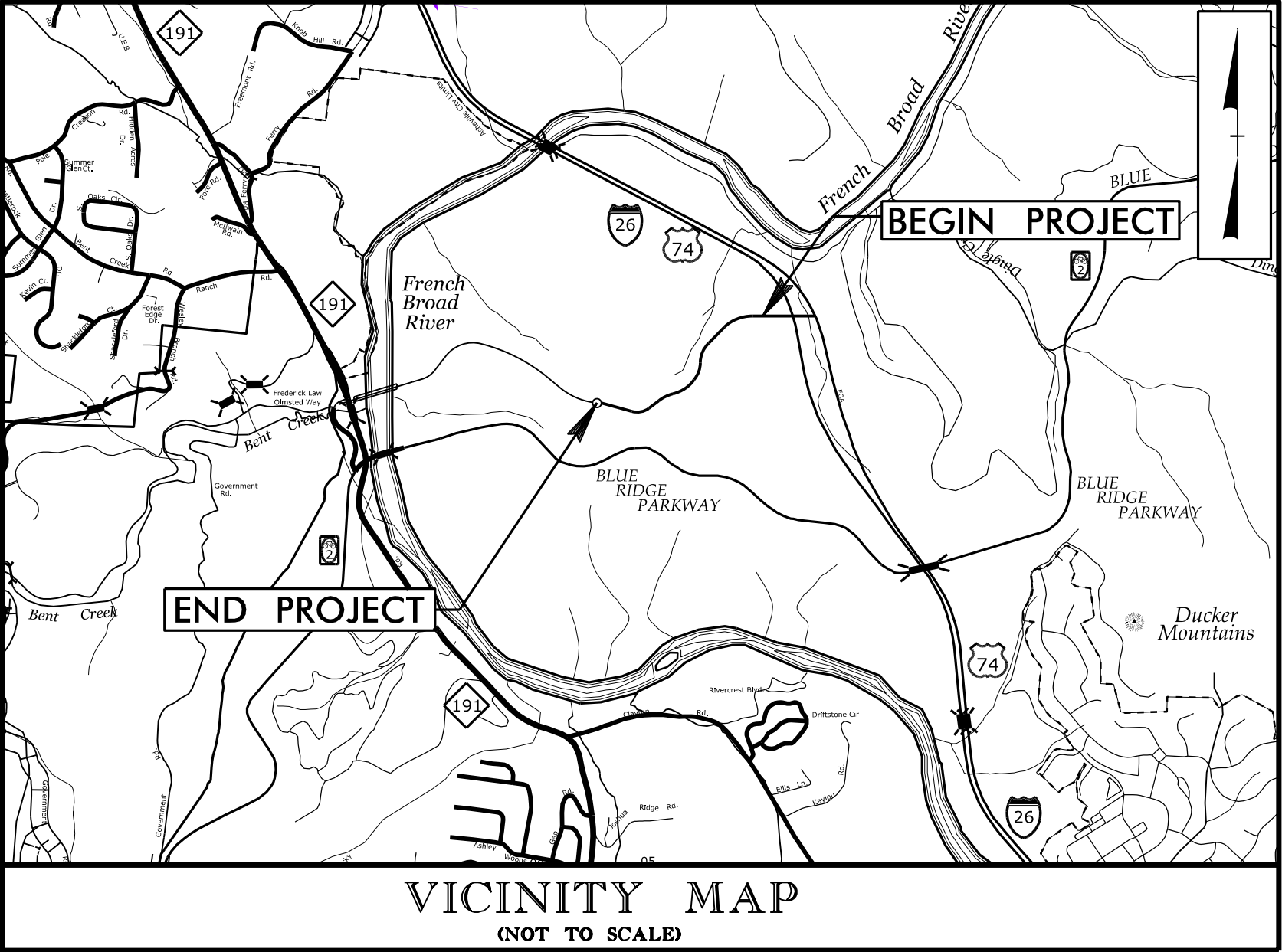


TIP PROJECT: HE-0001B

CONTRACT: C205126

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



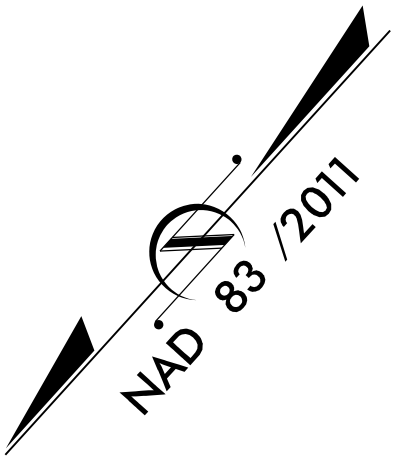
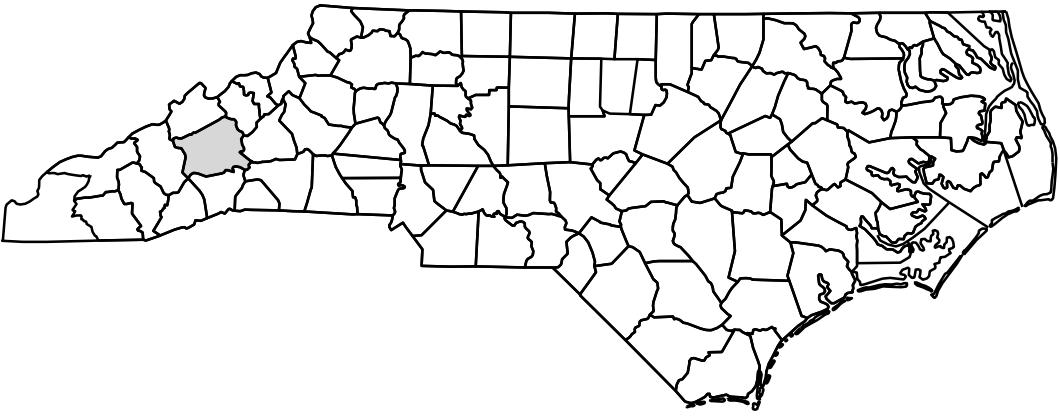
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

LOCATION: FUTURE CONNECTOR ROAD (EAST
FREDERICK LAW OLMSTED WAY) FROM
I-26 INTERCHANGE TO ROUNDABOUT

TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HE-0001B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49742.1.2	SKYR026	PE	
49742.2.2	SKYR026	UTILITIES	
49742.3.4	SKYR026	CONSTRUCTION	



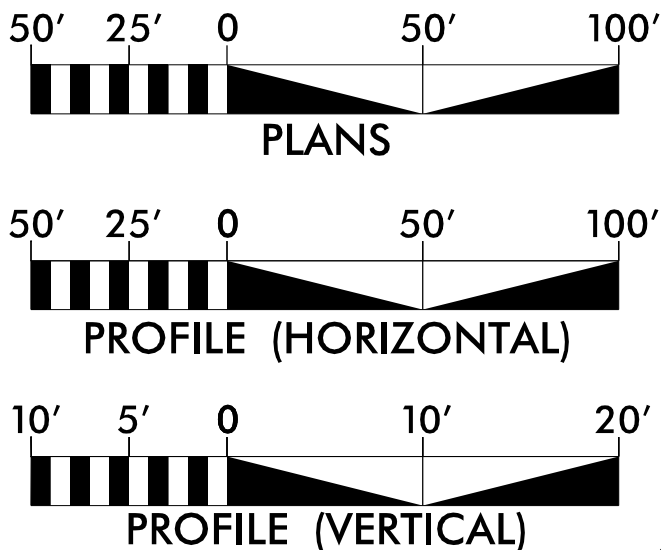
END TIP PROJECT HE-0001B
-Y- STA. 48 + 03.58

BEGIN TIP PROJECT HE-0001B
-Y- STA. 21 + 50.00

NOTES:
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE INTERCHANGE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2023 = 9,890
ADT 2043 = 17,810
K = 9%
D = 55%
T = 5%*
V = 40 MPH
* TTST = 1% DUAL 4%
FUNC CLASS = MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HE-0001B = 0.503 Miles

TOTAL LENGTH TIP PROJECT HE-0001B = 0.503 Miles

NCDOT CONTACT: BRENDAN W. MERITHEW, PE
DIVISION 13 PROJECT MANAGER

Prepared for the North Carolina Department of Transportation
In the Office of:



GANNETT FLEMING
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

2024 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
JANUARY 28, 2025

LETTING DATE:
NOVEMBER 18, 2025

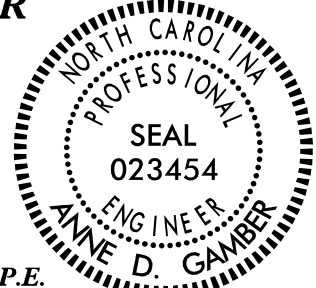
RICKY A. TIPTON, PE
PROJECT ENGINEER

ANGELA B. PRIDGEN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

Signed by:
Anne D. Gamber
F9DA71FAF124454...

9/30/2025
P.E.

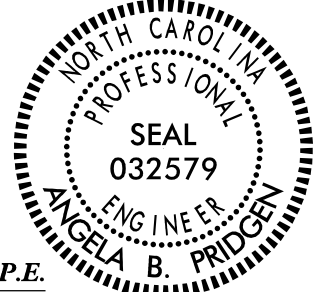


SIGNATURE:

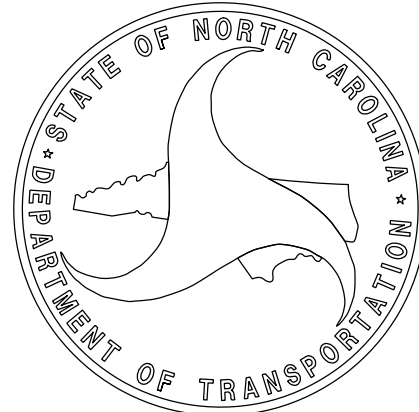
ROADWAY DESIGN
ENGINEER

DocuSigned by:
Angela B. Pridgen
75A4100DAF7A489...

9/29/2025
P.E.



