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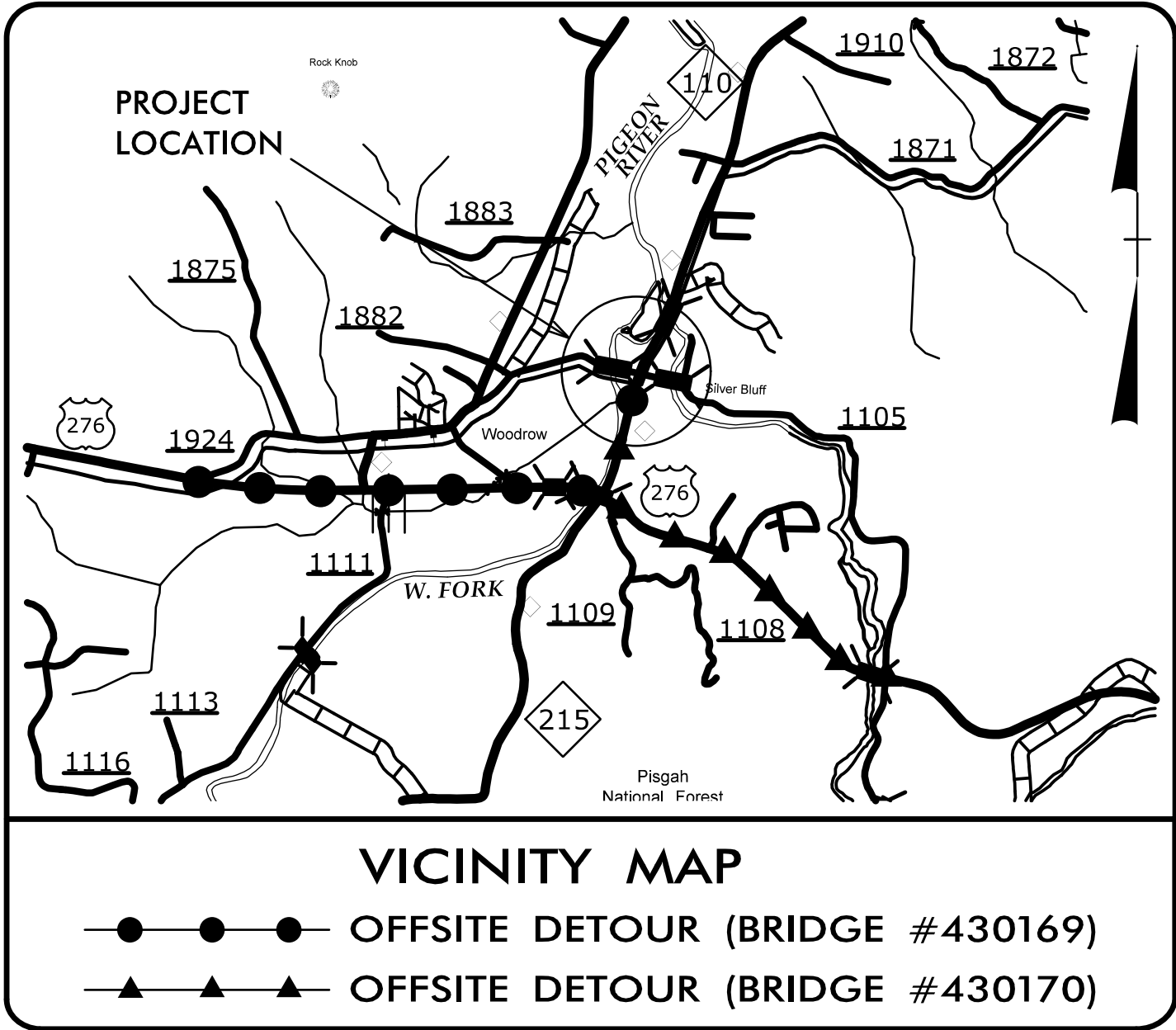
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HB-0023	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50345.1.1	N/A	PE	
50345.2.1	5034501	ROW	
50345.2.2	5034501	UTIL.	
50345.3.1	5034501	CONST.	

TIP PROJECT: HB-0023

CONTRACT: DN01082

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

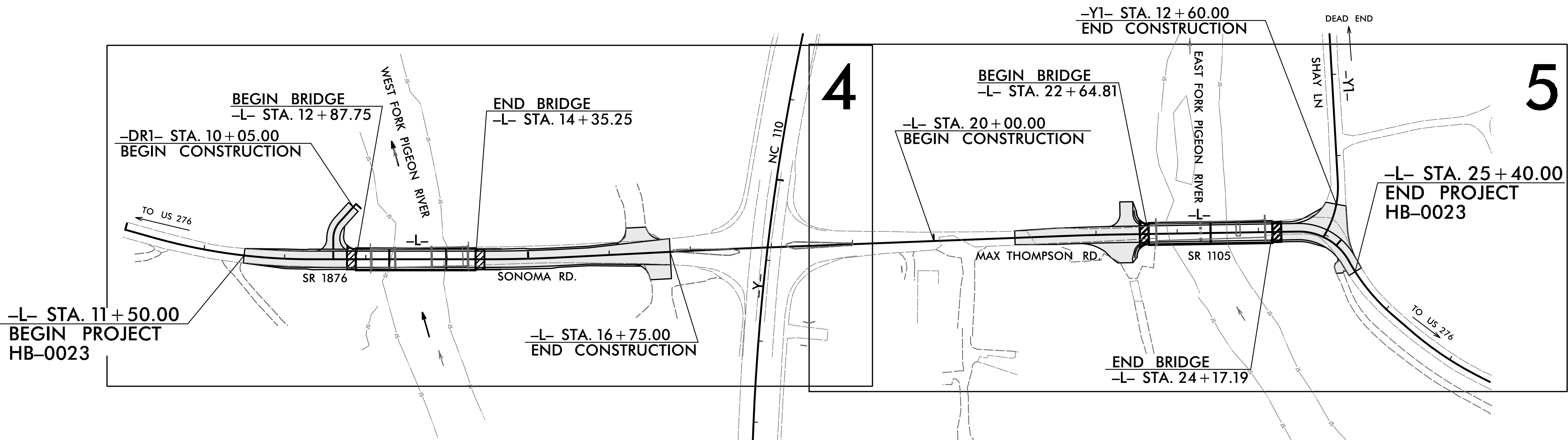
HAYWOOD COUNTY

LOCATION:

BRIDGE #430169 ON SR 1876 (SONOMA RD) OVER WEST FORK PIGEON RIVER

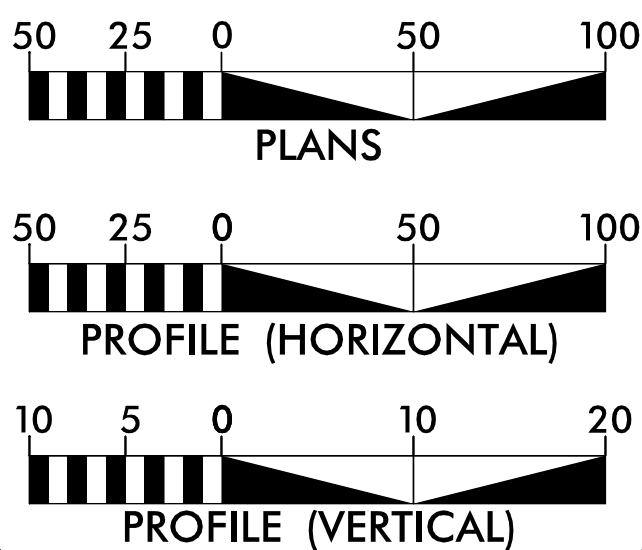
BRIDGE #430170 ON SR 1105 (MAX THOMPSON RD) OVER EAST FORK PIGEON RIVER

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



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 1,100
T = 7 % *
V = 40 MPH
* TTST = 4% DUAL 3%
FUNC CLASS =
LOCAL RURAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HB-0023 = 0.145 MILES
LENGTH STRUCTURE TIP PROJECT HB-0023 = 0.057 MILES
TOTAL LENGTH TIP PROJECT HB-0023 = 0.202 MILES

NCDOT CONTACT: ZACH SHULER

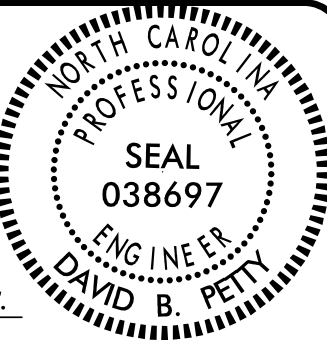
PLANS PREPARED BY:	PLANS PREPARED FOR:
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 14 345 Toot Hollow Rd Bryson City, NC 28713
RIGHT OF WAY DATE:	
JUNE 14, 2024	
LETTING DATE:	
JUNE 24, 2025	
2024 STANDARD SPECIFICATIONS	

HYDRAULICS
ENGINEER

4/23/2025

Signed by:
David B. Petty
SIGNATURE

P.E.

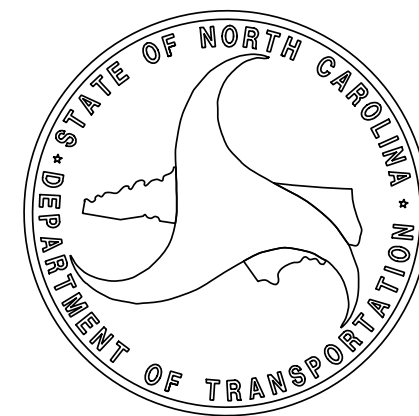


ROADWAY DESIGN
ENGINEER

4/23/2025

Signed by:
Jimmy L. Terry
SIGNATURE

P.E.



PROJECT REFERENCE NO.
HB-0023

SHEET NO.
1A

ROADWAY DESIGN
ENGINEER



DOCUMENT NOT CONSIDERED FINAL
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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	SPECIAL DETAILS - GUARDRAIL PLACEMENT
2C-3 THRU 2C-4	SPECIAL DETAILS - METHOD OF PIPE INSTALLATION
2C-5	SPECIAL DETAILS - TYPE III - SHOP CURVED ANCHOR
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 5	PLAN AND PROFILE SHEETS
RW01 THRU RW05	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-5	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX SHEET
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-8	CROSS-SECTIONS
S1-1 THRU S1-28	STRUCTURE PLANS (#430169)
S2-1 THRU S2-26	STRUCTURE PLANS (#430170)
STRUCTURE STANDARD NOTES	

GENERAL NOTES

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.
SUBSURFACE DRAINS:	SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.
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 ENERGY, AT&T, ZITO MEDIA, HAYWOOD EMC TRANSMISSION 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.

STANDARD DRAWINGS

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
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 I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement (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)
866.04	Barbed Wire Fence - with Wood Posts
876.02	Guide for Rip Rap at Pipe Outlets

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel / Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	
BUILDINGS AND OTHER CULTURE:	
Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	
HYDROLOGY:	
Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS
CONVENTIONAL PLAN SHEET SYMBOLS

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.



MILLING AND RESURFACING:
 -L- STA. 11+50.00 TO -L- STA. 11+87.50
 -L- STA. 16+37.50 TO -L- STA. 16+75.00
 -L- STA. 21+00.00 TO -L- STA. 21+37.50
 -L- STA. 25+02.50 TO -L- STA. 25+40.00



USE TYPICAL SECTION NO. 1

-L- STA. 12+00.00 TO -L- STA. 12+50.00
-L- STA. 15+25.00 TO -L- STA. 15+75.00

NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO.1 AS FOLLOWS:

-L- STA. 11+50.00 TO -L- STA. 12+00.00
-L- STA. 15+75.00 TO -L- STA. 16+75.00



USE TYPICAL SECTION NO. 2

-L- STA. 12+50.00 TO -L- STA. 12+87.75 (BEGIN BRIDGE)
-L- STA. 14+35.25 (END BRIDGE) TO -L- STA. 15+25.00



HAYWOOD COUNTY BRIDGE #430169 & BRIDGE #430170

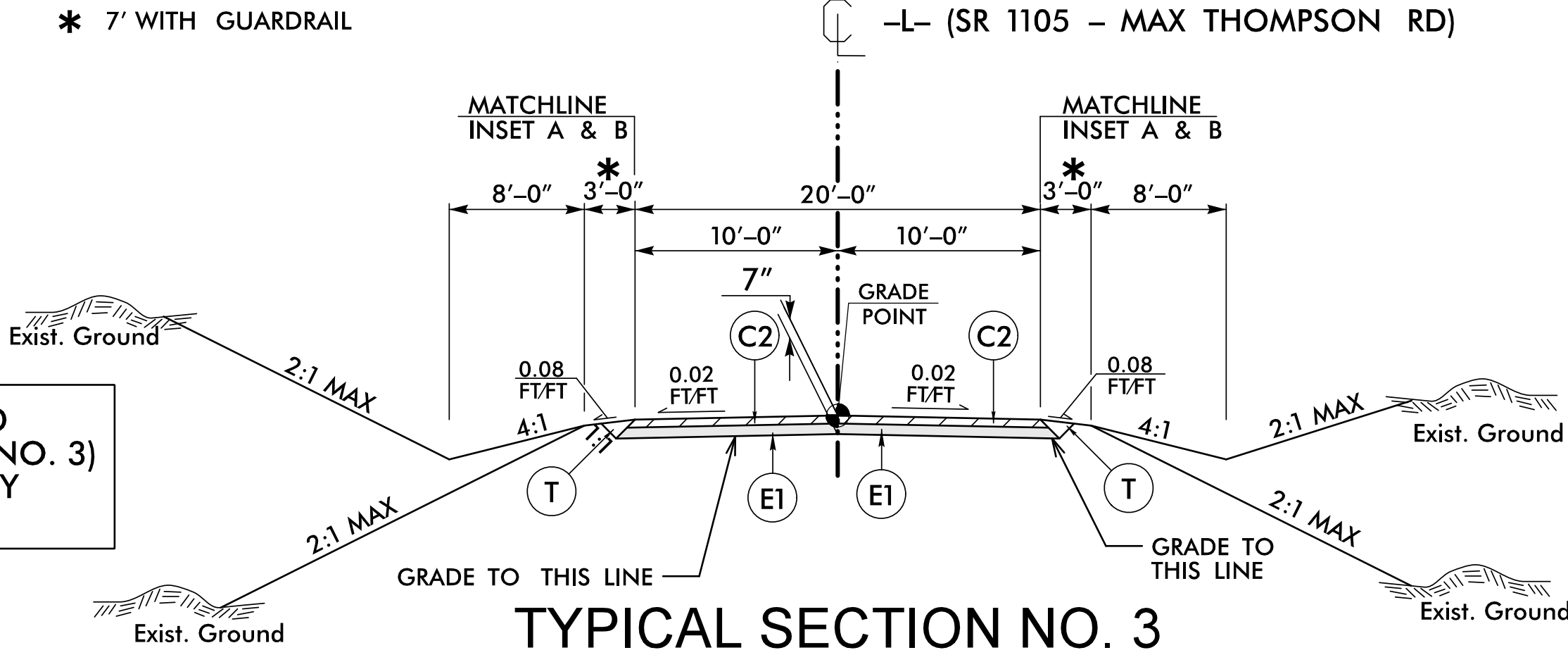
PROJECT REFERENCE NO.		SHEET NO.	
HB-0023		2A-1	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
			
11/21/2024		11/22/2024	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 TGS ENGINEERS 201 W. MARION ST. SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			

6/2/2024

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User:smelvin

FINAL PAVEMENT SCHEDULE	
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
E1	4" B25.0C
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL

NOTE: THE CONTRACTOR SHALL EXTEND FULL DEPTH PAVEMENT (TYP SECTION NO. 3) TO -L- STA 20+00.00 AS DIRECTED BY THE ENGINEER.

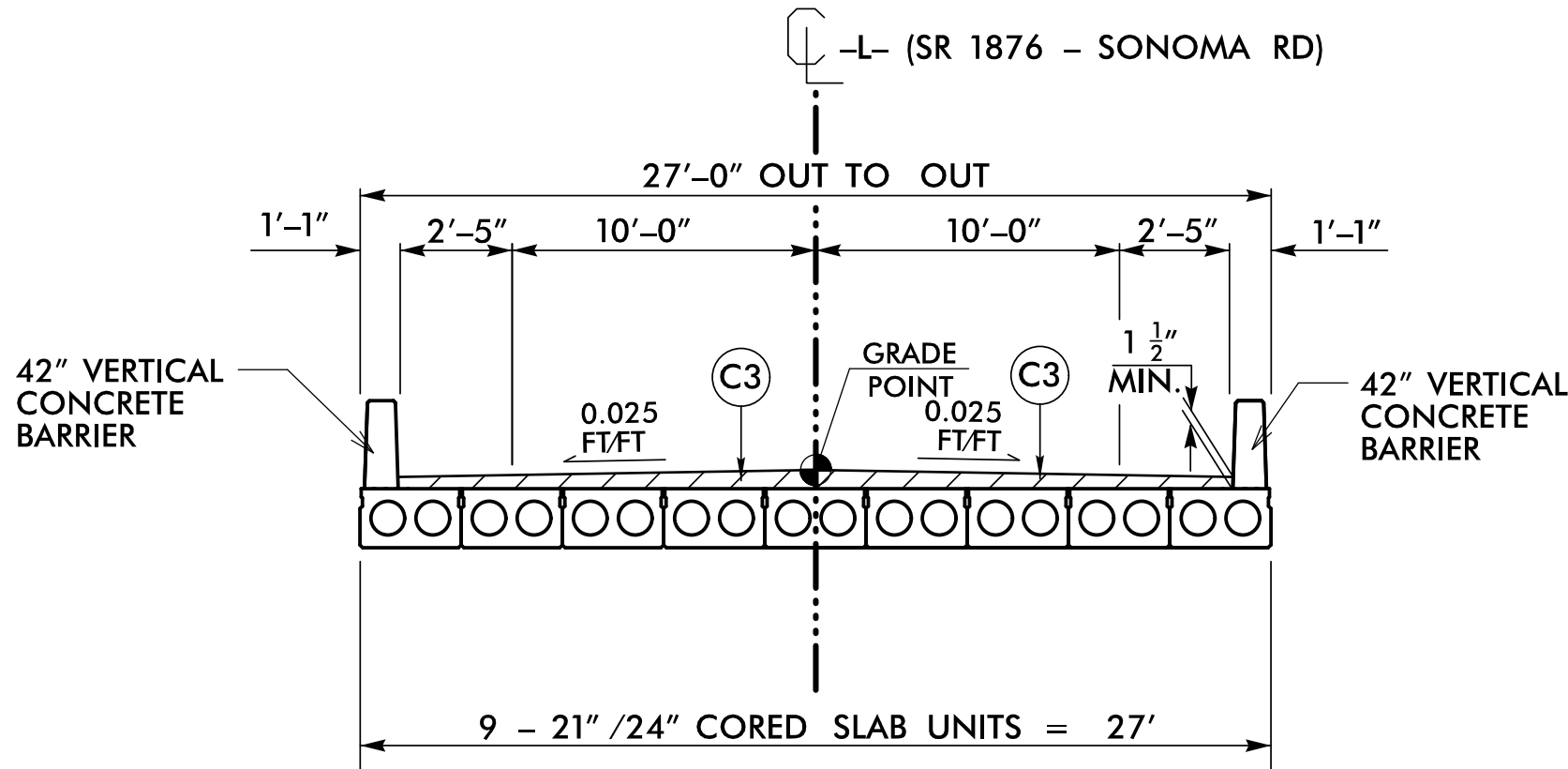


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 21+00.00 TO -L- STA. 22+64.81 (BEGIN BRIDGE)
-L- STA. 24+17.19 (END BRIDGE) TO -L- STA. 24+48.96

NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO.4 AS FOLLOWS:
-L- STA. 24+48.96 TO -L- STA. 25+40.00

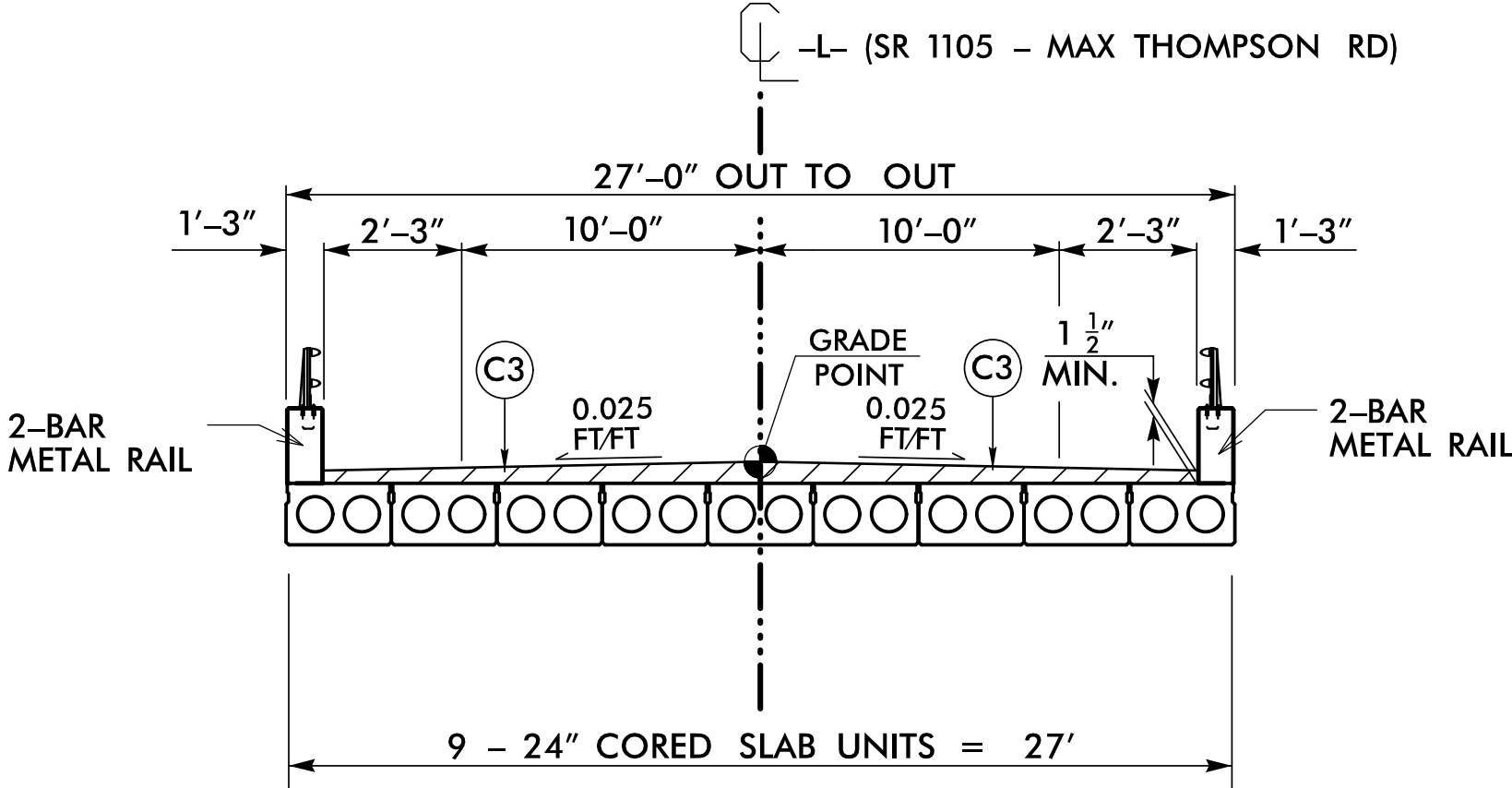


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 12+87.75 TO -L- STA. 14+35.25

