

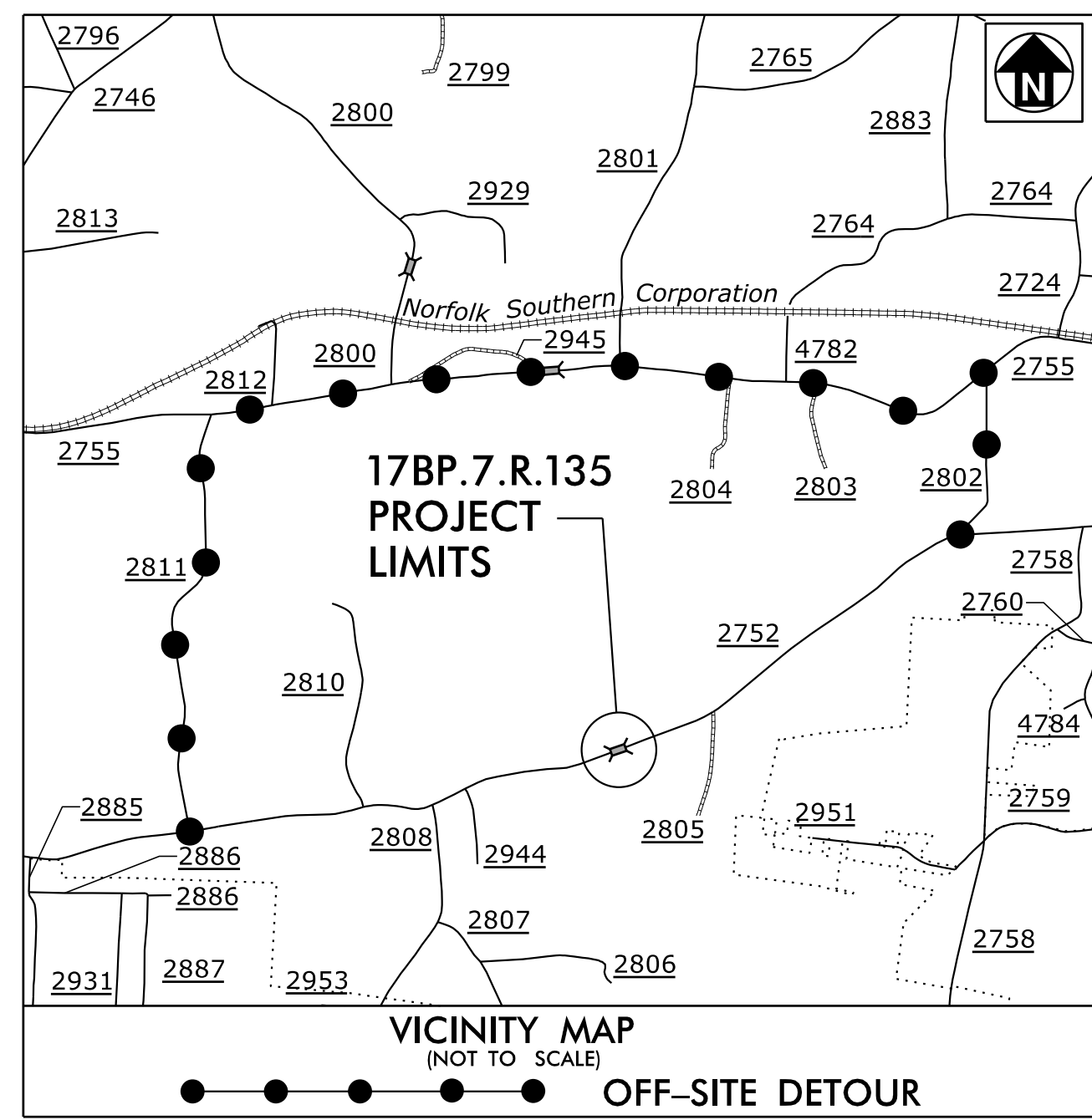
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CONTRACT: TIP PROJECT: 17BP.7.R.135

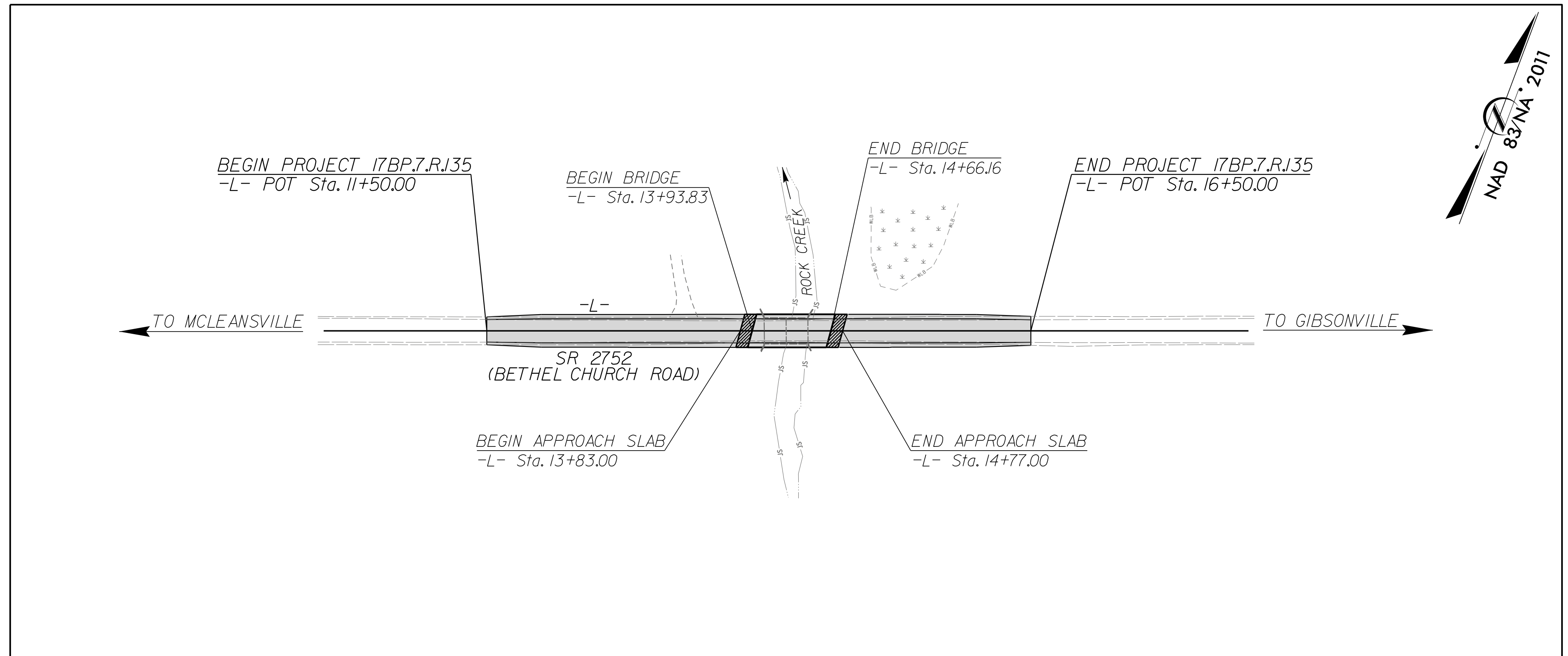
CONTRACT: TIP PROJECT: 17BP.7.R.135



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

LOCATION: BRIDGE NO. 205 OVER ROCK CREEK ON SR 2752 (BETHEL CHURCH ROAD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.7.R.135	1	
STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.7.PE.135		PE	
17BP.7.ROW.135		ROW	
17BP.7.R.135		CONSTRUCTION	



***DESIGN EXCEPTION:**
SAG VERTICAL CURVE K
VERTICAL SSD

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



DESIGN DATA

ADT 2015 =	1200
ADT 2025 =	2400
V =	45 MPH
SUB REGIONAL TIER MINOR COLLECTOR	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT =	0.081 MILES
LENGTH STRUCTURE TIP PROJECT =	0.014 MILES
TOTAL LENGTH TIP PROJECT =	0.095 MILES

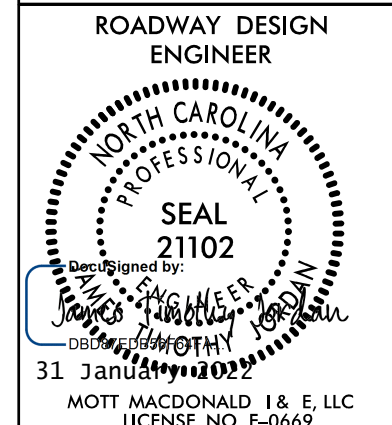

Prepared in the Office of Matt MacDonald for
DIVISION 7
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2018 STANDARD SPECIFICATIONS

LETTING DATE:	TIM JORDAN, PE PROJECT ENGINEER
	ELENI M. RIGGS, PE HYDRAULICS ENGINEER
NCDOT CONTACT:	TIM POWERS, PE DIVISION BRIDGE PROGRAM MANAGER

ROADWAY DESIGN ENGINEER

PLANS PREPARED BY:

M M
MOTT MACDONALD
 7621 Purfoy Road, Suite 115
 Fuquay-Varina, NC 27526
 (919) 552-2253
 (919) 552-2254 (Fax)
 www.mottmac.com
LICENSE NO. F-0669

PROJECT REFERENCE	SHEET NO.
17BP.7.R.135 – GUILFORD 205	1A
ROADWAY DESIGN ENGINEER 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 MOTT MACDONALD 7621 Purfoy Road, Suite 115 Fuquay-Varina, NC 27526 www.mottmac.com

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS EFFECTIVE: 01-16-18

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.

GUARDRAIL:

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

SUBSURFACE PLANS:

SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT FOR THE STRUCTURE ONLY. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CENTURYLINK, CHARTER COMMUNICATIONS AND DUKE ENERGY. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

LIST OF ROADWAY STANDARD DRAWINGS

EFF. 01-16-2018

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2018 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
310.10	Driveway Pipe Construction
DIVISION 4 – MAJOR STRUCTURES	
422.02	Bridge Approach Fills – Type II Modified Approach Fill
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	
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames – Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	GUARDRAIL INSTALLATION DETAILS
2C-3	STRUCTURE ANCHOR UNIT DETAIL
3B-1	GUARDRAIL, SHOULDER BERM GUTTER, AND EARTHWORK SUMMARY
3D-1	DRAINAGE SUMMARY
4	PLAN & PROFILE SHEET
RW-01 THRU RW-04	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1	UTILITIES BY OTHERS PLANS
X-1 THRU X-3	CROSS-SECTIONS
S-1 THRU S-17	STRUCTURE PLANS
SN	STANDARD STRUCTURE NOTES

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STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----x
Property Monument	□ ECM
Parcel/Sequence Number	⑩②③
Existing Fence Line	-x-x-x-
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	---WLB---
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

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

Note: Not to Scale *S.U.E. = *Subsurface Utility Engineering*

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easment Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	○
New Right of Way Line with Concrete or Granite R/W Marker	⊠
New Control of Access Line with Concrete CA Marker	⊠
Existing Control of Access	⊠
New Control of Access	⊠
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage / Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

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	-----

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	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

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 LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	⊠
Water Meter	○
Water Valve	⊠
Water Hydrant	⊠
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Pedestal	⊠
TV Tower	⊠
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊠
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

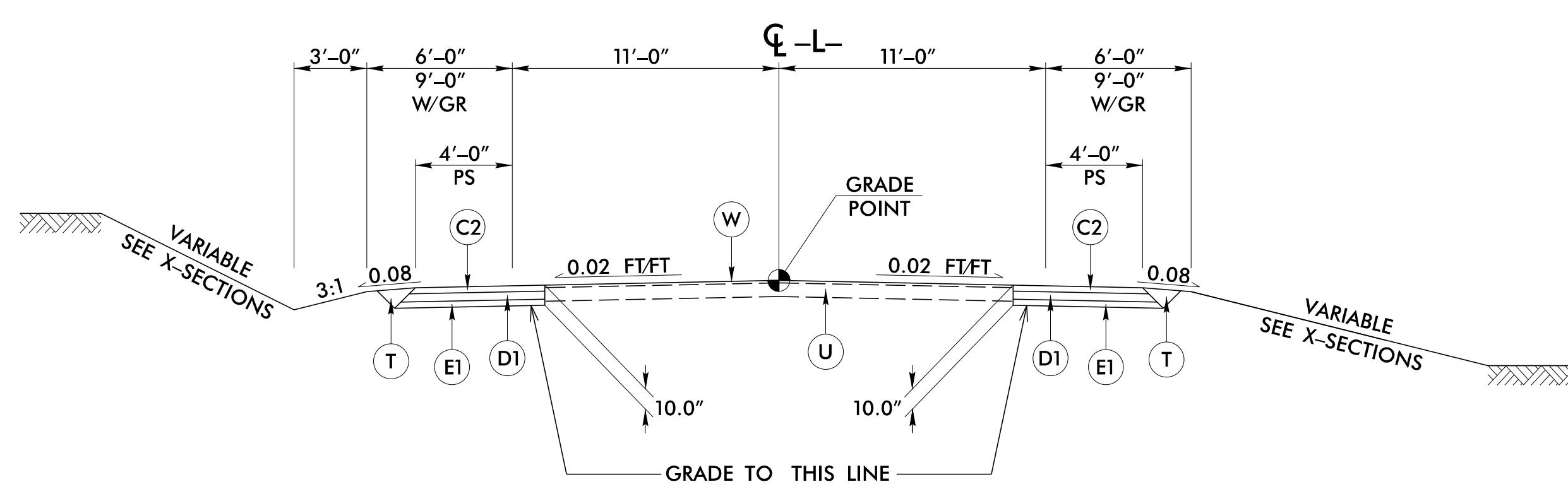
Sanitary Sewer Manhole	⊠
Sanitary Sewer Cleanout	⊠
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

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

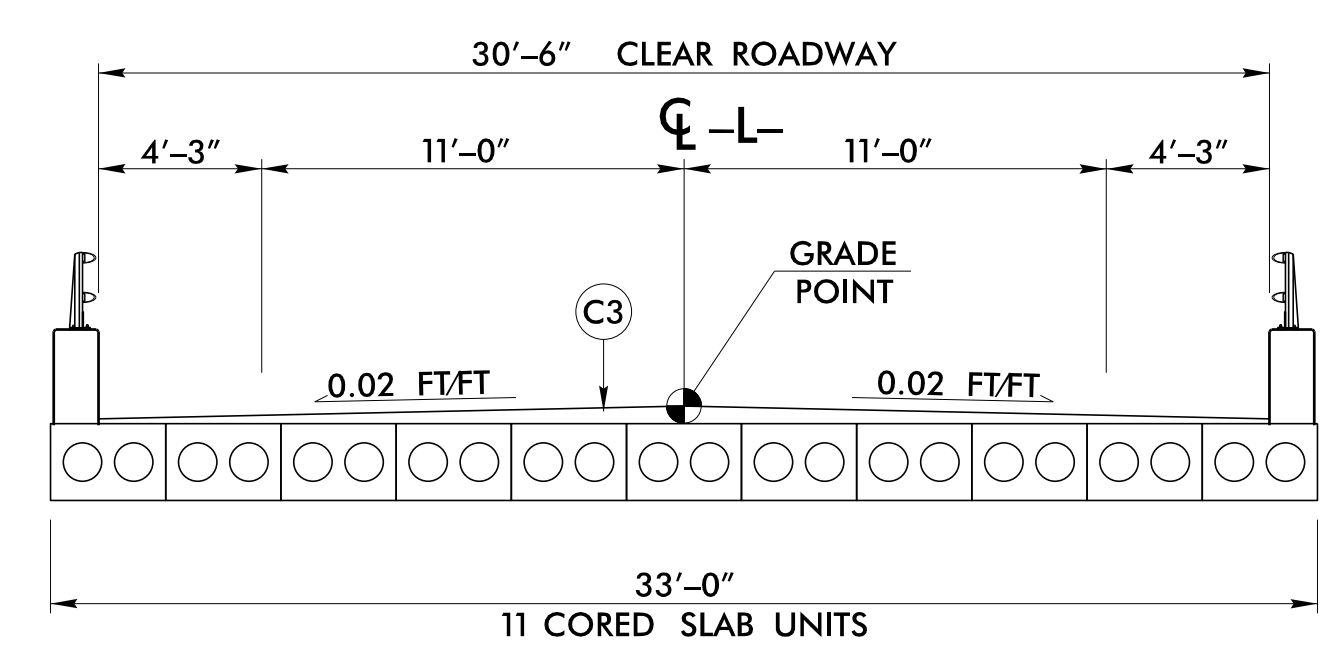
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PROJECT REFERENCE	SHEET NO.
17BP.7.R.135 - GUILFORD 205	2A-1
ROADWAY DESIGN ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
Prepared in the Office of:	
MOTT MACDONALD & E, LLC Fuquay-Varina, NC 27526 www.mottmac.com	