SIGNATURE:



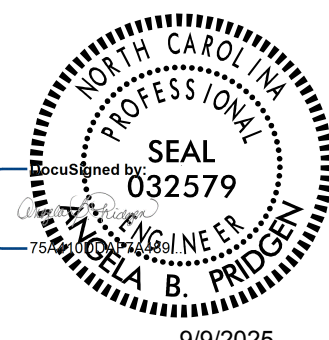
8/17/25

april.dgn
9/5/2025
c:\pwworking\gfbw01\april.dgn\16481021-HE-0001B_rdy_14h.dgn

PROJECT REFERENCE NO.
HE-0001B

SHEET NO.
1A

ROADWAY DESIGN ENGINEER



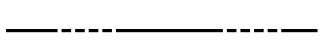
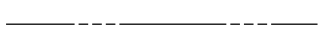
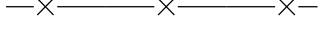
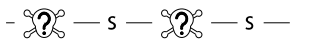
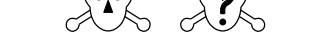
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

INDEX OF SHEETS

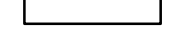
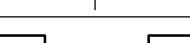
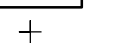
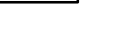
SHEET NUMBER	SHEET	GENERAL NOTES:	2024 SPECIFICATIONS	EFFECTIVE: 01-16-2024 REVISED:	2024 ROADWAY ENGLISH STANDARD DRAWINGS
1	TITLE SHEET	GRADE LINE: GRADING AND SURFACING:	THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.		The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit – N. C. Department of Transportation – Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:
1A	INDEX OF SHEETS, GENERAL NOTES AND STANDARD DRAWINGS	CLEARING:	CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.		STD.NO. TITLE
1B	CONVENTIONAL SYMBOLS	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.		DIVISION 2 – EARTHWORK
2A-1	PAVEMENT SCHEDULE AND 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		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 240.01 Guide for Berm Ditch Construction
2B-1	CONCRETE ISLAND DETAIL	SIDE ROADS:	THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH AL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.		DIVISION 3 – PIPE CULVERTS
2C-1 THRU 2C-4	SPECIAL DETAILS	BERM DITCHES:	BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.		300.01 Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
2D-1	DRAINAGE DETAILS	SUBSURFACE DRAINS:	SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.		DIVISION 5 – SUBGRADES, BASES AND SHOULDERS
3B-1	ROADWAY SUMMARIES	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.		560.01 Method of Shoulder Construction – High Side of Superelevated Curve – Method I
3D-1 THRU 3D-2	DRAINAGE SUMMARIES	TEMPORARY SHORING:	SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.		DIVISION 8 – INCIDENTALS
3G-1	GEOTECHNICAL SUMMARIES	RIGHT-OF-WAY MARKERS:	ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.		815.02 Subsurface Drain 838.01 Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew 838.11 Brick Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew 838.80 Precast Endwalls – 12" thru 72" Pipe 90 Skew 840.00 Concrete Base Pad for Drainage Structures 840.01 Brick Catch Basin – 12" thru 54" Pipe 840.02 Concrete Catch Basin – 12" thru 54" Pipe 840.03 Frame, Grates and Hood – for Use on Standard Catch Basin 840.18 Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe 840.20 Frames and Wide Slot Flat Grates 840.22 Frames and Wide Slot Sag Grates 840.25 Anchorage for Frames 840.27 Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe 840.45 Precast Drainage Structure 840.51 Brick Manhole – 12" thru 36" Pipe 840.52 Precast Manhole – 4', 5' and 6' Diameter 12" thru 48" Pipe 840.53 Precast Manhole with Masonry Base – 12" thru 42" Pipe 840.54 Manhole Frame and Cover 840.66 Drainage Structure Steps 846.01 Concrete Curb, Gutter and Curb & Gutter 848.01 Concrete Sidewalk (Use Detail in Lieu of Standard for Sheet 1 of 1) 848.06 Curb Ramp (Use Details in Lieu of Standards for Sheets 9 and 10 of 13) 850.01 Concrete Paved Ditches 850.10 Guide for Berm Drainage Outlet – 15" and 18" Pipe 852.01 Concrete Islands 862.01 Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15) 862.02 Guardrail Installation 866.02 Woven Wire Fence – with Wood Post 876.02 Guide for Rip Rap at Pipe Outlets 876.04 Drainage Ditches with Class 'B' Rip Rap
4 THRU 6	PLAN SHEETS	ROCK	ROCK IS ANTICIPATED BETWEEN -Y- STA. 19+50 TO 25+00 AND -Y- STA. 35+00 TO 37+50. BLASTING MAY BE REQUIRED FOR EXCAVATION ON THE PROJECT. SEE SECTION 220 OF THE STANDARD SPECIFICATIONS AND IF APPLICABLE, ROCK BLASTING PROVISION.		
7 THRU 9	PROFILE SHEETS				
RW-01, RW-04 THRU RW-06	SURVEY CONTROL SHEETS				
TMP-1 THRU TMP-8	TRAFFIC MANAGEMENT PLANS				
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS				
EC-1 THRU EC-9	EROSION CONTROL PLANS				
RF-1	REFORESTATION PLAN				
SIGN-1 THRU SIGN-9	SIGNING PLANS				
X-1	CROSS SECTION INDEX				
X-1A	CROSS SECTION SUMMARY				
X-2 THRU X-39	CROSS SECTIONS				

Note: Not to Scale

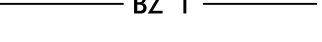
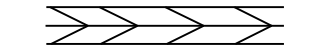
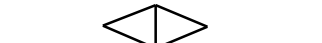
BOUNDARIES AND PROPERTY:

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	

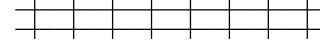
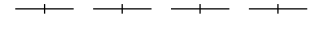
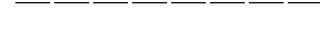
BUILDINGS AND OTHER CULTURE:

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

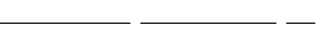
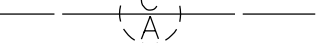
HYDROLOGY:

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	

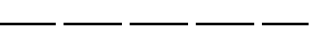
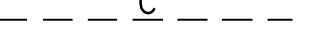
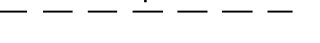
RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

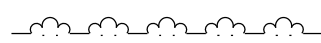
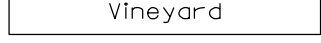
RIGHT OF WAY & PROJECT CONTROL:

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	

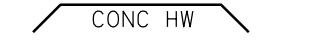
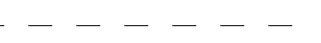
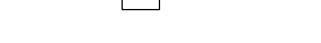
ROADS AND RELATED FEATURES:

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	
Single Tree	
Single Shrub	
Hedge	

VEGETATION:

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

**GANNETT
FLEMING**

*One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270*

PROJECT REFERENCE NO.		SHEET NO.	
HE-0001B		2A-1	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
 DocuSign 9/24/2024		 DocuSign 9/24/2024	
TS&A\1020742425 11/18/2025 10:45 AM DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

Diagram illustrating the cross-section of a road (Fredrick Law Olmsted Way) showing the proposed grade and existing ground. The road is divided into sections by matchlines (MATCHLINE A, MATCHLINE B, MATCHLINE C, MATCHLINE D). The road width is 10'-0" on each side of the centerline. The centerline is marked with a dashed line and labeled "C - Y - (FREDERICK LAW OLMSTED WAY)". The road is shown with a 2% grade. The diagram also shows the location of various structures and utilities, including a 2' wide sidewalk, a 6' wide curb, and a 11' wide road. The diagram is labeled "GRADE TO THIS LINE".

Figure 1: Typical cross-section of a road shoulder. The diagram shows a vertical matchline on the left. Horizontal dimensions from the matchline are 4'-6", 5'-0", and 6". A 4:1 slope is indicated. Key features include a 1/2" thick layer, a .02 inch gap, and a 1/2" thick layer. Callouts R1, T, S, and E1 are present. The bottom is labeled "GRADE TO THIS LINE" and "ORIGINAL GROUND".

Diagram illustrating a proposed road cross-section. The original ground is shown on the left, sloping down to the right at a 4:1 ratio. A proposed road structure is shown, including a 6" wide base and a 0.02' thick layer. A vertical line indicates the matchline to the right, labeled "MATCHLINE AC". Dimensions include a 2' distance from the original ground to the road edge and an 8' minimum distance from the road edge to the matchline.

[illegible]

Diagram illustrating a trench cross-section with dimensions and labels:

- Matchline AC**: Indicated at the top left.
- 8' MINIMUM**: Dimension for the width of the trench.
- 2'**: Dimension for the width of the trench.
- ORIGINAL GROUND**: Indicated on the right side.
- 4:1**: Slope ratio of the trench.
- GRADE TO THIS LINE**: Indicated at the bottom left.
- Labels**: **R1** (Reinforcing bar), **T** (Trench), **.02** (Slope), **6"** (Width), **1:1** (Slope).

GUARDRAIL DETAIL
USE IN CONJUNCTION WITH TYPICAL SECTION NO.1

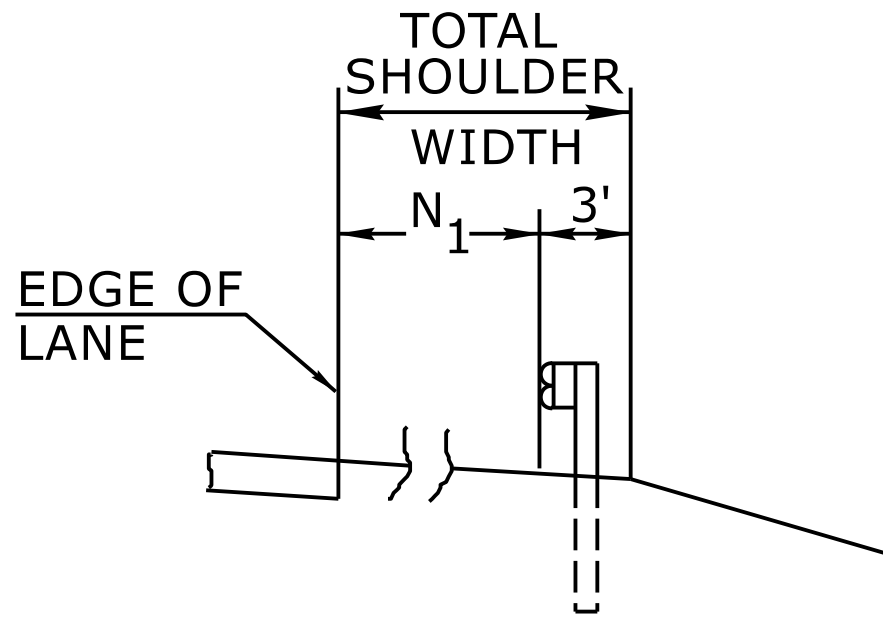
 **GANNETT
FLEMING** One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

