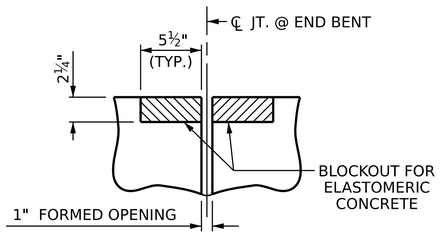
PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

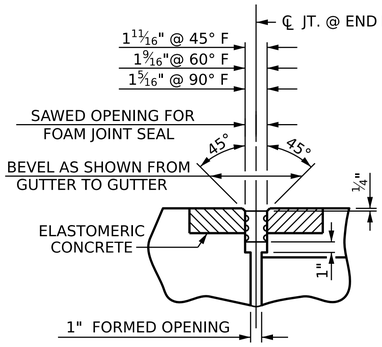
BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			32

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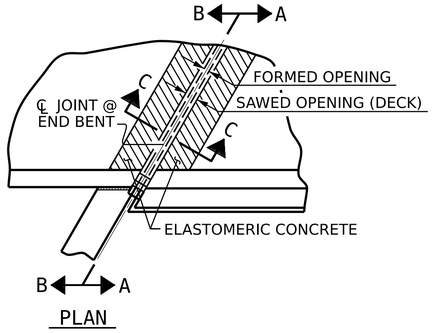
SECTION C-C
FOAM JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



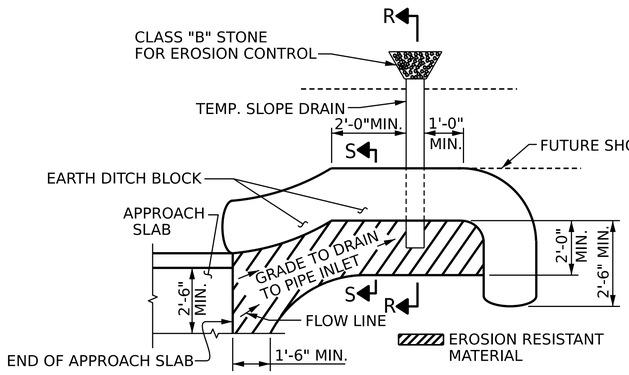
SECTION C-C
FOAM JOINT SEAL
(EXPANSION)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	5.3
2	5.3
TOTAL	10.6

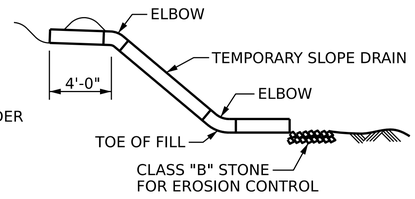
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



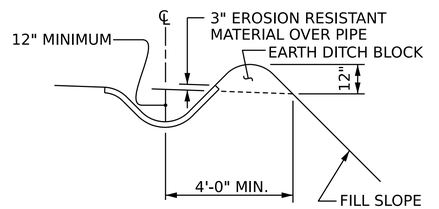
PLAN



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.



SECTION R-R

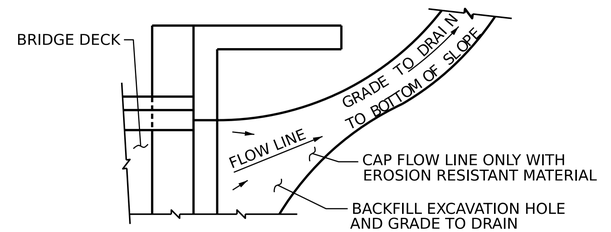


SECTION S-S

PLAN VIEW

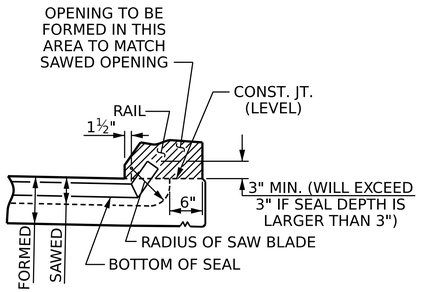
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

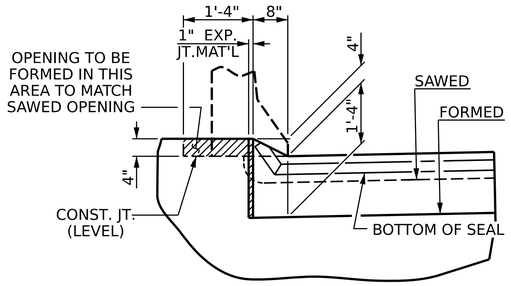


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



SECTION A-A



SECTION B-B

JOINT SEAL DETAILS @ END BENT

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

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

ASSEMBLED BY: M.K. BEARD		DATE : 01/2026	
CHECKED BY : G.W. DICKEY		DATE : 02/2026	
DRAWN BY : FCJ 11/88	REV. 6/13		MAA/GM
CHECKED BY : ARB 11/88	REV. 12/17		MAA/THC
	REV. 5/18		MAA/THC

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NORTH CAROLINA PROFESSIONAL SEAL 21271 ENGINEER GREGORY W. DICKEY
6/3/2026
DocuSigned by: Gregory W. Dickey
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PROJECT NO. BR-0102
STOKES COUNTY
STATION: 17+10.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

BRIDGE APPROACH SLAB DETAILS

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

STD. BAS4

Docusign Envelope ID: 3CA9EC29-8FED-8D3E-8160-95F9F93F8C85

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.