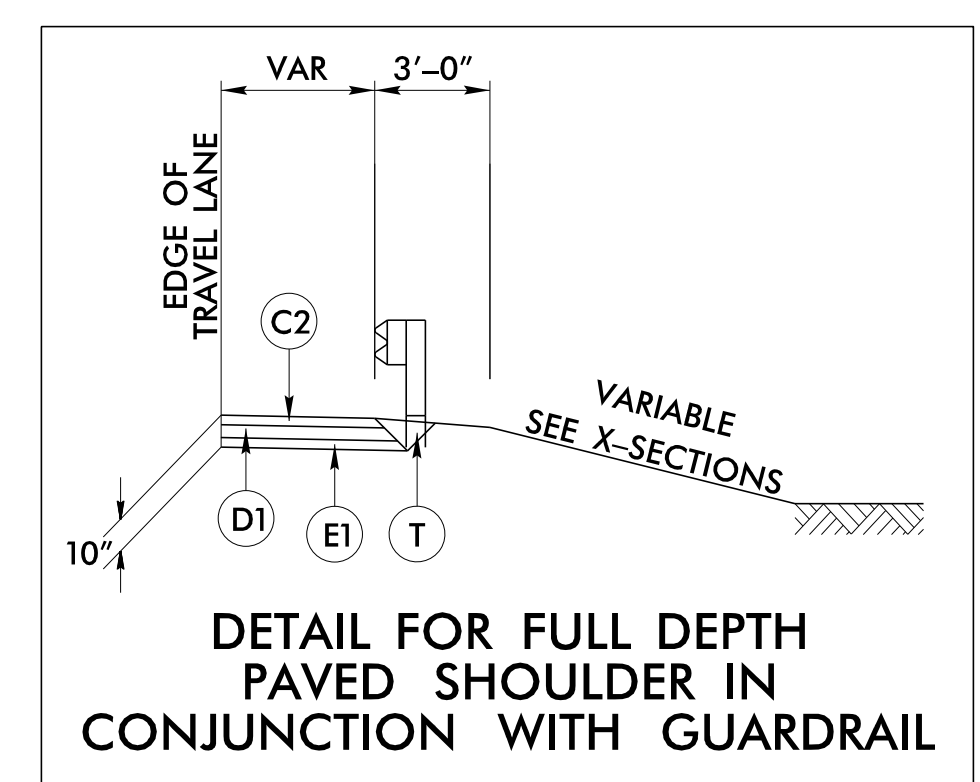
TYPICAL SECTION NO. 1

- TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1:**
 -L- STA 11+50.00 TO 12+00.00
- USE TYPICAL SECTION NO. 1:**
 -L- STA 12+00.00 TO 13+93.83 (BEGIN BRIDGE)
 -L- STA 14+66.16 (END BRIDGE) TO 16+00.00
- TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING:**
 -L- STA 16+00.00 TO 16+50.00

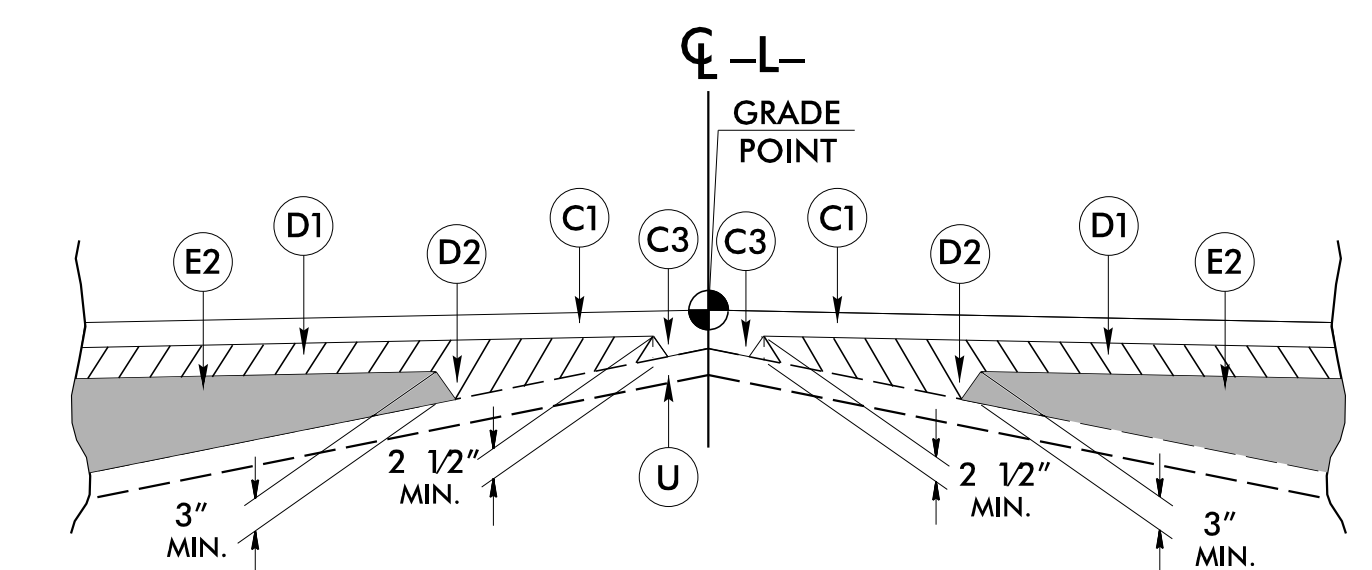


TYPICAL SECTION NO. 2

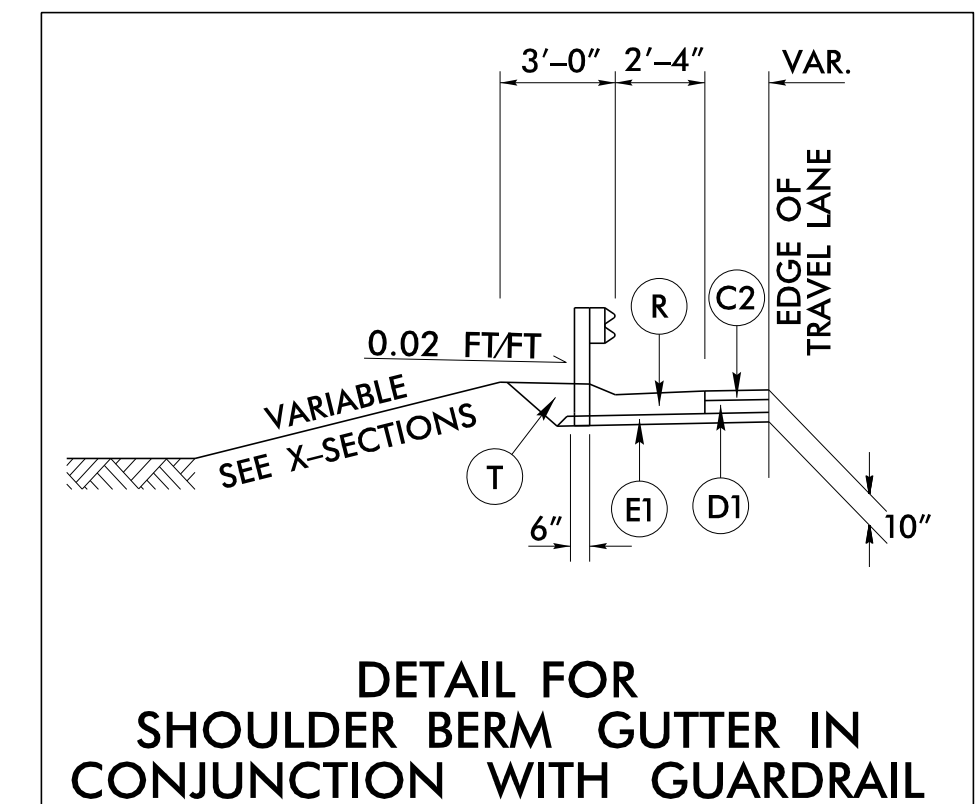
- USE TYPICAL SECTION NO. 2:**
 -L- STA 13+93.83 (BEGIN BRIDGE) TO 14+66.16 (END BRIDGE)
- NOTE: SEE STRUCTURE PLANS FOR PAVEMENT DEPTHS ON STRUCTURE**



DETAIL FOR FULL DEPTH PAVED SHOULDER IN CONJUNCTION WITH GUARDRAIL

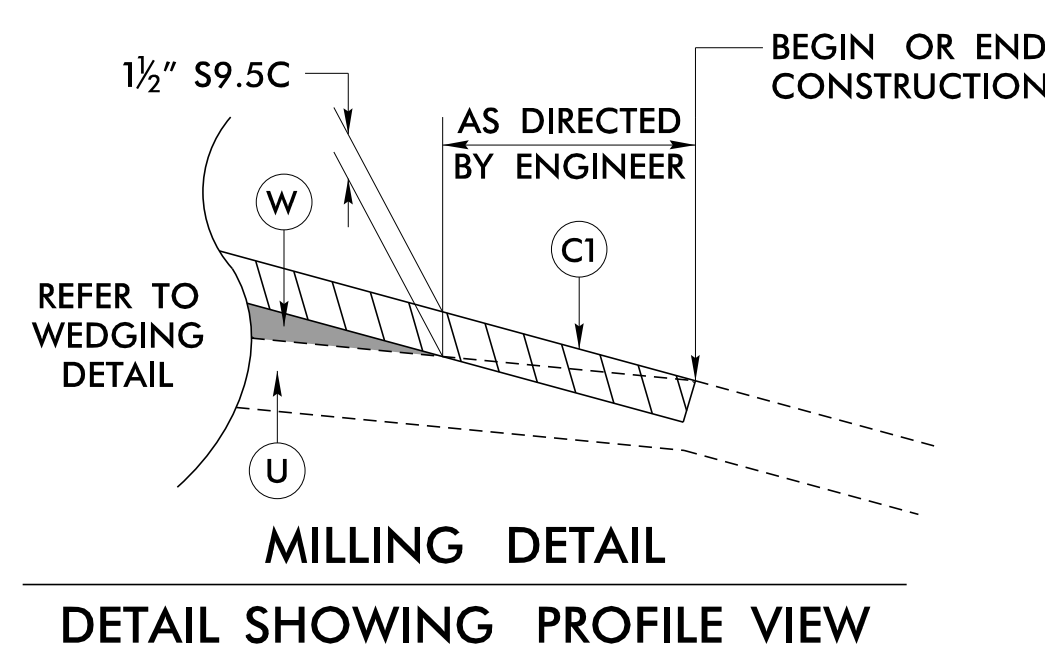


Detail Showing Method of Wedging



DETAIL FOR SHOULDER BERM GUTTER IN CONJUNCTION WITH GUARDRAIL

- L- STA 13+57.00 TO 13+78.91 RT
 -L- STA 13+57.00 TO 13+87.09 LT



MILLING DETAIL
DETAIL SHOWING PROFILE VIEW

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" 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 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	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 LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE DETAIL SHOWING METHOD OF WEDGING).

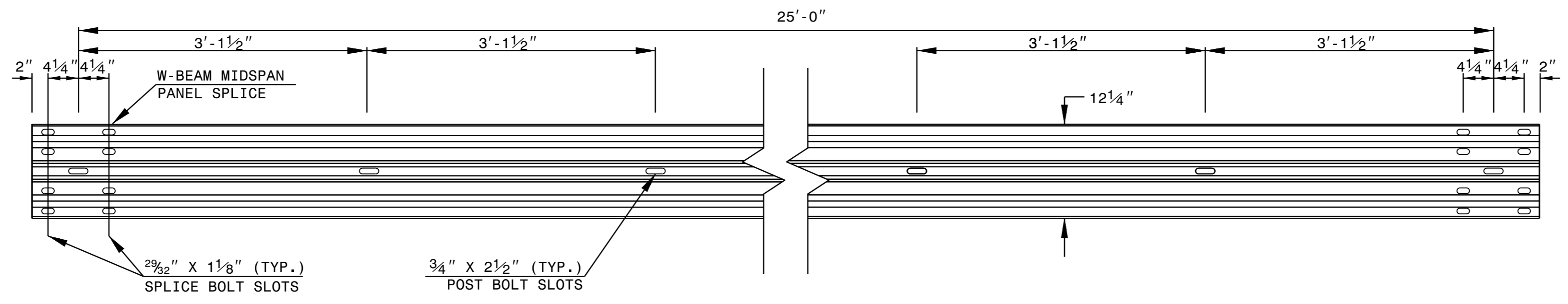
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

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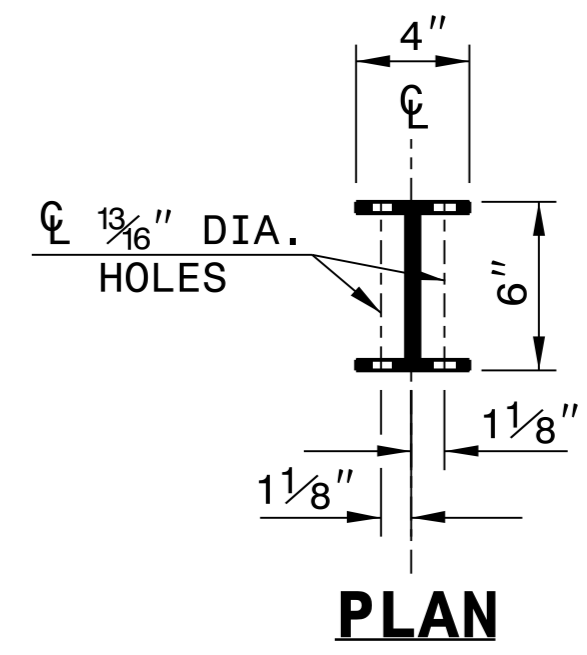
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

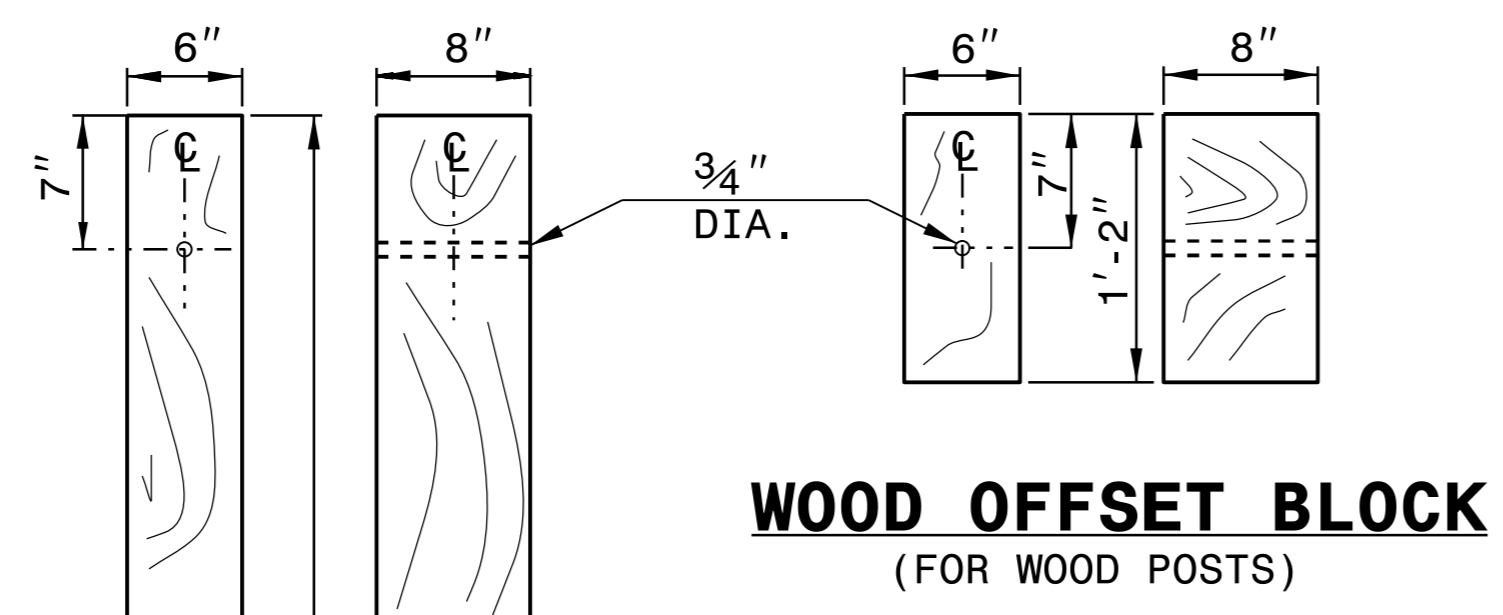
SHEET 6 OF 8
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STANDARD W-BEAM GUARDRAIL