NAD 83 2011

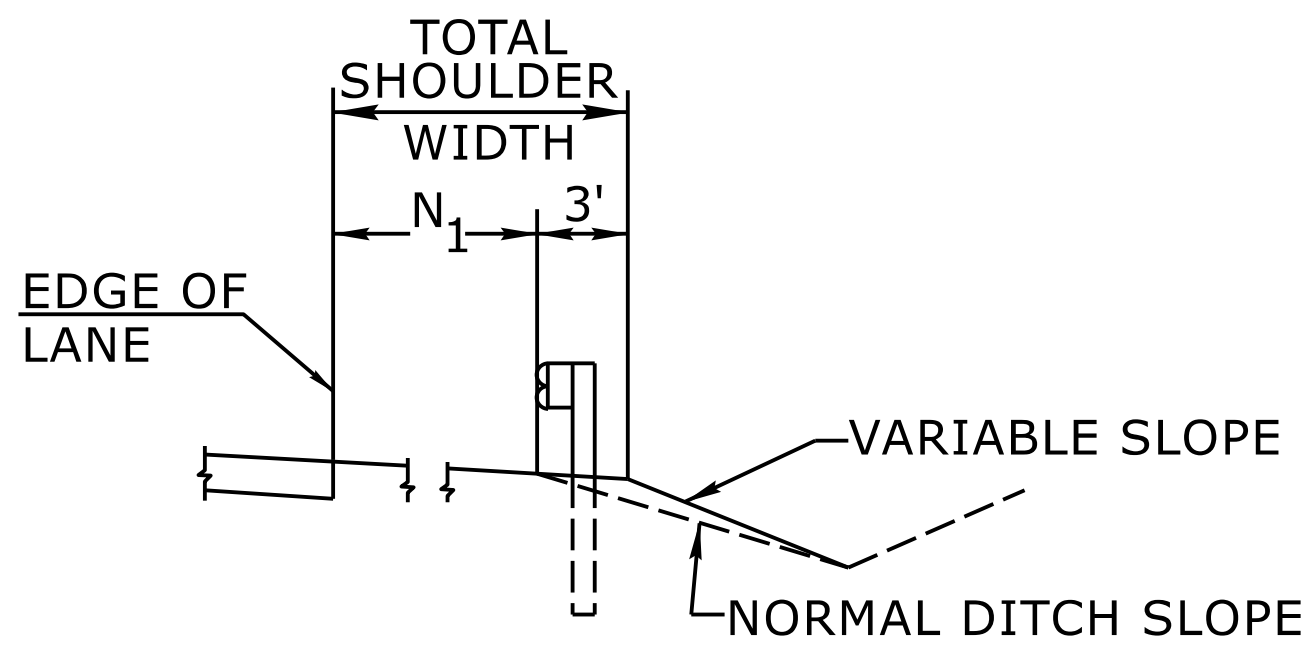


FOR -Y- PLAN VIEW, SEE SHEET 6

PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	2C-1

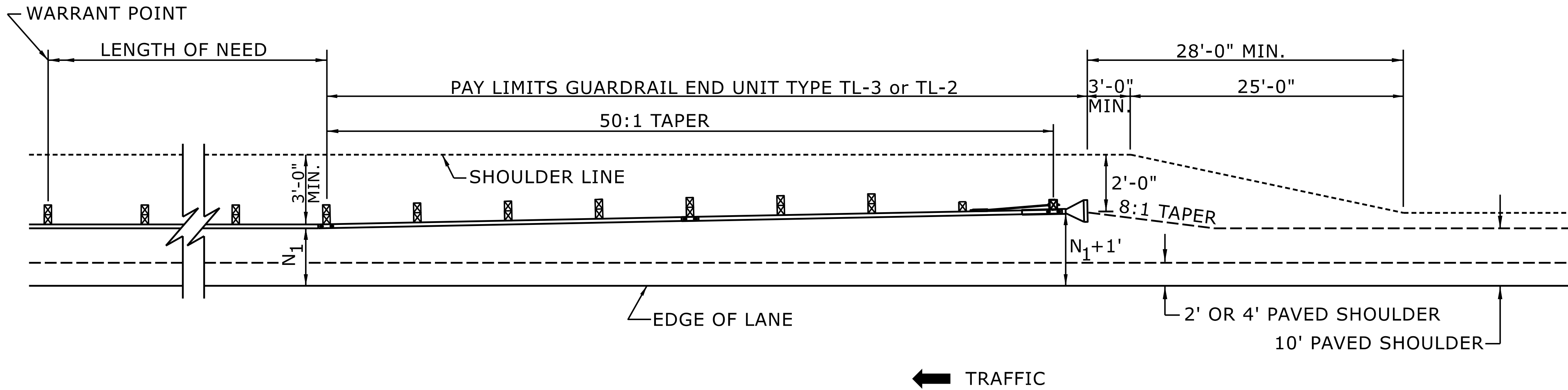


FILL SECTION



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01

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



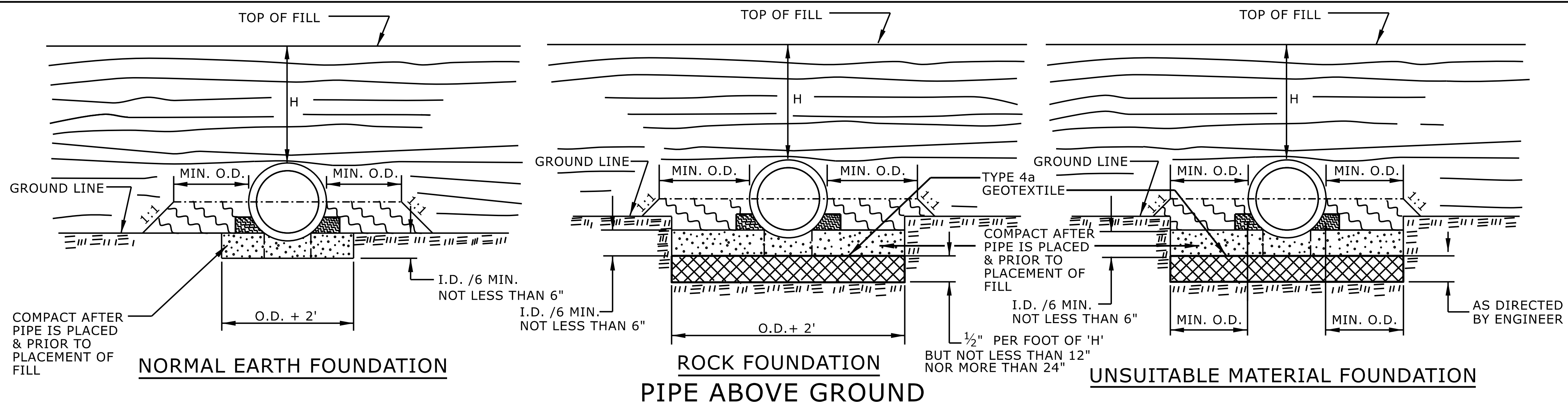
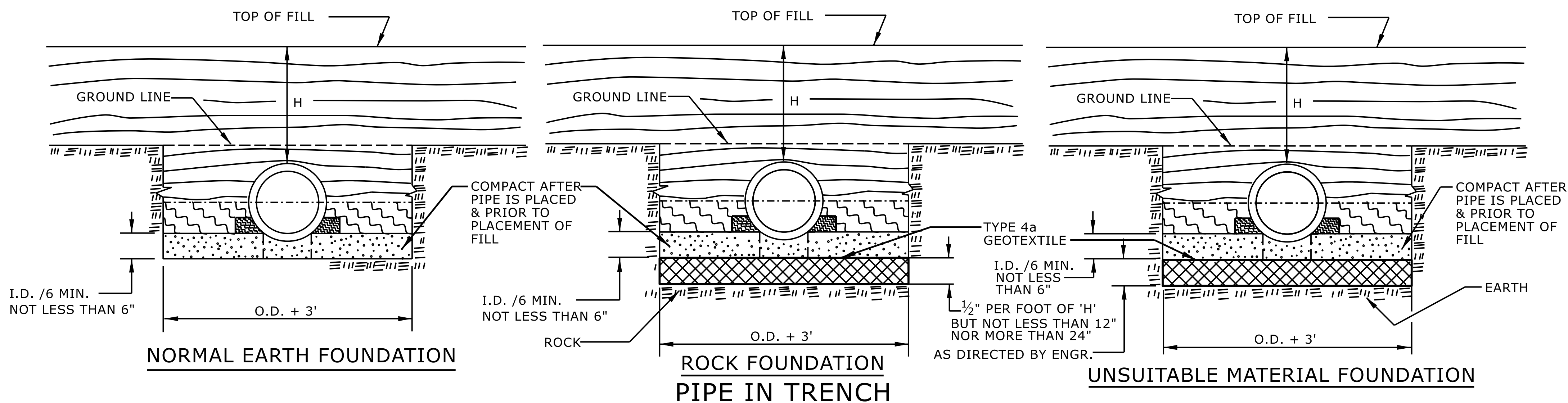
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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

SEE TITLE BLOCK

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



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.

ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE	STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
---	---

