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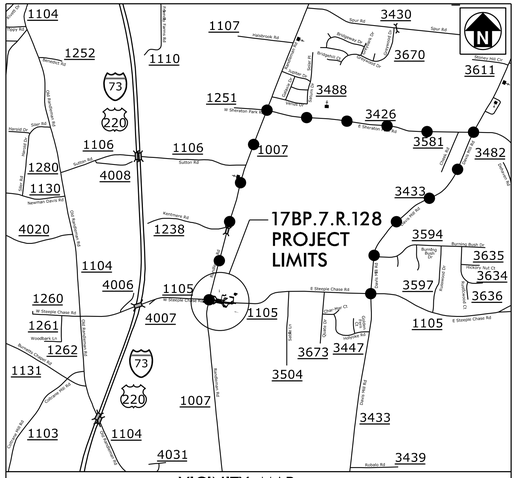
CONTRACT: TIP PROJECT: 17BP.7.R.128



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

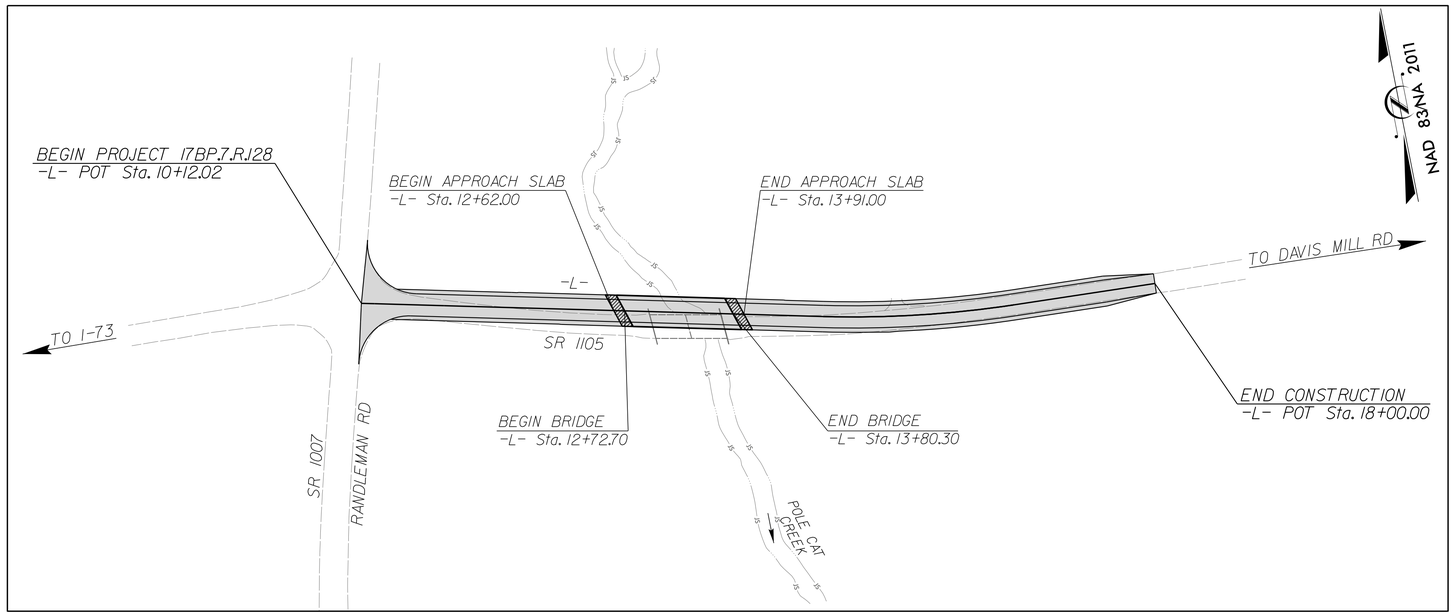
GUILFORD COUNTY

LOCATION: BRIDGE NO. 25 OVER POLE CAT CREEK ON SR 1105 (EAST STEEPLE CHASE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.7.R.128	1	

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



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DESIGN DATA

ADT 2015 = 750
ADT 2025 = 1500

V = 45 MPH

SUB REGIONAL TIER
LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT	=	0.129 MILES
LENGTH STRUCTURE TIP PROJECT	=	0.020 MILES
TOTAL LENGTH TIP PROJECT	=	0.149 MILES

Prepared in the Office of Mott 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

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER

DocuSigned by: James Timothy Moore Jordan 3A6528B1B02F444... 6/21/2021
SIGNATURE: P.E.

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER

DocuSigned by: Eleni M. Riggs 328FFC7127ED4F1... 6/21/2021
SIGNATURE: P.E.

PLANS PREPARED BY:

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

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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER TIMOTHY J. MOONEY

DocuSigned by: 6/21/2021

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

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Prepared in the Office of:

MOTT MACDONALD
7621 Parkay 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 DUKE POWER, AT&T, AND CHARTER COMMUNICATIONS.

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 CONTRACT.

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 8 – INCIDENTALS	
806.01	Concrete Right–of–Way Marker
806.02	Granite Right–of–Way Marker
840.00	Concrete Base Pad for Drainage Structures
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	GUARDRAIL INSTALLATION DETAIL
2C–2	STRUCTURE ANCHOR UNIT DETAIL
3B–1	GUARDRAIL, SHOULDER BERM GUTTER, AND EARTHWORK SUMMARY
3D–1	DRAINAGE SUMMARY
4	PLAN & PROFILE SHEET
RW02C–1 THRU RW02C–3	SURVEY CONTROL SHEETS
RW02D–1	PROPOSED ALIGNMENT CONTROL SHEET
TMP–1 THRU TMP–3	TRAFFIC MANAGEMENT PLANS
EC–1 THRU EC–5	EROSION CONTROL PLANS
UO–1	UTILITIES BY OTHERS PLANS
X–1 THRU X–4	CROSS–SECTIONS
S–1 THRU S–20	STRUCTURE PLANS
SN	STANDARD STRUCTURE NOTES

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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

***S.U.E. = Subsurface Utility Engineering**

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- 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 — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- 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.128 – GUILFORD 25	2A–1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES EDWARD TIMMOTH

DocuSigned by: James Timmoth 6/21/2021

MOTT MACDONALD I & E, LLC
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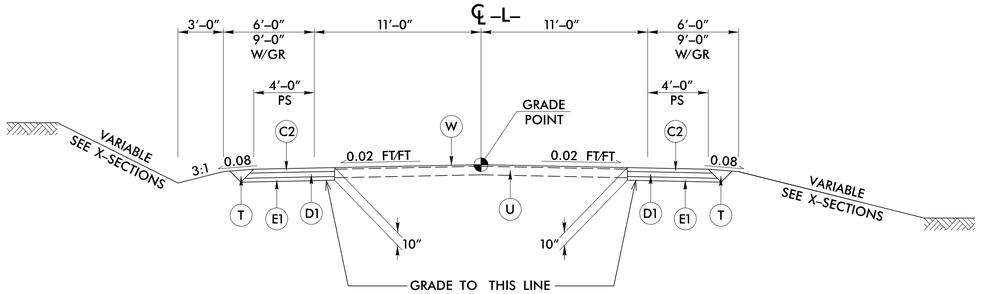


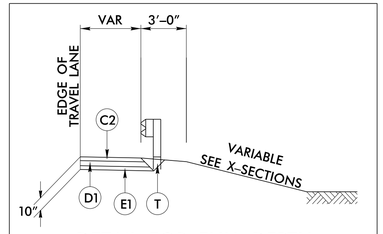
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1:

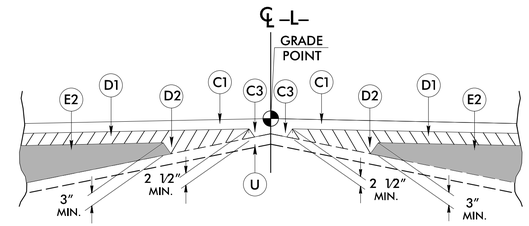
–L– STA 10+12.02 TO 10+75.00
–L– STA 15+75.00 TO 17+50.00

TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING:

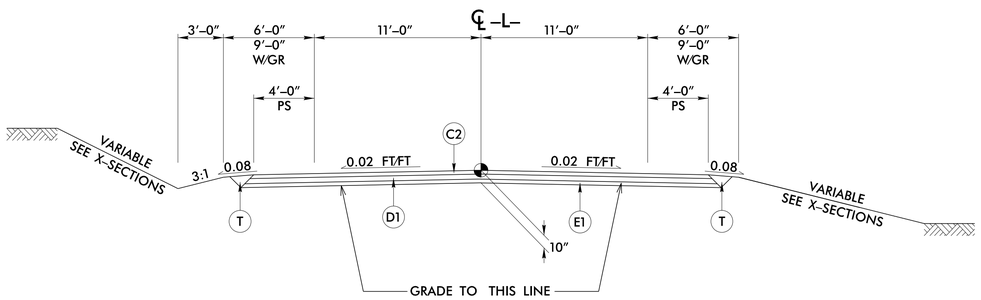
–L– STA 17+50.00 TO 18+00.00



DETAIL FOR FULL DEPTH PAVED SHOULDER IN CONJUNCTION WITH GUARDRAIL



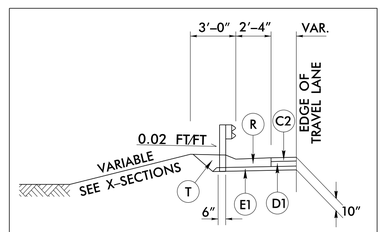
Detail Showing Method of Wedging



TYPICAL SECTION NO. 2

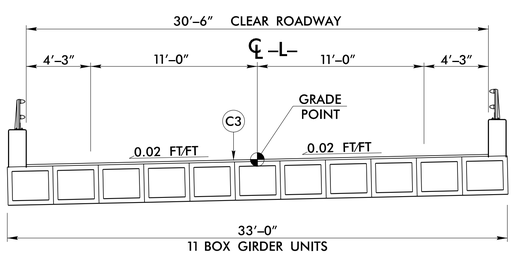
USE TYPICAL SECTION NO. 2:

–L– STA 10+75.00 TO 12+72.70 (BEGIN BRIDGE)
–L– STA 13+80.30 (END BRIDGE) TO 15+75.00



DETAIL FOR SHOULDER BERM GUTTER IN CONJUNCTION WITH GUARDRAIL

–L– STA 13+82.20 TO 13+89 LT

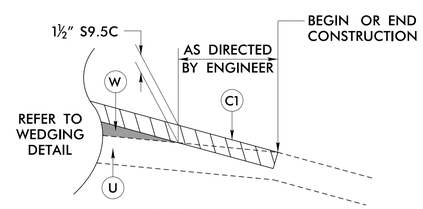


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:

–L– STA 12+72.70 (BEGIN BRIDGE) TO 13+80.30 (END BRIDGE)

NOTE: SEE STRUCTURE PLANS FOR PAVEMENT DEPTHS ON STRUCTURE



MILLING DETAIL

DETAIL SHOWING PROFILE VIEW

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½″ 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 1½″ 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 2½″ 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 5½″ 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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PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 - GUILFORD 25	2C-1
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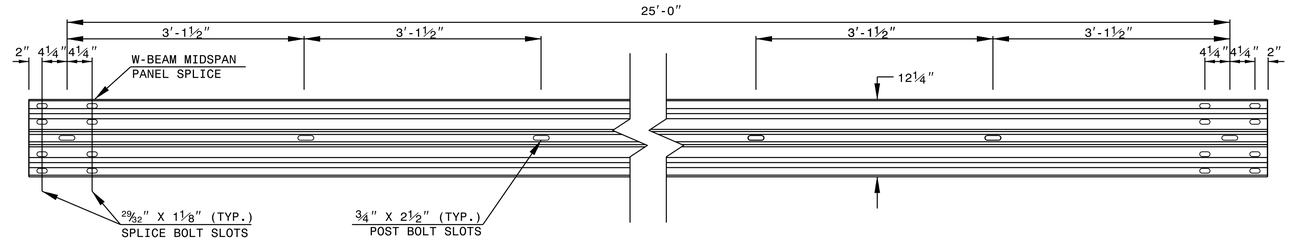
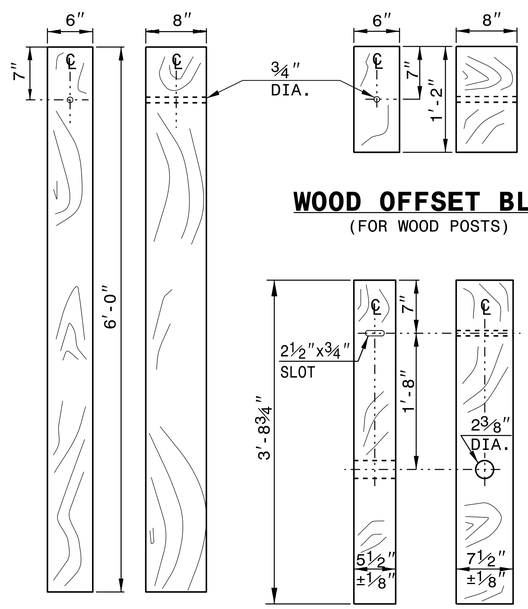
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION



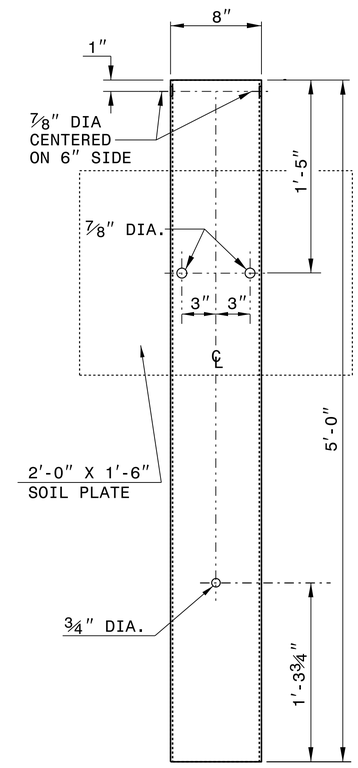
STANDARD W-BEAM GUARDRAIL



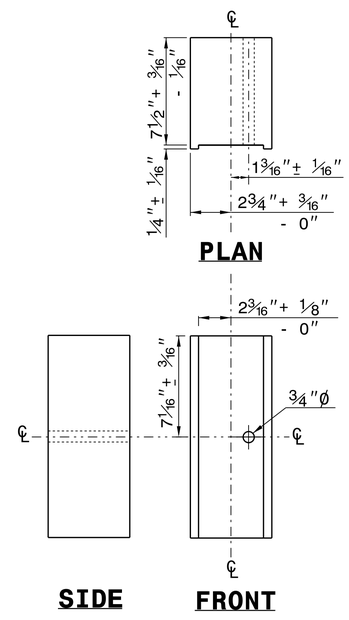
STANDARD LINE POST

WOOD OFFSET BLOCK
(FOR WOOD POSTS)

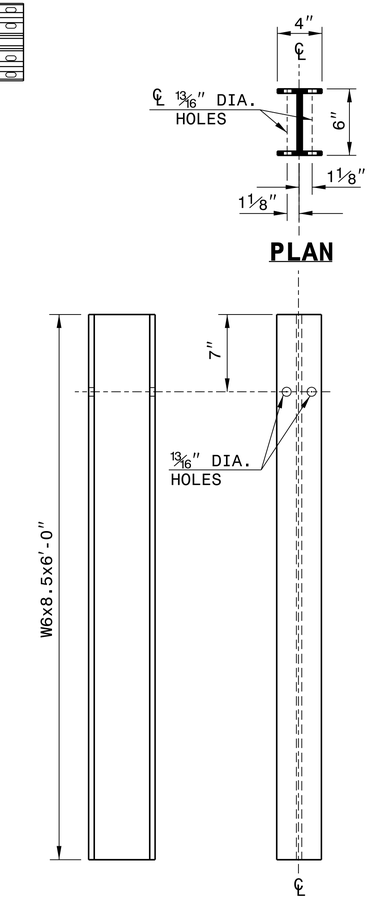
SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"



ROUTED OFFSET BLOCK



"W6" STEEL POST

SYSTEM PARTS

SHEET 6 OF 8
862D02

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER JOEL HOWERTON
DocuSigned by: Joel Howerton
6/21/2021

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

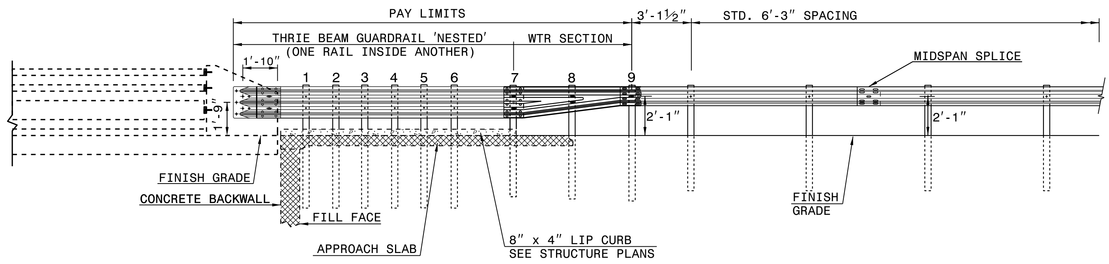
SEE TITLE BLOCK

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

DocuSign Envelope ID: 299AB585-3843-4D21-86C5-D53B3049ADD6

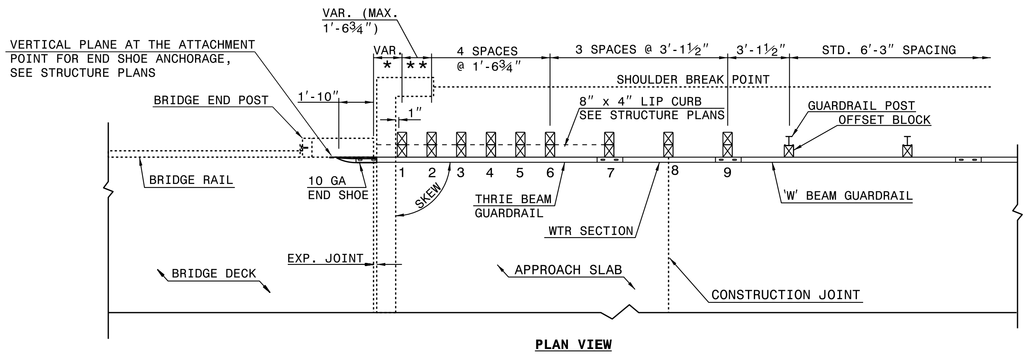
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE



ELEVATION

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 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.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

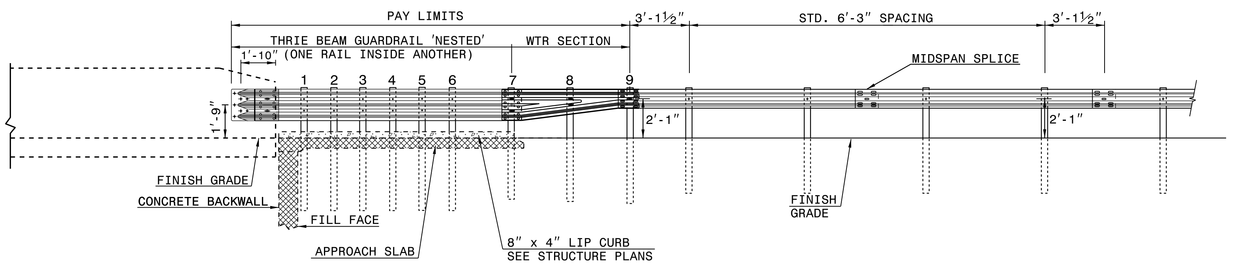
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

