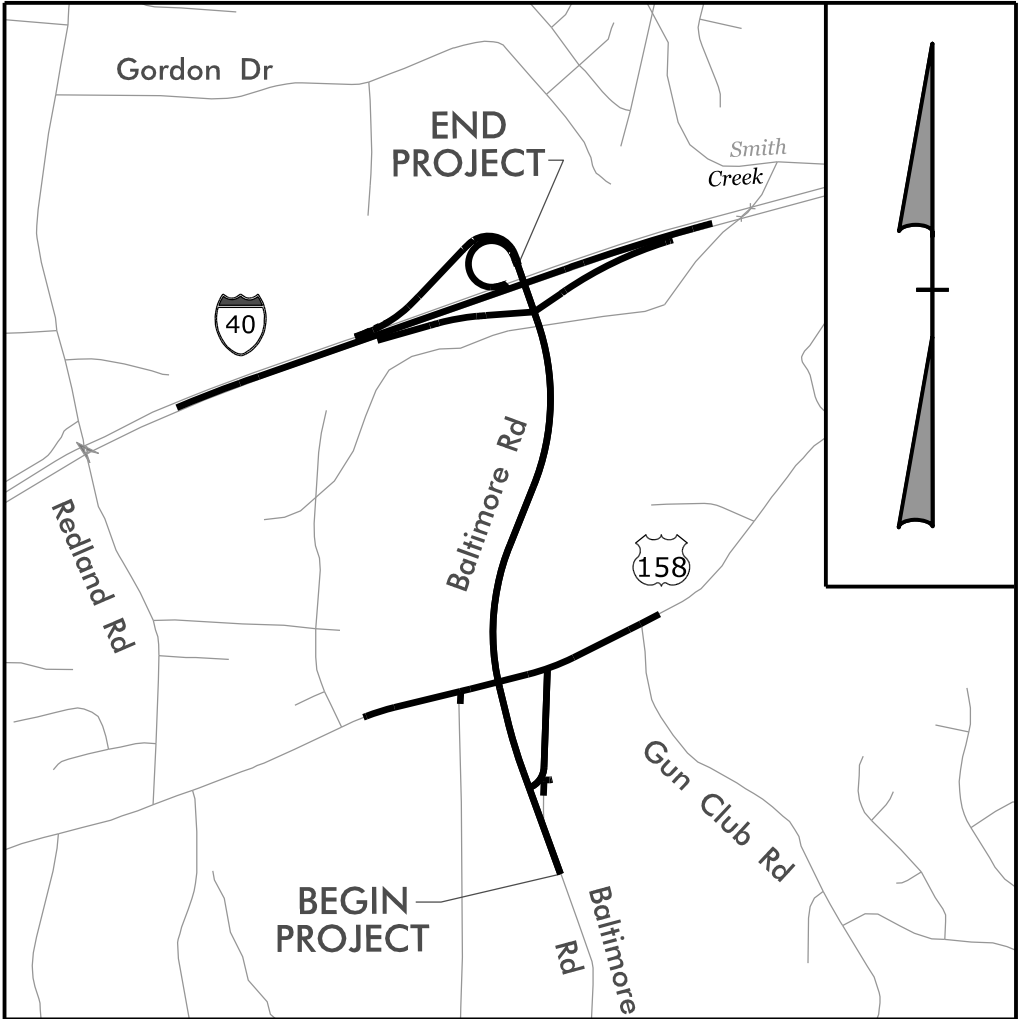


TIP PROJECT: U-6187

CONTRACT: C205093

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



VICINITY MAP (NTS)

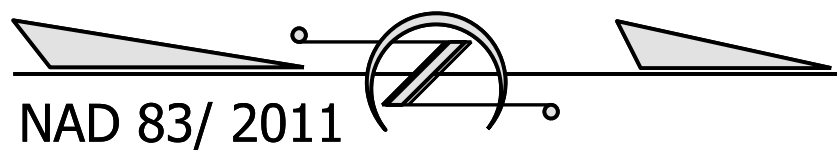
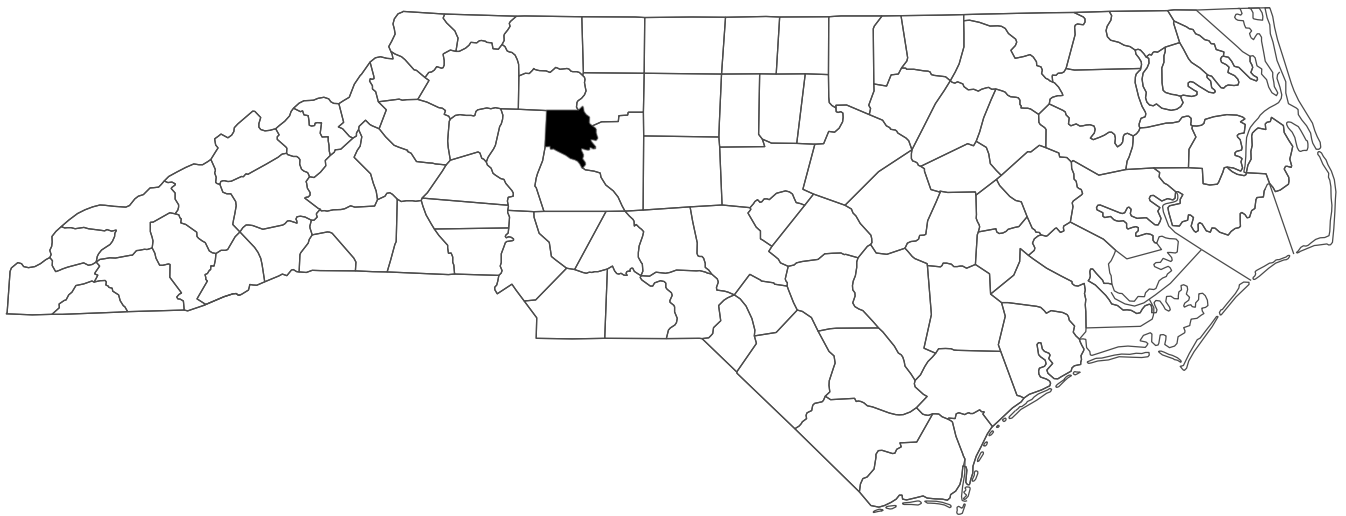
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DAVIE COUNTY

LOCATION: *EXTENSION OF SR 1630 (BALTIMORE ROAD)
TO A NEW INTERCHANGE AT I-40*

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-6187	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
48647.1.1		PE	
48647.2.2	4864701	UTIL.	
48647.2.3	4864701	R/W	
48647.3.1		CONST.	



BEGIN TIP PROJECT U-6187
-L- STA. 10+30.00

END CONSTRUCTION
-DRW1- STA. 10+85.00

BEGIN CONSTRUCTION
-Y1- STA. 10+31.26

BEGIN CONSTRUCTION
-Y3- STA. 10+10.00

BEGIN CONSTRUCTION
-Y2- STA. 19+93.85 LT

END TIP PROJECT U-6187
-L- STA. 72+80.54

END BRIDGE
-L- STA. 72+07.84

PROPOSED BRIDGE

BEGIN BRIDGE
-L- STA. 69+83.09

END CONSTRUCTION
-Y1- STA. 38+70.00

END CONSTRUCTION
-Y2- STA. 66+20.00 RT

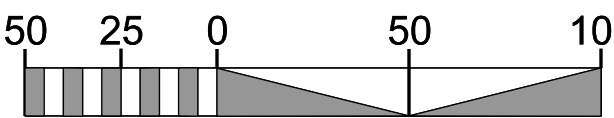
★ DENOTES PROPOSED TRAFFIC SIGNAL

THIS IS A CONTROL OF ACCESS PROJECT WITH ACCESS TO I-40 BEING LIMITED TO INTERCHANGES.

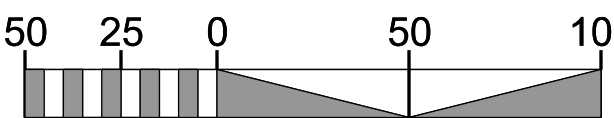
A DESIGN EXCEPTION HAS BEEN APPROVED FOR STOPPING SIGHT DISTANCE FOR A VERTICAL CREST CURVE
ALONG -Y1- (US 158).

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

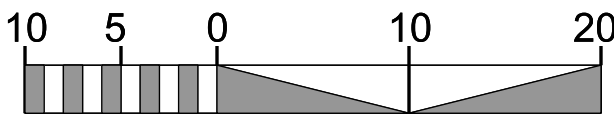
GRAPHIC SCALES



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

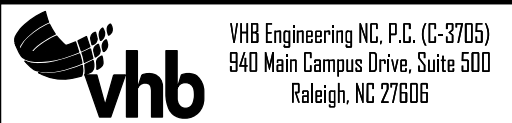
DESIGN DATA

ADT 2025 = 8,100
ADT 2045 = 21,200
K = 10 %
D = 55 %
T = 8 % *
V = 60 MPH
* TTST =6% DUAL 2%
FUNC CLASS =
MAJOR COLLECTOR
STATE WIDE TIER

PROJECT LENGTH

PROJECT LENGTHS FOR TIP PROJECT U-6187:
LENGTH ROADWAY TIP PROJECT U-6187 = 1.141 MILES
LENGTH STRUCTURES TIP PROJECT U-6187 = 0.043 MILES
TOTAL LENGTH TIP PROJECT U-6187 = 1.184 MILES

NCDOT Contact: RYAN C. NEWCOMB, PE
Prepared in the Office of:



2024 STANDARD SPECIFICATIONS

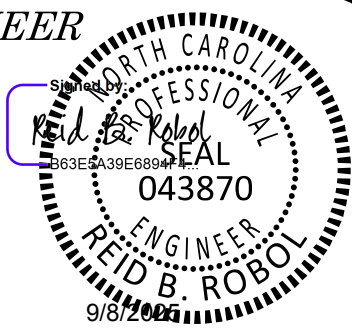
RIGHT OF WAY DATE:
MAY 31, 2024

LETTING DATE:
OCTOBER 21, 2025

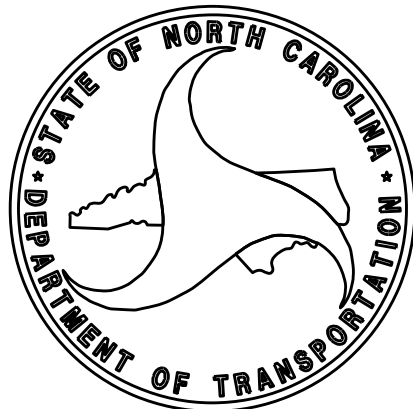
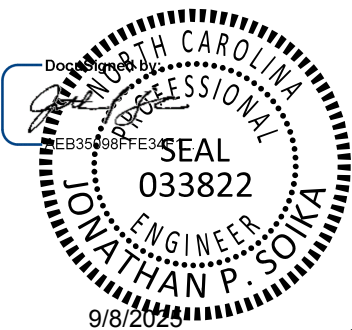
JONATHAN P. SOIKA, P.E.
PROJECT ENGINEER

JOHN G. TOWNSEND, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER



ROADWAY DESIGN
ENGINEER



Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

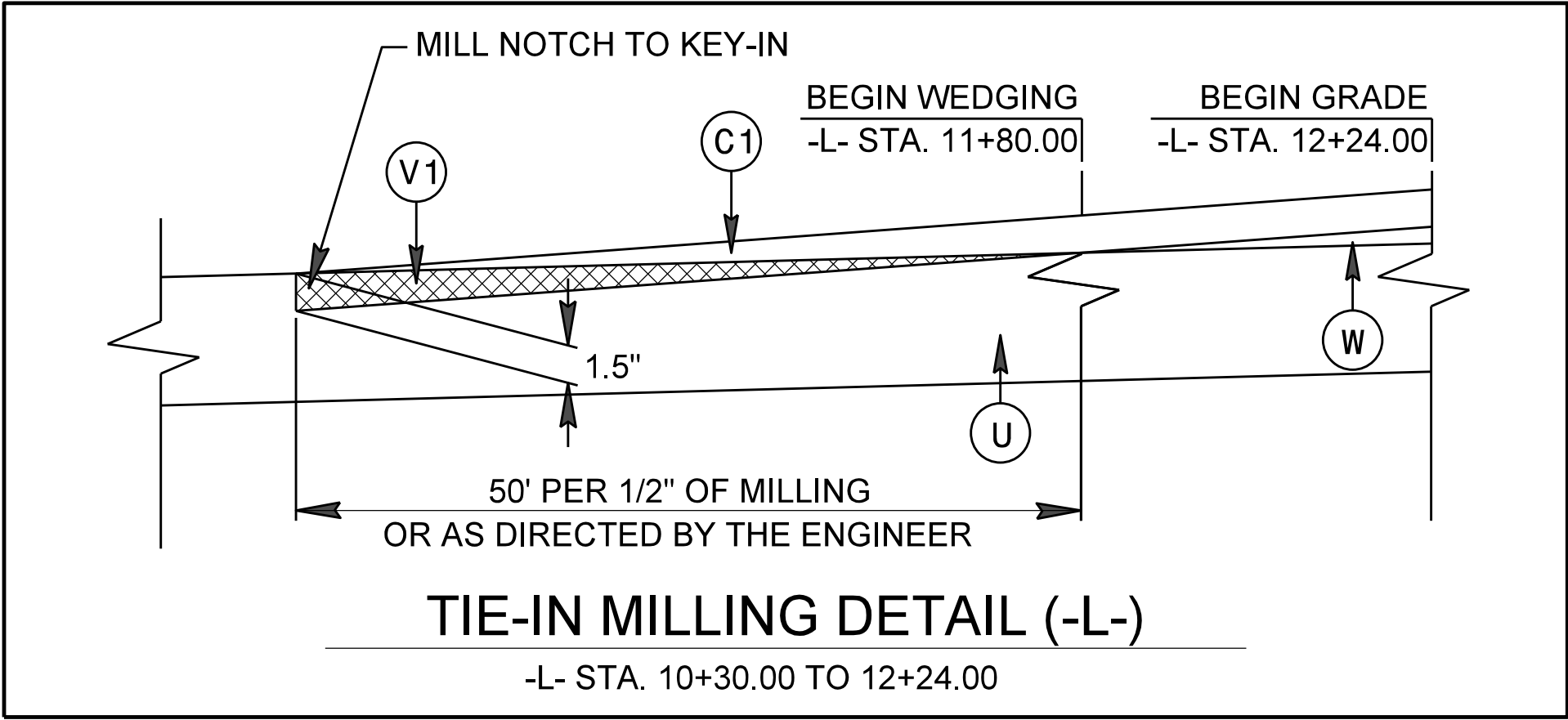
MISCELLANEOUS:

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

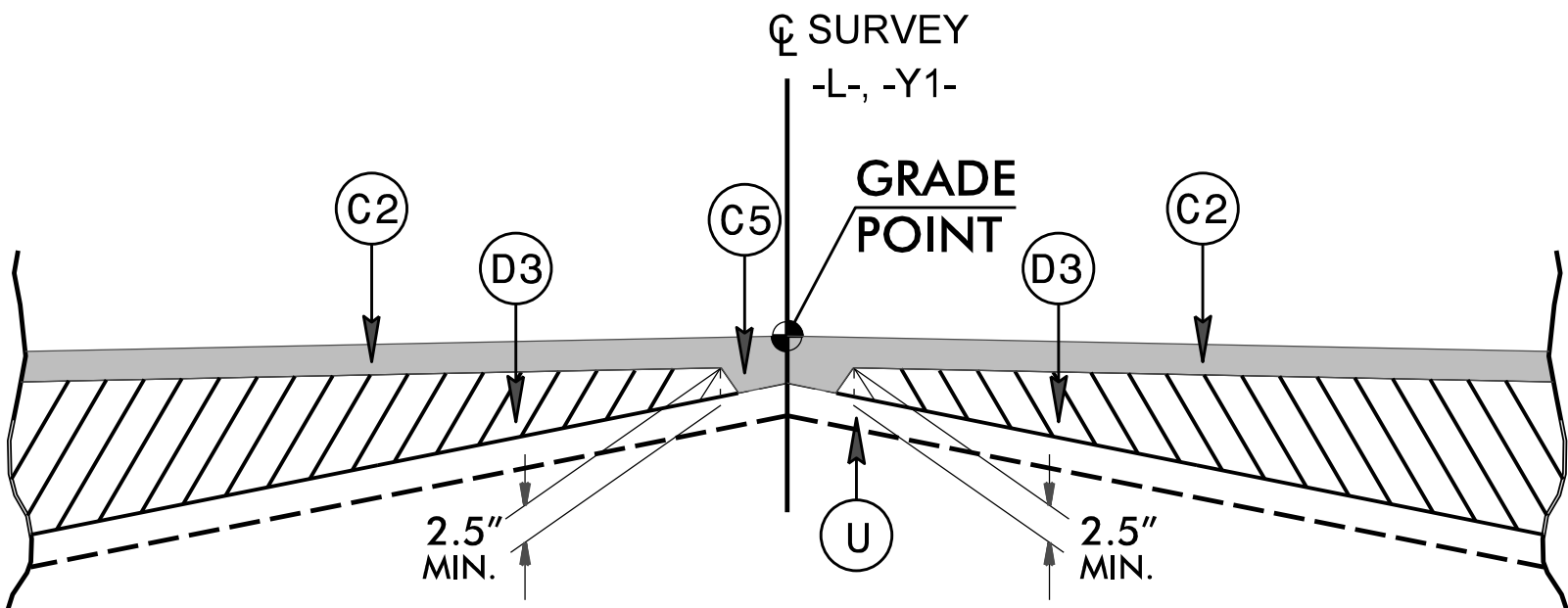
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" 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. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C5	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 TO EXCEED 2" IN DEPTH.
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5D, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	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 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 11" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE
K	PROP. 8" LIME SUBGRADE STABILIZATION (METHOD-SLURRY) AT A RATE OF 24 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER (50% OF PROJECT) OR PROP. 7" CEMENT SUBGRADE STABILIZATION AT A RATE OF 56 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER (50% OF PROJECT).
N	GEOTEXTILE FOR SUBGRADE STABLIZATION
P	PRIME COAT AT AN AVERAGE RATE OF 0.35 GAL. PER SQ. YD.
R1	2' - 6" CONCRETE CURB AND GUTTER
R2	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING
V2	MILLING ASPHALT PAVEMENT 1.5" DEPTH
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
Y	MILLED RUMBLE STRIPS (SEE RSD NOS. 665.01 AND 665.02)

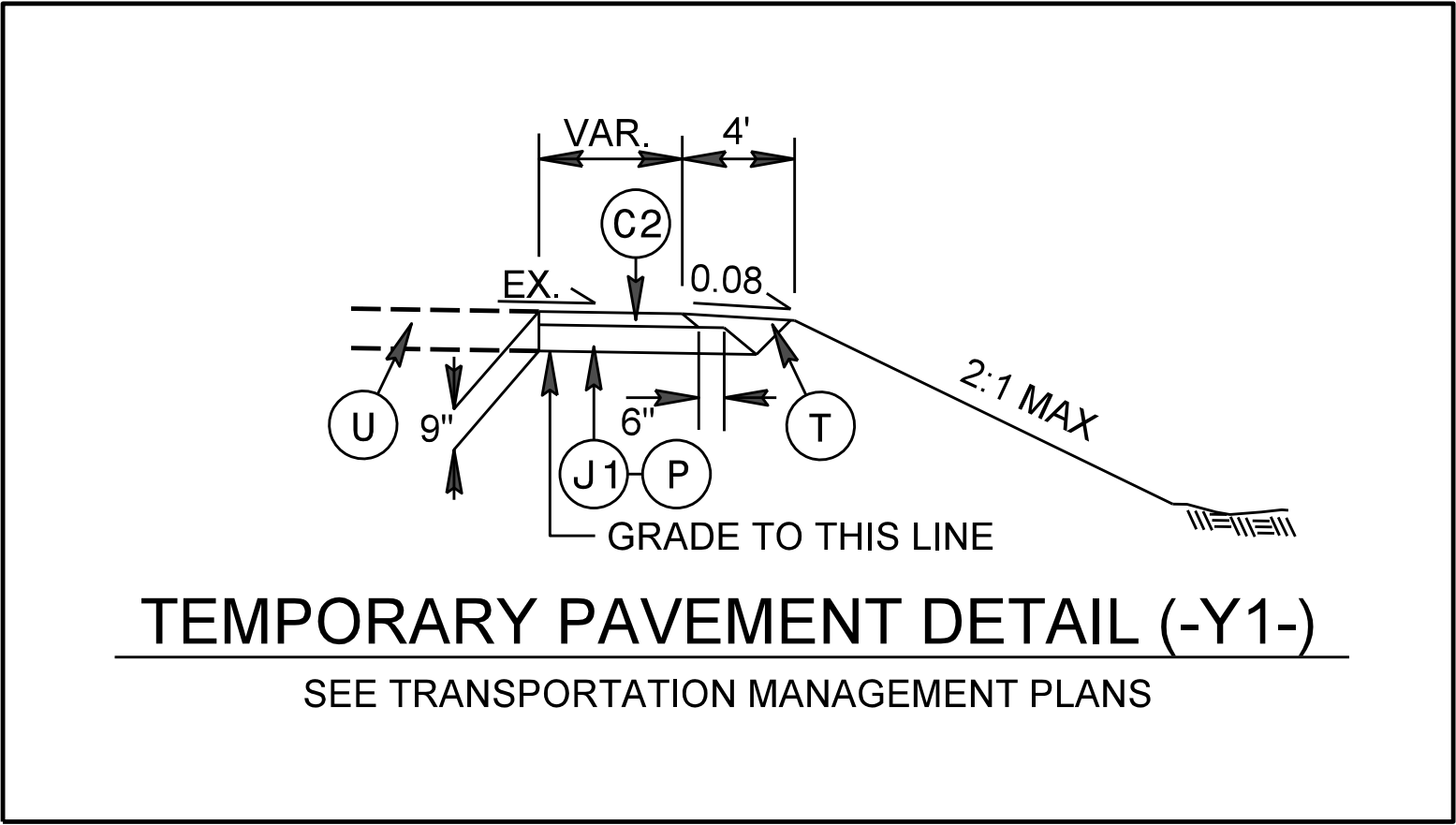
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



TIE-IN MILLING DETAIL (-L-)

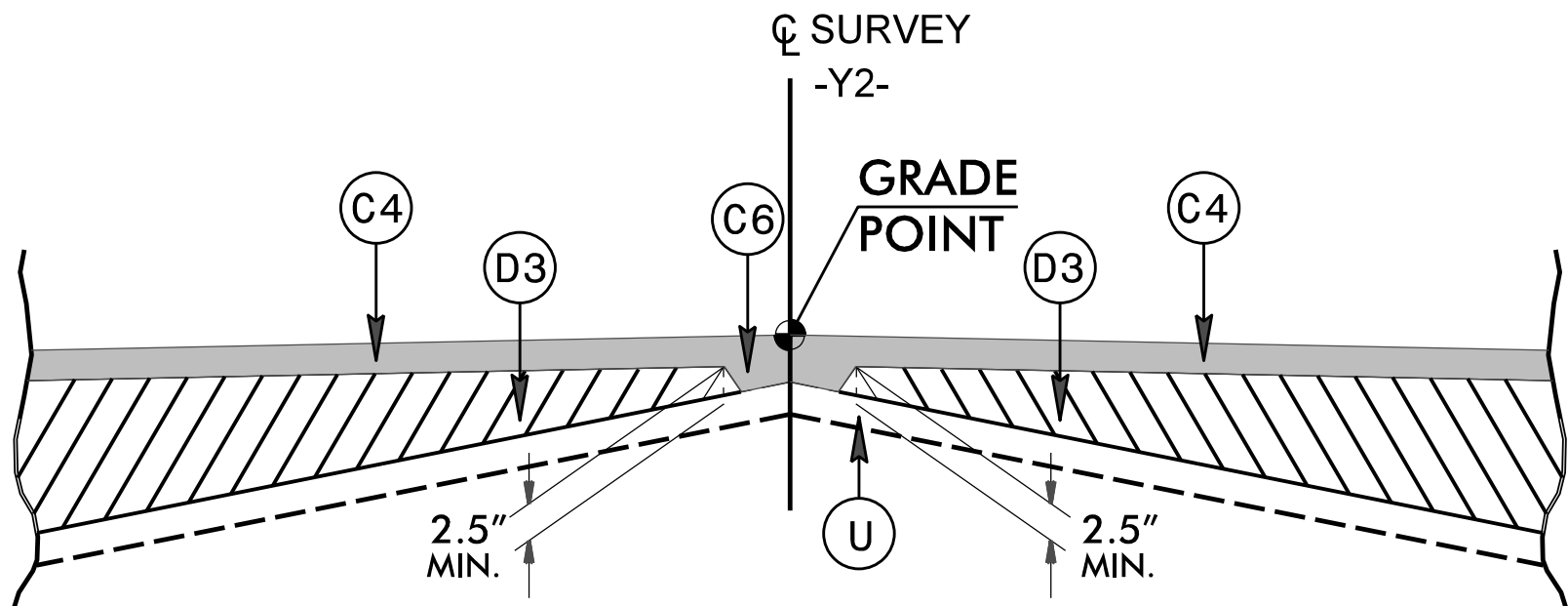


DETAIL SHOWING METHOD OF WEDGING

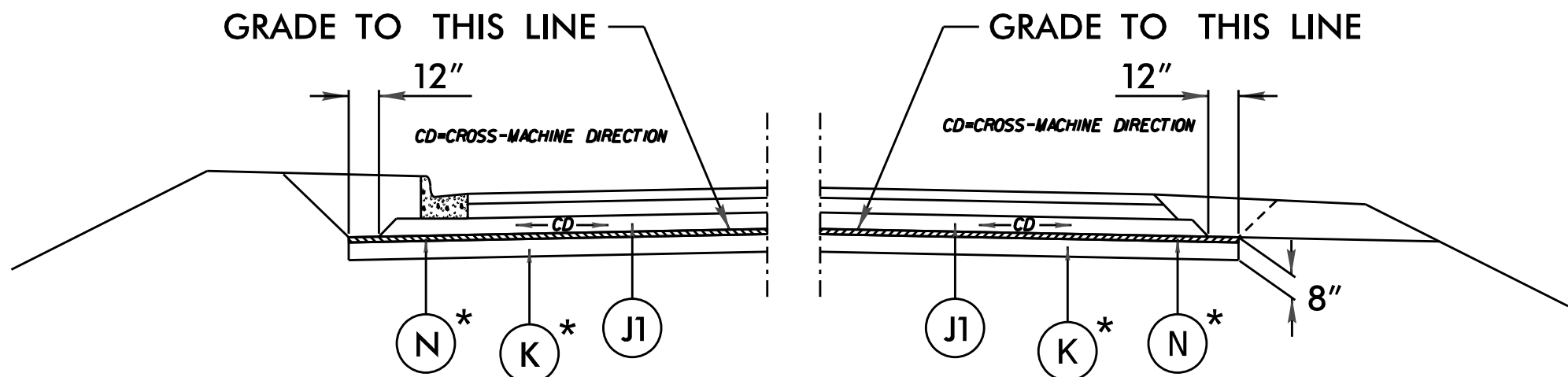


TEMPORARY PAVEMENT DETAIL (-Y1-)

