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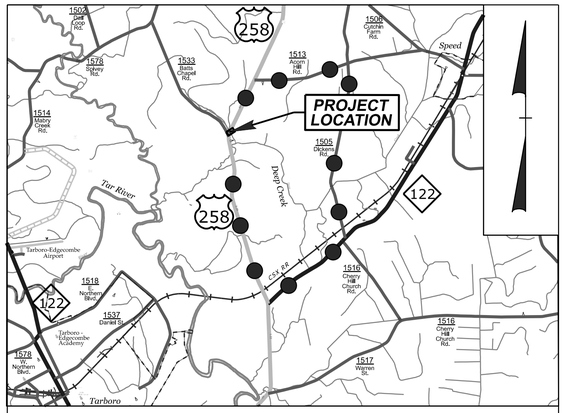
01/16/24

TIP PROJECT: BP4-R034

CONTRACT: DD00535

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



VICINITY MAP (NTS)
OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

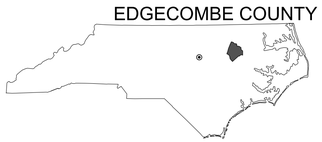
LOCATION: REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK.

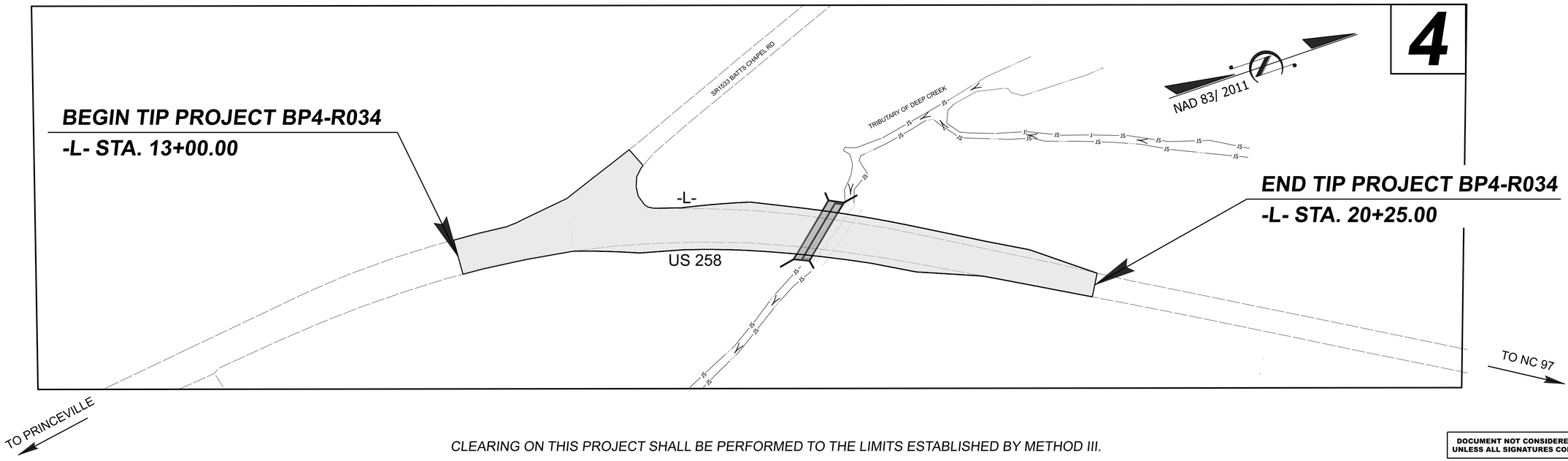
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R034	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP4.R034.1		PE
BP4.R034.2		R/W & UTIL
BP4.R034.3		CONST

EDGECOMBE COUNTY





CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 50
PROFILE (VERTICAL)

DESIGN DATA

ADT 2026 = 2,150
ADT 2046 = 3,150
*T = 8% **
V = 60 MPH
** (6% TTST, 2% DUAL)*

FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BP4-R034 = 0.137 MILES
TOTAL LENGTH OF TIP PROJECT BP4-R034 = 0.137 MILES

Prepared for NCDOT Division 4 in the Office of:

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0275

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 10, 2026

LETTING DATE:
NOVEMBER 10, 2026

BURKE EVANS, PE
PROJECT ENGINEER

RUSSELL BROADWELL, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by: John W Twisdale Jr
0EE4FD4C5E304CE...
10/19/2026
P.E.
SIGNATURE:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024897 John W. Twisdale, Jr.

ROADWAY DESIGN ENGINEER

DocuSigned by: David Burke Evans
10F5698666EF3409...
10/19/2026
P.E.
SIGNATURE:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19724 DAVID BURKE EVANS

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	SINUSOIDAL RUMBLE STRIP DETAILS
2D-1	MODIFIED CONCRETE FLUME DETAIL
3B-1	SUMMARY OF EARTHWORK, PAVEMENT REMOVAL SUMMARY, SHOULDER BERM GUTTER SUMMARY, AND GUARDRAIL SUMMARY
3D-1 THRU 3D-2	DRAINAGE SUMMARY SHEETS
4	PLAN AND PROFILE SHEET
RW-1 THRU RW-5	RIGHT OF WAY PLANS
TMP-1 THRU TMP-2	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
UC-1 THRU UC-4	UTILITY CONSTRUCTION PLANS
UBO-1 THRU UBO-5	UTILITY BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-15	CROSS-SECTIONS
C-1 THRU C-7	CULVERT PLANS

GENERAL NOTES

GENERAL NOTES: 2024 SPECIFICATIONS EFFECTIVE: 01-16-2024
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

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

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:
CENTURYLINK/BRIGHTSPEED (TELECOM) - KEVIN GODWIN

DOMINION ENERGY (POWER) - WILL FOXWELL AND CHASE TAYLOR

EDGECOMBE COUNTY (WATER) - PAUL MOSELEY

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

STANDARD DRAWINGS

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 08-11-2025
REV. 11-26-2025

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE

DIVISION 2 - EARTHWORK
200.03 Method of Clearing - Method III
225.02 Guide for Grading Subgrade - Secondary and Local
225.04 Method of Obtaining Superelevation - Two Lane Pavement

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS
560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I

DIVISION 8 - INCIDENTALS
846.01 Concrete Curb, Gutter and Curb & Gutter
850.01 Concrete Paved Ditches
862.01 Guardrail Placement (Use Detail in Lieu of Standard for Sheets 6)
862.02 Guardrail Installation
876.01 Rip Rap in Channels and Ditches
876.04 Drainage Ditches with Class 'B' Rip Rap

BP4-R034
01A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

10DFC066568F9429...
10/19/2026

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PREPARED BY

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706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
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REVISIONS

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05/20/24

Note: Not to Scale

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BP4.R034 | 01B

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- 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 — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

** 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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- U/G Power Line Test Hole (SUE - LOS A)*
- U/G Power Line (SUE - LOS B)* — P
- U/G Power Line (SUE - LOS C)* — P
- U/G Power Line (SUE - LOS D)* — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN: FEBRUARY 17, 2025

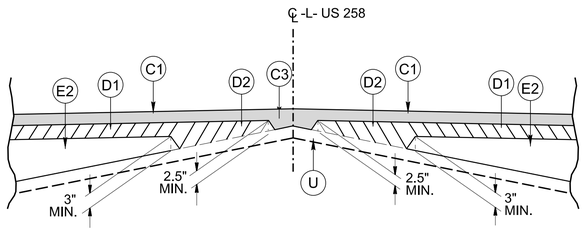
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING BITUMINOUS PAVEMENT (VAR. 0"- 1½" DEPTH - SEE DETAIL THIS SHEET)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)
Y1	PROP. APPROX. 8" SINUSOIDAL RUMBLE STRIPS (SEE SINUSOIDAL CENTERLINE RUMBLE STRIP DETAIL)
Y2	PROP. APPROX. 18" SINUSOIDAL RUMBLE STRIPS (SEE SINUSOIDAL CENTERLINE RUMBLE STRIP DETAIL)

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

LIMITS OF SINUSOIDAL RUMBLE STRIPS

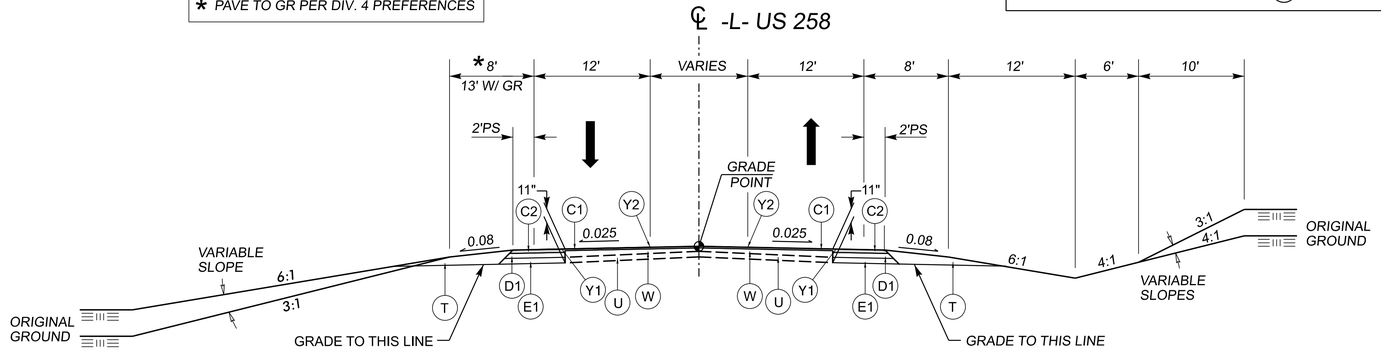
ROADWAY	LOCATION	STATION	STATION	WIDTH
-L-	LT	13+00.00	13+60.00	8"
-L-	LT	15+30.00	20+25.00	8"
-L-	LT MED	13+00.00	14+00.00	18"
-L-	LT MED	14+78.00	20+25.00	18"
-L-	RT MED	13+00.00	14+00.00	18"
-L-	RT MED	15+10.00	20+25.00	18"
-L-	RT	13+00.00	20+25.00	8"

DETAIL SHOWING METHOD OF WEDGING (W)



NOTE: *RESURFACE FROM -L- STA 13+00.00 TO STA 14+30.00 AND TO THE LIMITS SHOWN ON PLAN SHEET 4 FOR BATTS CHAPEL RD. WITH (C1).*

* *PAVE TO GR PER DIV. 4 PREFERENCES*



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

FROM -L- STA 13+00.00 TO STA 16+50.00
FROM -L- STA 18+00.00 TO STA 20+25.00

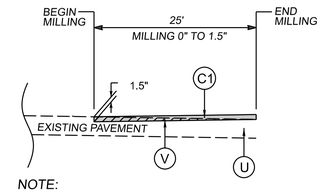
* *PAVE TO GR PER DIV. 4 PREFERENCES*

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

FROM -L- STA 16+50.00 TO STA 18+00.00

INCIDENTAL MILLING DETAIL



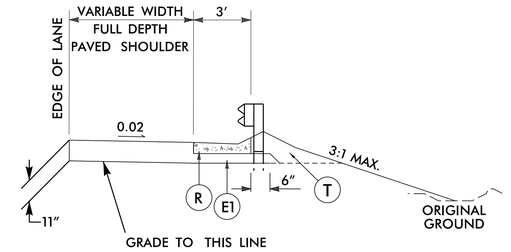
NOTE:
MIRROR FOR END OF CONSTRUCTION

USE DETAIL AS FOLLOWS:

MILLING AND OVERLAY FOR TIE-INS:
-L- STA. 13+00 TO -L- STA. 13+25 +/-
-L- STA. 20+00 TO -L- STA 20+25 +/-
BATTS CHAPEL RD. - SEE PLANS

DETAIL FOR SHOULDER BERM GUTTER

SEE CORRESPONDING TYPICAL SECTION FOR PAVEMENT DESIGN.
SEE TYPICAL SECTIONS AND PLANS FOR ACTUAL DIMENSIONS.



LINE	STATIONS
–L–	15+55.00 to 17+75.00 RT

BP4-R034

2A-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID WAYNE BURKE-EVANS

1DFC06656B4F4A8...

10/19/2026

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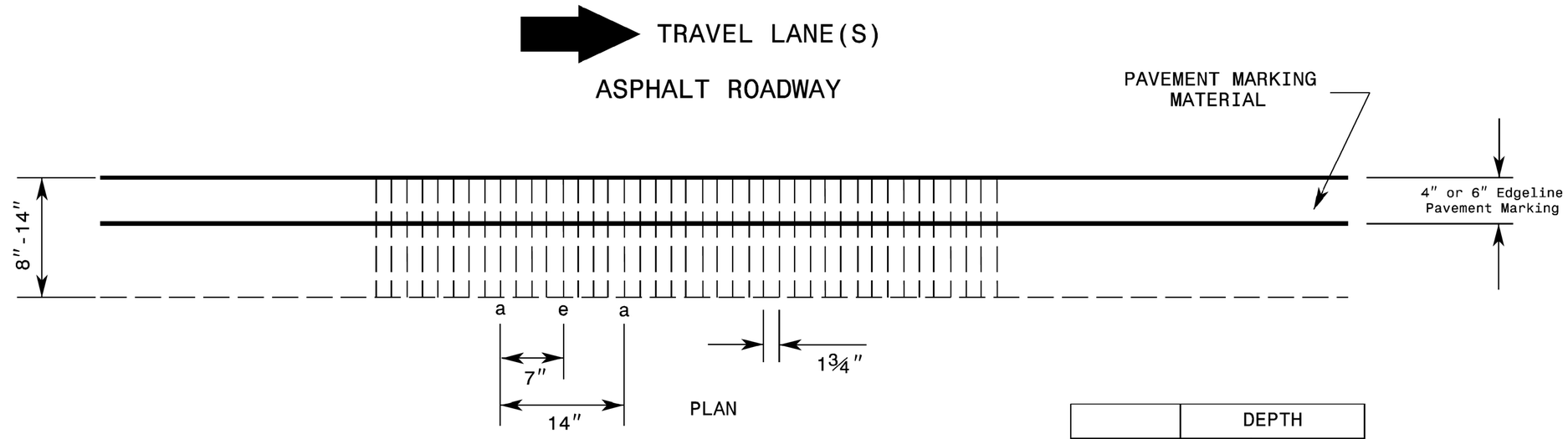
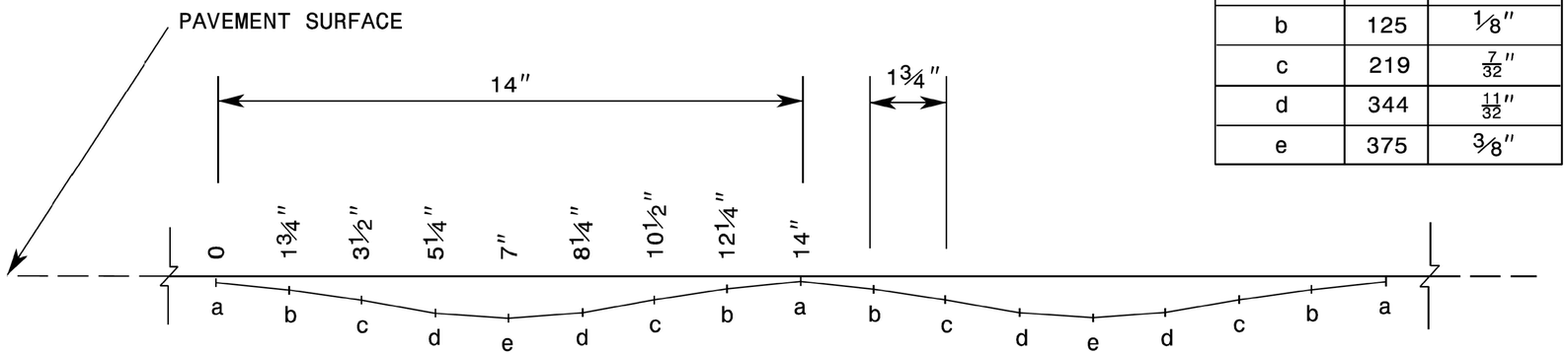
Sinusoidal Edgeline Rumble Stripe



	DEPTH	
LOCATION	MIL	INCHES
a	62.5	1/16″
b	125	1/8″
c	219	7/32″
d	344	11/32″
e	375	3/8″



PROFILE

Specifications in table taken from MNDOT Research Projetc Final Report 2016-23:

Sinusoidal Rumble Strip Design Optimization Study
BY: Terhaar et. al, June 2016

Reference Drawing ID: Sin.Stripe

Draft Technical Drawings - February 2022

BP4-R034
2C-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER BRYAN JAMES BURKE, JR.
10FC0A6B...