SHEET 2 OF 2
300.01

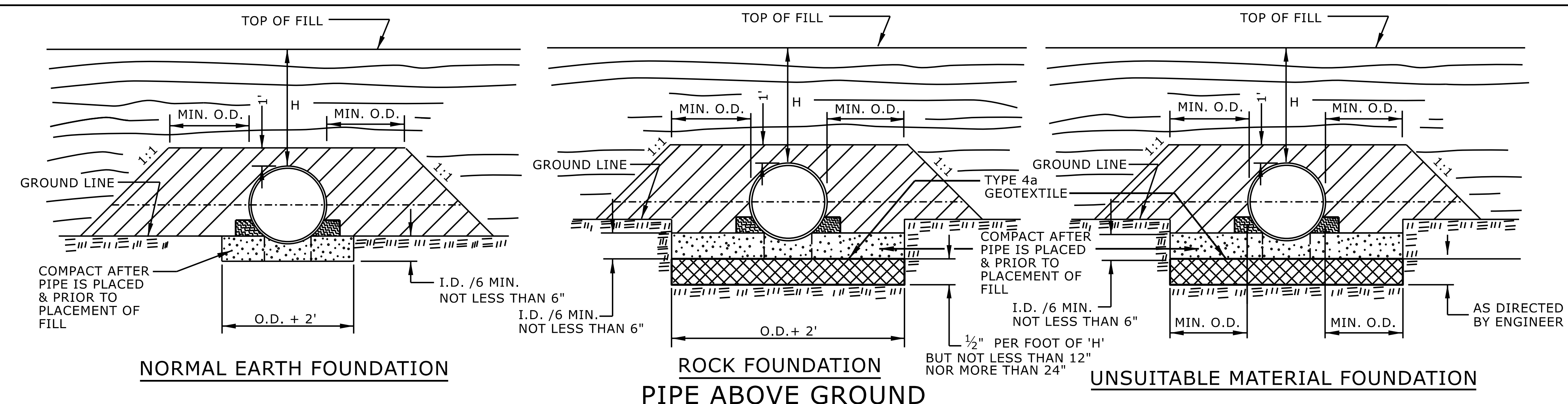
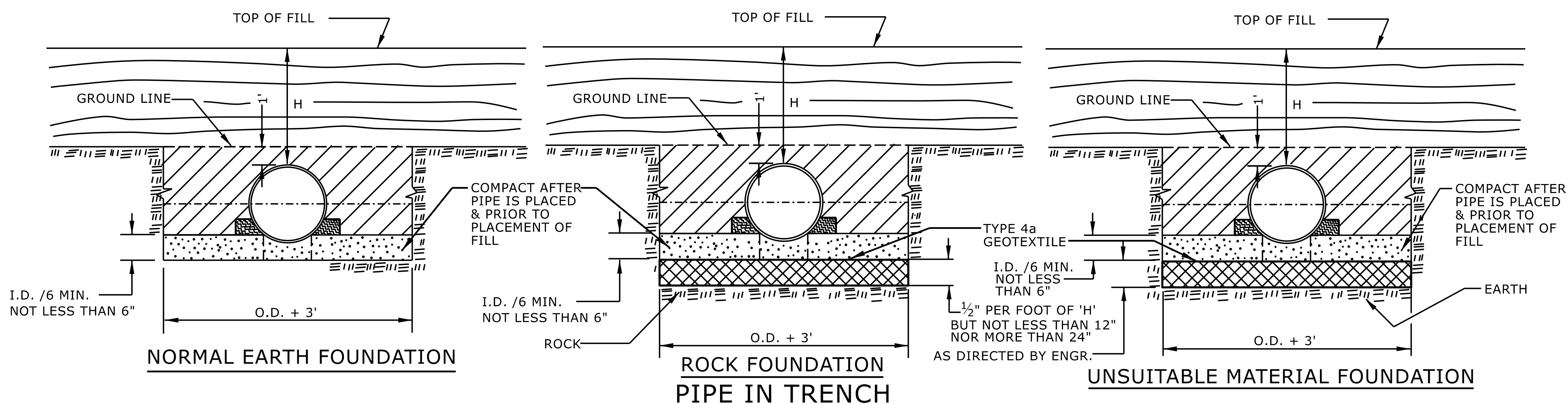


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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



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

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

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

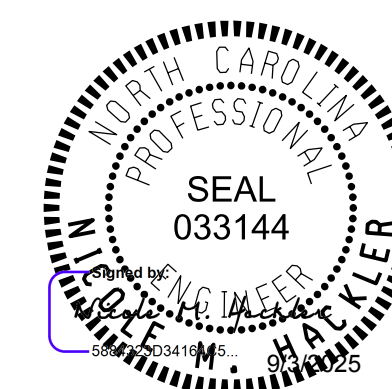
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS
FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

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

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

ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION FLEXIBLE PIPE

SHEET 1 OF 2
300.01



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

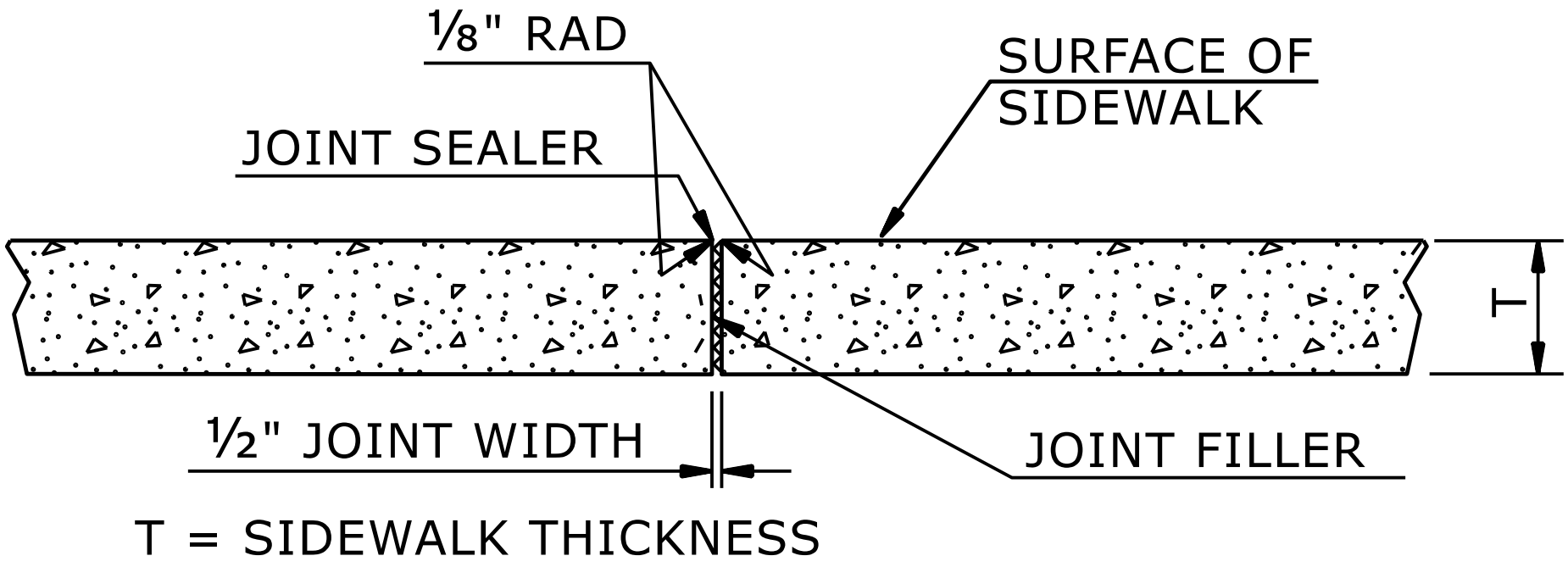
PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	2C-4

NOTES:

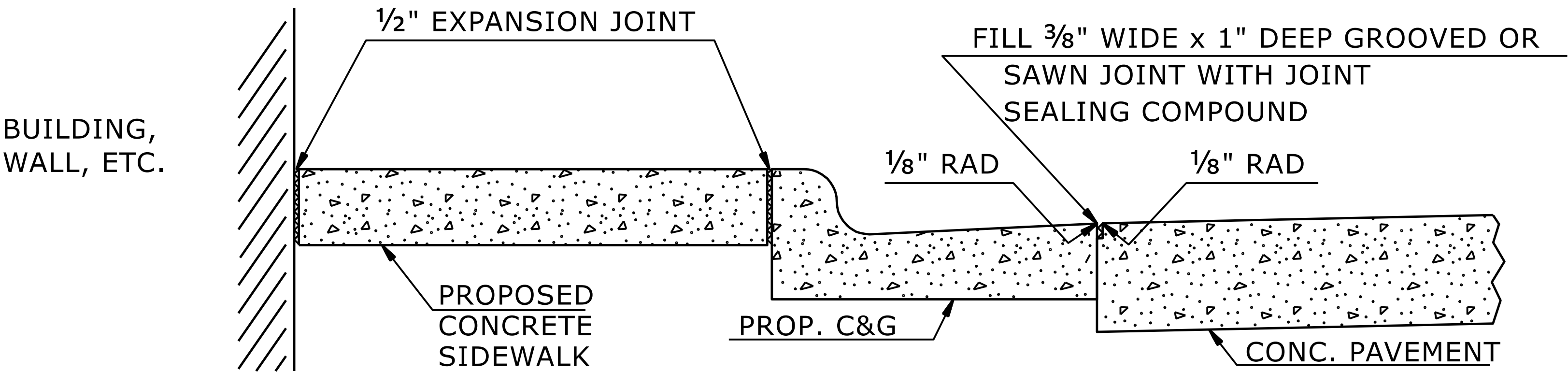
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TRANSVERSE EXPANSION JOINT
IN SIDEWALK



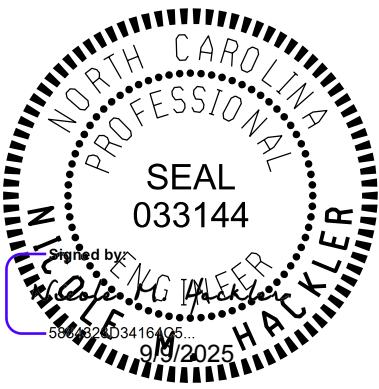
DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK

SHEET 1 OF 1

848D01



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

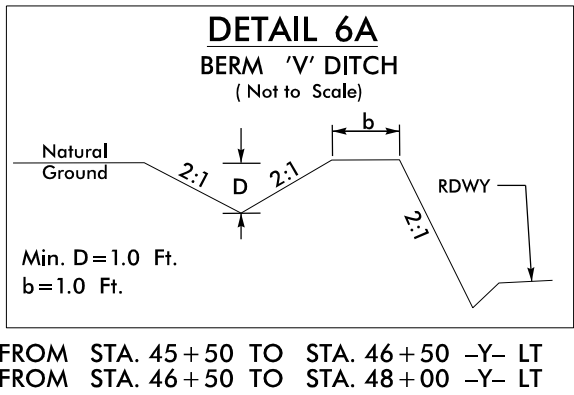
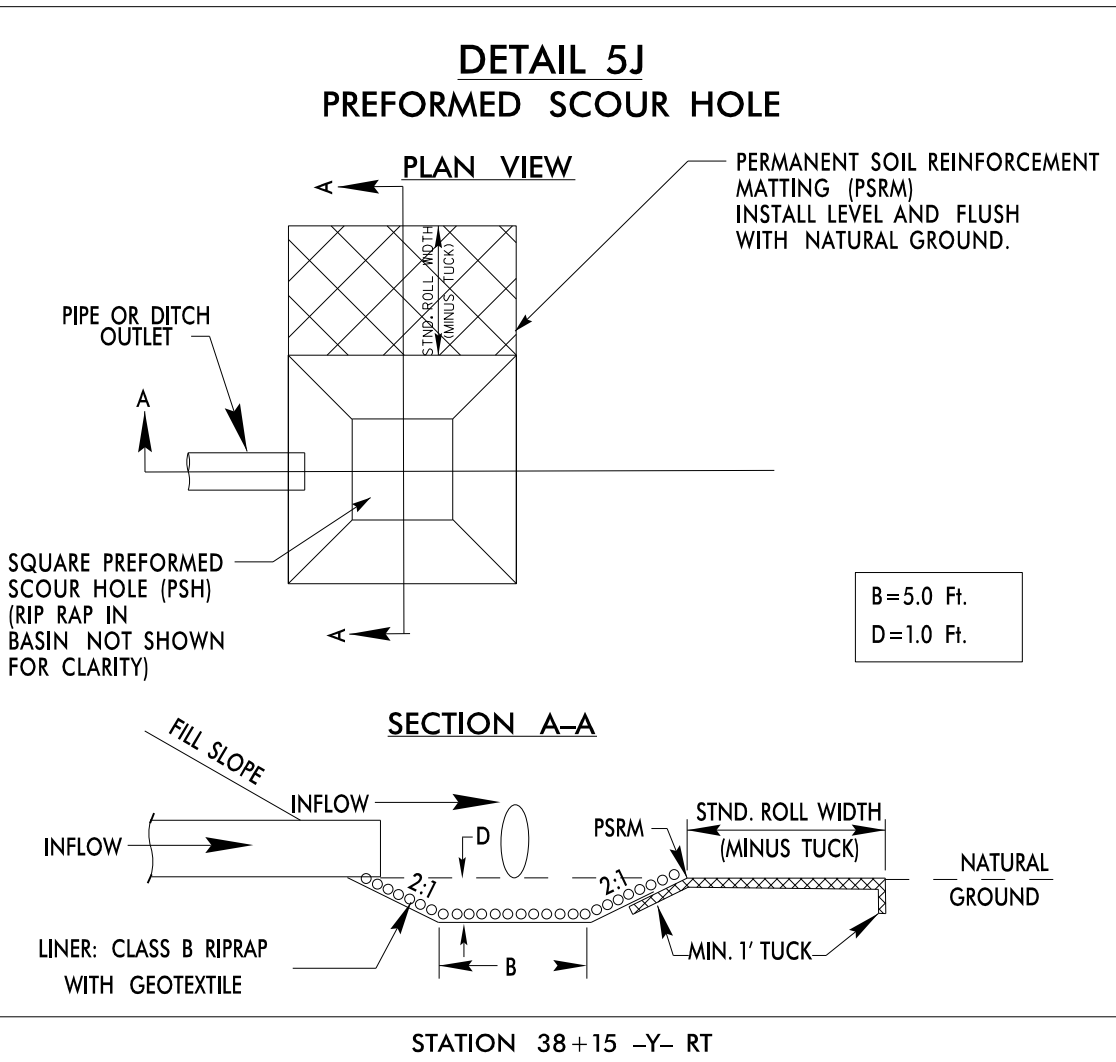
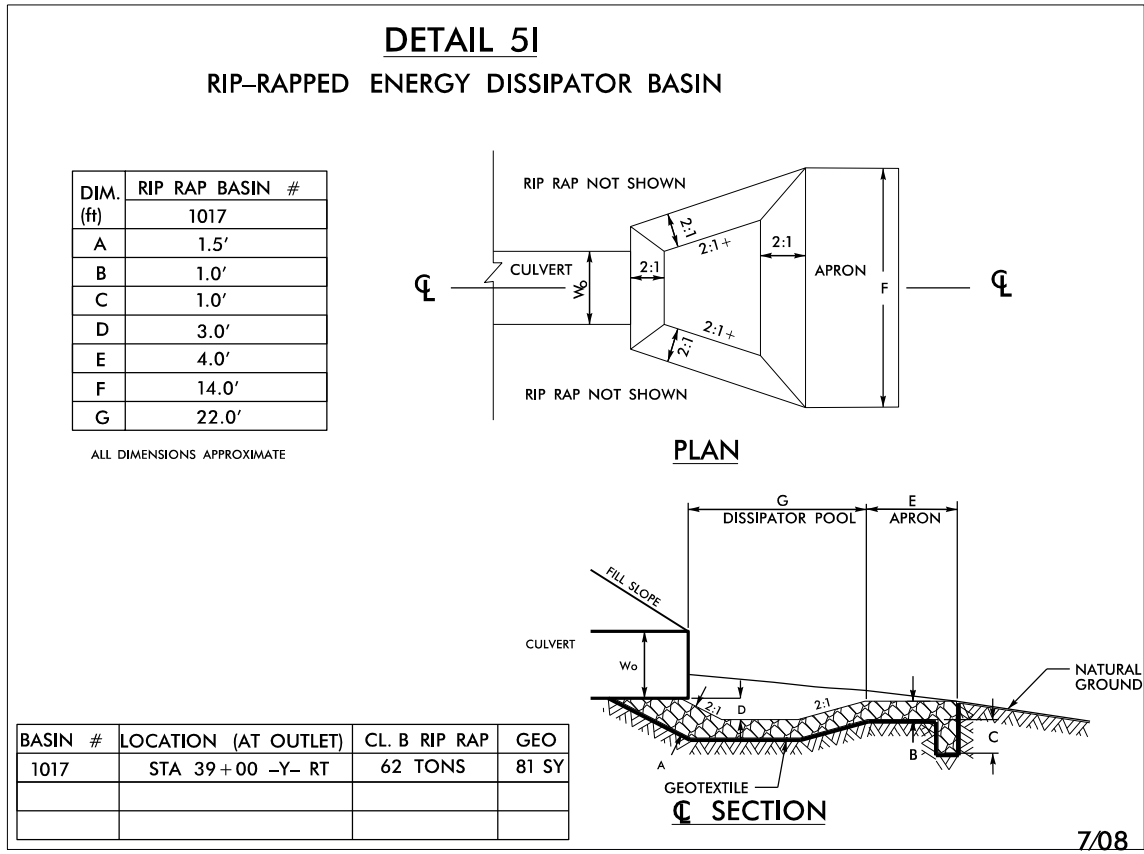
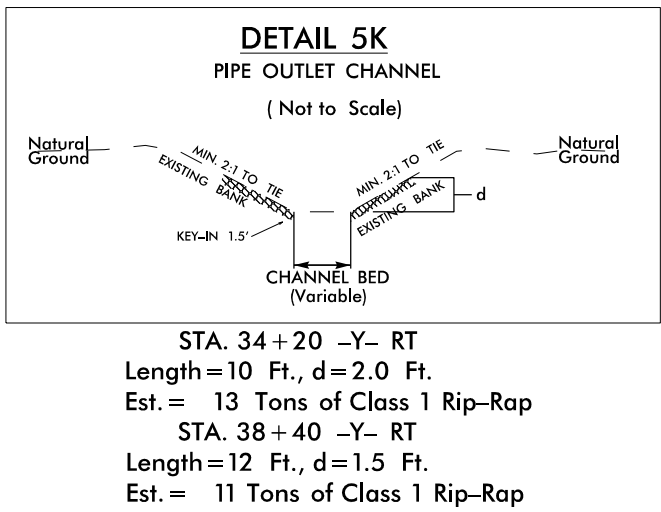
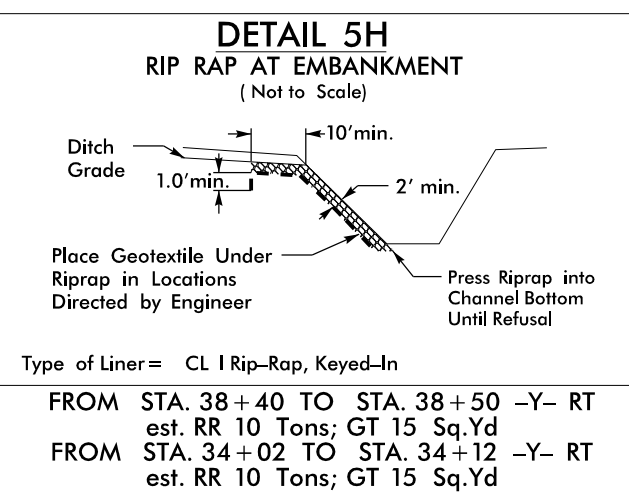
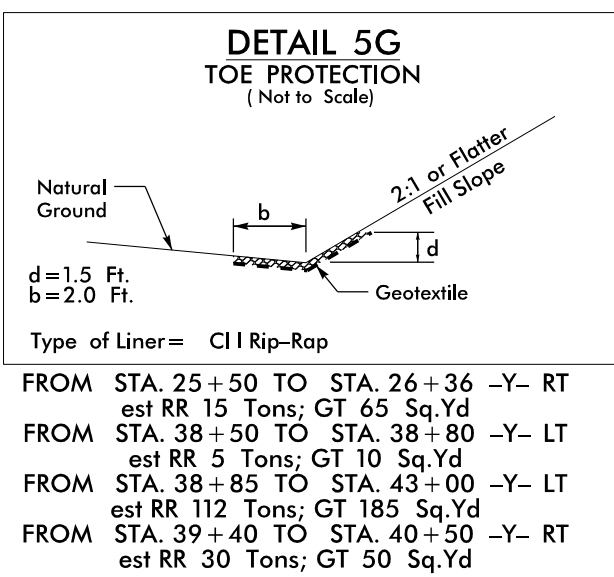
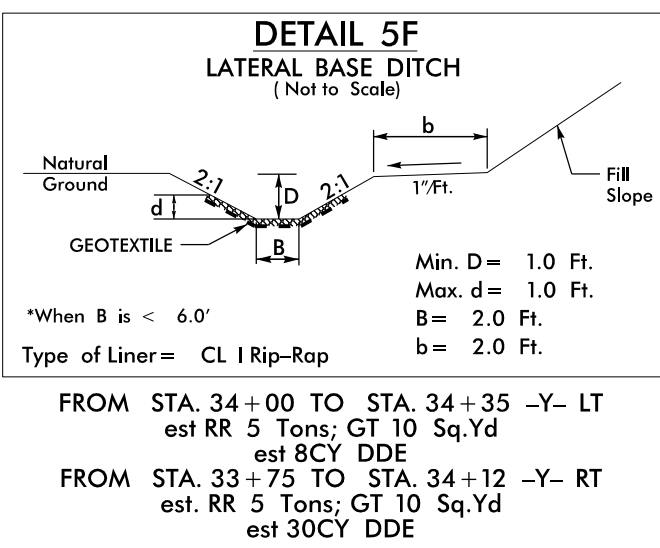
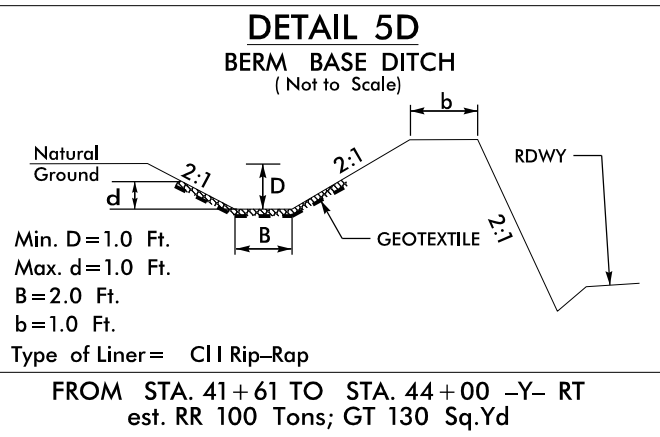