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



ELEVATION

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 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
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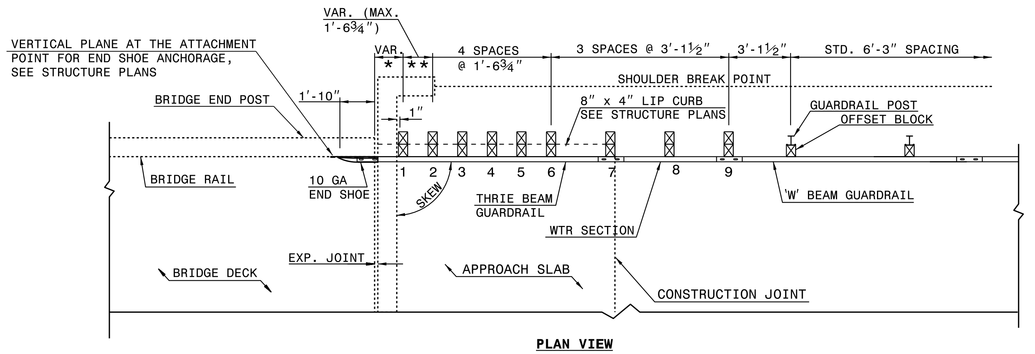
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862D03

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

SEE TITLE BLOCK

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER
JAY L. HOWERTON
6/21/2018

PROJECT REFERENCE NO.: 17BP.7.R.128 - GUILFORD 25
SHEET NO.: 2C-2

PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	3B–1

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS								IMPACT ATTENUATOR TYPE 350			REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT–1	GREU TL–2	TYPE III							PERMITTED		
																							NO.	G	NG	
–L–	12+12.75	12+81.50	RT	68.75′			12+81.50		6′	9′						1	1									
–L–	11+70.155	12+63.90	LT	93.75′				12+63.90	6′	9′						1	1									
–L–	13+89.10	15+32.85	RT	143.75′				13+89.10	6′	9′						1	1									
–L–	13+71.50	14+27.75	LT	56.25′			13+71.50		6′	9′						1	1									
		SUBTOTAL		362.50′																						
		LESS ANCHOR DEDUCTIONS																								
		GREU TL–2 4 x 25.00′ =		–100.00′																						
		TYPE III 4 x 18.75′ =		–75.00′																						
		TOTAL		187.50′												4	4									5 ADDITIONAL GUARDRAIL POSTS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L– 10+12.02 TO 12+72.70 (BEGIN BRIDGE)	98		1759	1661	
–L– 13+80.30 (END BRIDGE) TO 18+00.00	97		1686	1589	
SUBTOTAL	195		3445	3250	
WASTE IN LIEU OF BORROW					
PROJECT TOTAL	195			3250	
5% TO REPLACE BORROW				163	
GRAND TOTAL	195			3413	
SAY	210			3590	

SUMMARY OF SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
–L–	13+82.20	13+98.00	LT	15.80′
			TOTAL:	15.80′
			SAY:	20′

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".

JOR66165
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6/21/2021 10:14:42 AM

PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	3D–1

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE PVC	DO NOT USE CAAP	DO NOT USE HDPE	C.S. PIPE 12"	15"	18"	24"	36"	42"	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE																				.064	.064	.064	.064	.079	.109	.109															
13+92	LT	401	402	742.6'	739.4'	731.3'															32'																				
15+44	LT	403																																							
16+55	LT	404																																							
16+84	RT	405																																							
17+47	RT	406																																							
TOTAL																					32'																				

STATION	R.C. PIPE (CLASS V) ***	R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE ***	R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE ***	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL. B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	LIN. *FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	T.B.D.I. STD. 840.35	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
13+92								1												1	1	2@15"					
15+44				20'																					20'		
16+55				28'																					20'		
16+84				20'																					20'		
17+47				32'																					20'		
TOTAL				100'				1												1	1	2@15"			80'		

ABBREVIATIONS

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

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

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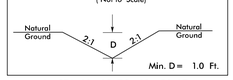
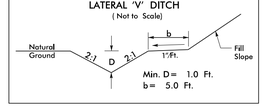
DETAIL A
STANDARD 'V' DITCH
(Not to Scale)



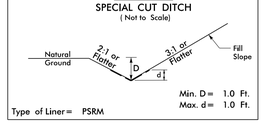
-L- STA. 13+15 TO 13+50 LT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



-L- STA. 13+50 TO 15+34 LT
-L- STA. 13+75 TO 16+50 RT

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)

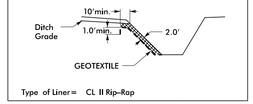


Type of Liner= PSRM

-L- STA. 15+34 TO 18+00 LT
-L- STA. 16+50 TO 18+00 RT

NAD 83/NA 2011

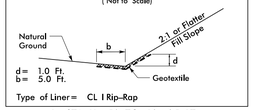
DETAIL D
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner= CL II Rip-Rap

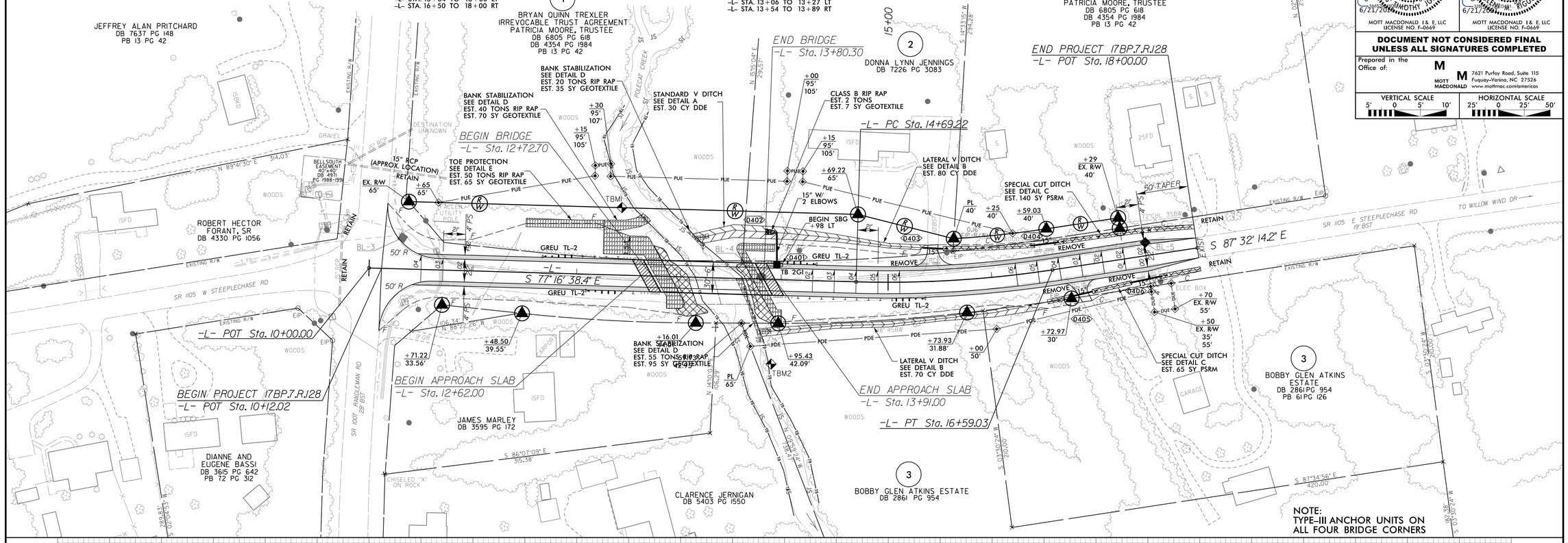
-L- STA. 12+25 TO 12+70 LT
-L- STA. 13+06 TO 13+27 LT
-L- STA. 13+54 TO 13+89 RT

DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner= CL I Rip-Rap

-L- STA. 11+50 TO 12+25 LT



PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	4

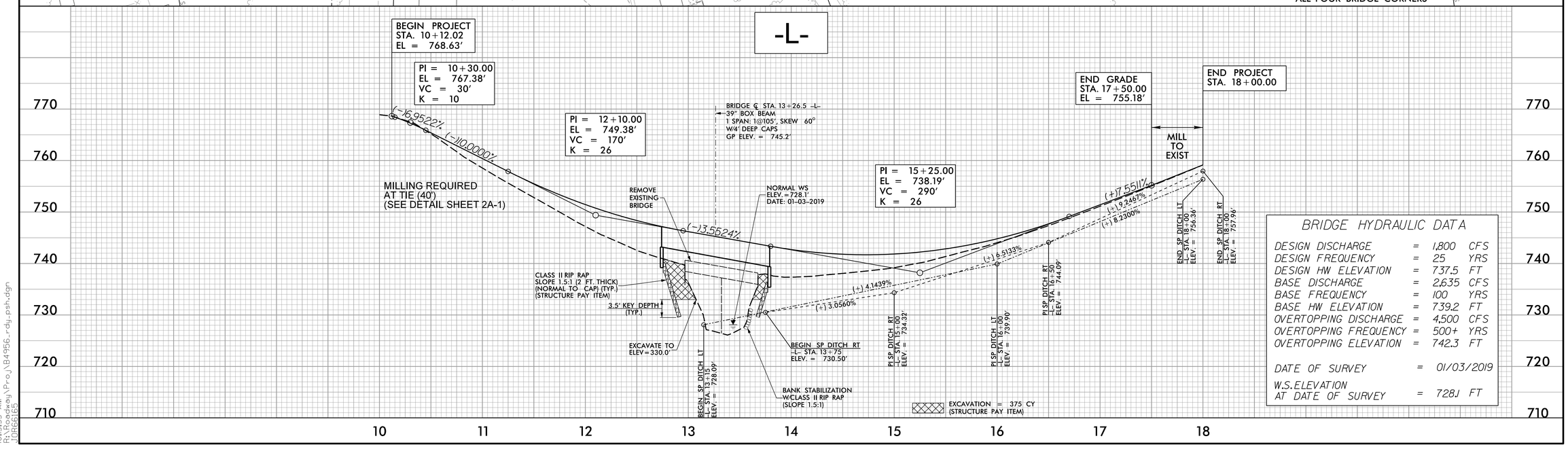
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER
Docusigned by: JAMES MARLEY BRAGAN
Docusigned by: TIMOTHY J. BRAGAN
6/21/2021
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036821 ENGINEER
Docusigned by: CHARLES M. RIGGS
6/21/2021
MOTT MACDONALD I & E, LLC
LICENSE NO. F-0669

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/americas

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



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1,800	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	737.5	FT
BASE DISCHARGE	=	2,635	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	739.2	FT
OVERTOPPING DISCHARGE	=	4,500	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	742.3	FT
DATE OF SURVEY	=	01/03/2019	
W.S. ELEVATION AT DATE OF SURVEY	=	728.1	FT

6/21/2021
10:51:55 AM
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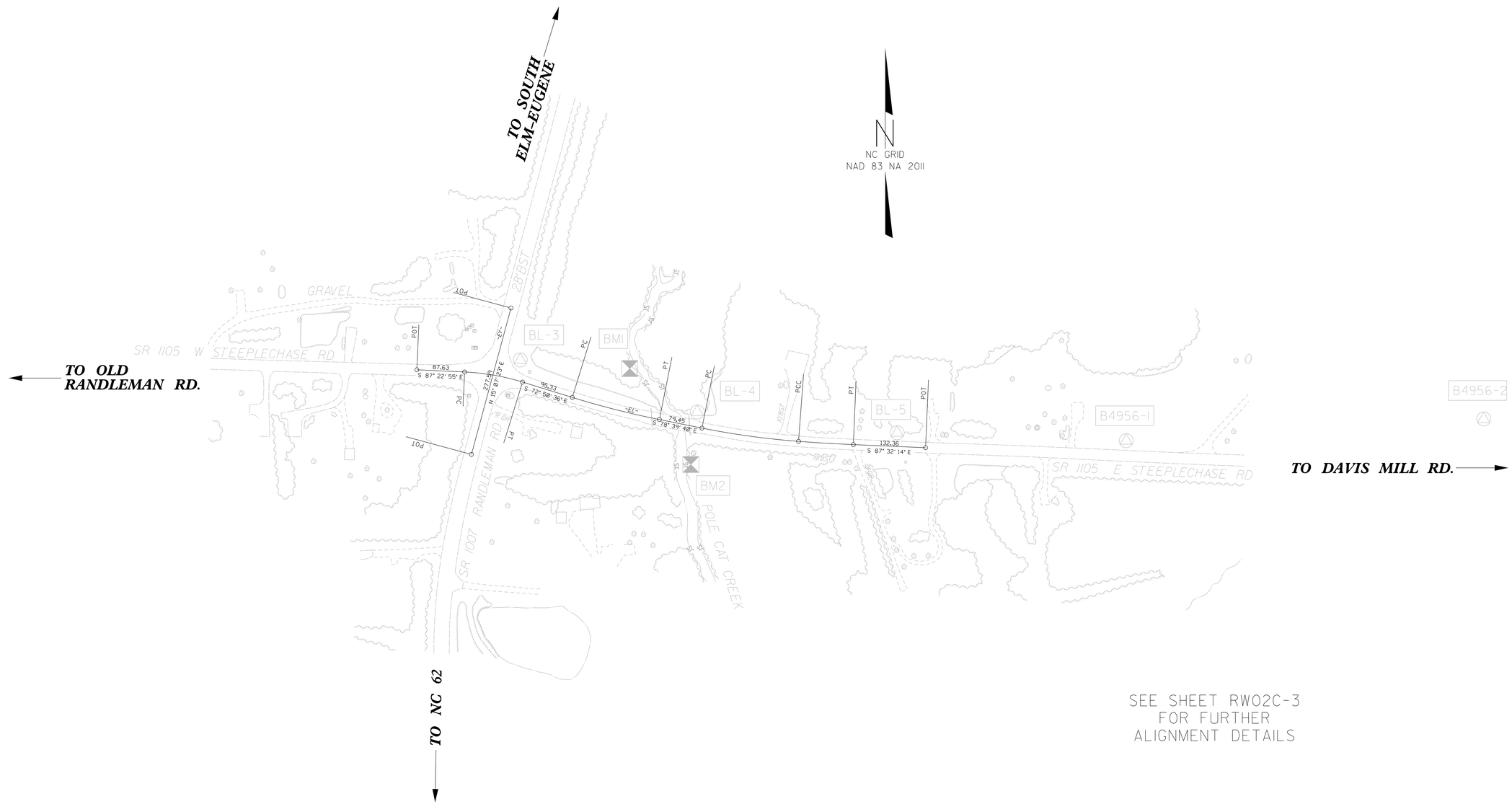
J10R6165

PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 – GUILFORD 25	RW02C-1
Location and Surveys	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



SEE SHEET RW02C-3
FOR FURTHER
ALIGNMENT DETAILS

NOTES:

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

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

6/2/99
27-JAN-2021 21:24
S:\Units\Div07\GSBO\Low_Impact_Bridges\40.0025 (SR1105 E Steeplechase Rd formerly (B-4956))\control_sheet\400025_ls_rw02c-1.dgn
cwiewter AT LS-312549

PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 – GUILFORD 25	RW02C-2
Location and Surveys	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION
3	BL-3	803061.2630	1759475.5410	765.84
4	BL-4	802957.9270	1759807.1450	737.46
5	BL-5	802919.1840	1760176.4180	754.51
1	B4956-1	802904.1810	1760598.7020	786.33
2	B4956-2	802956.8400	1761251.8500	810.01

BENCHMARK DATA

****
BM1 ELEVATION = 735.39
N 803049 E 1759688
EL STATION 13+80.00 79 LEFT
SPIKE IN 44" OAK
****
****
BM2 ELEVATION = 732.65
N 802873 E 1759800
EL STATION 15+28.00 69 RIGHT
SPIKE IN 22" GUM
****

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4956-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 802904.181(ft) EASTING: 1760598.702(ft)
ELEVATION: 786.33(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999147012
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4956-1" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
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6/2/99
27-JAN-2021 21:37
S:\Units\Div07\GSBO\Low_Impact_Bridges\40.0025 (SR1105 E Steeplechase Rd (formerly (B-4956))\control_sheet\400025_ls_rw02c-2.dgn
cwlewter AT LS-312549

PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 – GUILFORD 25	RW02C-3
Location and Surveys	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	803046.877	1759298.533							
LINE			S 87°22'55.0" E	87.63					
PC	803042.874	1759386.073							
CURVE			S 80°06'45.6" E	107.65	14°32'18.7"(RT)	13°28'07.5"	107.94	54.26	425.40
PT	803024.389	1759492.127							
LINE			S 72°50'36.3" E	95.33					
PC	802996.268	1759583.216							
CURVE			S 75°45'08.4" E	164.52	05°49'04.2"(LT)	03°32'05.1"	164.59	82.37	1620.93
PT	802955.777	1759742.674							
LINE			S 78°39'40.5" E	79.45					
PC	802940.158	1759820.570							
CURVE			S 82°10'21.4" E	178.46	07°01'22.0"(LT)	03°55'57.7"	178.57	89.40	1456.91
PCC	802915.853	1759997.369							
CURVE			S 86°36'38.3" E	100.55	01°51'11.8"(LT)	01°50'35.2"	100.55	50.28	3108.66
PT	802909.908	1760097.741							
LINE			S 87°32'14.2" E	132.36					
POT	802904.221	1760229.981							

EY

POINT	N	E	BEARING	DIST
POT	802891.950	1759398.553		
LINE			N 15°07'22.7" E	277.59
POT	803159.923	1759470.973		

NOTES:

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6/2/99
27-JAN-2021 13:
S:\Units\Div07\GSBO\Low_Impact_Bridges\40.0025 (SR1105 E Steeplechase Rd (formerly (B-4956))\control_sheet\400025_ls_rw02c-3.dgn
cwlewter AT LS-312549

PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 – GUILFORD 25	RW02D-1
Location and Surveys	

PROPOSED ALIGNMENT CONTROL SHEET

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	803038.8904	1759438.2228
PC	14+69.22	802935.5541	1759895.9177
PT	16+59.03	802910.5074	1760083.8166
POT	18+50.00	802902.3016	1760274.6106

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+36.55	-65.00	803094.2452	1759488.1898
L	10+71.22	33.56	802990.4690	1759500.2989
L	11+48.50	39.55	802967.6028	1759574.3663
L	13+16.01	44.01	802926.3629	1759736.7761
L	13+95.43	42.09	802910.7431	1759814.6714
L	14+69.22	-65.00	802998.9581	1759910.2328
L	15+65.82	-40.00	802958.2573	1759996.2064
L	15+73.93	31.88	802885.9381	1759995.1113
L	16+59.03	-40.00	802950.4704	1760085.5354
L	16+72.97	30.00	802879.9362	1760096.4522
L	17+29.00	-40.00	802947.4639	1760155.4411
L	17+29.00	-30.00	802937.4731	1760155.0114