10/19/2026

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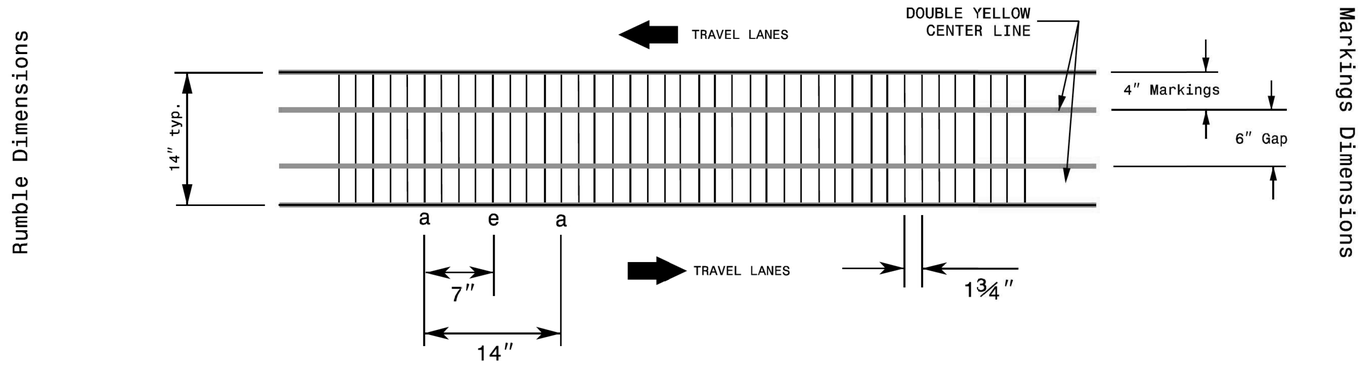
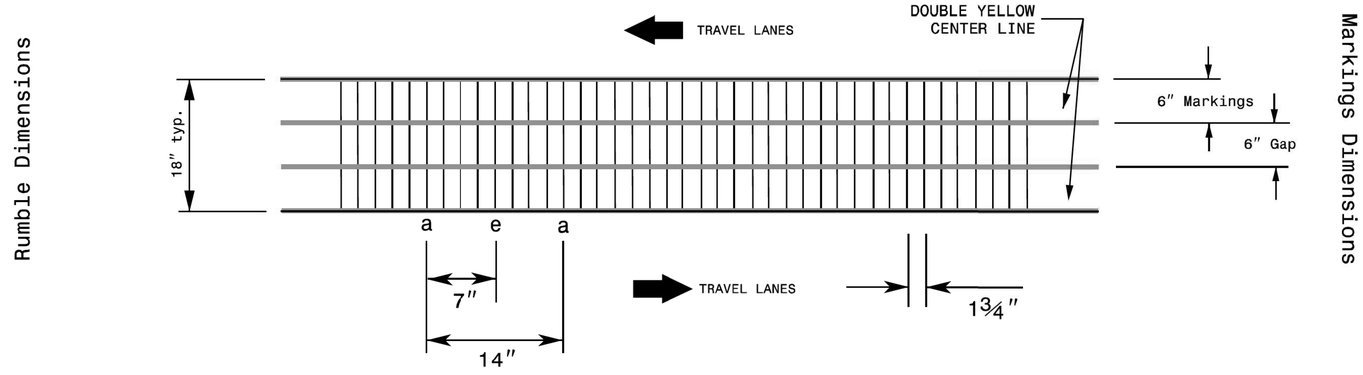
11/15/23

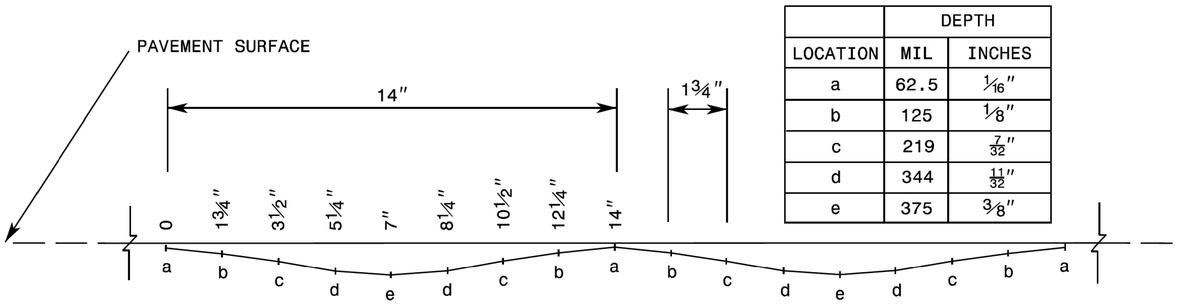
Sinusoidal Centerline Rumble Stripe

If 4″ Markings will be used:



If 6″ Markings will be used:





	DEPTH	
LOCATION	MIL	INCHES
a	62.5	1/16″
b	125	1/8″
c	219	7/32″
d	344	11/32″
e	375	3/8″

PROFILE

Specifications in table taken from MNDOT Research Projetc Final Report 2016-23:

Sinusoidal Rumble Strip Design Optimization Study
BY: Terhaar et. al, June 2016

Reference Drawing ID: Sin.CL

Draft Technical Drawings - February 2022

BP4-R034

2C-2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER DAVID VERNON BURKE JR.

10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED BY

TGS ENGINEERS

706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0279

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJECT REFERENCE NO.	SHEET NO.
BP4R034	2D-1

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

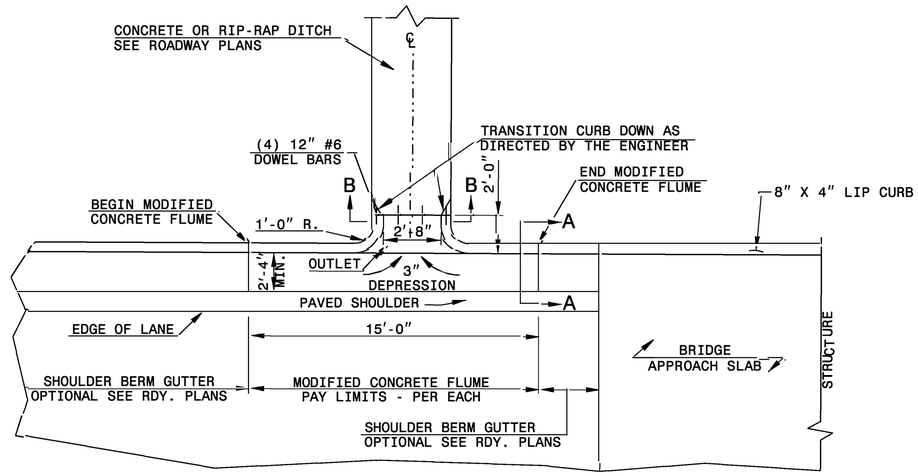
ENGLISH DETAIL DRAWING FOR

MODIFIED CONCRETE FLUME

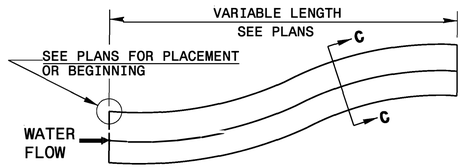
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1

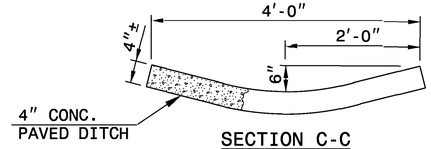
MODFLMDTCH



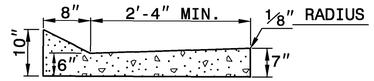
PLAN VIEW



DOWNGRADE OR SAG



SECTION C-C



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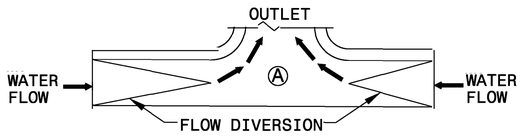
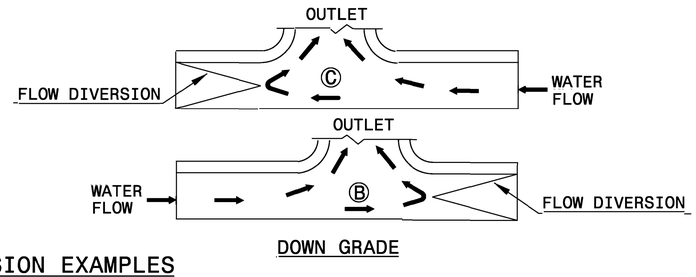
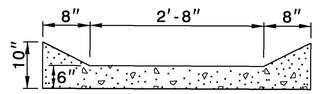


SAG



DOWN GRADE



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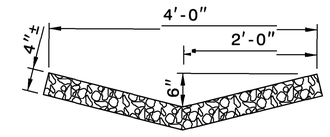

RIP-RAP LINED DITCH

FLOW DIVERSION EXAMPLES

NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18″ PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

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

ENGLISH DETAIL DRAWING FOR

MODIFIED CONCRETE FLUME

WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1

MODFLMDTCH

18-OCT-2017 14:17
S:\Contracts\Contracts\Special Details\ericward\usr\details\stand\modifiedflume.dgn
jhowerton AT CSD-292595

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HECKLER

Signed by:
Nicole M. Heckler
5884323D3416AC5...
10/19/2026

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002
MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: _____ DATE: _____
FILE SPEC.: w:details\stand\modifiedflume.dgn

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

COMPUTED BY: NGP DATE: 06/16/2026
CHECKED BY: DBE DATE: 9/16/2026

PROJECT NO.	SHEET NO.
BP4-R034	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Undercut Excavation	Embank. +%	Borrow	Waste
-L- 14+30.00	-L- 20+25.00	272	320	1,269	997	320
SUBTOTAL:		**272**	**320**	**1,269**	**997**	**320**
TOTAL:		**272**	**320**	**1,269**	**997**	**320**
MATERIAL FOR SHOULDER CONSTRUCTION						
LOSS DUE TO CLEARING AND GRUBBING						
ADDITIONAL UNDERCUT						
ADJUST FOR ROCK WASTE						
WASTE IN LIEU OF BORROW						
PROJECT TOTALS:		272	320	1269	997	320
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					50	
GRAND TOTALS:		272	320	1269	1047	320
SAY:		**300**			**1,110**	

EST. DDE = 220 CUBIC YARDS
EST. SELECT GRANULAR MATERIAL = 590 CUBIC YARDS
EST. SHALLOW UNDERCUT = 100 CUBIC YARDS
EST. CLASS IV SUBGRADE STABILIZATION = 200 CUBIC YARDS
PER GEOTECH RECOMMENDATION, ESTIMATED 300 CUBIC YARDS OF UNDERCUT, CONTINGENCY

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

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing and Removal of Existing Pavement will be paid for at the contract lump sum price for grading.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	16+50	18+00		580			
			TOTAL:	580.00			

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LINE	STATION	STATION	LENGTH
-L-	15+55.00	17+75.00	220'
		TOTAL:	220'
		SAY:	220'

"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
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

IN LINEAR FEET

LINE	BEG. STA.	END STA.	LOC.	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPR. END	WARRANT POINT TRAIL. END	"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH APPR. END	FLAIR LENGTH TRAIL. END	W APPR. END	W TRAIL. END	ANCHORS	AT-1	GREU TL3			25' CLEAR SPAN GUARDRAIL SECTIONS	IMP. ATTEN. EA	IMP. ATTEN. G	IMP. ATTEN. NG	REMOVE EXISTING GUARDRAIL		REMARKS
L	16+30.00	19+45.00	LT	312.50			17+45.00	17+10.00	10'	13'	50'	50'	1'	1			2									
L	15+05.00	18+25.00	RT	312.50			16+69.00	17+09.00	10'	13'	50'	50'	1'	1			2			1						
SUB-TOTALS:				625.00'								TOTAL ANCHORS (EA)					4			1						
	LESS ANCHOR DEDUCTIONS			250.00'								ANCHOR UNIT LENGTH:					50'			50'						
TOTAL (LF)				375.00'		ADDITIONAL GUARDRAIL POSTS = 5 EA						DEDUCTION PER TYPE (LF)					200'			50'						
SAY (LF)				375.00'								TOTAL DEDUCTION (LF)					250'									

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TGSLTW1103

COMPUTED BY: NCL DATE: 7/7/26

CHECKED BY: DATE:

PROJECT NO.	SHEET NO.
BP4.R034	3D-1

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)

| LINE & STATION | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | DO NOT USE RCP | DO NOT USE CSP | DO NOT USE CAAP | DO NOT USE HDPE | DO NOT USE PVC | DO NOT USE PP PIPE | R. C. PIPE CLASS III 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | 15" SIDE DRAIN PIPE | 18" SIDE DRAIN PIPE | 24" SIDE DRAIN PIPE | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 0' THRU 5' LIN. FT. | B: 5' THRU 10' LIN. FT. | 10' AND ABOVE LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 EACH | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | 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 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | M.H. FRAME AND COVER STD. 840.54 | CONVERT EXISTING C.B. TO J.B. | CONVERT EXISTING C.B. TO D.I. | CONVERT EXISTING D.I. TO J.B. | CONVERT EXISTING J.B. TO D.I. | ADJUST C.B. | ADJUST D.I. | MODIFIED CONC. FLUME, SEE DETAIL SHEET 2D-1 | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---

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CHECKED BY:	REL	DATE:	9/22/26	BP4.R034	3D-2