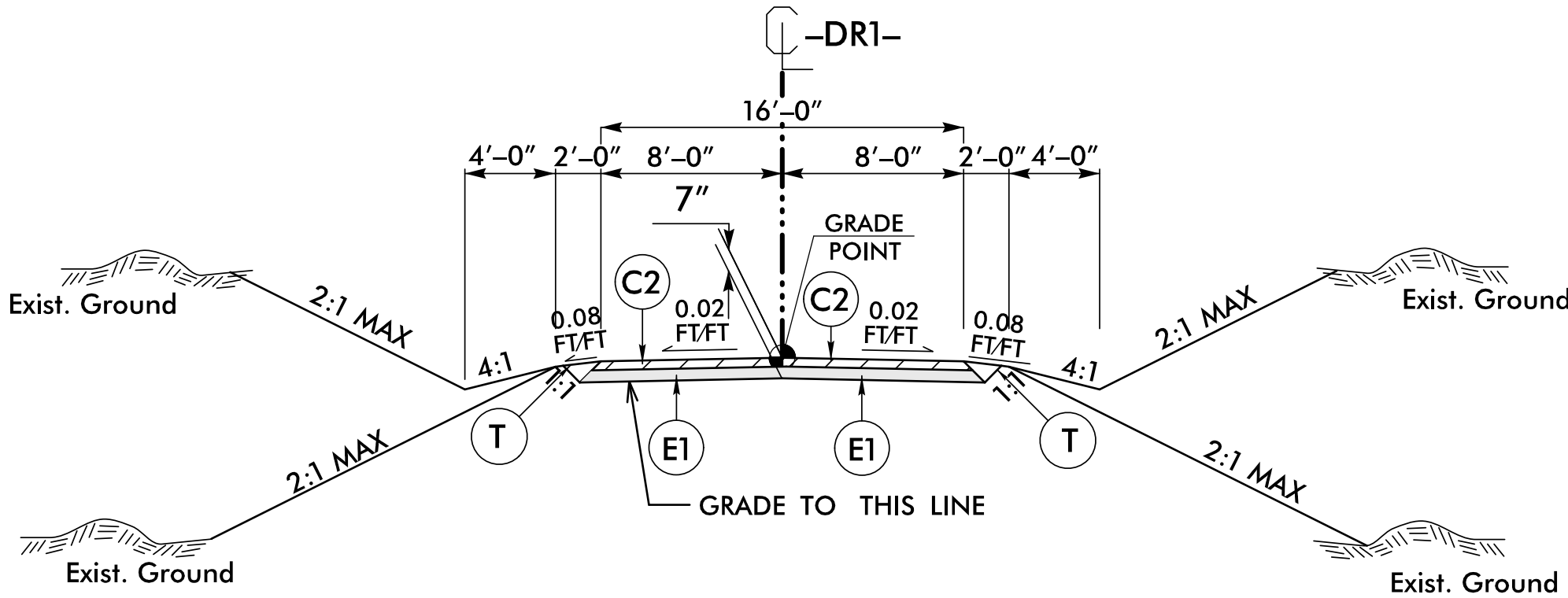
SEE STRUCTURE PLANS FOR STRUCTURE CONSTRUCTION DETAILS



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO.5

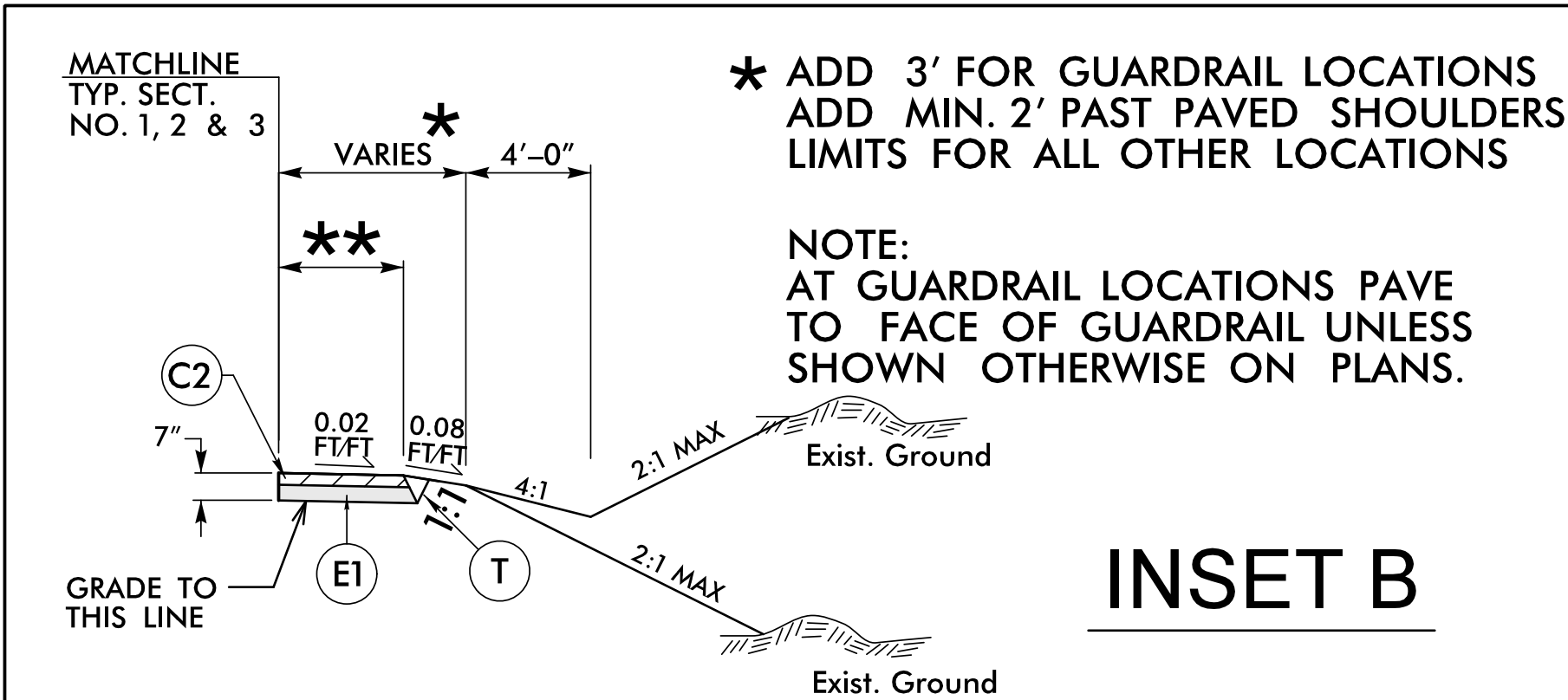
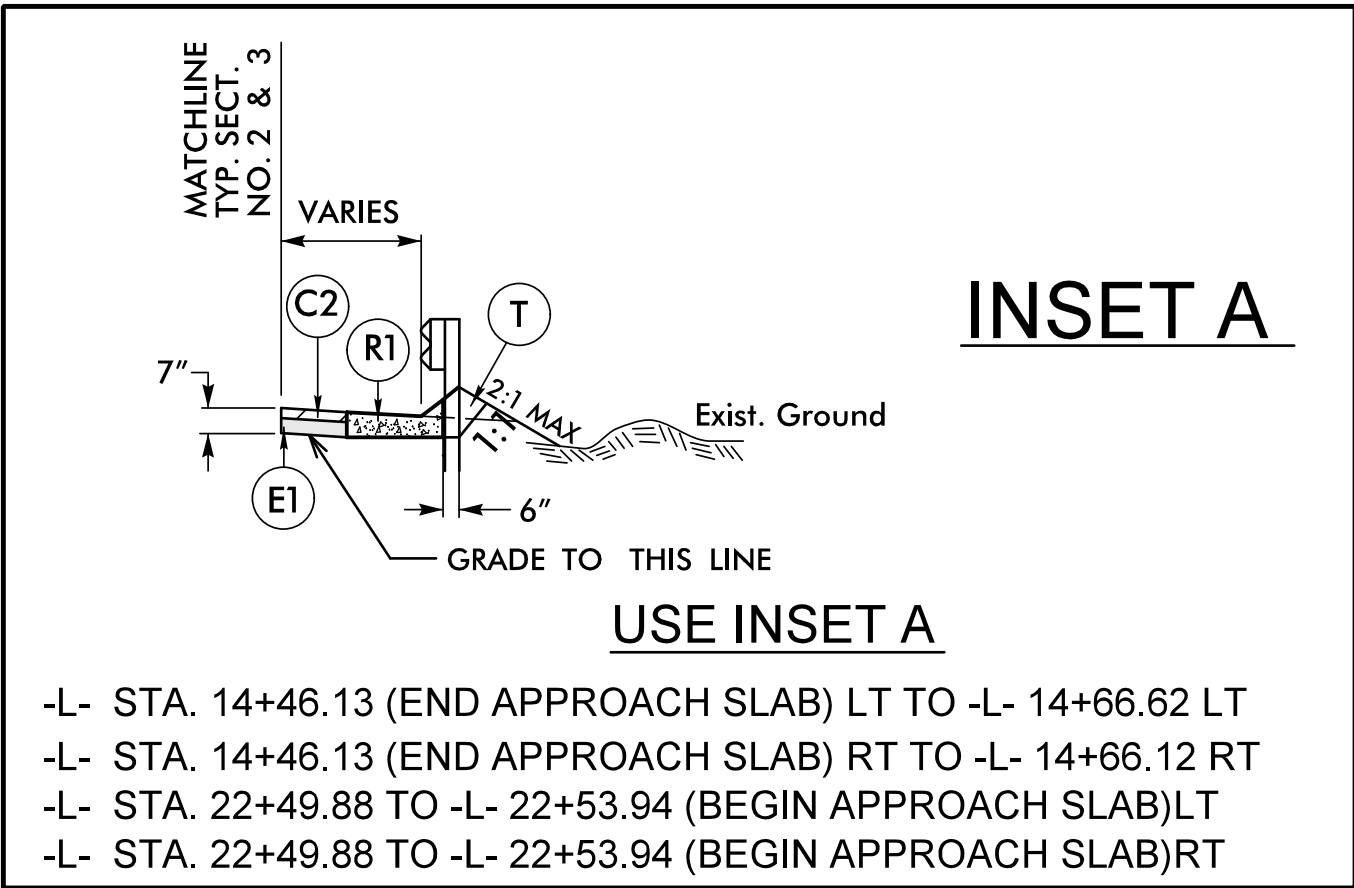
-L- STA. 22+64.81 TO -L- STA. 24+17.19



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

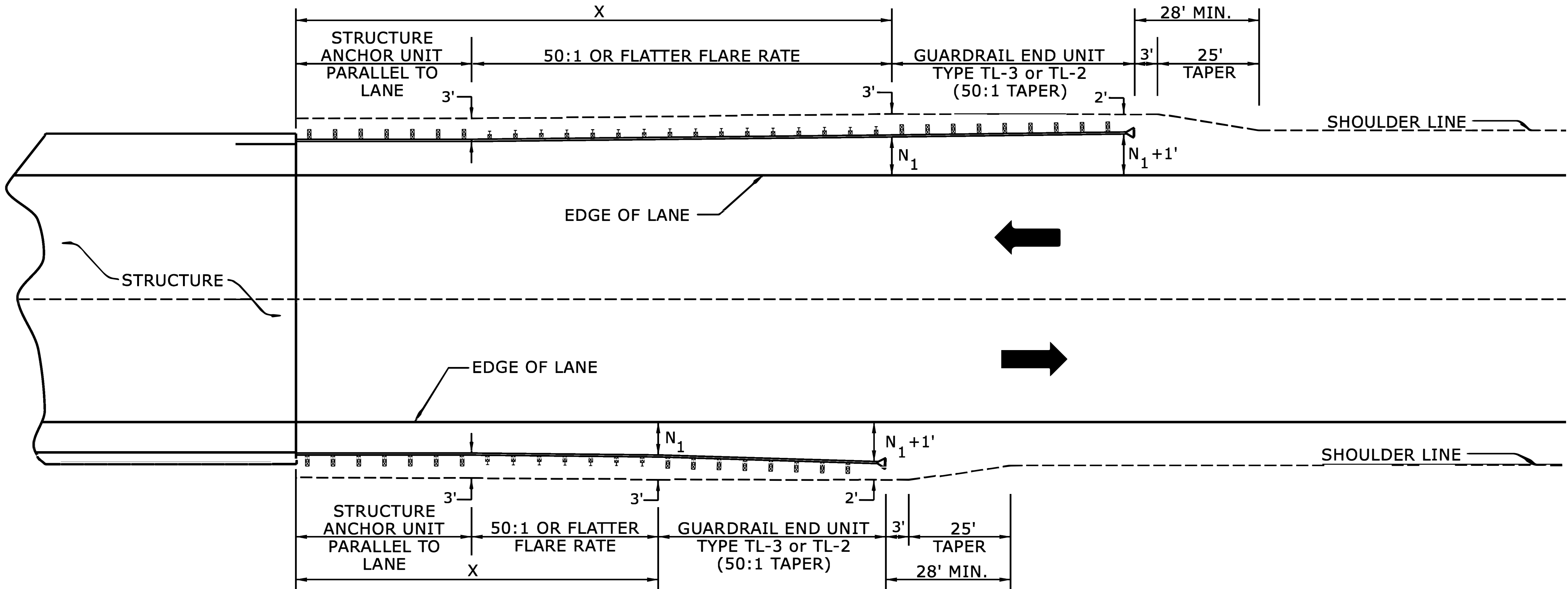
-DR1- STA. 10+05.00 TO -DR1- STA. 10+67.81



USE INSET B

** FDPS WIDTH	
0'-0" TO 2'-11"	-L- STA. 11+50.00 LT TO -L- STA. 12+76.88 (BEGIN APPROACH SLAB) LT
0'-0" TO 2'-11"	-L- STA. 11+50.00 RT TO -L- STA. 12+76.88 (BEGIN APPROACH SLAB) RT
2'-11" TO 2'-0"	-L- STA. 14+66.62 (END SBG) LT TO -L- STA. 16+11.97 LT
2'-11" TO 2'-0"	-L- STA. 14+66.12 (END SBG) RT TO -L- STA. 16+38.22 RT
2'-3"	-L- STA. 24+28.06 (END APPROACH SLAB) LT TO -L- STA. 24+35.94 LT
2'-3"	-L- STA. 24+28.06 (END APPROACH SLAB) LT TO -L- STA. 24+71.04 RT
0'-0" TO 2'-3"	-L- STA. 24+35.94 TO -L- STA. 24+69.57 LT
0'-0" TO 2'-3"	-L- STA. 24+71.04 TO -L- STA. 24+90.46 RT

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	2C-1



USE FLARE RATE AS THE CONTROL IF THE "N₁" DISTANCE IS NOT OBTAINED.
("N₁" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS ≥ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

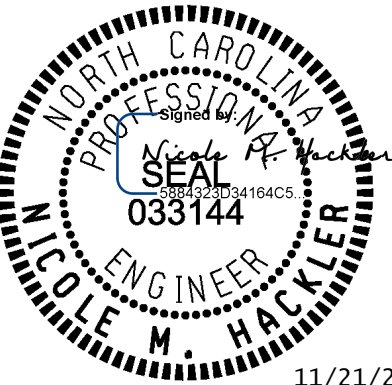
LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01



11/21/2024

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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

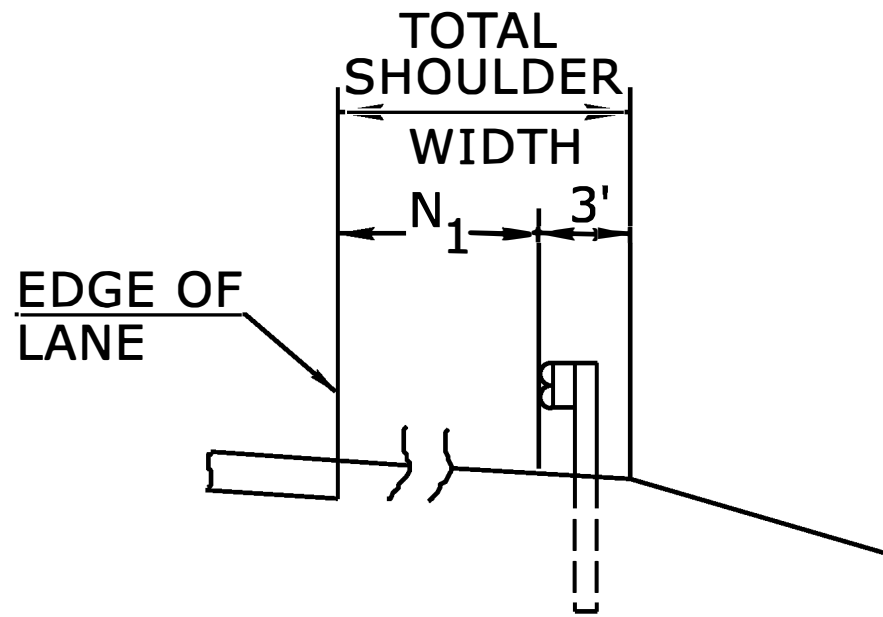
Office 919-707-6950

FAX 919-250-4119

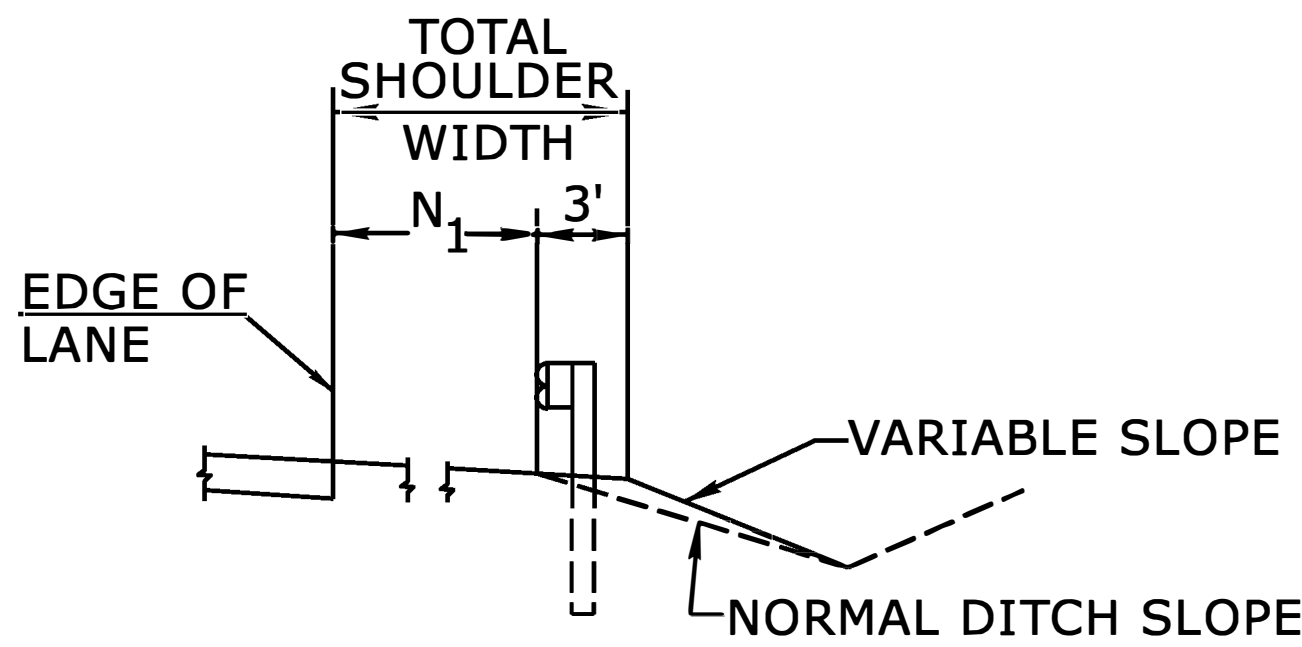
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	2C-2

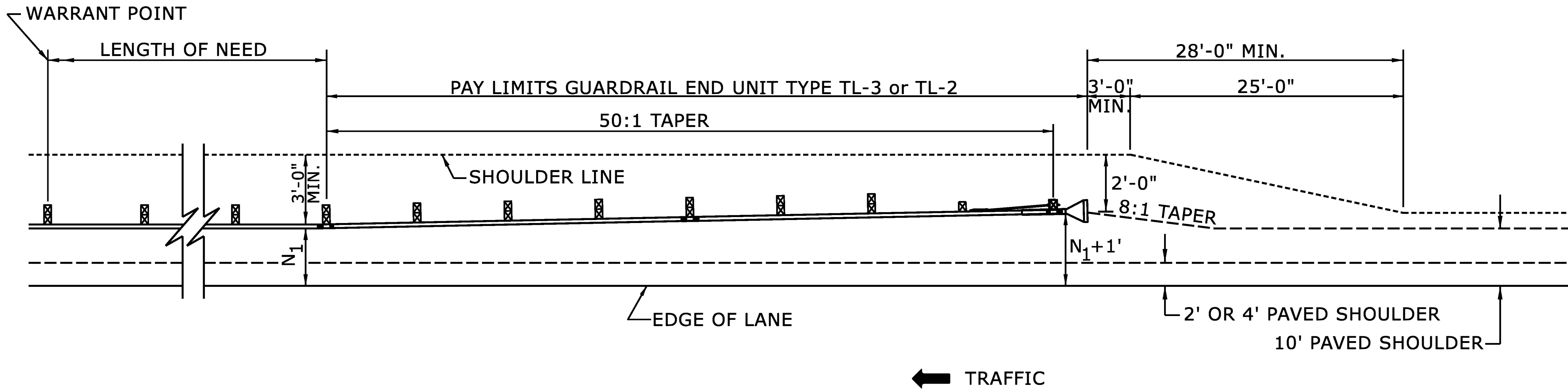


FILL SECTION



CUT SECTION

"N₁"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.

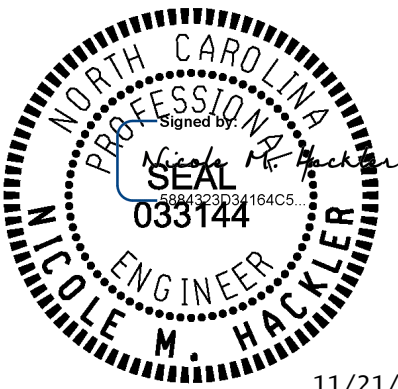


FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



11/21/2024

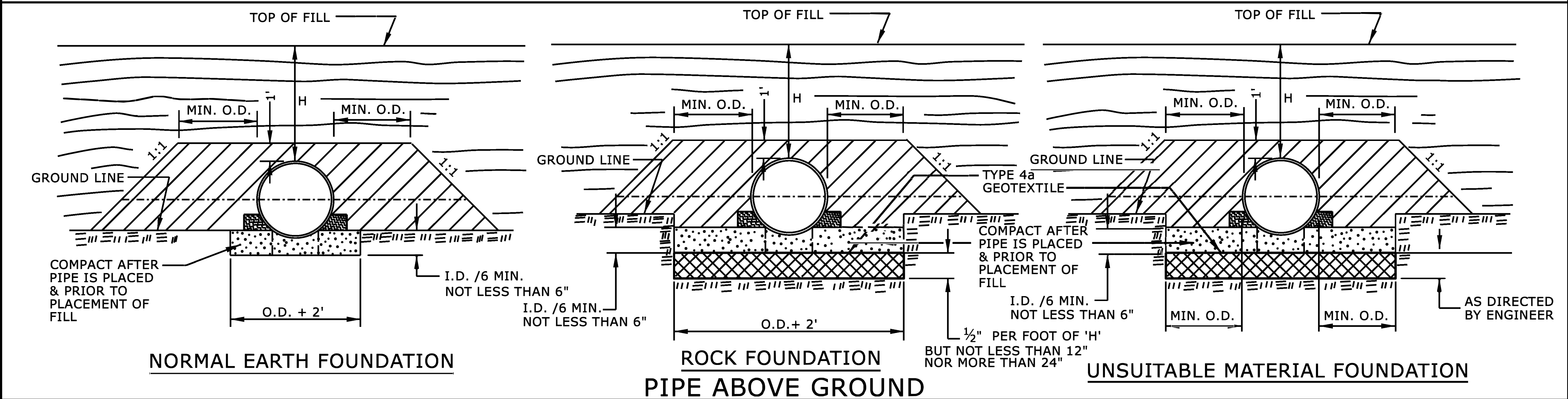
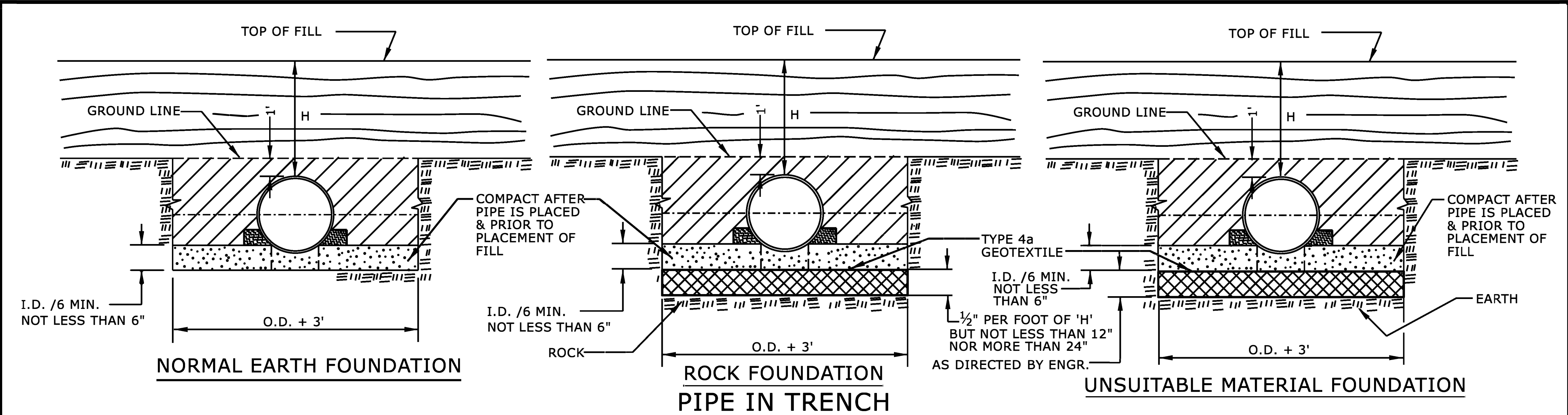
SHEET 6 OF 15
862D01

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

SEE TITLE BLOCK

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



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.

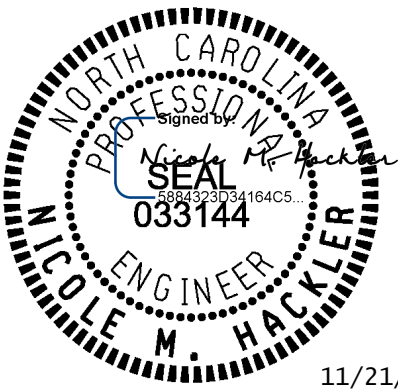
UNDISTURBED EARTH MATERIAL

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



11/21/2024

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS
AND DEVELOPMENT UNIT

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

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	2C-4

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

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE IN TRENCH**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE ABOVE GROUND**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

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.

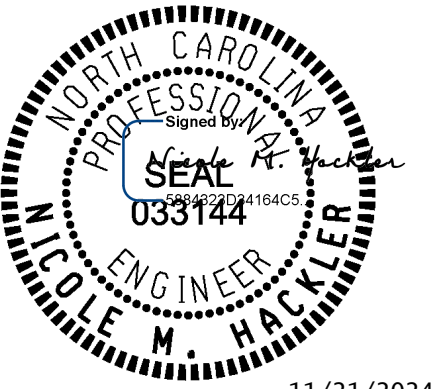
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

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.



11/21/2024

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UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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

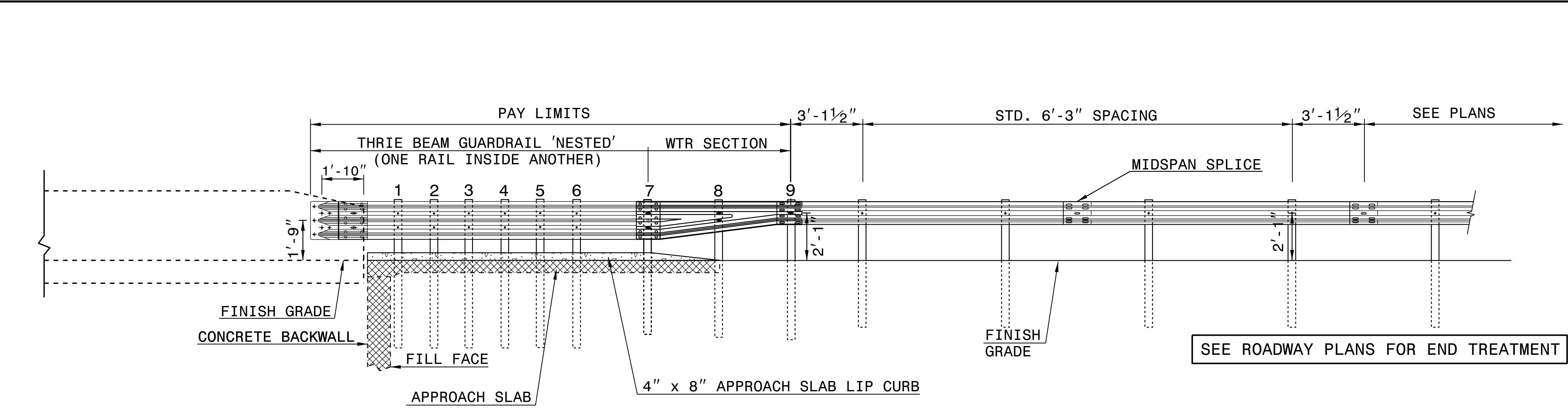
SEE TITLE BLOCK

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MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

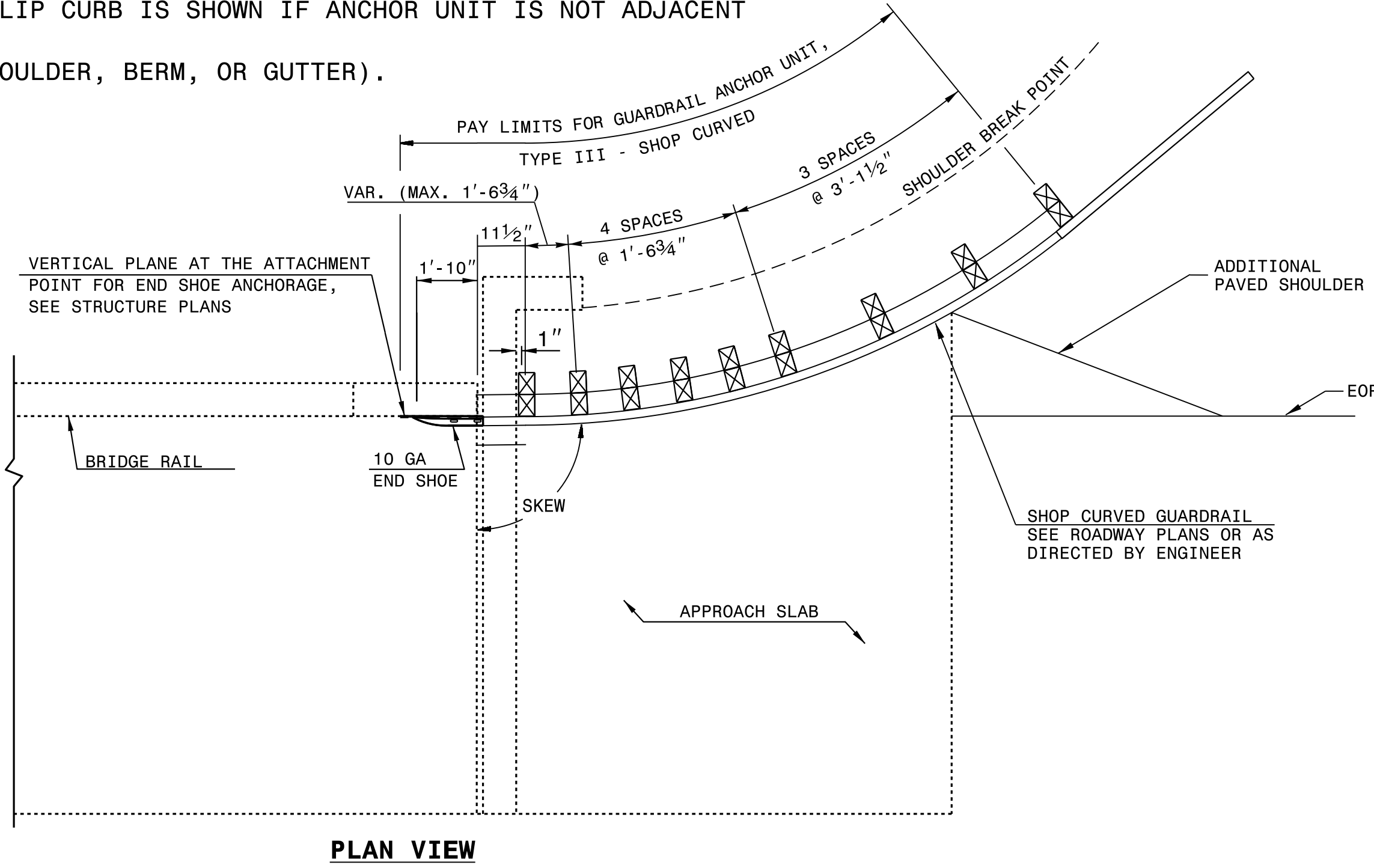
STATE OF
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC



NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED
FOR ATTACHMENT TO RAIL ON BRIDGE**

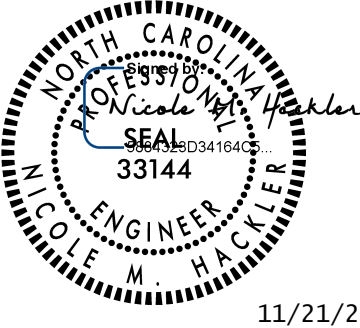
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1
TYPE III SC

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119	
SEE PLATE FOR TITLE	
ORIGINAL BY: E.E.Ward	DATE: 4-4-02
MODIFIED BY: T.S.Spell	DATE: 2-01-18
CHECKED BY:	DATE:
FILE SPEC.: \\howerton\guardrail\31inguardrail\typeiiiisc.dgn	



11/21/2024

COMPUTED BY:- SGM
CHECKED BY: JLT

DATE: 10/7/2024
DATE 10/23/2024:

PROJECT NO.
HB-0023

SHEET NO.
3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 11+50.00	-L- 12+87.75	316	2		314
-DR1- 10+05.00	-DR1- 10+67.81	431			431
SUBTOTALS 1		747	2	0	745
-L-14+35.25	-L- 16+75.00	55	115	60	
SUBTOTALS 2		55	115	60	0
-L- 21+00.00	-L- 22+64.81	45	10		35
SUBTOTALS 3		45	10	0	35
-L- 24+17.19	-L-25+40.00	21	217	196	
SUBTOTALS 4		21	217	196	0
TOTALS		868	344	256	780
WASTE IN LIEU OF BORROW				-256	-256
GRAND TOTALS:		868	344	0	524
SAY:		900			

EST. SHALLOW UNDERCUT = 200 CUBIC YARDS
EST. SELECT GRANULAR MATERIAL = 800 CUBIC YARDS
PER GEOTECH RECOMMENDATION, ESTIMATED 800 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

Note: Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

Note: Earthwork quanties are calculated by TGS Engineers. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	12+50	13+05	CL	127.56			
-L-	14+27	15+25	CL	233.74			
-L-	15+25	16+12	LT	44.86			
-L-	22+00	22+73	CL	175.32			
-L-	24+09	24+49	CL	77.42			
-L-	24+49	24+67	LT	7.03			
TOTAL:				665.93			
SAY				670			

SHOULDER BERM GUTTER SUMMARY

IN FEET

Line	Station	Station	Length
-L-	14+46.13	14+66.62	20.5
-L-	14+46.13	14+66.12	20
-L-	22+49.88	22+53.94	17.2
-L-	22+49.88	22+53.94	17.2
TOTAL:			74.9
SAY			80

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

GUARDRAIL SUMMARY

IN LINEAR FEET

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH		W		ANCHORS						IMP. ATTN. TYPE 350			REMOVE EXISTING		REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END		AT-1	GREU TL2	III	III SC			EA	G	NG		
-L-	12+37.75	12+87.75	RT	50.00			12+87.75		2.42'	2.92'	25'		0.5'			1	1		1							RADIUS = 15'
-L-	12+73	12+87.75	LT		31.25			12+87.75	2.42'																	
-L-	14+35.25	15+29.00	RT	93.75				14+35.25	2.42'	2.92'		25'		0.5'			1	1								
-L-	14+35.25	14+91.50	LT	56.25			14+35.25		2.42'	2.92'	25'		0.5'				1	1								
-L-	22+50.00	22+64.81	RT		31.25		22+64.81		2.25'							1			1							RADIUS = 15'
-L-	22+50.00	22+64.81	LT		31.25		22+64.81		2.25'							1			1							RADIUS = 15'
-L-	24+17.19	25+00.00	RT	31.25	43.75		24+17.19		2.25'							1			1							
-L-	24+17.19	24+60.00	LT	18.75	31.25		24+17.19		2.25'							1			1							
SUB-TOTALS:				250.00	168.75											5	3	5	3							
LESS ANCHOR DEDUCTIONS																										
AT-1					5 @ 6.25																					
TL-2					3 @ 25.00																					
III					5 @ 18.75																					
III SC					3 @ 18.75																					
ANCHOR TOTALS					168.75	87.5																				
GRAND TOTALS SAY					81.25	81.25										5	3	5	3							

ADDITIONAL GUARDRAIL POSTS = 5 EA

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	400
				TOTAL LF:	400

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

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			ASU(1)		200	400	600		
			TOTAL CY/TONS/SY:		200	400**	600**	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.

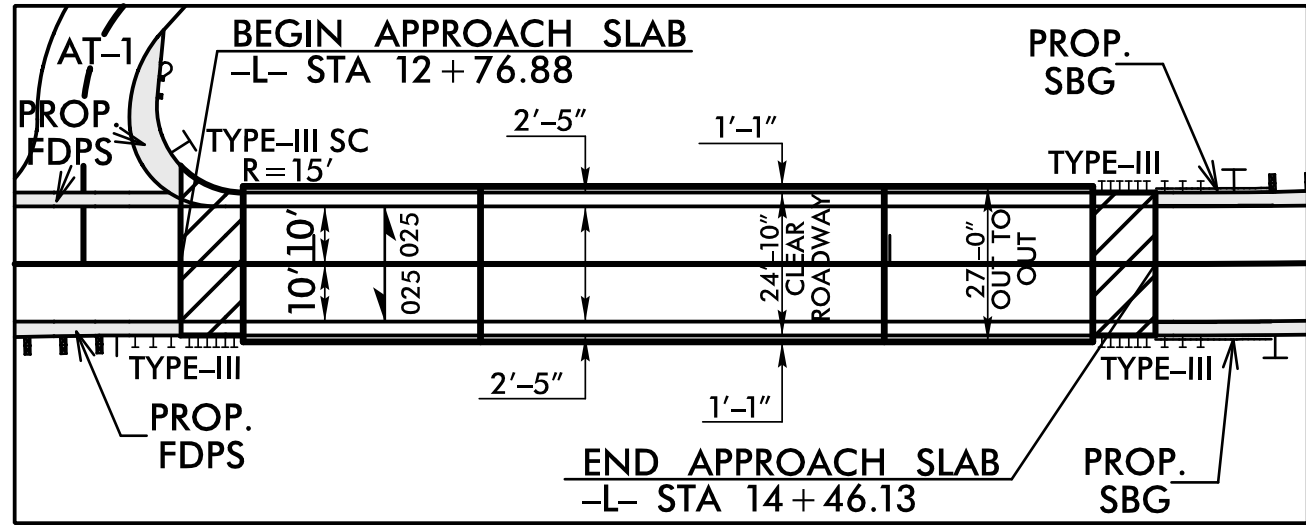
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	WILLIAM A. AND EARLENE HOLBROOK
2	4	TIM BURRESS
3	4	THOMAS E. LONG
4	4	THOMAS A. LONG
5	4	TIMOTHY BURRESS
6	5	LANAE PLESS MCCRACKEN
7	5	JERRY MCFALL
8	5	JOSEPH BAXLEY
9	5	PHOEBE SEILER
10	5	JERRY MCFALL

REVISIONS

8/17/24



BRIDGE/ROADWAY RELATIONSHIP SKETCH

ALL DRIVE RADII ARE 20', UNLESS OTHERWISE NOTED

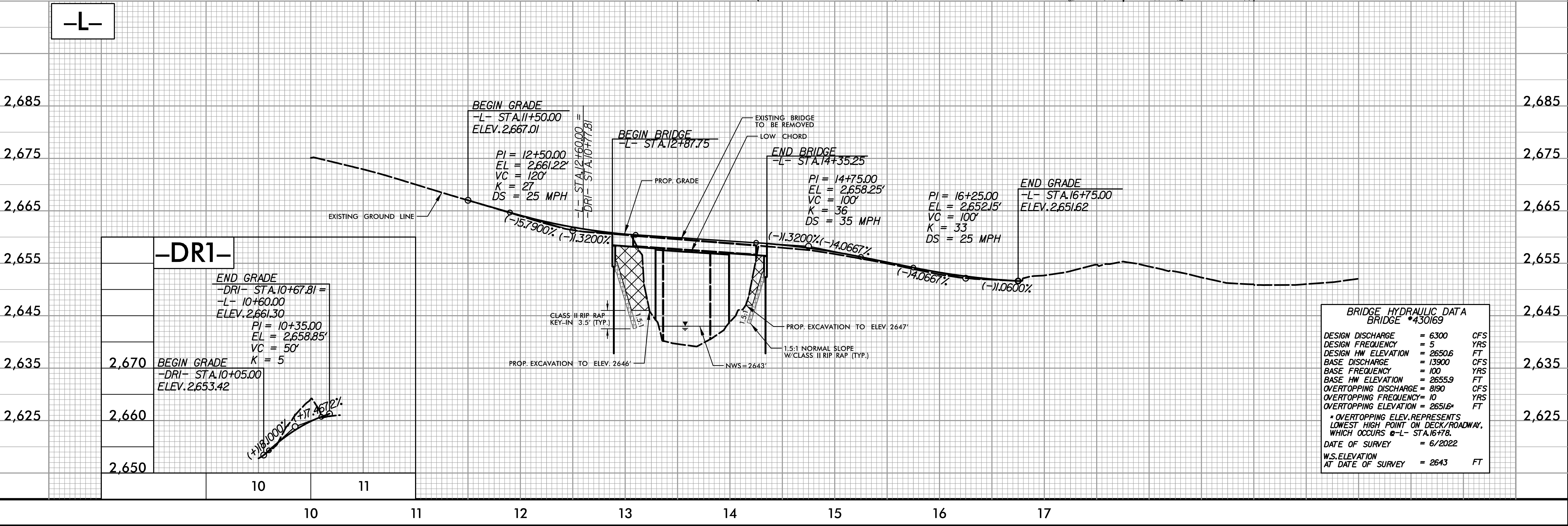
FOR STRUCTURE PLANS, SEE SHEET S1-1 THRU S1-28

-L- CURVE DATA	
PI Sta 11+35.11	PI Sta 14+95.11
$\Delta = 15' 36'' 45.2''$ (LT)	$\Delta = 2' 55'' 07.4''$ (LT)
$D = 8' 02'' 09.1''$	$D = 3' 10'' 59.2''$
$L = 194.29'$	$L = 91.69'$
$T = 97.75'$	$T = 45.86'$
$R = 713.00'$	$R = 1,800.00'$
$SE = 0.04$	$SE = NC$
$DS = 45$ MPH	$DS = 20$ MPH

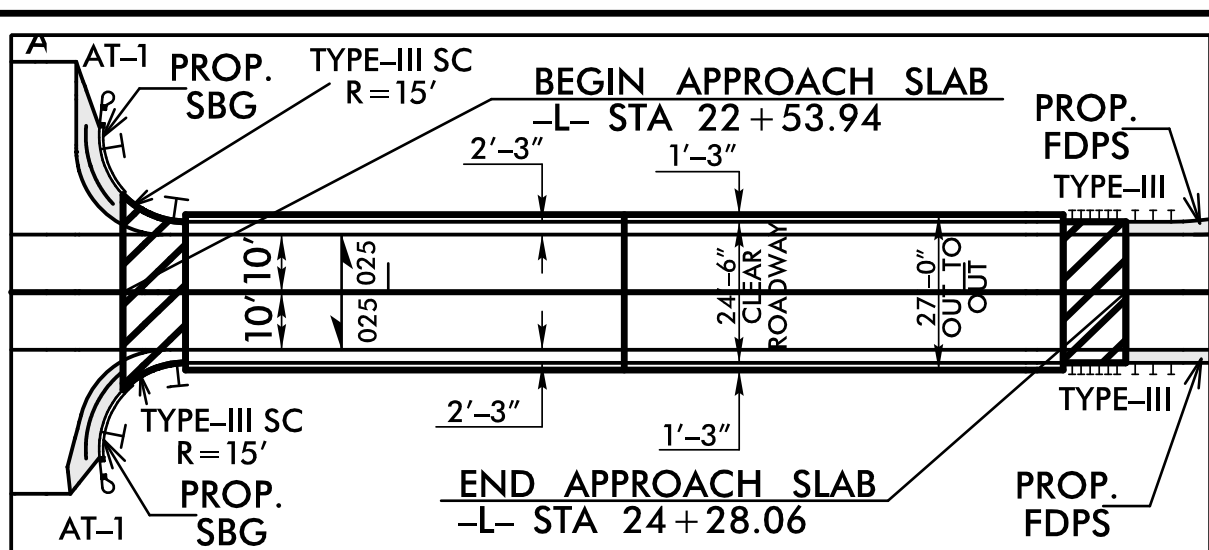
-L- CURVE DATA		-DRI- CURVE DATA	
PI Sta 17+36.63	PI Sta 10+41.67	PI Sta 10+41.67	PI Sta 10+41.67
$\Delta = 0' 42'' 40.9''$ (RT)	$\Delta = 42' 11'' 27.5''$ (LT)	$\Delta = 42' 11'' 27.5''$ (LT)	$\Delta = 42' 11'' 27.5''$ (LT)
$D = 1' 08'' 45.3''$	$D = 190' 59'' 09.4''$	$D = 190' 59'' 09.4''$	$D = 190' 59'' 09.4''$
$L = 62.08'$	$L = 22.09'$	$L = 22.09'$	$L = 22.09'$
$T = 31.04'$	$T = 11.57'$	$T = 11.57'$	$T = 11.57'$
$R = 5,000.00'$	$R = 30.00'$	$R = 30.00'$	$R = 30.00'$
$SE = EXIST$	$SE = EXIST$	$SE = EXIST$	$SE = EXIST$
1 = -DRI- POT 10+00.00		1 = -DRI- POT 10+00.00	
BI = S 56° 38' 28.0" W		BI = S 56° 38' 28.0" W	
2 = -DRI- PC 10+30.09		2 = -DRI- PC 10+30.09	
B2 = S 14° 27' 00.5" W		B2 = S 14° 27' 00.5" W	
3 = -DRI- PT 10+52.19		3 = -DRI- PT 10+52.19	

SHOULDER BERM GUTTER STATION RANGES

-L- STA. 14 + 46.13 (END APP. SLAB) LT TO
-L- 14 + 66.62 LT
-L- STA. 14 + 46.13 (END APP. SLAB) RT TO
-L- 14 + 66.12 RT



8/17/99



BRIDGEROADWAY RELATIONSHIP SKETCH

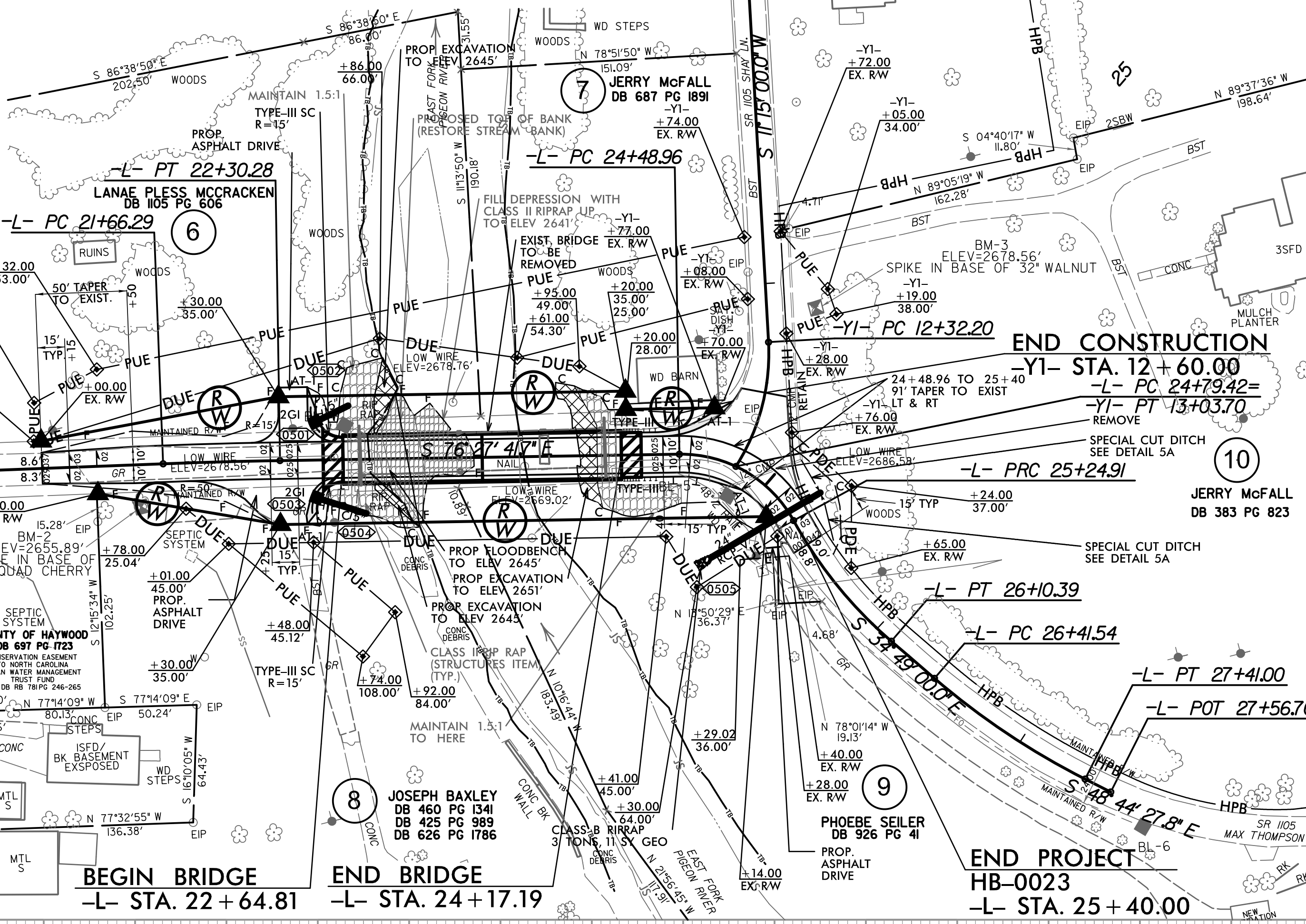
MATCH LINE STA.-L- 19+00.00
MATCH TO SHEET NO.4

COUNTY OF HAYWOOD
DB 687 PG 1891
CONSERVATION EASEMENT
TO NORTH CAROLINA
CLEAN WATER MANAGEMENT
TRUST FUND
PER DB RB 78 PG 246-265

BEGIN CONSTRUCTION
HB-0023 (BRIDGE#170)
-L- STA. 20+00.00

NOTE: THE CONTRACTOR SHALL
EXTEND FULL DEPTH PAVEMENT
(SEE TYP. SECT NO.3, SHT 2A-2)
TO -L- STA. 20+00.00 AS
DIRECTED BY THE ENGINEER

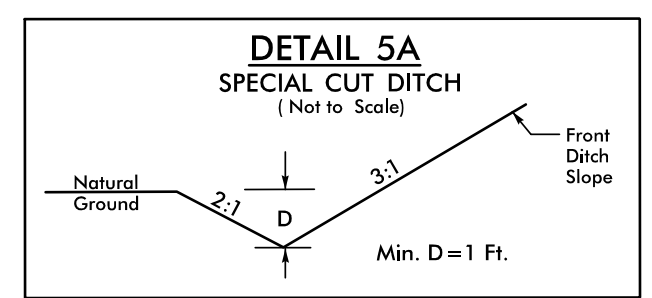
ALL DRIVE RADII ARE 20', UNLESS OTHERWISE NOTED
FOR STRUCTURE PLANS, SEE SHEET S2-1 THRU S2-26



TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

HAYWOOD COUNTY
BRIDGE #430170

PROJECT REFERENCE NO. HB-0023		SHEET NO. 5	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



SHOULDER BERM GUTTER STATION RANGES

-L- STA. 22+49.88 LT TO -L- 22+53.94
(BEGIN APP. SLAB) LT
-L- STA. 22+49.88 RT TO -L- 22+53.94
(BEGIN APP. SLAB) RT

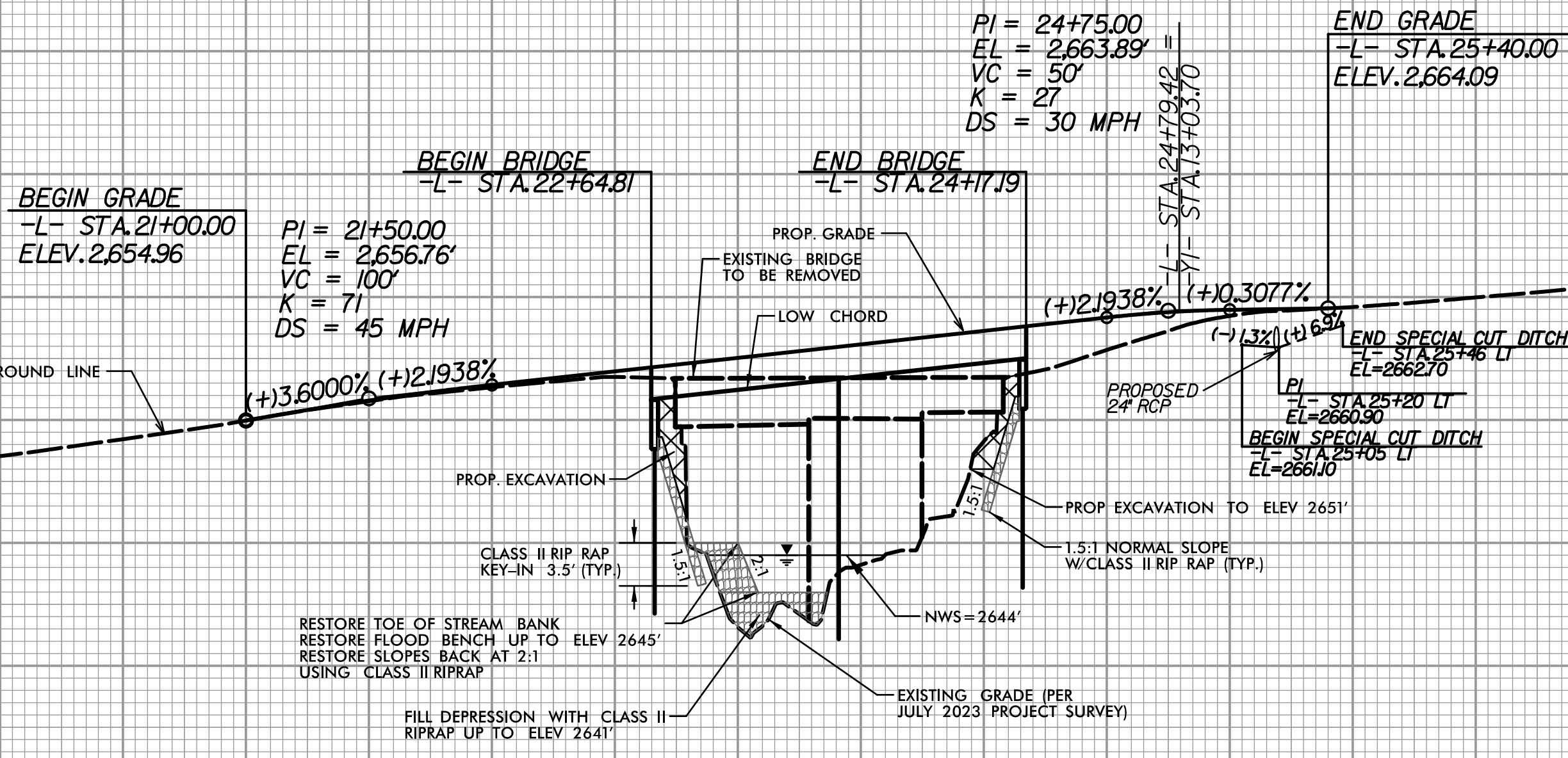
-YI- CURVE DATA
PI Sta 12+69.16
Δ = 35° 44' 57.3" (RT)
D = 50° 00' 00.0"
L = 71.50'
T = 36.96'
R = 114.59'

-L- CURVE DATA

PI Sta 21+98.29 Δ = 1° 17' 44.3" (RT) D = 2° 01' 28.5" L = 63.99' T = 32.00' R = 2,830.00' SE = NC DS = 30 MPH	PI Sta 24+91.6 Δ = 62° 09' 41.7" (RT) D = 81° 51' 04.0" L = 75.94' T = 42.19' R = 70.00' SE = NC DS = 15 MPH	PI Sta 25+68.1 Δ = 20° 30' 59.9" (LT) D = 24° 00' 00.0" L = 85.49' T = 43.21' R = 238.73'	PI Sta 26+91.52 Δ = 13° 55' 27.8" (LT) D = 14° 00' 00.0" L = 93.46' T = 49.98' R = 409.26'
---	---	--	---

-L-

2,685
2,675
2,665
2,655
2,645
2,635
2,625



PIPE HYDRAULIC DATA
Str#0505 -L- Sta. 25+19

DRAINAGE AREA	= 4.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 13	CFS
DESIGN HW ELEVATION	= 2662.8	FT
100 YEAR DISCHARGE	= 16	CFS
100 YEAR HW ELEVATION	= 2663.1	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 23	CFS
OVERTOPPING ELEVATION	= 2664.0	FT

BRIDGE HYDRAULIC DATA
BRIDGE #430170

DESIGN DISCHARGE	= 9090 CFS
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 2654.4 FT
BASE DISCHARGE	= 17510 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2658.1 FT
OVERTOPPING DISCHARGE	= 9090 CFS
OVERTOPPING FREQUENCY	= 10 YRS
OVERTOPPING ELEVATION	= 2654.0 FT*
*OVERTOPPING ELEVATION REPRESENTS LOWEST NG ELEVATION LOCATED @ -L- STA. 22+60 RT.	
DATE OF SITE VISIT	= 4/24/2023
APPROX. W.S. ELEVATION ON DATE OF SITE VISIT	= 2644 FT