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+65.00	-65.00	803087.9794	1759515.9420
L	12+15.00	-105.00	803093.9625	1759671.0684
L	12+15.00	-95.00	803084.2080	1759668.8661
L	12+30.00	-107.00	803092.6099	1759686.1406
L	12+30.00	-95.00	803080.9045	1759683.4978
L	13+59.93	42.95	802917.7238	1759779.8588
L	13+69.16	65.00	802894.1851	1759784.0051
L	14+00.00	-105.00	803053.2195	1759851.5262
L	14+00.00	-95.00	803043.4650	1759849.3239
L	14+15.00	-95.00	803040.1615	1759863.9556
L	14+15.00	-105.00	803049.9160	1759866.1579
L	16+00.00	50.00	802864.9274	1760020.0170
L	16+25.00	-40.00	802952.4023	1760052.8483
L	17+50.00	55.00	802851.6493	1760172.3396
L	17+50.00	30.00	802876.6262	1760173.4138
L	17+50.00	35.00	802871.6308	1760173.1990
L	17+70.00	30.00	802875.7668	1760193.3953
L	17+70.00	55.00	802850.7899	1760192.3211

NOTES:

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

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

6/2/99
28-JAN-2021 16:35
S:\Units\Div07\GSBO\Low_Impact_Bridges\40.0025 (SR1105 E Steeplechase Rd (formerly (B-4956))\control_sheet\400025_ls_rw02d-1.dgn
cwlewter AT LS-312549

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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	TMP–1
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER TIMOTHY JORGENSEN

DocuSigned by: 6/21/2021

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

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

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.

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 1105 (EAST STEEPLE CHASE ROAD)
– PLACE TRAFFIC ONTO OFF– SITE DETOUR

STEP 2: REMOVE EXISTING BRIDGE #25 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 1105 (EAST STEEPLE CHASE ROAD) TO THE FINAL TRAFFIC PATTERN.

PAVEMENT MARKING

THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	3,152 LF

J0R66165
R:\Roadway\Proj\B4956_rdy_tmp.dgn
6/21/2021 10:19:23 AM

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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	TMP–2

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN DocuSigned by: James Timothy Jordan 3A6529B19D27444... 6/21/2021 MOTT MACDONALD I & E, LLC LICENSE NO. F–0669	

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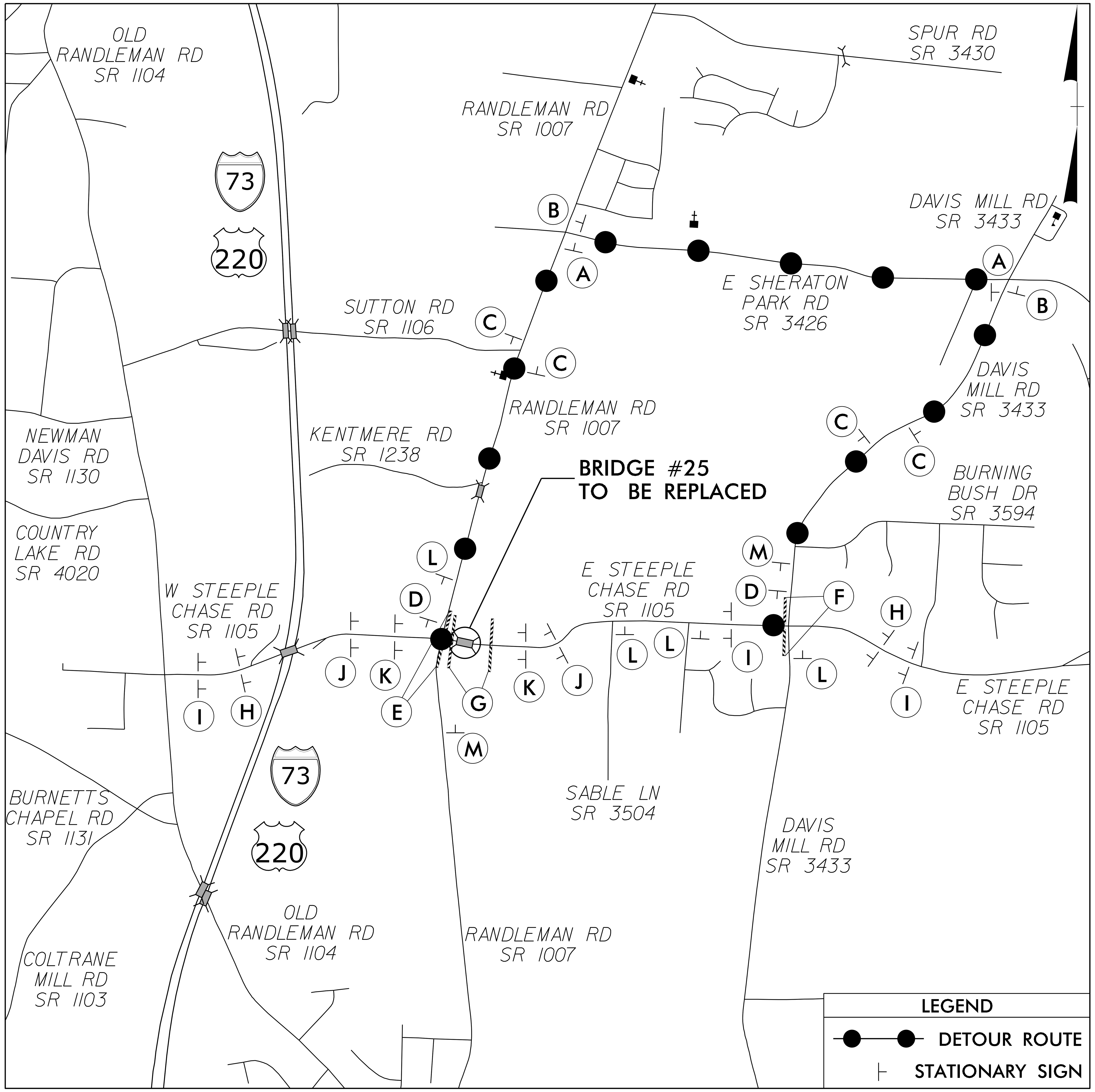
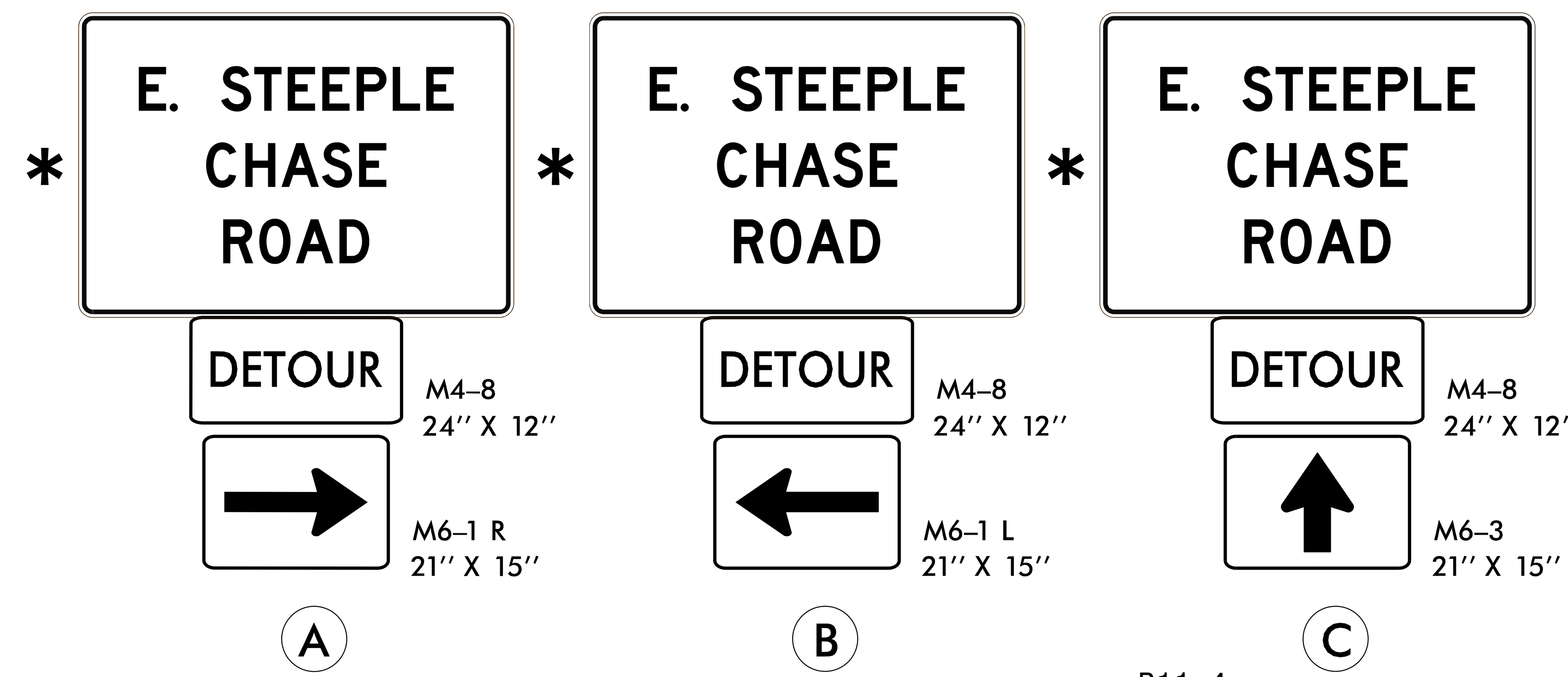
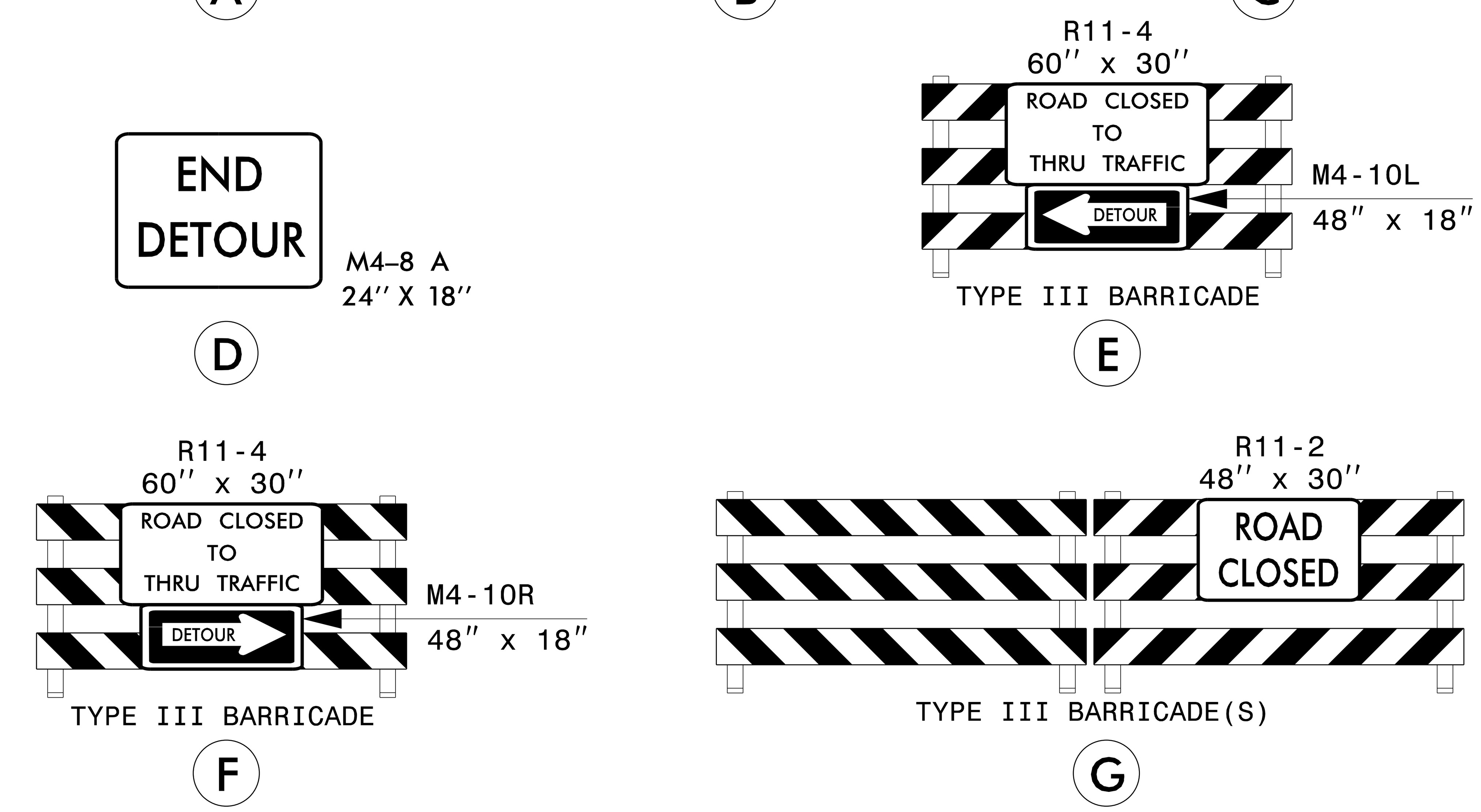
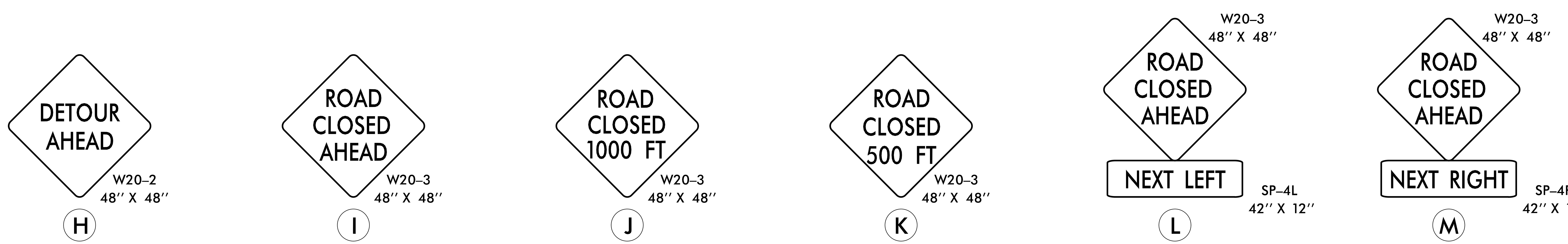
* SEE SHEET TMP–3 FOR SPECIAL SIGN DESIGNS