SEE TRANSPORTATION MANAGEMENT PLANS



DETAIL SHOWING METHOD OF WEDGING



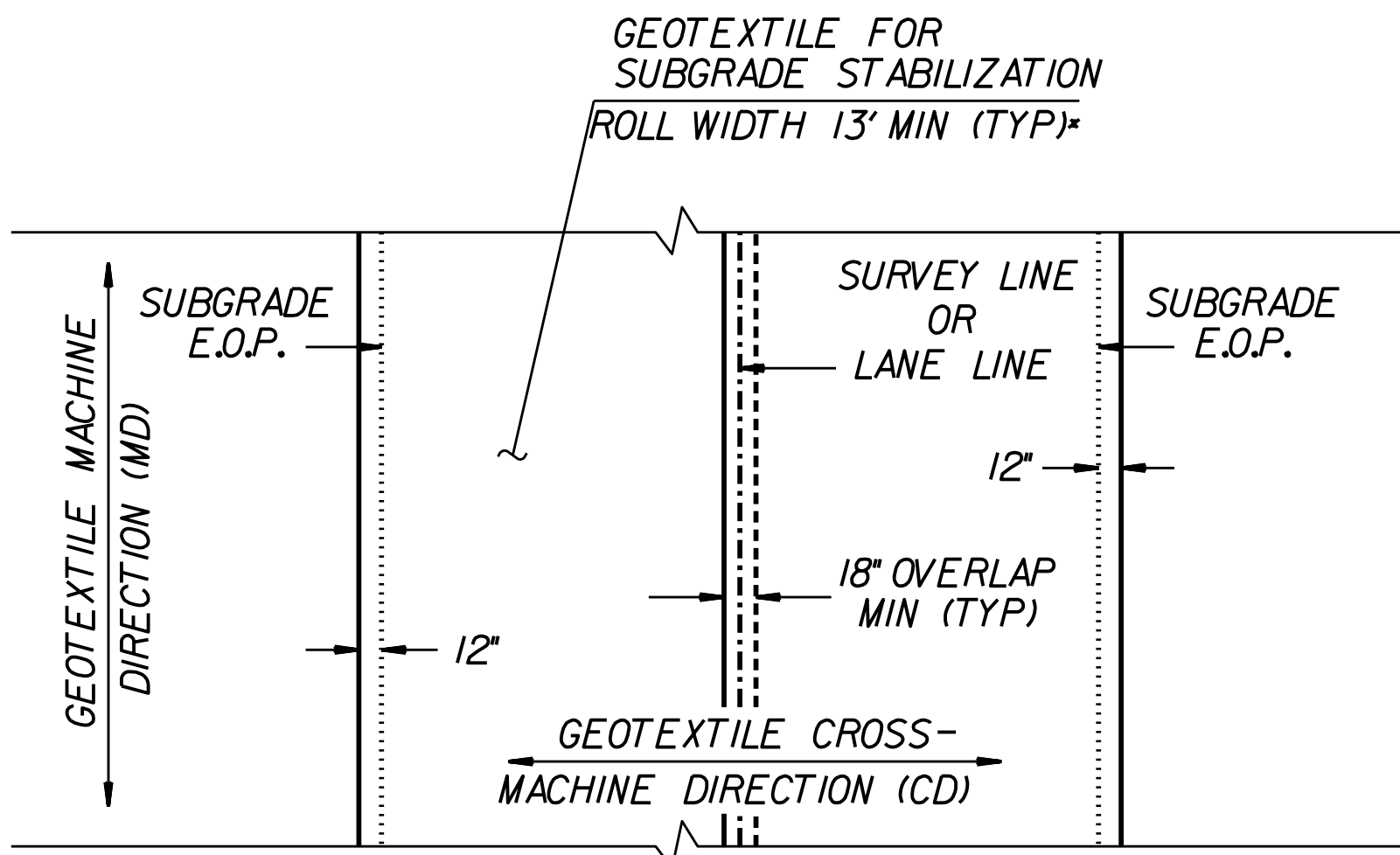
DETAIL SHOWING CHEMICAL STABILIZATION-GEOTEXTILE FOR SUBGRADE STABILIZATION FOR PAVEMENT WITH ABC

TO BE USED IN CONJUNCTION WITH
TYPICAL SECTION NOS. 2, 3, 6, 7, AND 8A

APPLY (N) (GEOTEXTILE FOR SUBGRADE STABILIZATION) ALONG THE FOLLOWING SEGMENTS:

-L- FROM STA. 15+75.00 TO 24+75.00 -RPC- FROM STA. 10+00.00 TO 25+67.00
-L- FROM STA. 61+25.00 TO 69+74.00 -RPD- FROM STA. 17+75.00 TO 25+10.00
-RPB- FROM STA. 10+00.00 TO 13+75.00 -Y4- FROM STA. 10+12.00 TO 13+50.00

APPLY (K) (CHEMICAL SUBGRADE STABILIZATION) AS SHOWN ON TYPICAL SECTIONS.
NOTE THERE IS NO CHEMICAL SUBGRADE STABILIZATION ALONG -Y4- (TS NO. 8A).



GEOTEXTILE FOR SUBGRADE STABILIZATION PLACEMENT
(PLAN VIEW)

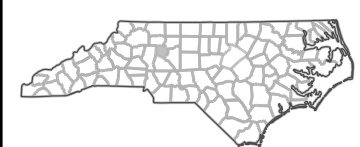
(100% COVERAGE REQUIRED)

*INSTALL GEOTEXTILE FOR SUBGRADE STABILIZATION WITH MINIMUM ROLL
WIDTH UNDER ROADWAY EDGES AND SHOULDERS ADJACENT TO FILL SLOPES

U-6187

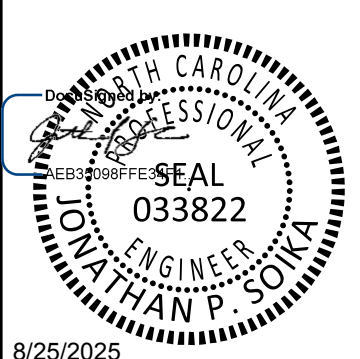
FINAL 2A-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY



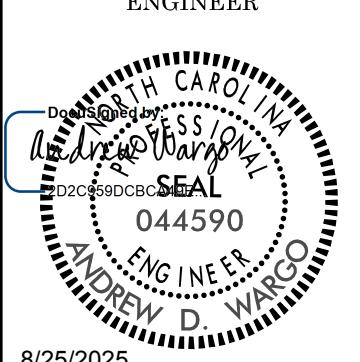
ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



8/25/2025

PAVEMENT DESIGN
ENGINEER



8/25/2025

PREPARED BY



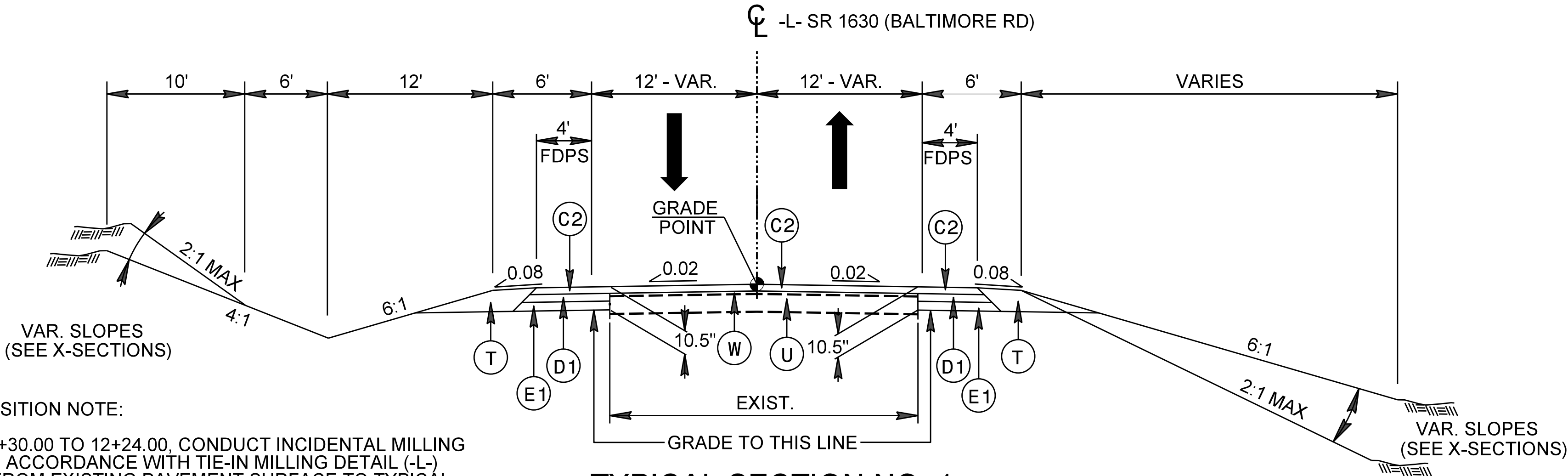
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5C
C2	3" TYPE S9.5C
C3	1.5" TYPE S9.5D
C4	3" TYPE S9.5D
D1	3.5" TYPE I19.0C
D2	4" TYPE I19.0C
E1	4" TYPE B25.0C
E2	11" TYPE B25.0C
J1	6" ABC
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C&G
R2	5" CONC. ISLAND (KEYED IN)
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING ASPHALT PVMT
V1	INC. MILLING
V2	1.5" MILLING
W	WEDGING
Y	RUMBLE STRIPS

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

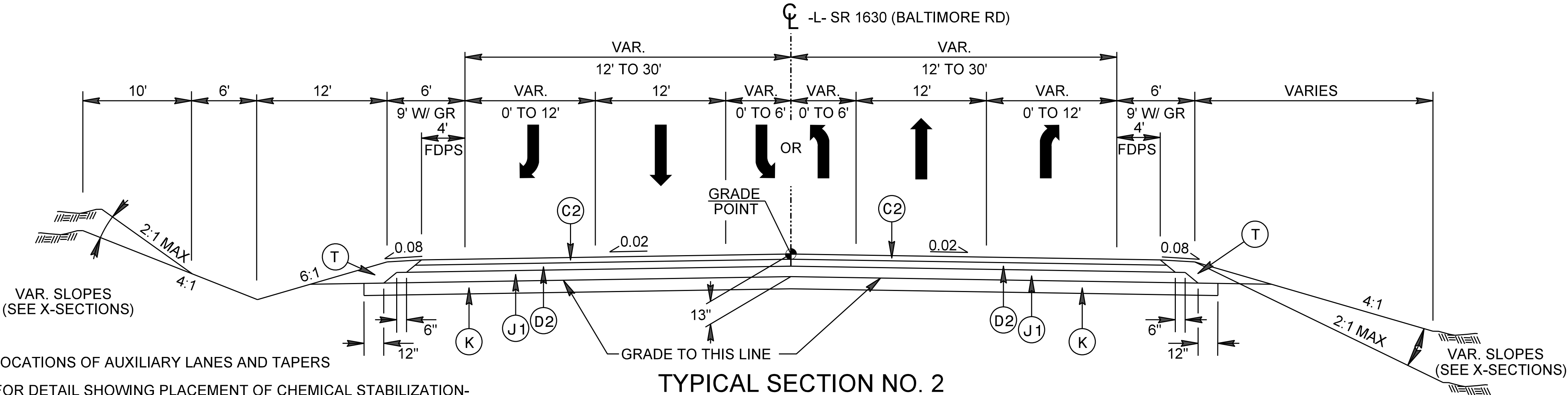
PAVEMENT TRANSITION NOTE:

FROM -L- STA. 10+30.00 TO 12+24.00, CONDUCT INCIDENTAL MILLING AND WEDGING IN ACCORDANCE WITH TIE-IN MILLING DETAIL (-L-) TO TRANSITION FROM EXISTING PAVEMENT SURFACE TO TYPICAL SECTION NO. 1.



TYPICAL SECTION NO. 1

-L- STA. 12+24.00 TO 14+30.00

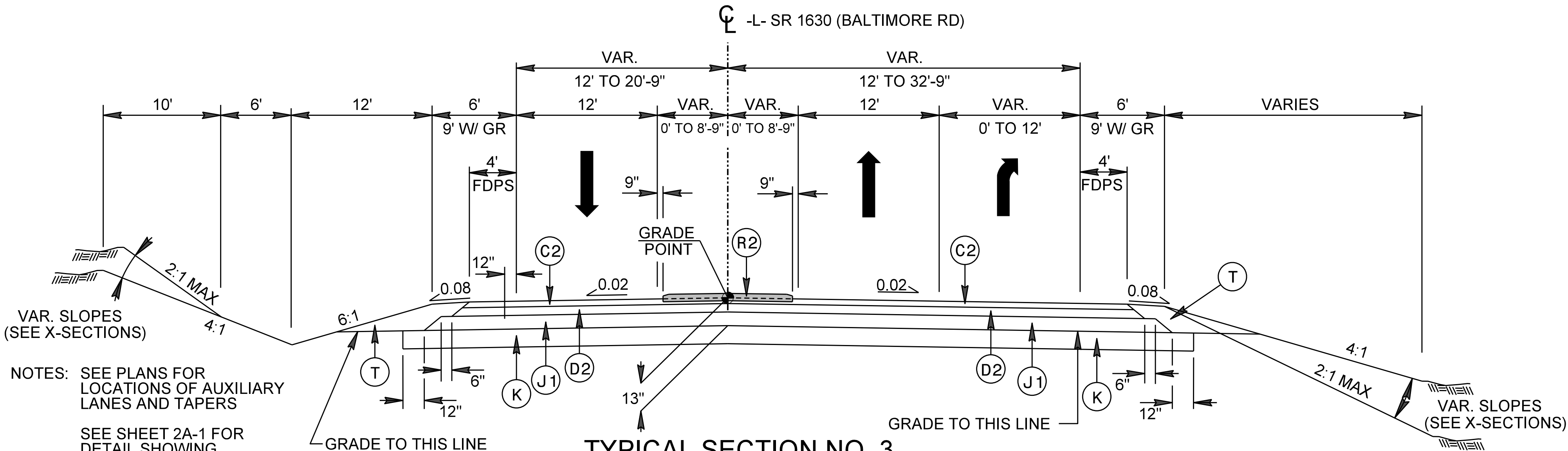


TYPICAL SECTION NO. 2

-L- STA. 14+30.00 TO 29+83.27
-L- STA. 30+36.81 TO 65+10.00

NOTES: SEE PLANS FOR LOCATIONS OF AUXILIARY LANES AND TAPERS

SEE SHEET 2A-1 FOR DETAIL SHOWING PLACEMENT OF CHEMICAL STABILIZATION-GEOTEXTILE FOR SUBGRADE STABILIZATION FOR PAVEMENT WITH ABC



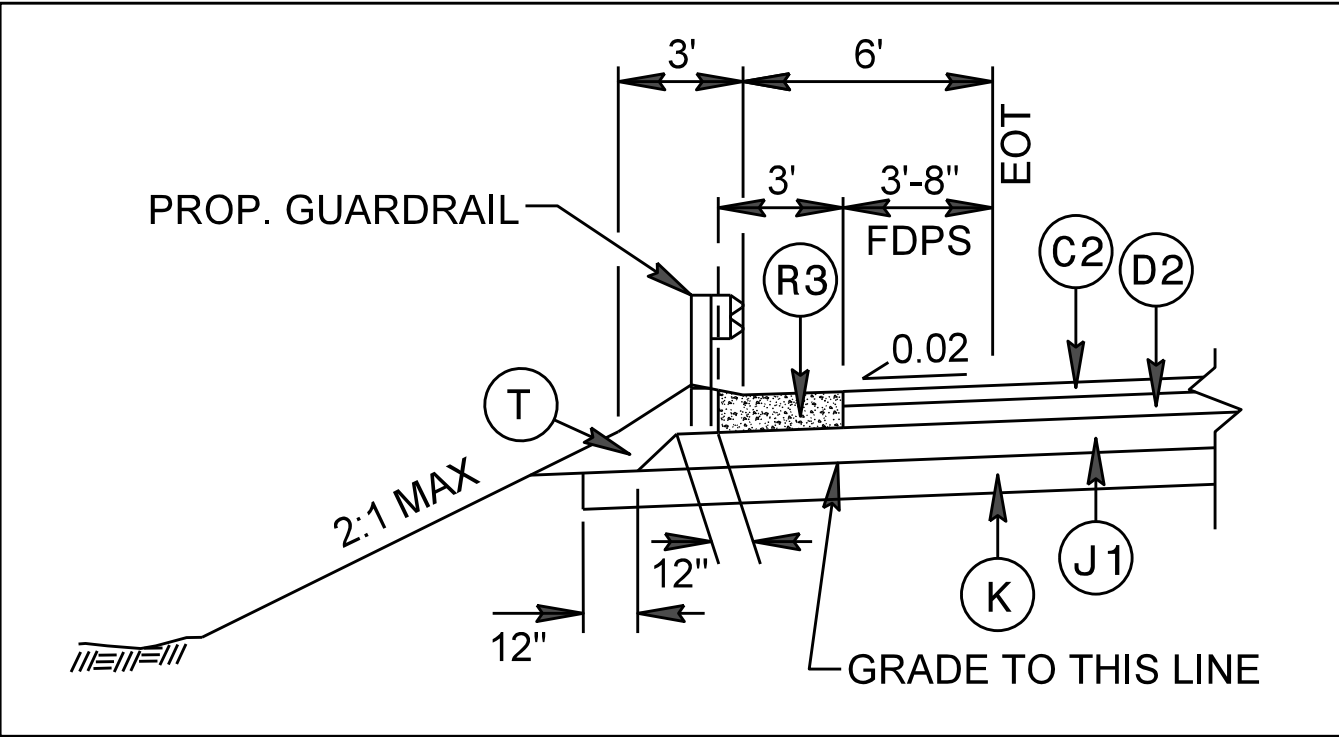
TYPICAL SECTION NO. 3

-L- STA. 65+10.00 TO 69+83.09 (BEGIN BRIDGE)
-L- STA. 72+07.84 (END BRIDGE) TO 72+80.54

NOTES: SEE PLANS FOR LOCATIONS OF AUXILIARY LANES AND TAPERS

SEE SHEET 2A-1 FOR DETAIL SHOWING PLACEMENT OF CHEMICAL STABILIZATION-GEOTEXTILE FOR SUBGRADE STABILIZATION FOR PAVEMENT WITH ABC

INSET "A"
SHOULDER BERM GUTTER DETAIL (SBG)



USE INSET "A" IN CONJUNCTION WITH
TYPICAL SECTION NOS. 2 & 3

-L- STA. 16+10.00 TO 20+00.00 LT
-L- STA. 17+50.00 TO 18+47.36 RT
-L- STA. 19+70.41 TO 24+75.00 RT
-L- STA. 60+25.00 TO 67+29.50 LT
-L- STA. 68+40.00 TO 69+58.92 LT (BEGIN APPROACH SLAB)
-L- STA. 69+34.00 TO 69+58.92 RT (BEGIN APPROACH SLAB)
-L- STA. 72+32.01 (END APPROACH SLAB) TO 72+80.54 LT
-L- STA. 72+32.01 (END APPROACH SLAB) TO 72+50.00 RT

U-6187

FINAL2A-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

SEAL
033822
ENGINEER
NATHAN P. SONIA
8/25/2025

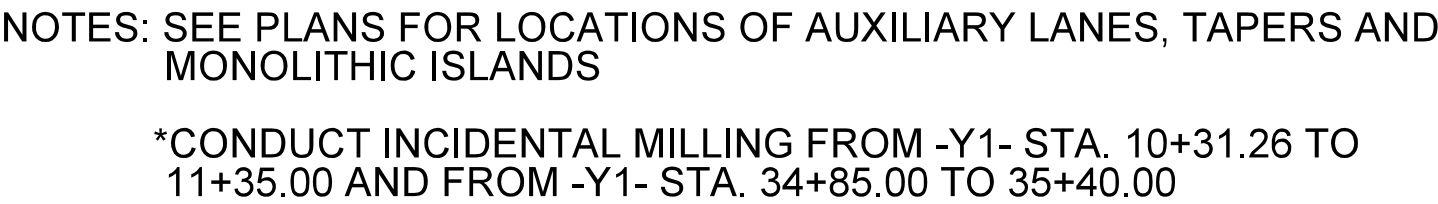
PAVEMENT DESIGN
ENGINEER

SEAL
044590
ENGINEER
ANDREW D. WARGO
8/25/2025

PREPARED BY
vhb
vhb Engineering, Inc., P.C. (C-3705)
540 Main Campus Drive, Suite 500
Raleigh, NC 27606

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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



-Y1- STA. 10+31.26 TO 35+40.00



SEE PLANS FOR ISLAND LIMITS AND DIMENSIONS



-Y1- STA. 35+40.00 TO 38+70.00 LT
-Y1- STA. 35+40.00 TO 38+40.00 RT



NOTES: SEE PLANS FOR LOCATIONS OF ACCELERATION/DECELERATION LANES AND TAPERS

WHERE PAVED SHOULDER IS 4 FEET WIDE, ITS CROSS SLOPE WILL MATCH THAT OF ADJACENT ACCELERATION/DECELERATION LANE

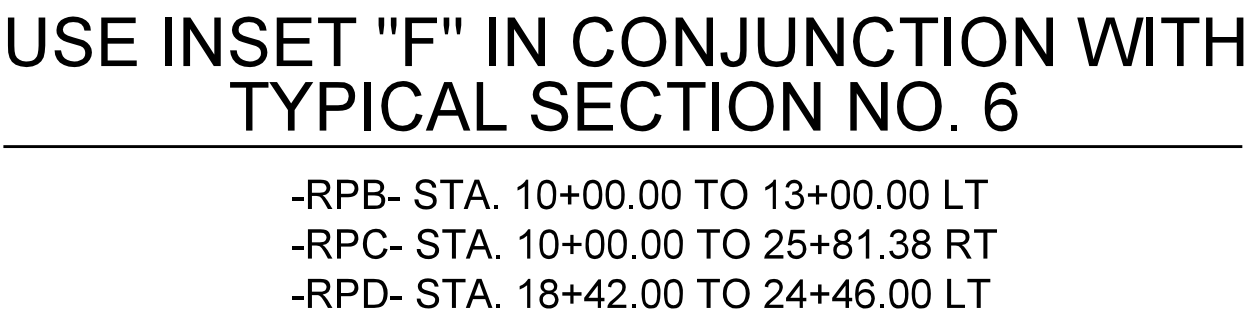


- Y2- STA. 21+80.00 TO 33+15.80 LT (WESTBOUND OUTSIDE SHOULDER)
OUTLETS AT 24+80 (PAD), 27+80 (PAD), 31+00 (2GI, 0801),
AND 33+15.80 (2GI, 0806)
- Y2- STA. 27+98.30 TO 36+36.64 RT (EASTBOUND OUTSIDE SHOULDER)
OUTLETS AT 30+98.39 (PAD), 34+21.39 (2GI, 0847),
AND 36+36.64 (2GI, 0851)
- Y2- STA. 43+80.00 TO 52+00.00 LT (WESTBOUND OUTSIDE SHOULDER)
OUTLETS AT 46+07 (2GI, 0837), 48+90 (2GI, 0841), 50+74 (2GI, 0842),
AND 52+00 (PAD)
- Y2- STA. 56+71.73 TO 62+04.00 (EASTBOUND OUTSIDE SHOULDER)
OUTLETS AT 58+72.64 (2GI, 1202) AND 62+04 (2GI, 1204)

USE INSET "E" IN CONJUNCTION WITH
TYPICAL SECTION NO. 5

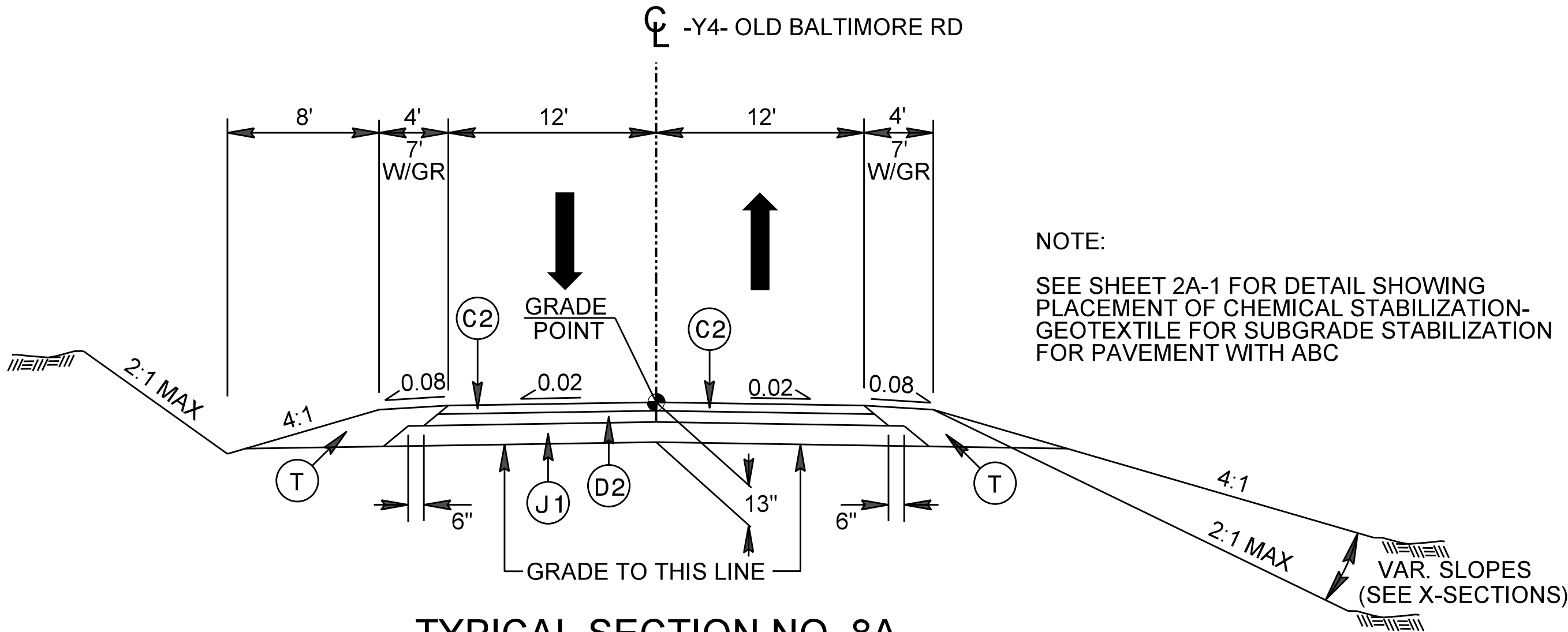
-Y2- STA. 25+75.00 TO 29+01.25 LT
-Y2- STA. 29+50.00 TO 30+98.39 RT