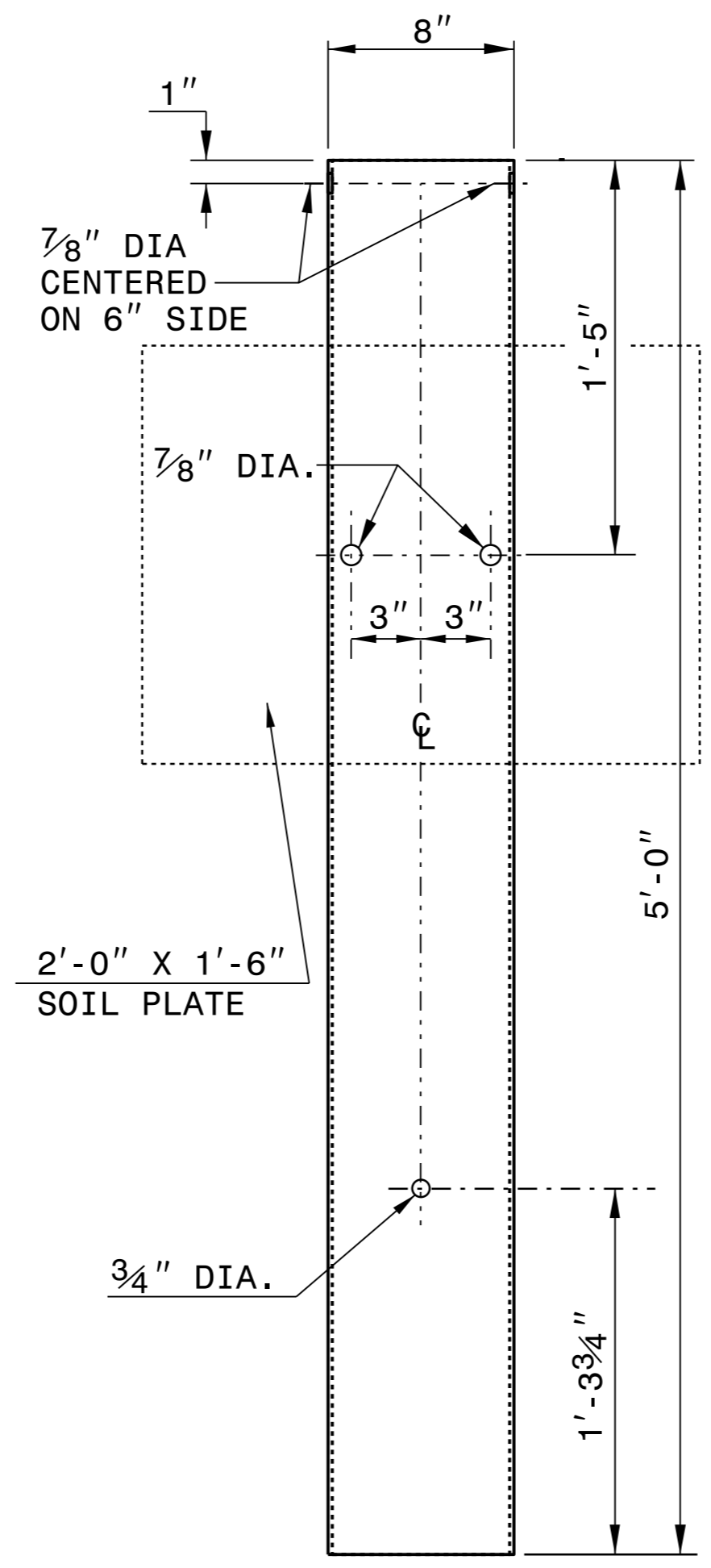
PLAN



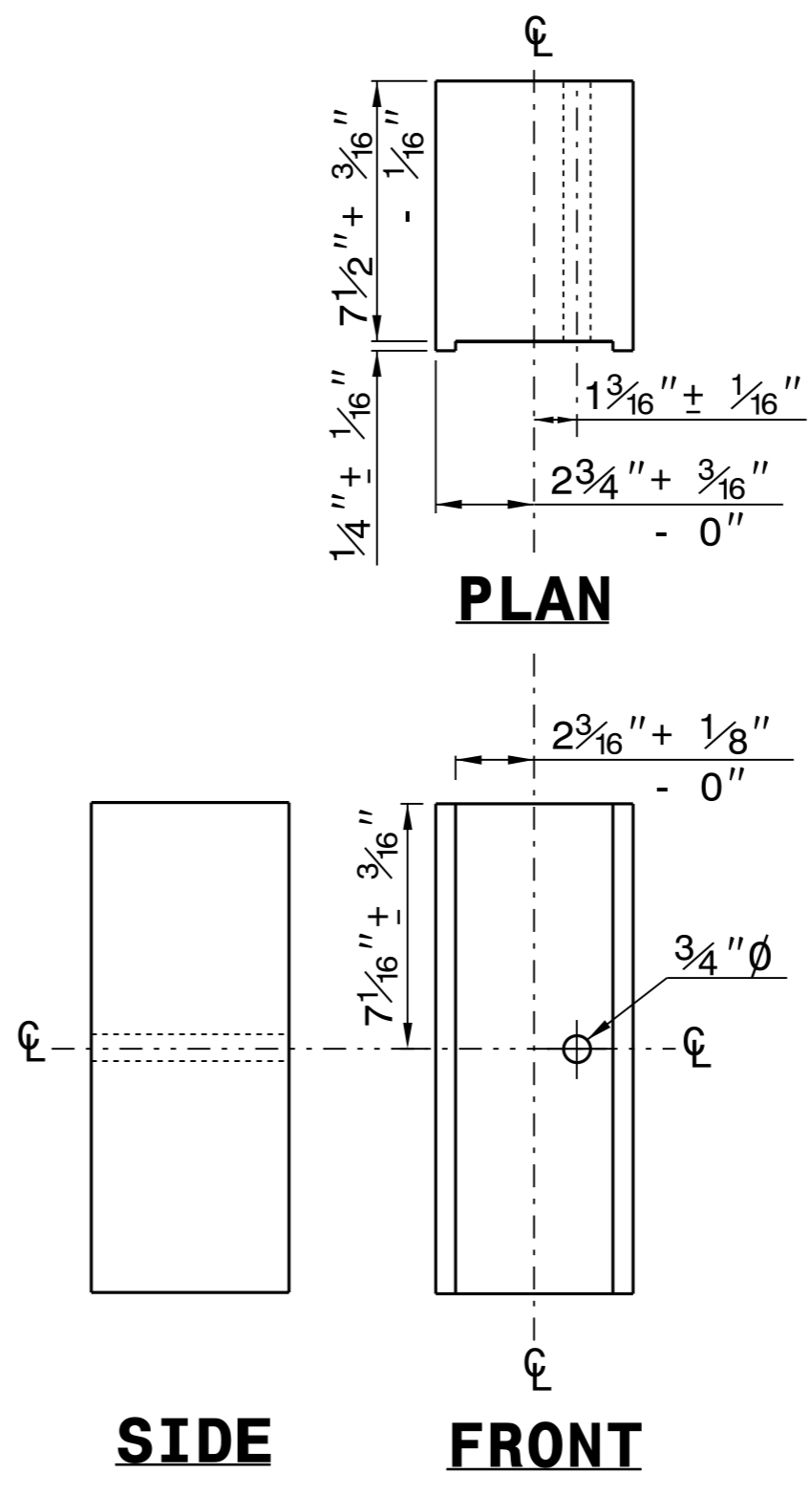
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**

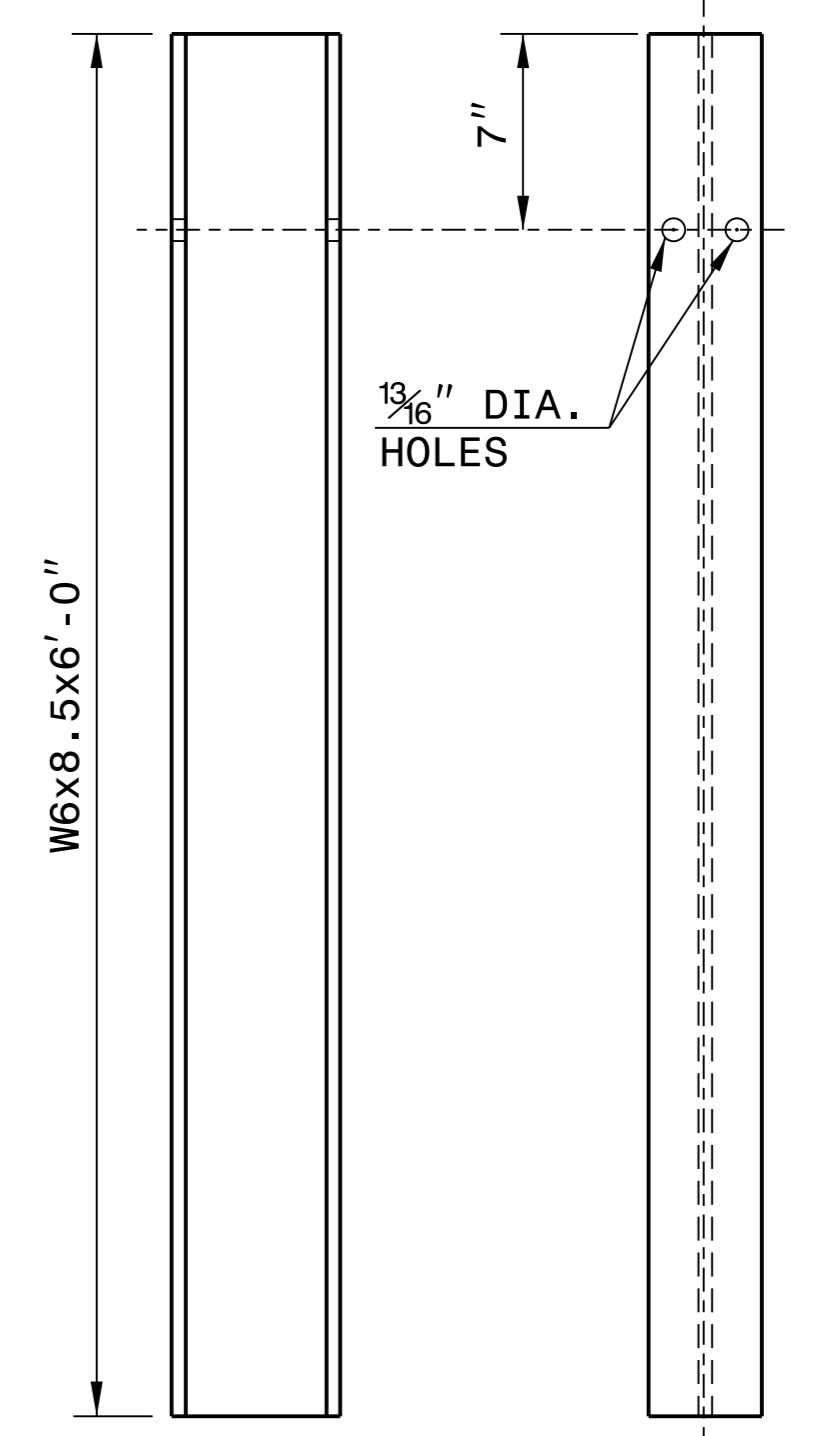


PLAN

SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

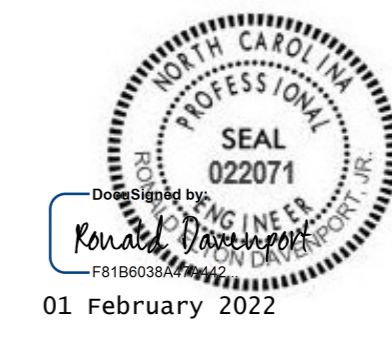
FRONT

"W6" STEEL POST

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____

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

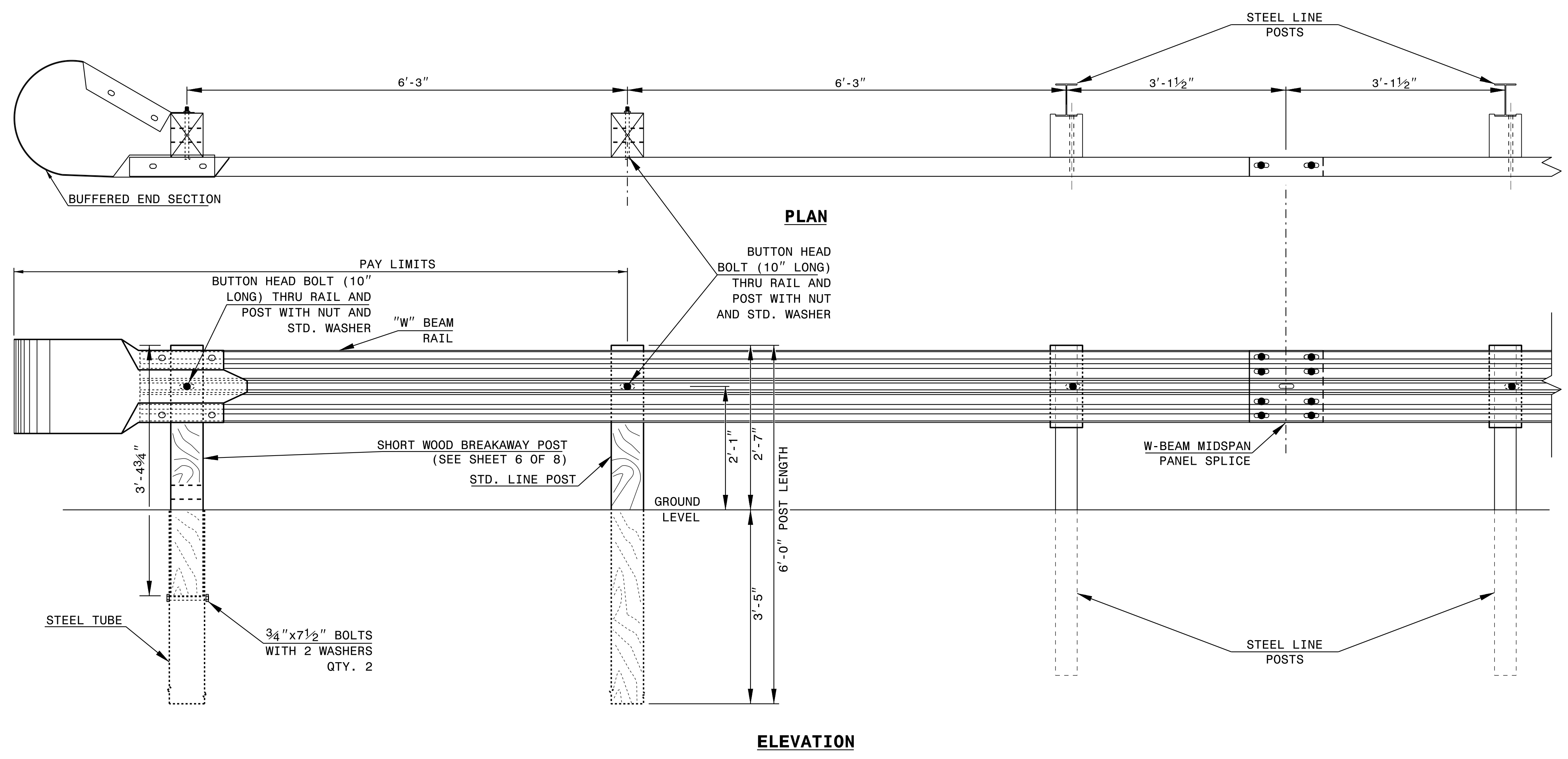
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

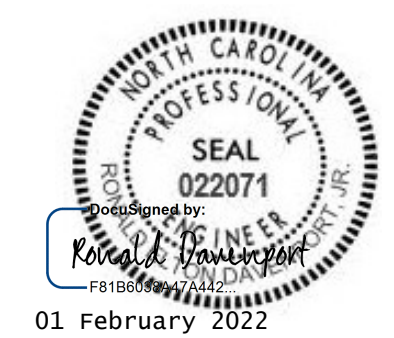
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF



TRAILING END UNIT ASSEMBLY
A.T. - 1 SYSTEM



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

A.T. - 1 SYSTEM

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

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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE	SHEET 1 OF 7 862D03
<p>NOTE:</p> <ul style="list-style-type: none"> **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 11½" 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). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9. 		
<p>STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.</p> <p>ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE</p> <p>SHEET 1 OF 7 862D03</p>		

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER	SHEET 2 OF 7 862D03
<p>NOTE:</p> <ul style="list-style-type: none"> **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 11½" 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). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9. 		
<p>STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.</p> <p>ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER</p> <p>SHEET 2 OF 7 862D03</p>		

01 February 2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON	DATE: 06-22-12
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS							IMPACT ATTENUATOR TYPE 350			REMARKS						
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT-1	GREU TL-2	TYPE III										NO.	PERMITTED G	NG		
-L-	12+83.49	13+89.74	RT	106.25'			13+89.74		6'	9'																				REMOVE 112.5' EXISTING GUARDRAIL	
-L-	13+41 +/-	13+97.92	LT	50.00'	12.50'				6'	9'																			REMOVE 50' EXISTING GUARDRAIL		
-L-	14+62.07	15+18.32	RT	56.25'					6'	9'																			REMOVE 112.5' EXISTING GUARDRAIL		
-L-	14+70.25	15+64.00	LT	93.75'			14+70.25		6'	9'																			REMOVE 112.5' EXISTING GUARDRAIL		
SUBTOTAL				306.25'	12.50'																										
LESS ANCHOR DEDUCTIONS																															
				GREU TL-2	3 x 25.00'	=	-75.00'																								
				TYPE III	4 x 18.75'	=	-75.00'																								
				AT-1	1 x 6.25'	=	-6.25'																								
TOTAL				150.00'	12.50'																										5 ADDITIONAL GUARDRAIL POSTS