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 54 INCHES & GREATER)

| LINE & STATION | SIZE | THICKNESS OR GAUGE | OFFSET | STRUCTURE NUMBER FROM | STRUCTURE NUMBER TO | TOP ELEVATION FT. | INVERT ELEVATION FT. | INVERT ELEVATION FT. | MINIMUM REQUIRED SLOPE % | R. C. PIPE CLASS IV 12 | 15 | 18 | 24 | 30 | 36 | 42 | 48 | ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY | REINFORCED ENDWALLS CY | DRAINAGE STRUCTURE MASONRY CY | QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN.FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A 0' THRU 5' EACH | A 5' THRU 10' LIN. FT. | A 10' AND ABOVE LIN. FT. | B LIN. FT. | C.B. STD. 840.01 OR STD. 840.02 | FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E | F | G | CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06 | C.B. STD. 852.05 | OPEN THROAT C.B. STD. 840.04 OR STD. 840.05 | C.B. MIN DEPTH STD. (SPECIAL DETAIL) | CONCRETE BRIDGE APPROACH D.I. STD. 840.13 | 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 | DRIVEWAY D.I. STD. 840.30 | FRAME W/ GRATE FOR DRIVEWAY STD. 840.30 | J.B. STD. 840.31 OR STD. 840.32 | ANGLED VANE GRATES AND FRAMES STD. 840.33 | T.B.J.B. STD. 840.34 | T.B.D.I. STD. 840.35 | T.B.D.I. FOR STEEL GRATES STD. 840.36 | STEEL FRAME WITH TWO GRATES STD. 840.37 | STEEL GRATE AND FRAME (BICYCLE) STD. 840.39 | TEMP STEEL PLATE COVER MASONRY DRAINAGE | M.H. STD. 840.51, STD. 840.52, OR STD. 840.53 | ## SIDE DRAIN PIPE ELBOW | ## SIDE DRAIN PIPE ELBOW | ## SIDE DRAIN PIPE ELBOW | ## SIDE DRAIN PIPE ELBOW | ## R.C. ELBOW | ## PIPE END SECTION | ## PIPE END SECTION | ## PIPE END SECTION | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## CUSTOM INPUT | ## SPRING BOX PIPE | ## SLUICE GATE (## SIZE SLUICE GATE) | ##"x ##" x ##" PERF. C.S.P. TEE RISER ##" THICK | SPRING BOX STD. 840.41 | BERM DITCH OUTLET STD. 850.10 (PER EACH) | BERM DITCH OUTLET STD. 850.11 (PER EACH) | MODIFIED CONC. FLUME | PREFORMED SCOUR HOLE (PER EACH) | ENERGY DISSIPATION BASIN | FLOWABLE FILL CY | CONCRETE COLLARS CL. "B" STD. 840.72 CY | CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY | PIPE REMOVAL LIN. FT. | REMARKS |
|---|---|---|---|---|---

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COMPUTED BY: _C.T. Tang DATE: 07/07/2026 CHECKED BY: _S. Wood DATE: _07/08/2026	(9-17-24)	PROJECT NO. BP.4.R034	SHEET NO. 3G-1

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 ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2:1	16+37	2:1	17+87	RT	2	1, 2 or B	135
-L-	2:1	16+87	2:1	17+88	LT	2	1, 2 or B	180
							TOTAL SY:	315

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	100	200	300		
			TOTAL CY/TONS/SY:		100	200**	300**	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.

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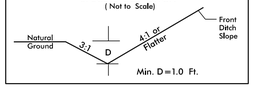
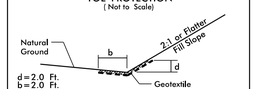
11/14/23

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)



FROM STA.14+75 TO STA.16+00–L– RT.

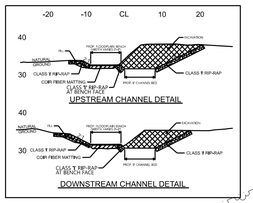
DETAIL 4
TOE PROTECTION
(Not to Scale)



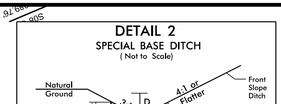
FROM STA.16+00 TO STA.16+71–L– RT.

DETAIL 5
CUT DITCH
(Not to Scale)

FROM STA.15+25 TO STA.16+50–L– LT.

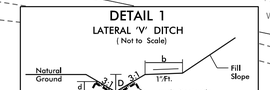


DETAIL 2
SPECIAL BASE DITCH
(Not to Scale)



FROM STA.18+65 TO STA.20+25–L– LT.

DETAIL 1
LATERAL 'V' DITCH
(Not to Scale)



FROM STA.17+11 TO STA.18+50–L– RT.

HURSEL B JOHNSON LIMITED LIABILITY COMPANY
Deed Book/Page 1519/755
Plat Book/Page 5/275

G H JOHNSON JR
Deed Book/Page 1479/839

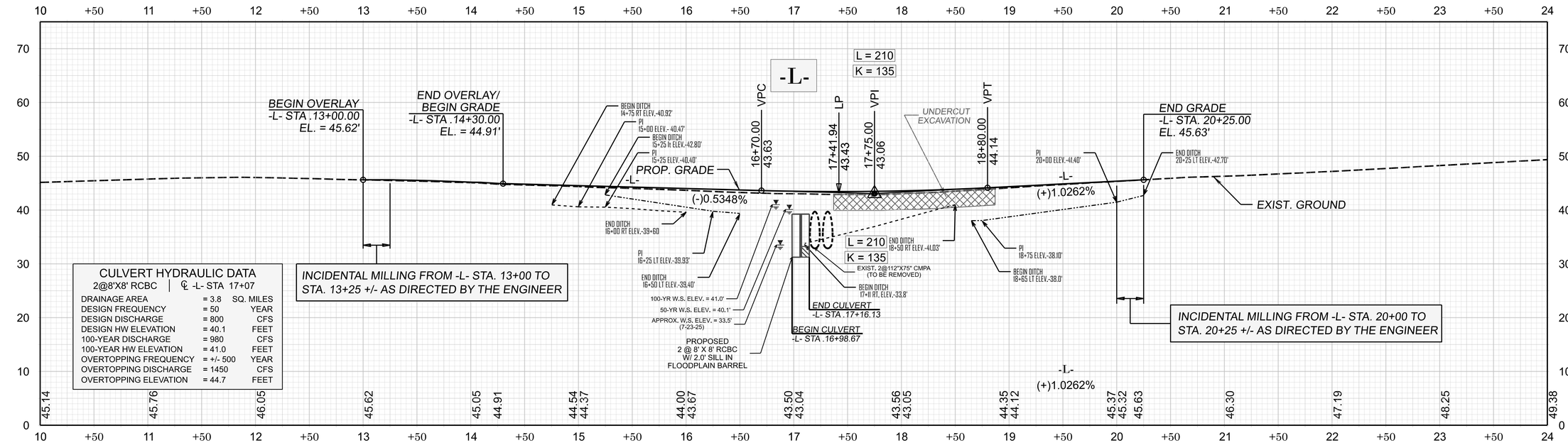
ALTON MARK SESSOMS et al
Deed Book/Page 1626/937
Plat Book/Page 11/247

BRADLEY FAMILY FARMS, LLC
Deed Book/Page 1828/611
Plat Book/Slide 10/169

BATTS CHAPEL BAPTIST CHURCH
Deed Book/Page 957/524

-L- POB 10+00.00
N10°35'38.3"W
BEGIN TIP Project BP4-R034
-L- POC STA. 13+00.00
-L- PC 11+03.64
N03°19'07.3"W
-L- PT 12+41.73
-L- PC 12+68.07
-L- PT 14+08.75
-L- PC 14+37.29
-L- PCC 16+46.26
-L- PT 18+08.56
-L- PT 19+76.01
END TIP Project BP4-R034
-L- POT STA. 20+25.00
N06°00'47.8"E
N18°40'27.1"E
N25°05'09.8"E
N25°43'10.6"E
N04°19'27"E 13.24'
S84°24'06"W 1191.39'
S86°33'06"W 814.82'
N20°25'20"W 70.60'
S19°06'39"W 46.86'
NAD 83 NA 2011

RETAIN
PROPOSED 2@ 8'x8' RCBC BURIED
CUT DITCH SEE DETAIL 5
END RESURFACING
LIMITS OF MILLED BUTT JOINT
BACKFILL W/ NATIVE MATERIAL
REMOVE EXIST. 2@112"x 75" CMPA's
PAINT STRIPING
500' TAPER
TOE PROTECTION SEE DETAIL 4
CL. 'B' RIP RAP
48 Tons
47 Sq. Yds. Geo
SPECIAL CUT DITCH SEE DETAIL 3
BEG. SBG 15+55 -L- RT.
END SBG 17+75 -L- RT.
MODIFIED CONCRETE FLUME
CONCRETE DITCH
8 SY CONC. PAVED DITCH
LATERAL V DITCH SEE DETAIL 1
CL. 'B' RIP RAP
74 Tons
124 Sq. Yds. Geo
40 Tons DDE
OUTLET CHANNEL (SEE DETAIL)
CL. I RIP RAP
60 Tons
16 CY COIR FIBER MATTING
111 CY DDE
INLET CHANNEL (SEE DETAIL)
CL. I RIP RAP
70 Tons
17 CY COIR FIBER MATTING
65 CY DDE
SPECIAL BASE DITCH SEE DETAIL 2
CL. 'B' RIP RAP
56 Tons
249 Sq. Yds. Geo
25' CLEAR SPAN GUARDRAIL SECTION STD. 862.01
LOW POINT -L- STA. 17+41.94 EL. 43.43'
POINT OF BEGINNING
POINT OF ENDING
POND
TRIBUTARY OF DEEP CREEK
BATTS CHAPEL RD VARIABLE WIDTH BST
US-258 NORTH VARIABLE WIDTH BST
SR1535 BATTS CHAPEL RD VARIABLE WIDTH BST
EVERGREEN HEIGHTS LN
CEMETERY (APPROX 50 GRAVES WITHIN SURVEY LIMITS)
POTENTIAL BURIAL
PITTS CHAPEL CHURCH
HTR
EXISTING RW
EXISTING RW.
1.0' EIP TO R/W
1.0' EIP
WOODS
GUY
12" PVC
15" SOIL
10" SOIL
1 FO
2 TP
2 TF
2 TS
2 TW
2 TG
2 TT
2 TL
2 TE
2 TC
2 TV
2 TB
2 TA
2 TJ
2 TH
2 TK
2 TD
2 TR
2 TQ
2 TN
2 TM
2 TU
2 TZ
GREU-TL3
MC
JC
DUE
PDE
BZ 1
BZ 2
JS
-L- +10.00 81 (LT)
-L- +25.00 104 (LT)
-L- +00.00 65 (LT)
-L- +45.00 72.03 (LT)
-L- +85.00 EX. R/W
-L- +65.00 77.15 (LT) 95
-L- +65.00 65 (LT)
-L- +85.00 EX. R/W
-L- +50.00 75 (LT)
-L- +50.00 65 (LT)
-L- +25.00 EX. R/W
-L- +35.00 EX. R/W 95 (RT)
-L- +10.00 60 (RT)
-L- +65.00 114 (RT)
-L- +00.00 70 (RT)
-L- +65.00 EX. R/W
CUR DATA -L- PIc 11+72.78 Δc = 07°16'31.0" (RT) D = 05°16'05.7" Lc = 138.10 Tc = 69.14 R = 1,087.57
CUR DATA -L- PIc 13+38.56 Δc = 09°19'55.1" (RT) D = 06°38'00.5" Lc = 140.68 Tc = 70.50 R = 863.74
CUR DATA -L- PIc 15+42.20 Δc = 12°39'35.1" (RT) D = 06°03'29.7" Lc = 208.97 Tc = 104.91 R = 945.75 SE = MATCH EX.
CUR DATA -L- PIc 17+27.49 Δc = 06°24'47.0" (RT) D = 03°57'05.2" Lc = 162.30 Tc = 81.23 R = 1,450 SE = 0.06
CUR DATA -L- PIc 18+92.28 Δc = 00°38'00.7" (RT) D = 00°22'42.0" Lc = 167.45 Tc = 83.73 R = 15,144.27 SE = 0.025



CULVERT HYDRAULIC DATA
2@8'X8' RCBC | ℄ -L- STA 17+07

DRAINAGE AREA	= 3.8	SQ. MILES
DESIGN FREQUENCY	= 50	YEAR
DESIGN DISCHARGE	= 800	CFS
DESIGN HW ELEVATION	= 40.1	FEET
100-YEAR DISCHARGE	= 980	CFS
100-YEAR HW ELEVATION	= 41.0	FEET
OVERTOPPING FREQUENCY	= +/- 500	YEAR
OVERTOPPING DISCHARGE	= 1450	CFS
OVERTOPPING ELEVATION	= 44.7	FEET

BP4-R034
004
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY
ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 19724 ENGINEER
Digitally signed by Dustin Blake Evans
10FC0665669F9409...
10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER
Digitally signed by John Whitney Bevans, PE
26E4F04C9E3044CE...
10/19/2026

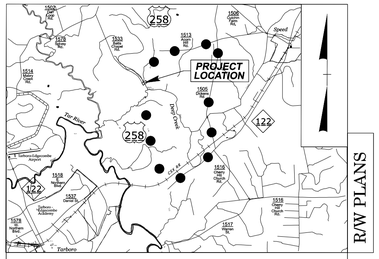
PREPARED BY
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0279

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

06/23/26

TIP PROJECT: *BP4-R034*



R/W PLANS

VICINITY MAP (NTS)
●●●● OFFSITE DETOUR

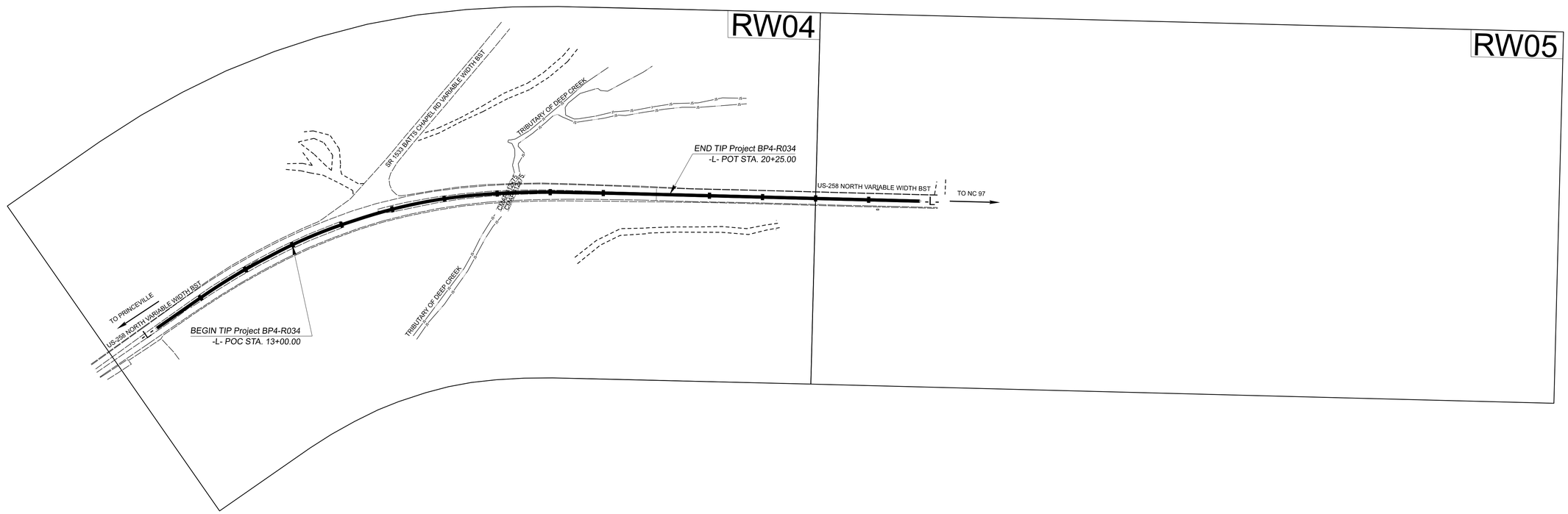
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

EDGECOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R034	RW01	9

NAD 83/ 2011



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

100' 50' 0' 100' 200'

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT GPS-2
WITH NAD83/NA2011 STATE PLANE GRID COORDINATES OF
NORTHING: 806940.9319' EASTING: 2443771.8295'
ELEVATION: 44.90'
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999516734
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

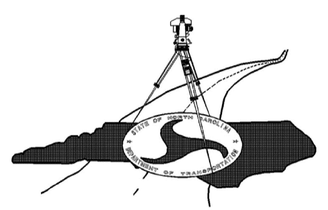
LOCATION & SURVEYS
DIVISION 4
509 WARD BLVD
WILSON, NC, 27893

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...
08/28/2026

SIGNATURE: *DATE:*



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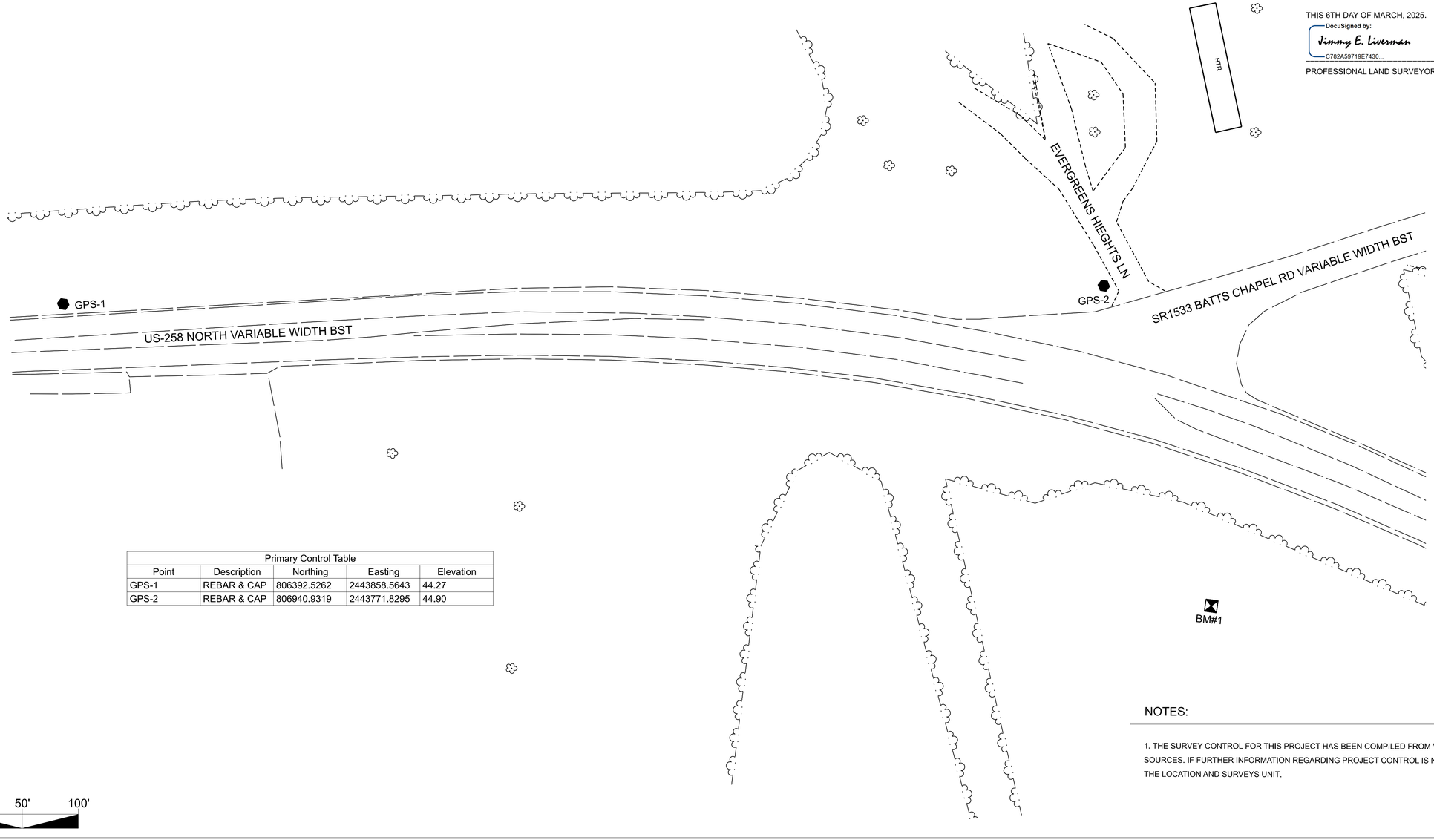
3/03/25

PRIMARY SURVEY CONTROL SHEET



Primary Control Table				
Point	Description	Northing	Easting	Elevation
GPS-1	REBAR & CAP	806392.5262	2443858.5643	44.27
GPS-2	REBAR & CAP	806940.9319	2443771.8295	44.90

50' 25' 0' 50' 100'

I, JIMMY E. LIVERMAN, PLS, CERTIFY THAT THE PRIMARY PROJECT CONTROL WAS PERFORMED UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THE SURVEY:

CLASS OF SURVEY: ***AA***
TYPE OF GPS FIELD PROCEDURE: RTN
DATES OF SURVEY: 02/12/2025
DATUM/EPOCH: NAD83(2011)
VERTICAL DATUM: NAVD 88
PUBLISHED/FIXED-CONTROL USE: NA
LOCALIZED AROUND: BP4-R034-2
NORTHING: 806940.9319
EASTING: 2443771.8295
COMBINED GRID FACTOR: 0.9999516734
GEOID MODEL: 18NC
UNITS: US SURVEY FEET

THIS 6TH DAY OF MARCH, 2025.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457

NOTES:

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

BP4-R034
R/W | 02C-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION AND SURVEYS
DIVISION 4
509 WARD BLVD.
WILSON, NC 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

3/06/25

SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

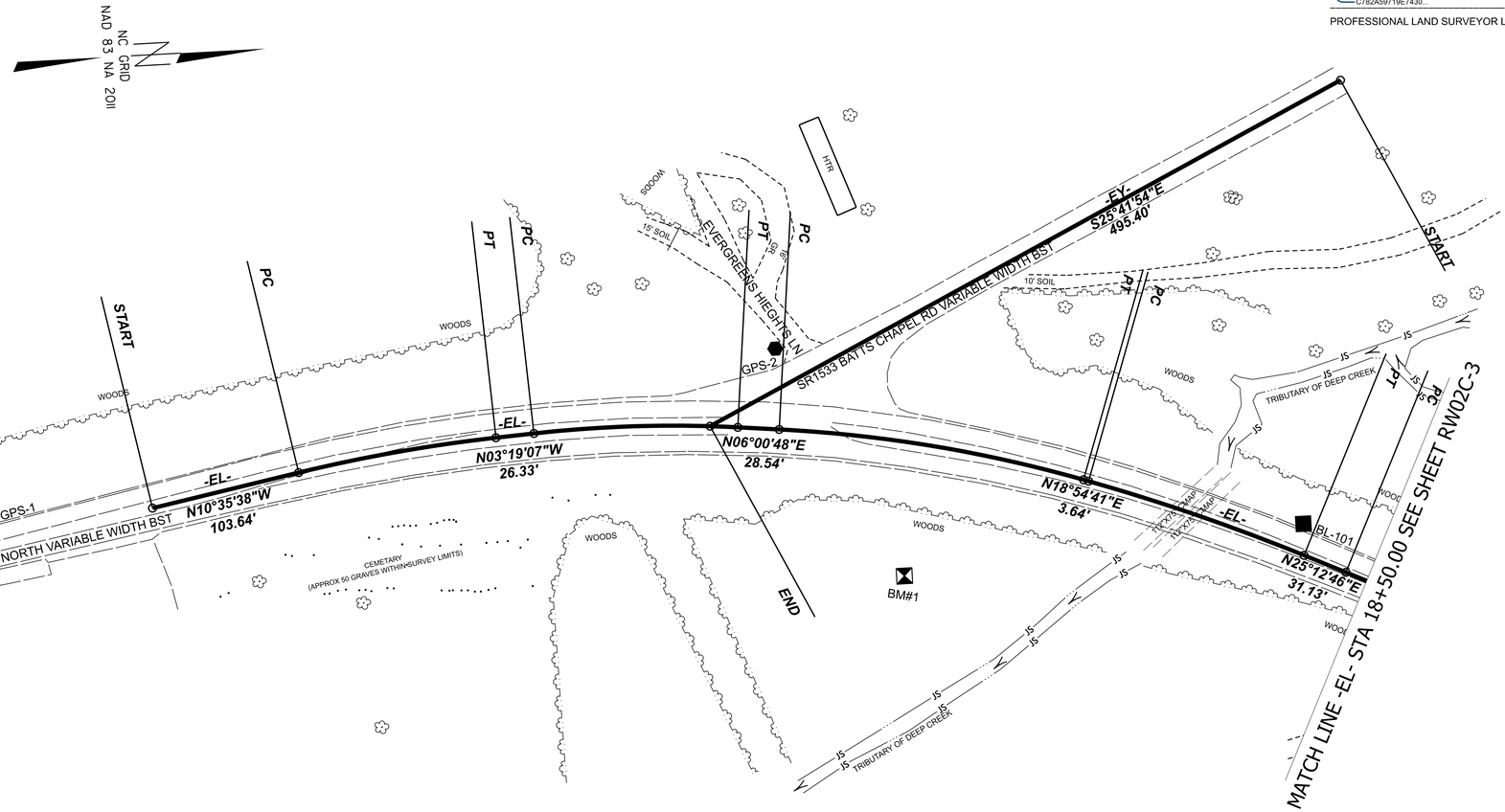
SEE SHEET RW02C-4
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

I, JIMMY E. LIVERMAN, PLS, CERTIFY THAT THE SECONDARY BASELINE CONTROL FOR THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION UTILIZING PRIMARY GPS CONTROL SET UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:20,000 (CLASS AA) AND VERTICAL ACCURACY TO 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 12/10/24 TO 02/12/25 , AND ALL COORDINATES ARE BASED ON NAD 83/NA 2011 AND ALL ELEVATIONS ARE BASED ON NAVD 88; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 6TH DAY OF MARCH, 2025.

DocuSigned by:
Jimmy E. Liverman
C782A5971E7430...

PROFESSIONAL LAND SURVEYOR L-4457



50' 25' 0' 50' 100'

NOTES:

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

BP4-R034
R/W 02C-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION AND SURVEYS
DIVISION 4
509 WARD BLVD.
WILSON, NC 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

3/06/25

SECONDARY SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

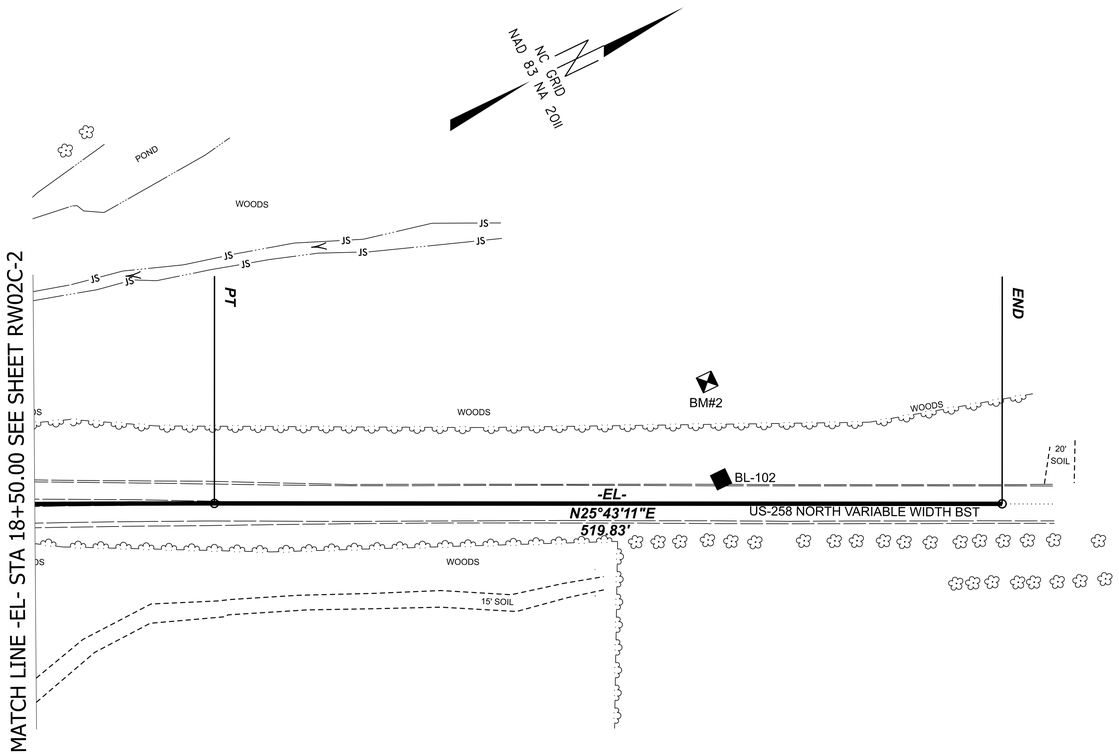
SEE SHEET RW02C-4
FOR FURTHER ALIGNMENT
AND CONTROL DETAILS

I, JIMMY E. LIVERMAN, PLS, CERTIFY THAT THE SECONDARY BASELINE CONTROL FOR THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION UTILIZING PRIMARY GPS CONTROL SET UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:20,000 (CLASS AA) AND VERTICAL ACCURACY TO 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 12/10/24 TO 02/12/25 , AND ALL COORDINATES ARE BASED ON NAD 83/NA 2011 AND ALL ELEVATIONS ARE BASED ON NAVD 88; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 6TH DAY OF MARCH, 2025.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457



50' 25' 0' 50' 100'

NOTES:

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

BP4-R034
R/W | 02C-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION AND SURVEYS
DIVISION 4
509 WARD BLVD.
WILSON, NC 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