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



PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5C
C2	3" TYPE S9.5C
C3	1.5" TYPE S9.5D
C4	3" TYPE S9.5D
D1	3.5" TYPE I19.0C
D2	4" TYPE I19.0C
E1	4" TYPE B25.0C
E2	11" TYPE B25.0C
J1	6" ABC
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
P	PRIME COAT
R1	2'-6" C&G
R2	5" CONC. ISLAND (KEYED IN)
R3	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING ASPHALT PVMT
V1	INC. MILLING
V2	1.5" MILLING
W	WEDGING
Y	RUMBLE STRIPS

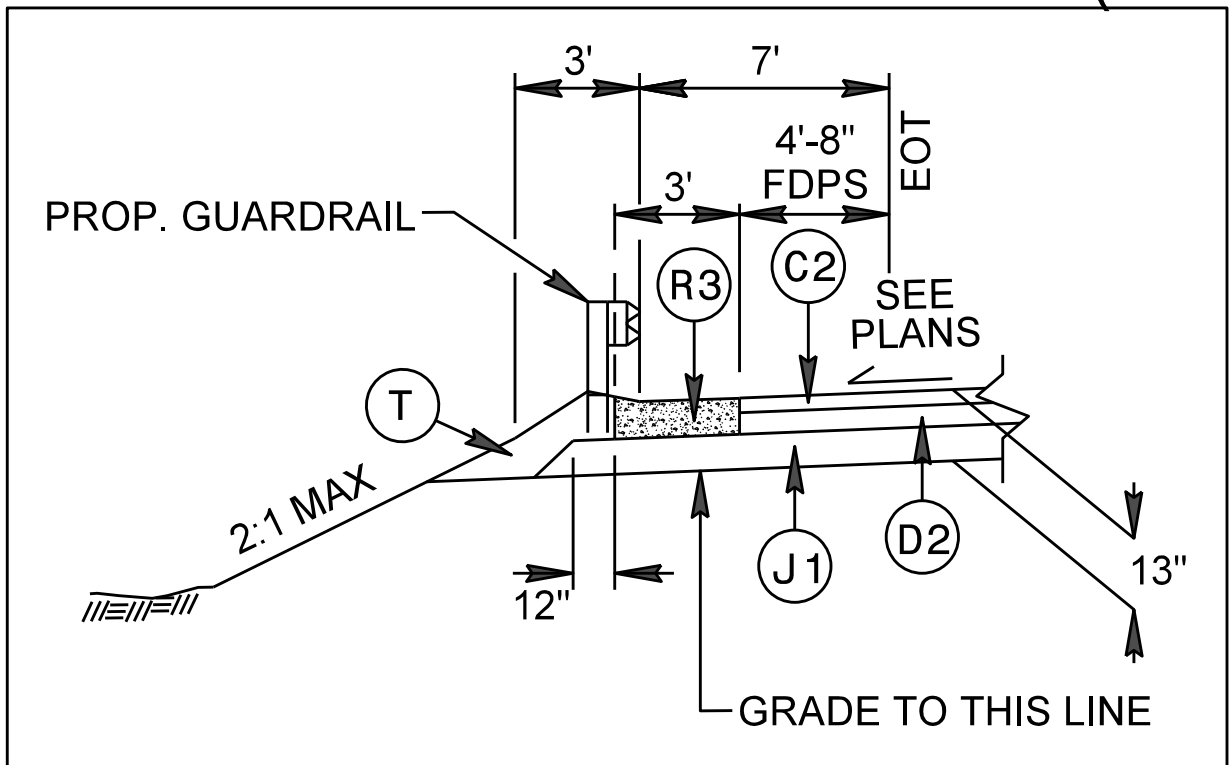
NOTE: PAVEMENT EDGE SLOPES ARE
1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 8A

-Y4- STA. 10+12.00 TO 13+75.00

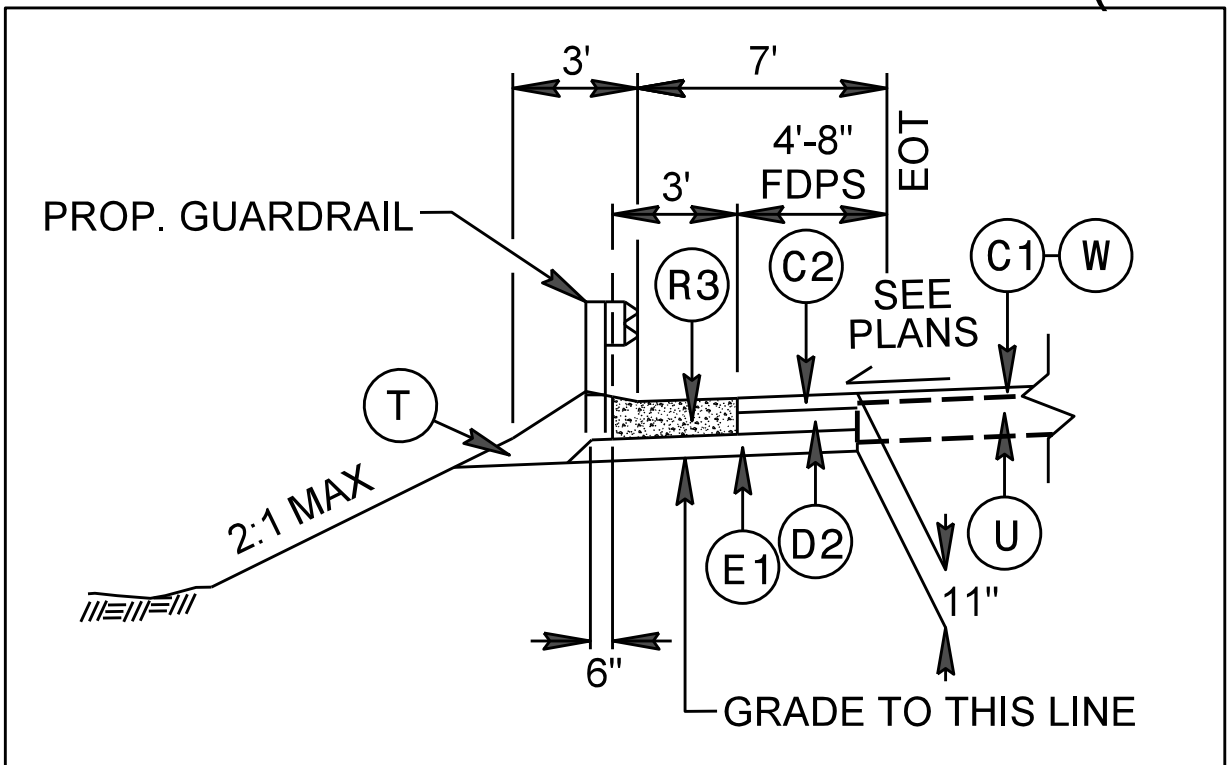
INSET "H"
SHOULDER BERM GUTTER DETAIL (SBG)



USE INSET "H" IN CONJUNCTION WITH
TYPICAL SECTION NO. 8A

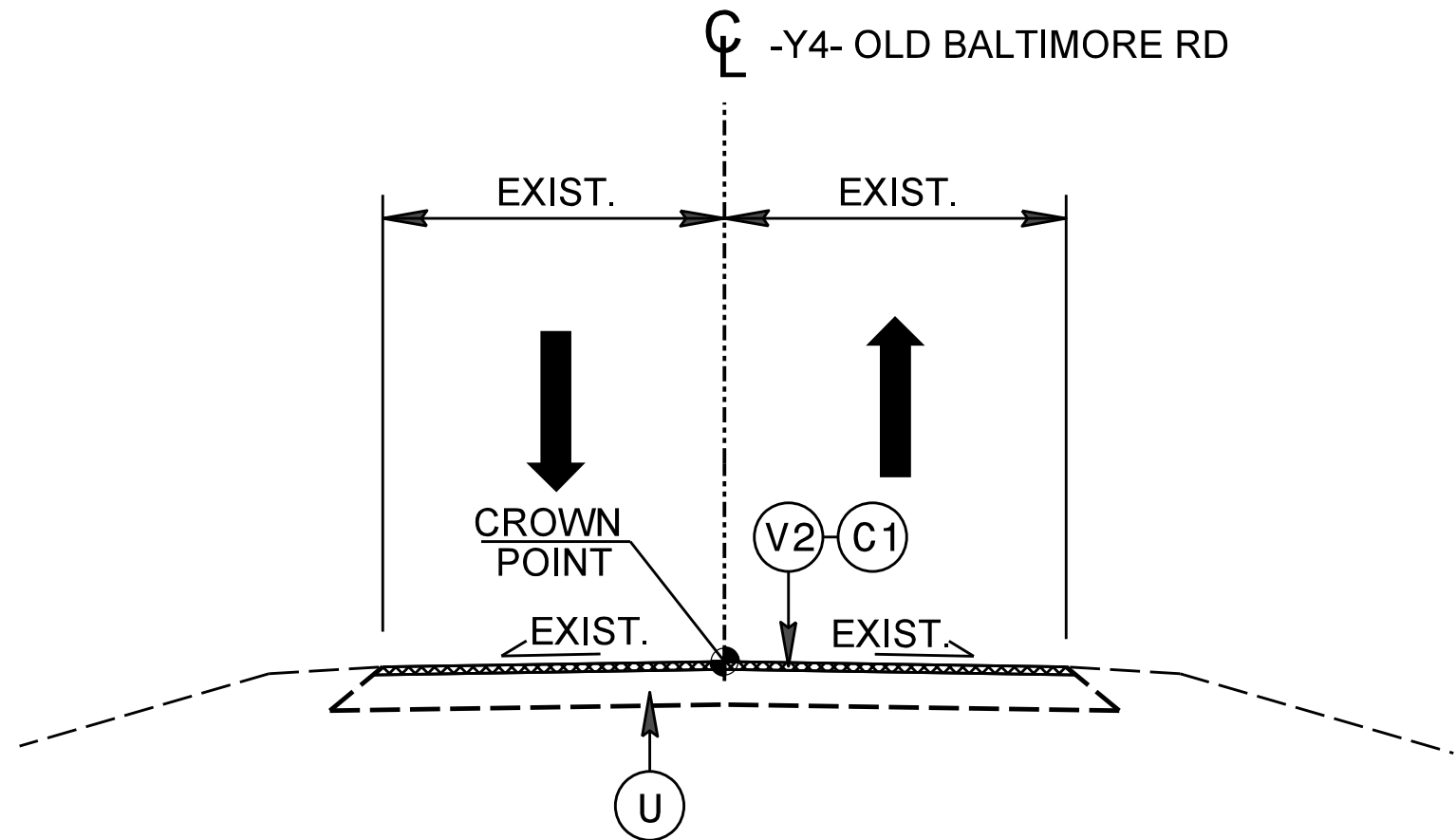
-Y4- STA. 10+20.79 TO 13+75.00 LT
-Y4- STA. 13+30.00 TO 13+75.00 RT

INSET "I"
SHOULDER BERM GUTTER DETAIL (SBG)



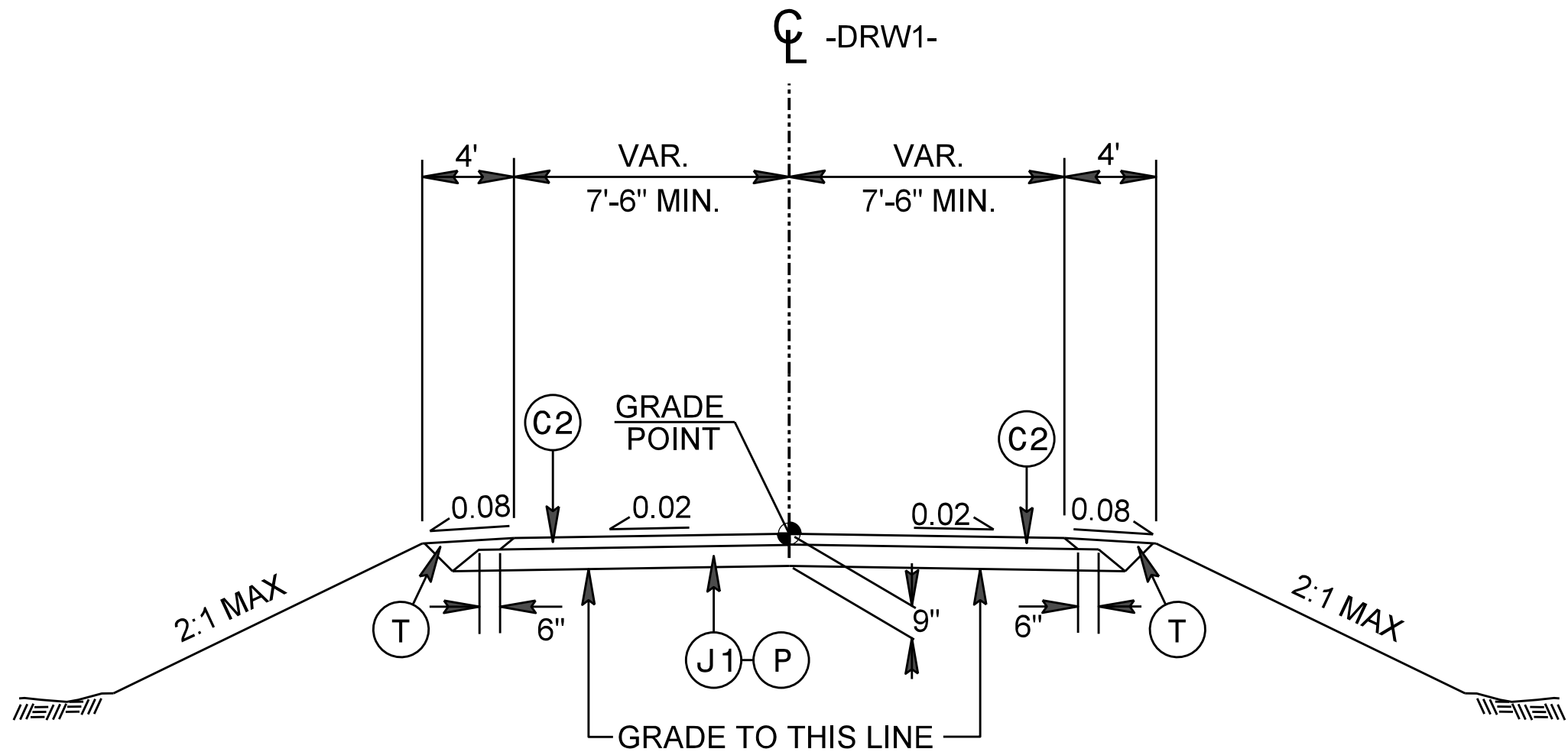
USE INSET "I" IN CONJUNCTION WITH
TYPICAL SECTION NO. 8B

-Y4- STA. 13+75.00 TO 14+75.00 LT
-Y4- STA. 13+75.00 TO 14+50.00 RT



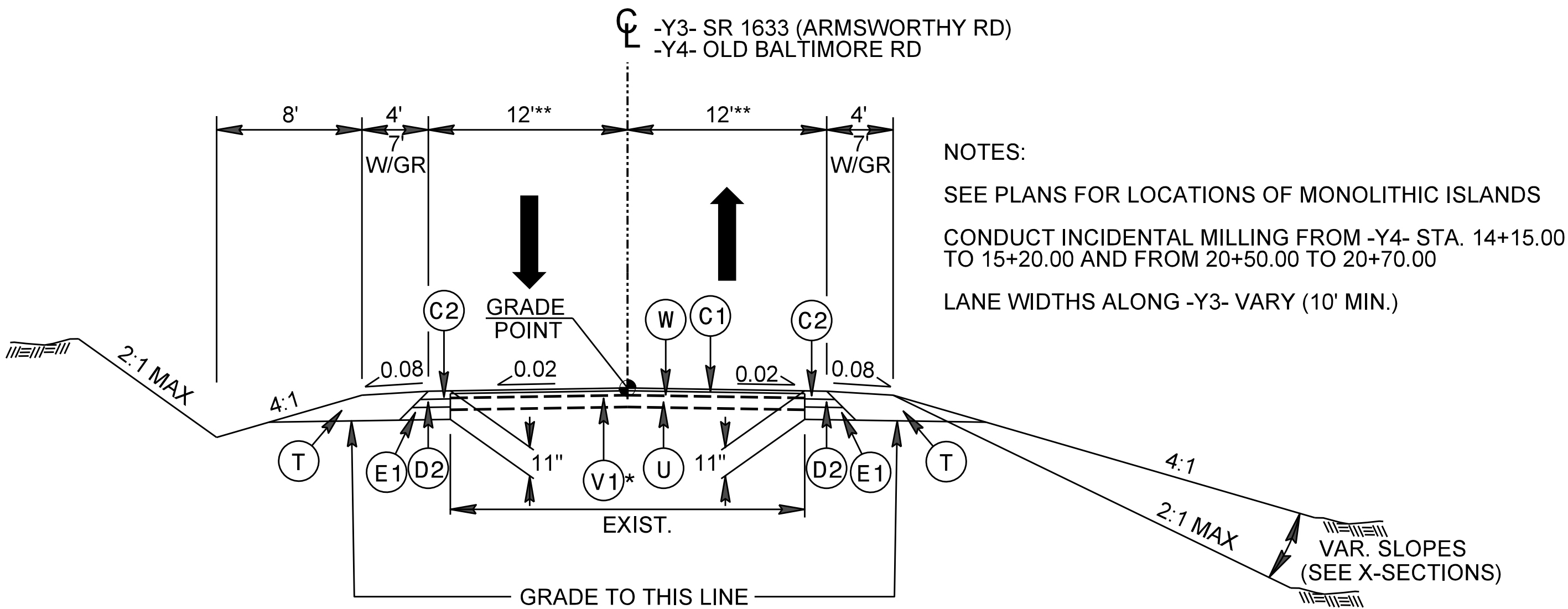
TYPICAL SECTION NO. 8C

-Y4- STA. 15+20.00 TO 20+50.00



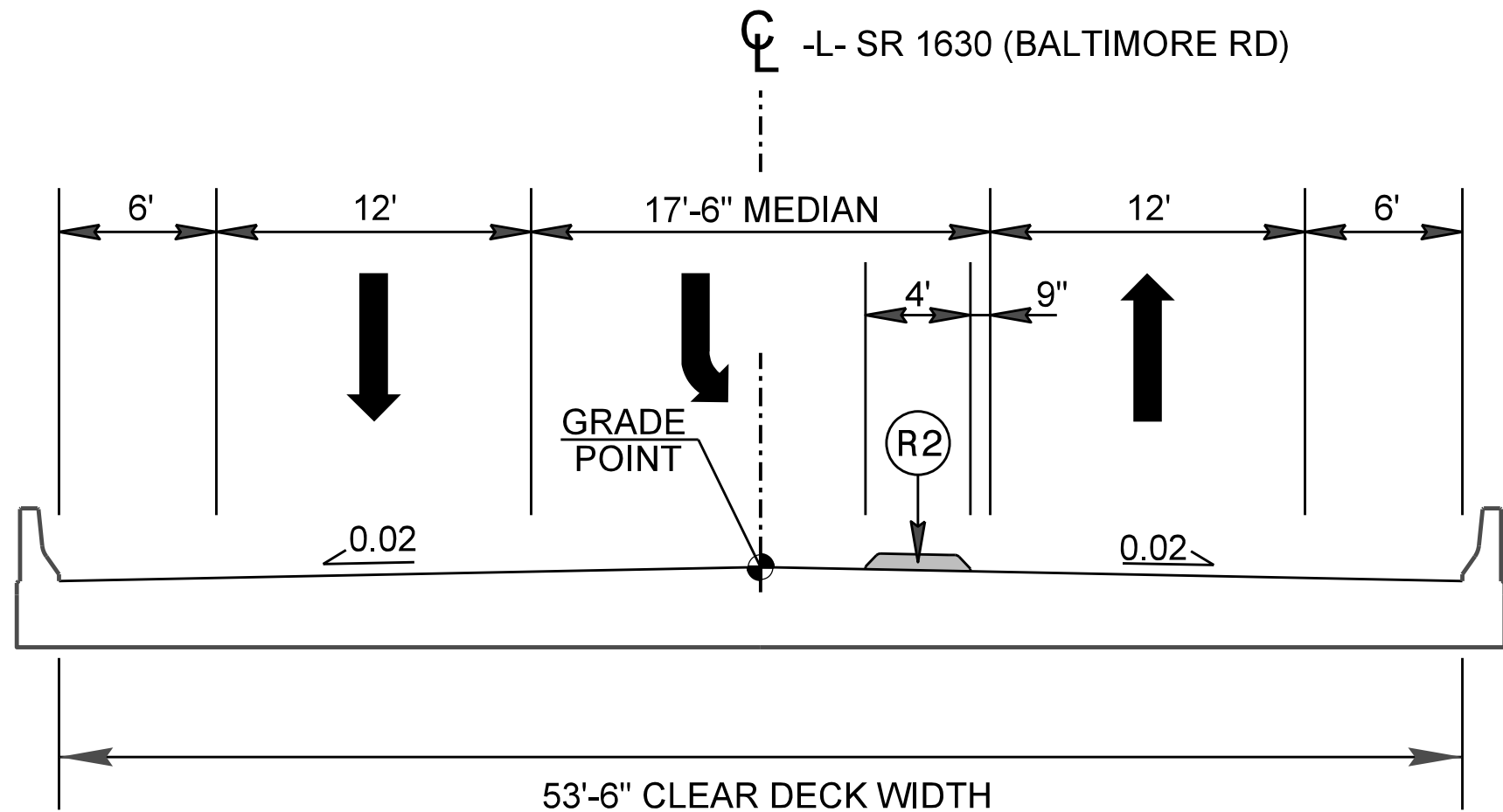
TYPICAL SECTION NO. 9

-DRW1- STA. 10+12.00 TO 10+85.00



TYPICAL SECTION NO. 8B

-Y3- STA. 10+10.00 TO 11+26.4
-Y4- STA. 13+75.00 TO 15+20.00
-Y4- STA. 20+50.00 TO 22+23.69



TYPICAL SECTION ON STRUCTURE

-L- STA. 69+83.09 TO 72+07.84

NOTE: SEE STRUCTURE PLANS FOR STRUCTURE
CONSTRUCTION DETAILS.