20 21 22 23 24 25 26 27

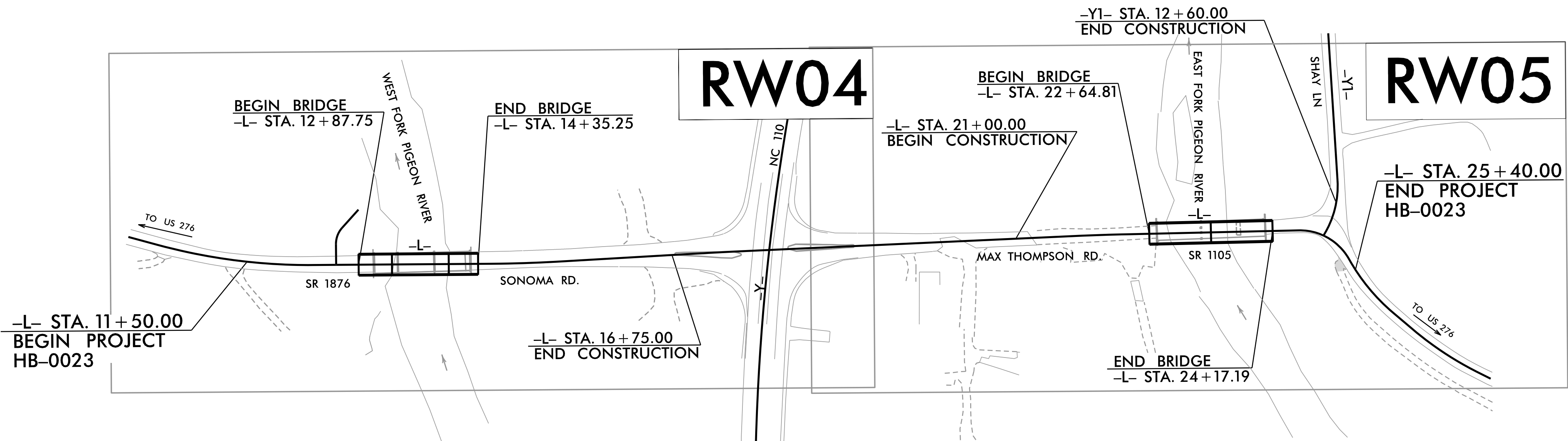
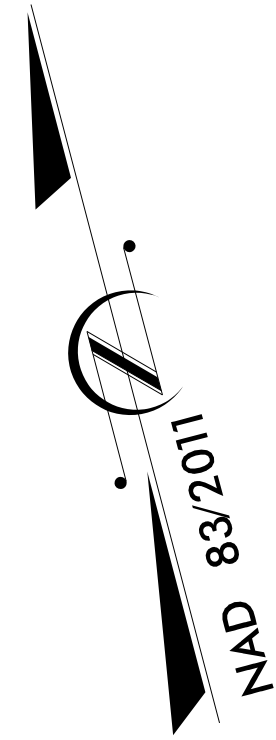
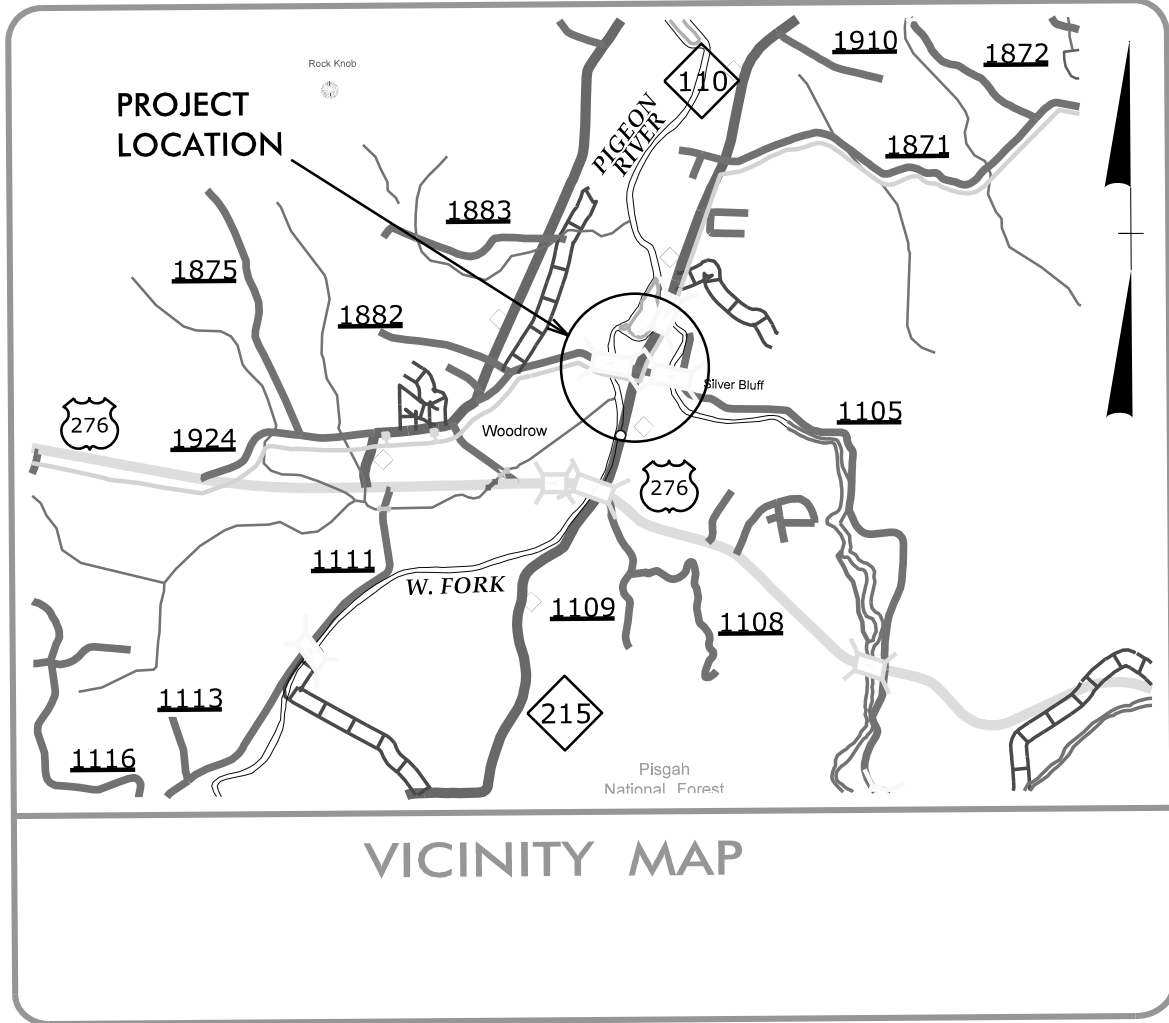
11/21/2024
User: jpruett

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HB-0023	RW01	6

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

HAYWOOD COUNTY



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT GPS-102
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 651499.8820' EASTING: 844593.9860'
ELEVATION: 2657.02'
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.9997578935
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:
LOCATION AND SURVEYS
DIVISION 14
122 BONNIE LANE
SYLVA, NC 28779

2024 STANDARD SPECIFICATIONS

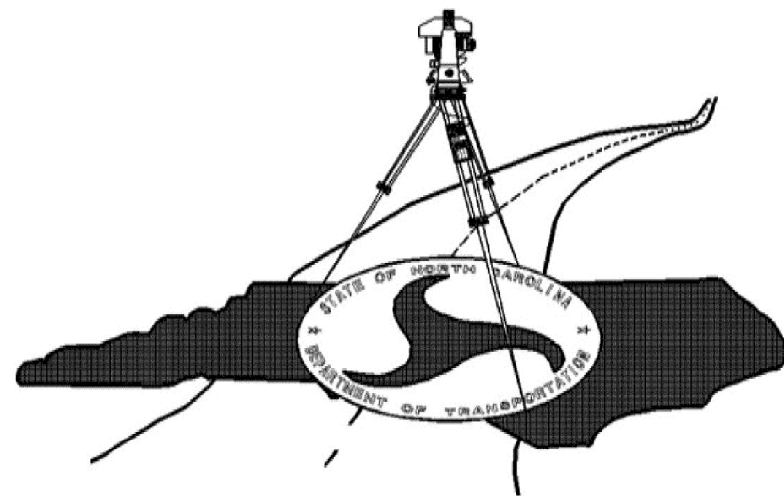
RIGHT OF WAY DATE:
NOVEMBER 20, 2024

LETTING DATE:
JUNE 24, 2025

PROFESSIONAL LAND
SURVEYOR



DocuSigned by:
Brian A. Barwatt
ASSISTANCE: 05/19/2025
SIGNATURE: DATE:



REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1	BL-1		651862.4880	843992.9500	2670.15
2	BL-2		658965.6380	843933.9110	2657.42
3	BL-3		658967.2110	844232.4640	2653.63
4	GPS-101		658968.8720	844347.8790	2658.73
5	BL-4		658821.8370	844734.7680	2656.19
6	BL-5		658732.1180	844639.2220	2661.38
7	BL-6		658449.4860	845182.1880	2664.14

BY	POINT	DESC.	NORTH	EAST	ELEVATION
0181	GPS-101		658968.8720	844347.8790	2658.73
0182	GPS-102		651499.6820	844593.9860	2657.82

BM1 ELEVATION = 2668.89
N 651826 E 843514
BL STATION 5+30.00 30 RIGHT
SP. SPIKE SET IN THE ROOT OF A 20' OAK TREE

BM2 ELEVATION = 2655.89
N 658806 E 844616
BL STATION 7+73.00 24 RIGHT
SPIKE SET IN 18" QUAD CHERRY

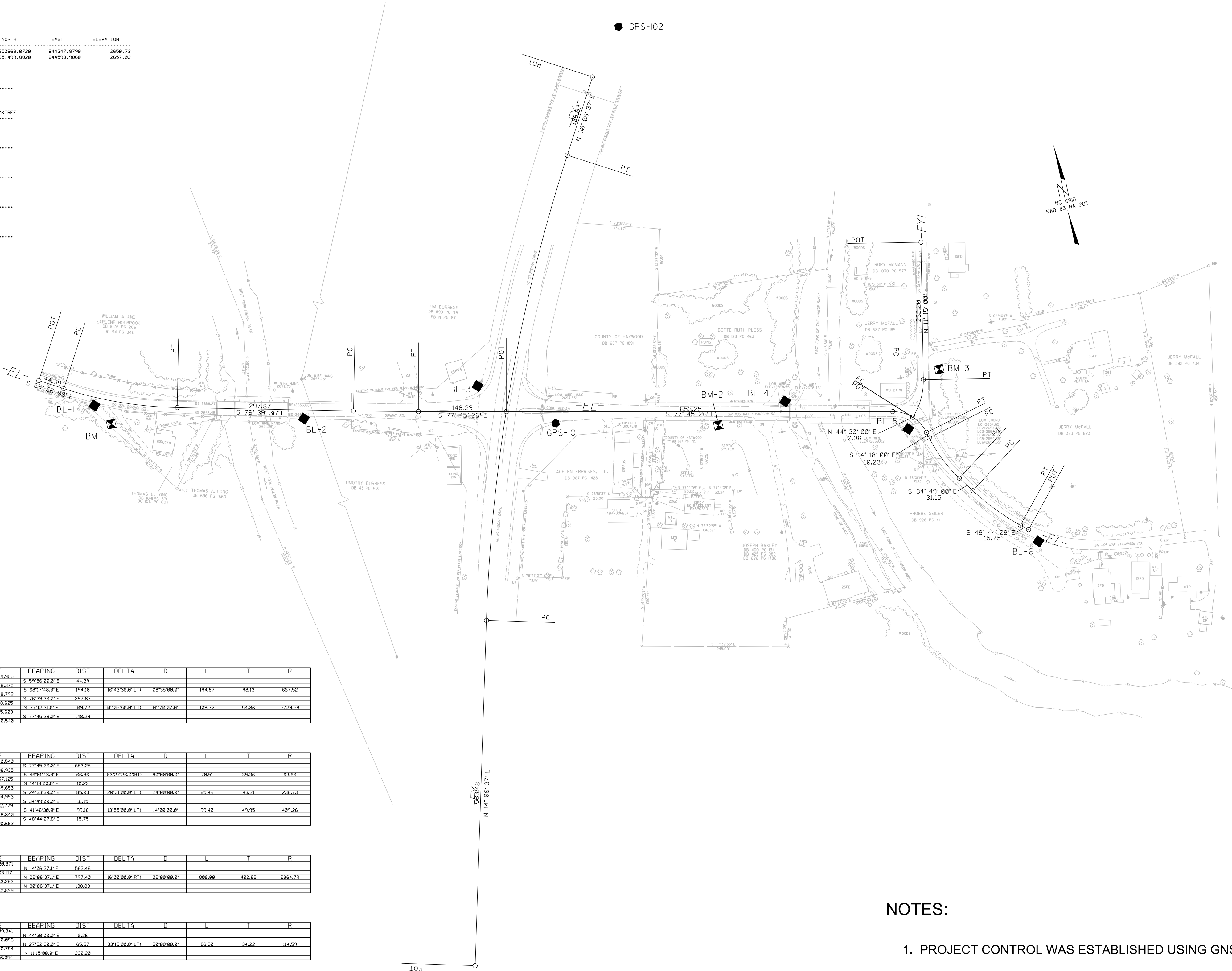
BM3 ELEVATION = 2678.93
N 658820 E 845081
BL STATION 19+02.00 114 LEFT
SPIKE IN BASE OF 32" WALNUT

EL1	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	651823.516	843983.995	S 30°56'38.8"E	43.78						
PT	651801.214	843948.375	S 68°17'43.0"E	154.18	16°43'36.0"E	88°16'30.0"	154.67	98.13	667.52	
PC	651823.485	843728.732	S 78°29'36.2"E	297.87						
PT	658968.738	844018.626	S 77°12'31.8"E	185.72	81°09'58.8"E	81°08'00.0"	185.72	54.86	5725.58	
PC	658936.436	844125.623	S 77°45'26.8"E	148.29						
PT	658965.888	844278.520								

EL2	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	658965.888	844278.520	S 77°45'26.8"E	663.26						
PT	658756.475	844988.935	S 46°30'43.0"E	66.76	67°27'26.0"E	58°00'00.0"	70.51	35.36	63.66	
PC	658715.986	844957.125	S 1°12'00.0"E	18.23						
PT	658718.868	844955.683	S 24°23'38.2"E	85.43	28°31'08.0"E	24°00'00.0"	85.43	43.21	236.73	
PC	658632.738	844954.993	S 34°49'00.0"E	31.15						
PT	658687.155	845012.774	S 41°46'38.8"E	93.16	12°55'08.0"E	14°00'00.0"	93.16	45.95	485.26	
PC	658633.286	845015.600	S 48°44'27.8"E	15.75						
PT	658622.816	845038.682								

EY	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	658801.680	844838.871	N 14°06'37.1"E	583.48						
PT	658967.477	844613.117	N 22°06'37.1"E	792.48	10°00'00.0"E	82°00'00.0"	888.28	482.82	2854.74	
PC	651386.248	844463.292	N 38°06'37.1"E	138.83						
PT	651426.336	844932.899								

EV	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	658749.879	844931.841	N 44°08'38.8"E	8.36						
PT	658726.148	844938.896	N 27°52'38.8"E	66.57	33°15'08.0"E	58°00'00.0"	66.58	34.22	114.03	
PC	658883.882	844938.754	N 11°10'00.0"E	232.28						
PT	651835.844	845015.854								



I, Mark A. Parris, PLS, certify that the GPS Project Control was verified under my supervision using the following information from an actual GPS survey made by NCDOT Div. 14:

Class of survey: AA
Type of GPS field procedure: VRS
Dates of survey: June, 2022
Datum/Epoch: NAVD 88
Published/Fixed-control use: N/A
Localized around: GPS-102
Northing: 651499.8820'
Easting: 844593.9860'
Combined grid factor: 0.9997578935
Geoid model: G18NC
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 May 05, 2023 to May 15, 2023, and all coordinates are based on NAD 83/NA 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 07 day of June, 2023.

DocuSigned by
F1570C8B5C7248A...

Professional Land Surveyor L-XXXX

NOTES:

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

PROPOSED ALIGNMENT CONTROL SHEET

I, BRIAN BARWATT, 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 13th DAY OF MAY, 2025.

DocuSigned by:
Brian Barwatt
ADDRESS: [Redacted]
PROFESSIONAL LAND SURVEYOR L-4727

PROPOSED ALIGNMENT: L												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	651123.5156	843509.9550	S59°56'14.3"E	37.3592							
PC	10+37.36	651104.8006	843542.2886	S67°44'36.9"E	193.6852	15°36'45.2"	08°02'09.1"	194.2857	97.7484	713.0000		
PT	12+31.64	651031.4419	843721.5438	S75°32'59.5"E	217.6113							
PC	14+49.26	650977.1398	843932.2710	S77°00'33.2"E	91.6847	02°55'07.4"	03°10'59.2"	91.6946	45.8572	1800.0000		
PT	15+40.95	650956.5296	844021.6091	S78°28'06.9"E	164.6408							
PC	17+05.59	650923.6170	844182.9266	S78°06'46.5"E	62.0781	00°42'40.9"	01°08'45.3"	62.0785	31.0397	5000.0000		
PT	17+67.67	650910.8300	844243.6735	S77°45'26.0"E	398.6201							
PC	21+66.29	650826.3008	844633.2281	S77°06'33.9"E	63.9933	01°17'44.3"	02°01'28.5"	63.9947	31.9987	2830.0000		
PT	22+30.28	650812.0245	844695.6087	S76°27'41.7"E	218.6760							
PC	24+48.96	650760.8331	844908.2084	S45°22'50.9"E	72.2745	62°09'41.7"	81°51'04.0"	75.9447	42.1947	70.0000		
PRC	25+24.91	650710.0681	844959.6527	S24°33'30.0"E	85.0301	20°30'59.9"	24°00'00.0"	85.4860	43.2057	238.7324		
PT	26+10.39	650632.7300	844994.9928	S34°49'00.0"E	31.1511							
PC	26+41.54	650607.1555	845012.7786	S41°46'43.9"E	99.2154	13°55'27.8"	14°00'00.0"	99.4600	49.9762	409.2556		
PT	27+41.00	650533.1684	845078.8816	S48°44'27.8"E	15.6975							
END	27+56.70	650522.8165	845090.6820									

PROPOSED ALIGNMENT: Y												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	651426.3359	844532.8986	S30°06'37.1"W	138.8300							
PC	11+38.83	651306.2394	844463.2522	S22°06'37.1"W	797.4031	16°00'00.0"	02°00'00.0"	800.0000	402.6198	2864.7890		
PT	19+38.83	650567.4765	844163.1170	S14°06'37.1"W	583.4810							
END	25+22.31	650001.6002	844020.8705									

PROPOSED ALIGNMENT: Y1												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	651035.8439	845016.0544	S11°15'00.0""W	232.2034							
PC	12+32.20	650808.1022	844970.7537	S29°07'28.7""W	70.3444	35°44'57.3""	50°00'00.0""	71.4985	36.956	114.5916		
END	13+03.70	650746.6519	844936.5163									

PROPOSED ALIGNMENT: DR1												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	651083.2972	843793.0865	S56°38'28.0"W	30.0948							
PC	10+30.09	651066.7486	843767.9500	S35°32'44.2"W	21.5954	42°11'27.5"	190°59'09.4"	22.0911	11.5733	30.0000		
PT	10+52.19	651049.1775	843755.3955	S14°27'00.5"W	25.6218							
END	10+77.81	651024.3663	843749.0019									

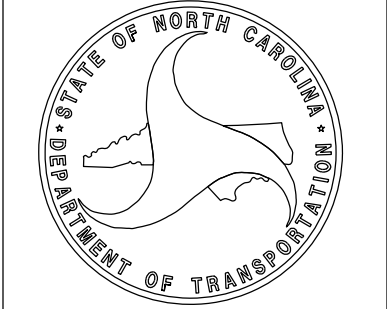
NOTES:

1. 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.

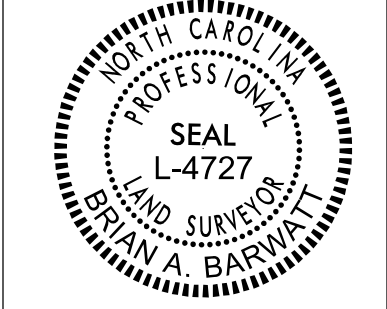
HB-0023

R/W20-1

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

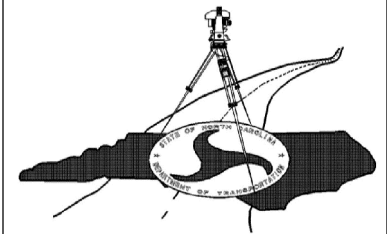


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL SIGNATURES
ARE COMPLETED

2024 STANDARD
SPECIFICATIONS

TIP PROJECT: HB-0023
County: Haywood

PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY:
LOCATION AND SURVEYS
DIVISION 14
122 BONNIE LANE
SYLVA, NC 28779

RIGHT OF WAY CONTROL SHEET

PERMANENT ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
11+50.00	20.00	651037.6224	843636.6486
11+50.00	-30.00	651084.2979	843654.5760
11+50.00	12.00	651045.0905	843639.5170
11+50.00	-12.00	651067.4947	843648.1222
12+31.64	20.00	651012.0746	843716.5531
12+80.00	20.00	651000.0082	843763.3784
12+80.00	30.00	650990.3246	843760.8831
13+00.00	-30.00	651043.4357	843795.2226
13+00.00	-35.00	651048.2775	843796.4703
14+49.26	-30.00	651006.1907	843939.7571
14+49.26	30.00	650948.0888	843924.7849
15+34.39	-33.59	650990.7388	844022.0139
15+40.95	30.00	650927.1351	844015.6120
15+76.34	30.00	650920.0614	844050.2831
21+00.00	-15.00	650855.0168	844571.6264
21+30.00	15.00	650819.3374	844594.5825
22+30.00	-35.00	650846.1195	844703.5217
22+30.00	35.00	650778.0629	844687.1418
24+20.00	-35.00	650801.6402	844888.2457
24+20.00	-25.00	650791.9181	844885.9047
25+14.00	11.29	650715.9317	844945.7744

PERMANENT ROW MARKER IRON PIN AND CAP: Y1			
STATION	OFFSET	NORTH	EAST
12+77.00	24.76	650780.6799	844933.1491

PERMANENT DRAINAGE EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
12+80.00	45.00	650975.7991	843757.1400
13+00.00	-40.00	651053.1194	843797.7180
14+69.00	30.00	650943.1866	843944.2498
14+69.00	45.00	650928.6210	843940.6663
14+69.00	-40.00	651011.1597	843960.9729
14+69.00	-31.19	651002.6009	843958.8672
25+24.00	-37.00	650720.5461	844995.1557
25+65.00	-12.00	650677.0941	844983.7335

PERMANENT DRAINAGE EASEMENT MARKER IRON PIN AND CAP: Y1			
STATION	OFFSET	NORTH	EAST
12+76.00	-19.69	650757.0324	844970.7912

PERMANENT UTILITY EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
20+96.00	-15.00	650855.8650	844567.7173
20+97.00	-36.00	650876.1753	844573.1477
21+32.00	-53.00	650885.3668	844610.9567
22+01.00	45.00	650774.8763	844657.0215
22+48.00	45.12	650764.0110	844702.2691
22+74.00	108.00	650696.7919	844712.8267
22+92.00	84.00	650715.9113	844735.9448
23+61.00	-54.30	650834.2183	844835.4038

- NOT SET IN WATER

PERMANENT UTILITY EASEMENT MARKER IRON PIN AND CAP: Y1			
STATION	OFFSET	NORTH	EAST
11+72.00	-10.00	650865.1979	844992.3067
11+74.00	10.00	650867.1381	844972.3008
12+05.00	-34.00	650828.1498	845009.4075
12+08.00	10.00	650833.7914	844965.6677
12+19.00	-38.00	650813.6385	845010.5994
12+28.00	-10.00	650810.2739	844981.3816

DUAL UTILITY EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
21+00.00	-15.00	650855.0168	844571.6264
21+78.00	25.04	650799.3449	844639.2553
22+01.00	45.00	650774.8763	844657.0215
22+86.00	-66.00	650863.1478	844765.2261
23+61.00	-54.30	650834.2183	844835.4038
23+95.00	-49.00	650821.1036	844867.2177
24+20.00	-35.00	650801.6402	844888.2457
24+41.00	45.00	650718.9471	844889.9344
25+28.00	12.00	650703.9601	844948.8477
25+30.00	64.00	650688.0176	844899.2980

- NOT SET IN WATER

- NOT SET IN CONCRETE

I, BRIAN BARWATT, PLS, 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 IN APRIL OF 2025, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 13th DAY OF MAY, 2025.

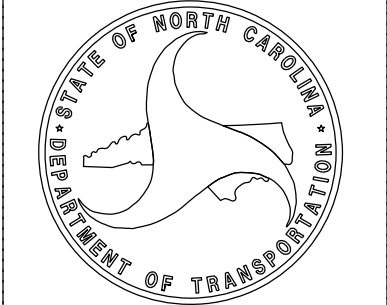
DocuSigned by:
Brian Barwatt
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PROFESSIONAL LAND SURVEYOR L-4727

HB-0023

R/W03E-1

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR



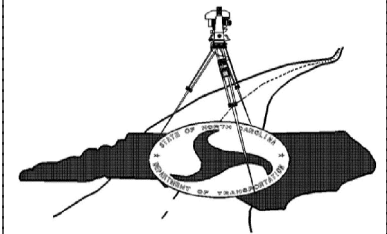
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FINAL UNLESS ALL SIGNATURES
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2024 STANDARD
SPECIFICATIONS

TIP PROJECT: HB-0023

County: Haywood

PREPARED FOR

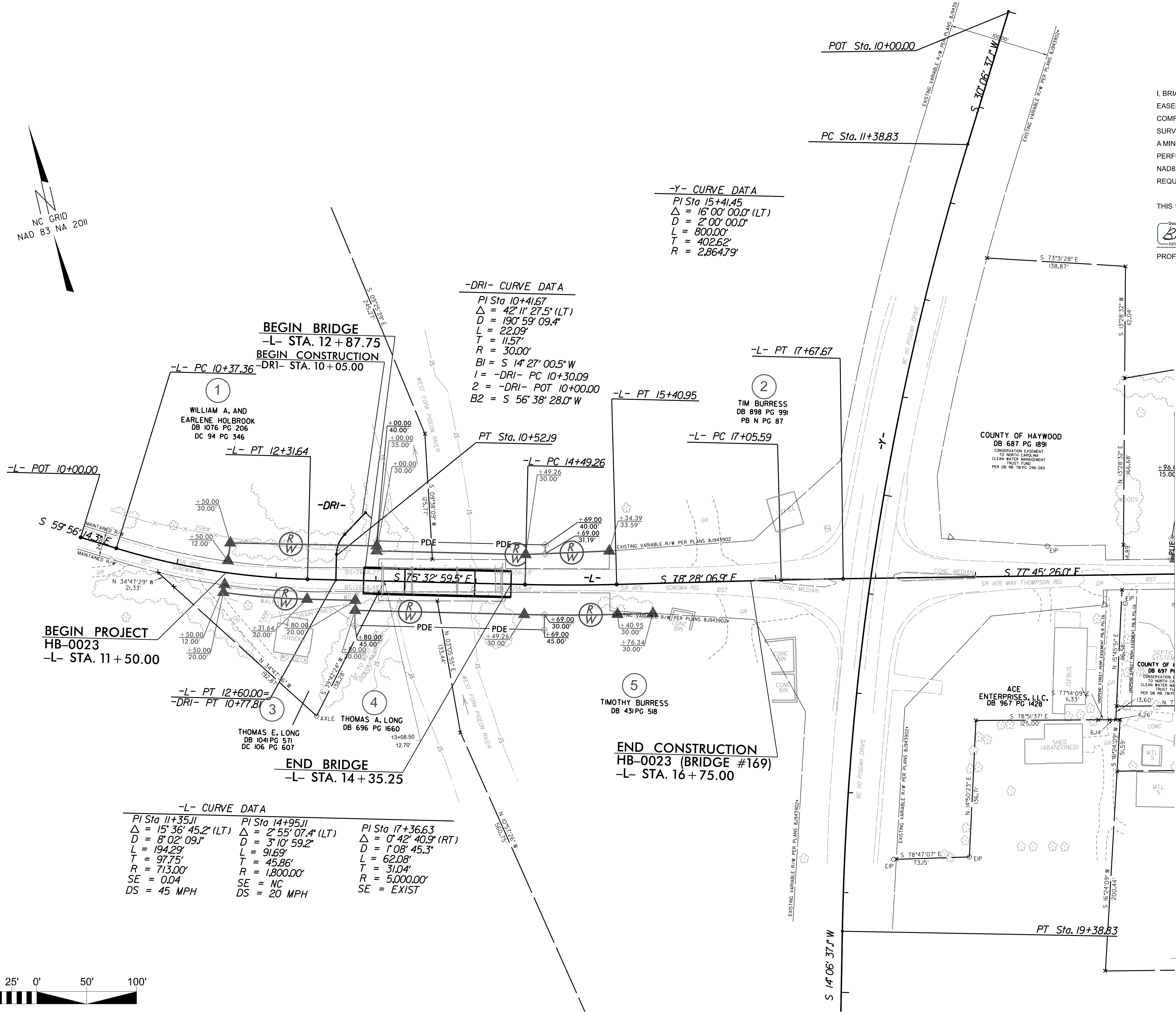
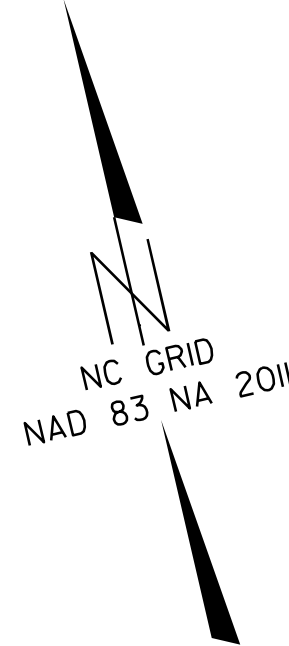


LOCATION AND SURVEYS UNIT

PREPARED BY:
LOCATION AND SURVEYS
DIVISION 14
122 BONNIE LANE
SYLVA, NC 28779

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.