3/06/25

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

I, JIMMY E. LIVERMAN JR, PLS, CERTIFY THAT THE SECONDARY BASELINE CONTROL FOR THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPOSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION UTILIIZING PRIMARY GPS CONTROL SET UNDER MY DIRECT SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:20,000 (CLASS AA) AND VERTICAL ACCURACY TO 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 12/10/24 TO 02/12/25, AND ALL COORDINATES ARE BASED ON NAD 83/NA2011 AND ALL ELEVATIONS ARE BASED ON NAVD 88; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE

THIS 6TH DAY OF MARCH, 2025.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457

BASELINE POINTS TABLE				
POINT	DESCRIPTION	NORTHING	EASTING	ELEVATION
BL-101	REBAR & CAP	807297.7960	2443911.8050	43.22
BL-102	REBAR & CAP	807754.4380	2444135.0310	47.50

BENCHMARK POINTS TABLE				
BENCHMARK	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM1	807021.4135	2443933.0131	42.72	36" OAK WITH RR SPIKE IN BASE OF TREE
BM2	807774.0555	2444073.1880	43.53	24" OAK WITH RR SPIKE IN BASE OF TREE

EXISTING ALIGNMENT NAME:EY									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	807339.6611	2443607.9842							
LINE			S25°41'53.5"E	495.3995					
END	806893.2612	2443822.8047							

EXISTING ALIGNMENT NAME:EL									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	806506.6504	2443858.5837							
LINE			N10°35'38.3"W	103.6357					
PC	806608.5196	2443839.5305							
CURVE					07°16'30.9" Right	05°16'05.7"	138.0966	69.1412	1087.5694
PT	806745.5076	2443822.8164							
LINE			N03°19'07.3"W	26.3343					
PC	806771.7978	2443821.2919							
CURVE					09°19'55.1" Right	06°38'00.5"	140.6799	70.4959	863.7369
PT	806912.2834	2443824.5960							
LINE			N06°00'47.8"E	28.5450					
PC	806940.6714	2443827.5863							
CURVE					12°53'53.7" Right	06°03'29.7"	212.9038	106.9037	945.7485
PT	807148.1200	2443873.4337							
LINE			N18°54'41.4"E	3.6411					
PC	807151.5646	2443874.6139							
CURVE					06°18'04.4" Right	04°00'41.9"	157.0738	78.6161	1428.2395
PT	807297.0636	2443933.5829							
LINE			N25°12'45.8"E	31.1263					
PC	807325.2246	2443946.8421							
CURVE					00°30'24.8" Right	00°22'42.0"	133.9773	66.9891	15144.2747
PT	807446.1842	2444004.4492							
LINE			N25°43'10.6"E	519.8323					
END	807914.5159	2444230.0396							

NOTES:

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

BP4-R034
R/W | 02C-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
SEAL L-4457

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

2024 STANDARD SPECIFICATIONS

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION AND SURVEYS
DIVISION 4
509 WARD BLVD.
WILSON, NC 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

6/23/26

PROPOSED ALIGNMENT CONTROL SHEET

I, JIMMY E. LIVERMAN JR, PLS, CERTIFY THAT THE DATA COMPILED CAME FROM AVAILABLE SURVEYS/MAPPING PERFORMED BY OTHERS AND PROVIDED TO ME BY NCDOT AND DO NOT CERTIFY TO THE ACCURACY OR QUALITY OF THE INDIVIDUAL DATA SOURCES.

THIS 2ND DAY OF JULY, 2026.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457

PROPOSED ALIGNMENT: L												
POINT	STATION	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R	LT	ST
START	10+00.00	806506.6504	2443858.5837	N10°35'38.3"W	103.6357							
PC	11+03.64	806608.5196	2443839.5305	N06°57'22.8"W	138.0039	07°16'31.0"	05°16'05.7"	138.0966	69.1412	1087.5694		
PT	12+41.73	806745.5076	2443822.8164	N03°19'07.3"W	26.3344							
PC	12+68.07	806771.7978	2443821.2919	N01°20'50.2"E	140.5245	09°19'55.1"	06°38'00.5"	140.6799	70.4959	863.7369		
PT	14+08.75	806912.2835	2443824.5960	N06°00'47.8"E	28.5449							
PC	14+37.29	806940.6713	2443827.5863	N12°20'35.3"E	208.5423	12°39'35.1"	06°03'29.7"	208.9672	104.9108	945.7485		
PCC	16+46.26	807144.3932	2443872.1656	N21°52'46.3"E	162.2114	06°24'47.0"	03°57'05.2"	162.2961	81.2329	1449.9940		
PCC	18+08.55	807294.9204	2443932.6147	N25°24'10.2"E	167.4584	00°38'00.8"	00°22'42.0"	167.4592	83.7305	15144.2747		
PT	19+76.01	807446.1879	2444004.4510	N25°43'10.6"E	519.8282							
END	24+95.84	807914.5159	2444230.0396									

NOTES:

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

BP4-R034

R/W | 020-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

SEAL L-4457 JIMMY E. LIVERMAN JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

TIP PROJECT: BP4-R034

County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION & SURVEYS
DIVISION 4
509 WARD BLVD
WILSON, NC, 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

6/26/26

RIGHT OF WAY CONTROL SHEET

I , JIMMY E. LIVERMAN JR, PLS, CERTIFY THAT THE RIGHT OF WAY AND PERMANENT EASEMENT MONUMENTATION FOR THIS PROJECT SHOWN HEREIN WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 6/25/2026 TO 6/26/2026, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 2ND DAY OF JULY, 2026.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457

PERMANENT ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
16+85.00	-50.02	807198.2016	2443838.1116
17+00.00	-65.00	807218.0534	2443829.5461
17+65.00	-65.00	807280.9808	2443855.0737
17+85.00	-50.05	807293.9864	2443877.1382

PERMANENT EASEMENT MARKER IRON PIN AND CAP: L				
STATION	OFFSET	NORTH	EAST	
15+45.00	-72.03	807062.5502	2443774.6310	
16+35.00	50.00	807118.2626	2443916.1798	- POINT NOT SET (IN TREE)
16+35.00	95.00	807104.3636	2443958.9795	- POINT NOT SET (IN TREE)
16+65.00	114.00	807124.2169	2443985.7989	
17+10.00	60.00	807182.6219	2443949.8365	
17+10.00	-81.00	807233.5919	2443818.3714	
17+25.00	-104.00	807256.8646	2443802.8155	
17+65.00	-95.00	807292.8784	2443827.5338	
17+65.00	-77.15	807285.7983	2443843.9224	
18+00.00	70.00	807257.8579	2443992.5815	
18+50.00	-75.00	807364.4163	2443882.3998	- POINT NOT SET (IN TREE)
18+65.00	50.00	807324.6289	2444001.8457	
19+50.00	-65.00	807450.8487	2443934.5731	
20+25.00	-50.00	807512.0191	2443980.6629	

NOTES:

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

BP4-R034
R/W | 03E-I

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION & SURVEYS
DIVISION 4
509 WARD BLVD
WILSON, NC, 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

6/02/26

I , JIMMY E. LIVERMAN JR, PLS, CERTIFY THAT THE RIGHT OF WAY AND PERMANENT EASEMENT MONUMENTATION FOR THIS PROJECT SHOWN HEREIN WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 6/25/2026 TO 6/26/2026, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 2ND DAY OF JULY, 2026.

DocuSigned by:
Jimmy E. Liverman
C782A59719E7430...

PROFESSIONAL LAND SURVEYOR L-4457

NC GRID NAD 83 NA 2011

-L- START 10+00.00

-L- PC 11+03.64

-L- PT 12+41.73

-L- PC 12+68.07

-L- PT 14+08.75

-L- PC 14+37.29

-L- PCC 16+46.26

-L- PCC 18+08.55

-L- PT 19+76.01

N10°35'38.3"W

N03°19'07.3"W

N06°00'47.8"E

N25°43'10.6"E

MATCH LINE -L- STA 23+00.00 SEE SHEET RW05

HURSEL B JOHNSON LIMITED LIABILITY COMPANY
Deed Book/Page 1519/755
Plat Book/Page 5/275

G H JOHNSON JR
Deed Book/Page 1479/839

ALTON MARK SESSOMS et al
Deed Book/Page 1626/937
Plat Book/Page 11/247

BATTS CHAPEL BAPTIST CHURCH
Deed Book/Page 574/274

BATTS CHAPEL BAPTIST CHURCH
Deed Book/Page 957/524

BRADLEY FAMILY FARMS, LLC
Deed Book/Page 1828/611
Plat Book/Slide 10/169

SR1553 BATTS CHAPEL RD VARIABLE WIDTH BST

-268 NORTH VARIABLE WIDTH BST

TRIBUTARY OF DEEP CREEK

P/L IS C/L OF CREEK

EXISTING RW

178' RW TO BSP

WOODS

POND

15' SOIL

DUE

PDE

CUR DATA -L-
PIc 11+72.78
Δc = 07°16'31.0" (RT)
D = 05°16'05.7"
Lc = 138.10
Tc = 69.14
R = 1,087.57
SE = 0.000

CUR DATA -L-
PIc 17+27.49
Δc = 06°24'47.0" (RT)
D = 03°57'05.2"
Lc = 162.30
Tc = 81.23
R = 1,449.99
SE = 0.000

CUR DATA -L-
PIc 13+38.56
Δc = 09°19'55.1" (RT)
D = 06°38'00.5"
Lc = 140.68
Tc = 70.50
R = 863.74
SE = 0.000

CUR DATA -L-
PIc 18+92.29
Δc = 00°38'00.8" (RT)
D = 00°22'42.0"
Lc = 167.46
Tc = 83.73
R = 15,144.27
SE = 0.000

CUR DATA -L-
PIc 15+42.20
Δc = 12°39'35.1" (RT)
D = 06°03'29.7"
Lc = 208.97
Tc = 104.91
R = 945.75
SE = 0.000

NOTES:

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

50' 25' 0' 50' 100'

BP4-R034
R/W 04

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR
NORTH CAROLINA PROFESSIONAL SEAL L-4457 LAND SURVEYOR JIMMY E. LIVERMAN JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

TIP PROJECT: BP4-R034
County: EDGECOMBE

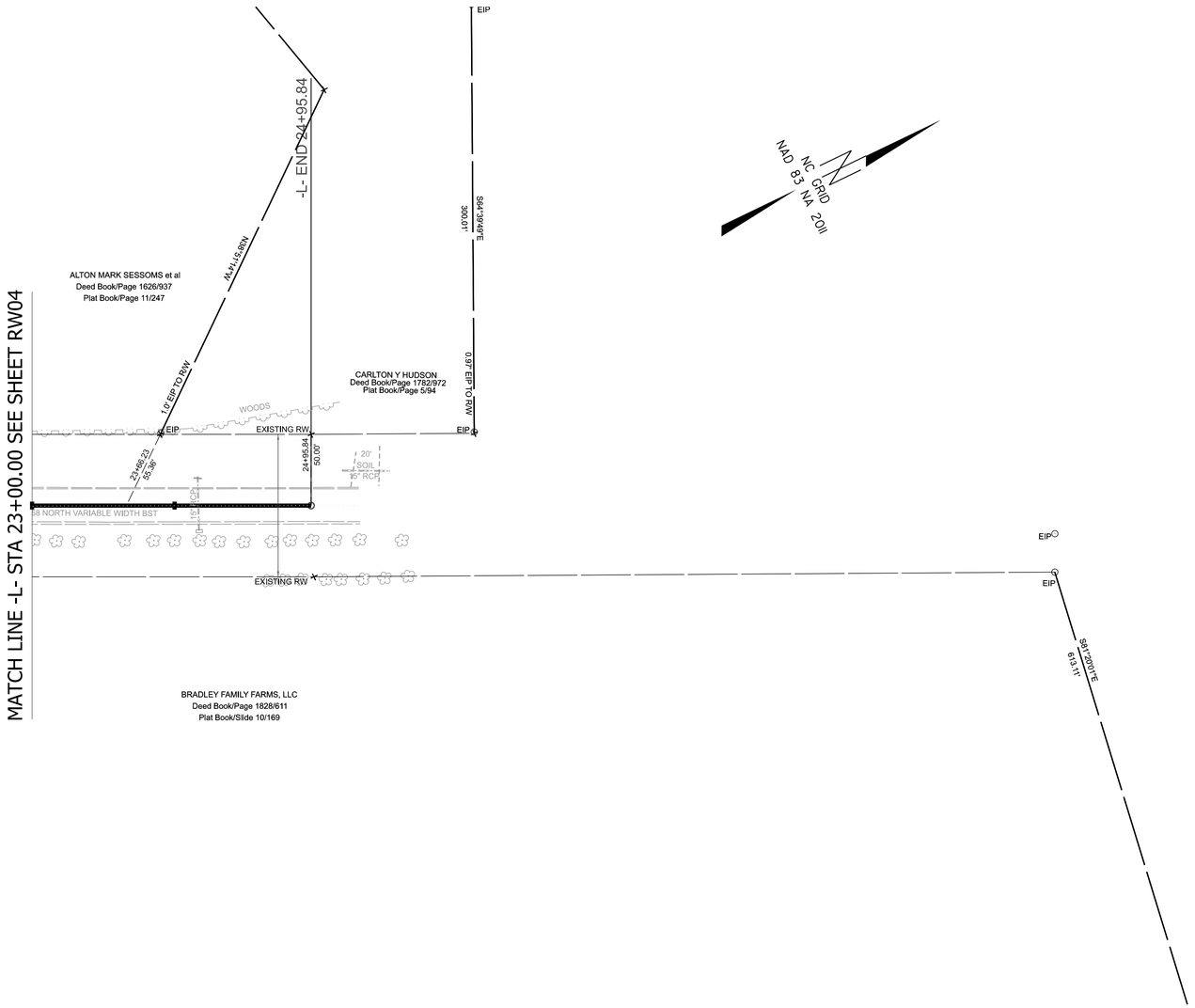
PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY
LOCATION & SURVEYS
DIVISION 4
509 WARD BLVD
WILSON, NC, 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

6/02/26



I , JIMMY E. LIVERMAN JR, PLS, CERTIFY THAT THE RIGHT OF WAY AND PERMANENT EASEMENT MONUMENTATION FOR THIS PROJECT SHOWN HEREIN WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT ALL HORIZONTAL CLOSURES HAD A MINIMUM RATIO OF PRECISION OF 1:10,000 (CLASS A). FIELD WORK WAS PERFORMED FROM 6/25/2026 TO 6/26/2026, AND ALL COORDINATES ARE BASED ON NAD83/NA 2011; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUIREMENTS OF 21NCAC 56.1600 AS APPLICABLE.

THIS 2ND DAY OF JULY, 2026.

DocuSigned by:
Jimmy E. Liverman
C782A597197E7430...