U-6187

FINAL2A-5

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

PROFESSIONAL
ENGINEER
033822
NATHAN P. SONA
8/25/2025

PAVEMENT DESIGN
ENGINEER

PROFESSIONAL
ENGINEER
044590
ANDREW D. WARGO
8/25/2025

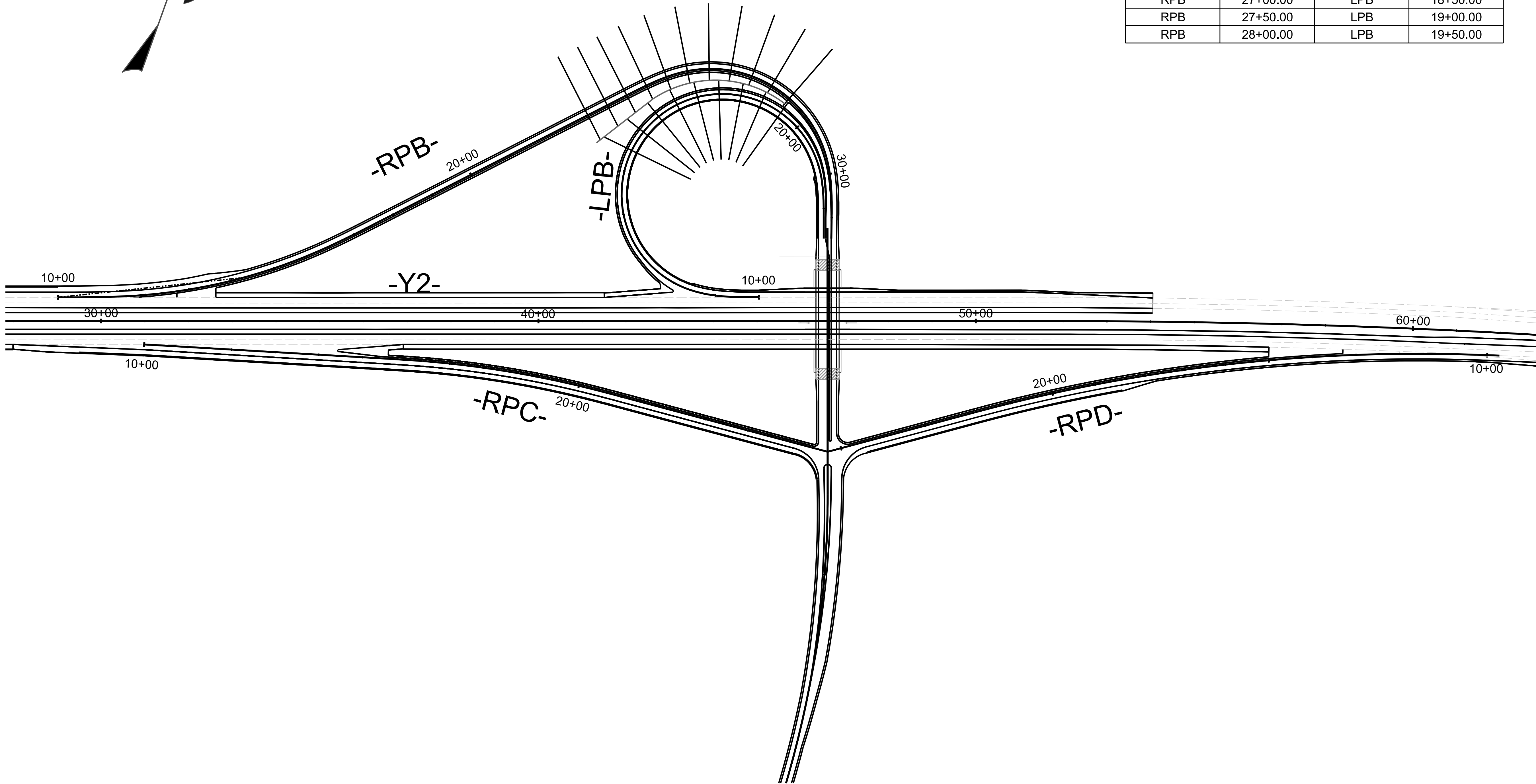
PREPARED BY

vhb
VHB Engineering, Inc., P.C. (P-3705)
540 Main Campus Drive, Suite 500
Raleigh, NC 27606

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UNLESS ALL SIGNATURES COMPLETED

XSC LAYOUT SHEET

1" = 250'



XSC LAYOUT INFORMATION			
Alignment	Station	Alignment	Station
RPB	23+00.00	LPB	15+50.00
RPB	23+50.00	LPB	16+00.00
RPB	24+00.00	LPB	16+00.00
RPB	24+50.00	LPB	16+50.00
RPB	25+00.00	LPB	17+00.00
RPB	25+50.00	LPB	17+50.00
RPB	26+00.00	LPB	17+50.00
RPB	26+50.00	LPB	18+00.00
RPB	27+00.00	LPB	18+50.00
RPB	27+50.00	LPB	19+00.00
RPB	28+00.00	LPB	19+50.00

U-6187

FINAL2B-1

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DAVIE COUNTY

ROADWAY DESIGN UNIT

PREPARED BY

VHB Engineering NC, P.C. (C-3705)
540 Main Campus Drive, Suite 500
Raleigh, NC 27606

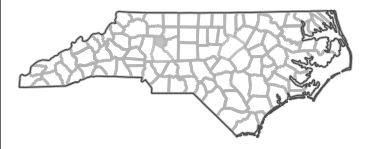
U-6187

FINAL2B-2

NORTH CAROLINA


DEPARTMENT OF TRANSPORTATION

DAVIE COUNTY



ROADWAY DESIGN UNIT

PREPARED BY

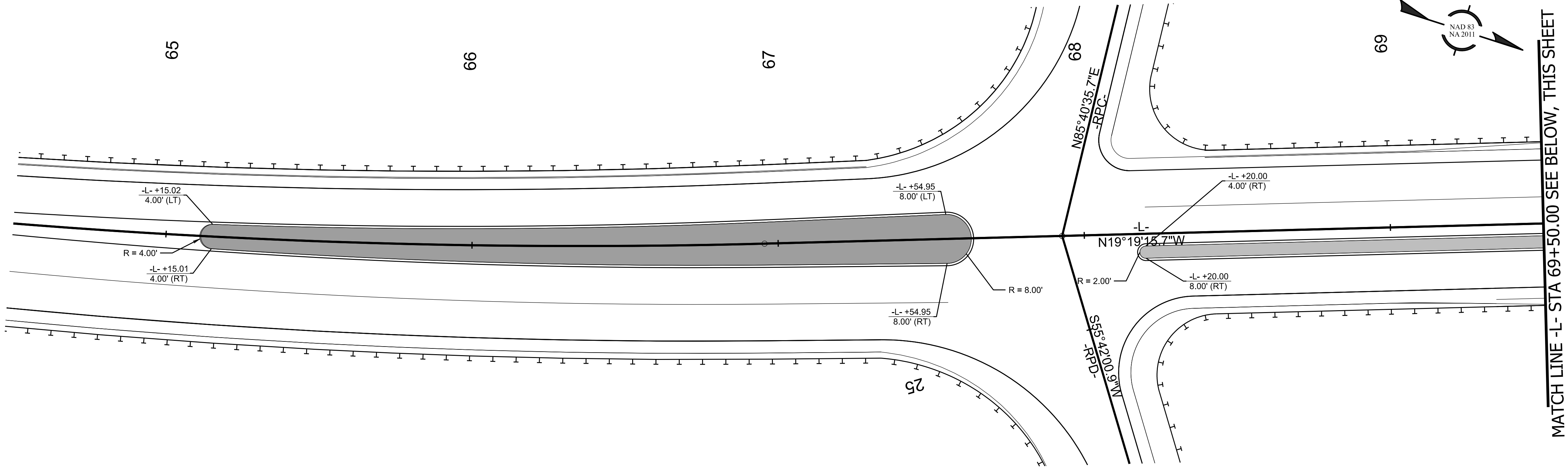


vhb

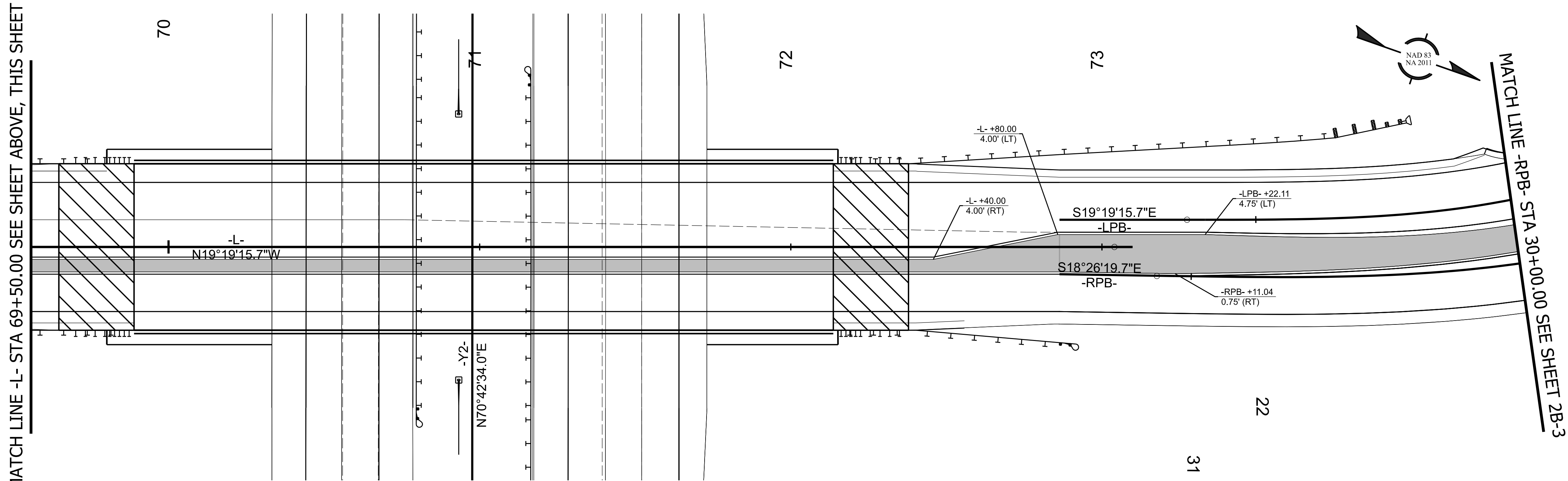
vhb Engineering, Inc. P.C. (C-2785)

940 Main Campus Drive, Suite 500

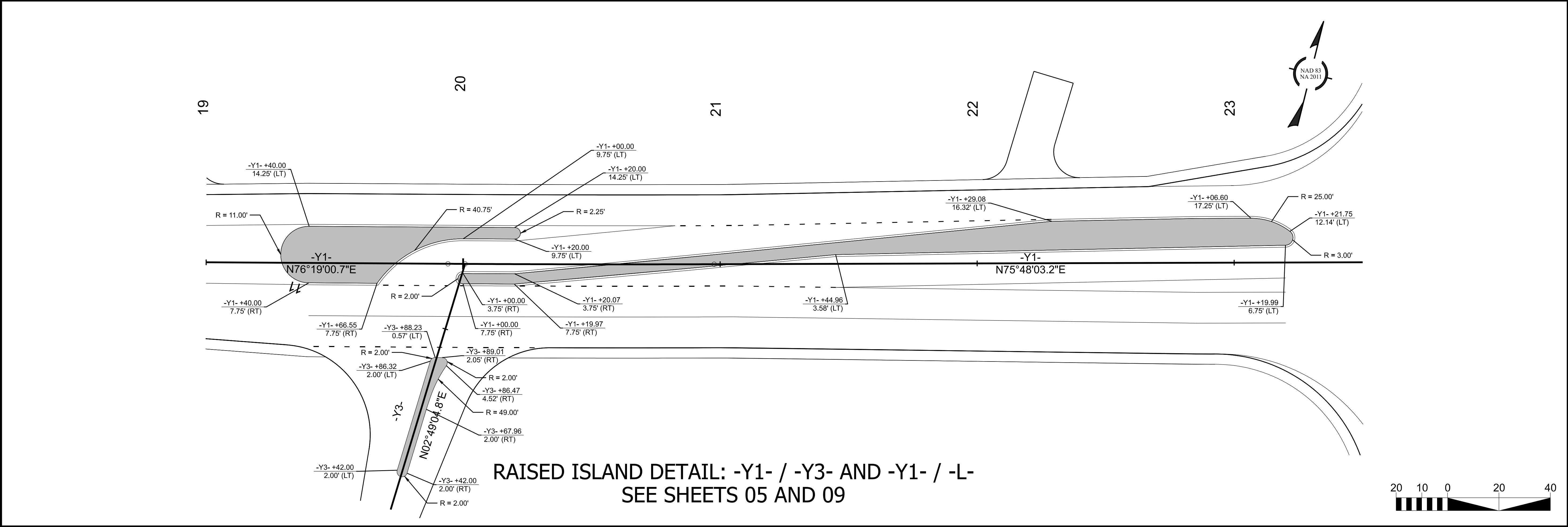
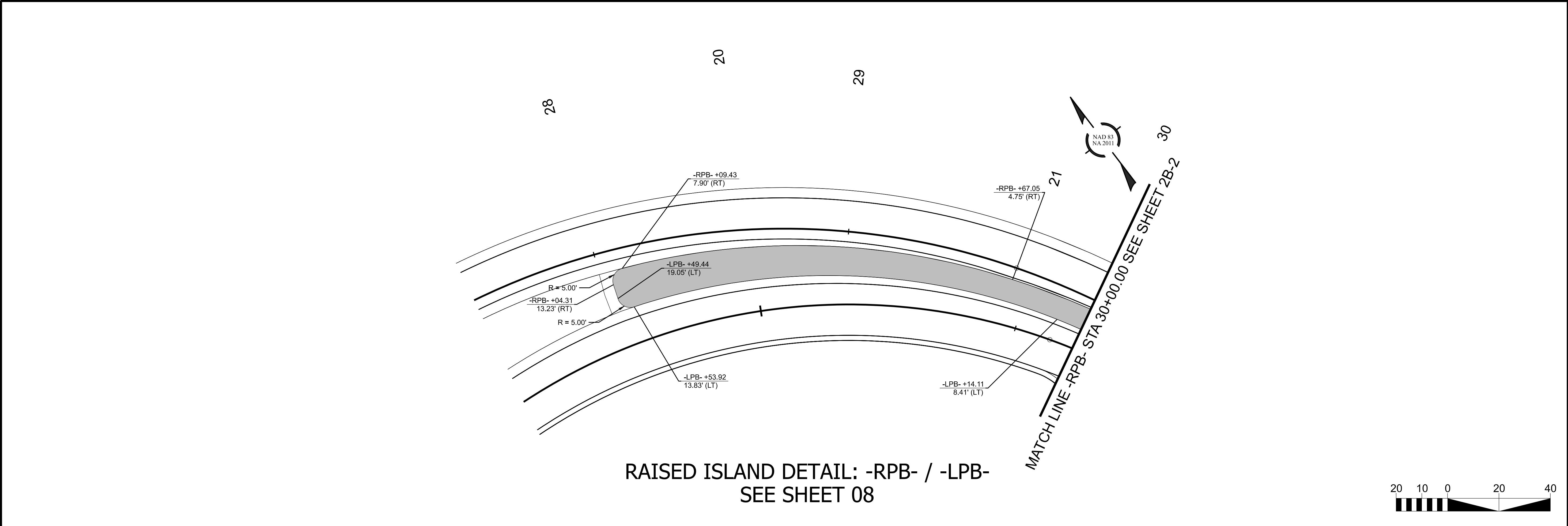
Raleigh, NC 27608



RAISED ISLAND DETAIL: -L- / -RPC / -RPD-
SEE SHEET 08



RAISED ISLAND DETAIL: -L- AT BRIDGE OVER -Y2- AND -RPB- / -LPB-
SEE SHEET 08




U-6187

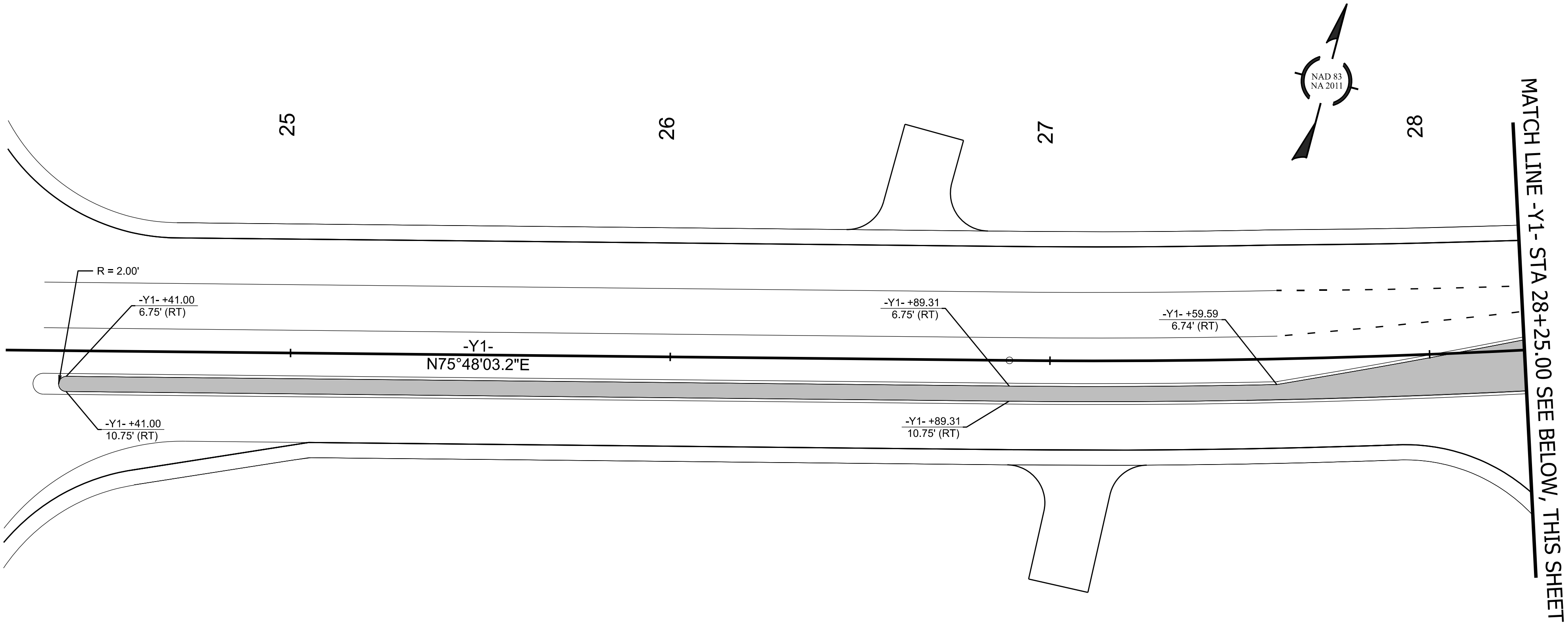
FINAL 2B-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

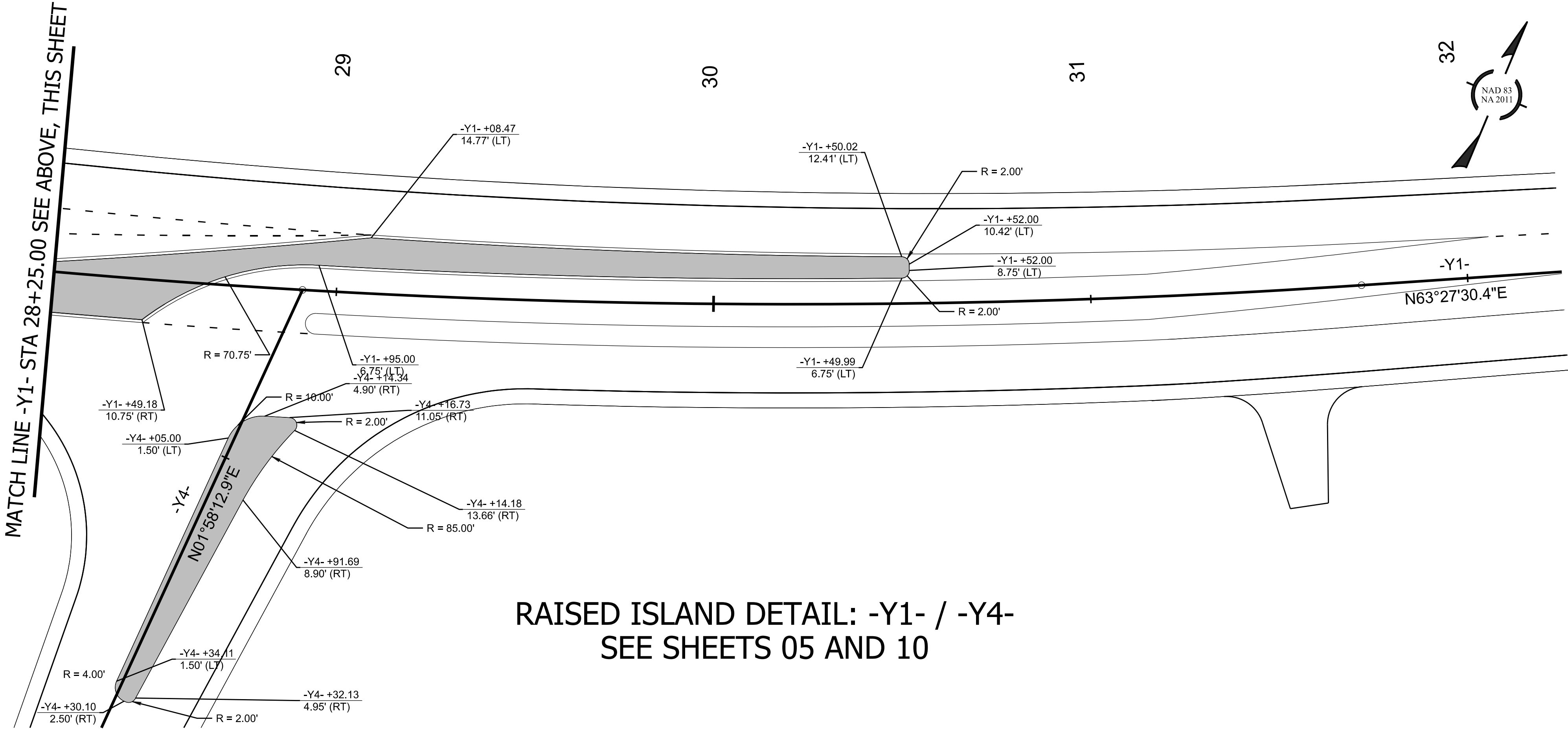
ROADWAY DESIGN UNIT

PREPARED BY


vhb
VHB Engineering Inc. P.C. (C-2705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27608



RAISED ISLAND DETAIL: -Y1- / -L- AND -Y1- / -Y4-
SEE SHEET 05



RAISED ISLAND DETAIL: -Y1- / -Y4-
SEE SHEETS 05 AND 10



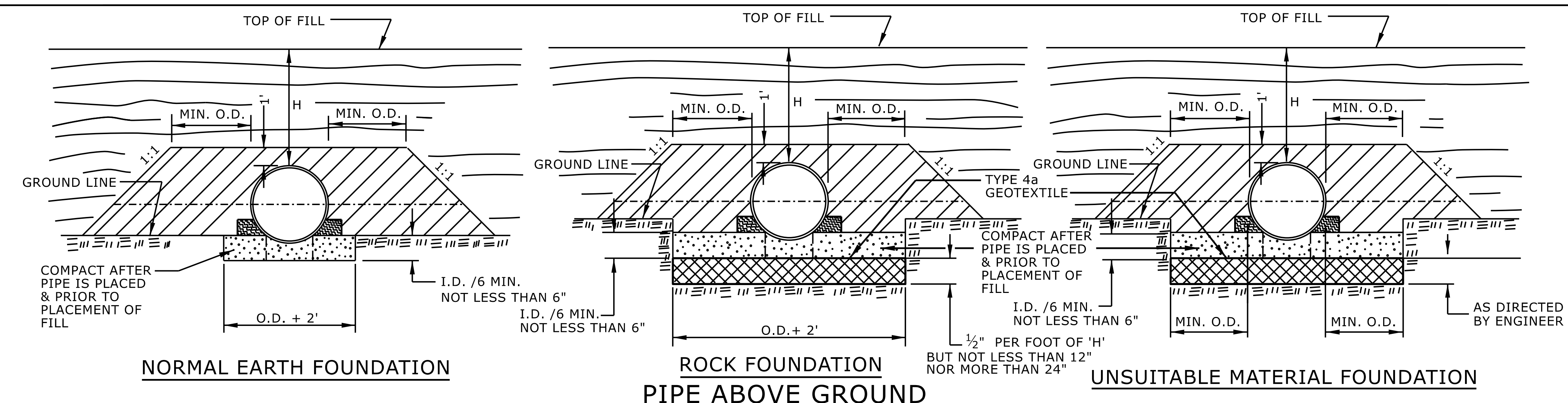
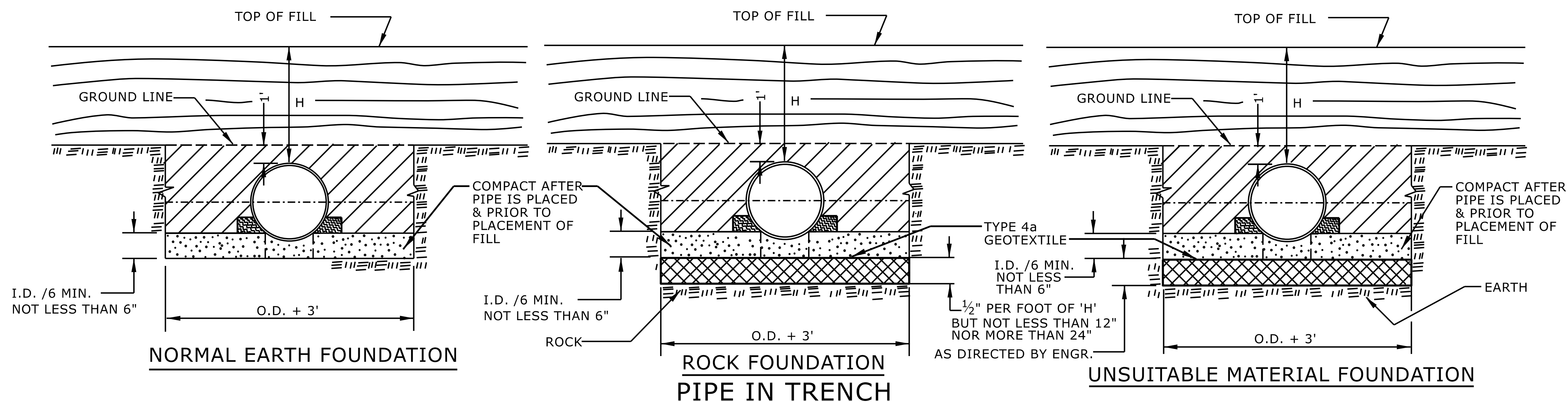
U-6187

FINAL	28-4
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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

ROADWAY DESIGN UNIT
PREPARED BY

vhb
VHB Engineering, Inc. P.C. (C-2785)
540 Main Campus Drive, Suite 500
Raleigh, NC 27605







GENERAL NOTES:
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT
ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP
OF THE EMBANKMENT AT THAT POINT.