SUMMARY OF EARTHWORK IN CUBIC YARDS

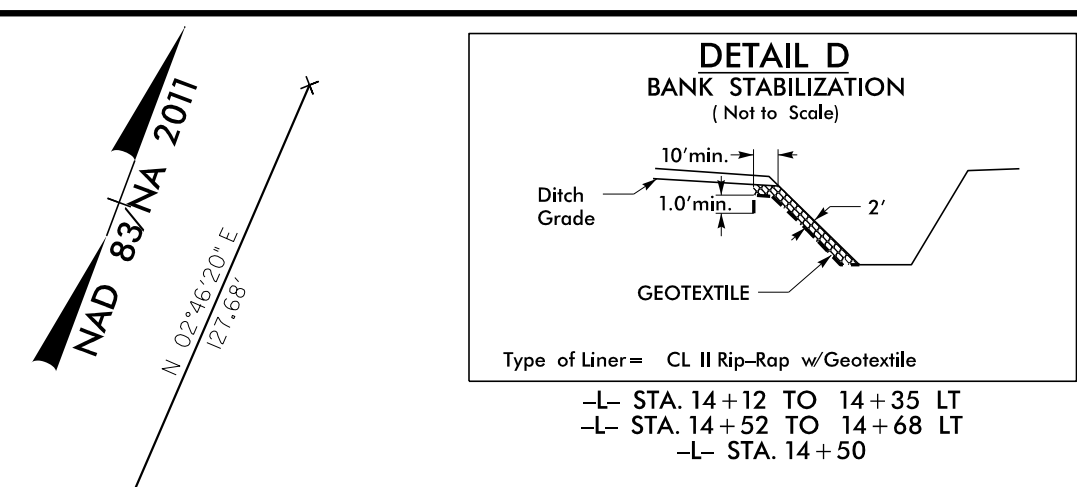
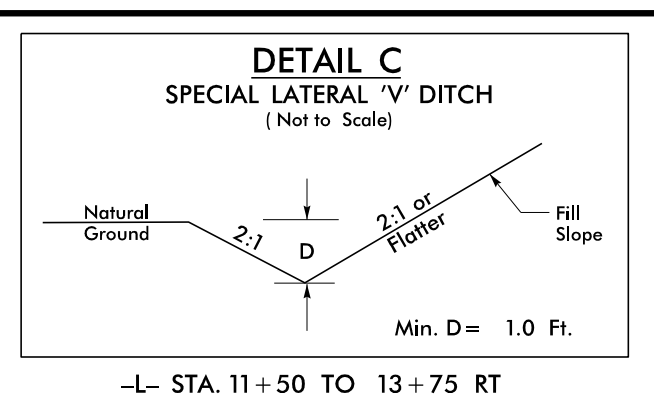
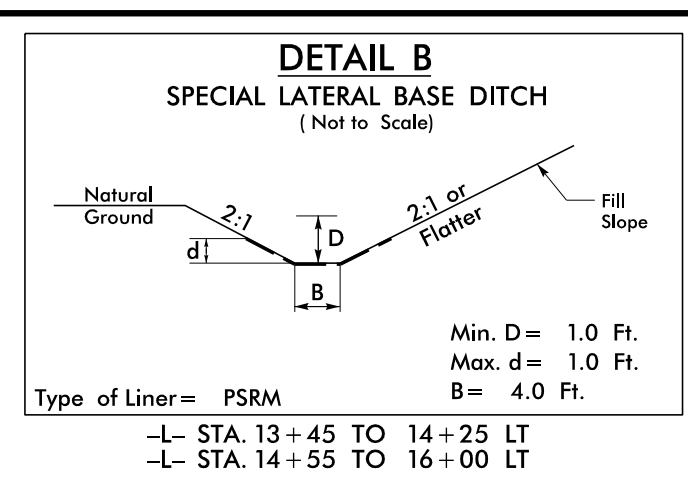
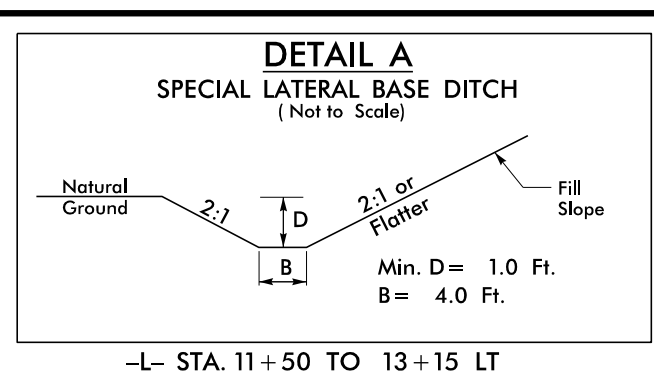
LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 11+50.00 TO 13+93.83 (BEGIN BRIDGE)	147		180	33	
-L- 14+66.16 (END BRIDGE) TO 16+50.00	64		200	136	
SUBTOTAL	211		380	169	
WASTE IN LIEU OF BORROW					
PROJECT TOTAL	211			169	
5% TO REPLACE BORROW				9	
GRAND TOTAL	211			178	
SAY	230			190	

SUMMARY OF SHOULDER BERM GUTTER

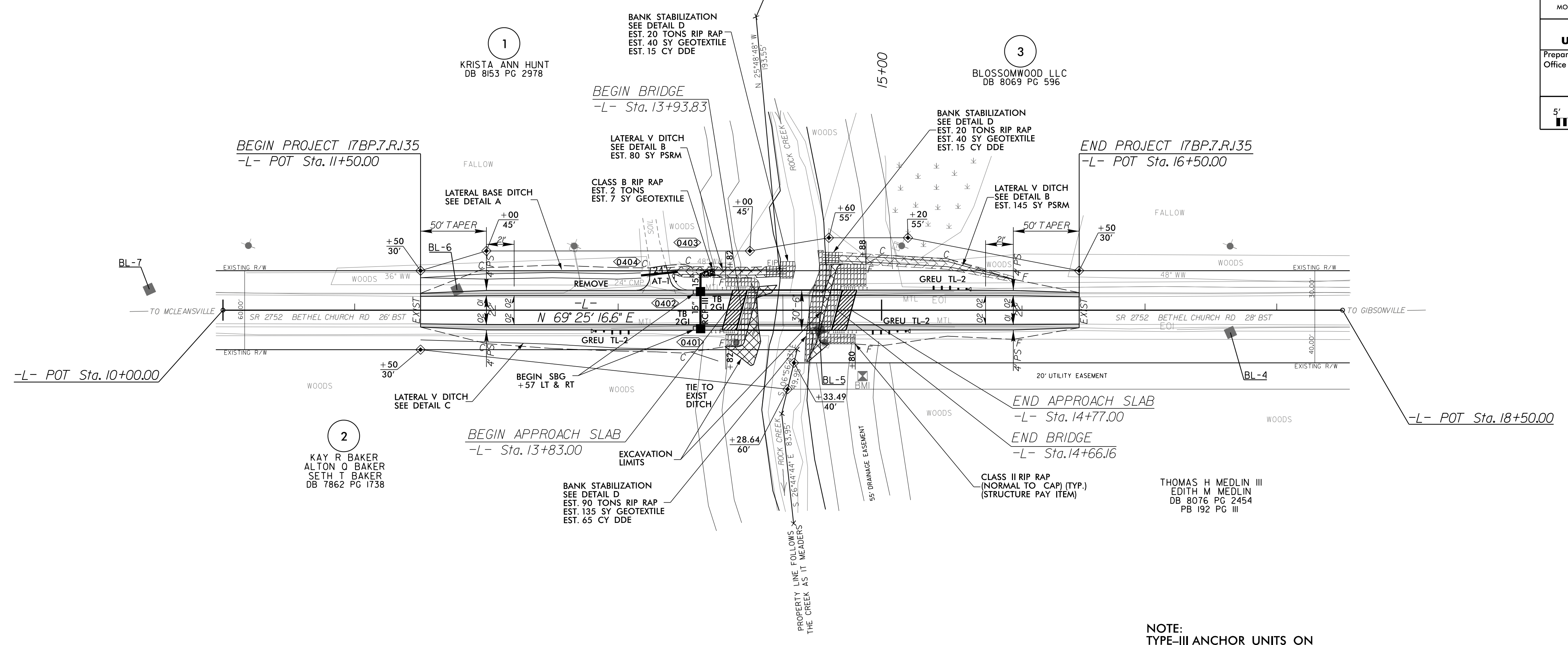
SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
-L-	13+57.00	13+87.09	LT	30.09'
-L-	13+57.00	13+78.91	RT	21.91'
TOTAL:				52.00'
SAY:				55'

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

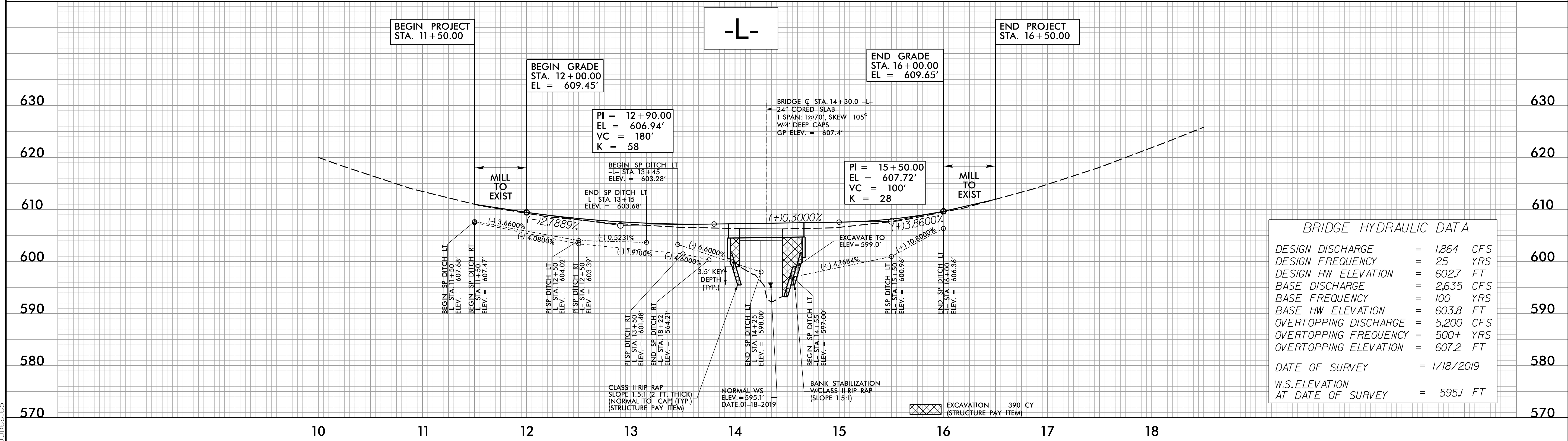
***DESIGN EXCEPTION:
SAG VERTICAL CURVE K
VERTICAL SSD**



PROJECT REFERENCE 17BP.7.R.135 - GUILFORD 205	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: M MOTT MACDONALD	
7621 Purfoy Road, Suite 115 Fuquay-Varina, NC 27526 www.mottmac.com/americas	
VERTICAL SCALE 5' 0 5' 10'	HORIZONTAL SCALE 25' 0 25' 50'



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



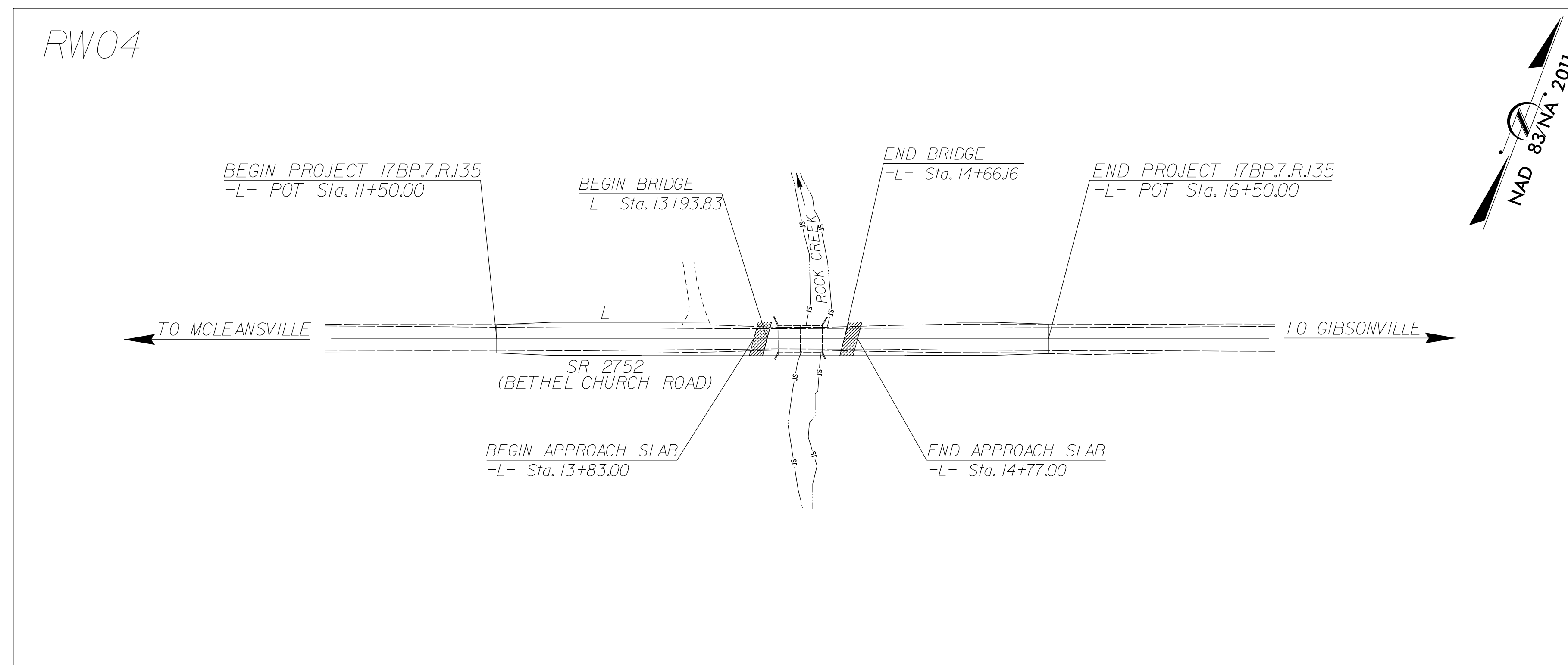
DESIGN DISCHARGE	= 1,864 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 602.7 FT
BASE DISCHARGE	= 2,635 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 603.8 FT
OVERTOPPING DISCHARGE	= 5,200 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 607.2 FT
DATE OF SURVEY	= 1/18/2019
W.S. ELEVATION AT DATE OF SURVEY	= 595J FT

1/31/2022 11:20:49 AM
 R:\Roadway\Projects\400205_rdy_psh.dgn
 JOR66165

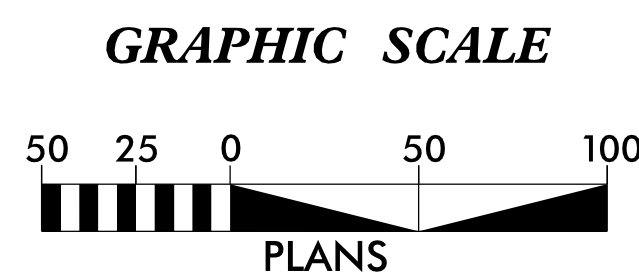
TIP PROJECT: 17BP.7.R.135

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.7.R.135	RW01	XX

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 SURVEY CONTROL, EXISTING CENTERLINES,
 RIGHT OF WAY, EASEMENTS AND PROPERTY TIES
GUILFORD COUNTY



*DESIGN EXCEPTION:
 SAG VERTICAL CURVE K
 VERTICAL SSD



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "400205-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 854,042.463(ft) EASTING: 1,824,036.792(ft) ELEVATION: 658.51(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999541426 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-7" TO -L- STATION 10+00.00 IS N 85° 14' 08.5" E 58.17(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88/GEOID G12BNC

Prepared in the Office of:

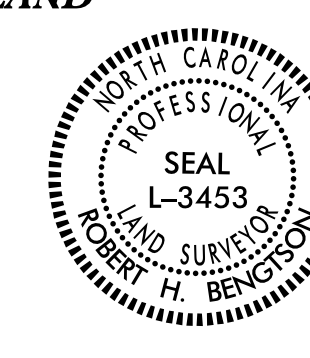
Dewberry
 Dewberry Engineers Inc.
 551 PINEY FOREST ROAD
 DANVILLE, VA 24040
 PHONE: 434.797.4497
 FAX: 434.797.4341
 NCBELS #F-0929

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 01/12/2021

LETTING DATE:

PROFESSIONAL LAND SURVEYOR

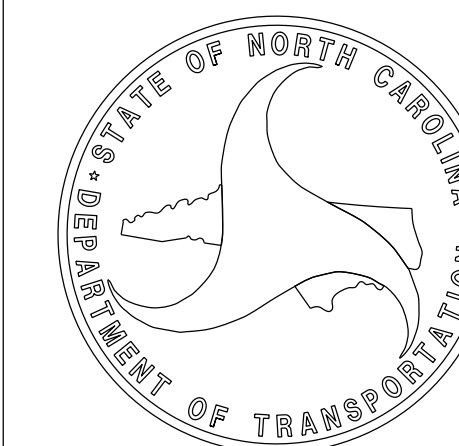


DocuSigned by:
 Robert H. Bengtson

5/17/2022

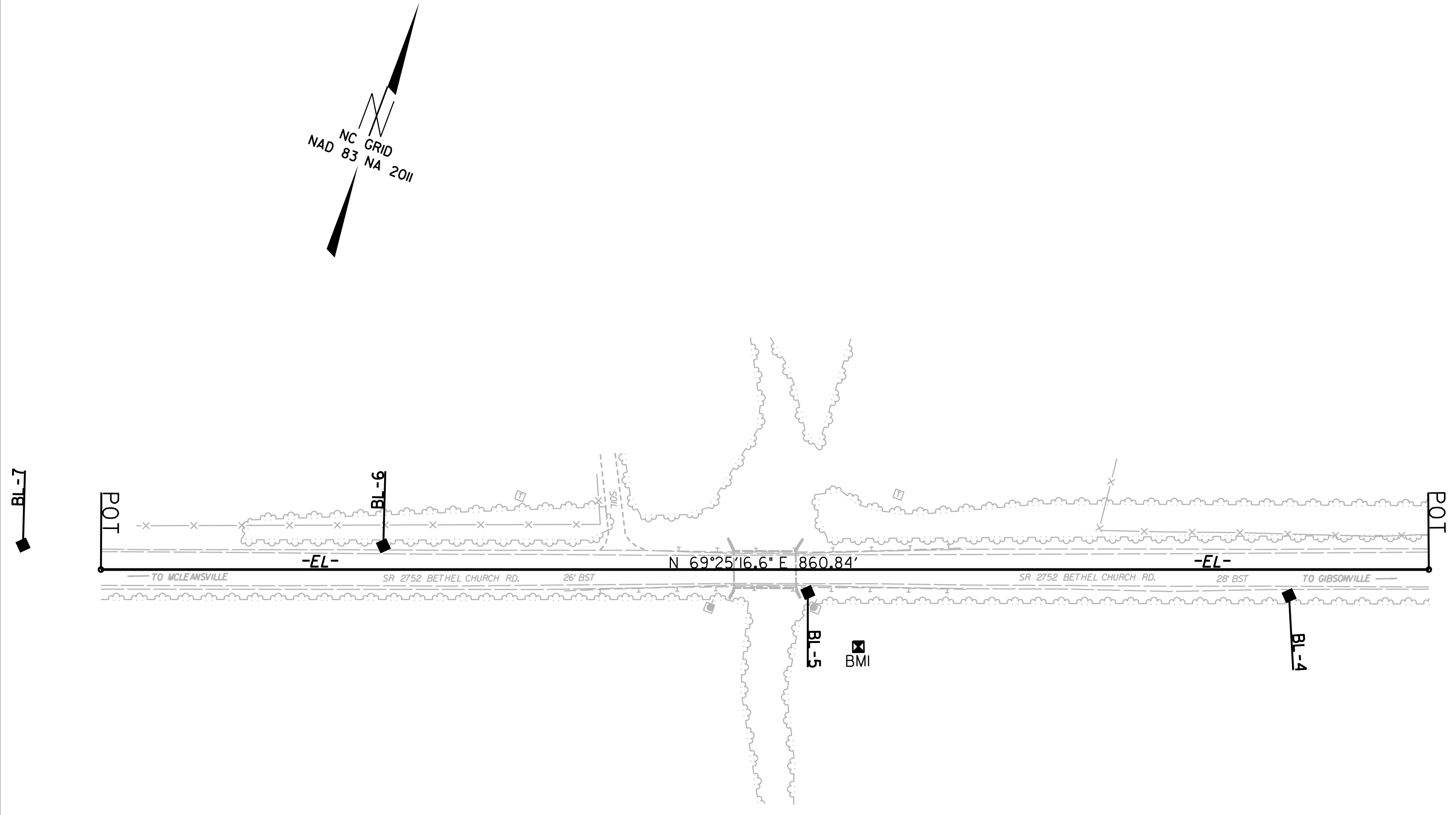
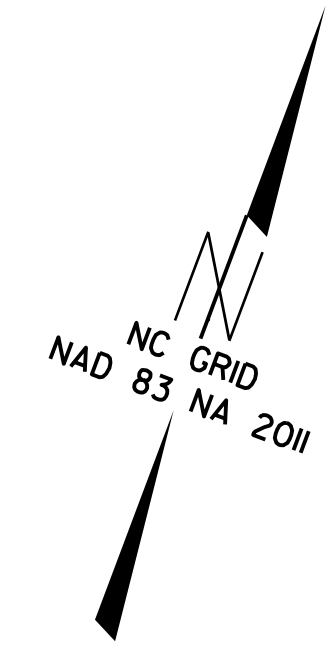
SIGNATURE:

Date:



SURVEY CONTROL SHEET 40-0205

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



400205-1
 N = 854042.463
 E = 1824036.792
 ELEV = 658.507

400205-2
 N = 854294.079
 E = 1824658.477
 ELEV = 682.307

 BM1 ELEVATION = 601.64
 N 853708 E 1823246
 BENCH TIE NAIL SET IN 14" OAK TREE

BL	POINT	DESC.	NORTH	EAST	ELEVATION
7		BL-7	853579.3230	1822715.7660	623.54
6		BL-6	853661.0100	1822934.6270	609.31
5		BL-5	853729.3780	1823202.9100	605.68
4		BL-4	853837.1210	1823495.6950	618.06
3		BL-3	853946.2860	1823785.4890	644.64

EL	POINT	N	E	BEARING	DIST
	POT	853582.249	1822768.661		
	LINE			N 69°25'16.6" E	860.84
	POT	853884.830	1823574.574		

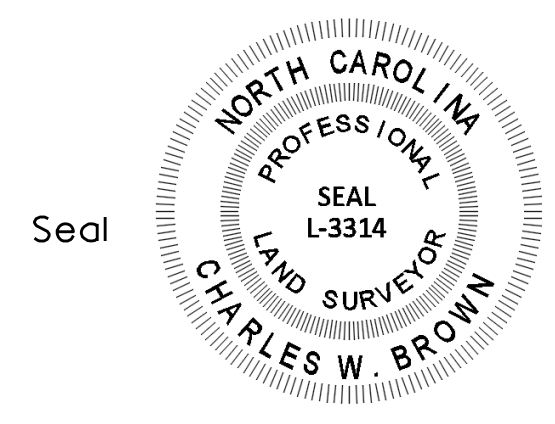
I, Charles W. Brown, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (Base map Compilation) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further 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.

Witness my original signature, registration number and seal this 8th day of November, 2018.


 Professional Land Surveyor

L-3314
 PLS #


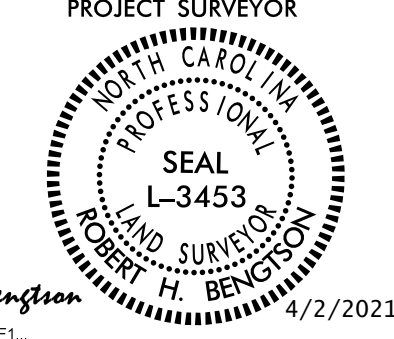


NOTES:

- 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.

6/2/19
 05 NOV 2018 14:08
 C:\Users\charles\Documents\Projects\40-0205\400205-1.dgn

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
400205	RW02D-1
Location and Surveys	
 Dewberry Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24540 PHONE: 434.797.4497 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR  <small>DocuSigned by: Robert H. Bengtson EAT9ETCA33894F1</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	


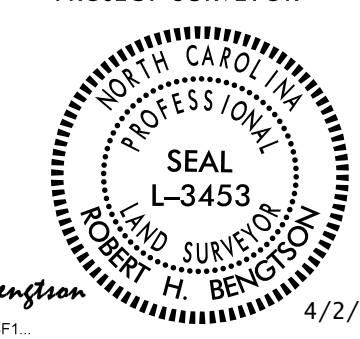
REVISIONS

		L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	853584.1546	1822773.7367
POT	18+50.00	853882.9243	1823569.4984

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 INFORMATINO REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. 400205	SHEET NO. RW03E-1
Location and Surveys	
 Dewberry Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24040 PHONE: 434.797.4497 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR	
	
DocuSigned by: Robert H. Bengtson <small>EAT9ETCA33894F1</small> 4/2/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

I, ROBERT H. BENGTON, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures and that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

I further 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.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 2nd day of April, 2021.

DocuSigned by:
Robert H. Bengtson 4/2/2021
EAT9ETCA33894F1
 Professional Land Surveyor L-3453
 PLS # Seal

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+50.00	30.00	853608.7929	1822924.7101
L	11+50.00	-30.00	853664.9644	1822903.6204
L	12+00.00	-45.00	853696.5819	1822945.1575
L	14+00.00	-45.00	853766.8807	1823132.3956
L	14+28.64	60.00	853678.6489	1823196.1187
L	14+33.49	40.00	853699.0777	1823193.6301
L	14+60.00	-55.00	853797.3322	1823185.0520
L	15+20.00	-55.00	853818.4218	1823241.2235
L	16+50.00	-30.00	853840.7108	1823371.7085

HITS IN A CREEK. POINT NOT SET
 HITS IN A CREEK. POINT NOT SET

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 03/10/21 TO 03/19/21 .

REVISIONS

*DESIGN EXCEPTION:
SAG VERTICAL CURVE K
VERTICAL SSD

I, ROBERT H. BENTSON, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures and that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

I further 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.

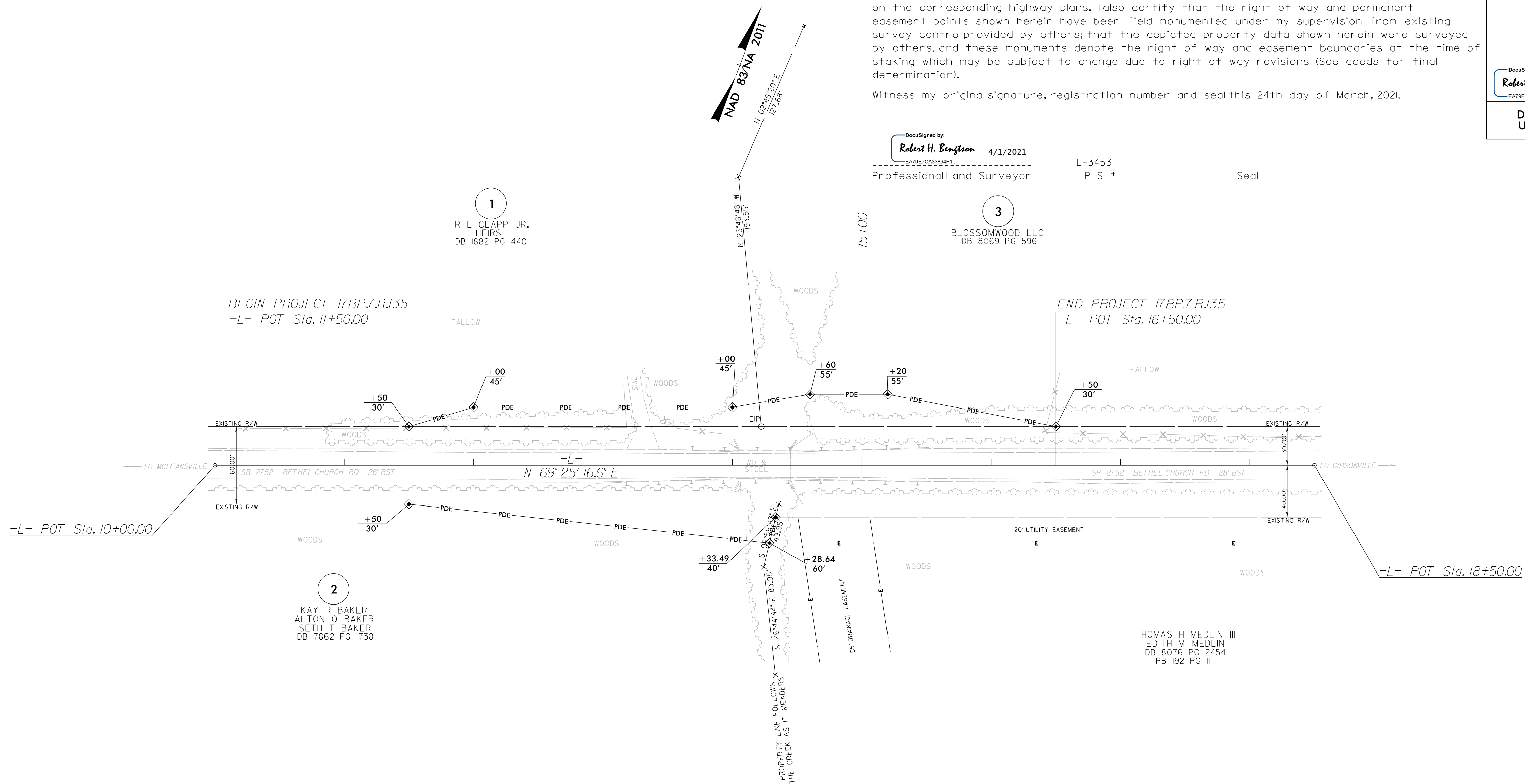
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 24th day of March, 2021.

DocuSigned by:
Robert H. Bentson 4/1/2021
Professional Land Surveyor

L-3453
PLS

Seal



PROJECT REFERENCE NO. 400205	SHEET NO. RW04
Location and Surveys	
 Dewberry Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24540 PHONE: 434.797.4407 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR	
<small>DocuSigned by: Robert H. Bentson EAT9E7CA33894F1</small>	
4/1/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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 03/10/21 TO 03/19/21.

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" – HIGHWAY DESIGN BRANCH– N.C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS – LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS – TWO-LANE AND MULTI-LANE ROADWAYS
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

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) PROVIDE PERMANENT SIGNING.
- C) 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.

- D) 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.

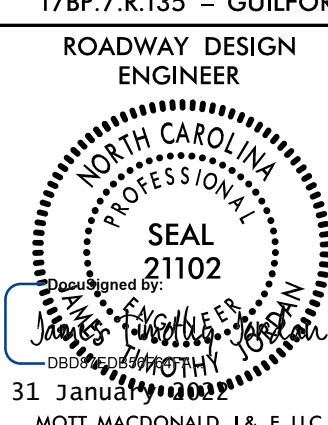

- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

- G) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE.

PROJECT REFERENCE	SHEET NO.
17BP.7.R.135 – GUILFORD 205	TMP-1
ROADWAY DESIGN ENGINEER	
	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
Prepared in the Office of:	
	<p>MOTT MACDONALD 7621 Purfoy Road, Suite 115 Fuquay-Varina, NC 27526 www.mottmcc.com</p>

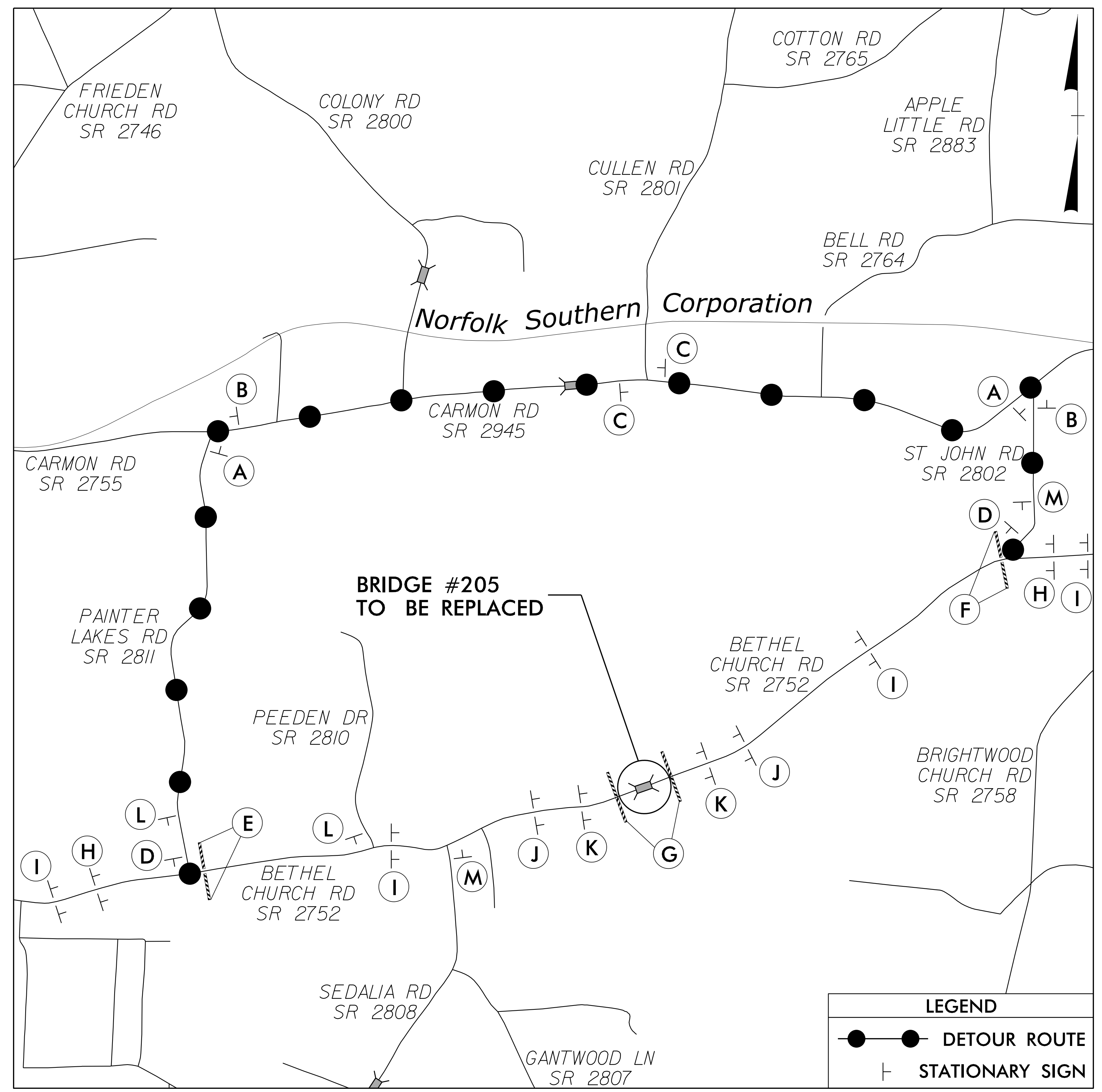
PHASING

- STEP 1: USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 9, AND SHEET TMP-2, PERFORM THE FOLLOWING:
 - INSTALL ALL ROAD CLOSURE AND DETOUR SIGNING INCLUDING BARRICADES
 - CLOSE SR 2752 (BETHEL CHURCH ROAD)
 - PLACE TRAFFIC ONTO OFF-SITE DETOUR
- STEP 2: REMOVE EXISTING BRIDGE #205 AND CONSTRUCT THE PROPOSED BRIDGE AND APPROACHES AS SHOWN IN THE CONSTRUCTION PLANS.
- STEP 3: INSTALL FINAL PAVEMENT MARKINGS.
- STEP 4: REMOVE ALL TRAFFIC CONTROL SIGNING AND DEVICES AND RE-OPEN SR 2752 (BETHEL CHURCH ROAD) TO THE FINAL TRAFFIC PATTERN.