PROFESSIONAL LAND SURVEYOR L-4457

NOTES:

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

BP4-R034

R/W 05

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROFESSIONAL LAND SURVEYOR

SEAL L-4457

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED

TIP PROJECT: BP4-R034
County: EDGECOMBE

PREPARED FOR

LOCATION AND SURVEYS UNIT

PREPARED BY

LOCATION & SURVEYS
DIVISION 4
509 WARD BLVD
WILSON, NC, 27893

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

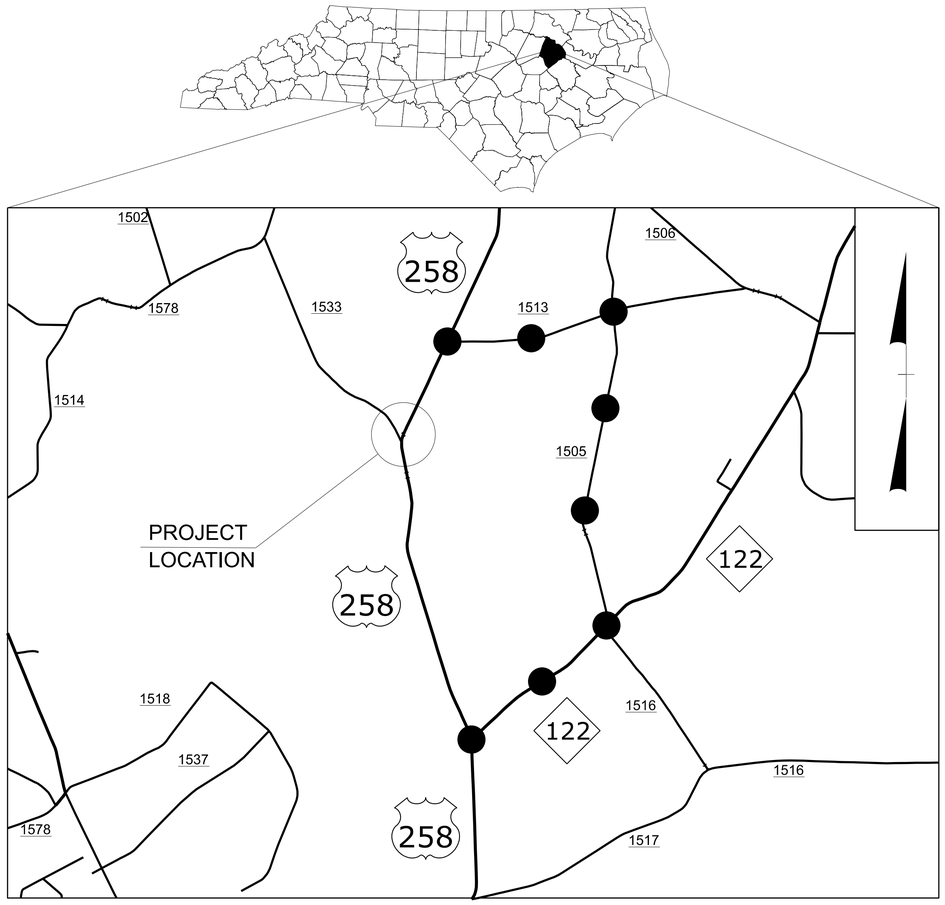
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

EDGECOMBE COUNTY

LOCATION: *REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND CULVERT*



VICINITY MAP
OFF-SITE DETOUR

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND PHASING)
TMP-2	DETOUR SIGNING

SHEET NO.
TMP-1

PROJECT: BP4-R034

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 10/19/2026

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

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

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

DON A. PARKER, P.E.
PROJECT ENGINEER

JAMES J. LAPLANTE
DESIGN ENGINEER

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

9/8/2026
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PROJ. REFERENCE NO.	SHEET NO.
BP4-R034	TMP-1A

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

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

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

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

APPROVED: Digitally signed by Dan A. Parker 75DB8E90ADEF440...

DATE: 10/19/2026

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043251 DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

9/8/2026
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User:rnicil

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJ. REFERENCE NO.	SHEET NO.
BP4-R034	TMP-1B

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

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

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

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

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

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

TRAFFIC CONTROL DEVICES

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

MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

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

PHASING

PHASE 1

STEP 1 -- INSTALL AND COVER DETOUR SIGNING. (SEE RSD 1101.03 AND TMP-2).

STEP 2 -- UNCOVER DETOUR SIGNING AND CLOSE US-258 (-L-).

STEP 3 -- AWAY FROM TRAFFIC, INSTALL (2) 8'-0" X 8'-0" RCBC AND CONSTRUCT ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA. 14+30 +/- TO -L- STA. 20+25 +/-.

STEP 4 -- AWAY FROM TRAFFIC, INSTALL FINAL PAVEMENT MARKINGS.

STEP 5 -- COVER OR REMOVE DETOUR SIGNING AND RE-OPEN US-258 (-L-) TO TRAFFIC.

STEP 6 -- REMOVE ALL TRAFFIC CONTROL DEVICES.

APPROVED: Signed by: Don A. Parker 750B9E90ADEF440...

DATE: 10/19/2026

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

9/8/2026
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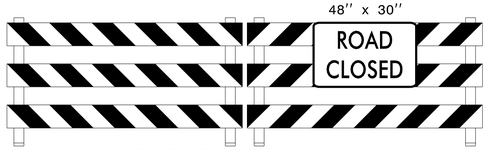
User:nlail

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJ. REFERENCE NO.	SHEET NO.
BP4-R034	TMP-2

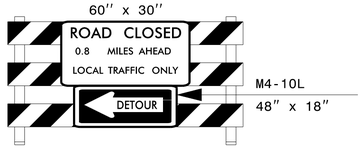
TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

R11-2
48" x 30"



TYPE III BARRICADE(S)
A

R11-3
60" x 30"



M4-10L
48" x 18"

TYPE III BARRICADE
B

R11-3
60" x 30"

M4-10R
48" x 18"

TYPE III BARRICADE
C

W20-3
48" X 48"
3

W20-3
48" X 48"
4

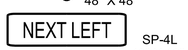
W20-3
48" X 48"
5

W20-2
48" X 48"
6

W20-3
48" X 48"

SP-4R
42" X 12"
7

W20-3
48" X 48"



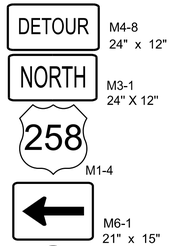
SP-4L
42" X 12"
8

W20-3
48" X 48"

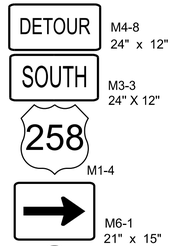
W16-3P
24" X 24"
9

W20-3
48" X 48"

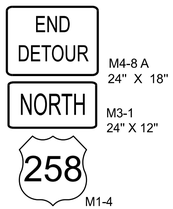
W16-3P
24" X 24"
10



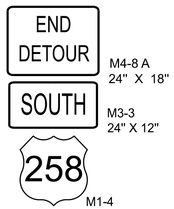
M4-8
24" x 12"
M3-1
24" X 12"
M1-4
M6-1
21" x 15"
11



M4-8
24" x 12"
M3-3
24" X 12"
M1-4
M6-1
21" x 15"
12

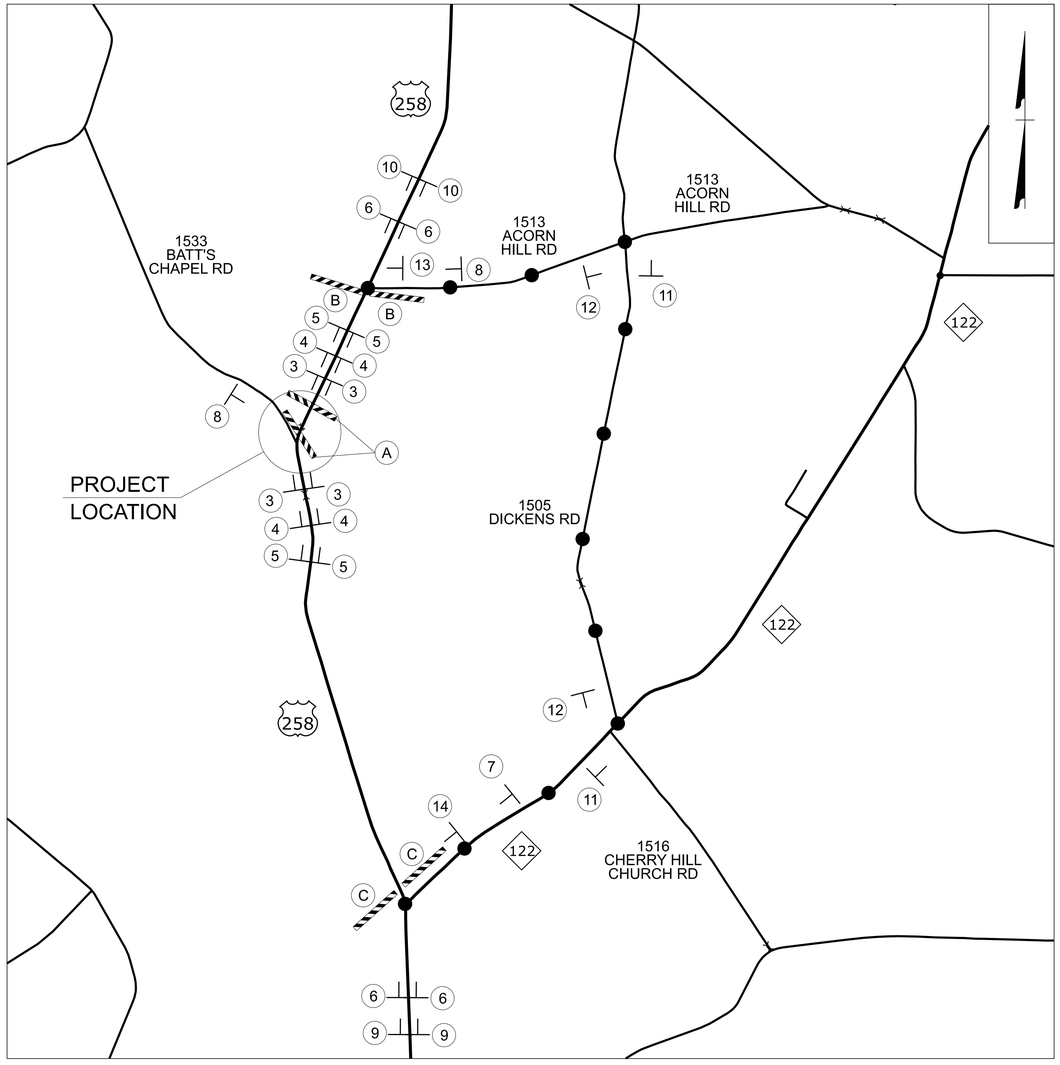


M4-8 A
24" X 18"
M3-1
24" X 12"
M1-4
13



M4-8 A
24" X 18"
M3-3
24" X 12"
M1-4
14

NOTE: SEE RSD 1101.03, SHEET 1 FOR ADDITIONAL NOTES AND DETAILS



VICINITY MAP (NTS)

OFFSITE DETOUR

APPROVED: Don A. Parker
75DB9E90ADEF440...

DATE: 10/19/2026

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

DETOUR SIGNING

9/8/2026
X:\NCDOT\Division 4 Edgecombe BP4R034\Work Zone Traffic Control\BP4R034_TC_TMP_02.dgn
User:nlail

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJECT: BP4-R034

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
EDGECOMBE COUNTY

LOCATION: *REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND CULVERT*

TIP NO.	SHEET NO.
BP4-R034	PMP-1

APPROVED: Signed by: Don A. Parker 75D89E90ADEF440...

DATE: 10/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-1A	REVISED STANDARD DRAWING
PMP-2	PAVEMENT MARKING DETAIL

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

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

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L- US-258	THERMOPLASTIC	SNOWPLOWABLE PAVEMENT MARKINGS (POLYCARBONATE H-SHAPED) SEE SPECIAL PROVISION
SR 1533 (BATTS CHAPEL RD)	THERMOPLASTIC	NONE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL DESCRIPTION

PAVEMENT MARKINGS

THERMOPLASTIC (4",90 MILS)

T1 (4") WHITE EDGELINE
T2 (4") WHITE SOLID LANE LINE
T5 (4") 2 FT.-6 FT./SP WHITE MINISKIP
T13 (4") YELLOW DOUBLE CENTER

THERMOPLASTIC (12", 90 MILS)

T52 (12") YELLOW DIAGONAL

THERMOPLASTIC PAVEMENT MARKING SYMBOLS

T70 LEFT TURN ARROW

POLYCARBONATE H-SHAPED MARKERS

ME YELLOW / YELLOW
MF CRYSTAL / RED

PLAN SUBMITTED TO: NCDOT

RUSSELL BROADWELL, P.E. DIVISION 4 BRIDGE PROGRAM ENGINEER

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: TGS ENGINEERS

DON A. PARKER, P.E. PROJECT ENGINEER

JAMES J. LAPLANTE DESIGN ENGINEER

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

9/8/2026
X:\NCDOT\Division 4 Edgecombe BP4R034\Signing and Delineation\Pavement Marking\Design\BP4R034_SGN_PMP_01.dgn
User:tgs1

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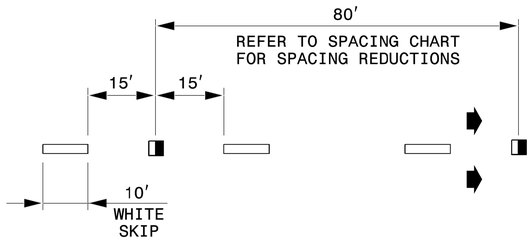
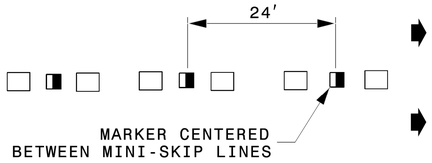
PROJECT REFERENCE NO.	SHEET NO.
BP4-R034	PMP-1A

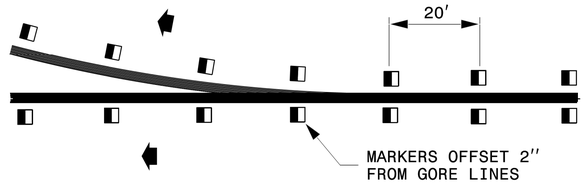
10′-30′/SP SKIP LINE



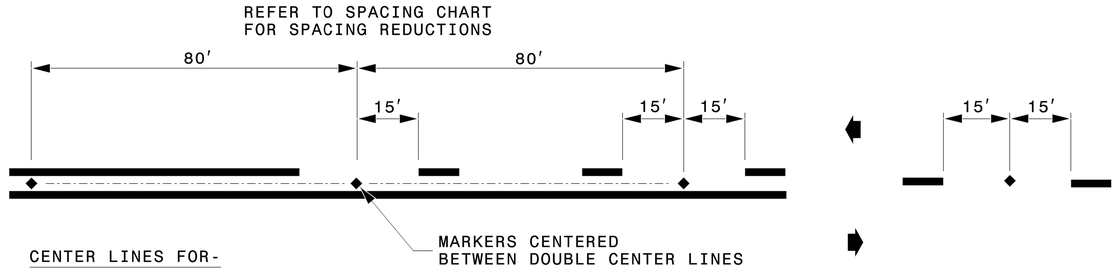
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