	APPROVED SUITABLE LOCAL MATERIAL.
	TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
	LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

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

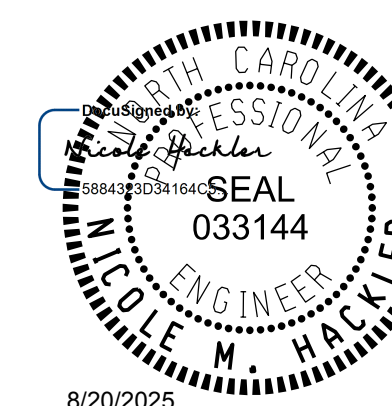
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS
FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

	SPRINGLINE OF PIPE
	SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
	UNDISTURBED EARTH MATERIAL
	SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE

SHEET 1 OF 2
300.01



8/20/20

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AND DEVELOPMENT UNIT**
919-707-6950 FAX 919-250-4

SEE TITLE BLOCK

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

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

TOP OF FILL

TOP OF FILL

TOP OF FILL

TOP OF FILL

TOP OF FILL

TOP OF FILL

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

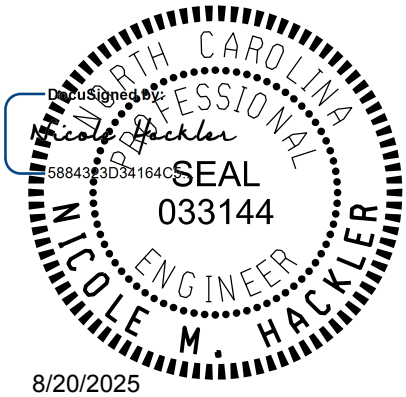
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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



8/20/2025

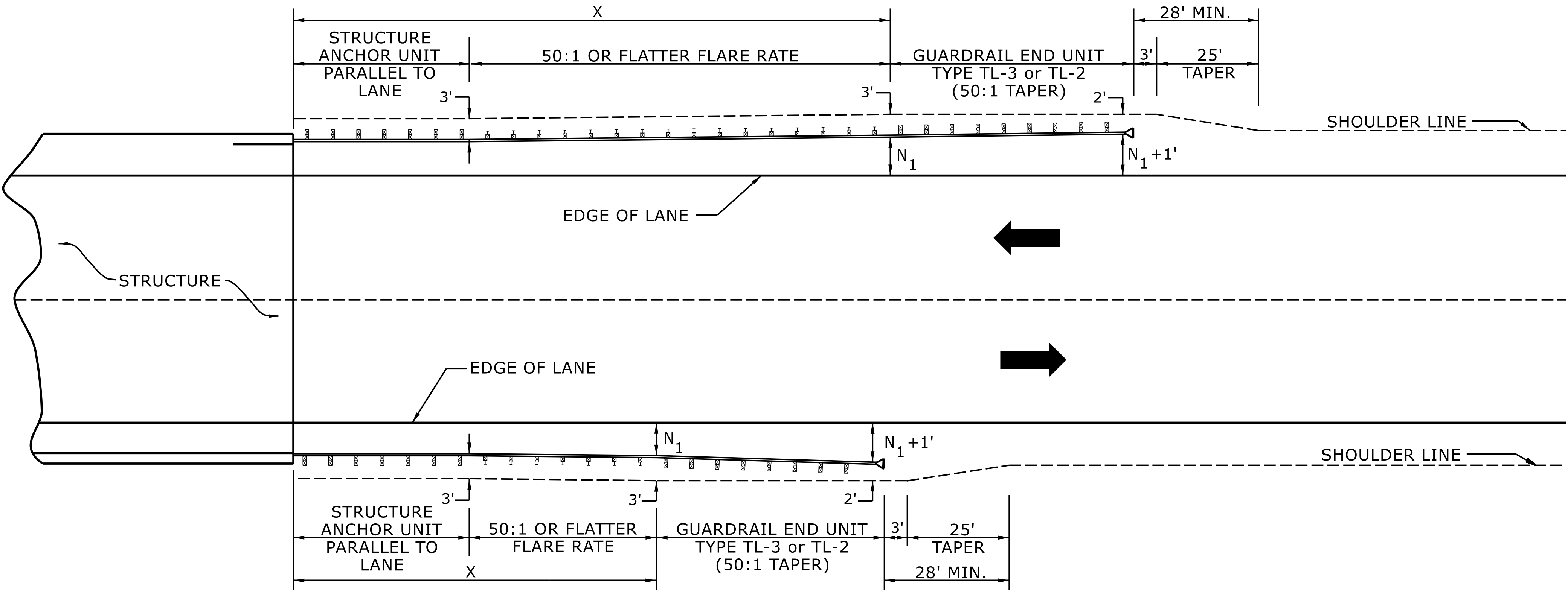
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AND DEVELOPMENT UNIT
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PROJECT REFERENCE NO.	SHEET NO.
U-6187	2C-3



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

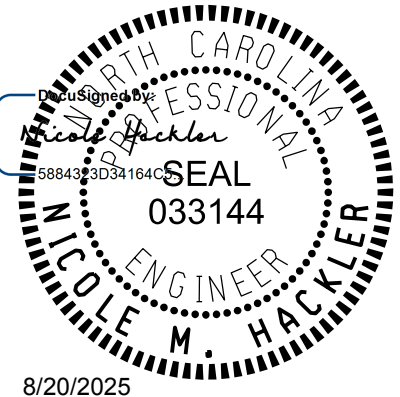
SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



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

SHEET 4 OF 15
862D01

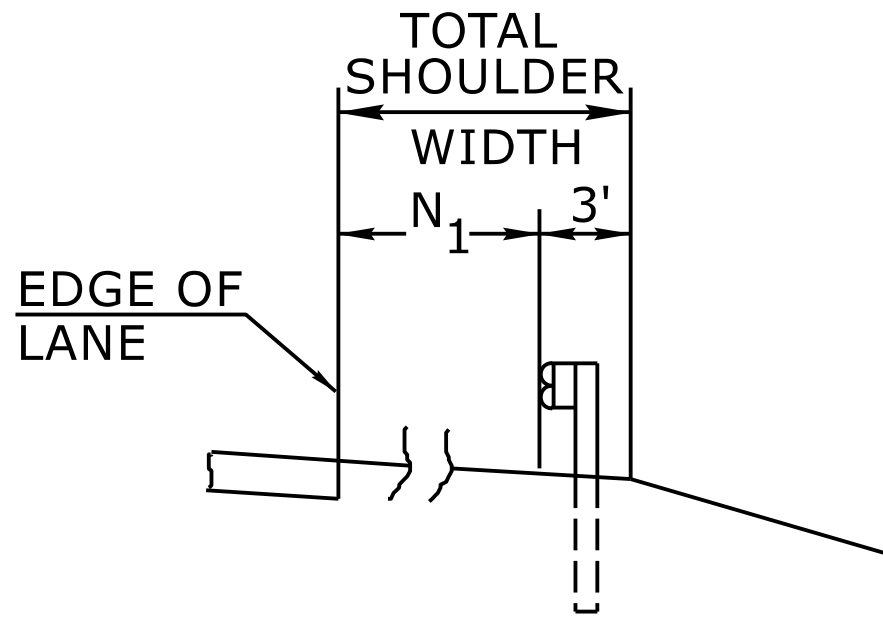
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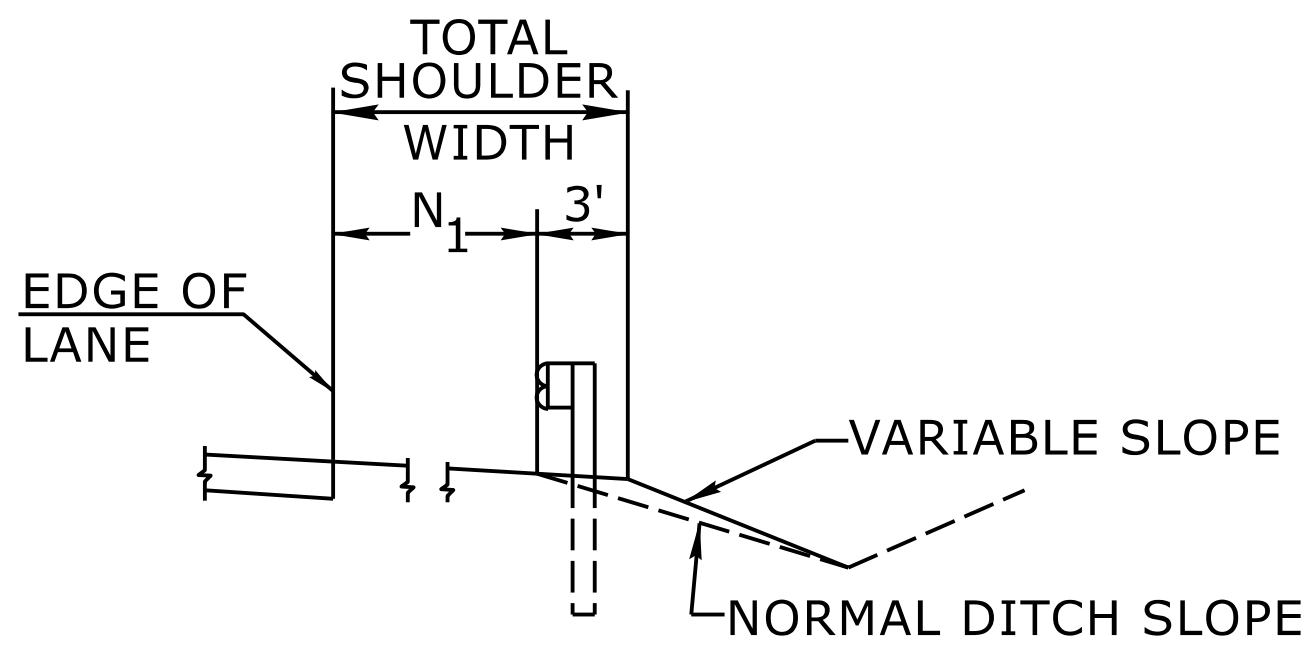
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FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.
U-6187	2C-4

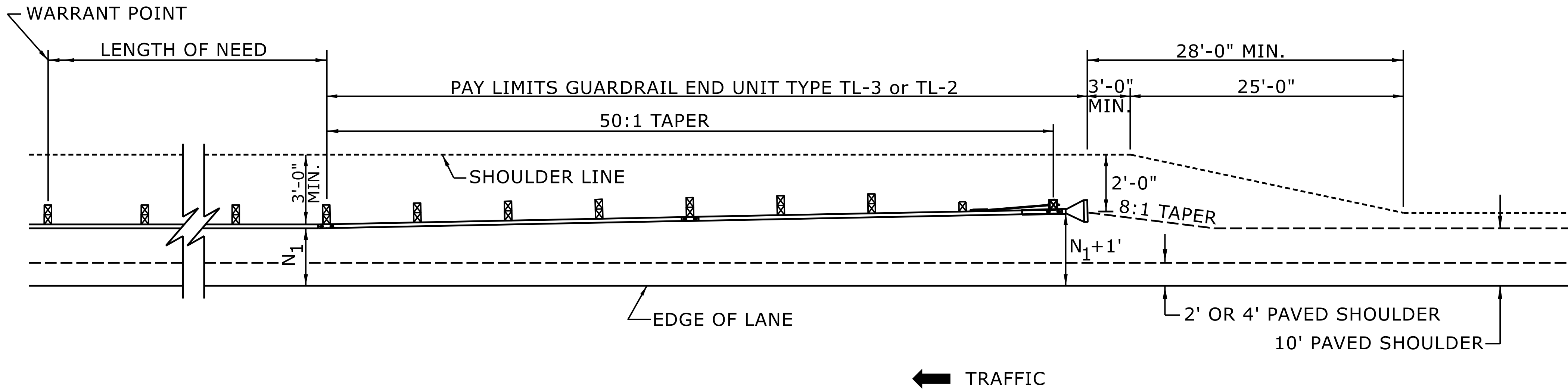


FILL SECTION



CUT SECTION

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



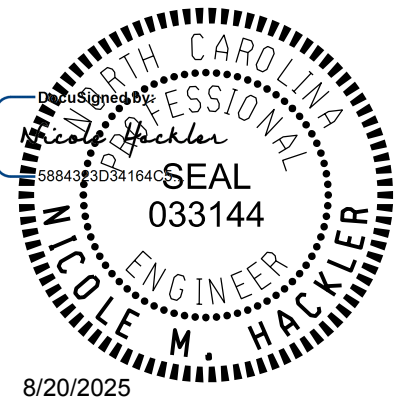
FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

STATE OF
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

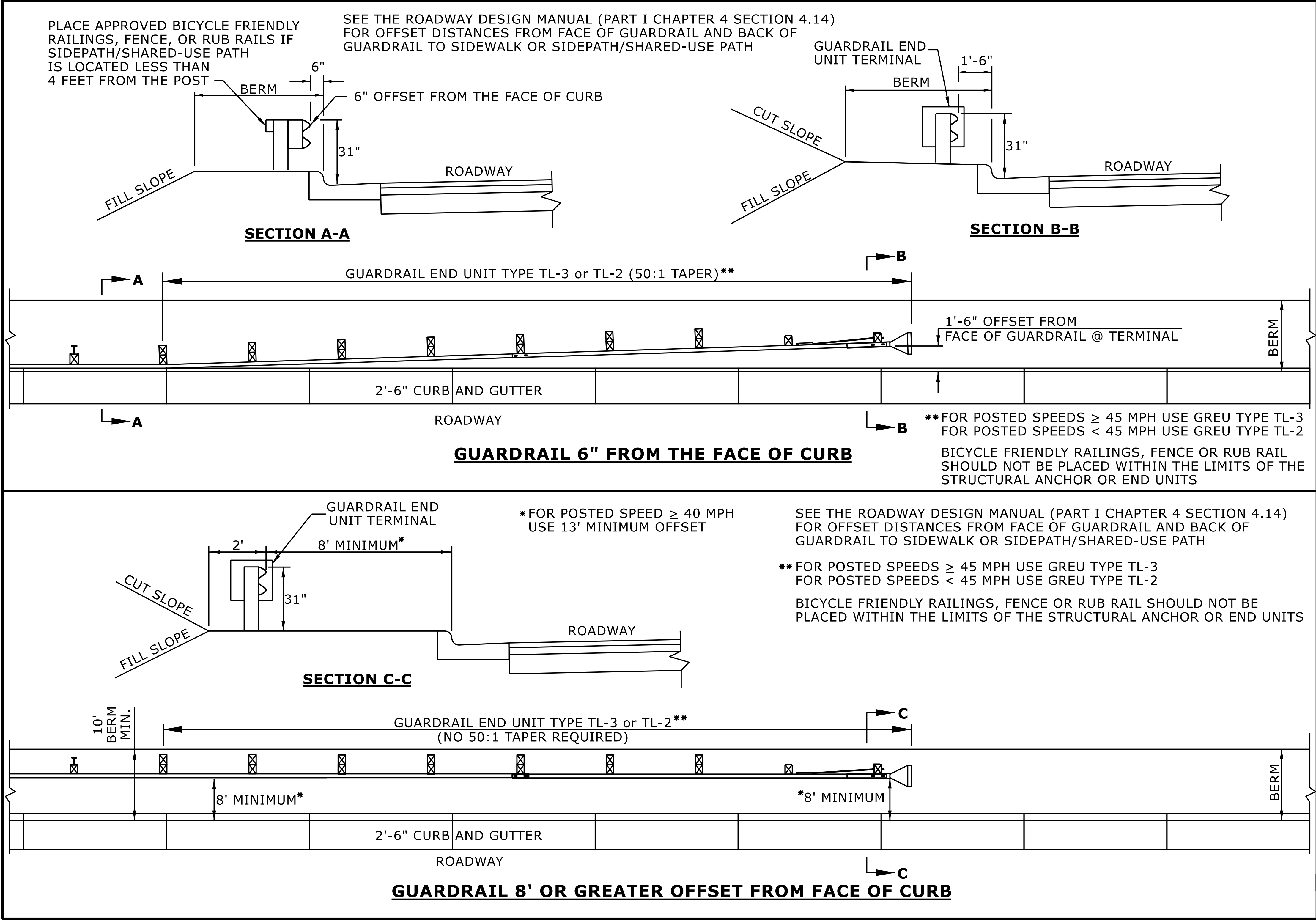
ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01



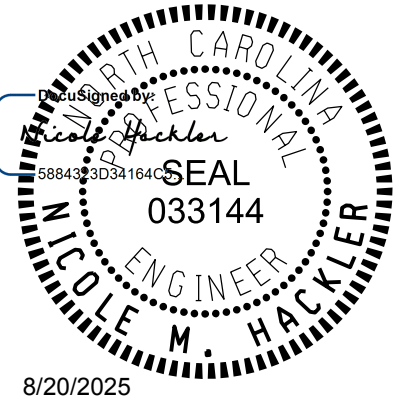
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MODIFIED BY:	<u> </u>	DATE:	<u> </u>
CHECKED BY:	<u> </u>	DATE:	<u> </u>
FILE SPEC.:	<u> </u>		<u> </u>



STATE OF
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT
GUARDRAIL TREATMENT AT CURB AND GUTTER



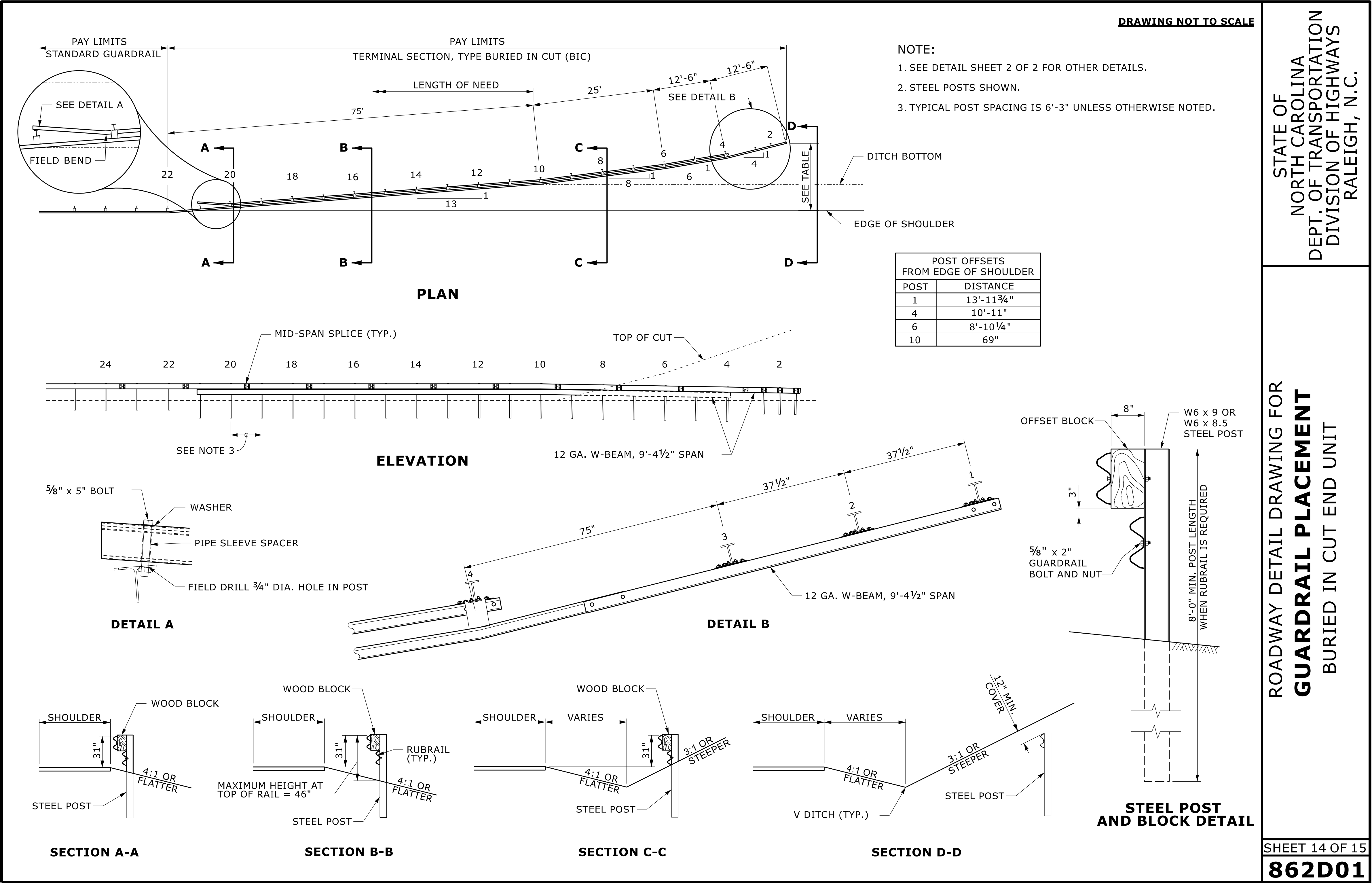
SHEET 12 OF 15
862D01

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AND DEVELOPMENT UNIT**
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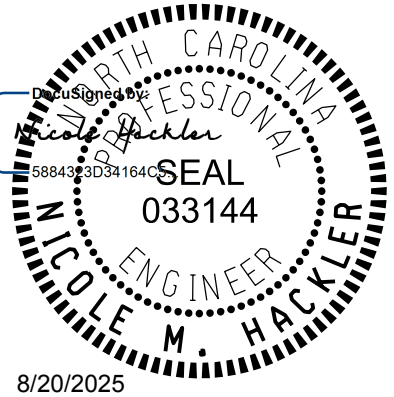
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FILE SPEC.: DATE:



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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT
BURIED IN CUT END UNIT



SHEET 14 OF 15
862D01

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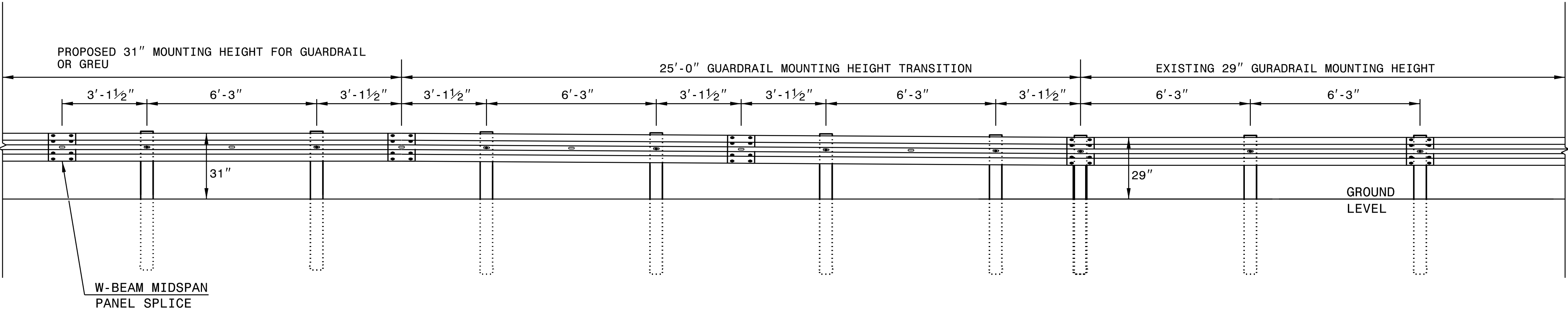
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FILE SPEC.:	

PROJECT REFERENCE NO.	SHEET NO.
U-6187	2C-7

NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.



ELEVATION VIEW

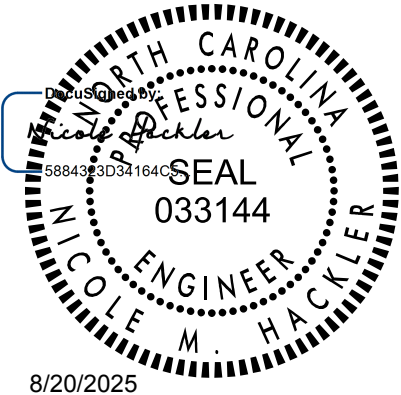
TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9

862D02



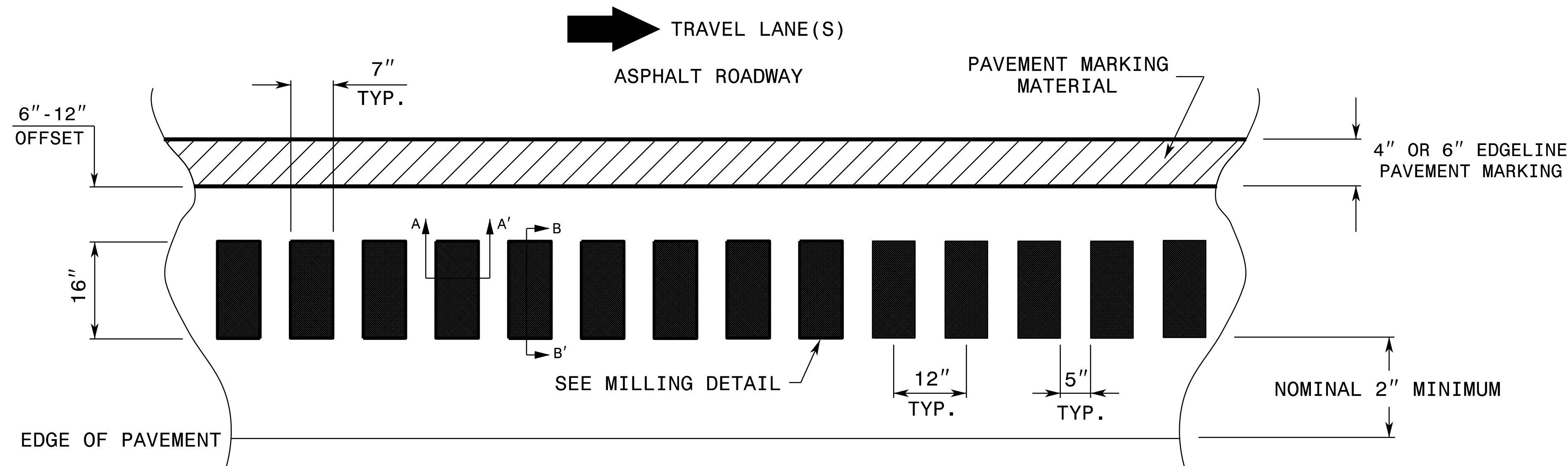
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UNLESS ALL SIGNATURES COMPLETED