-Y- CURVE DATA
PI Sta 15+41.45
 $\Delta = 16^{\circ}00'00.0''$ (LT)
D = 2'00'00.0"
L = 800.00'
T = 402.62'
R = 2,864.79'

-DRI- CURVE DATA
PI Sta 10+41.67
 $\Delta = 42^{\circ}11'27.5''$ (LT)
D = 190'59'09.4"
L = 22.09'
T = 11.57'
R = 30.00'
BI = S 14'27'00.5" W
1 = -DRI- PC 10+30.09
2 = -DRI- POT 10+00.00
B2 = S 56'38'28.0" W

-L- CURVE DATA		
PI Sta 11+35.11	PI Sta 14+95.11	PI Sta 17+36.63
$\Delta = 15^{\circ}36'45.2''$ (LT)	$\Delta = 2^{\circ}55'07.4''$ (LT)	$\Delta = 0^{\circ}42'40.9''$ (RT)
D = 8'02'09.1"	D = 3'10'59.2"	D = 1'08'45.3"
L = 194.29'	L = 91.69'	L = 62.08'
T = 97.75'	T = 45.86'	T = 31.04'
R = 713.00'	R = 1,800.00'	R = 5,000.00'
SE = 0.04	SE = NC	SE = EXIST
DS = 45 MPH	DS = 20 MPH	

I, BRIAN BARWATT, PLS, 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 IN APRIL OF 2025, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 13th DAY OF MAY, 2025.

DocuSigned by:
Brian Barwatt
AB355FEDABADANCE
PROFESSIONAL LAND SURVEYOR L-4727

MATCH LINE -L- STA 20+79.81 SEE SHEET RW05

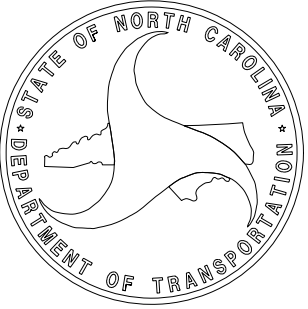
NOTES:

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HB-0023

R/W 04

NORTH CAROLINA
DEPARTMENT
OF TRANSPORTATION



PROFESSIONAL LAND
SURVEYOR

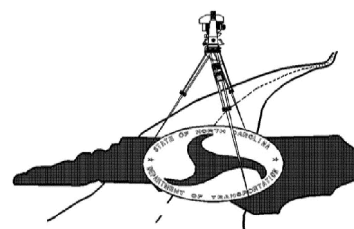


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2024 STANDARD
SPECIFICATIONS

TIP PROJECT: HB-0023
County: Haywood

PREPARED FOR



LOCATION AND
SURVEYS UNIT

PREPARED BY:
LOCATION AND SURVEYS
DIVISION 14
122 BONNIE LANE
SYLVA, NC 28779

I, BRIAN BARWATT, PLS, 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 IN APRIL OF 2025, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

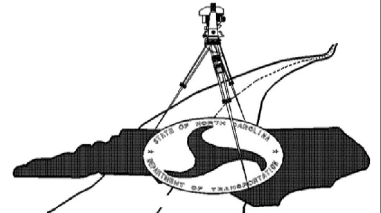
THIS 13th DAY OF MAY, 2025.

DocuSigned by:
Brian Barwatt
A0380FEB4ABA4ACE
PROFESSIONAL LAND SURVEYOR L-4727

TIP PROJECT: HB-0023

County: Haywood

PREPARED FOR

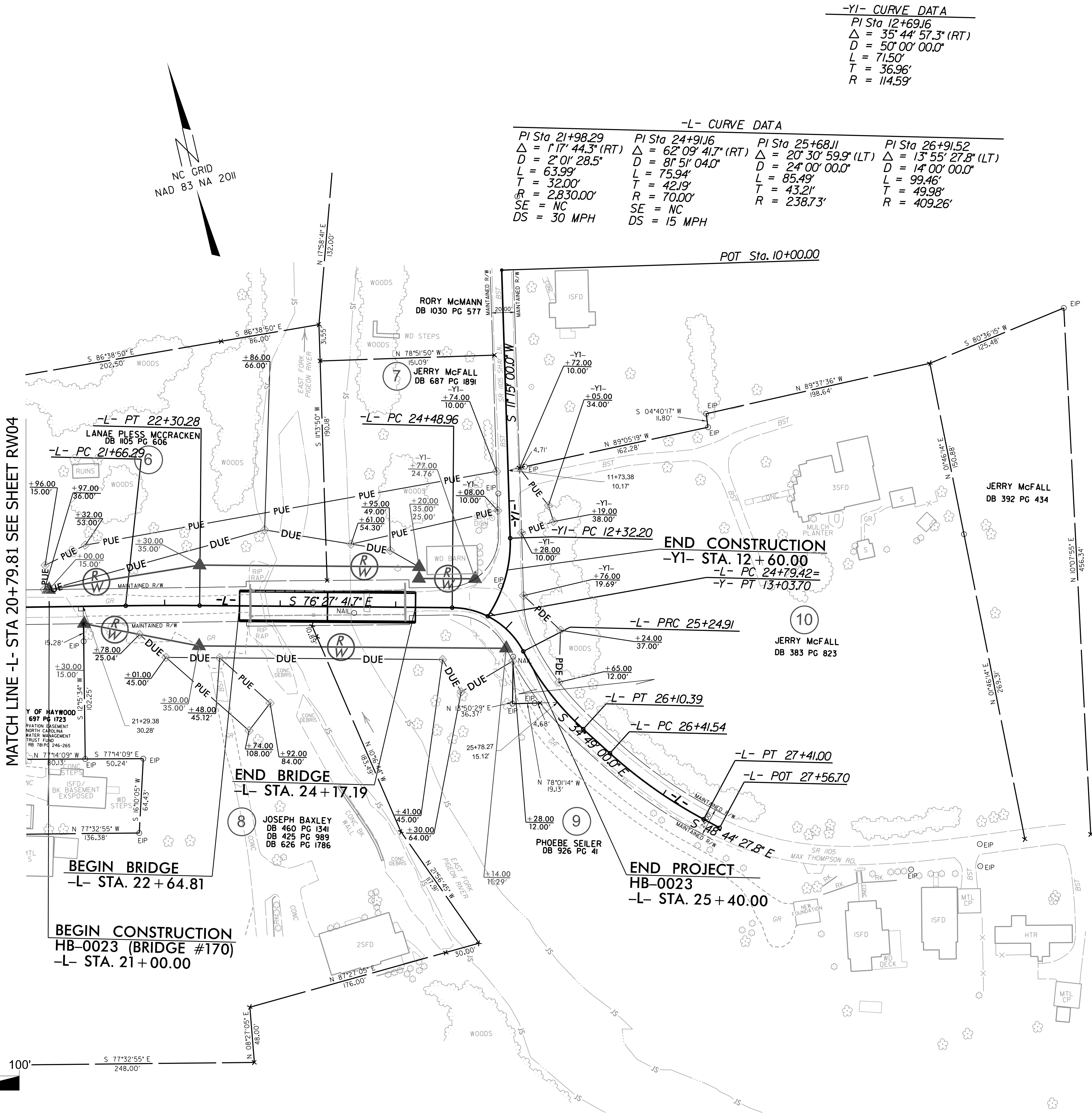


LOCATION AND SURVEYS UNIT

PREPARED BY:
LOCATION AND SURVEYS
DIVISION 14
122 BONNIE LANE
SYLVA, NC 28779

NOTES:

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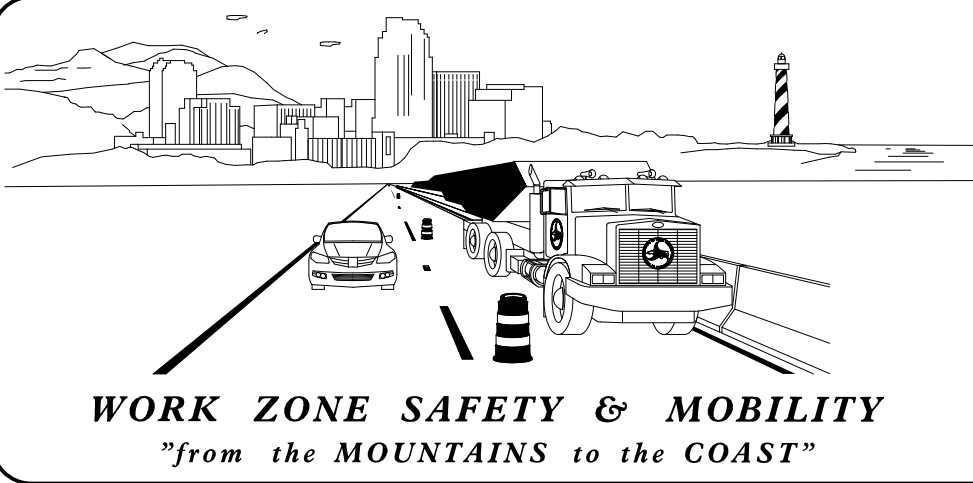
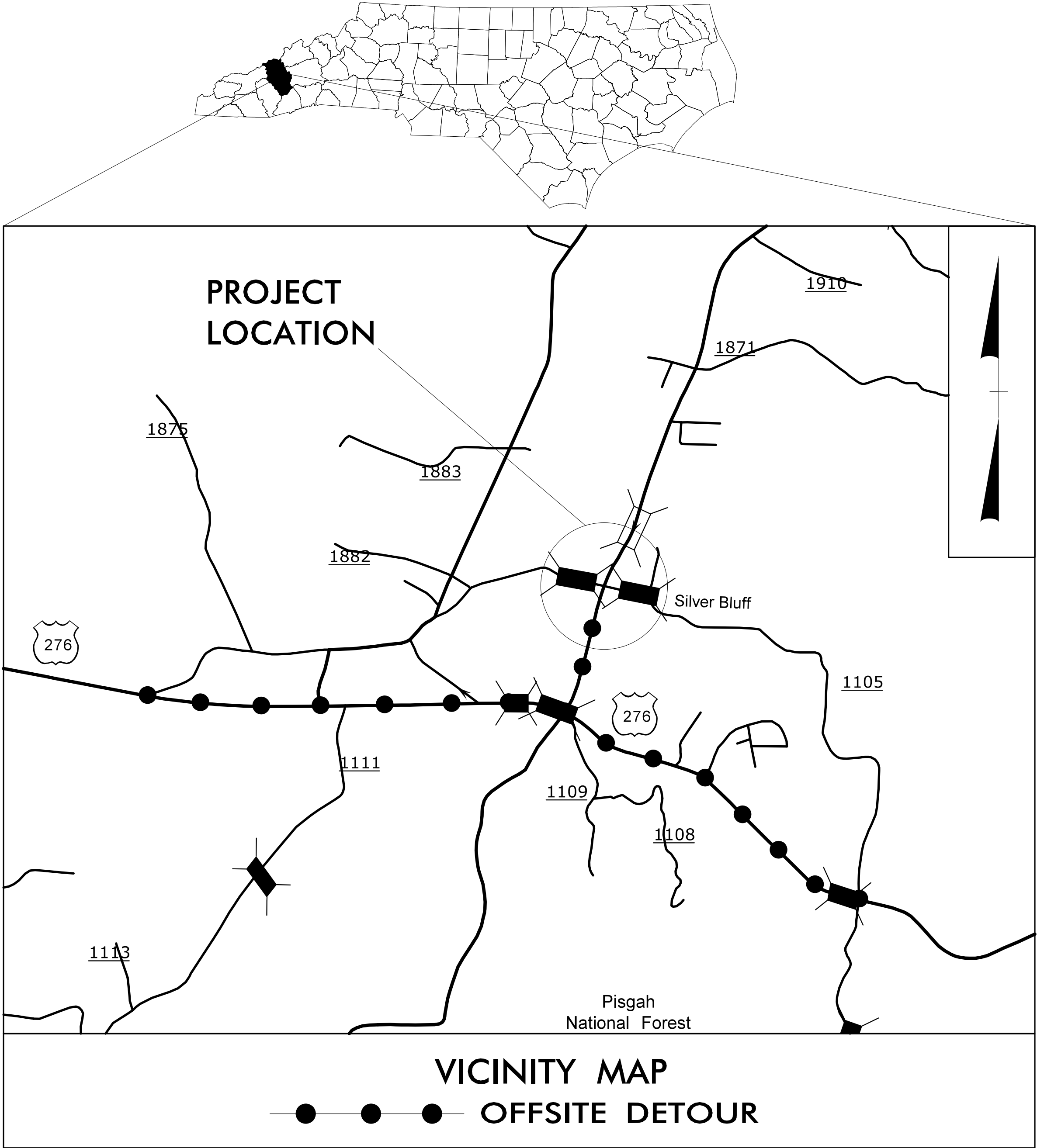


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

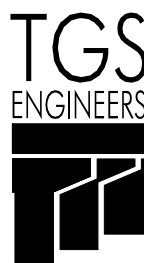
TRANSPORTATION MANAGEMENT PLAN

HAYWOOD COUNTY

LOCATION: BRIDGE #430169 ON SR 1876 (SONOMA RD) OVER WEST FORK PIGEON RIVER
BRIDGE #430170 ON SR 1105 (MAX THOMPSON RD) OVER EAST FORK PIGEON RIVER



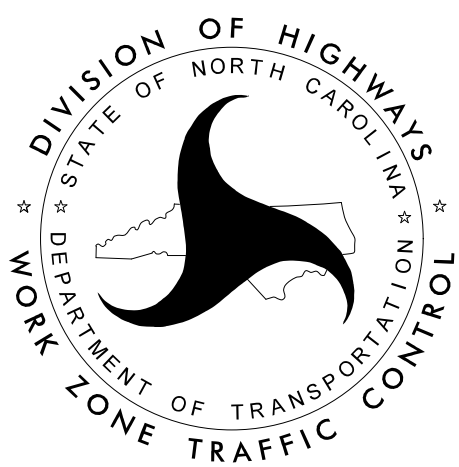
PLANS PREPARED FOR N.C.D.O.T. BY: TGS ENGINEERS



TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

DON A. PARKER, P.E.
PROJECT ENGINEER

CODA BRANNAN, E.I.
DESIGN ENGINEER



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 AND GENERAL NOTES)
TMP-2	SIGN DESIGNS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	DETOUR SIGNING KEY
TMP-5	OFFSITE DETOUR DETAIL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: Don A. Parker
DATE: 11/25/2024

SEAL



TIP PROJECT: HB-0023

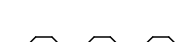
ROADWAY STANDARD DRAWINGS

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:

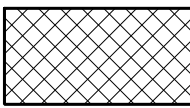
STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	TYPE III BARRICADES

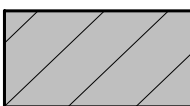
LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

 WORK AREA

 REMOVAL

 WEDGING

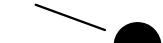
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

PROJ. REFERENCE NO.	SHEET NO.
HB-0023	TMP-1A
TGS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

APPROVED:

Signed by:

Don A. Parker

750B9E90ADEFA40...

DATE: 11/25/2024

SEAL

043251

ENGINEER

DON A. PARKER

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD
DRAWINGS & LEGEND

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJ. REFERENCE NO.	SHEET NO.
HB-0023	TMP-1B
TGS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
FULL ROADWAY CLOSURES
OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

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

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

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

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

- F) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS SHOWN IN THE FINAL PAVEMENT MARKINGS PLAN.
- G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

APPROVED: Signed by: Don A. Parker 750B0690ADEF440... DATE: 11/25/2024 NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	TRANSPORTATION OPERATIONS PLAN
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SIGN DESIGNS

[illegible]

Signed by: <u>Don A. Parker</u> APPROVED: _____ 75DBRE90ANDEF440 DATE: <u>11/25/2024</u>				SIGN DESIGNS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED				

PROJ. REFERENCE NO.	SHEET NO.
HB-0023	TMP-3
TGS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-9887 CORP. LICENSE NO.: C-0275	

PHASING

PHASE I

- STEP 1. USING RSD 1101.03 (SHEET 1 OF 9) AND TMP-4 THRU TMP-5, CLOSE SR 1876 (SONOMA RD) FROM -L- STA. 11+50± TO -L- STA. 16+75±, AND SR 1105 (MAX THOMPSON RD) FROM -L- STA. 21+00± TO -L- STA. 25+40±.
- STEP 2. AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE #430169 AND #430170. CONSTRUCT NEW BRIDGES AND ROADWAY APPROACHES, DRAINAGE, GUARDRAIL, AND PAVE UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE CONSTRUCTION PLANS):

- -L- STA. 11+50± TO -L- STA. 16+75± (SONOMA RD) AND -L- STA. 21+00± TO -L- STA. 25+40± (MAX THOMPSON RD).

- CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES.

- PLACE FINAL PAVEMENT MARKINGS (SEE FINAL PAVEMENT MARKINGS PLAN).
- STEP 3. REMOVE ALL TYPE III BARRICADES AND DETOUR SIGNING. REOPEN SR 1876 (SONOMA RD) AND SR 1105 (MAX THOMPSON RD) TO A 2-LANE, 2-WAY TRAFFIC PATTERN.

I0/18/2024
X:\NCDOT\Div 14 Haywood 169\Traffic\TrafficControl\TCP\HB-0023_TC_TMP_03 (PHASING).dgn
User: tbrannan

APPROVED:

Don A. Parker

750B8E90ADEF440...

DATE: 11/25/2024

NORTH CAROLINA

PROFESSIONAL

SEAL

043251

ENGINEER

DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS

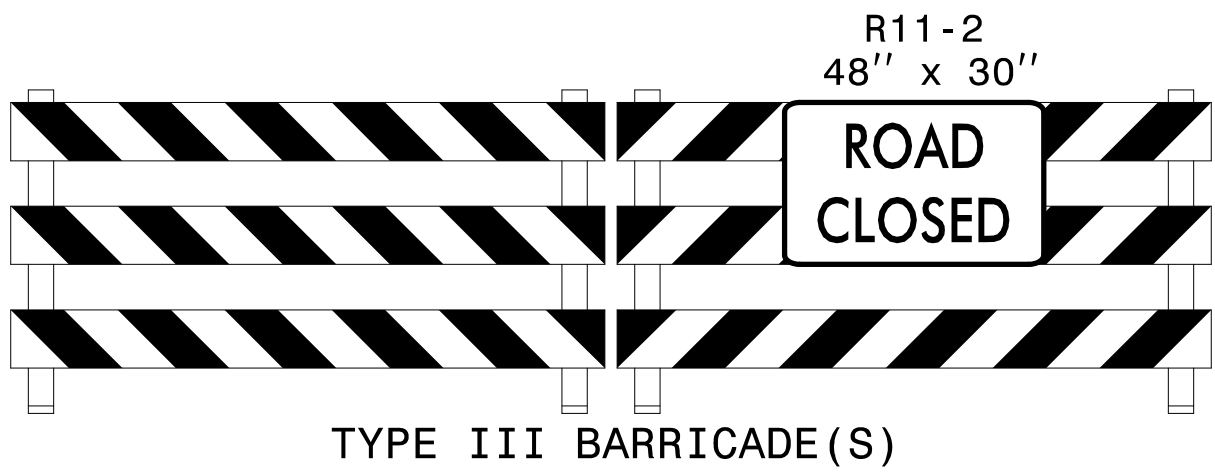
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

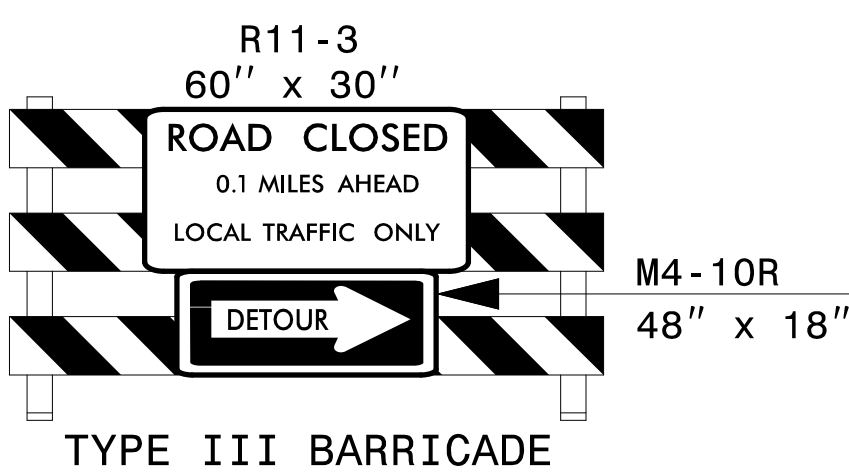
WORK ZONE TRAFFIC CONTROL

PHASING

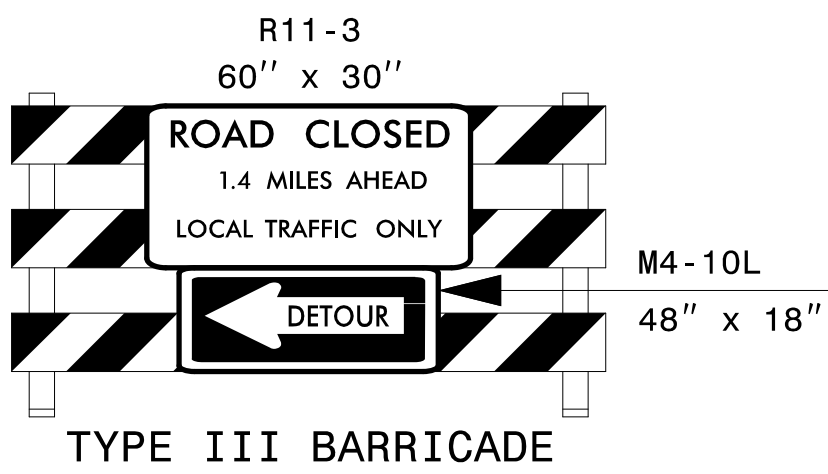
PROJ. REFERENCE NO.	SHEET NO.
HB-0023	TMP-4
TGS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 FH (919) 773-8887 CORP. LICENSE NO.: C-0275	