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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	TMP–3

TRAFFIC ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032711 ENGINEER

DocuSigned by: Robert W. Thompson
6/28/2021

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LICENSE NO. F–0669

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SIGN NUMBER: SD-1
TYPE: D
QUANTITY: SEE PLANS

SIGN WIDTH: 5′-0″
HEIGHT: 3′-6″
TOTAL AREA: 17.5 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

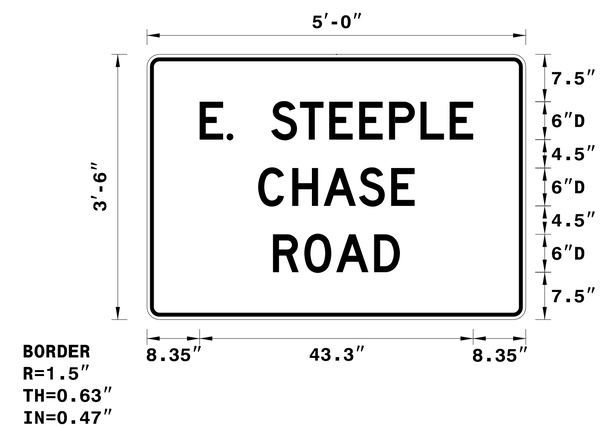
SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

DESIGN BY: VJR
PROJECT ID: 17BP.7.R.128
CHECKED BY: RWT
DIV: 7
DATE: Mar 19, 2019

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.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																											Series/Size Text Length
	E	.		S	T	E	E	P	L	E																	D 2000
	8.3	12.6	13.7	19.7	24.2	28.9	33.6	38.3	43.3	47.9																	43.3
	C	H	A	S	E																						D 2000
	17.6	23	28	33.6	38.7																						24.8
	R	O	A	D																							D 2000
	20	24.9	30	36																							20.1

FILENAME: B5714_rdy_tmp3

NORTH CAROLINA D.O.T. SIGN DETAIL

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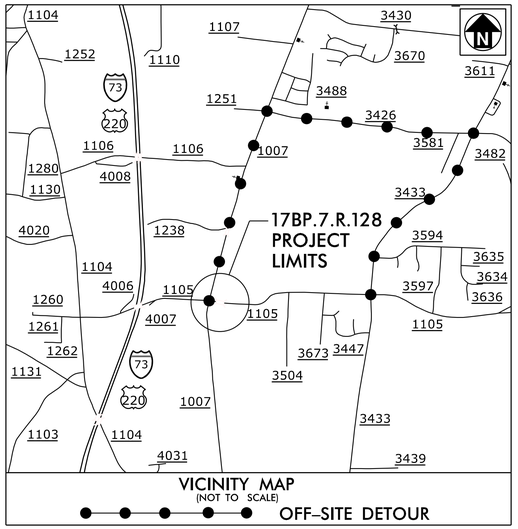
TIP PROJECT: 17BP.7.R.128

CONTRACT:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.7.R.128	EC-1	

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



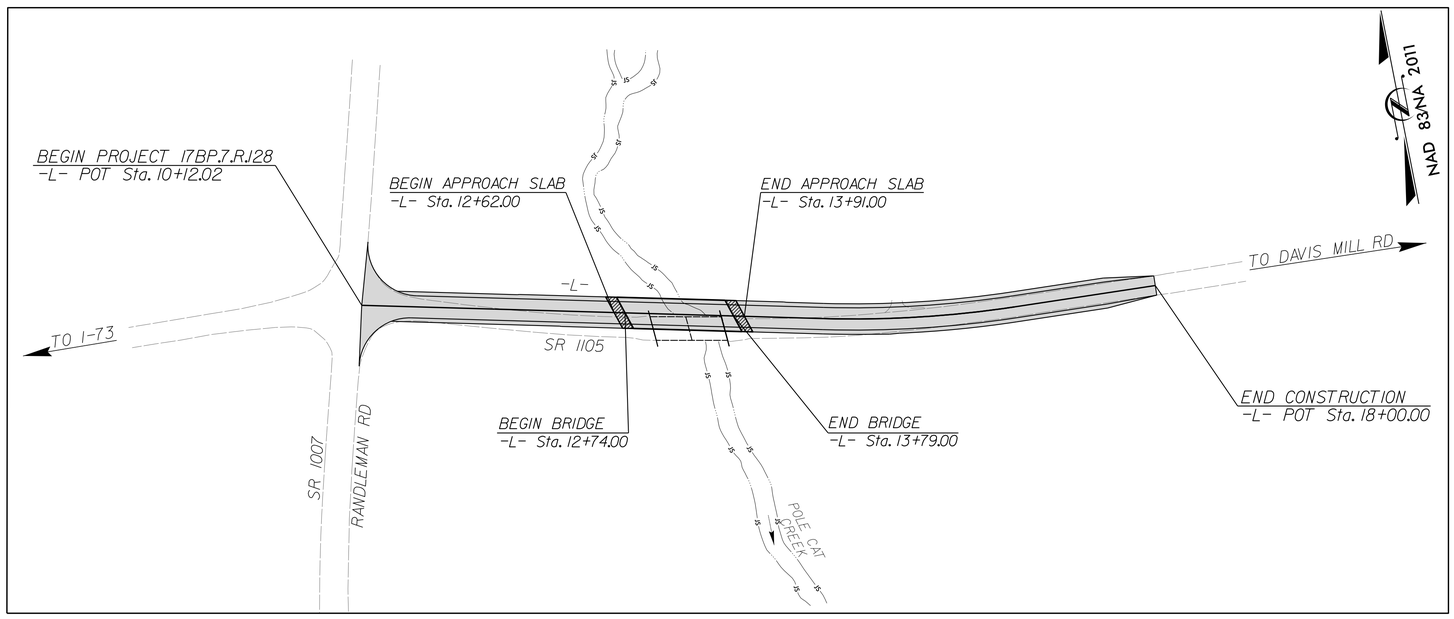
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