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

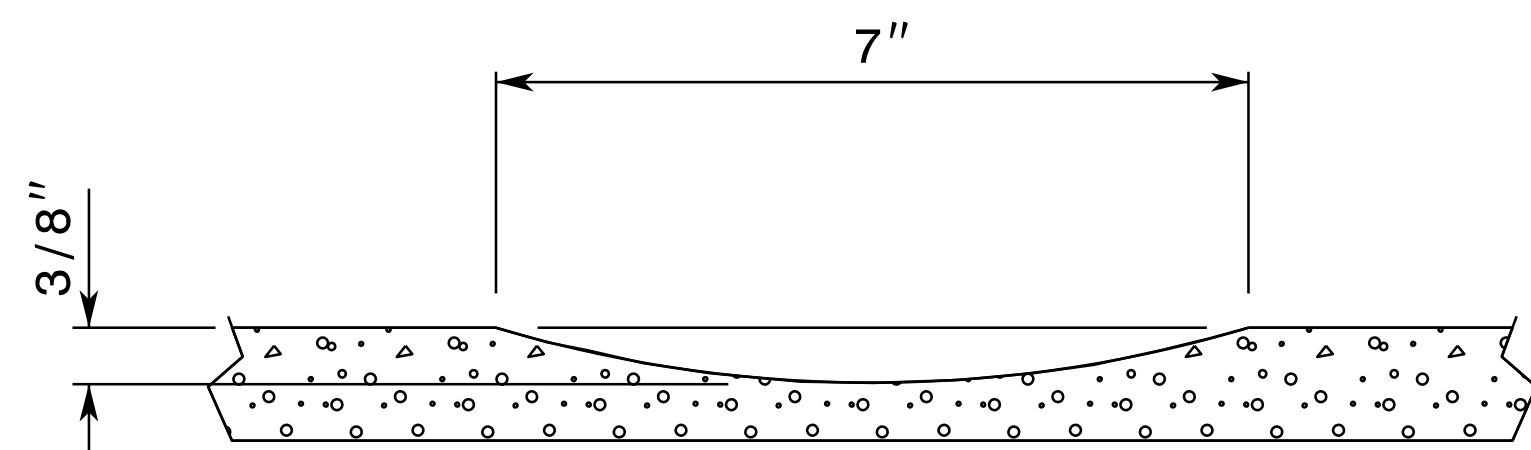
SEE TITLE BLOCK

ORIGINAL BY: K. Aldridge DATE: 02-25
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

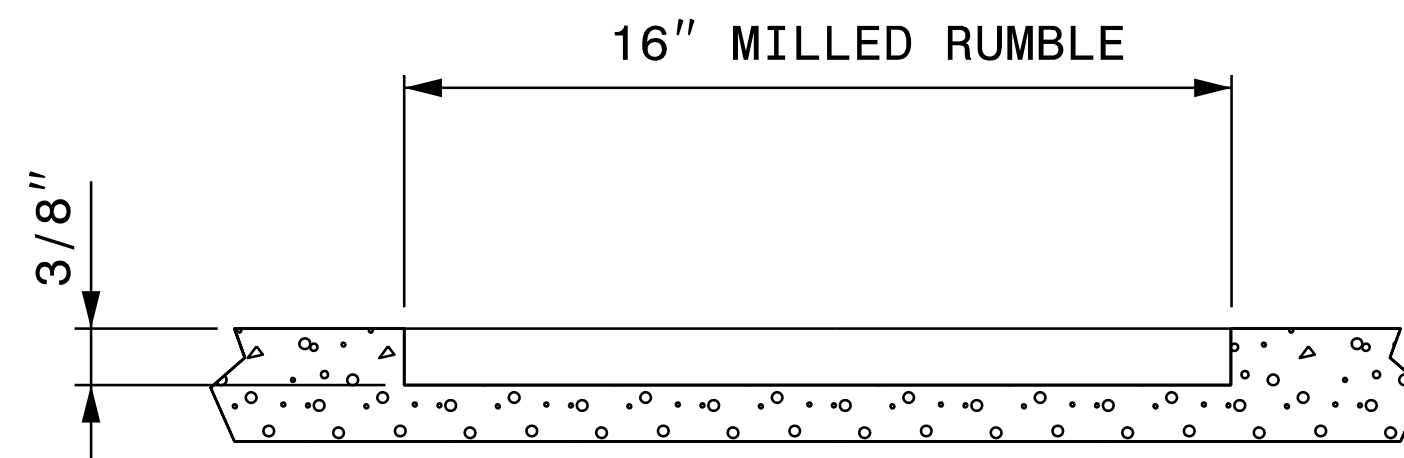
See Table 1 within Rumble Strip
Policy for Design Guidance



MILLING DETAIL:



SECTION A-A'



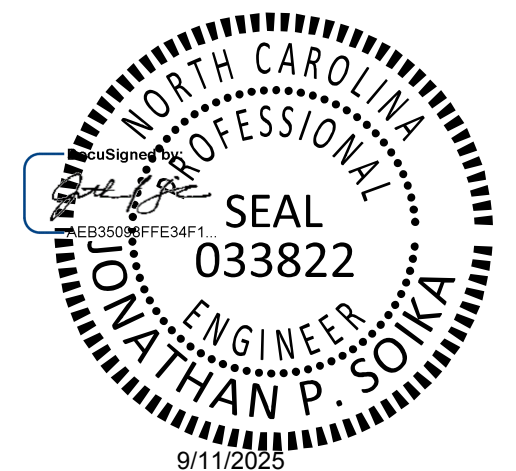
SECTION B-B'

REFERENCE DRAWING ID: Trad.Strip

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

ROADWAY DETAIL DRAWING FOR
RUMBLE STRIPS / STRIPES
TRADITIONAL SHOULDER RUMBLE STRIP

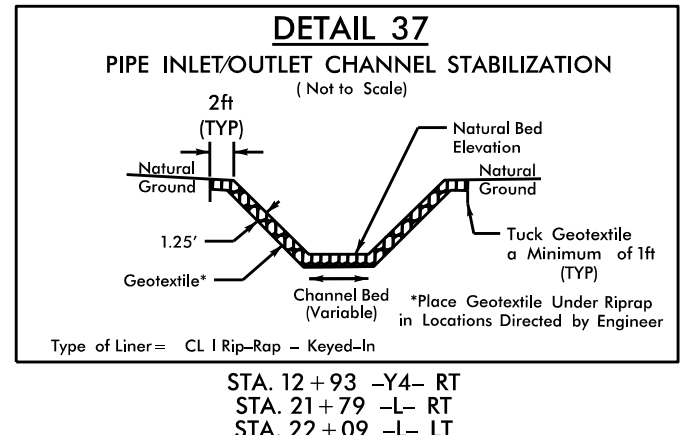
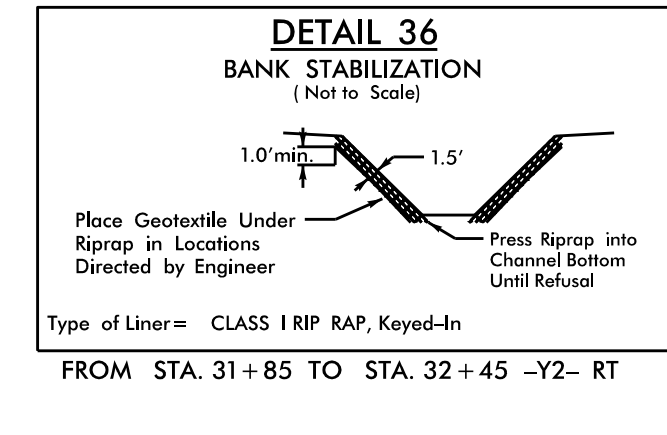
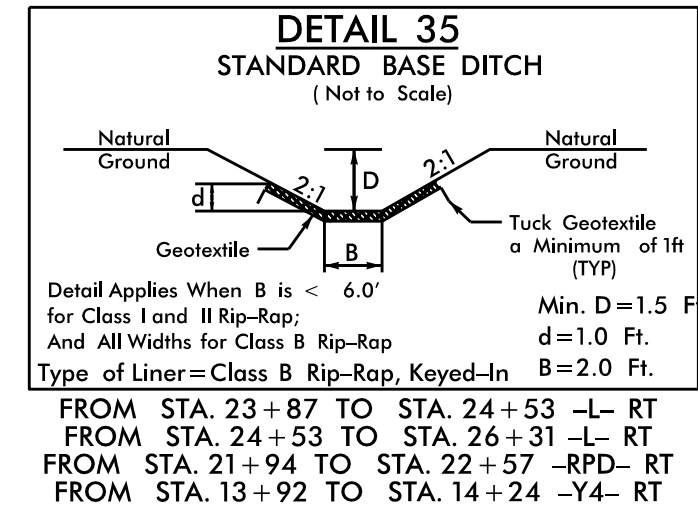
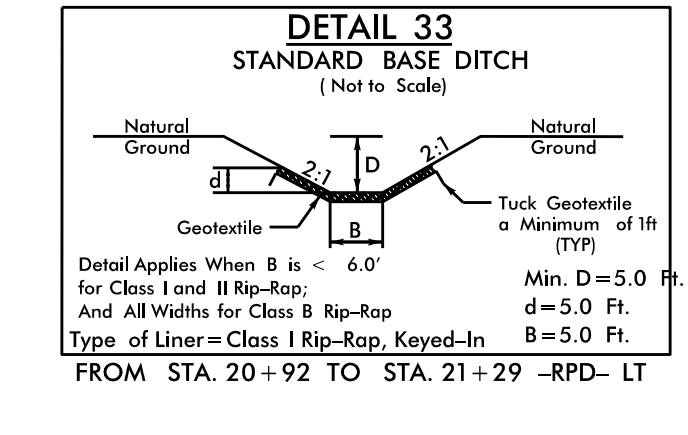
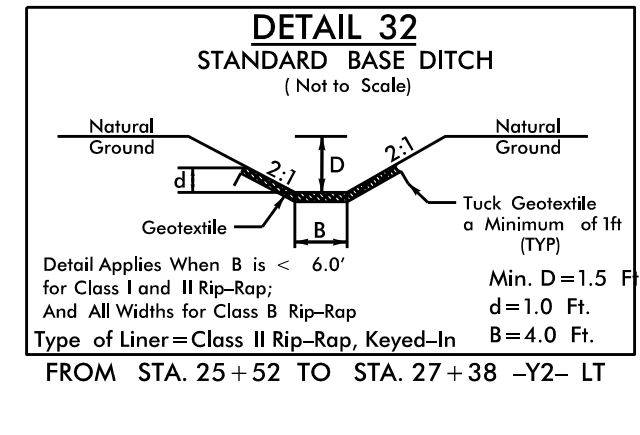
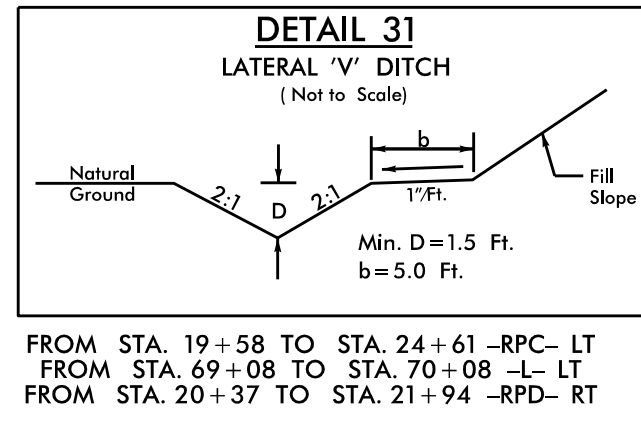
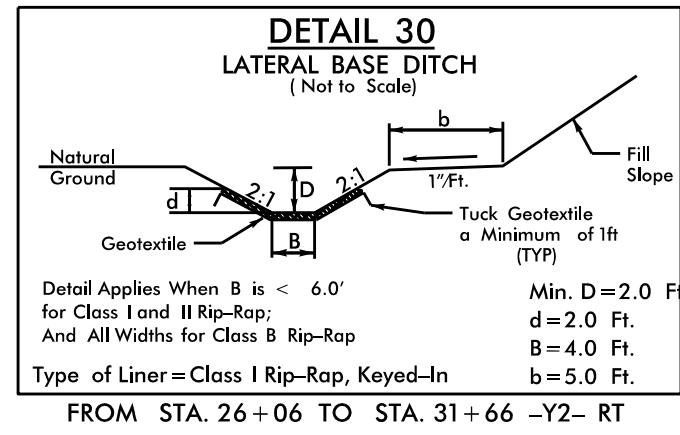
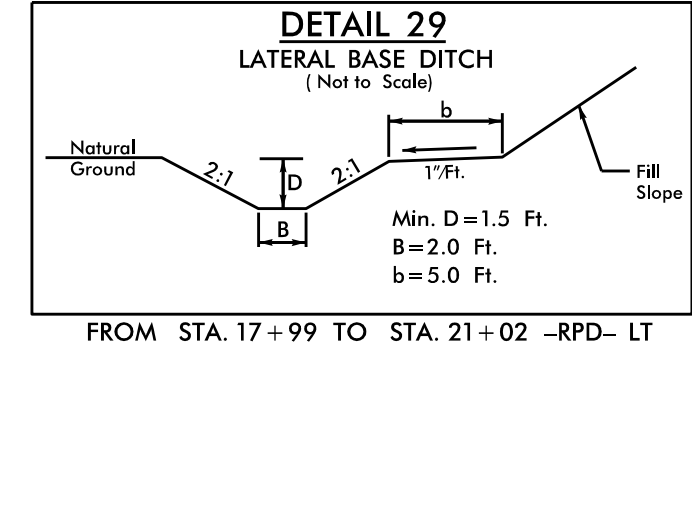
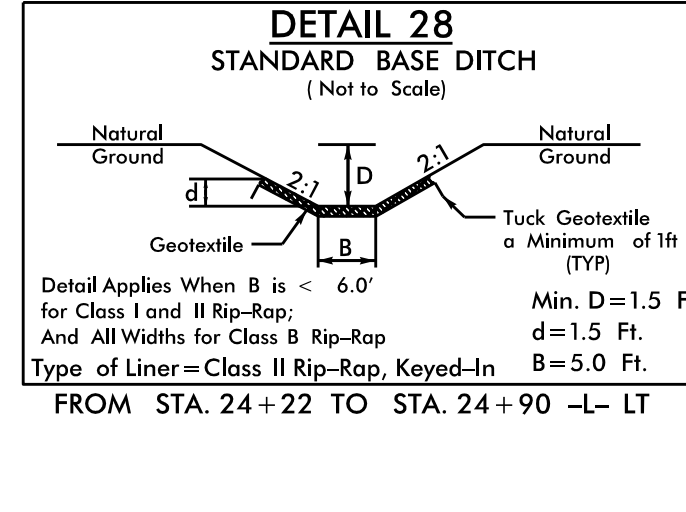
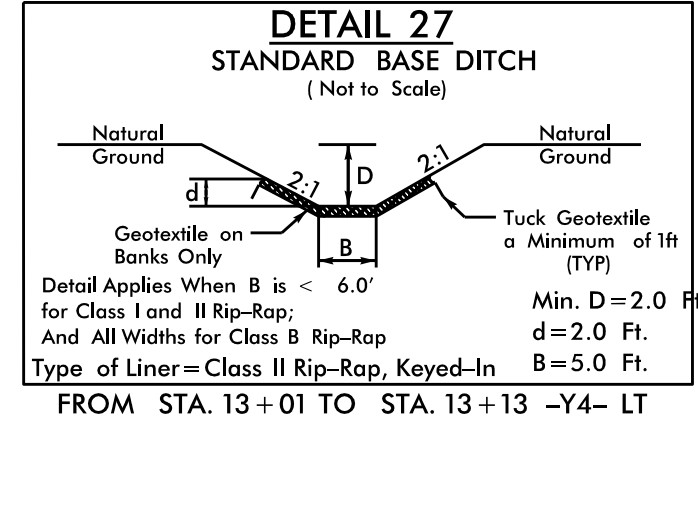
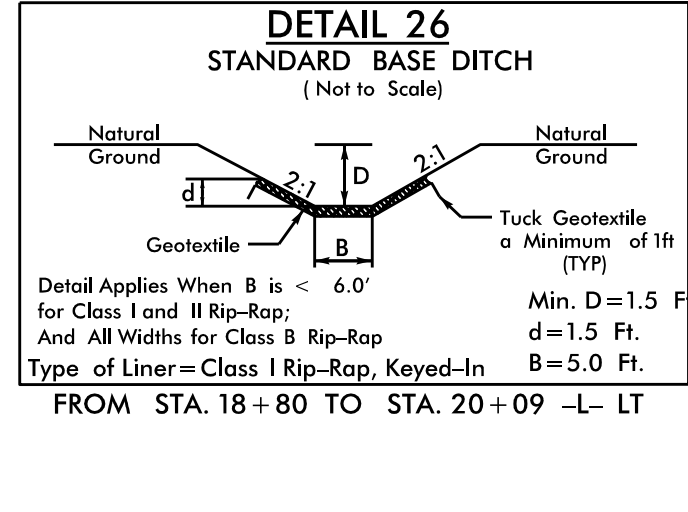
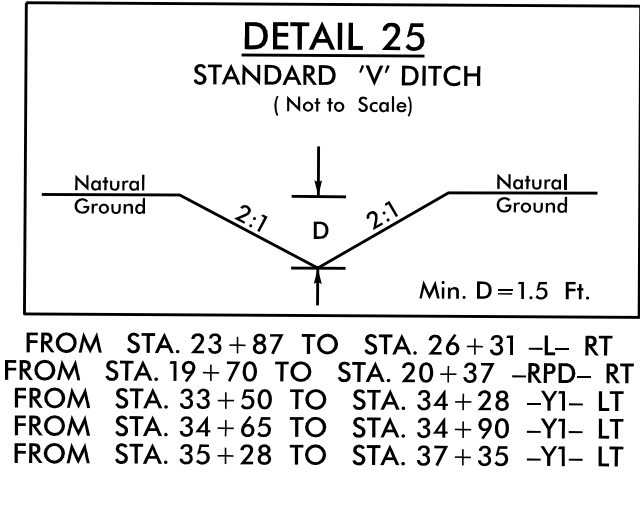
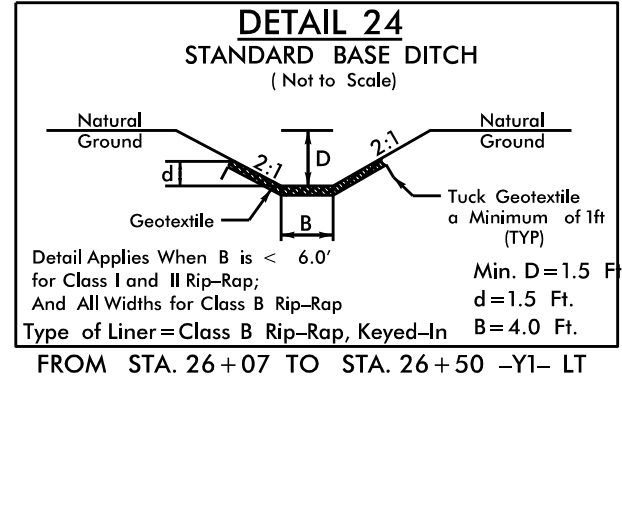
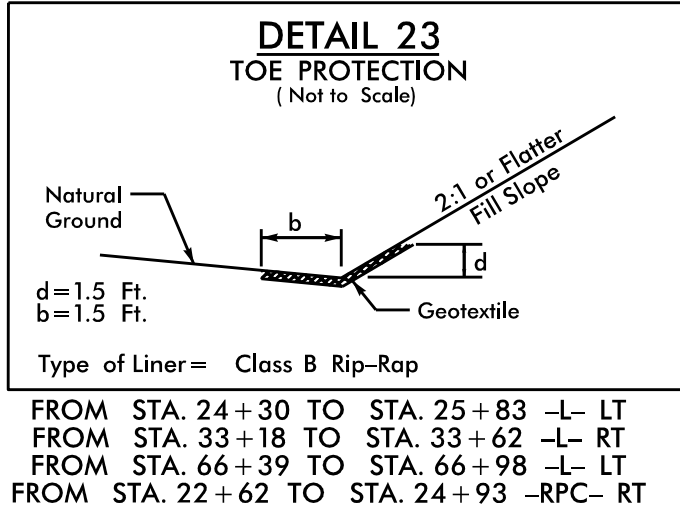
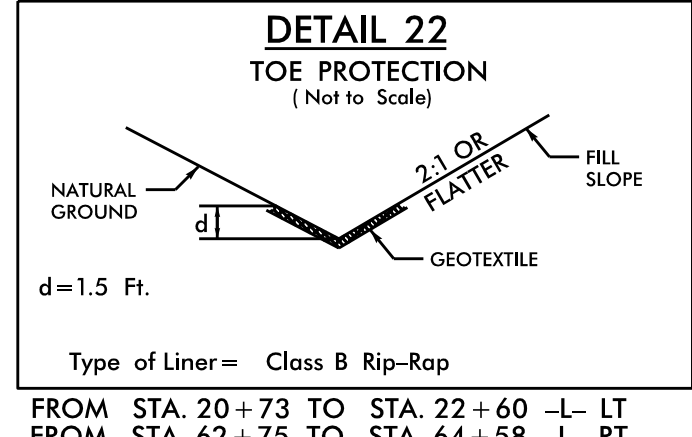
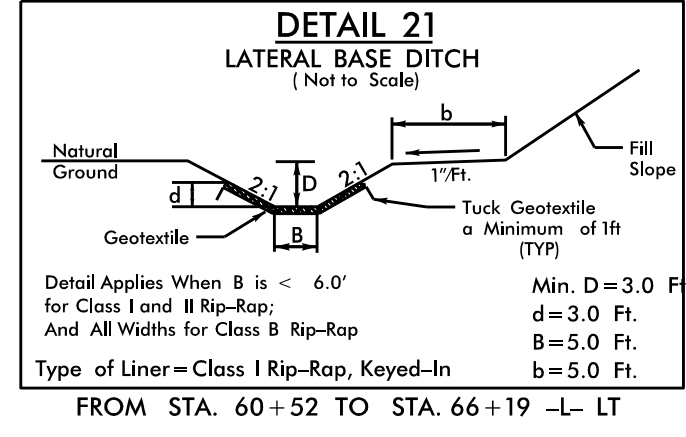
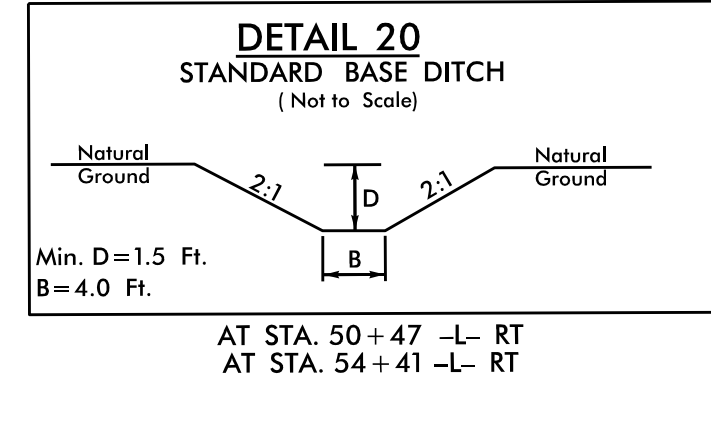
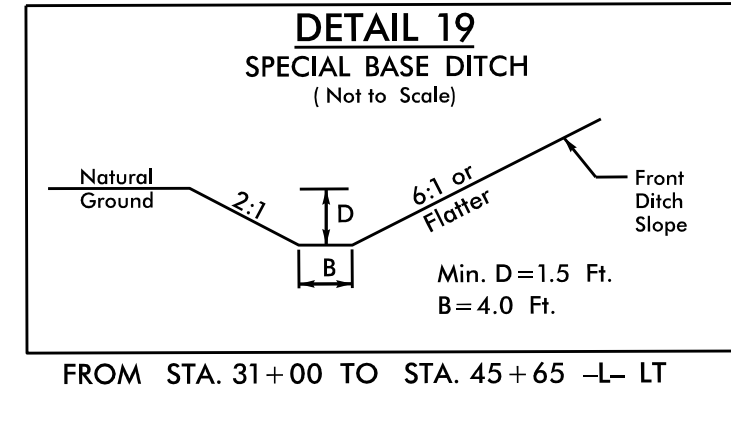
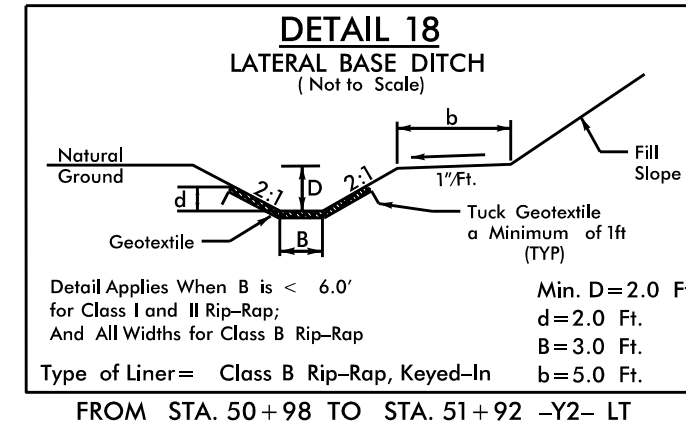
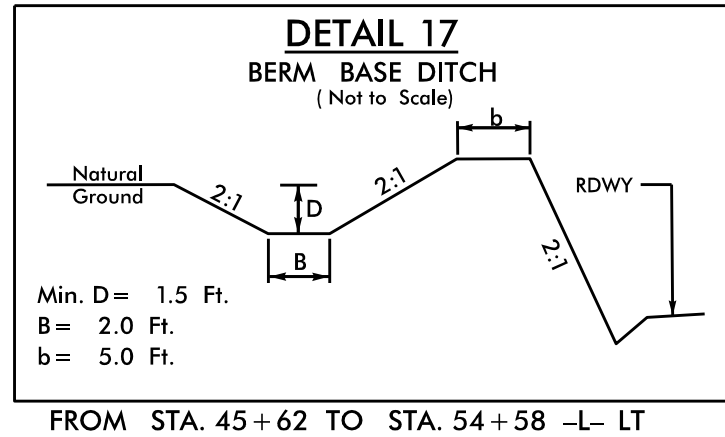
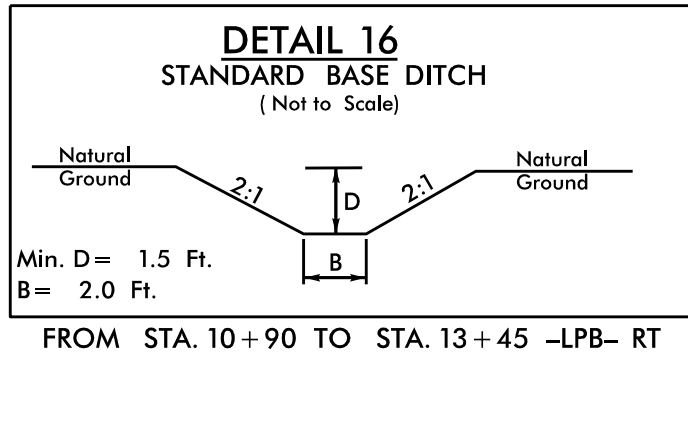
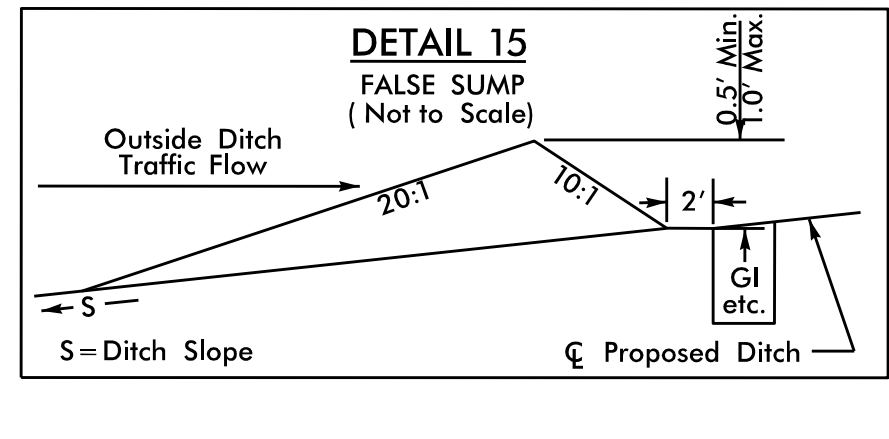
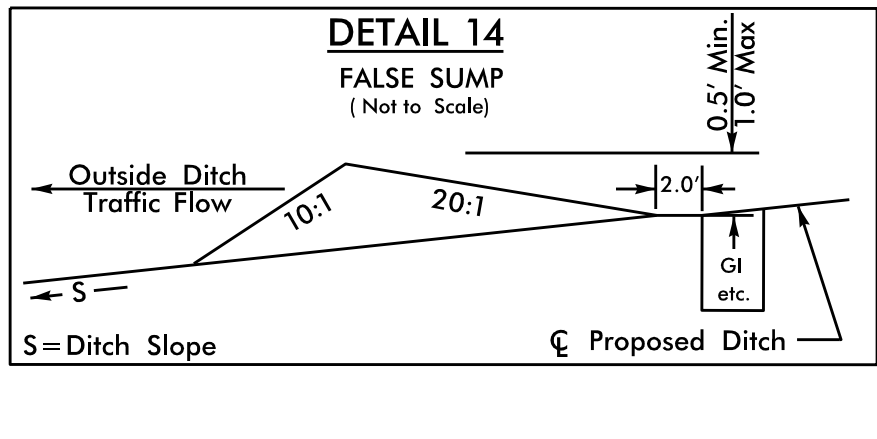
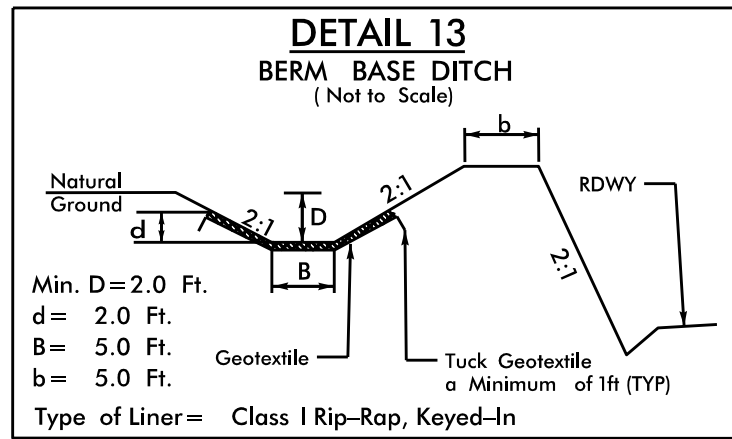
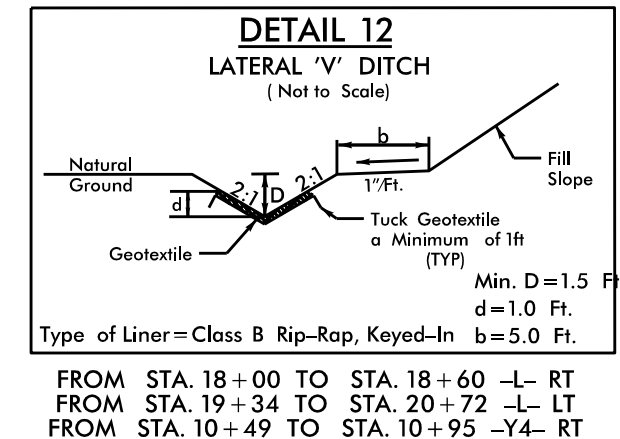
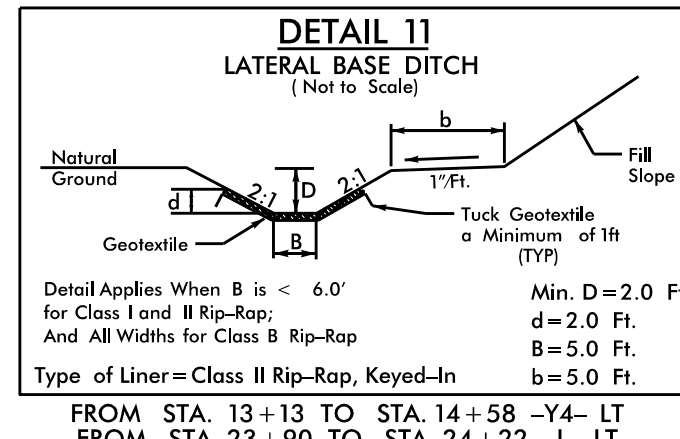
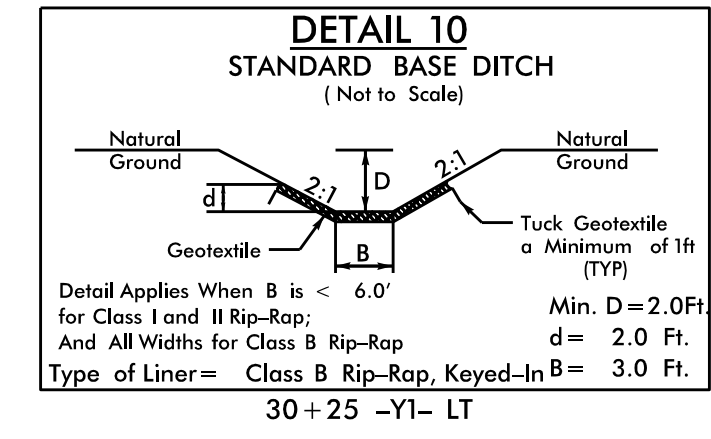
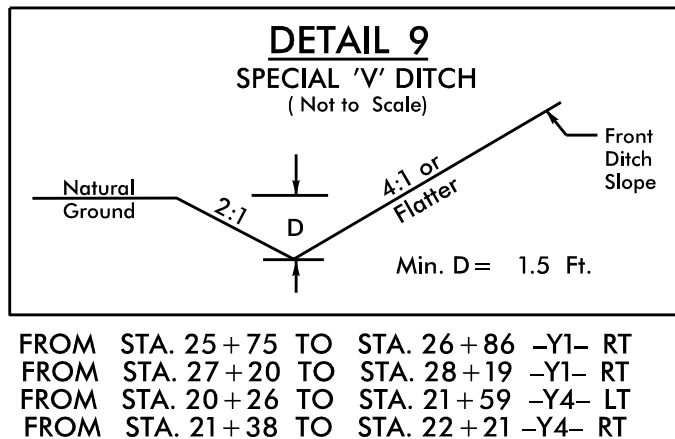
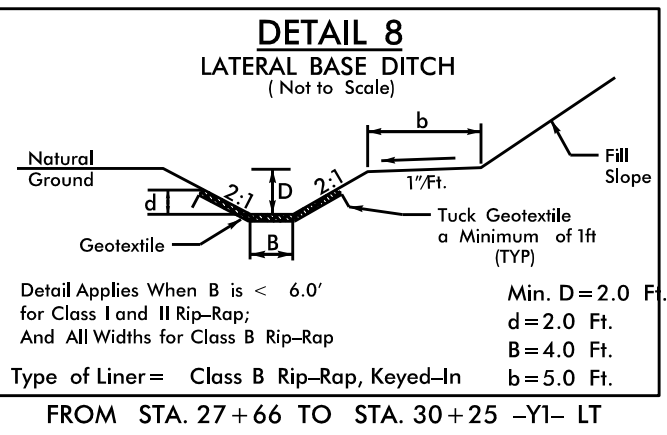
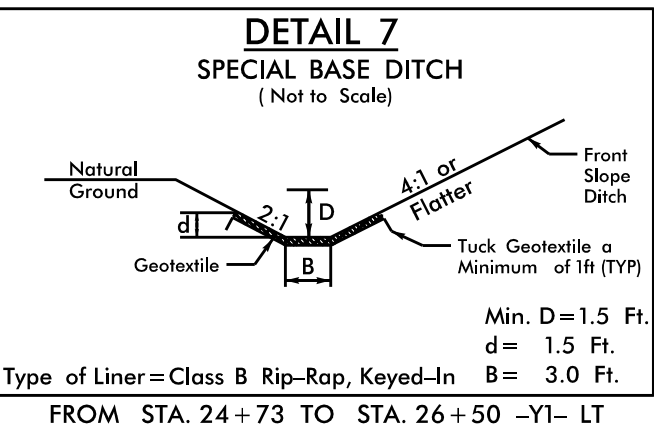
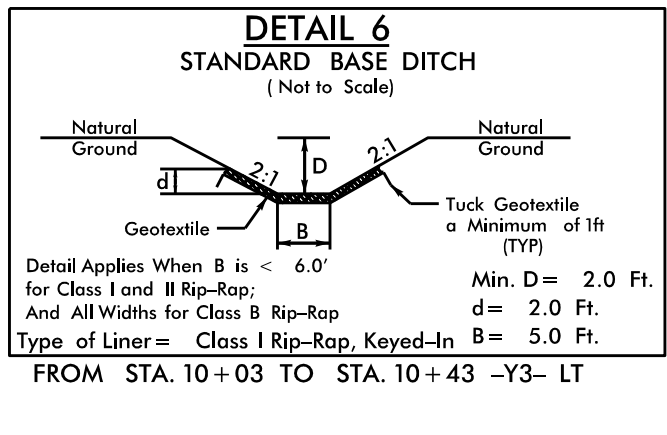
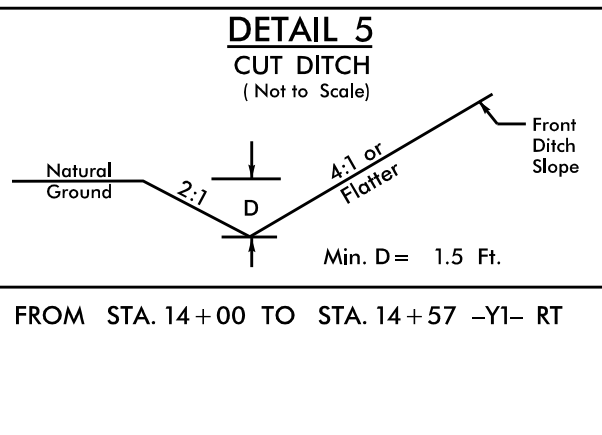
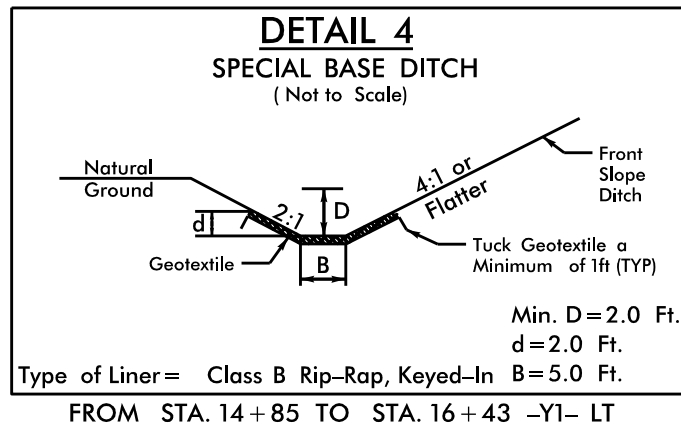
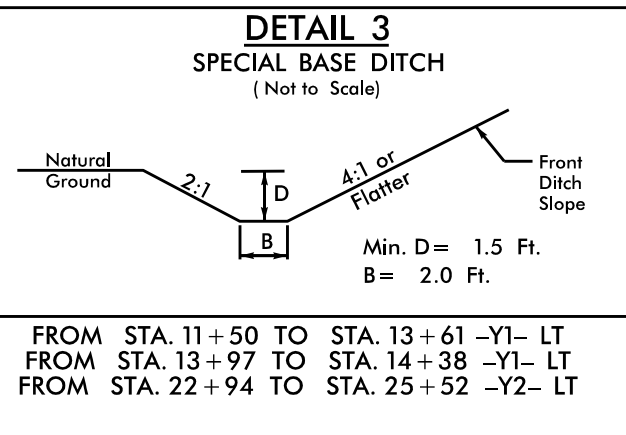
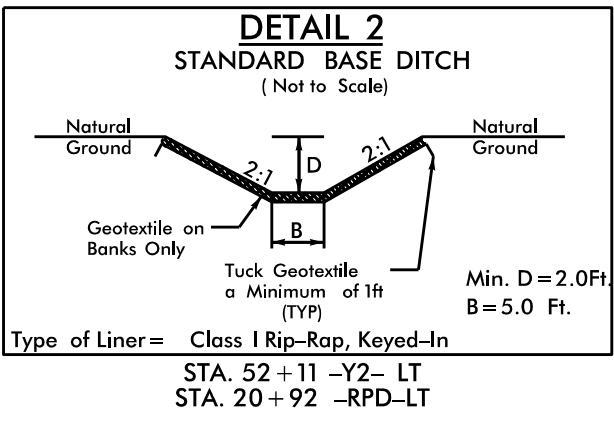
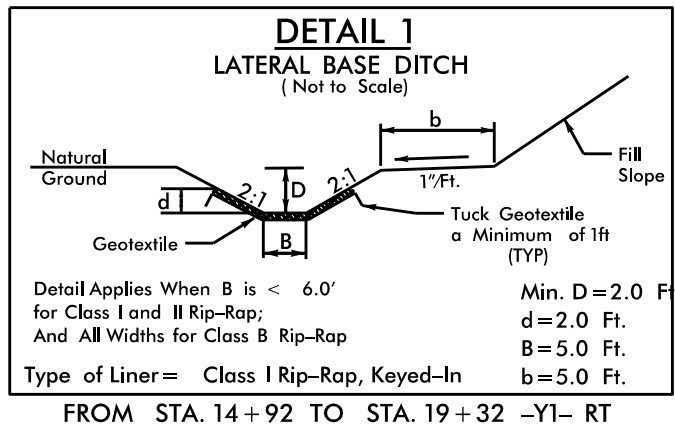
SHEET 1 OF 9