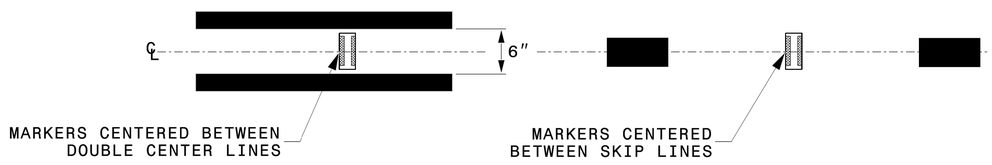


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY DETAIL DRAWING FOR

RAISED PAVEMENT MARKERS

INSTALLATION SPACING

SHEET 2 OF 3

1250D01

NORTH CAROLINA PROFESSIONAL SEAL 042546 ENGINEER MATTHEW V. SPRINGER

Signed by:
Matthew V. Springer, PE
BC80F6E8B584403...
10/19/2026

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

SEE TITLE BLOCK

ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

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TIP NO.	SHEET NO.
BP4-R034	PMP-2

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

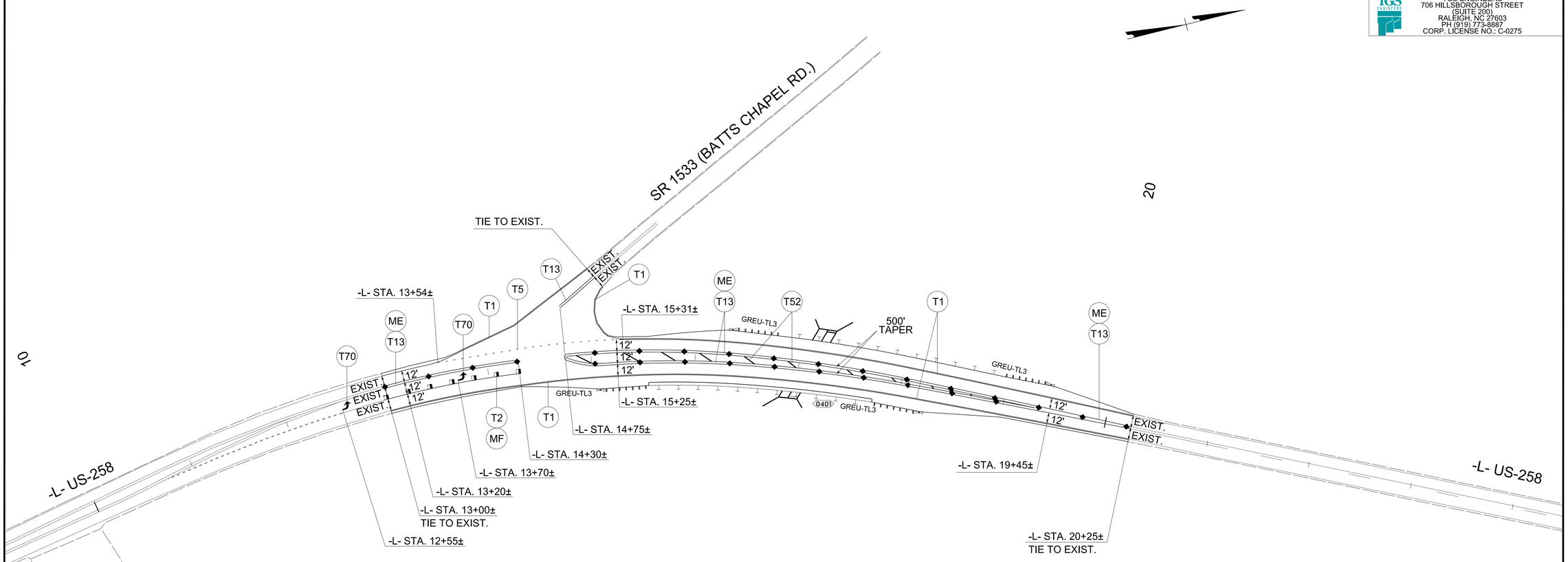
DATE: 10/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043251 DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



SEE RSD 1250.01 SHEET 1 FOR INSTALLATION SPACING OF PAVEMENT MARKERS.

PAVEMENT MARKING DETAIL

9/8/2026
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User:rnoll

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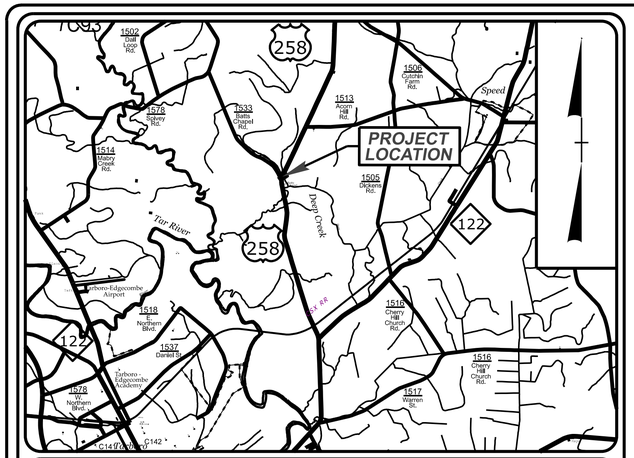
TIP PROJECT: BP4.R034



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

EDGECOMBE COUNTY

LOCATION: REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK.

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R034	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP4.R034.1		PE
BP4.R034.2		R/W & UTIL
BP4.R034.3		CONST

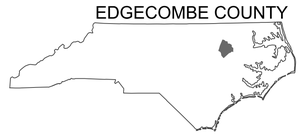
THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

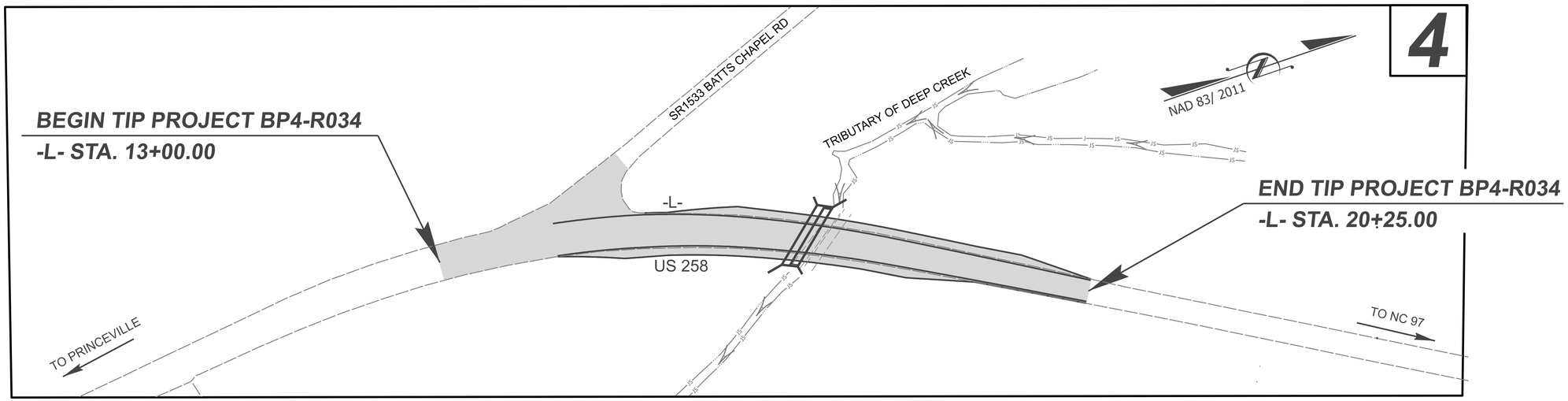
THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

EDGECOMBE COUNTY





GRAPHIC SCALE

50 25 0 50 100
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

TGS ENGINEERS

Prepared In the Office of:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603

Designed by:

Nick Lail — *4952*
NAME — *LEVEL III CERTIFICATION NO.*

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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PROJECT REFERENCE NO.	SHEET NO.
BP4.R034	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	EW EW EW
1636.03	Coir Fiber Wattle Barrier	CFW CFW CFW

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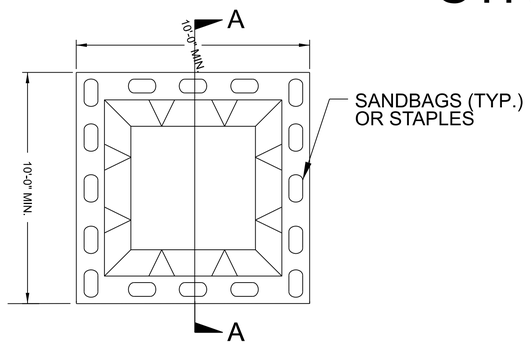
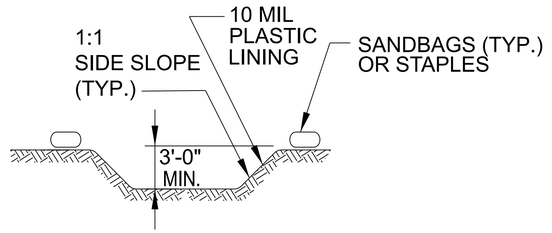
PROJECT REFERENCE NO.	SHEET NO.
BP4.R034	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

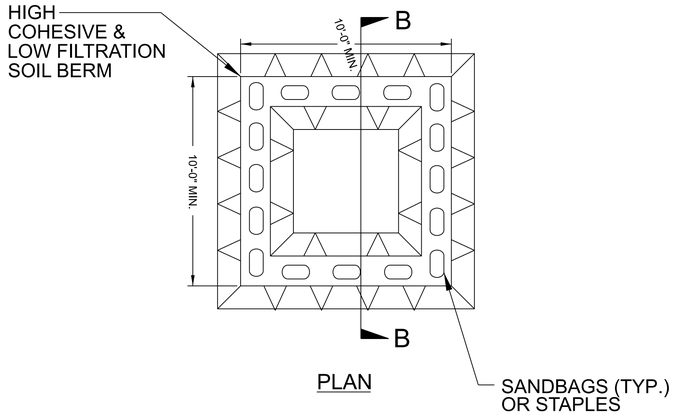
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

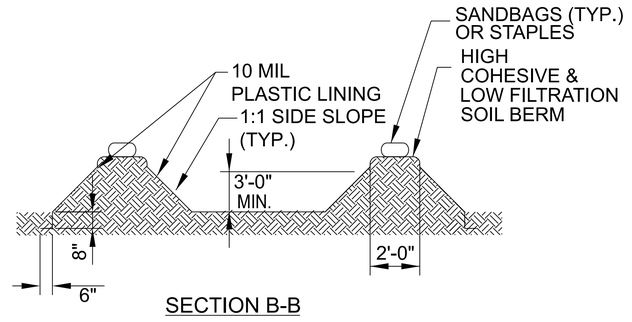
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



SECTION B-B

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

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

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

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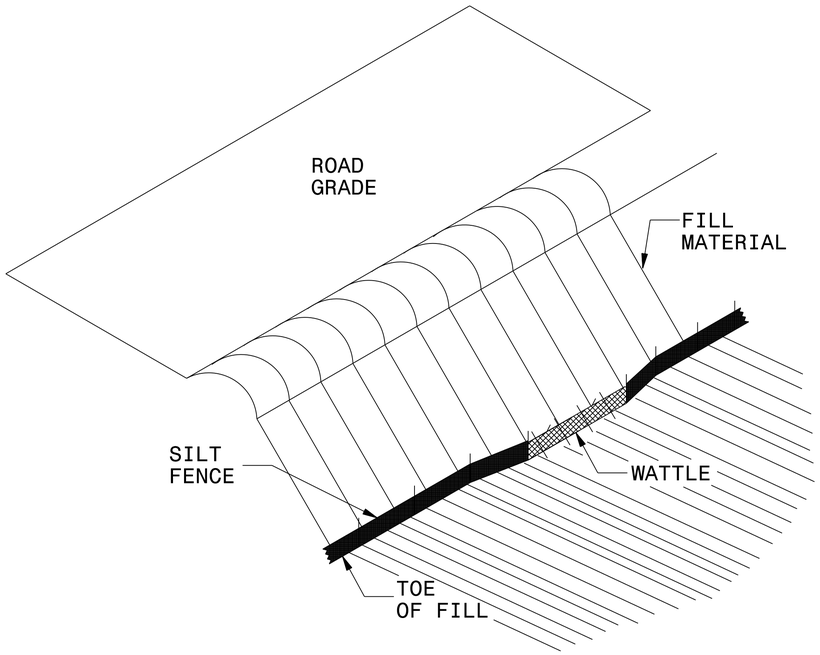
5/26/20

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

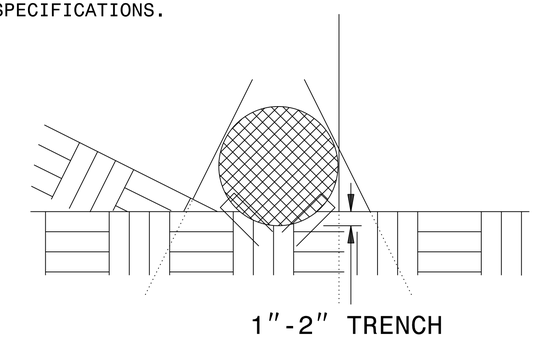
PROVIDE STAPLES MADE OF 11 GUAGE STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 6″ IN LENGTH.

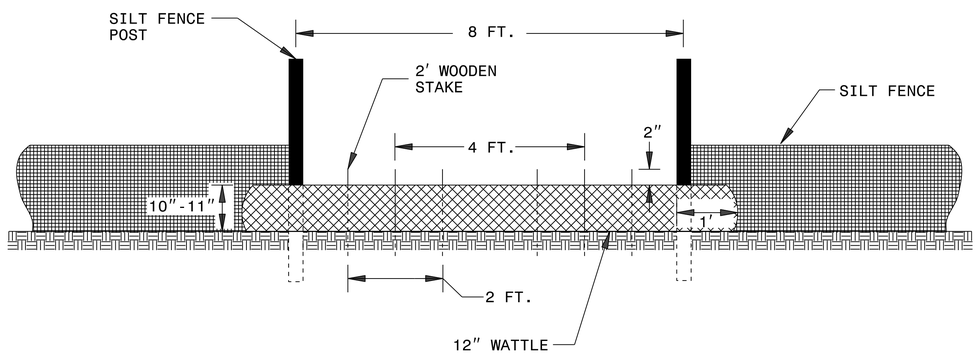
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

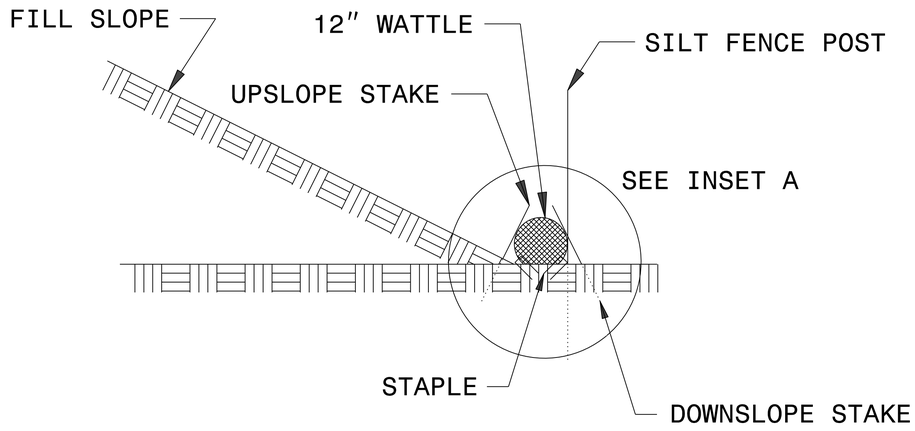
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





VIEW FROM SLOPE



SIDE VIEW

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PROJECT REFERENCE NO.	SHEET NO.
BP4.R034	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

DITCHLINE STRAW MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	–L–	15+25	16+50	LT	115
4	–L–	14+75	16+00	RT	115
			SUBTOTAL		230

DITCHLINE EXCELSIOR MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		

SLOPE MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	–L–	15+75	20+25	LT	1,115
4	–L–	15+90	17+75	RT	350
			SUBTOTAL		1,465

MATTING FOR EROSION CONTROL TOTALS

	ESTIMATE (SY)
DITCHLINE STRAW MATTING SUBTOTAL	230
DITCHLINE EXCELSIOR MATTING SUBTOTAL	N/A
SLOPE MATTING SUBTOTAL	1,465
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER	960
TOTAL	2,655
SAY	2,660

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PROJECT REFERENCE NO.	SHEET NO.
BP4.R034	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

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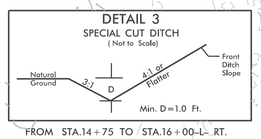
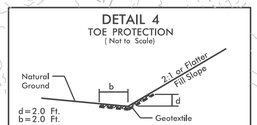
11/14/23

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)



FROM STA.14+75 TO STA.16+00–L– RT.