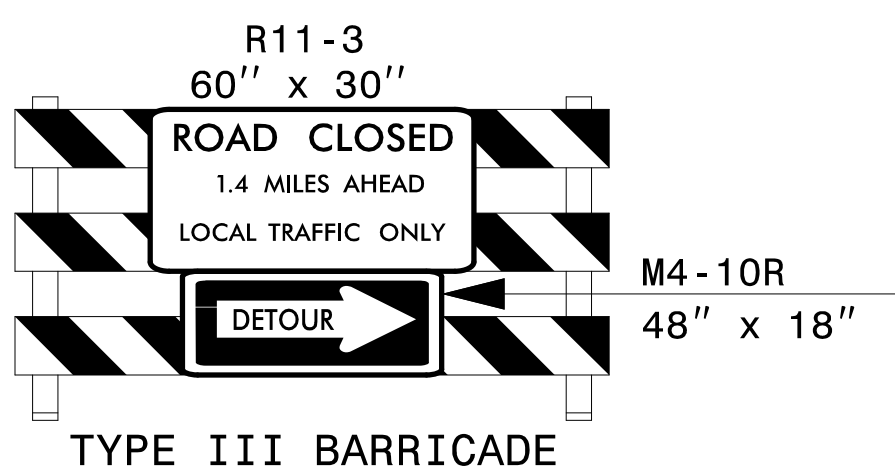
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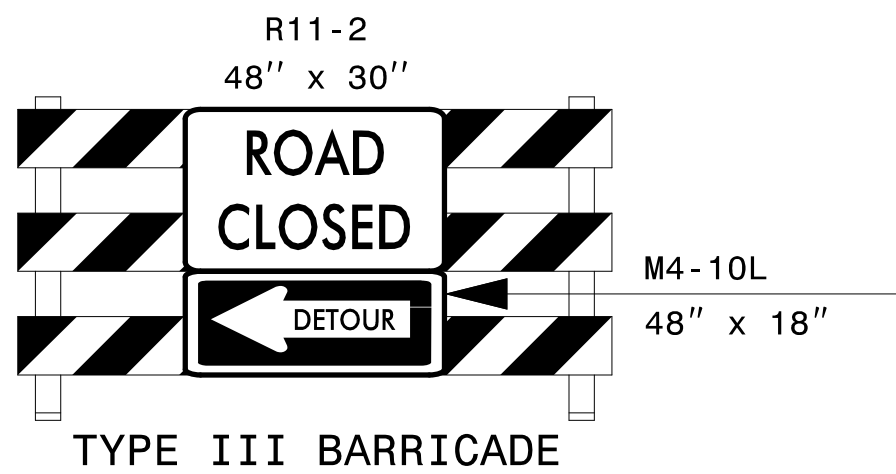
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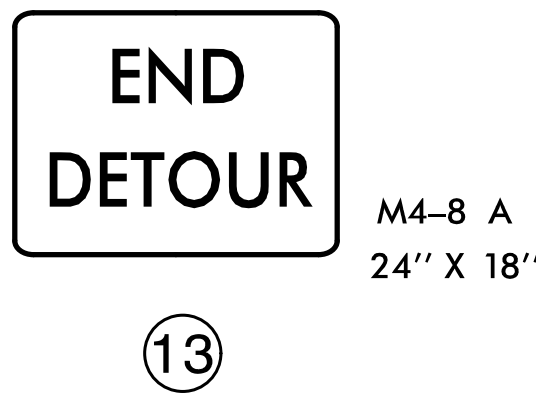
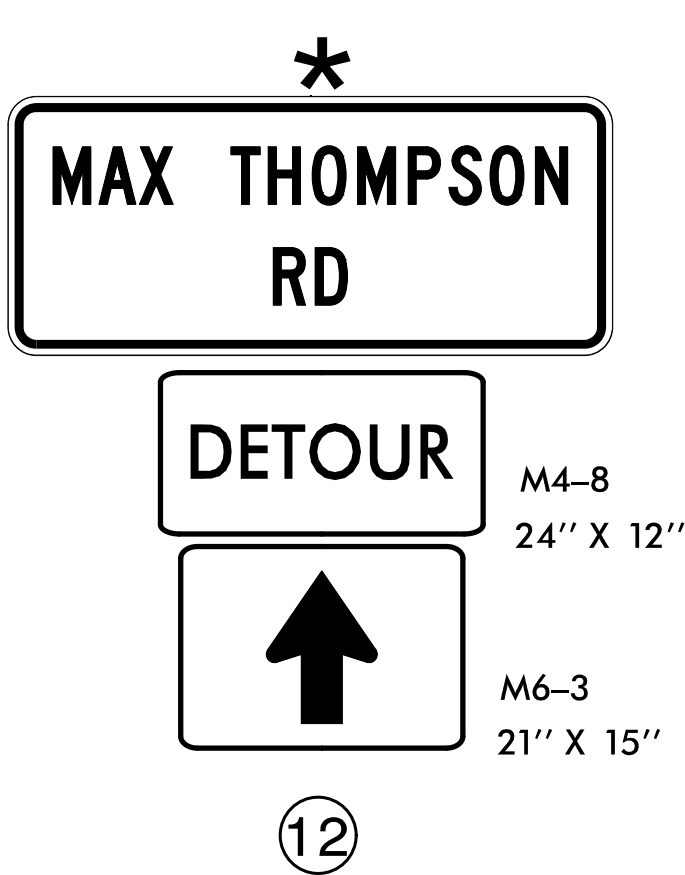
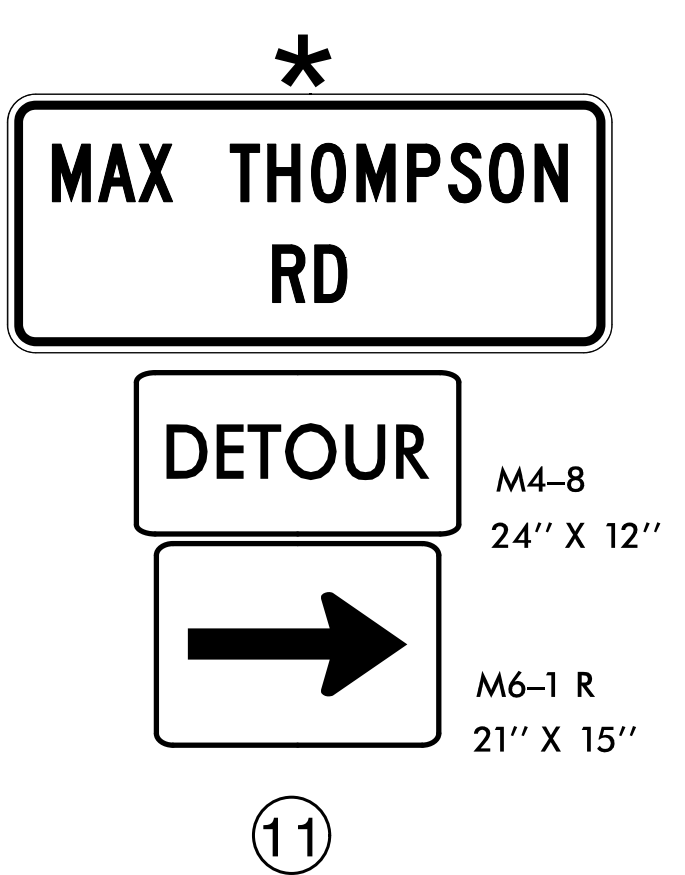
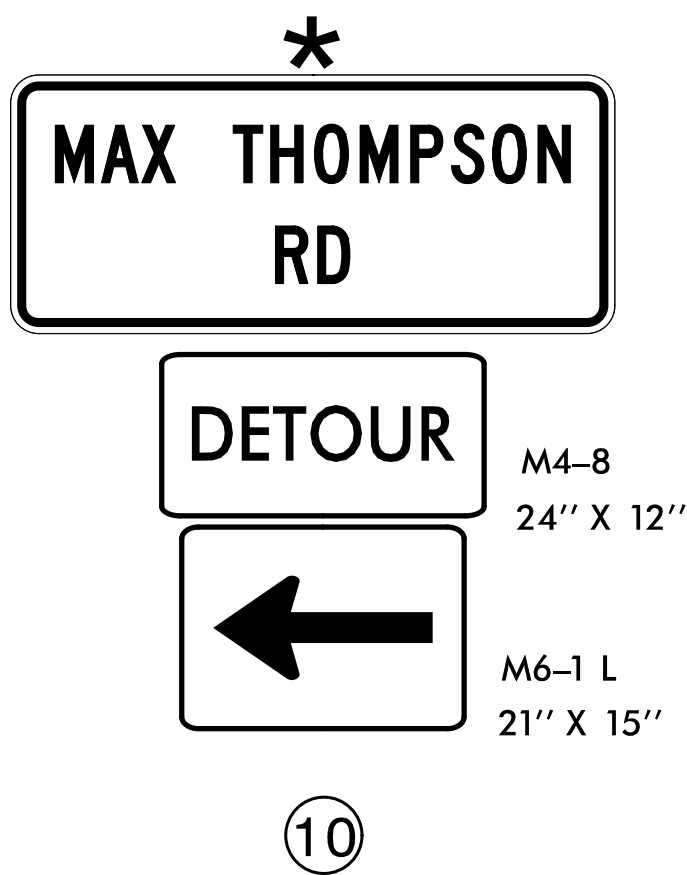
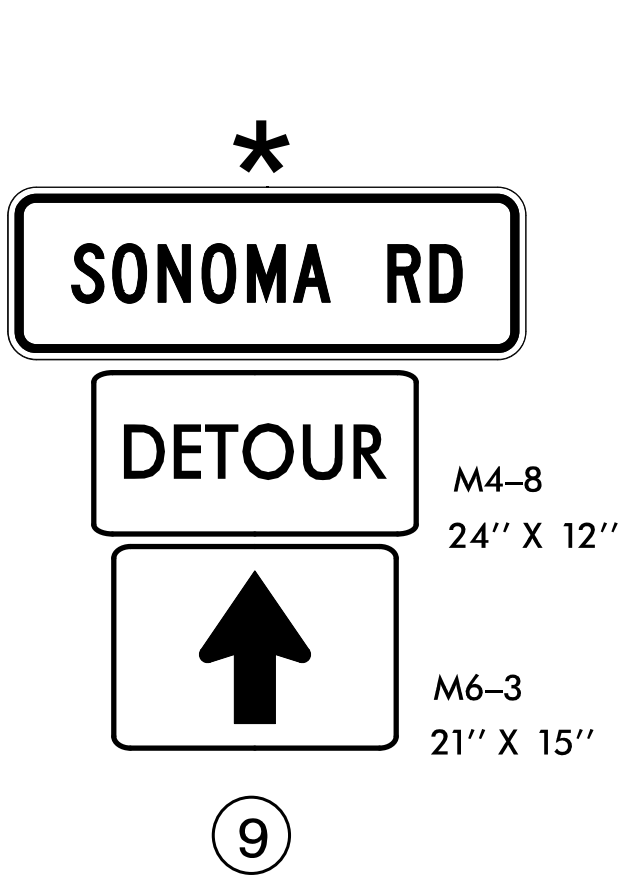
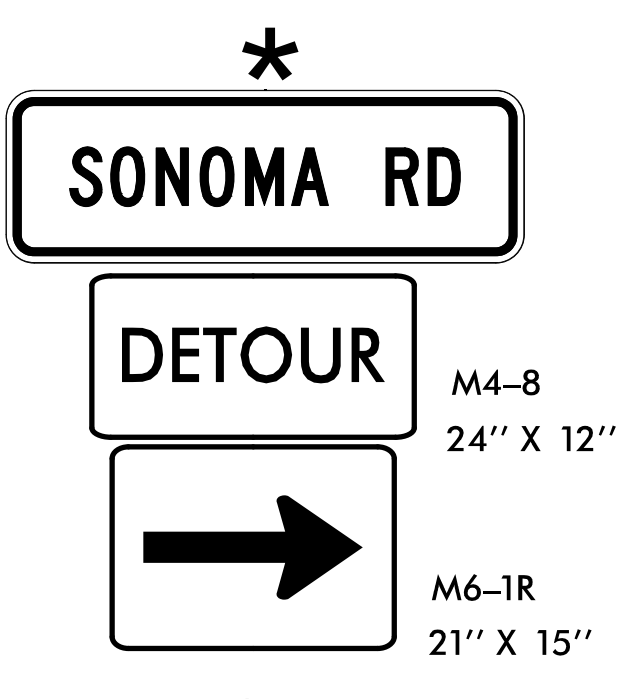
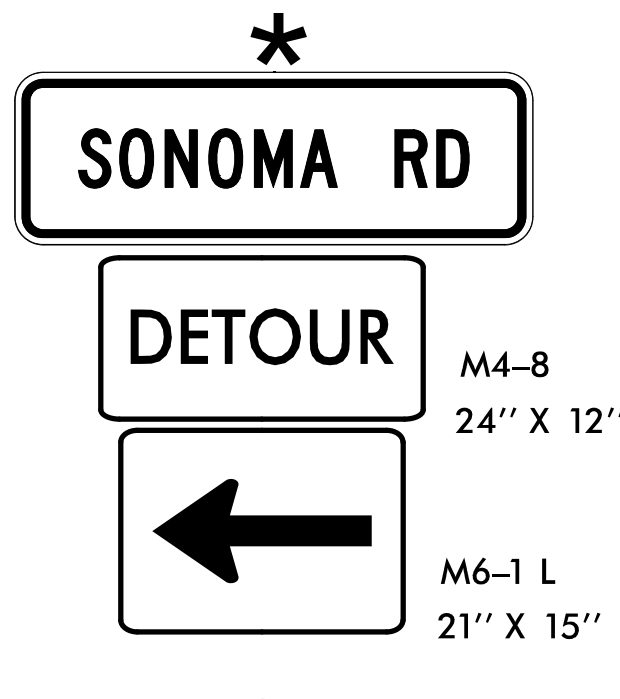
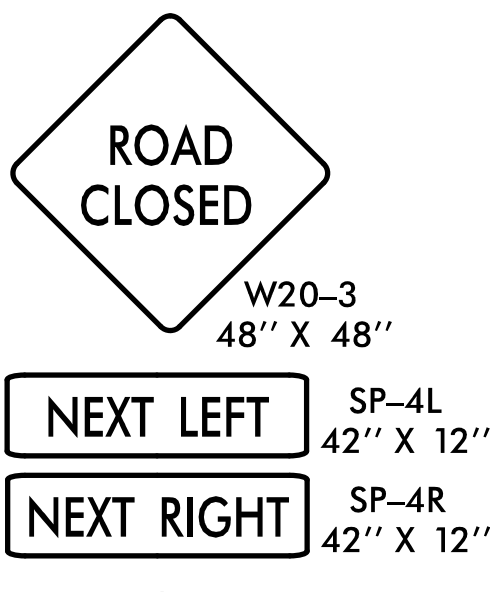
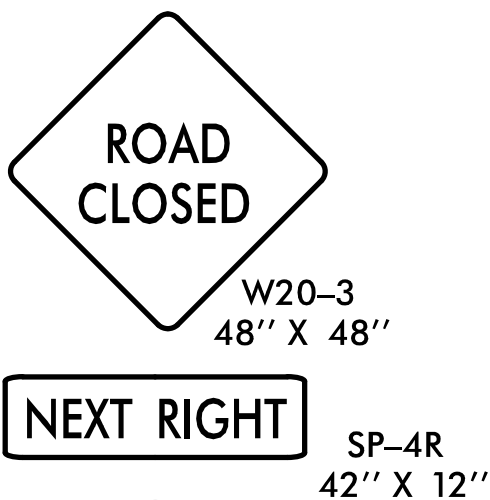
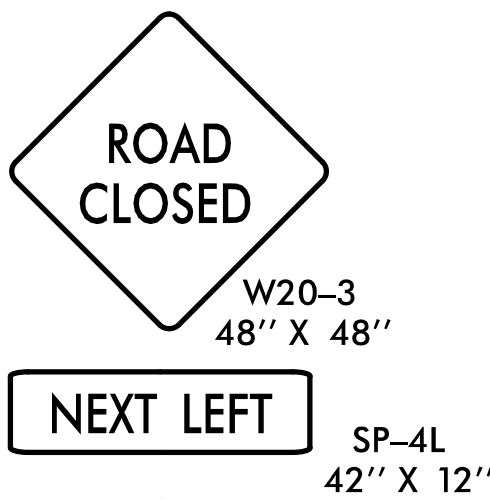
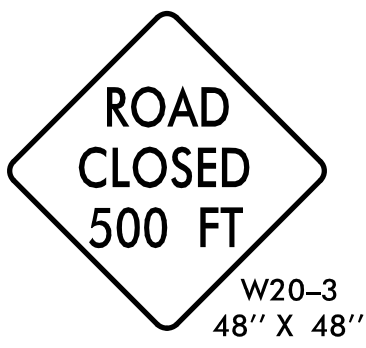
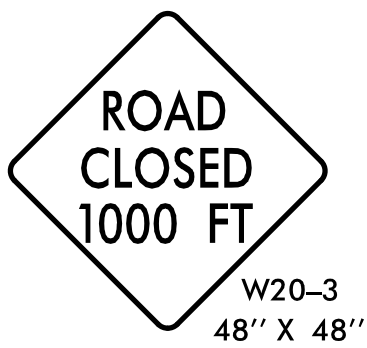
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(D)

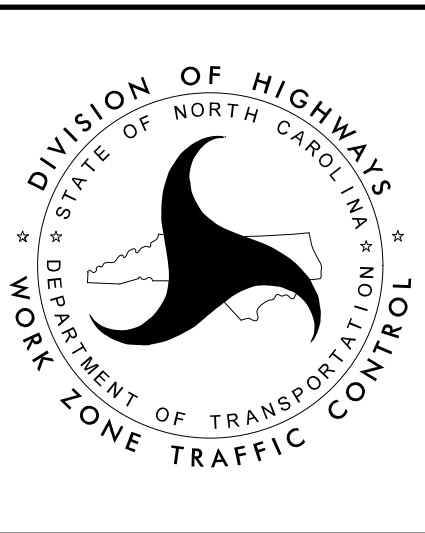


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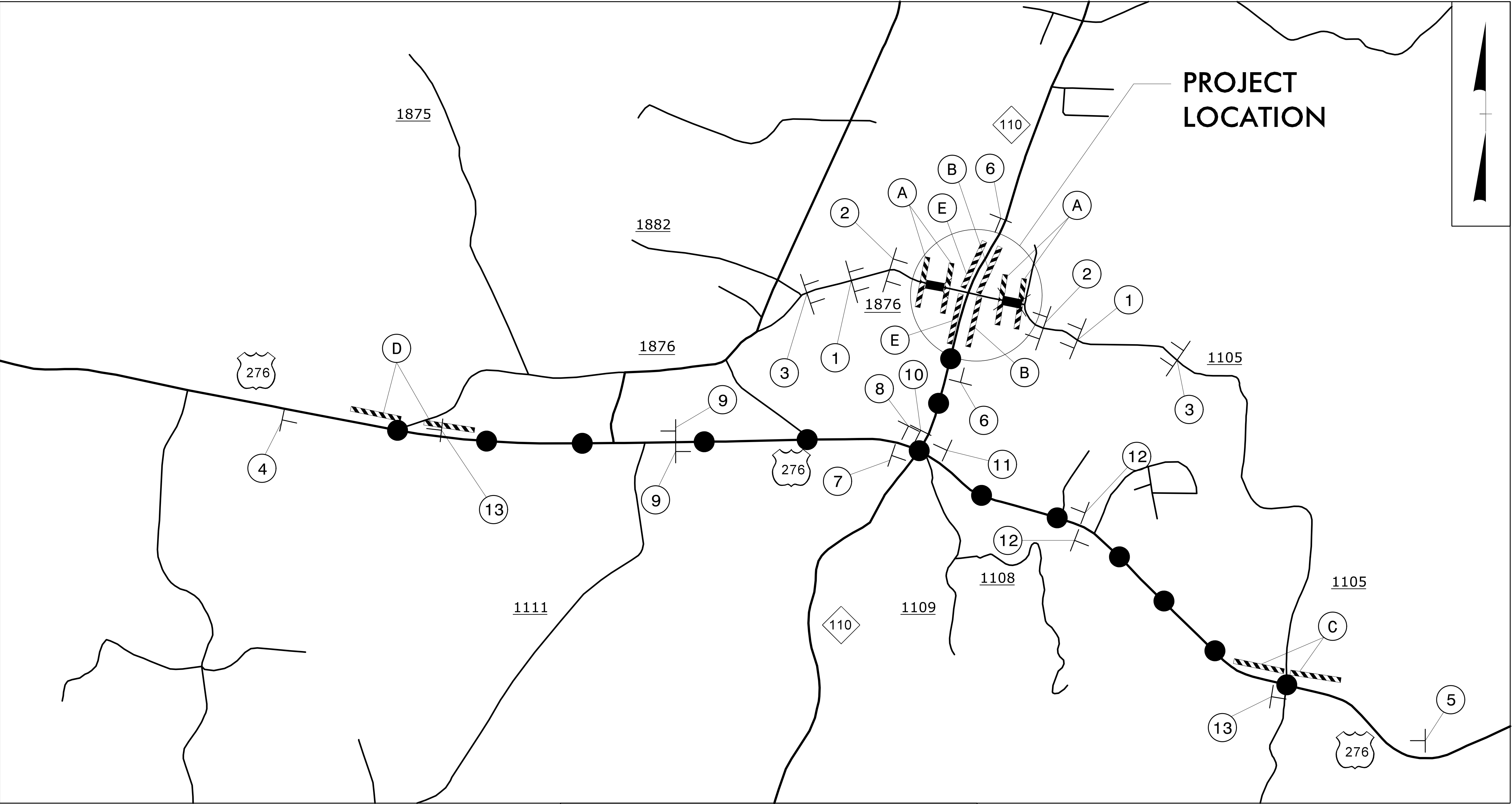


* SEE SHEET TMP-2 FOR SIGN DESIGN

APPROVED: <u>Don A. Parker</u> 750B9E90ADEFA40...	
DATE: <u>11/25/2024</u>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



DETOUR SIGNING
KEY



VICINITY MAP

● ● ● OFFSITE DETOUR

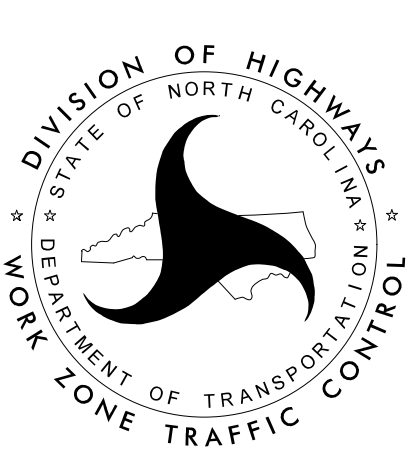
Signed by: Don A. Parker

APPROVED: _____
75DB9690ADEFA44D.

DATE: 11/25/2024



**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



BRIDGE #430169
AND #430170
OFFSITE DETOUR

I:\21\2024\12\16\2024\Div 14 Haywood 169\Traffic\Pavement Markings\HB-0023.Sgn_PMP_01.dgn
User:smelvin

T.I.P.: HB-0023

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
HAYWOOD COUNTY

LOCATION: BRIDGE #430169 ON SR 1876 (SONOMA RD) OVER WEST FORK PIGEON RIVER
BRIDGE #430170 ON SR 1105 (MAX THOMPSON RD) OVER EAST FORK PIGEON RIVER

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE, SCHEDULE SHEET, INDEX OF SHEETS, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES, AND FINAL PAVEMENT MARKING SCHEDULE
PMP-2-3	PAVEMENT MARKING DETAIL

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
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
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

GENERAL NOTES

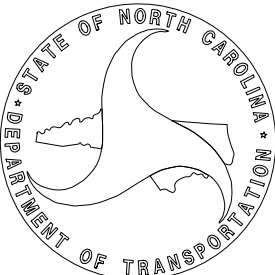
- THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
- | | | |
|-----------|---------------|--------|
| ROAD NAME | MARKING | MARKER |
| ALL ROADS | THERMOPLASTIC | NONE |
- 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) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

FINAL PAVEMENT MARKING
SCHEDULE

SYMBOL	DESCRIPTION
PAVEMENT MARKINGS	
THERMOPLASTIC (4",90 MILS)	
T1	(4") WHITE EDGELINE
T5	(4") 2 FT. - 6 FT./SP WHITE MINISKIP
T13	(4") YELLOW DOUBLE CENTER

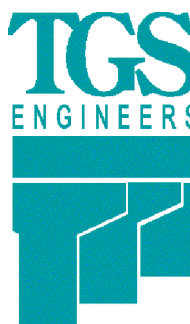
PLAN SUBMITTED TO: NCDOT

ZACH SHULER, P.E. BRIDGE PROGRAM MANAGER

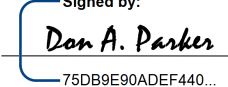


PLAN PREPARED BY: TGS ENGINEERS

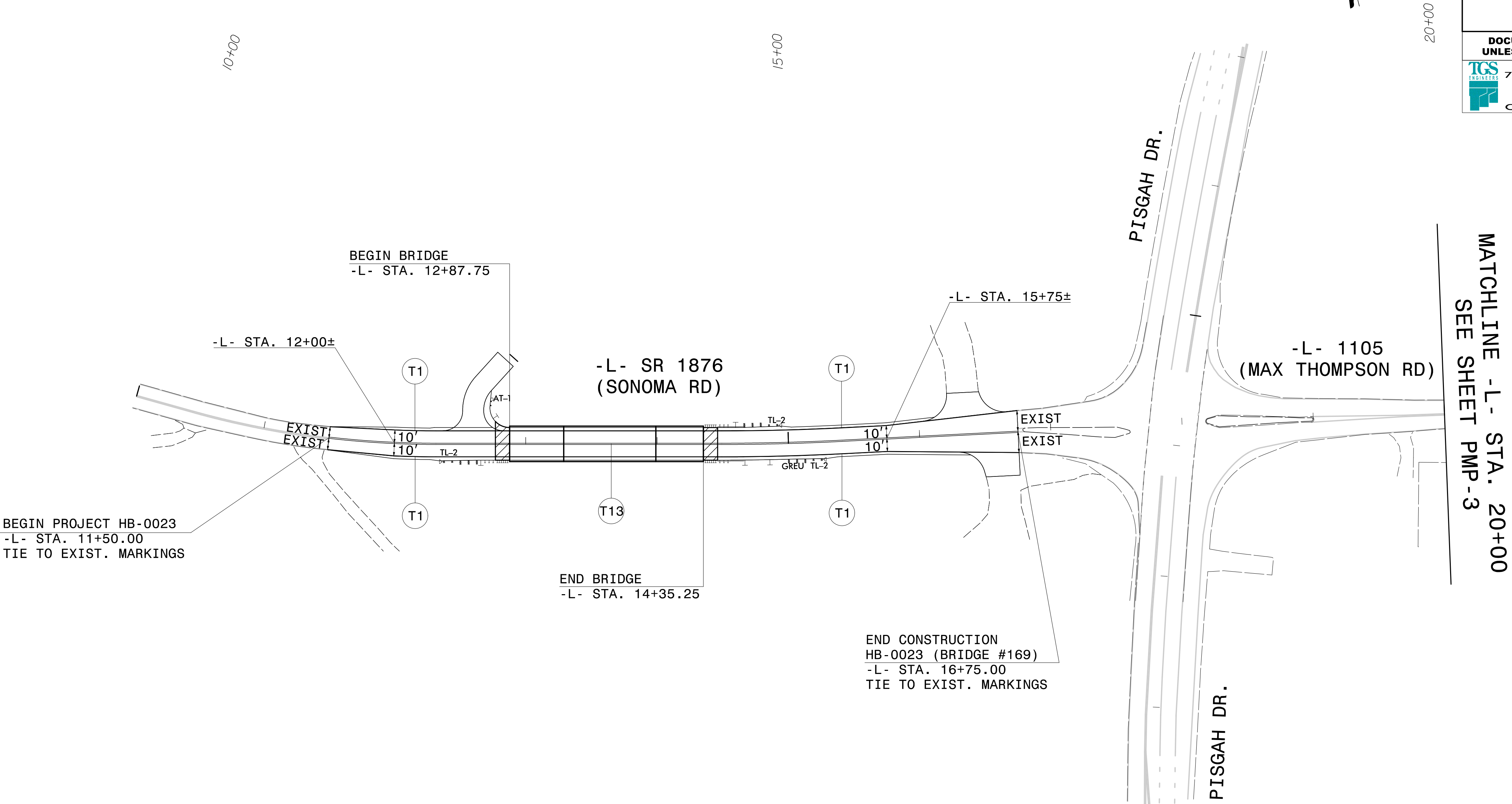
DON A. PARKER, P.E. PROJECT ENGINEER
CODA BRANNAN, E.I. DESIGN ENGINEER



TGS ENGINEERS
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RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

TIP NO.	SHEET NO.
HB - 0023	PMP - 1
APPROVED:  DATE: 11/22/2024	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

TIP NO.	SHEET NO.
HB-0023	PMP-2
APPROVED: Signed by: Don A. Parker	
DATE: 11/22/2024	
SEAL	
NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TCS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH STREET (SUITE 200) RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

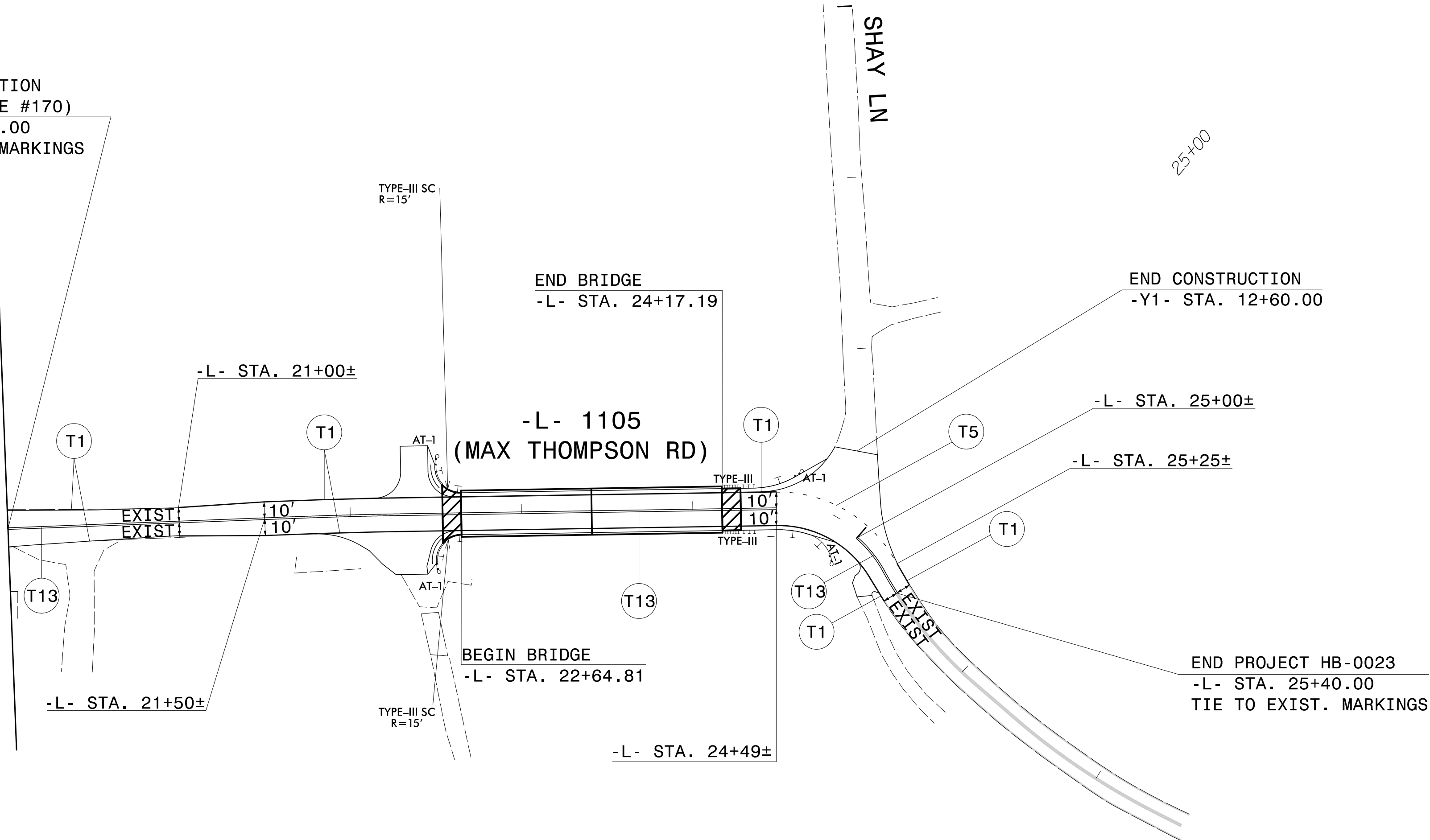


PAVEMENT MARKING DETAIL

TIP NO.	SHEET NO.
HB-0023	PMP-3
APPROVED: Signed by: Don A. Parker 75DB8E90ADE440...	
DATE: 11/22/2024	
SEAL	
NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TCS ENGINEERS TGS ENGINEERS 706 HILLSBOROUGH STREET (SUITE 200) RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