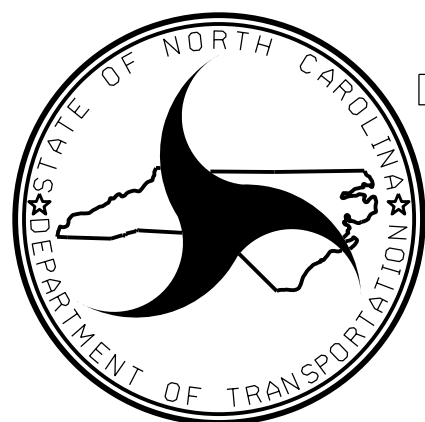
CONTRACTS STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-8950	FAX 919-250-4119
SEE TITLE BLOCK	
ORIGINAL BY: C. SIMPSON	DATE: 04-24-2025
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	

DRAINAGE DETAILS

(NOT TO SCALE)



PREPARED BY: MHS	DATE: 6/25
REVIEWED BY: ENW/SCC	DATE: 6/25

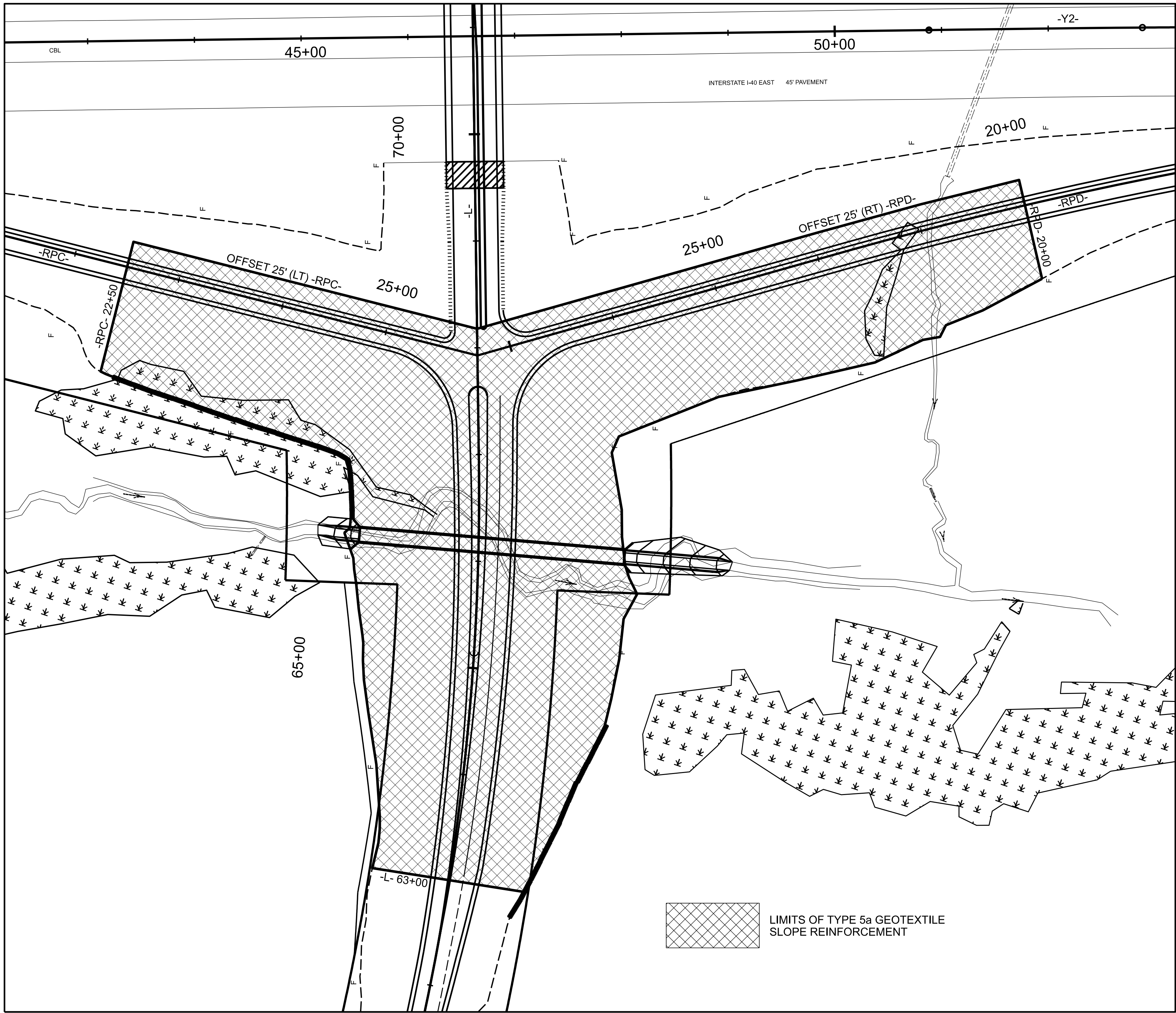


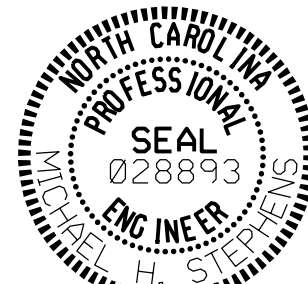
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

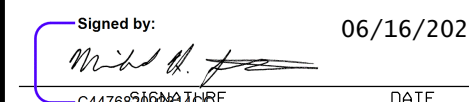
GEOTECHNICAL
ENGINEERING UNIT

GEOTEXTILE FOR
EMBANKMENT STABILIZATION
PLAN VIEW

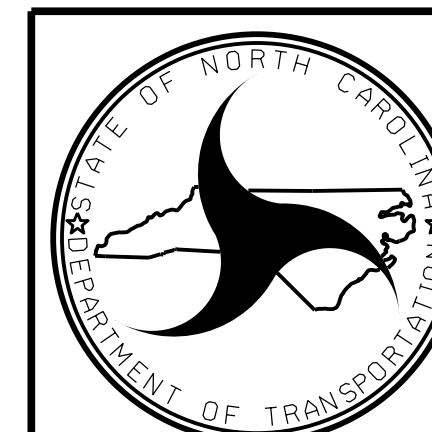
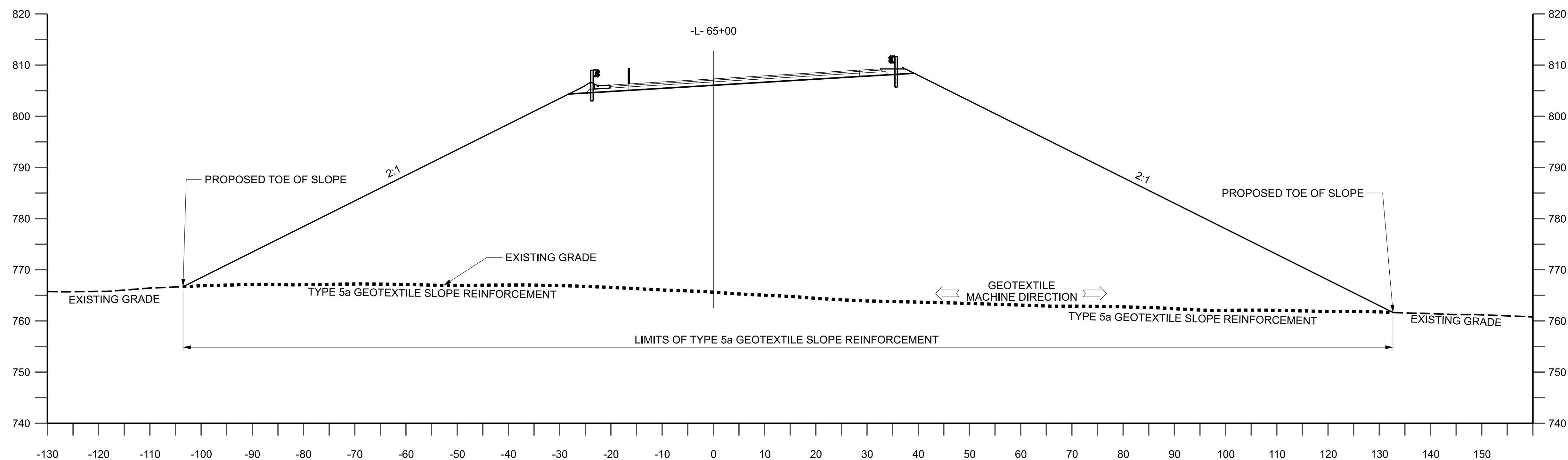
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	-	-	3	-	-
2	-	-	4	-	-



PROJECT REFERENCE NO.	SHEET NO.
U-6187	2G-1
GEOTECHNICAL ENGINEER	ENGINEER
 Signed by: <i>Michael H. Stephens</i> 06/16/2025 C447982992314CC...	
SIGNATURE	DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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