GUILFORD COUNTY

LOCATION: BRIDGE NO. 25 OVER POLE CAT CREEK ON SR 1105 (EAST STEEPLE CHASE ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
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	EW CFW
	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	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

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:

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 revison 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 B	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 Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

5/18/2021
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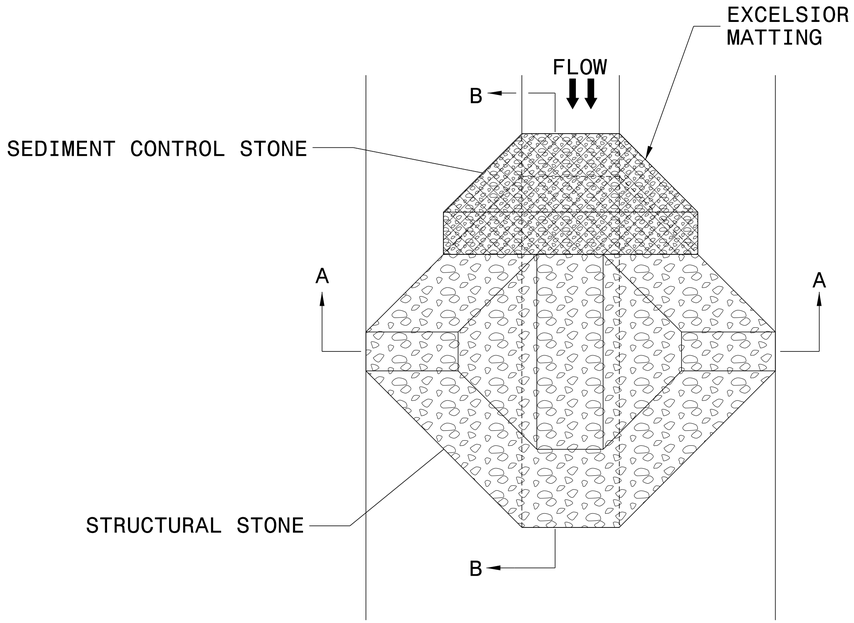
R1(68786)

PROJECT REFERENCE NO.	SHEET NO.
17BP.7.R.128 – GUILFORD 25	EC–2

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



PLAN

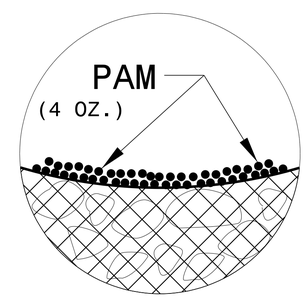
NOTES:

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

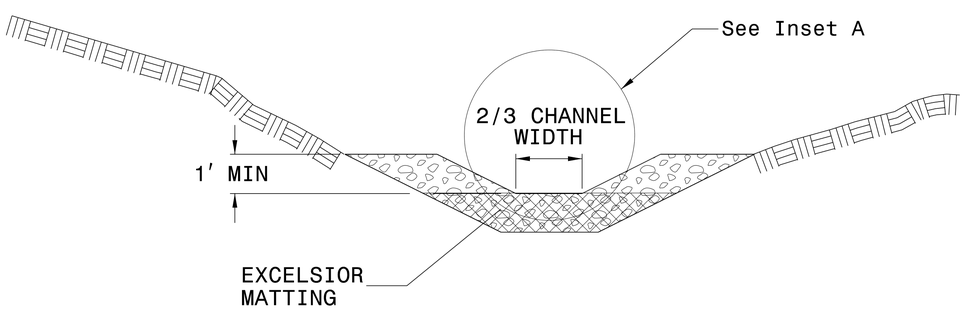
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

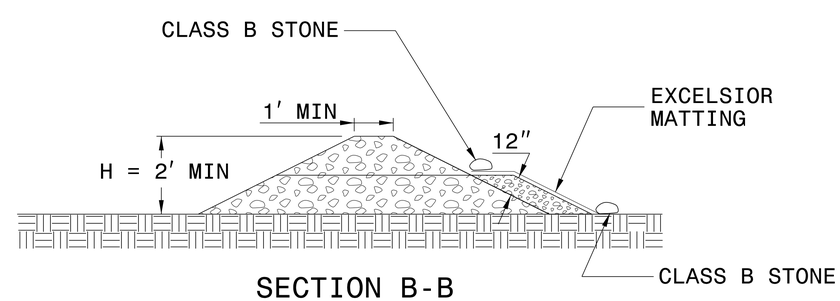
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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 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.

PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	EC–4 /CONST. 4

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

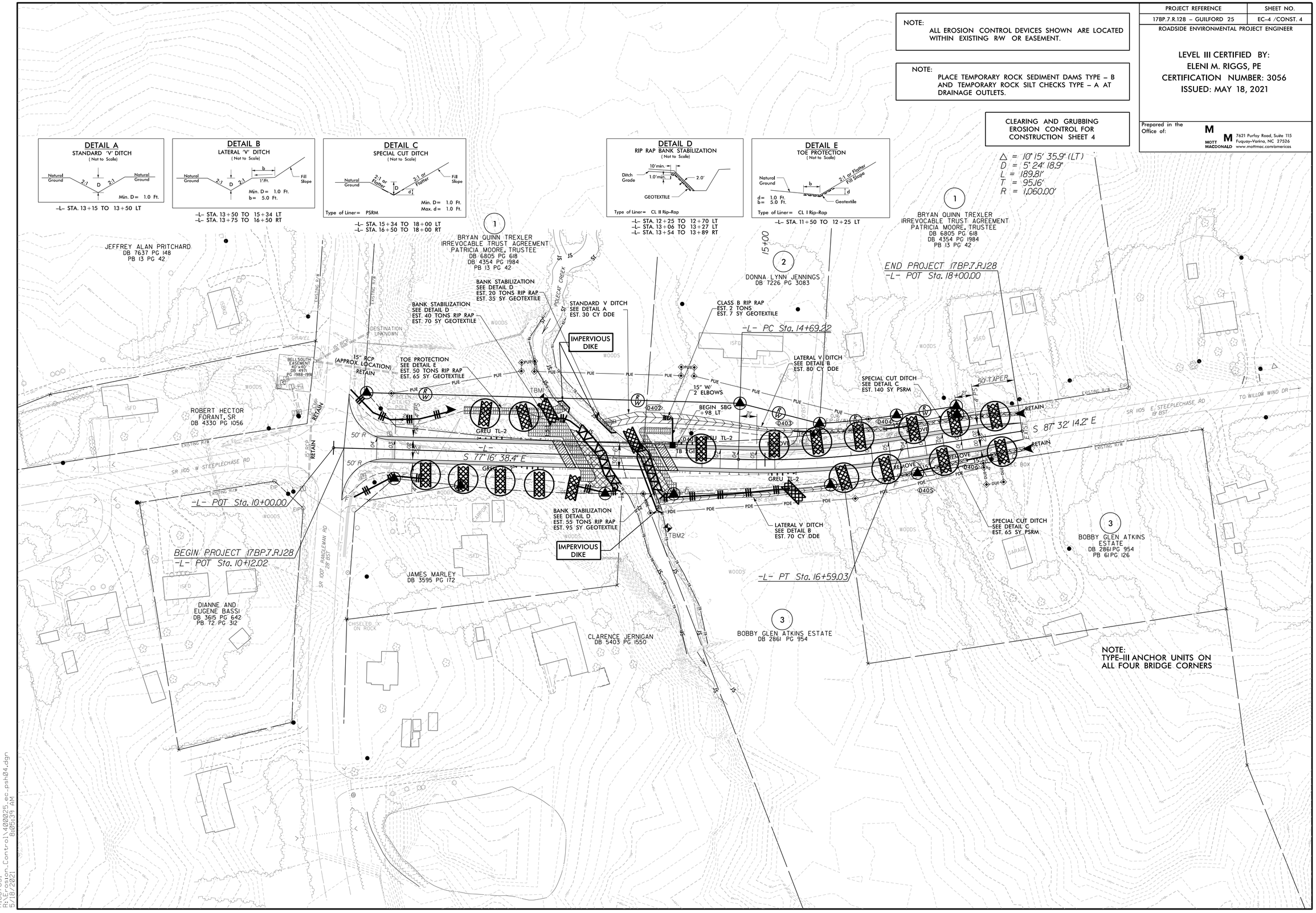
LEVEL III CERTIFIED BY:
ELENI M. RIGGS, PE
CERTIFICATION NUMBER: 3056
ISSUED: MAY 18, 2021