BEGIN CONSTRUCTION
HB-0023 (BRIDGE #170)
-L- STA. 20+00.00
TIE TO EXIST. MARKINGS

MATCHLINE -L- STA. 20+00
SEE SHEET PMP-2

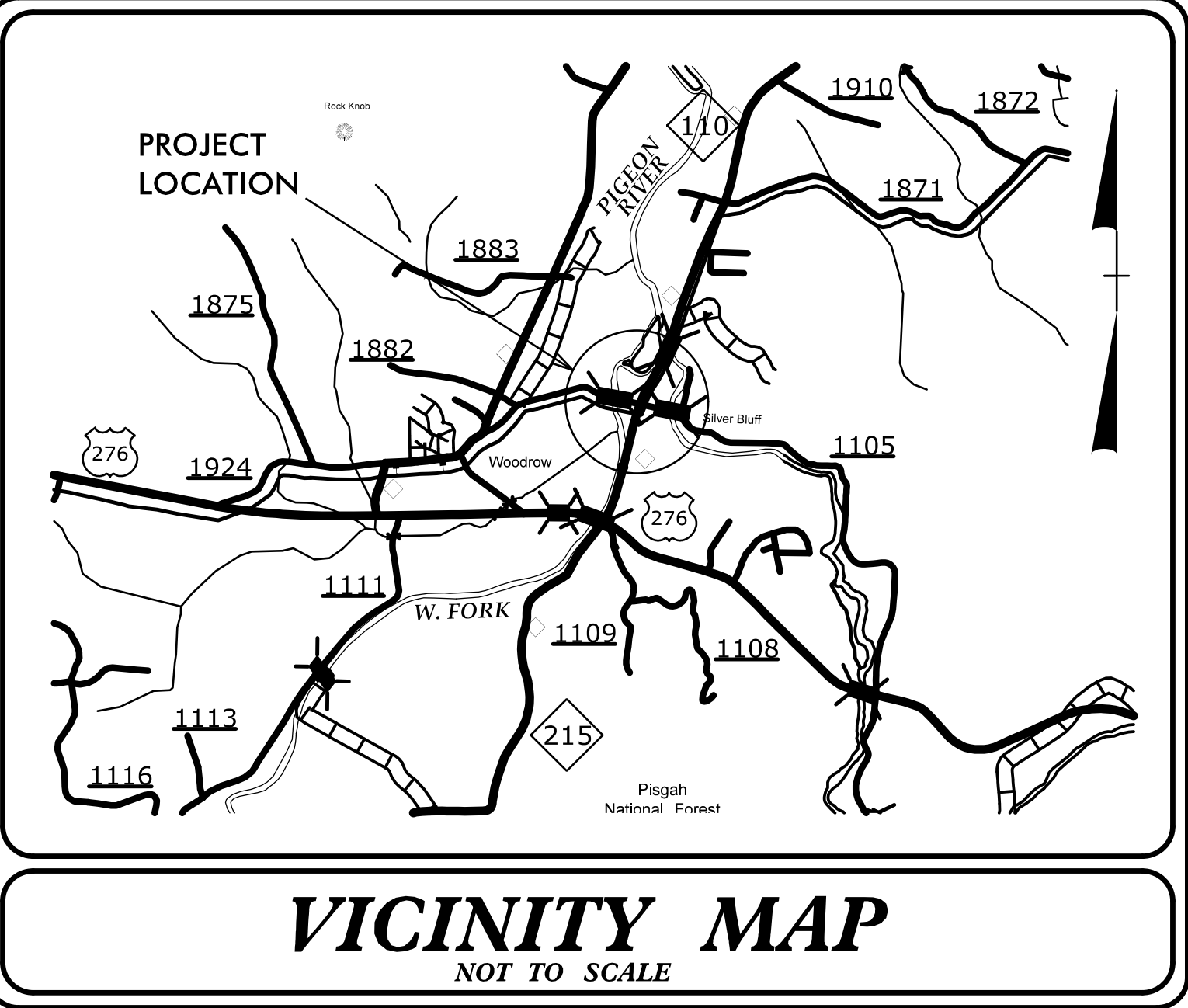


PAVEMENT MARKING DETAIL

14 Haywood 11/14/2024
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TIP PROJECT: HB-0023

CONTRACT:

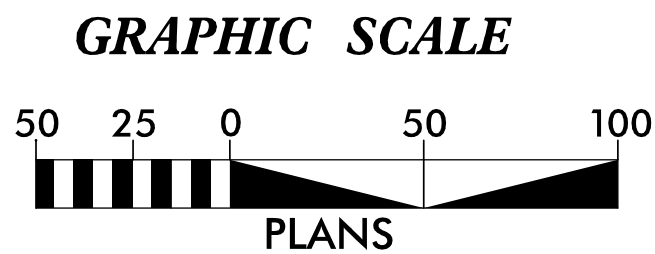
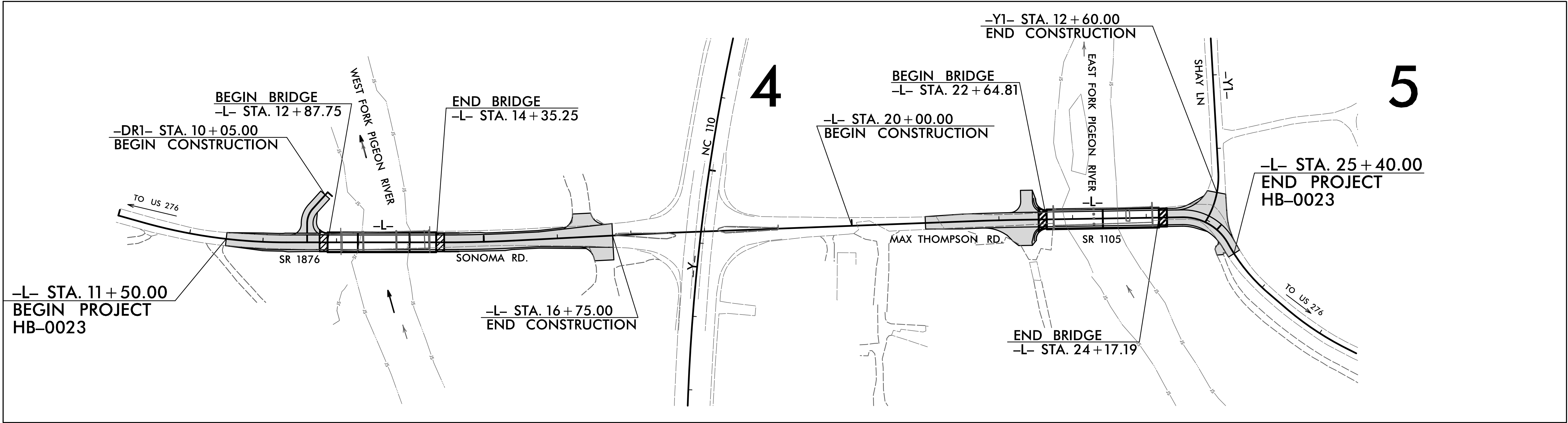


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
HAYWOOD COUNTY
LOCATION: BRIDGE NO. 430169 OVER WEST FORK PIGEON RIVER
ON SR 1876 (SONOMA ROAD)
BRIDGE NO. 430170 OVER EAST FORK PIGEON RIVER
ON SR 1105 (MAX THOMPSON ROAD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURES

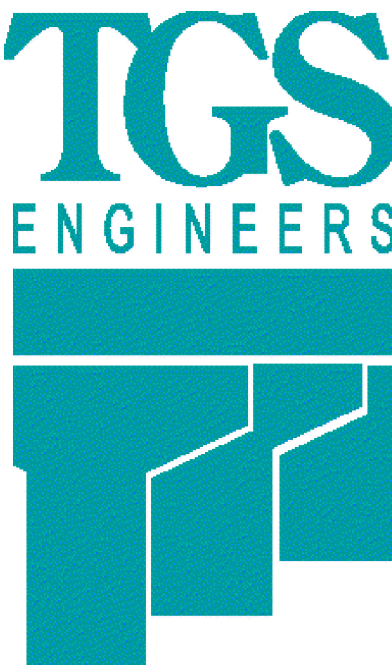


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HB-0023	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
50345.1.1	N/A	PE	
50345.2.1	5034501	ROW	
50345.2.2	5034501	UTIL.	
50345.2.3	5034501	CONST.	

- THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.
- THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.
- ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
Refer To E. C. Special Provisions for Special Considerations.



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.



Prepared In the Office of:
TGS ENGINEERS
201 W. MARION ST-STE 200
SHELBY, NC 28150

Designed by:
Andrew H. Cochrane, PE 3015
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.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

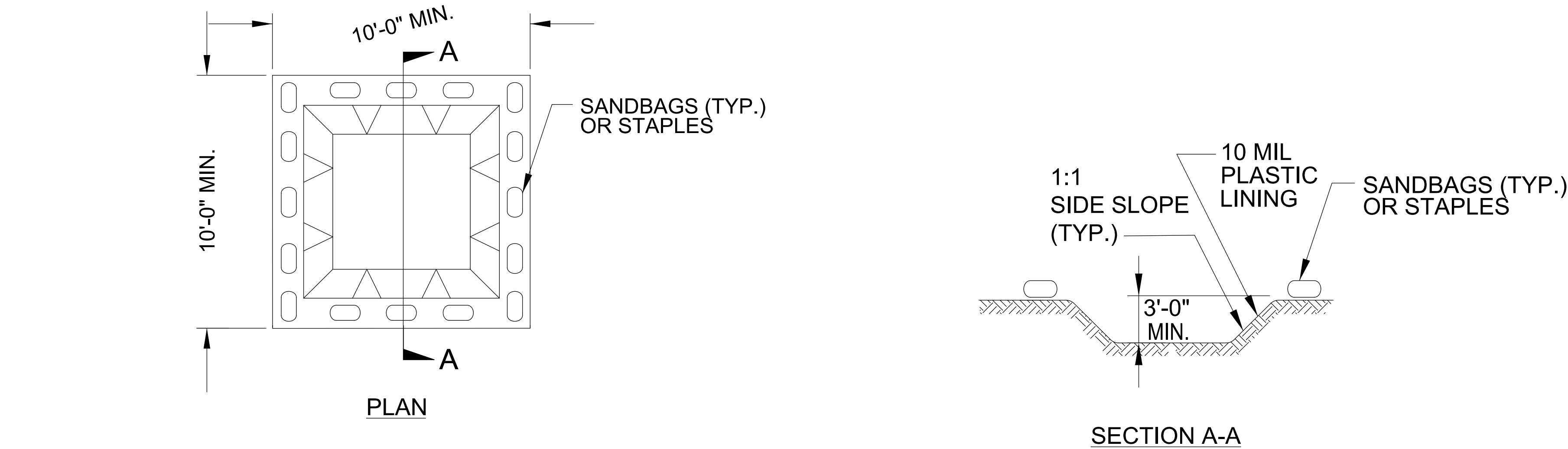
EROSION & SEDIMENT CONTROL LEGEND

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	
1630.04	Stilling Basin	
1630.05	Temporary Diversion	
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	
1632.02	Type B	
1632.03	Type 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	
1635.02	Rock Pipe Inlet Sediment Trap Type 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	
	Silt Fence Coir Fiber Wattle Break	
1636.03	Excelsior Wattle Barrier	
1636.03	Coir Fiber Wattle Barrier	

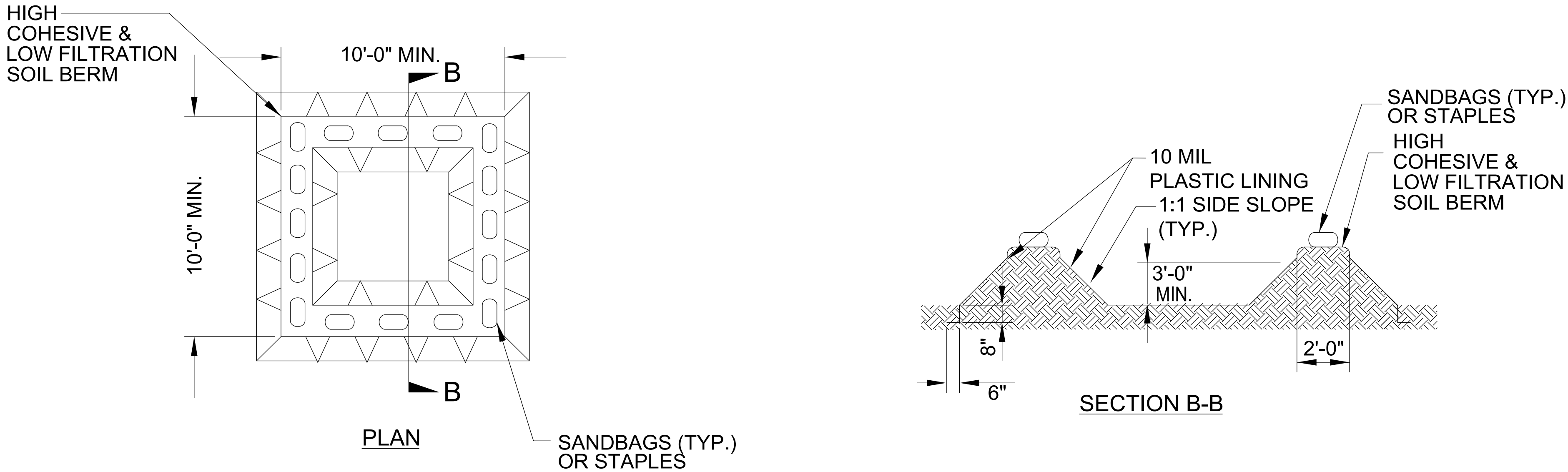
PROJECT REFERENCE NO.	SHEET NO.
HB-0023	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE



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

ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

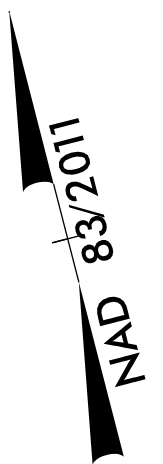
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

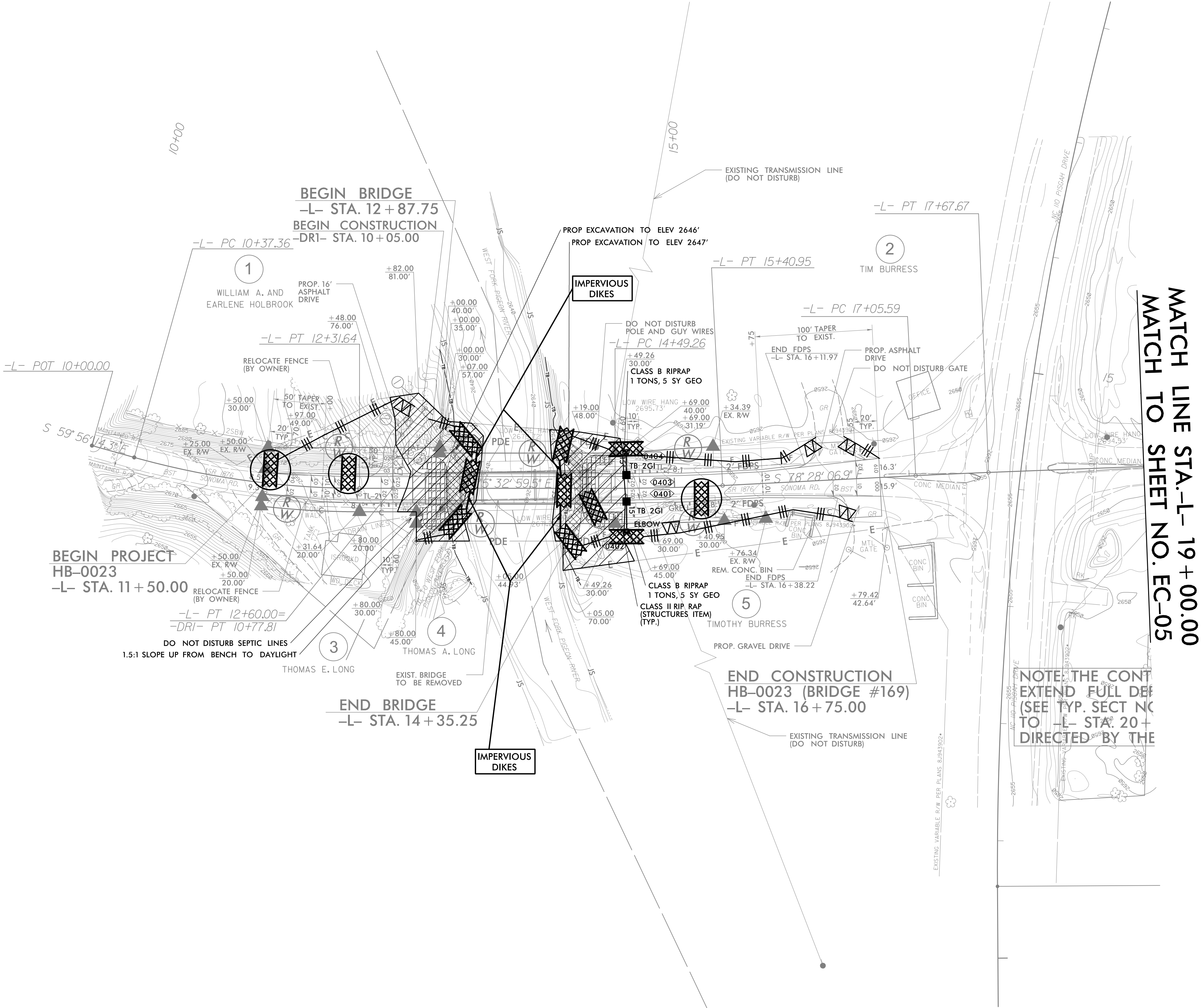
SOIL STABILIZATION TIMEFRAMES

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

HAYWOOD COUNTY
BRIDGE #430169



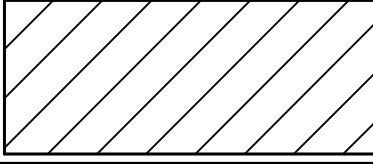
PROJECT REFERENCE NO.		SHEET NO.
HB-0023		EC-04/CONST.4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275		



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

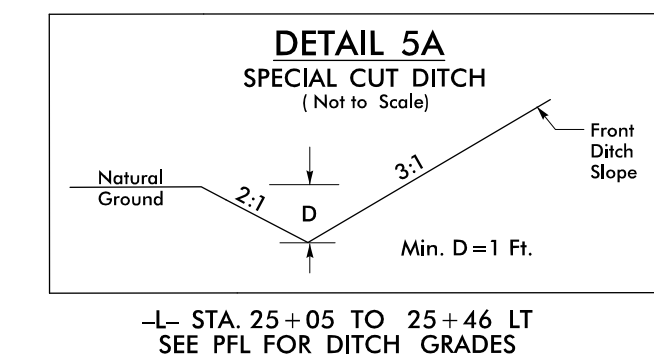
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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



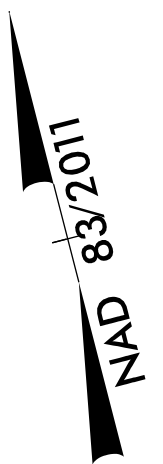
ENVIRONMENTALLY
SENSITIVE AREA
SEE PROJECT
SPECIAL PROVISIONS

NAD 83/2011

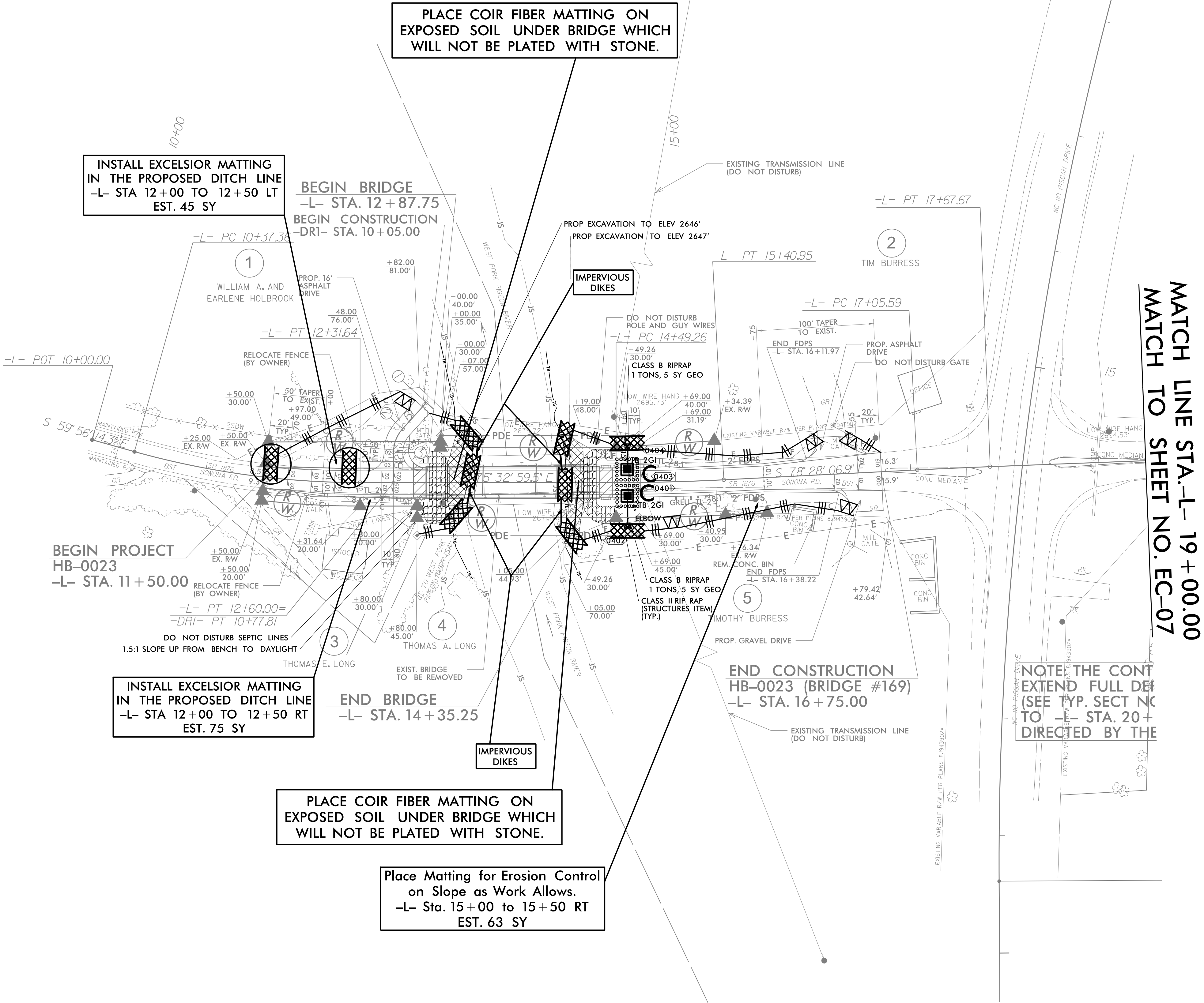
 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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

HAYWOOD COUNTY
BRIDGE #430169



PROJECT REFERENCE NO.		SHEET NO.	
HB-0023		EC-06/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			



INSTALL EXCELSIOR MATTING
IN THE PROPOSED DITCH LINE
-L- STA 12+00 TO 12+50 LT
EST. 45 SY

PLACE COIR FIBER MATTING ON
EXPOSED SOIL UNDER BRIDGE WHICH
WILL NOT BE PLATED WITH STONE.

PROP EXCAVATION TO ELEV 2646'
PROP EXCAVATION TO ELEV 2647'

IMPERVIOUS
DIKES

BEGIN PROJECT
HB-0023
-L- STA. 11+50.00

INSTALL EXCELSIOR MATTING
IN THE PROPOSED DITCH LINE
-L- STA 12+00 TO 12+50 RT
EST. 75 SY

END BRIDGE
-L- STA. 14+35.25

PLACE COIR FIBER MATTING ON
EXPOSED SOIL UNDER BRIDGE WHICH
WILL NOT BE PLATED WITH STONE.

Place Matting for Erosion Control
on Slope as Work Allows.
-L- Sta. 15+00 to 15+50 RT
EST. 63 SY

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

MATCH LINE STA.-L- 19+00.00
MATCH TO SHEET NO. EC-07

NOTE: THE CONT
EXTEND FULL DE
(SEE TYP. SECT NC
TO -L- STA. 20+
DIRECTED BY THE

For Slopes Excavated Greater Than 10
feet Install Matting for Erosion Control
on Entire Slope as Work Allows.

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C,
UTILIZE FABRIC INSERT INLET PROTECTION
DEVICES IN AREAS WHERE WATER MAY
POND ON ROAD OPEN TO LIVE TRAFFIC.

HAYWOOD COUNTY
BRIDGE #430170

NAD 83/2011

PROJECT REFERENCE NO.		SHEET NO.	
HB-0023		EC-07/CONST.5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

TGS

ENGINEERS

TGS ENGINEERS

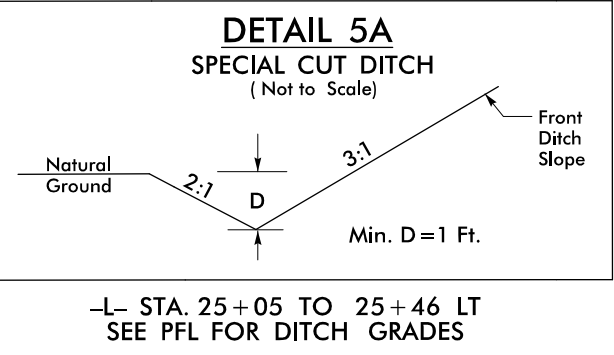
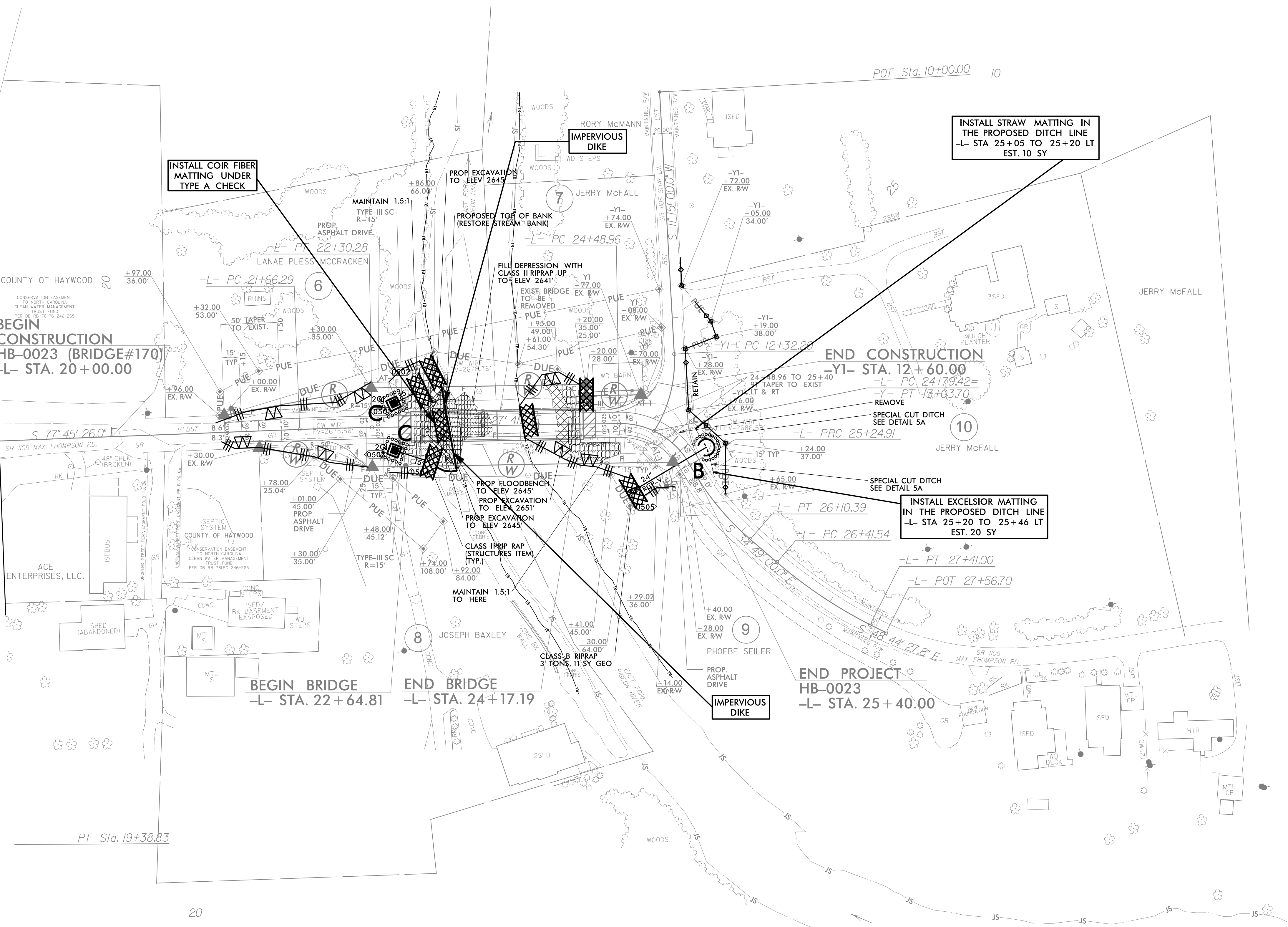
201 W. MARION ST-STE 200

SHELBY, NC 28150

PH (704) 476-0003

CORP. LICENSE NO.: C-0275

MATCH LINE STA.-L- 19 + 00.00
MATCH TO SHEET NO. EC-06



SAFETY FENCE

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

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

For Slopes Excavated Greater Than 10 feet Install Matting for Erosion Control on Entire Slope as Work Allows.