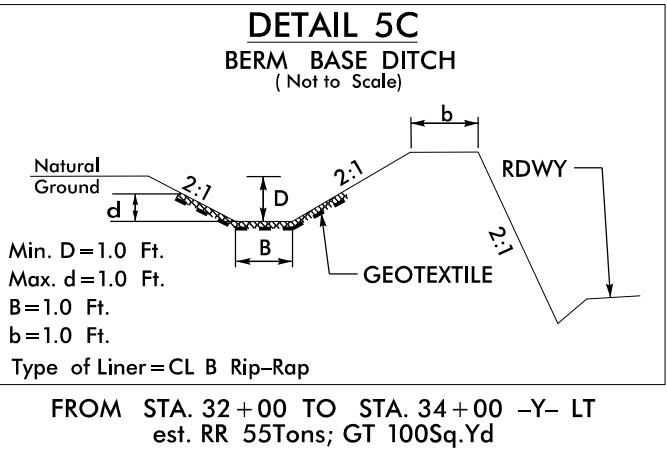
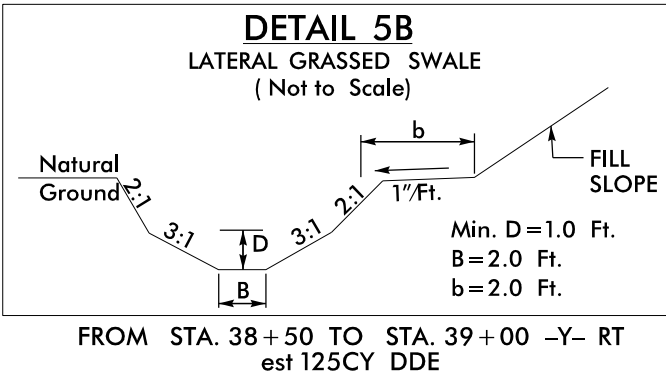
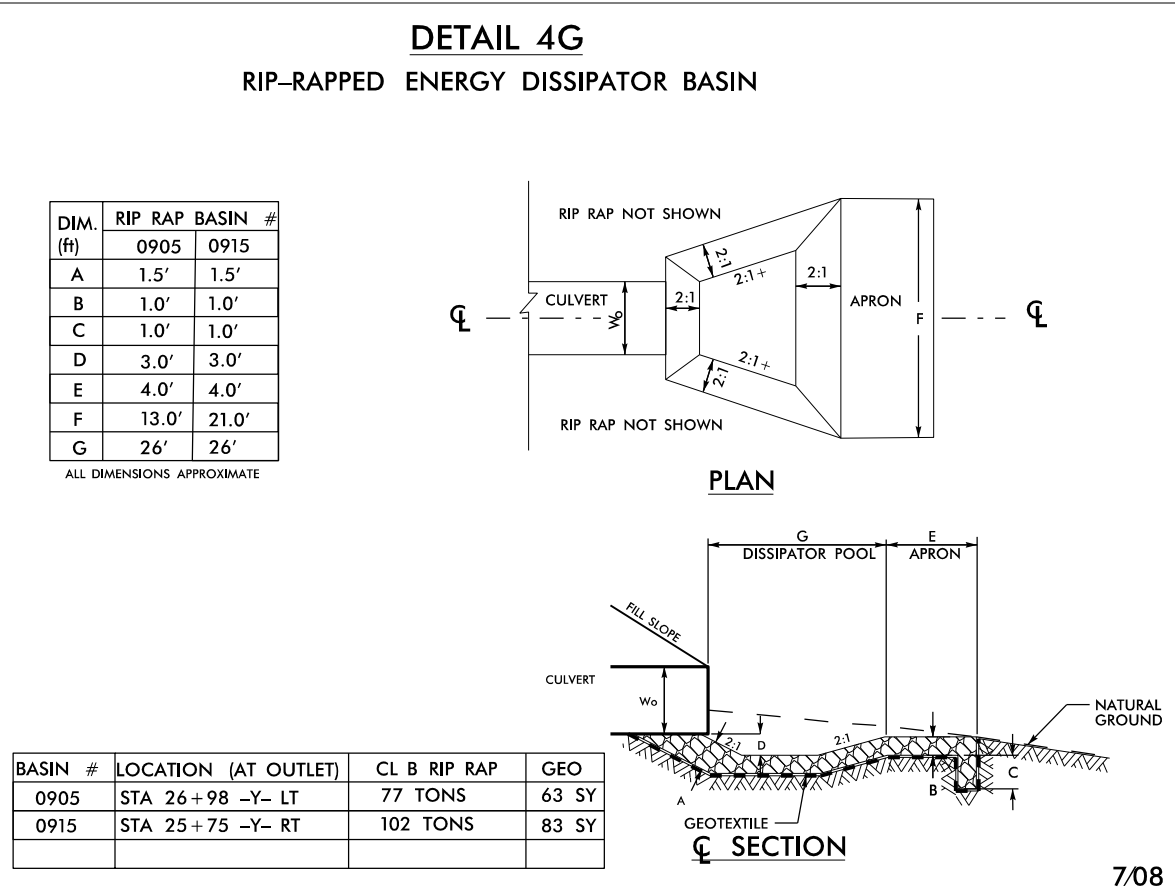
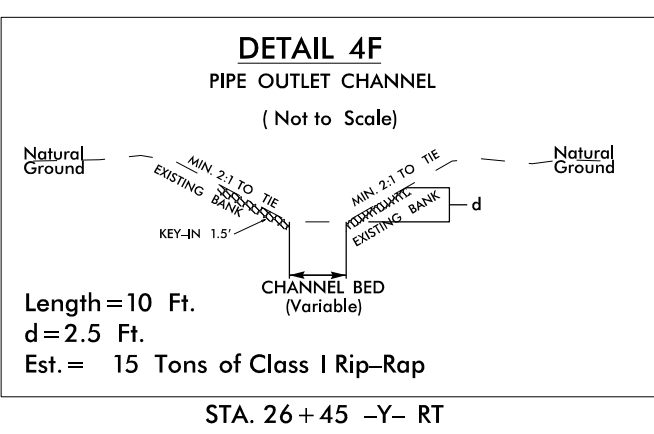
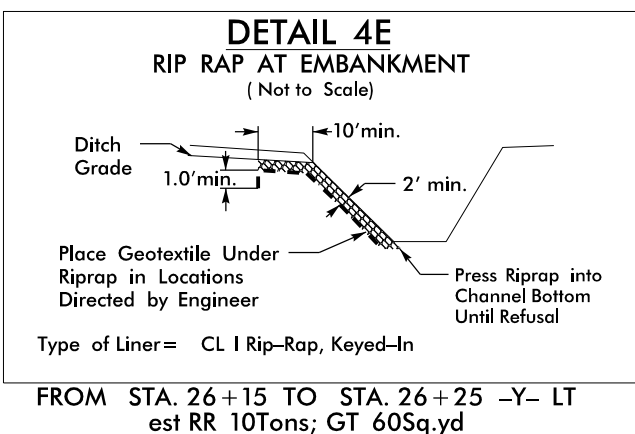
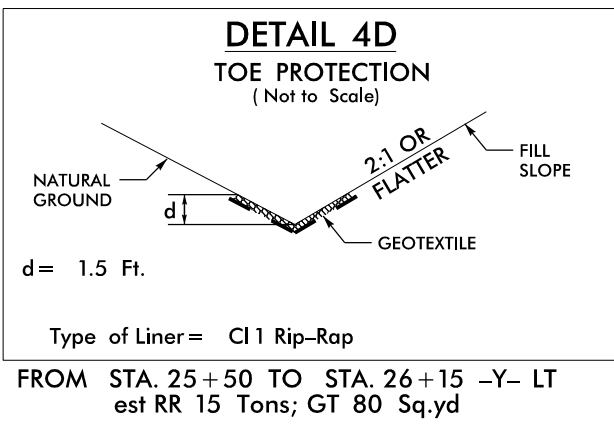
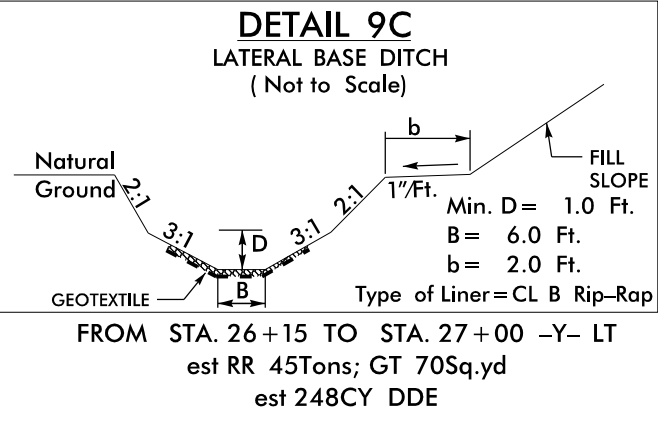
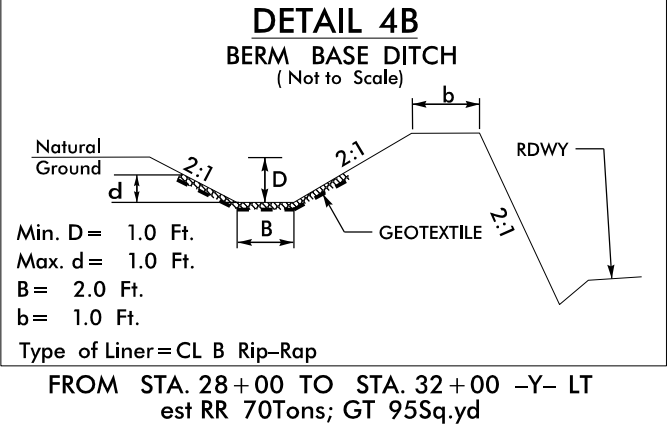
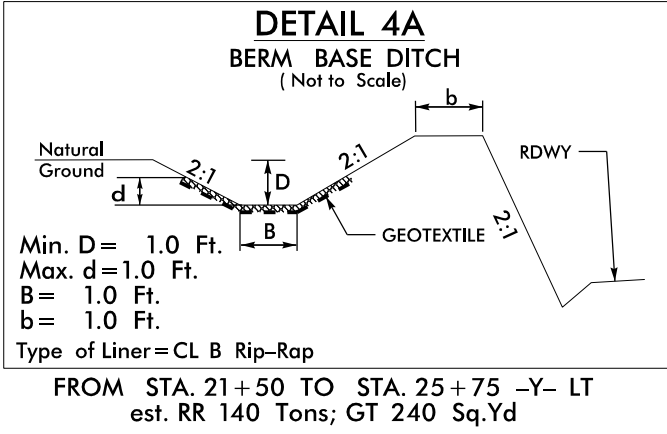
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