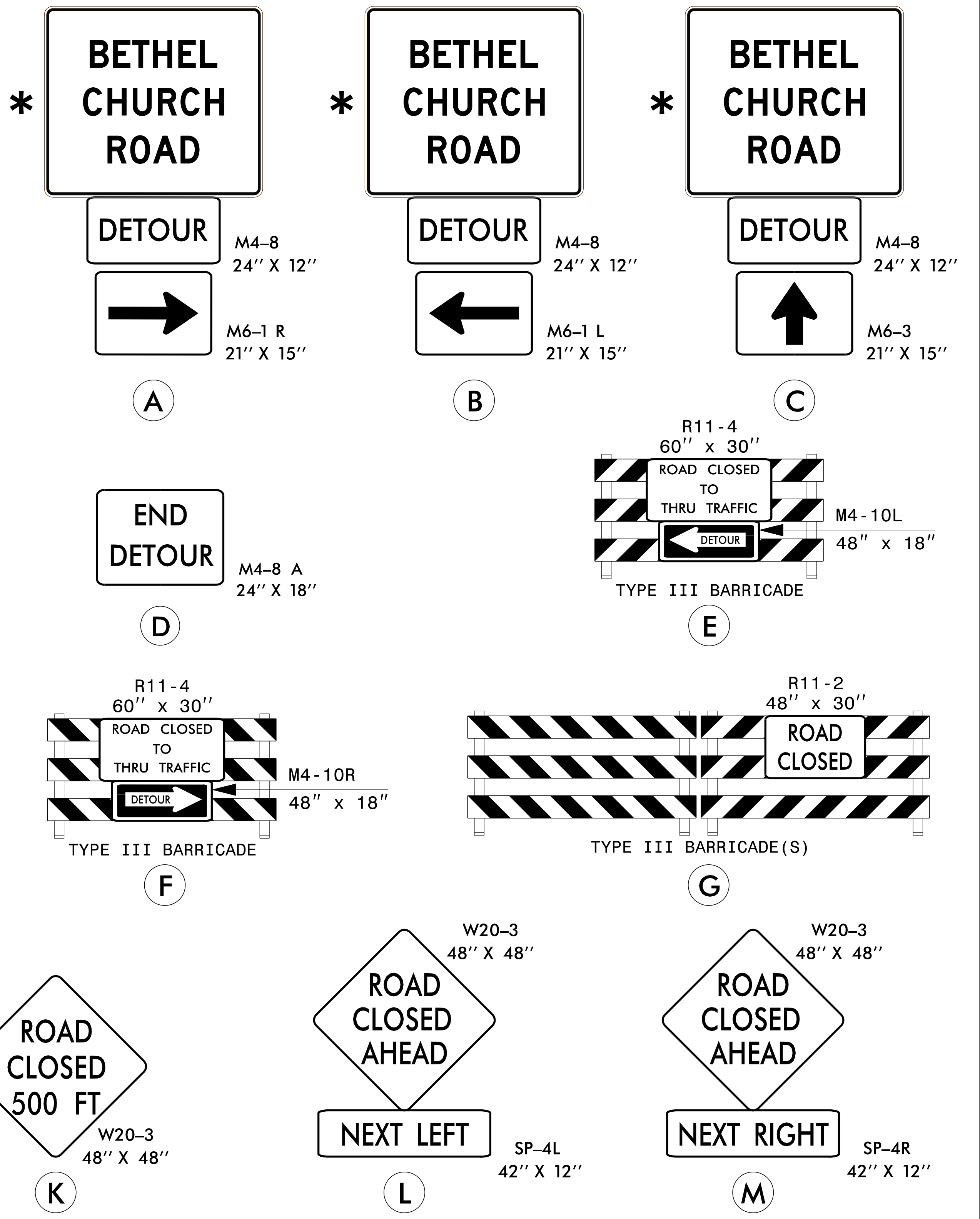
PAVEMENT MARKING

THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) 2,000 LF

PROJECT REFERENCE 17BP.7.R.135 - GUILFORD 205	SHEET NO. TMP-2
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: M	
MOTT MACDONALD & E, LLC 7621 Purfoy Road, Suite 115 Fuquay-Varina, NC 27526 www.mottmcc.com	



* SEE SHEET TMP-3 FOR SPECIAL SIGN DESIGNS



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1/31/2022 11:26:45 AM

PROJECT REFERENCE	SHEET NO.
17BP.7.R.135 - GUILFORD 205	TMP-3
TRAFFIC ENGINEER MOTT MACDONALD & E, LLC 31 JANUARY 2019 7621 Purfoy Road, Suite 115 Fuquay-Varina, NC 27526 LICENSE NO. F-0669	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M MOTT MACDONALD

SIGN NUMBER: SD-1 TYPE: D QUANTITY: SEE PLANS SIGN WIDTH: 4'-0" HEIGHT: 3'-6" TOTAL AREA: 14.0 Sq.Ft. BORDER TYPE: INSET RECESS: 0.47" WIDTH: 0.63" RADII: 1.5" NO. Z BARS: LENGTH:	BACKG COLOR: Fluorescent Orange COPY COLOR: Black <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> MAT'L: 0.080" (2.0 mm) ALUMINUM	SYMBOL	X	Y	WID	HT																					DESIGN BY: VJR PROJECT ID: 17BP.7.R.135	CHECKED BY: RWT DIV: 7	DATE: July 9, 2019
SYMBOL	X	Y	WID	HT																									

USE NOTES: 1,2 1. Legend and border shall be direct applied black non-reflective sheeting. 2. Background shall be NC GRADE B fluoresent orange retroreflective sheeting.		BORDER R=1.5" TH=0.63" IN=0.47"
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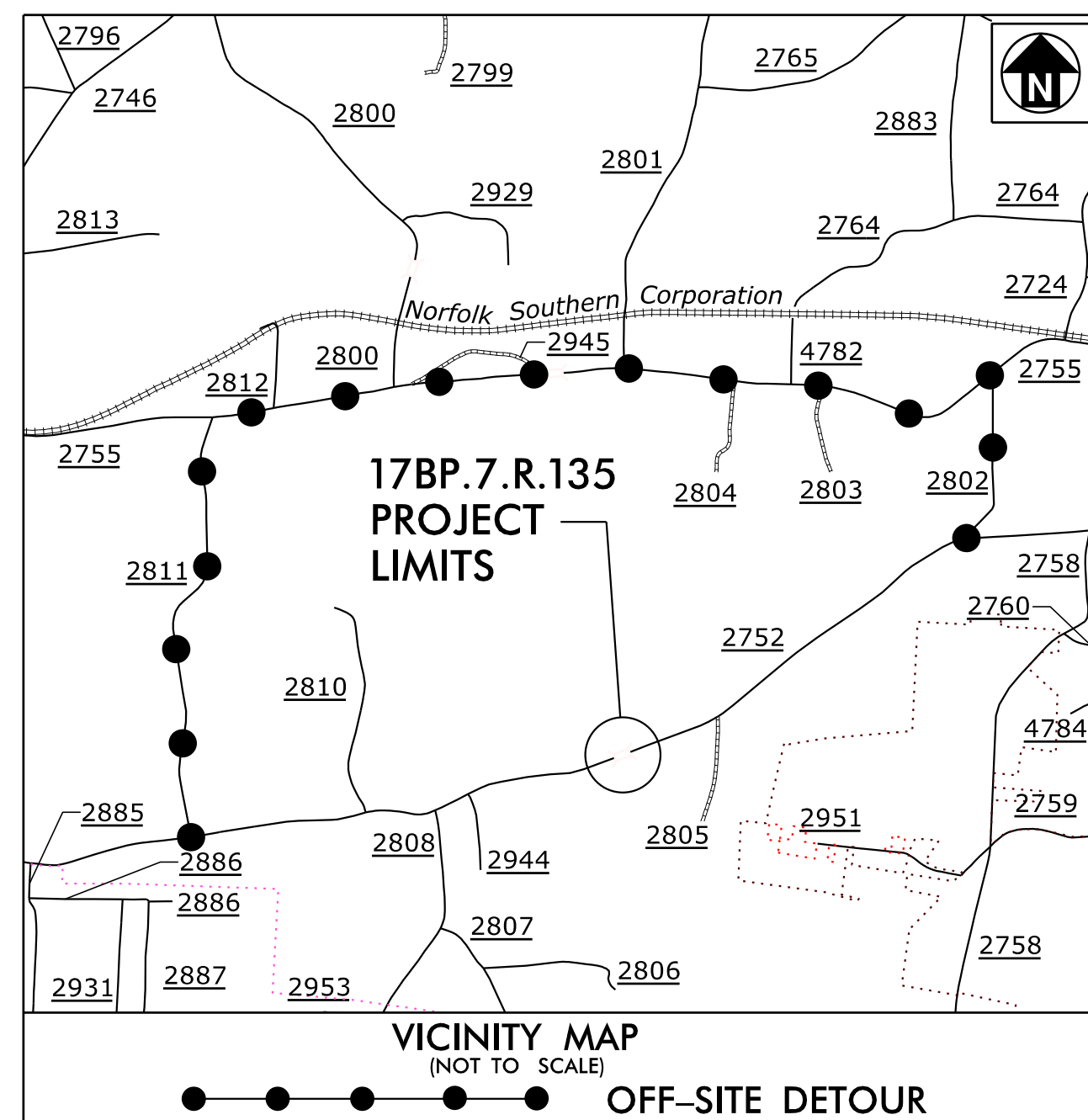
Spacing Factor is 1 unless specified otherwise

Letter locations are panel edge to lower left corner																								Series/Size Text Length
B	E	T	H	E	L																			D 2000
10	15.1	19.3	24	29.5	34.2																			27.9
C	H	U	R	C	H																			D 2000
8.6	14	19.5	25	30	35.4																			30.9
R	O	A	D																					D 2000
14	18.9	24	30																					20.1

FILENAME: B5714_rdy_tmp3 NORTH CAROLINA D.O.T. SIGN DETAIL

CONTRACT: TIP PROJECT: 17BP.7.R.135

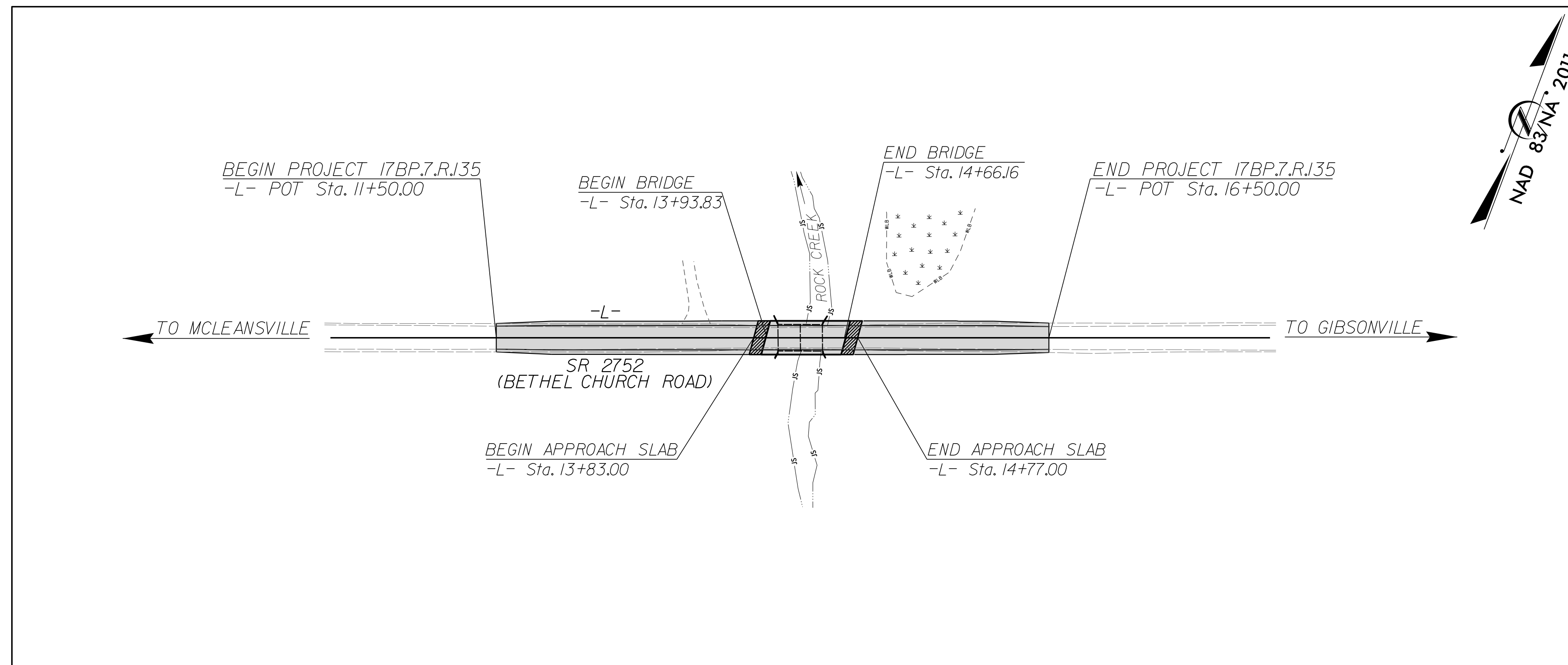
CONTRACT: TIP PROJECT: 17BP.7.R.135



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
GUILFORD COUNTY

LOCATION: BRIDGE NO. 205 OVER ROCK CREEK ON SR 2752 (BETHEL CHURCH ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.7.R.135	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

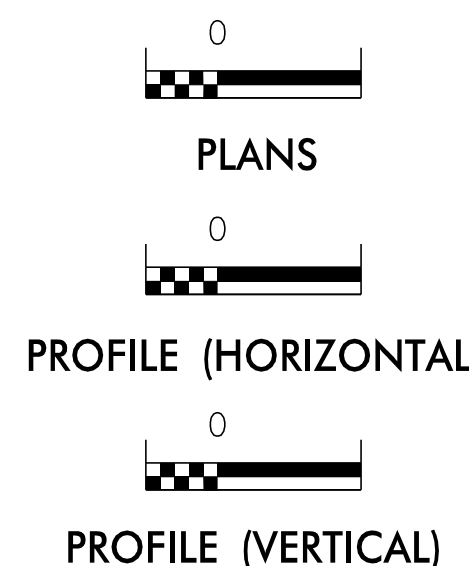
Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
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	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	
1632.02	Type B	
1632.03	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

**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.*

GRAPHIC SCALE



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

Prepared in the Office of:
M M
MOTT
MACDONALD
7621 Purfoy Road, Suite 115
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.mottmac.com

LICENSE NO. F-0669

Designed by:

Eleni Riggs, PE 3056
NAME LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611
2018 STANDARD SPECIFICATIONS

Reviewed by:

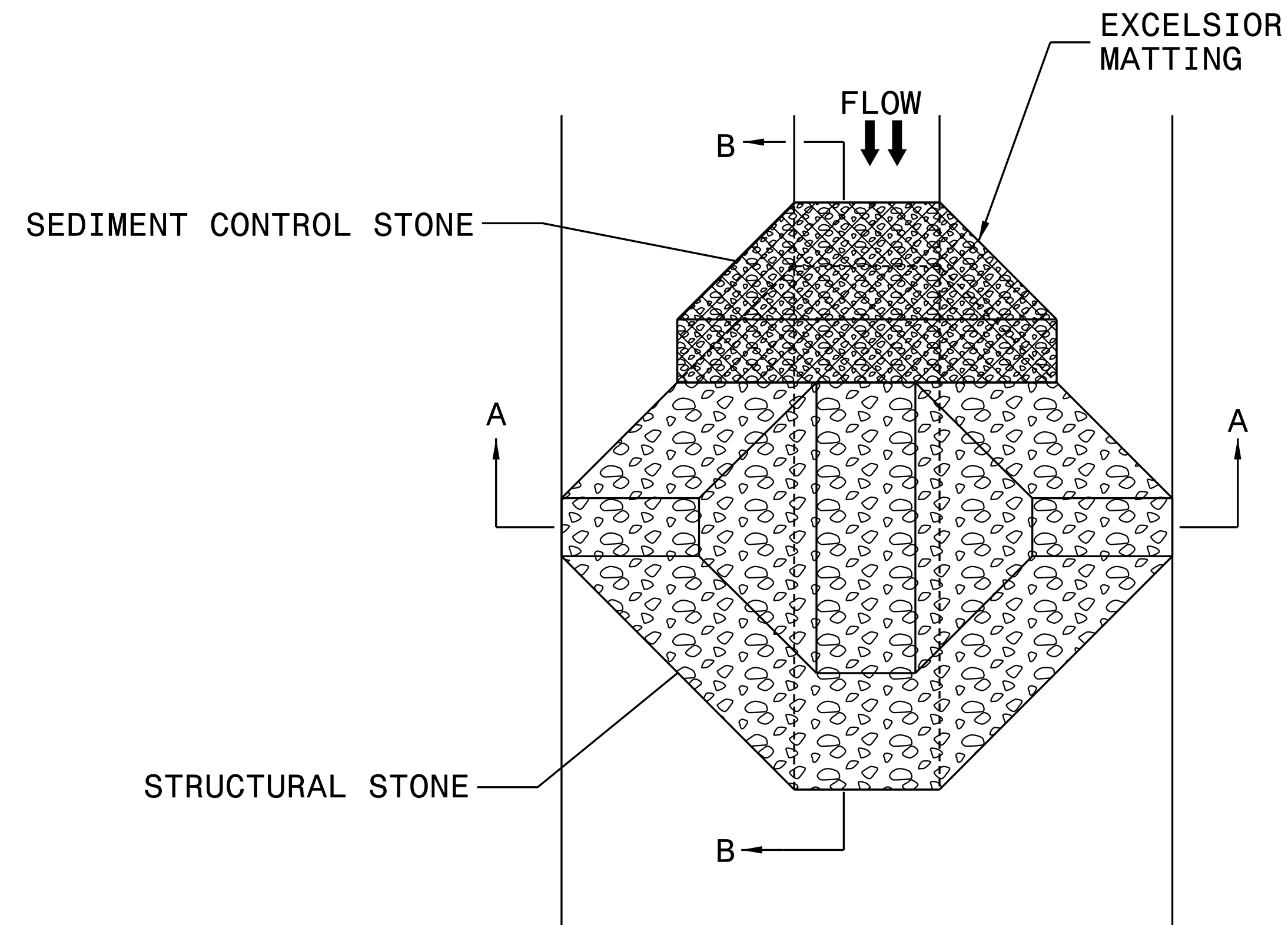
Aaron Harper, PE

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type J	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Jaffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