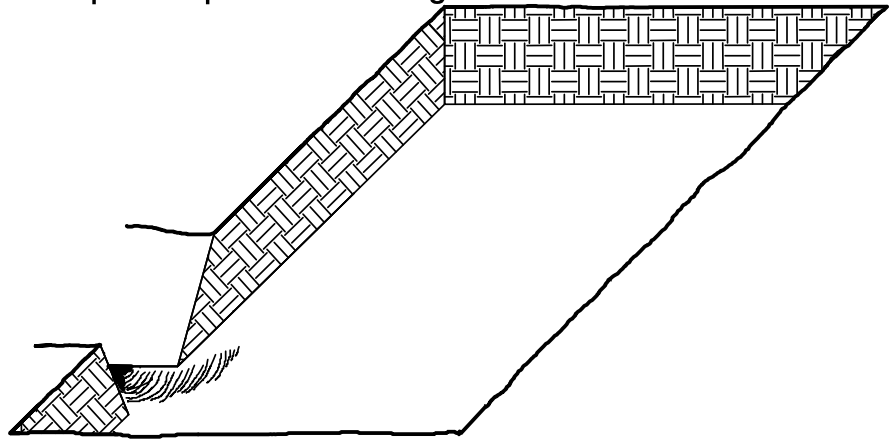
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HB-0023	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

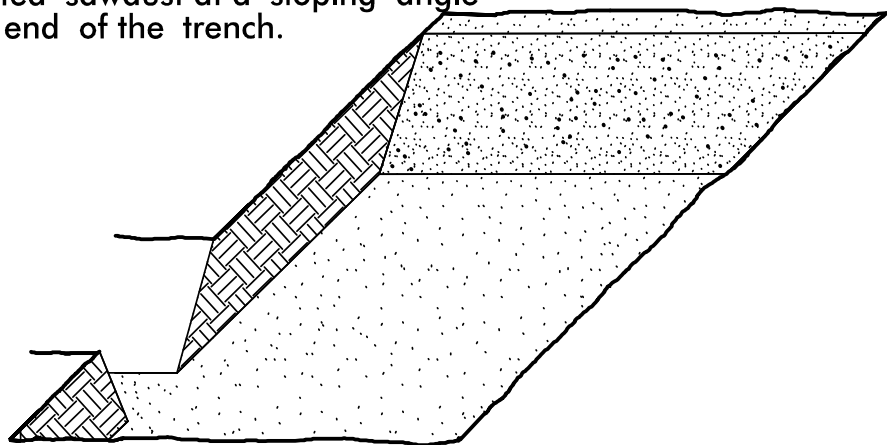
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

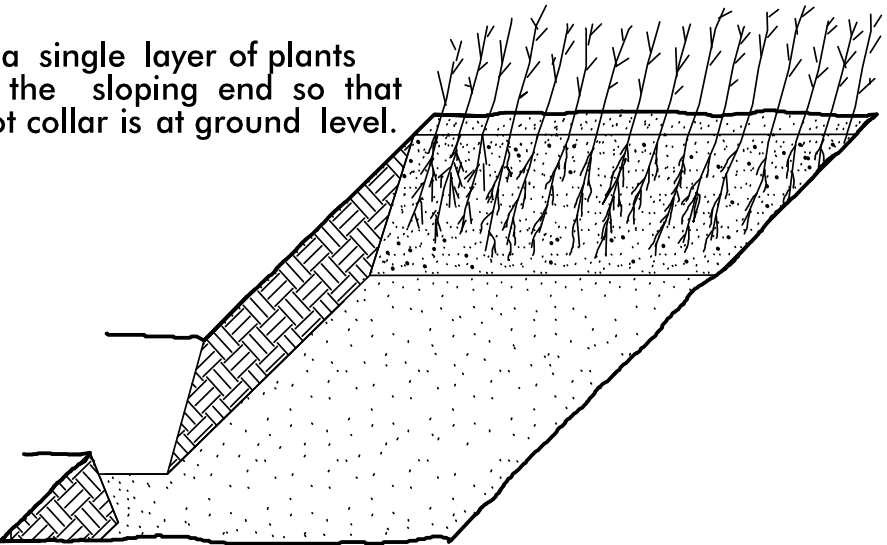
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



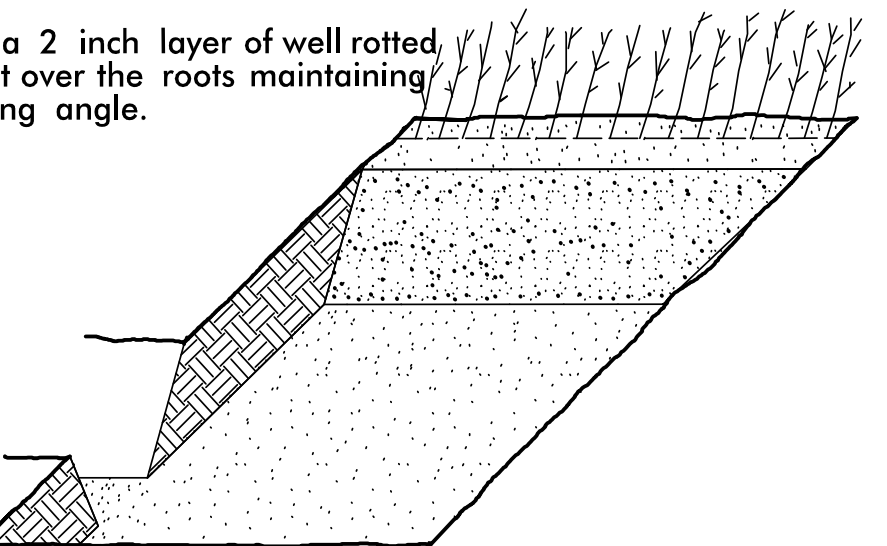
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

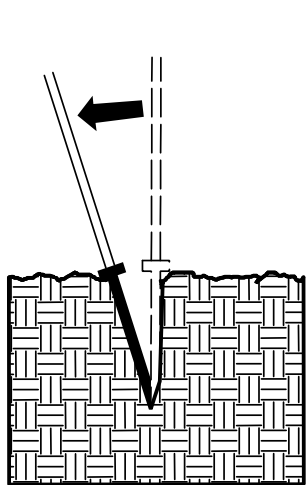


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

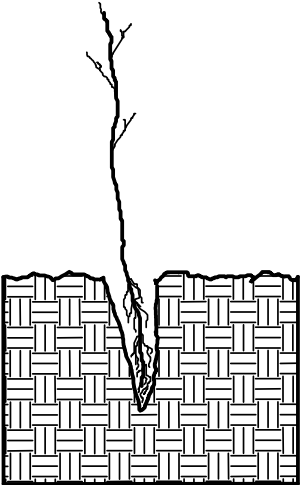


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

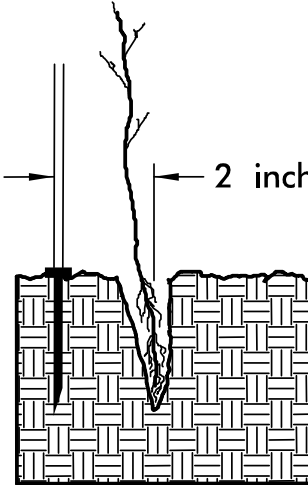
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



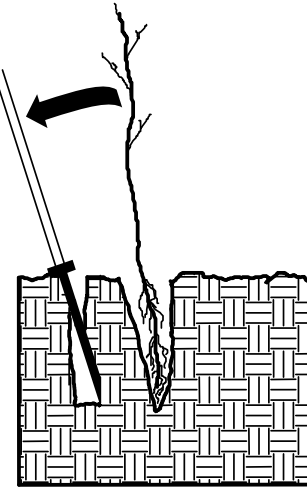
1. Insert planting bar as shown and pull handle toward planter.



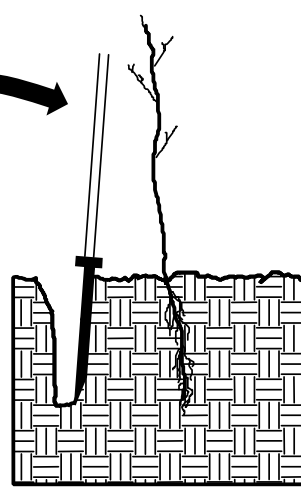
2. Remove planting bar and place seedling at correct depth.



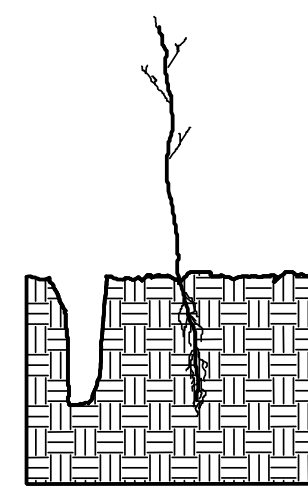
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



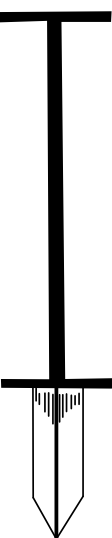
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- ☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

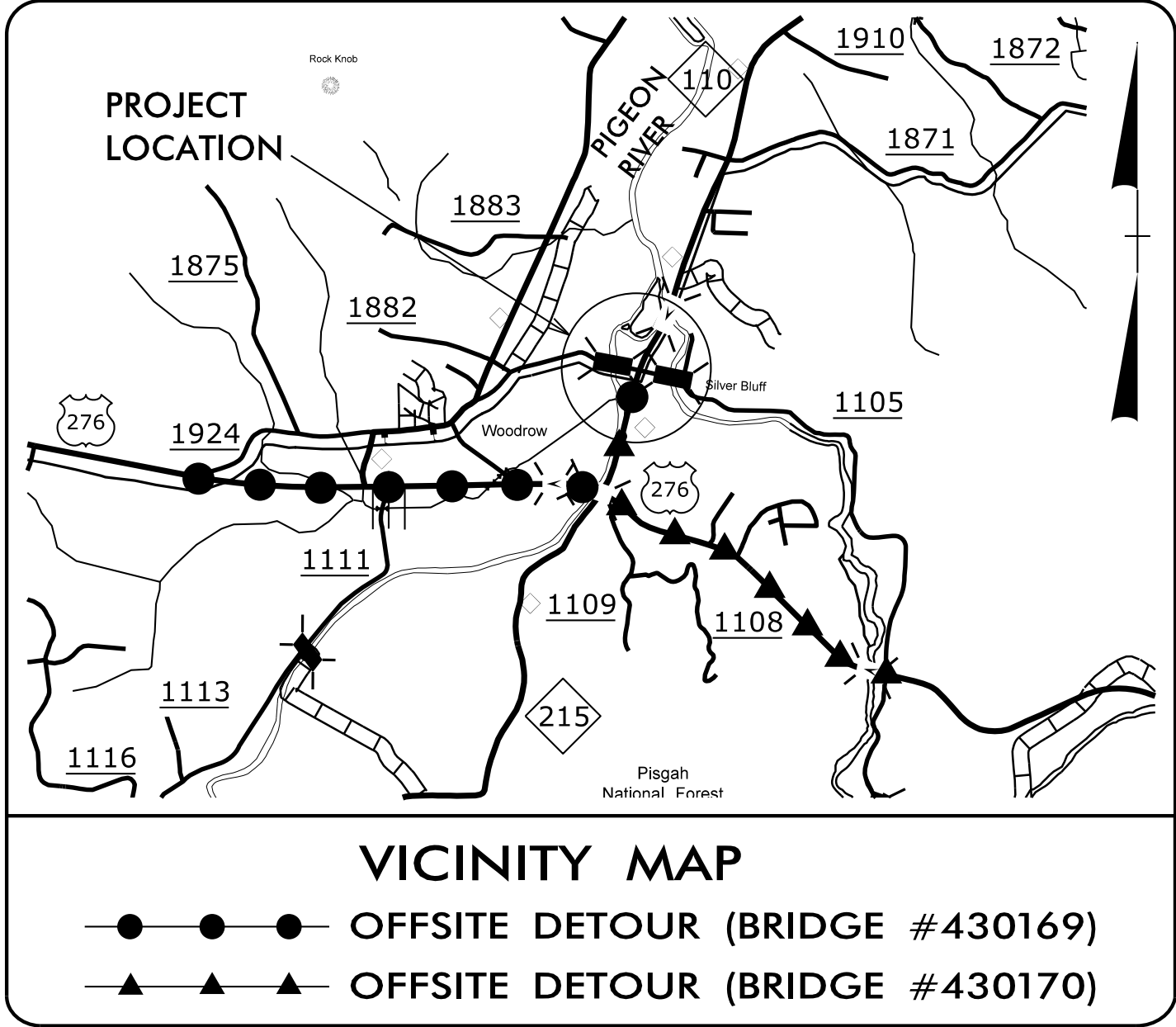
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in – 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR
25%	NYSSA SYLVATICA	BLACK GUM	12 in – 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. – ROADSIDE ENVIRONMENTAL UNIT

TIP PROJECT: HB-0023



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

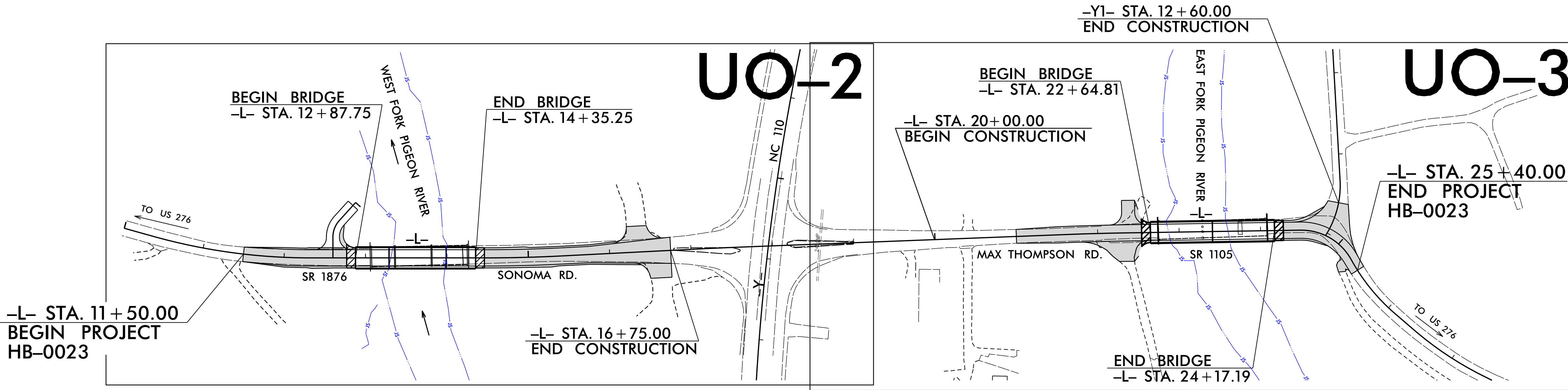
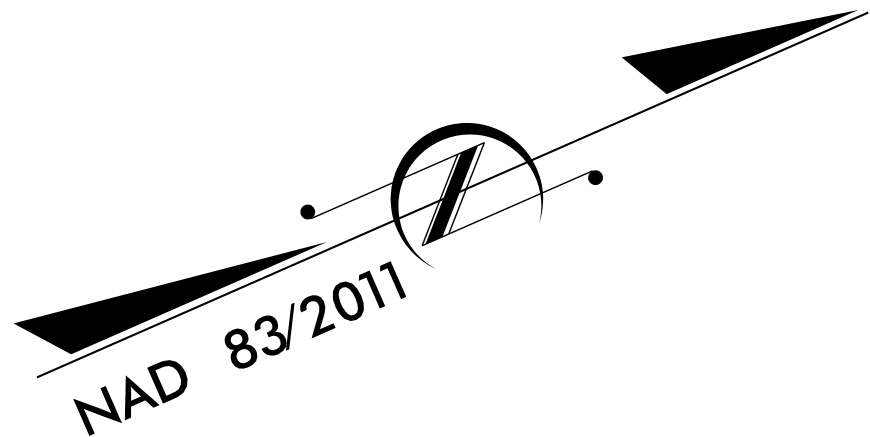
UTILITIES BY OTHERS PLANS
HAYWOOD COUNTY

LOCATION:
BRIDGE #430169 ON SR 1876 (SONOMA RD.)
OVER W. FORK PIGEON RIVER
BRIDGE #430170 ON SR 1105 (MAX THOMPSON RD.)
OVER E. FORK PIGEON RIVER

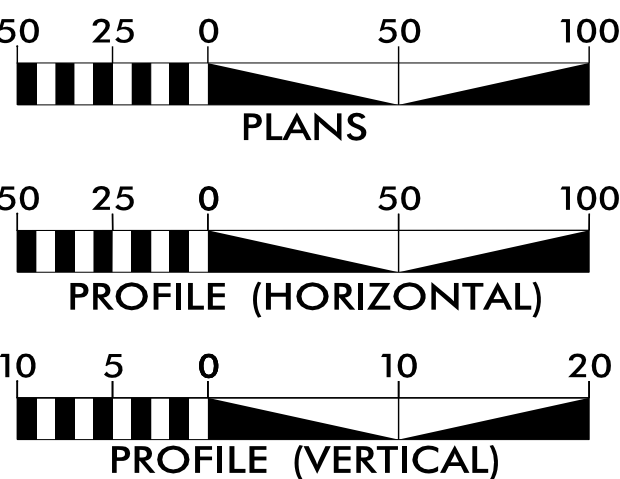
TYPE OF WORK: COMMUNICATIONS & POWER

T.I.P. NO.	SHEET NO.
HB-0023	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.



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET
UO-3	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

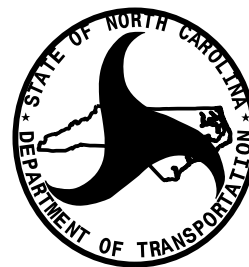
- (A) COMMUNICATIONS - AT&T
- (B) POWER - DUKE ENERGY
- (C) COMMUNICATIONS - ZITO MEDIA

PREPARED IN THE OFFICE OF:



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

CORY WOOD
CORY WOOD
UTILITY PROJECT MANAGER
PROJECT UTILITY COORDINATOR



DIVISION OF HIGHWAYS
DIVISION 14

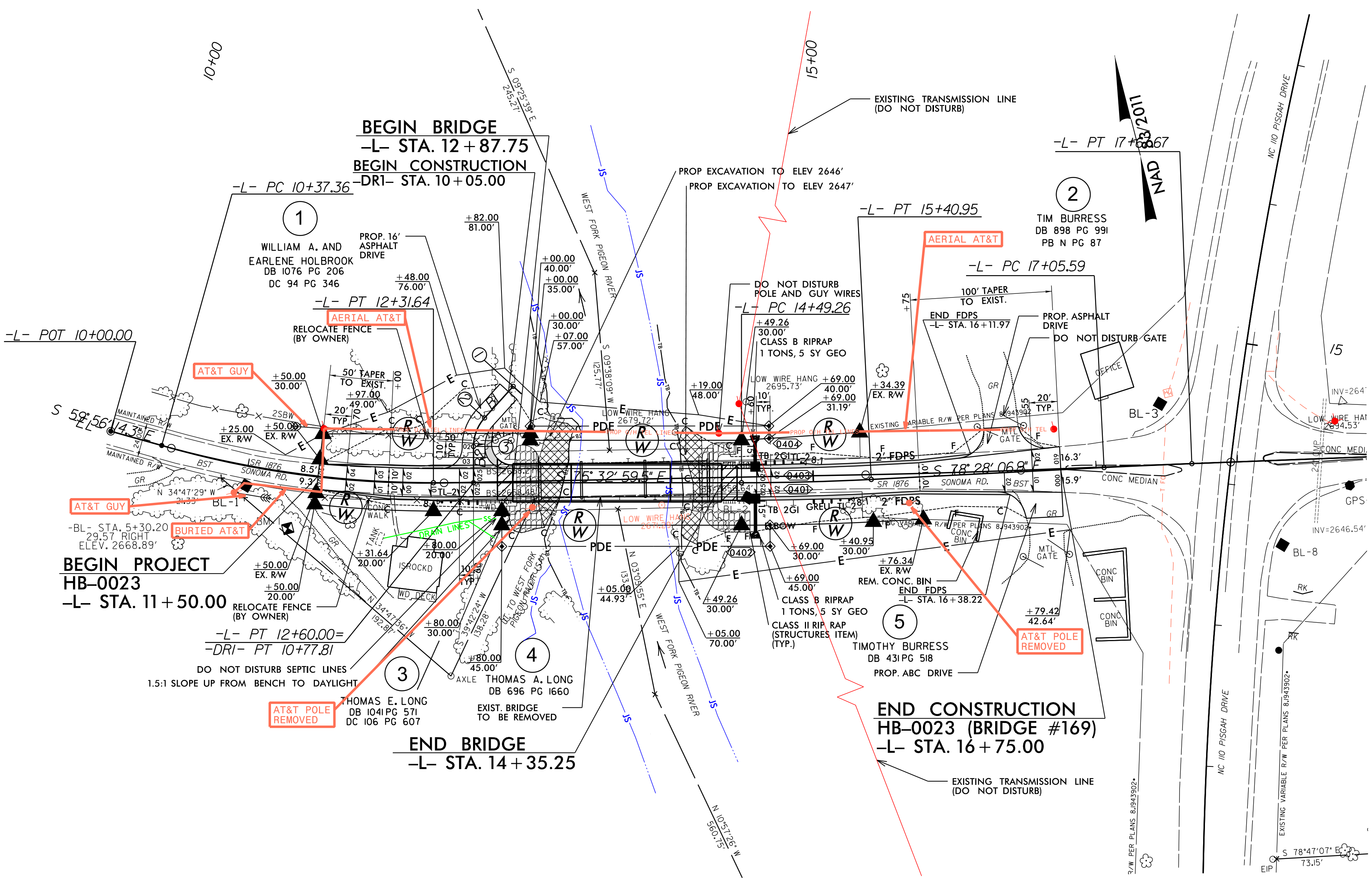
253 WEBSTER ROAD
SYLVA, NC 28779

BOB GOLDING
JUSTIN BROCK
DIVISION UTILITY ENGINEER
DIVISION UTILITY COORDINATOR

PROJECT REFERENCE NO.	SHEET NO.
HB-0023	U0-2
THIS SHEET CORRESPONDS TO RDY-4	

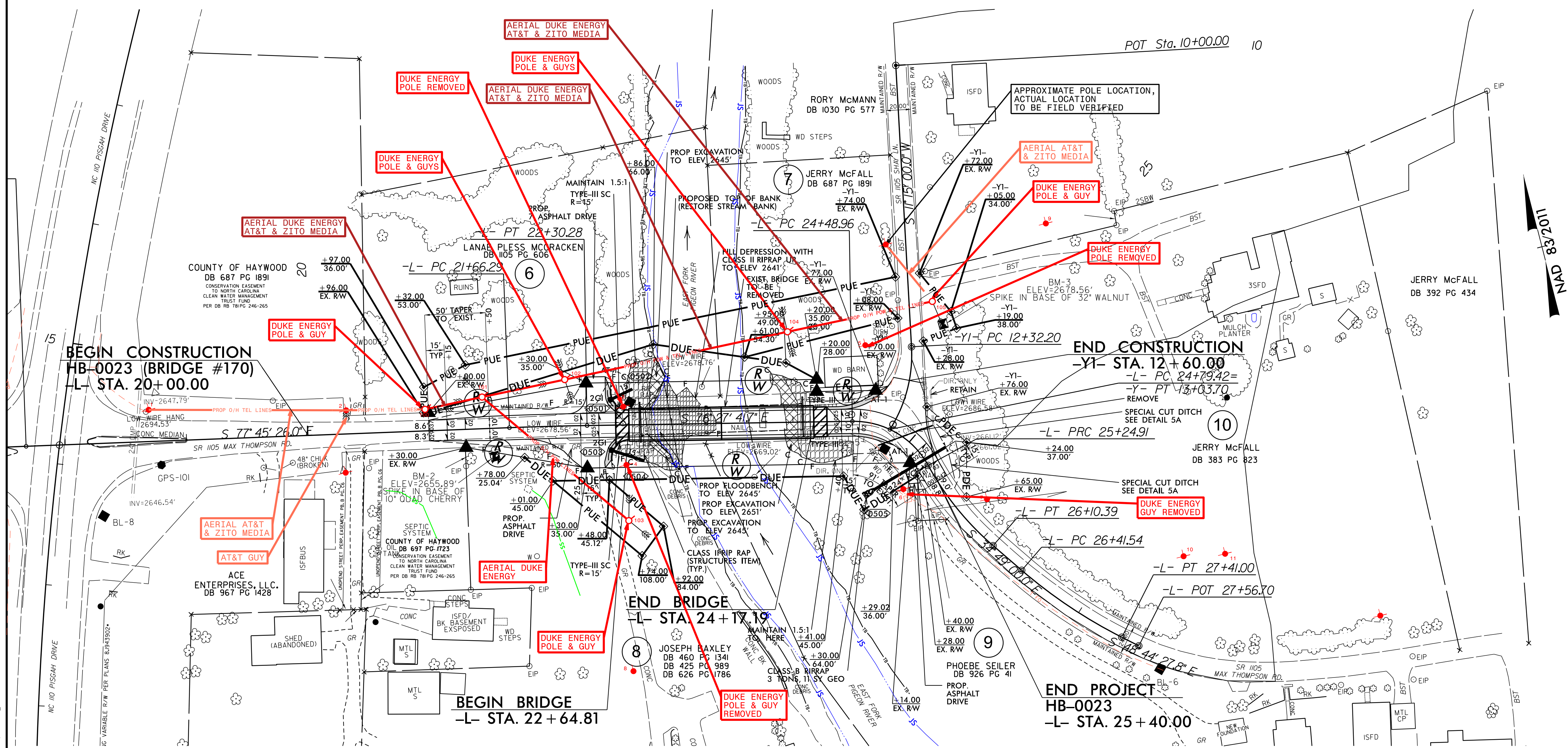
UTILITIES BY OTHERS

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.



5/14/99
10-06T-2024-10-41
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\$\$\$\$\$

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.



21-OCT-2024 09:44
resktop\Utility Stuff\HB-0023 UB0's\HB0023_ut_rdy5-U003-psh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$