Office 919-707-6950

FAX 919-250-4119

SEE TITLE BLOCK

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



12/06/07

COMPUTED BY:	GRM	DATE:	05/30/2024
CHECKED BY:	ABP	DATE:	08/18/2024

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	3B-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	ROCK	EMBANK. + %	BORROW	WASTE
-Y- 21+50.00	-Y- 48+03.58	140,833	1,126	28,844		111,989
SUBTOTALS:		140,833	1,126	28,844		111,989
TOTALS:						
LOSS DUE TO CLEARING & GRUBBING		-6,000				-6,000
PROJECT SUBTOTALS:		134,833	1,126	28,844		105,989
GRAND TOTALS:		134,833	1,126	28,844		105,989
SAY:		136,900				

CONTINGENCY ITEMS PER NCDOT GEOTECHNICAL REPORT - ROADWAY DESIGN AND CONSTRUCTION RECOMMENDATIONS, DATED MAY 12, 2023
EST. DDE = 411 CUBIC YARDS
UNDERCUT = 1150 CUBIC YARDS
EST. SHALLOW UNDERCUT = 100 CUBIC YARDS
CLASS IV SUBGRADE STABILIZATION = 955 TONS
SELECT GRANULAR MATERIAL, CLASS III = 300 CUBIC YARDS
GEOTEXTILE FOR SUBGRADE STABILIZATION = 1950 SQUARE YARDS

Earthwork quantities are calculated by the Roadway Engineer.
These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

WOVEN WIRE FENCE SUMMARY

SURVEY LINE	STATION	STATION	LENGTH	4" POSTS (EACH)	5" POSTS (EACH)
-Y- LT	21+50.00	29+00.00	793.42'	49	14
-Y- RT	21+50.00	29+00.00	853.03'	53	14
TOTAL:			1646.45'	102	28
SAY:			1650'	102	28

"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 SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	GREU TL-3	GREU TL-2		B-77	CAT-1	VI MOD	BIC	AT-1	EA	G	NG					
-Y-	25 + 25.00	27 + 25.00	LT	250'			26 + 00.00	26 + 50.00	10'	12'	25'	25'	0.5'	0.5'			2														
-Y-	25 + 25.00	40 + 25.00	RT	1500'			26 + 00.00	39 + 50.00	10'	12'	25'	25'	0.5'	0.5'			2														
-Y-	38 + 25.00	43 + 25.00	LT	500'			39 + 00.00	42 + 50.00	10'	12'	25'	25'	0.5'	0.5'			2														
ANCHOR DEDUCTIONS																															
GREU, TL-2 (25' EACH)				-150'																											
TOTALS				2100'																											
SAY				2125'																											
ADDITIONAL GUARDRAIL POSTS (EA)				5													6														
																	6														

9/5/2025
c:\pwworking\gfpw01\april\genn\dl658102\HE-0001B_rdy_psh3B-1.dgn
gfpw01

PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	3D-1

 **GANNETT
FLEMING** One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

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

[illegible]

PROJECT REFERENCE NO.	SHEET NO.
HE-0001B	3D-2

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

 **GANNETT
FLEMING** One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

[illegible]

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
-Y-	25+75	27+75	ASU(2)	8		375	825		
-Y-	38+25	40+25	ASU(2)	8		375	825		
CONTINGENCY			ASU(1)	12	100	205	300		
			TOTAL CY/TONS/SY:		100	955**	1950**	0	0

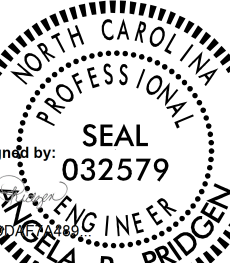
*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
*AST = Aggregate Stabilization
**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization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

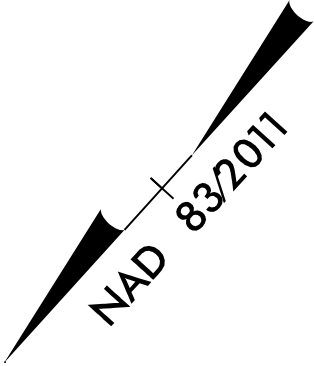
8/17/99

10/6/2025
c:\pwworking\gfpw01\apridgen\dl658102\HE-0001B_rdy_psh04.dgn
apridgen



One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-430-1600
NC Lic. No. F-6370

PROJECT REFERENCE NO.		SHEET NO.
HE-0001B		4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
 Doc. No. 2025-0001B		



END TIP PROJECT HE-0001A
BEGIN TIP PROJECT HE-0001B
-Y- POC STA. 21+50.00

There will be a 60 foot access break on the north side of line -Y- between Station 23+00 and 26+00. The exact location of the access break between these two stations will be determined by NCDOT as part of its approval of any future driveway permit that the property owner will apply for at such time the property owner develops the property.

1
BILTMORE FARMS, INC.
DB 1222 PG 645

BM#1 ELEV. 2104.48'
-BL- STA. 12+08.00' 12' RT.
R/R SPIKE SET IN BASE OF
18" RED OAK

HE-2

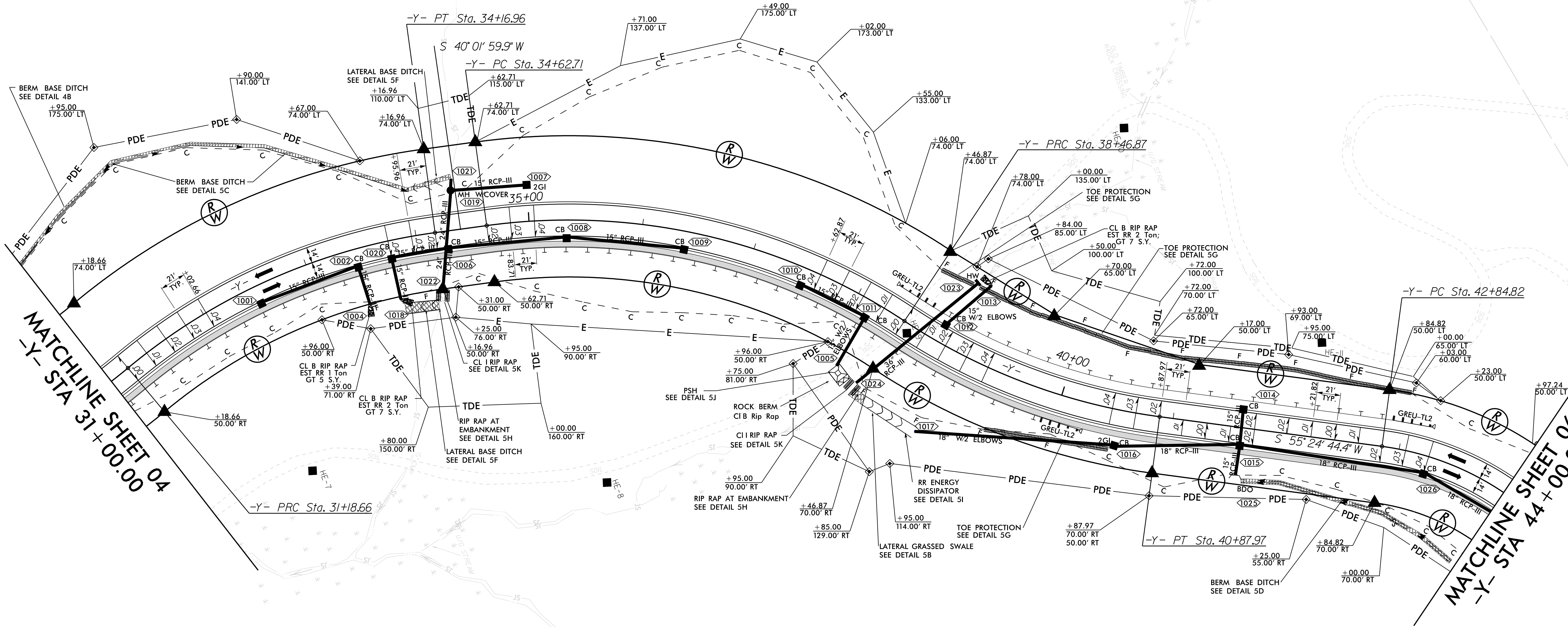
-Y-	
PI Sta. 21+64.96	PI Sta. 29+41.20
$\Delta = 50^{\circ} 31' 46.7''$ (LT)	$\Delta = 39^{\circ} 50' 19.5''$ (LT)
$D = 10^{\circ} 44' 58.8''$	$D = 10^{\circ} 44' 58.8''$
$L = 470.06'$	$L = 370.60'$
$T = 251.55'$	$T = 193.15'$
$R = 533.00'$	$R = 533.00'$
$SE = 04$	$SE = 04$
$RO = 42'$	$RO = 42'$
$DS = 40MPH$	$DS = 40MPH$

MATCHLINE SHEET 05
-Y- STA 31+00.00

FOR DITCH DETAILS SEE SHEET 2D-1
FOR -Y- PROFILE SEE SHEET 7

8/17/99

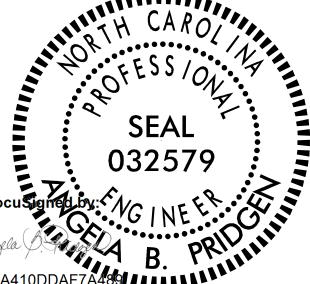
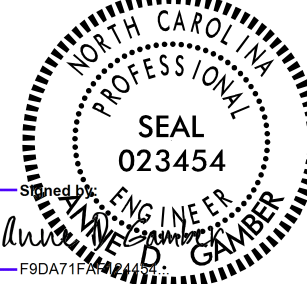
9/5/2025
c:\pwworking\gfpw01\apridgen\dl658102\HE-0001B.rdy_psh05.dgn
apridgen