GEOTECHNICAL
ENGINEERING UNIT

GEOTEXTILE FOR
EMBANKMENT STABILIZATION
CROSS SECTION



REVISIONS

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

PREPARED BY: MHS	DATE: 6/25
REVIEWED BY: ENW/SCC	DATE: 6/25

PROJECT REFERENCE NO.
U-6187

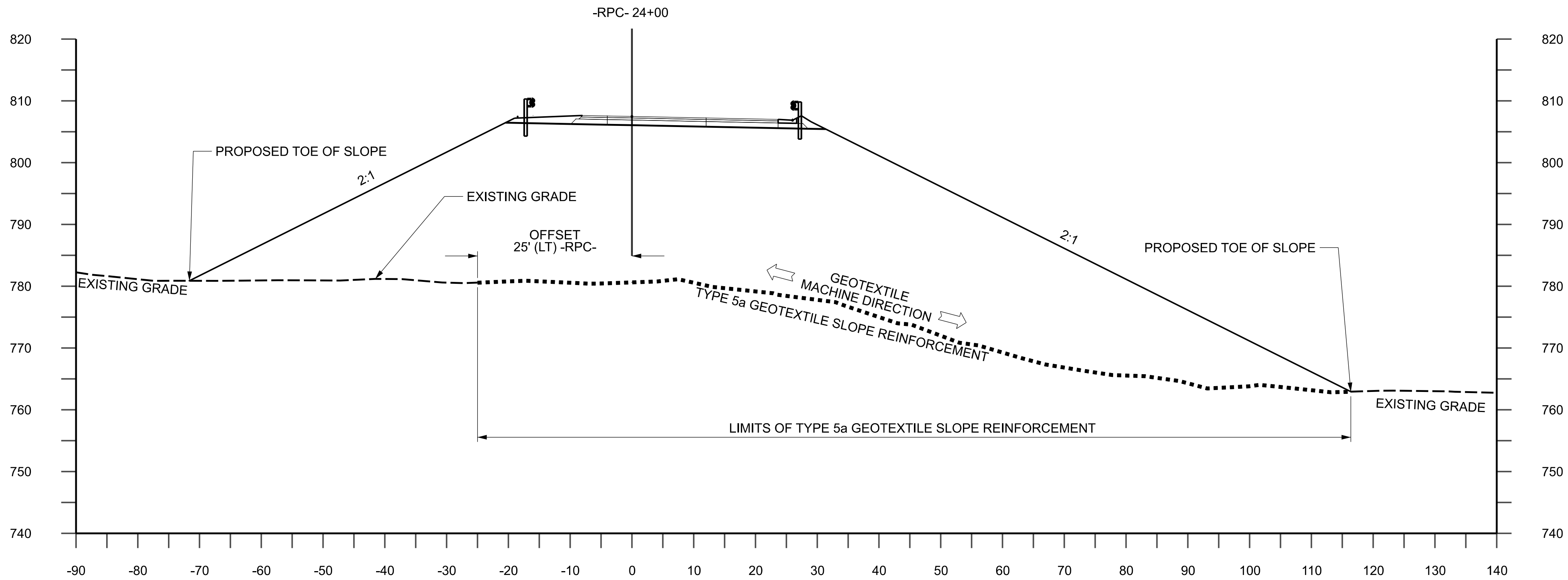
SHEET NO.
2G-3

GEOTECHNICAL ENGINEER

Signed by:  06/16/2025
C4476838304MFGRE DATE

ENGINEER

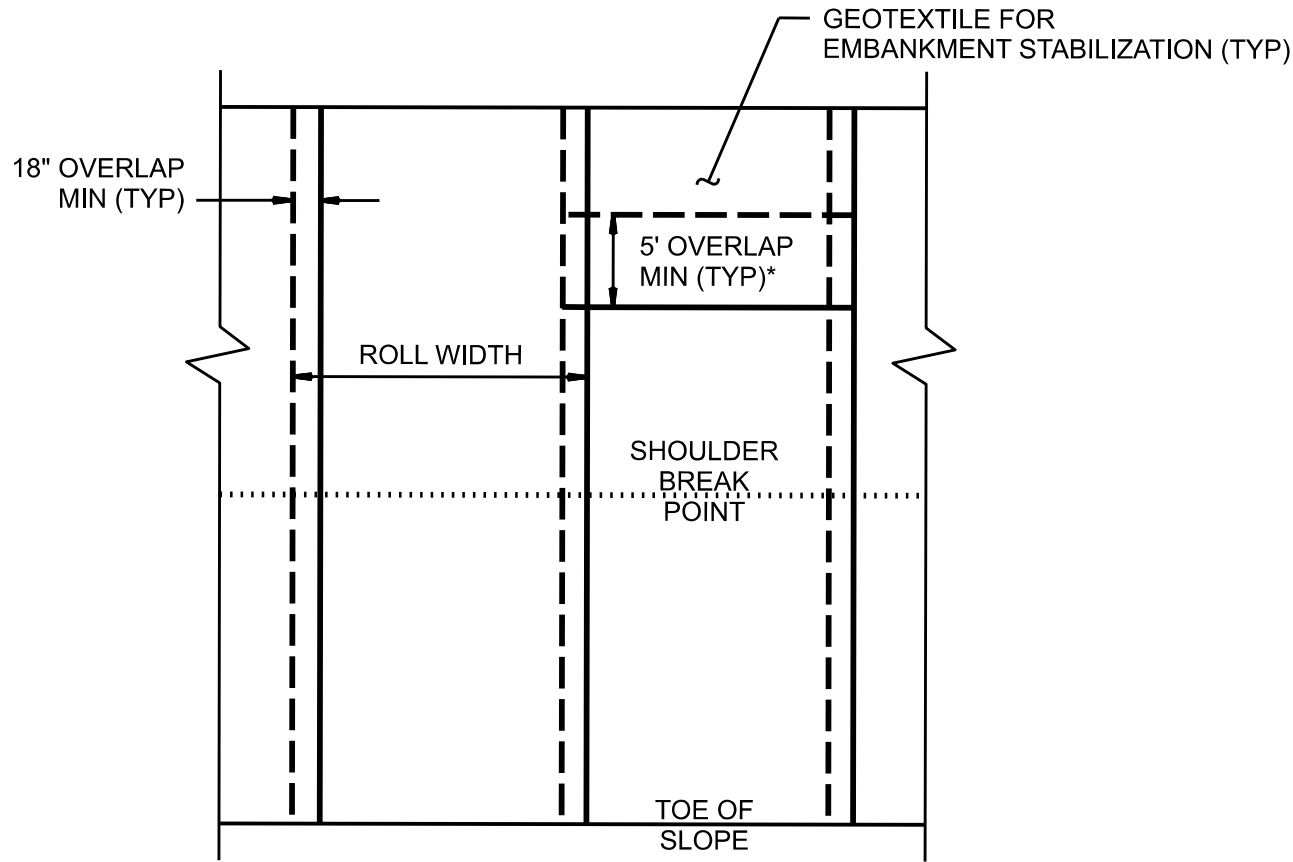
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



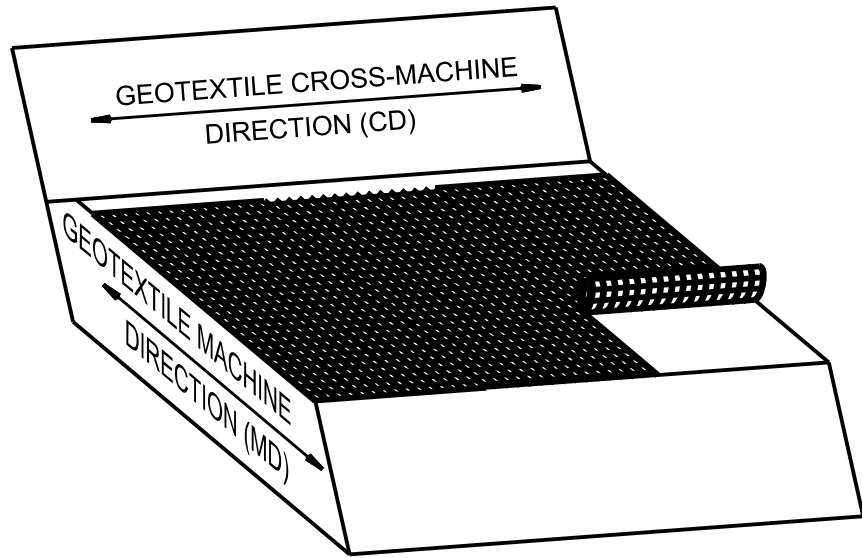
ESTIMATED REINFORCED EMBANKMENT	
MATERIAL TYPE	QUANTITY
TYPE 5a GEOTEXTILE	22,540 SY

- NOTES
- FOR EMBANKMENT STABILIZATION, SEE GEOTEXTILE FOR EMBANKMENT STABILIZATION SPECIAL PROVISION.
 - PLACE ALL GEOTEXTILE WITH THE MACHINE DIRECTION PERPENDICULAR TO THE SLOPE FACE.
 - THE CONTRACTOR TO SUBMIT DETAIL OF FABRIC LAYOUT IN TRANSITION ZONES FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION. IT WILL BE NECESSARY TO PROVIDE SIGNIFICANT FABRIC OVERLAP IN TRANSITION ZONES.



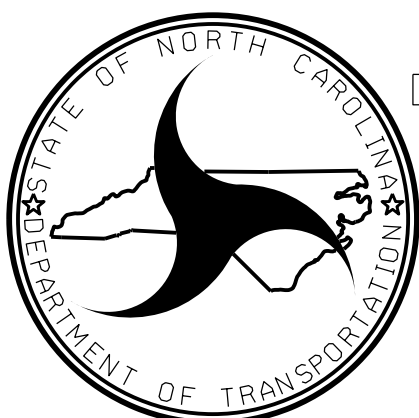
* FROM THE TOE OF SLOPE TO THE SHOULDER BREAK POINT, INSTALL GEOTEXTILE FULL LENGTH, NO OVERLAPS, IN THE MACHINE DIRECTION. SEE SECTION DETAILS.

GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)



GEOTEXTILE PLACEMENT DETAIL
(PLAN VIEW)

PREPARED BY: MHS	DATE: 6/25
REVIEWED BY: ENW/SCC	DATE: 6/25

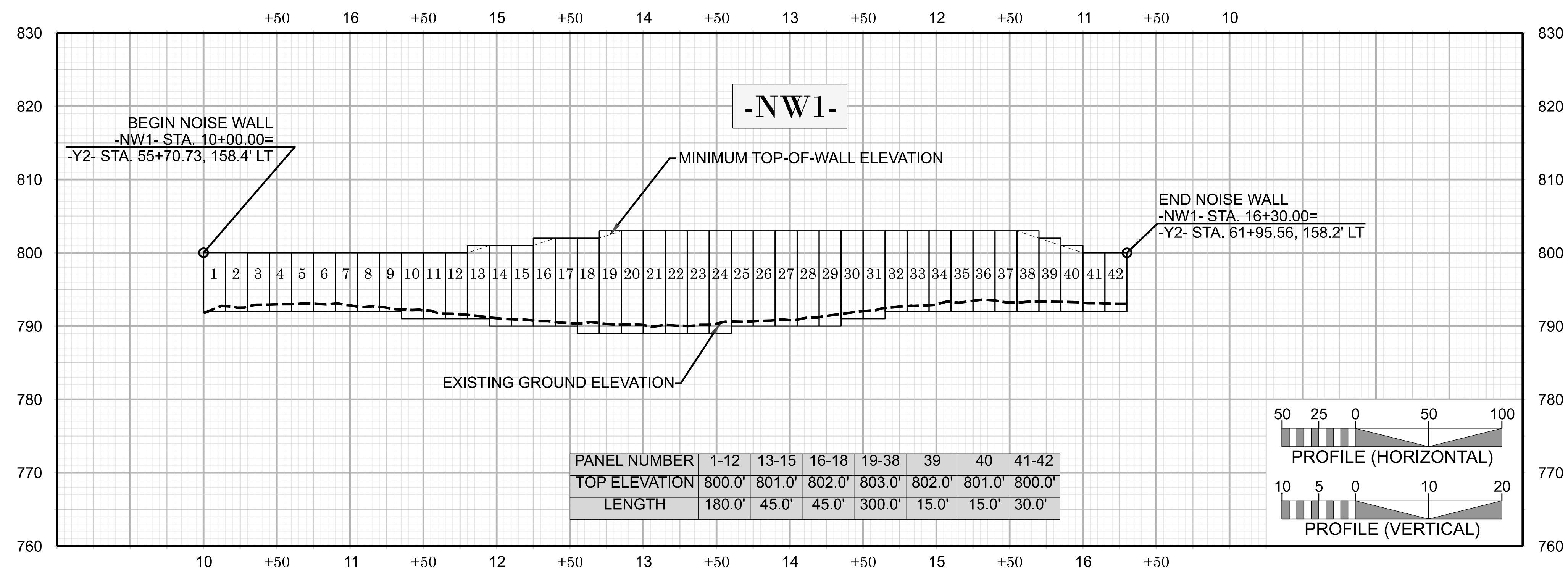
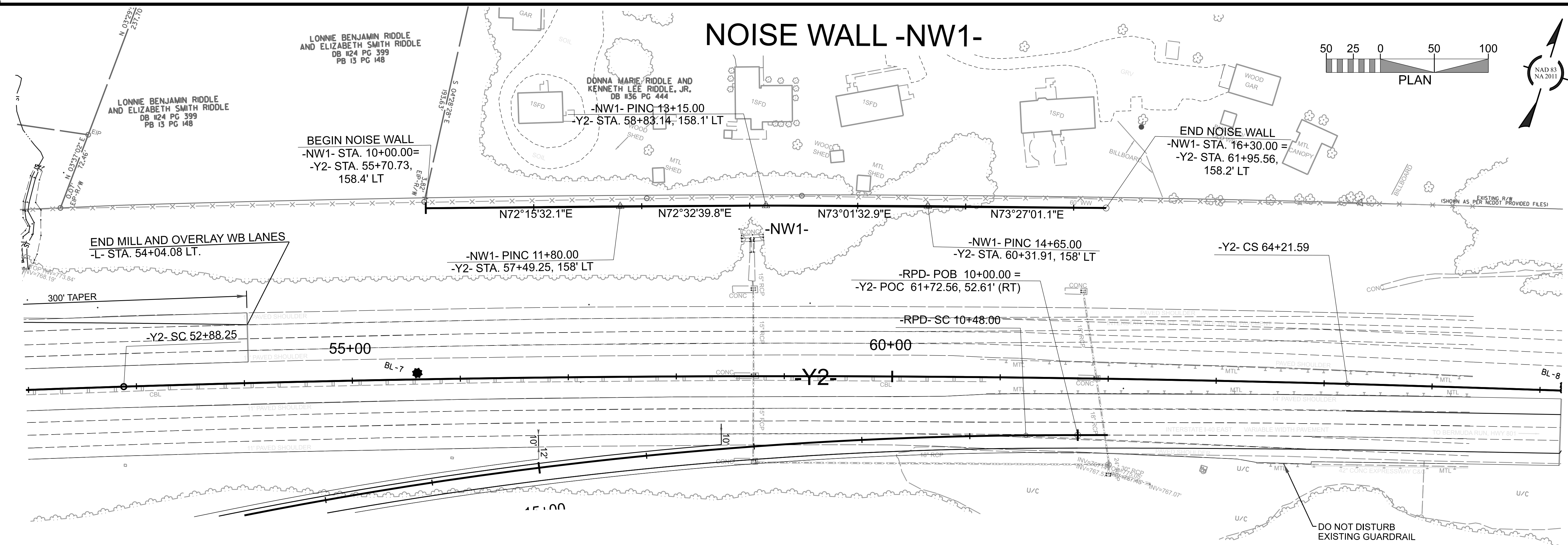


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

GEOTEXTILE FOR EMBANKMENT STABILIZATION
CROSS SECTION, NOTES,
AND DETAILS

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



SUMMARY OF EARTHWORK

Volumes in Cubic Yards

STATION	STATION	UNCLASS. EXCAVATION	UNDERCUT	EMBANK. +%	BORROW	WASTE
L 72+00.00	73+04.01	1,771		1,044		727
LPB 10+00.00	22+00.00	58,022		17		58,005
RPB 10+00.00	31+00.00	99,286	1,640	2,935		97,991
Y2 19+93.85 LT	50+00.00 LT	9,015		2,860		6,155
Y2 50+00.00 LT	54+50.00 LT	1,113		151		962
	SUBTOTAL	169,207	1,640	7,007		163,840
L 30+36.81	70+00.00	68,729	2,880	182,850	127,024	15,783
RPC 10+00.00	24+50.00	586		45,883	45,356	59
RPD 10+00.00	24+00.00	4,725	2,090	67,318	63,066	2,563
Y1 10+31.26 LT	35+50.00 LT	2,738		2,475	11	274
Y2 23+30.17 RT	50+00.00 RT	509		1,731	1,273	51
Y2 50+00.00 RT	65+50.00 RT	425		495	112	42
	SUBTOTAL	77,712	4,970	300,752	236,842	18,772
L 12+24.00 LT	20+00.00 LT	1,941		31,929	30,182	194
L 12+24.00 RT	20+00.00 RT	24		11,416	11,394	2
L 20+00.00	30+00.00	54		7,688	7,639	5
Y1 10+31.26 RT	35+50.00 RT	801		3,196	2,475	80
Y3 10+10.00	11+00.00	2		188	187	1
Y4 10+12.00	15+50.00	25		7,098	7,075	2
Y4 20+50.00	22+50.00	126		339	226	13
DRW 1 10+12.00	11+00.00	7		463	457	1
	SUBTOTAL	2,980		62,317	59,635	298
TOTAL		249,899	6,610	370,076	296,477	182,910
MATERIAL FOR SHOULDER CONSTRUCTION				10,350	10,350	
LOSS DUE TO CLEARING & GRUBBING		-32,500			32,500	
ADDITIONAL UNDERCUT (CONTINGENCY)			2,000			2,000
WASTE IN LIEU OF BORROW					-145,278	-145,278
PROJECT TOTAL		217,399	8,610	380,426	194,049	39,632
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					9,702	
GRAND TOTAL		217,399	8,610	380,426	203,751	39,632
SAY		228,500	9,000		214,000	

NOTE: QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL USE METHODS INCLUDING BUT NOT LIMITED TO RECROSS-SECTIONING, TRUCK MEASUREMENTS, AND AERIAL SURVEYS TO COMPUTE FINAL QUANTITIES WHICH THE CONTRACTOR WILL BE PAID.

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGNER. THESE QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEER.

NOTE: EMBANKMENT QUANTITIES DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

EST. DDE = **18,950 CY**

EST. **10%** OF THE UNCLASSIFIED EXCAVATION AS ADDITIONAL UNSUITABLE WASTE PER GEOTECH RECOMMENDATION

EST. **8,220 CY** OF SELECT GRANULAR MATERIAL TO REPLACE UNDERCUT PER GEOTECH RECOMMENDATION

UNCLASSIFIED EXCAVATION NOT SUITABLE FOR THE TOP 3 FT OF EMBANKMENT OR BACKFILL PER GEOTECH RECOMMENDATION:

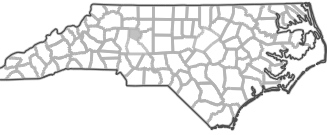
-Y1- 10+31.26 to 15+25.00 (530 CY), -Y1- 16+25.00 to 23+25.00 (1,320 CY), -Y2- 19+93.85 to 25+25.00 (1,720 CY), -Y2- 45+25.00 to 50+75.00 (7,010 CY), -Y2- 61+75.00 to 62+25.00 (20 CY)

EST. **40%** OF THE UNCLASSIFIED EXCAVATION AS CONTINGENCY NOT SUITABLE FOR THE TOP 3 FT OF EMBANKMENT OR BACKFILL PER GEOTECH RECOMMENDATION

U-6187


FINAL3B-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY



ROADWAY DESIGN UNIT

PREPARED BY

**Vhb**

VHB Engineering NC, P.C. (C-3705)
540 Main Campus Drive, Suite 500
Fayetteville, NC 27808

GUARDRAIL SUMMARY

"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				
SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (LF)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS					IMPACT ATTENUATOR		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	B-77	GREU, TL-3	GREU, TL-2	CAT-1	AT-1	G	NG								
-L-	15+95.00	26+15.00	LT	1,025.00			23+25.00	17+00.00	6'	9'	50'	50'	1'	1'		2													
-L-	15+85.00	18+82.00	RT	262.50			18+25.00		6'	9'	50'		1'			1													
-L-	19+38.00	25+51.00	RT	593.75				24+25.00	6'	9'		50'		1'		1													
-L-	59+05.00	67+85.00	LT	825.00	87.50			60+75.00	6'	9'		50'		1'		1													
-L-	59+60.00	67+88.00	RT	775.00	87.50		62+50.00		6'	9'	50'		1'			1													
-L-	68+23.00	69+74.00	LT	135.375	37.50		BRIDGE		6'	9'					1														
-L-	68+24.00	69+74.00	RT	135.375	37.50			BRIDGE	6'	9'					1														
-L-/-LPB-	72+09.00	21+53.00	LT	185.375				BRIDGE	VARIES	VARIES	162.5'		11'		1		1												
-L-	72+09.00	72+86.00	RT	91.625			BRIDGE		VARIES	VARIES		62.5'		4'	1			1											
-Y4-	10+24.00	15+10.00	LT	437.50	75.00		14+25.00		4'	7'	25'		1'				1												
-Y4-	10+15.00	11+34.00	RT	87.50	75.00				4'	7'		25'		1'			1												
-Y4-	11+78.00	15+03.00	RT	337.50				14+80.00	4'	7'	25'	25'	1'	1'			2												
-Y2-/-RPC-	26+61.00	25+13.00	RT	1,950.00			29+25.00		14'	17'	76.7'		0.8'			1						840							
-RPC-	19+50.00	25+30.00	LT	587.50			19+50.00		12'	15'	50'		1'			1													
-Y2-/-RPB-	25+49.00	13+50.00	LT	706.25				25+75.00	14'	17'	50'		1'			1		1				914							
-Y2-	43+02.00	47+19.00	RT	418.75			MED. STRUCTURE		12'	EXIST.		50'		1'		1		1											
-Y2-	46+04.00	50+20.00	LT	418.75			MED. STRUCTURE		12'	EXIST.		50'		1'		1		1											
-RPD-	18+25.00	25+10.00	LT	618.75				18+25.00	14'	17'								1											
-RPD-	17+75.00	24+74.00	RT	706.25				17+75.00	12'	15'								1											
TOTAL				10,297.75	400.00										4	11	5	6				1754							
DEDUCTIONS FOR ANCHORS:																													
TYPE		QTY	LT/EA																										
TYPE B-77		4	22.875	-91.50																									
GREU, TL-3		11	50.00	-550.00																									
GREU, TL-2		5	25.00	-125.00																									
CAT-1		6	6.25	-37.50																									
PROJECT TOTAL				9,493.75	400.00																	1754.00							
SAY				9,500.00	400.00																	1,755.00							
ADDITIONAL GUARDRAIL POSTS				10 EACH	per RDM																								

SUMMARY OF WOVEN WIRE FENCE

STATION TO STATION	LT. OR RT.	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E 4" POSTS	F 5" POSTS
-L- 24+13.00 TO -Y1- 22+75.00	LT	565.53	2	2	1	33	13
-L- 24+08.00 TO -Y1- 24+76.00	RT	558.13	2	2	1	33	13
-Y1- 22+80.00 TO -L- 36+55.00	LT	625.47	2	2	1	38	13
-Y1- 24+78.00 TO -L- 36+55.00	RT	563.19	2	2	1	33	13
-L- 57+92.00 TO 67+07.42	RT	1,100.11	1	6	4	61	32
-L- 57+92.00 TO 67+06.41	LT	916.86	1	6	3	50	29
-RPD- 16+53.00 TO 23+80.00	LT	815.54	1	5	3	44	26
-RPC- 15+69.00 TO 24+37.00	RT	848.37	1	1	3	53	14
-RPB- 13+79.00 TO -Y2- 47+77.00	LT	2,062.78	2	4	7	127	37
-Y2- 30+51.81 TO -RPC- 12+48.59	RT	321.97	2	3	1	14	16
-Y2- 27+84.34 TO -RPB- 13+79.00	LT	526.75	1	4	1	28	17
TOTAL		8,904.70				514	223
SAY		8,910				515	223

SUMMARY OF CABLE GUIDERAIL

LINE	BEG STATION	END STATION	LOC.	SINGLE FACED LENGTH (LF)	DOUBLE FACED LENGTH (LF)	INTERMEDIATE ANCHORS (EA)	TERMINAL ANCHORS (EA)	REMOVE AND RESET EX. GUIDERAIL (LF)
Y2	45+94.33	47+27.83	MED.				2	133.50
			TOTAL				2	133.50
			SAY				2	135
ADDITIONAL GUIDERAIL POSTS = SAY 5 EA								

SUMMARY OF REMOVAL EXISTING ASPHALT PAVEMENT

LINE	STATION	STATION	LOCATION	SQUARE YARDS
-L-/-Y4-	15+72.13	11+34.80	MED	565.90
-L-	14+98.09	15+46.62	RT	28.53
TOTAL				594.43
SAY				600

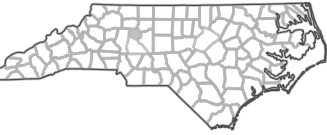
SUMMARY OF SHOULDER BERM GUTTER

LINE	STATION	STATION	SIDE	LENGTH (LF)
-L-	16+10.00	20+00.00	LT	390.00
-L-	17+50.00	18+47.36	RT	97.36
-L-	19+70.41	24+75.00	RT	504.54
-L-	60+25.00	67+29.49	LT	704.49
-L-	68+40.00	69+58.92	LT	118.92
-L-	69+34.00	69+58.92	RT	24.92
-L-/-LPB- (LT/RT)	72+32.01	21+29.33	LT	188.13
-L-	72+32.01	72+50.00	RT	17.99
-Y2-/-RPB-	25+75.00	13+00.00	LT	622.39
-Y4-	10+20.79	14+75.00	LT	464.39
-Y4-	13+30.00	14+50.00	RT	120.00
-Y2-/-RPC-	29+50.00	25+81.38	RT	1,747.04
-RPD-	18+42.00	24+46.00	LT	604.00
TOTAL				5,604.17
SAY				5,610

U-6187


FINAL38-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY



ROADWAY DESIGN UNIT

PREPARED BY



Vhb Engineering NC, P.C. (C-3705)
590 Main Campus Drive, Suite 500
Fayetteville, NC 27606

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

[illegible]

SHEET TOTALS (48" or Less)

[illegible]

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

[illegible]

SHEET TOTALS (48" or Less)

[illegible]

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

[illegible]

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC)																C. S. PIPE				R. C. PIPE CLASS IV				QUANTITIES FOR DRAINAGE STRUCTURES										FRAME, GRATES, AND HOOD				CONCRETE TRANSITIONAL SECTION		DRAINAGE STRUCTURES										PIPE REMOVAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		FROM	TO					DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PPP	DO NOT USE PVC	.079	.079	.079	.079	15	18	24	30	36	42	48	18" WELDED STEEL PIPE 0.25" THICK, GRADE B IN SOIL	18" WELDED STEEL PIPE 0.25" THICK, GRADE B NOT IN SOIL	24" WELDED STEEL PIPE 0.375" THICK, GRADE B IN SOIL	24" WELDED STEEL PIPE 0.375" THICK, GRADE B NOT IN SOIL	30" WELDED STEEL PIPE 0.50" THICK, GRADE B IN SOIL	30" WELDED STEEL PIPE 0.50" THICK, GRADE B NOT IN SOIL	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	CY	REINFORCED ENDWALLS	5" THRU 5'	6" THRU 10'	10" AND ABOVE	EACH LIN. FT.	IN. FT.	FT.	C.B. STD. 840.01 OR STD. 840.02	E	F	G	D.I. STD. 882.04 OR STD. 882.06	C.B. STD. 882.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W 2 GRATES STD. 840.29	J.B. STD. 840.31 OR STD. 840.32	T.E.J.B. STD. 840.34	T.E.D.I. STD. 840.35	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	15" SIDE DRAIN PIPE ELBOW	18" SIDE DRAIN PIPE ELBOW	30" SIDE DRAIN PIPE ELBOW	SPRING BOX STD. 840.41	BERM DITCH OUTLET STD. 880.10 (SY)	BERM DITCH OUTLET STD. 880.11 (SY)	CY FLOWABLE FILL	CY CONCRETE COLLARS CL. "B" STD. 840.72	CY CONCRETE AND BRICK PIPE PLUG STD. 840.71	LIN. FT.	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

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

[illegible]

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

[illegible][illegible]

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LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & GREATER)

[illegible]

SHEET TOTALS (54" or Greater)
PROJECT TOTALS (54" or Greater)