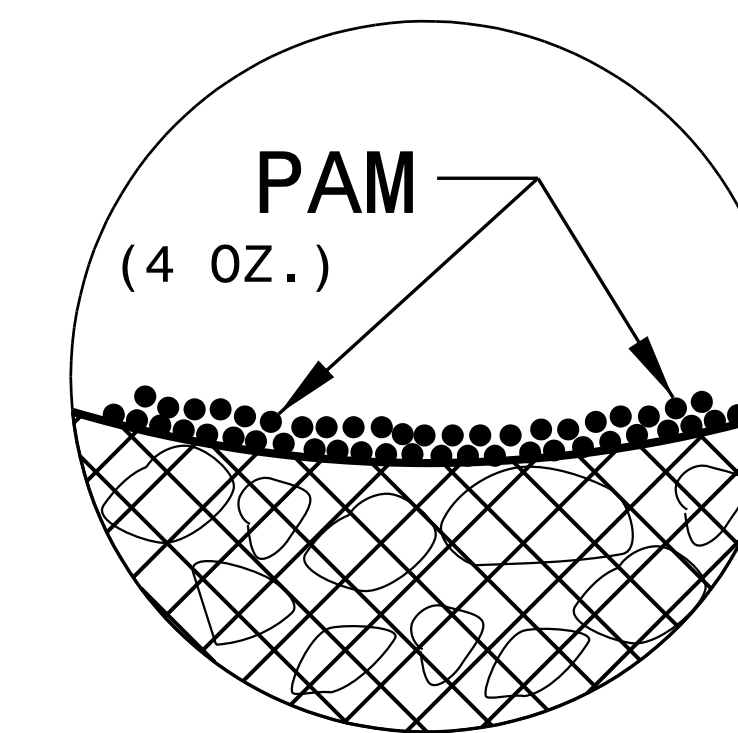
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

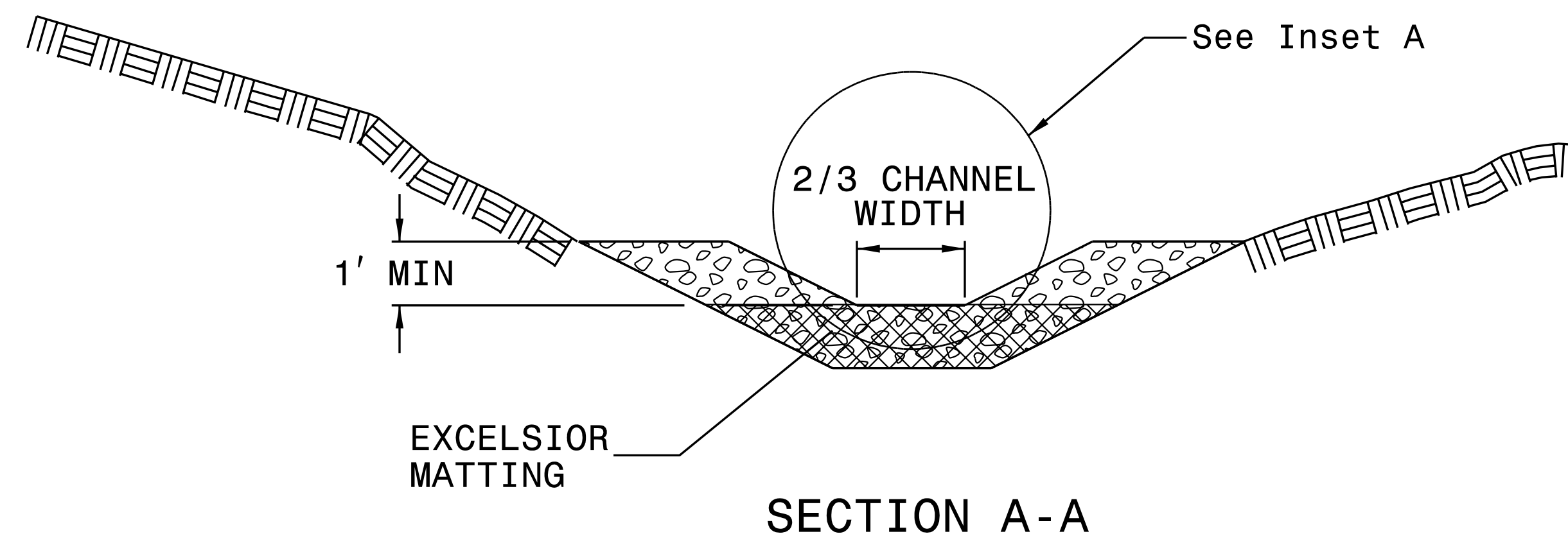
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

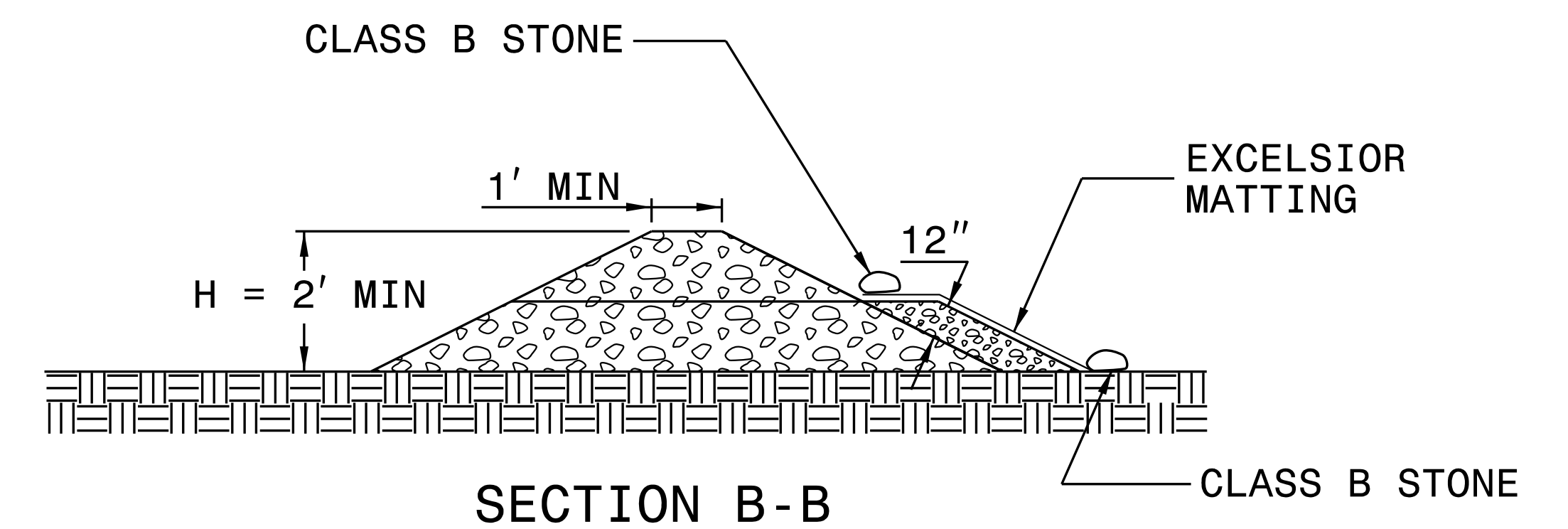
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

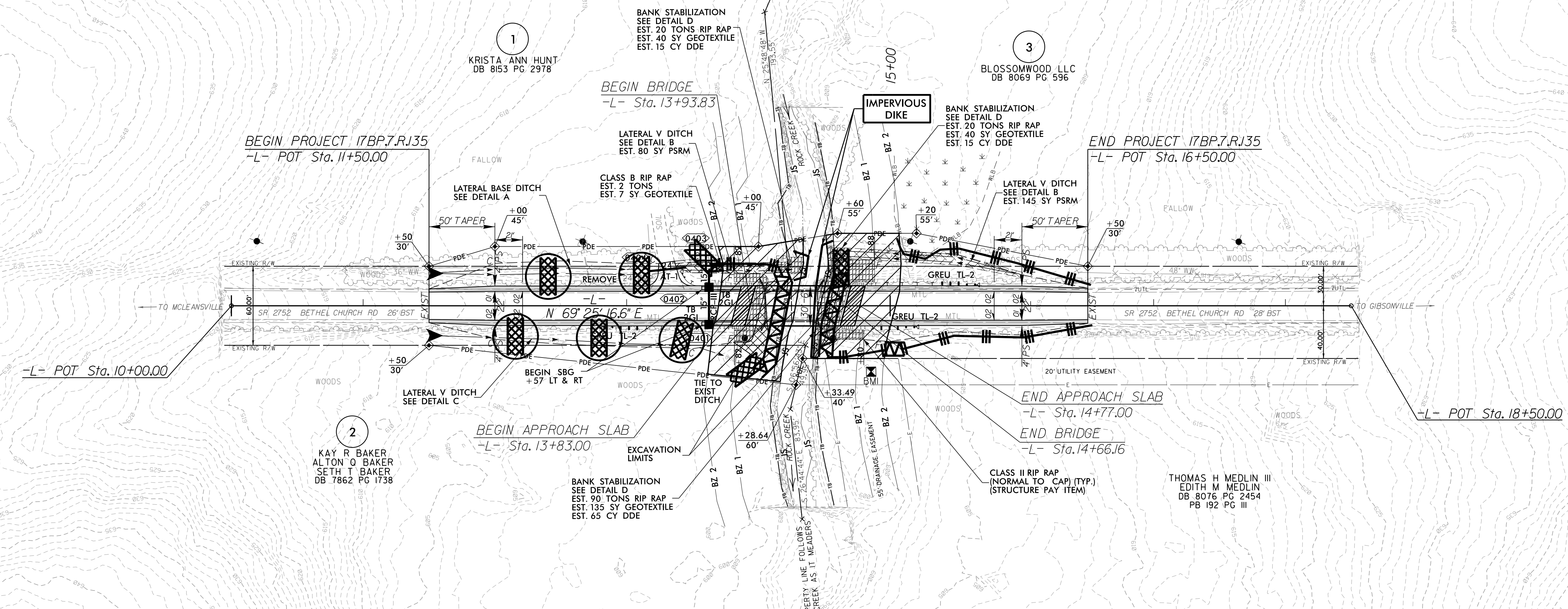
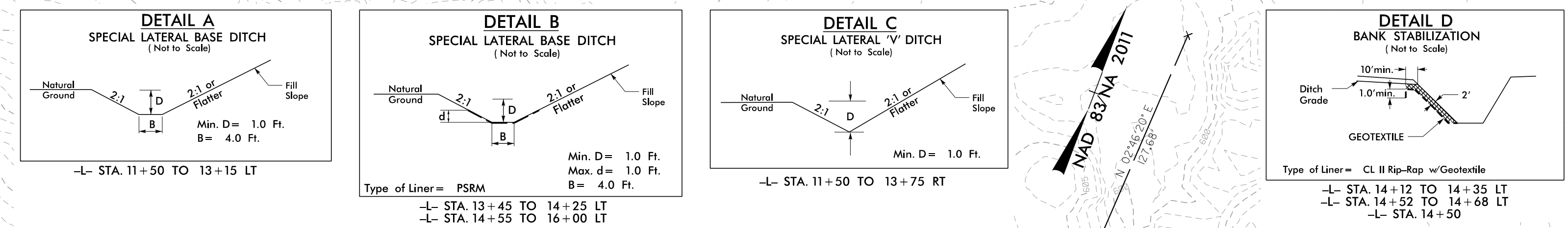
LEVEL III CERTIFIED BY:
ELENI M. RIGGS, PE
 CERTIFICATION NUMBER: 3056
 ISSUED: JANUARY 19, 2022

Prepared in the Office of:
M
 MOTT MACDONALD
 7621 Purfoy Road, Suite 115
 Fuquay-Varina, NC 27526
 www.mottmac.com/americas

NOTE:
 ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

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

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 4

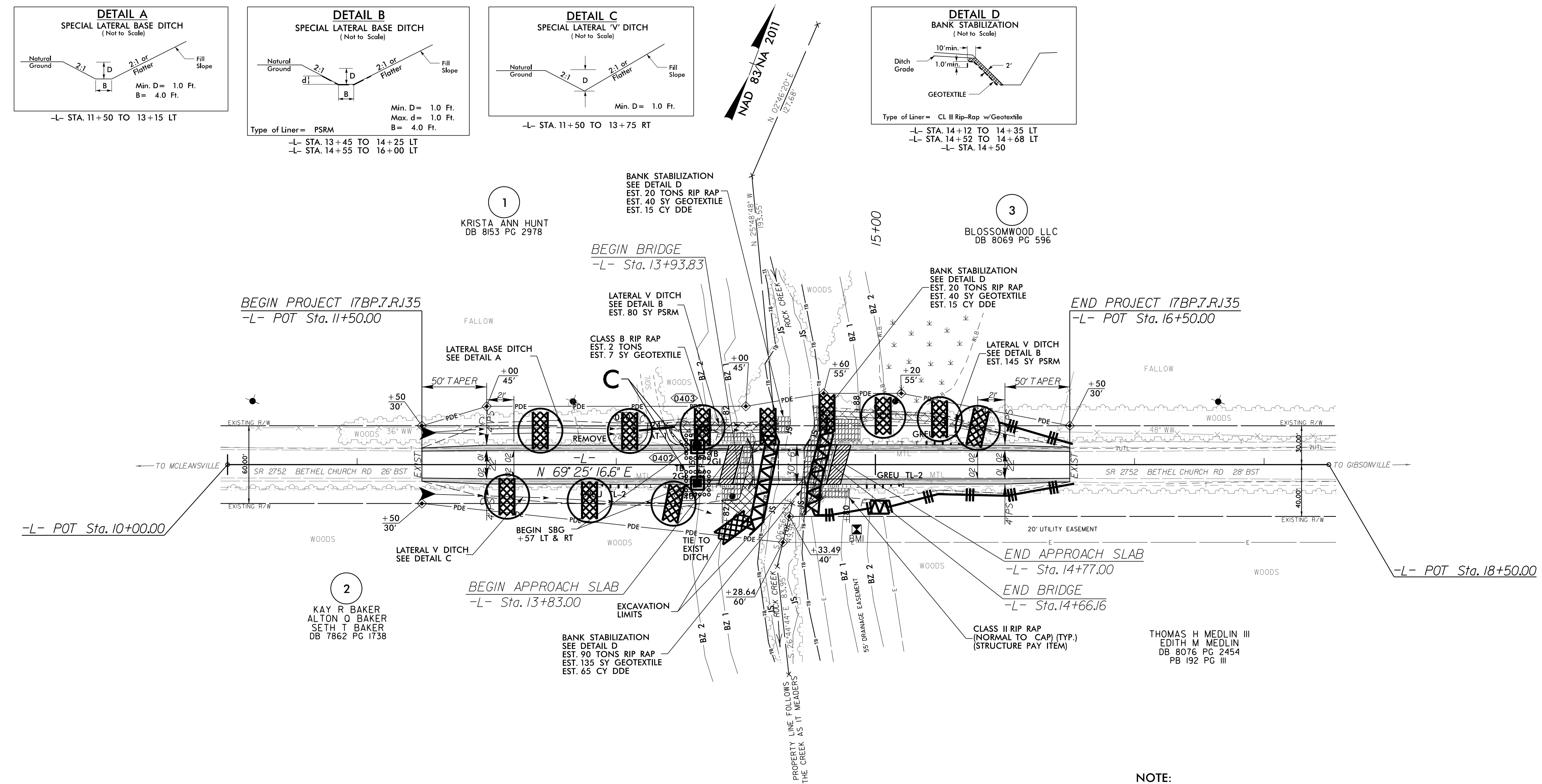


NOTE:
 TYPE-III ANCHOR UNITS ON ALL FOUR BRIDGE CORNERS



NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4



MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	12+50	13+15	LT	60
4	L	12+50	13+50	RT	35
			TOTAL		95

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	11+50	12+50	LT	70
4	L	11+50	12+50	RT	30
4	L	13+50	13+75	RT	10
4	L	13+45	14+25	LT	55
4	L	14+55	15+50	LT	75
4	L	15+50	16+00	LT	35
			TOTAL		275