Prepared in the Office of:
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 R/W 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



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PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	EC-5 /CONST. 4

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
ELENI M. RIGGS, PE
CERTIFICATION NUMBER: 3056
ISSUED: MAY 18, 2021

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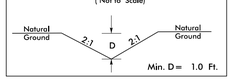
7621 Purfoy Road, Suite 115
Fuquay-Varina, NC 27526
www.mottmac.com/americas

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

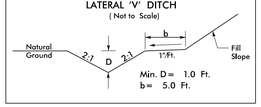
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

DETAIL A
STANDARD 'V' DITCH
(Not to Scale)



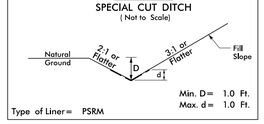
–L– STA. 13+15 TO 13+50 LT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



–L– STA. 13+50 TO 15+34 LT
–L– STA. 13+75 TO 16+50 RT

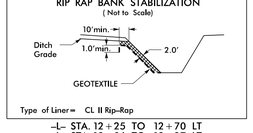
DETAIL C
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= PSRM

–L– STA. 15+34 TO 18+00 LT
–L– STA. 16+50 TO 18+00 RT

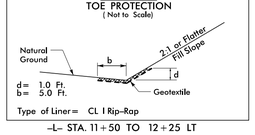
DETAIL D
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner= CL II Rip-Rap

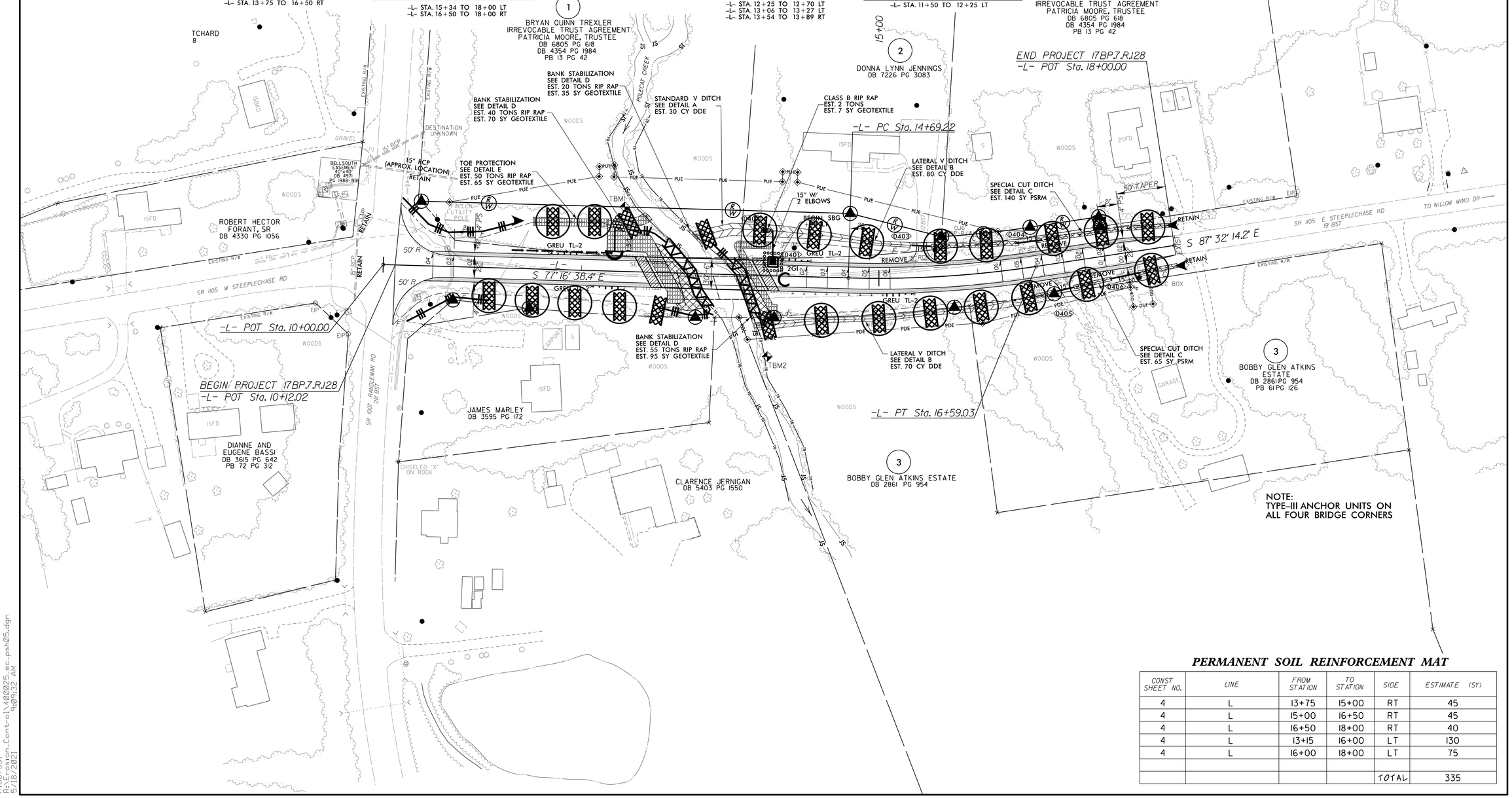
–L– STA. 12+25 TO 12+70 LT
–L– STA. 13+06 TO 13+27 LT
–L– STA. 13+54 TO 13+89 RT

DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner= CL I Rip-Rap

–L– STA. 11+50 TO 12+25 LT



PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	13+75	15+00	RT	45
4	L	15+00	16+50	RT	45
4	L	16+50	18+00	RT	40
4	L	13+15	16+00	LT	130
4	L	16+00	18+00	LT	75
				TOTAL	335

R1G87851
R:\Erosion_Control\400025_ec_psh05.dgn
5/18/2021 9:09:32 AM

PROJECT REFERENCE	SHEET NO.
17BP.7.R.128 – GUILFORD 25	UO–1

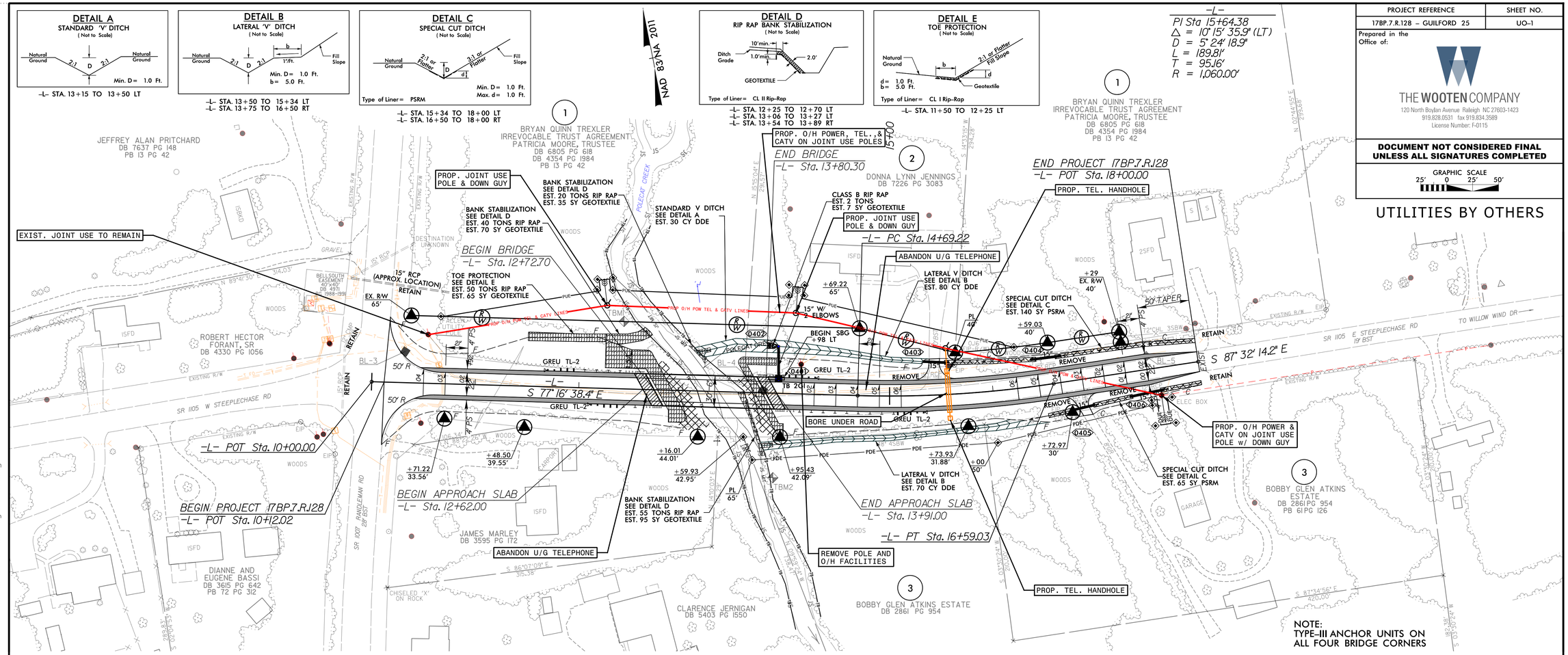
Prepared in the Office of:

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

5/20/2021
3:34:54 PM
T:\Projects\Hatch_Mott_MacDonald-3160\K\17BP.7.R.128 Guilford 25 on East Steeple Chase Rd (old B-4956)\CADD\B4956_rdy_ut1_Ub0.dgn
jharris