BILTMORE FARMS, INC.
DB I222 PG 645

BILTMORE FARMS, INC.
DB I222 PG 645



PROJECT REFERENCE NO.		SHEET NO.
HE-0001B		5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		
Michael B. Priddy	Michael B. Priddy	
9/29/2025	9/30/2025	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-Y-		
PI Sta 29+41.20 Δ = 39° 50' 19.5" (LT) D = 10° 44' 58.8" L = 370.60' T = 193.15' R = 533.00' SE = 04' RO = 42' DS = 40MPH	PI Sta 32+71.83 Δ = 32° 03' 58.2" (RT) D = 10° 44' 58.8" L = 298.30' T = 153.17' R = 533.00' SE = 04' RO = 42' DS = 40MPH	PI Sta 36+63.57 Δ = 41° 17' 45.3" (RT) D = 10° 44' 58.8" L = 384.16' T = 200.85' R = 533.00' SE = 04' RO = 42' DS = 40MPH
PI Sta 39+69.52 Δ = 25° 55' 00.8" (LT) D = 10° 44' 58.8" L = 241.09' T = 122.65' R = 533.00' SE = 04' RO = 42' DS = 40MPH	PI Sta 44+25.03 Δ = 58° 34' 15.1" (RT) D = 22° 55' 05.9" L = 255.56' T = 140.21' R = 250.00' SE = 04' RO = 42' DS = 30 MPH	

FOR DITCH DETAILS SEE SHEET 2D-1
FOR -Y- PROFILE SEE SHEET 8

8/17/99

9/5/2025
c:\pwworking\gfpw01\apridgen\dl658102\HE-0001B_rdy_psh06.dgn
apridgen

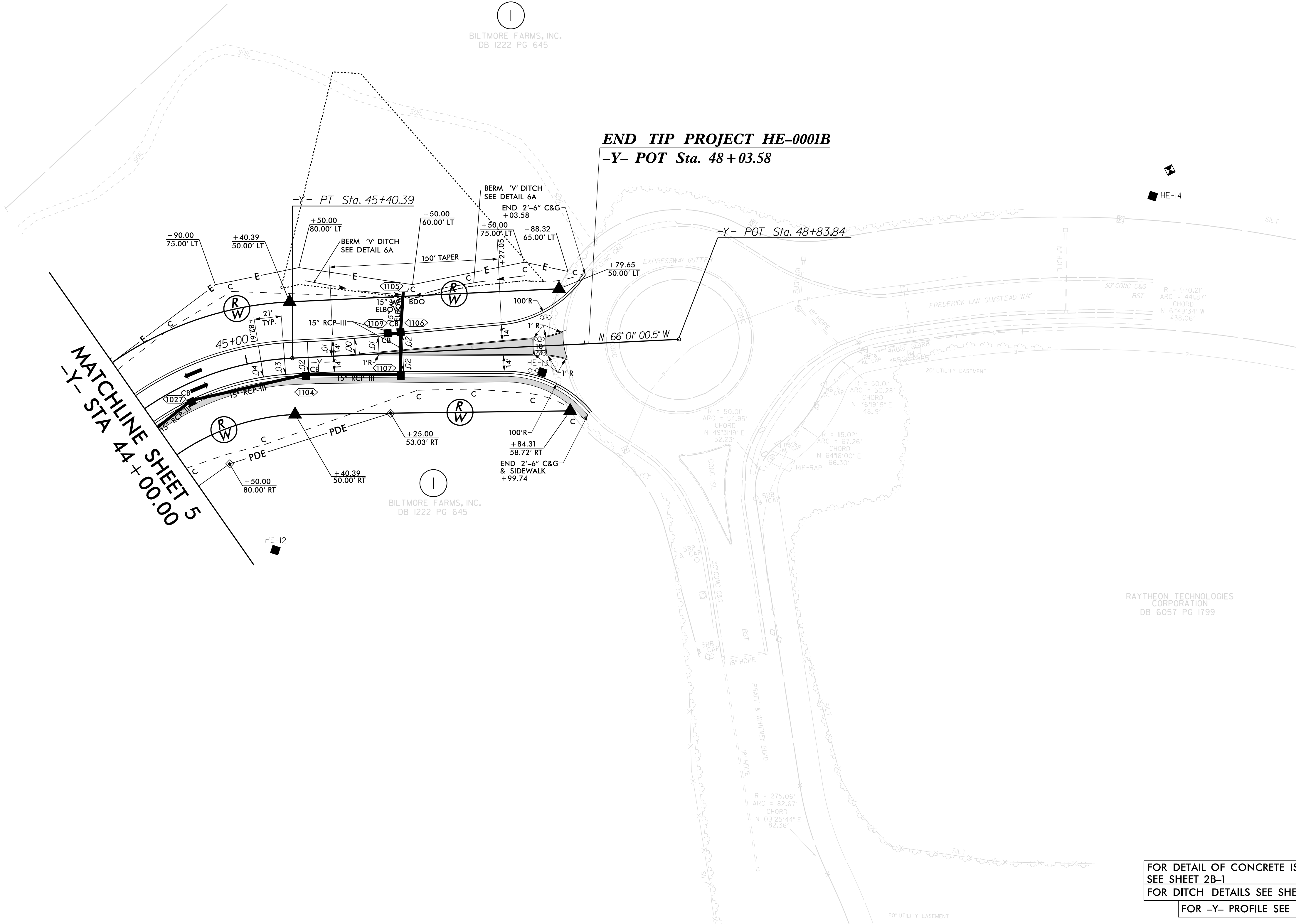
-Y-
PI Sta 44+25.03
 $\Delta = 58^{\circ} 34' 15.1''$ (RT)
 $D = 22^{\circ} 55' 05.9''$
 $L = 255.56'$
 $T = 140.21'$
 $R = 250.00'$
 $SE = 04$
 $RO = 42'$
 $DS = 30MPH$



One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC St. No. F-0379

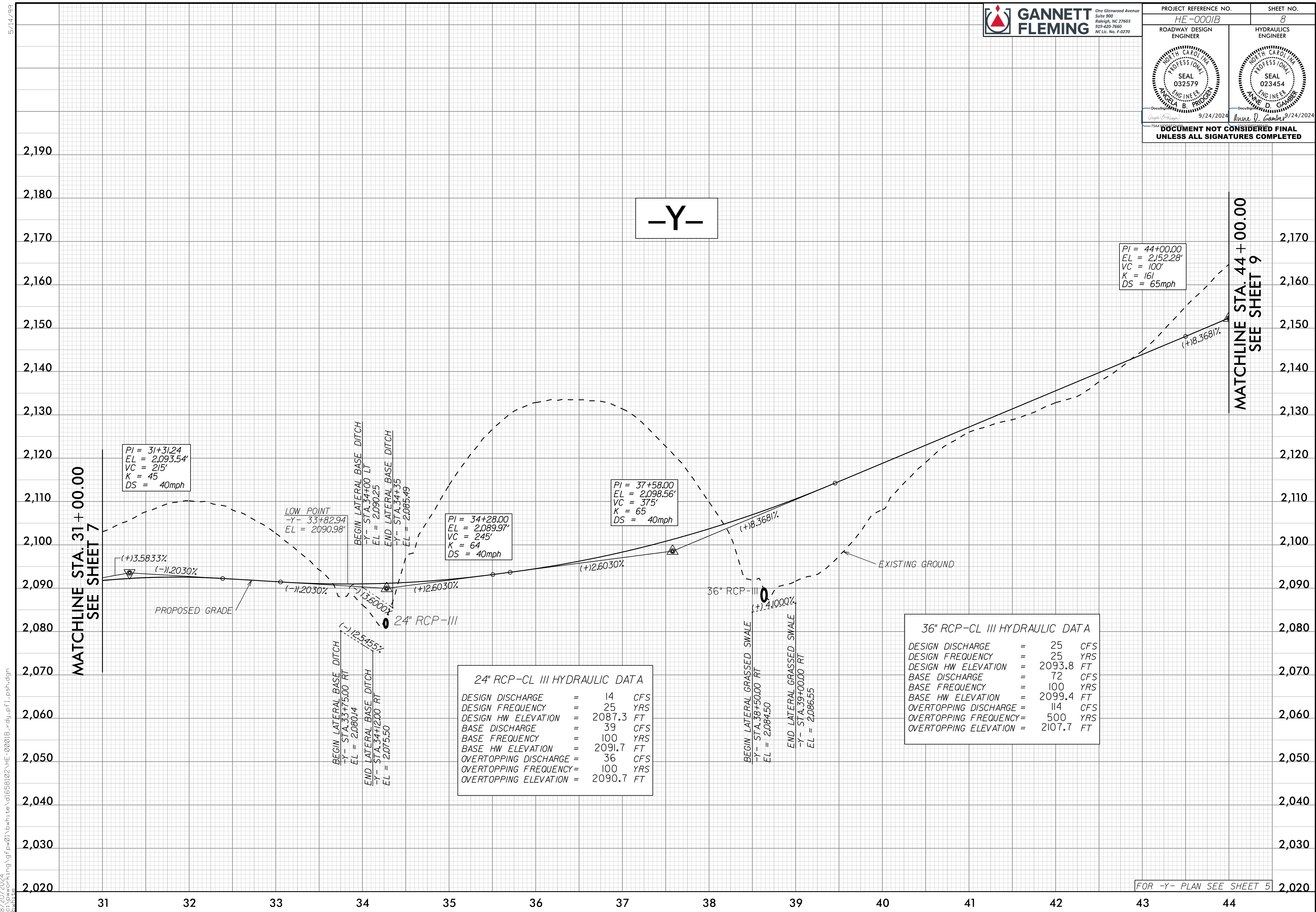
PROJECT REFERENCE NO.		SHEET NO.
HE-0001B		6
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

NOTE: ROUNDABOUT DESIGN TO
BE COMPLETED BY OTHERS



FOR DETAIL OF CONCRETE ISLAND
SEE SHEET 2B-1
FOR DITCH DETAILS SEE SHEET 2D-1
FOR -Y- PROFILE SEE SHEET 9





5/14/99



**GANNETT
FLEMING**

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

PROJECT REFERENCE NO. <i>HE-0001B</i>		SHEET NO. 9
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
		
<i>Angela B. Bridges</i> 9/24/2024		<i>Anne D. Gamber</i> 9/24/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-Y-