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

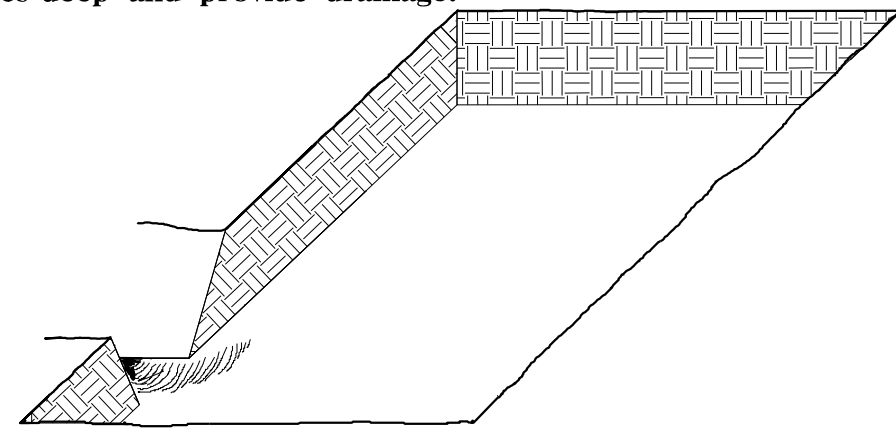
default
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PLANTING DETAILS

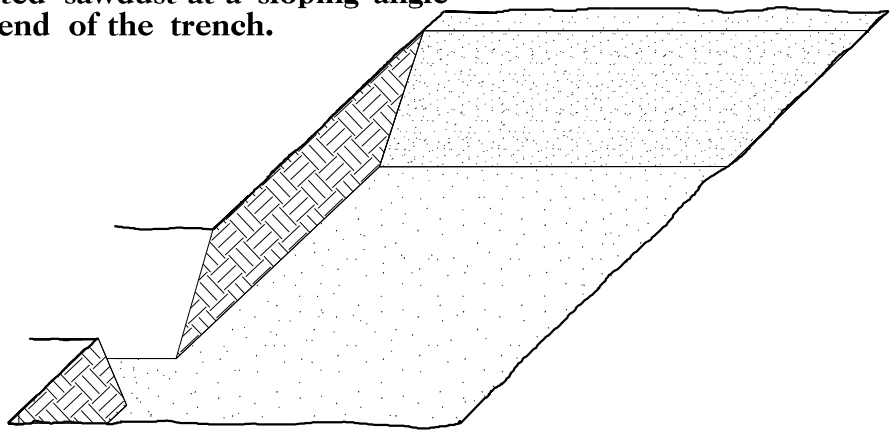
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

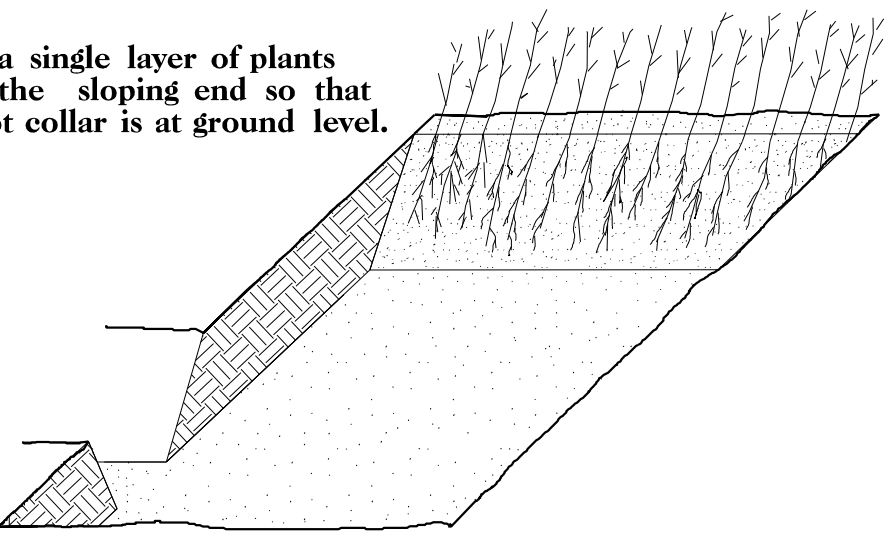
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



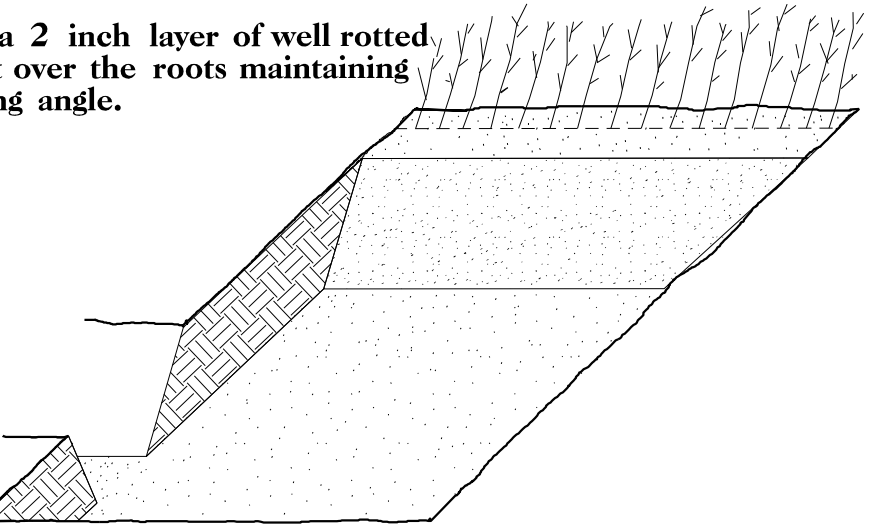
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

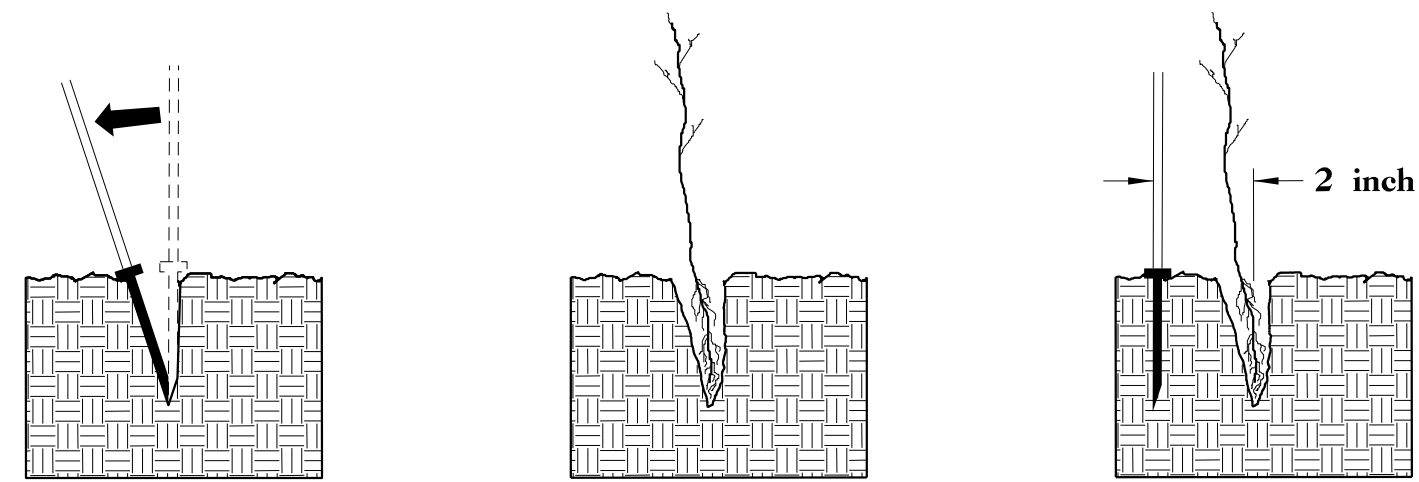


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



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

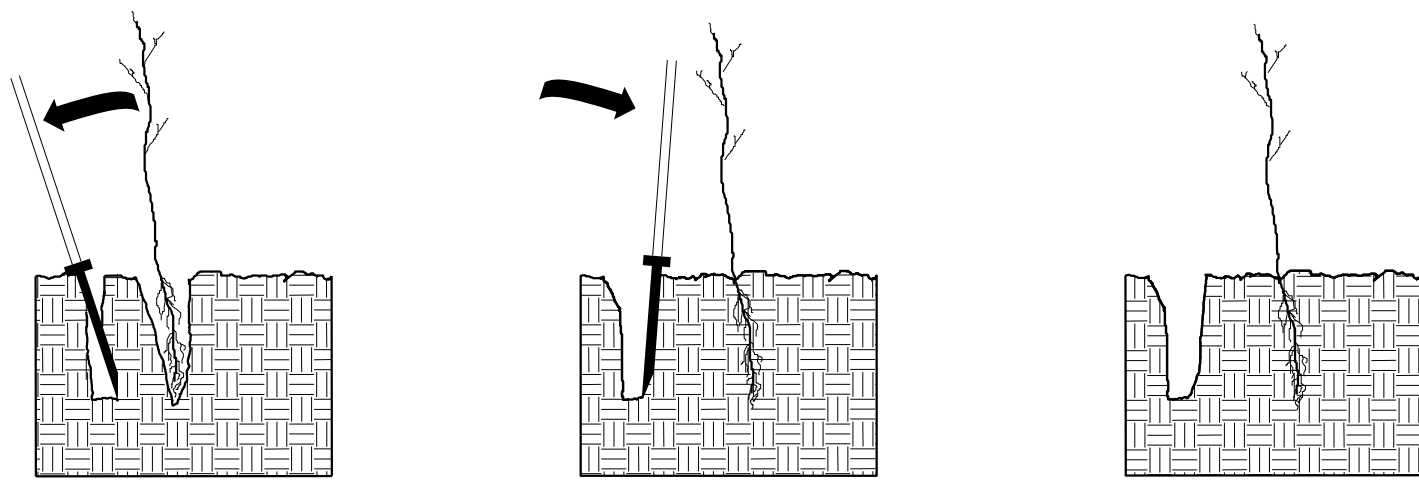
DOUBLE PLANTING METHOD USING THE KJC PLANTING BAR



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.

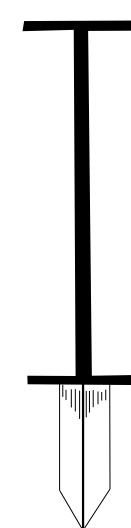
6. Leave compaction hole open. Water thoroughly.

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.



KJC 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

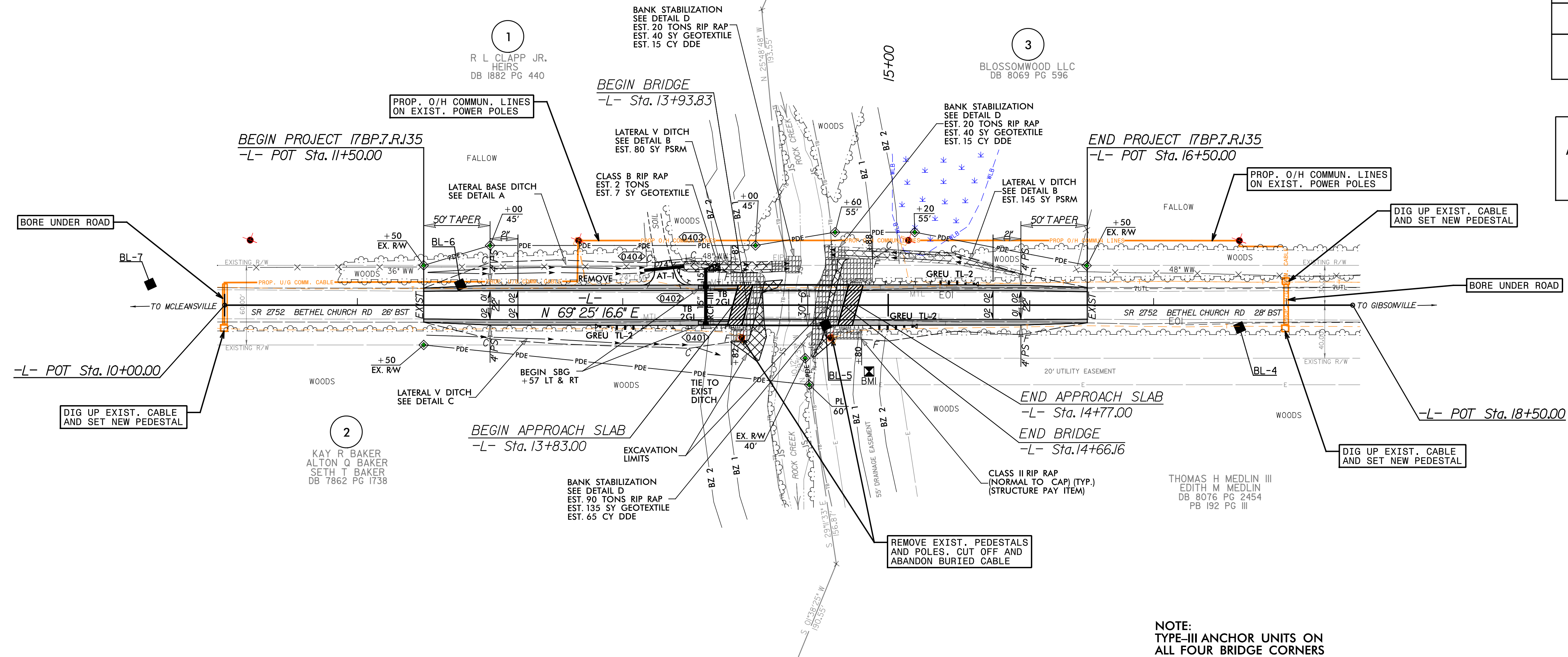
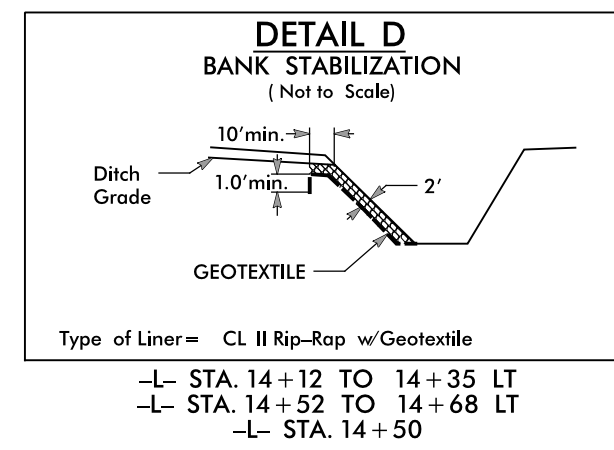
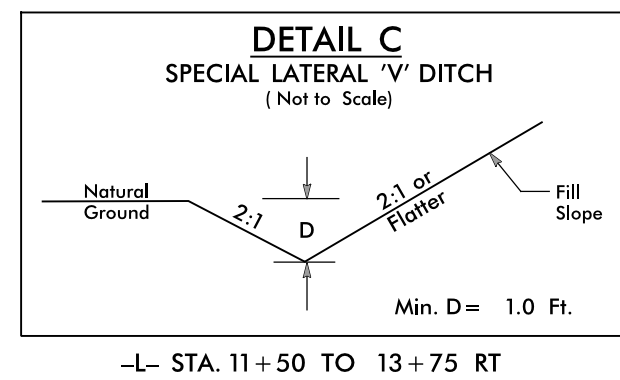
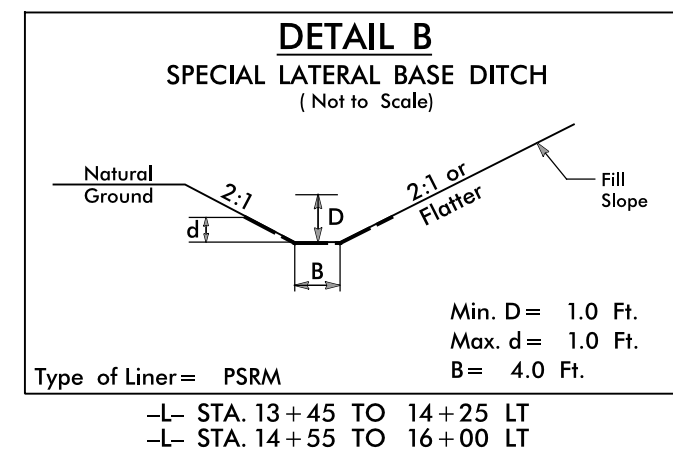
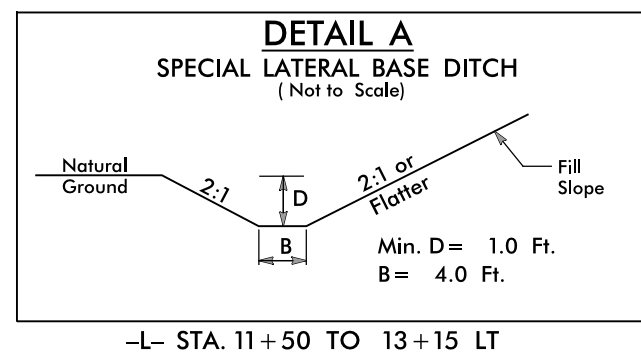
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in 3R
25% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in 3R
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in 3R
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in 3R

REFORESTATION DETAIL SHEET

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

***DESIGN EXCEPTION:
SAG VERTICAL CURVE K
VERTICAL SSD**



PROJECT REFERENCE	SHEET NO.
17BP.7.R.135 - GUILFORD 205	UO-1
Prepared in the Office of:	
 THE WOOTEN COMPANY 120 North Boylan Avenue Raleigh, NC 27603-1423 919.828.0531 fax 919.834.3589 License Number: F-0115	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
GRAPHIC SCALE 25' 0 25' 50'	

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

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

3/11/2022 4:45:55 PM
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