DETAIL 4
TOE PROTECTION
(Not to Scale)



Type of Liner= CL B Rip–Rap

FROM STA.16+00 TO STA.16+50–L– RT.

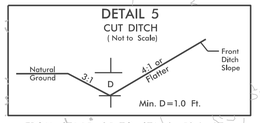
NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

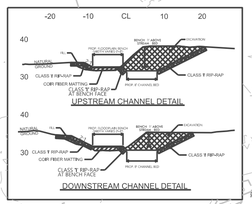
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

DETAIL 5
CUT DITCH
(Not to Scale)



FROM STA.15+25 TO STA.16+50–L– LT.



DETAIL 2
SPECIAL BASE DITCH
(Not to Scale)

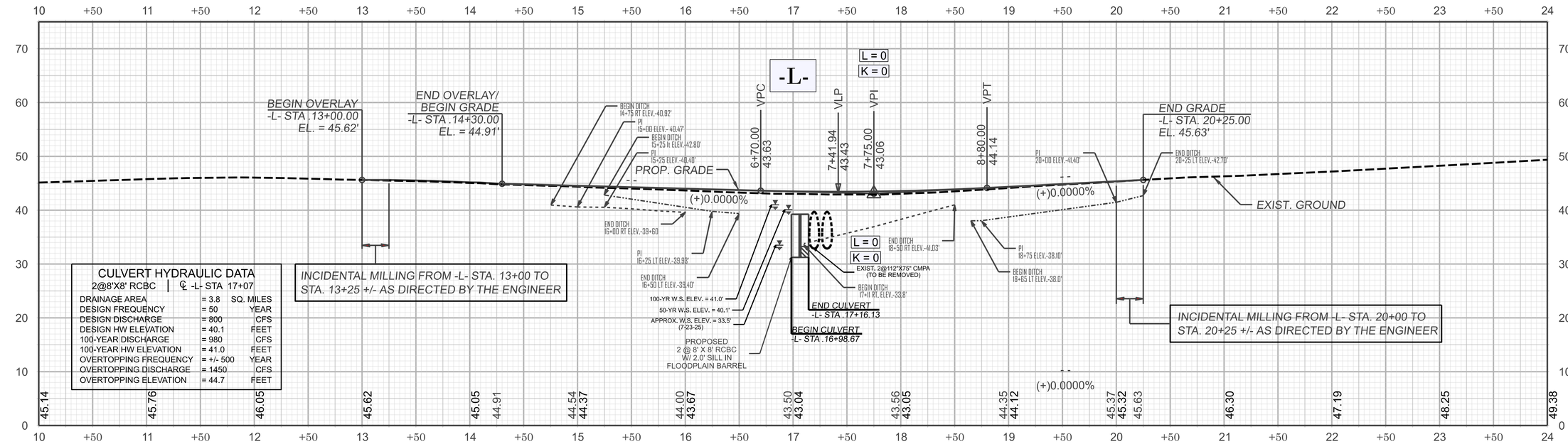
Type of Liner= CL B Rip–Rap, Keyed–In

FROM STA.18+65 TO STA.20+25–L– LT.

DETAIL 1
LATERAL 'V' DITCH
(Not to Scale)

Type of Liner= CL B Rip–Rap, Keyed–In

FROM STA.17+11 TO STA.18+50–L– RT.



CULVERT HYDRAULIC DATA
2@8'X8' RCBC | ℄ -L- STA 17+07

DRAINAGE AREA	= 3.8	SQ. MILES
DESIGN FREQUENCY	= 50	YEAR
DESIGN DISCHARGE	= 800	CFS
DESIGN HW ELEVATION	= 40.1	FEET
100-YEAR DISCHARGE	= 980	CFS
100-YEAR HW ELEVATION	= 41.0	FEET
OVERTOPPING FREQUENCY	= +/- 500	YEAR
OVERTOPPING DISCHARGE	= 1450	CFS
OVERTOPPING ELEVATION	= 44.7	FEET

BP4-R034

EC-04/CONST.04

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PREPARED BY

TGS ENGINEERS

706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0279

REVISIONS

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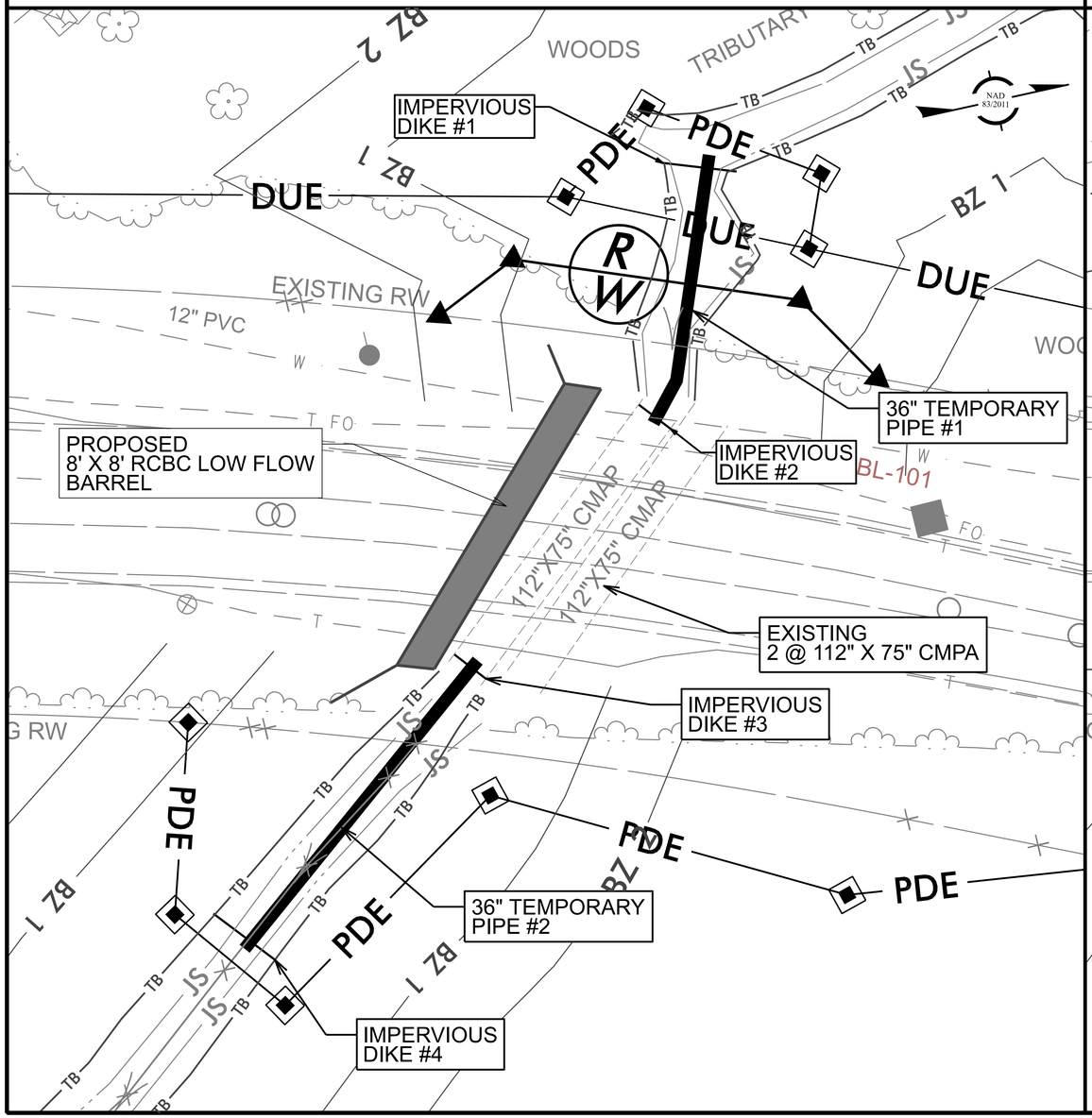
CULVERT CONSTRUCTION SEQUENCE STA. 17+07 -L-

PROJECT REFERENCE NO.	SHEET NO.
BP4.R034	EC-4A/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

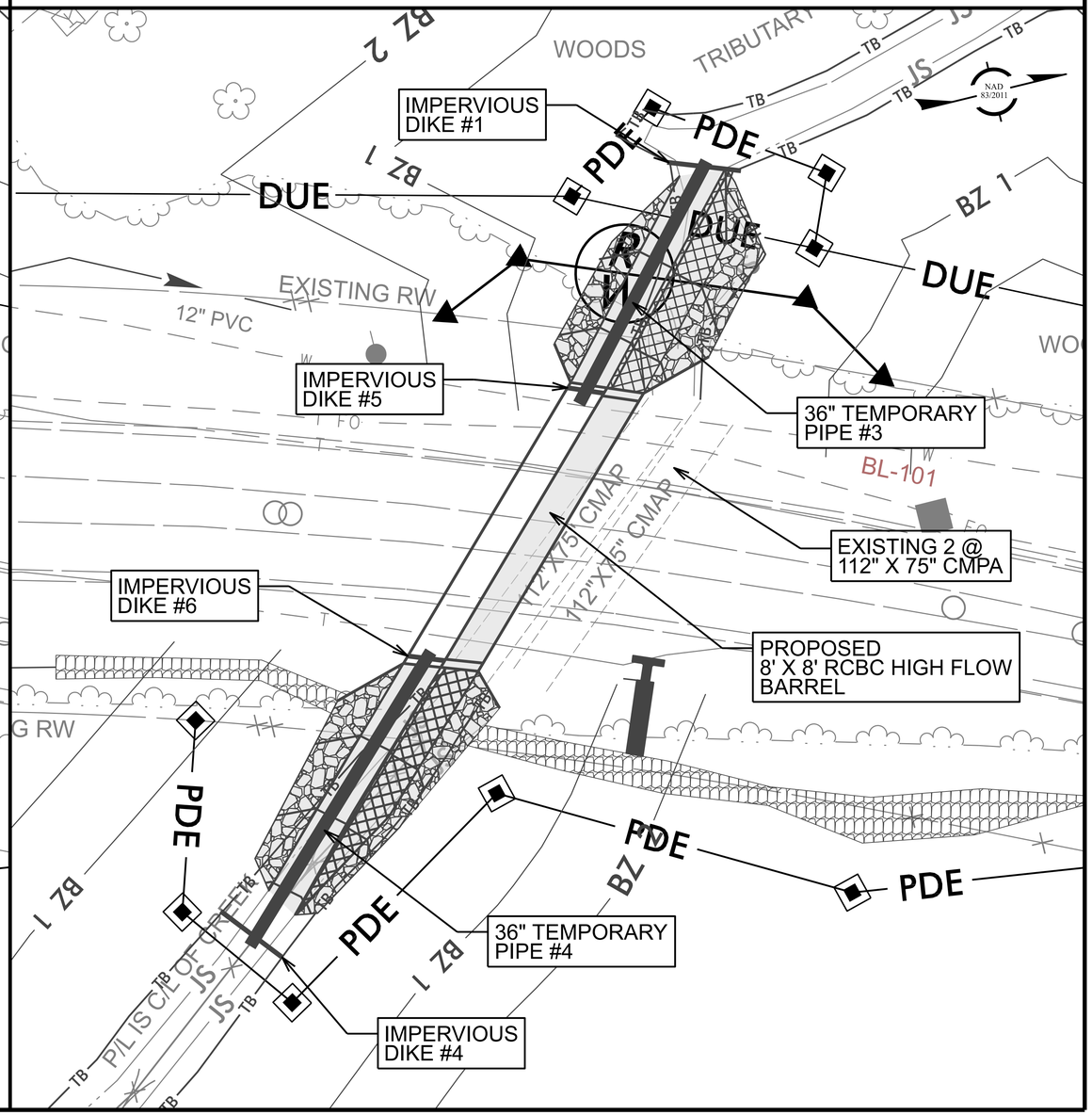
PHASE I

1. INSTALL IMPERVIOUS DIKES #1, #2, #3, #4, & TEMPORARY 36" PIPES #1 & #2.
2. DEWATER CONSTRUCTION AREA INTO SPECIAL STILLING BASIN(S) AS REQUIRED.
3. CONSTRUCT PROPOSED LOW FLOW 8' X 8' RCBC BARREL.



PHASE II

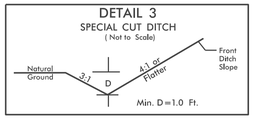
1. DEWATER CONSTRUCTION AREA INTO SPECIAL STILLING BASIN(S) AS REQUIRED.
2. INSTALL IMPERVIOUS DIKES #5, #6, & TEMPORARY PIPES #3 & #4. REMOVE IMPERVIOUS DIKES #2 & #3, 36" TEMPORARY PIPES #1 & #2, & EXISTING 2 @ 112" X 75" CMPA.
3. CONSTRUCT PROPOSED HIGH FLOW 8' X 8' RCBC BARREL, ALONG WITH INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES #1, #5, #6, AND #4, 36" TEMPORARY PIPES, & SPECIAL STILLING BASIN(S).
5. RE-ESTABLISH STREAM ACCORDING TO PLANS.



Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

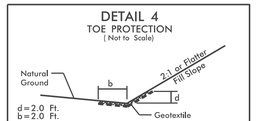
11/14/23

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)



FROM STA.14+75 TO STA.16+00–L– RT.

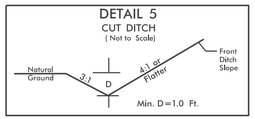
DETAIL 4
TOE PROTECTION
(Not to Scale)



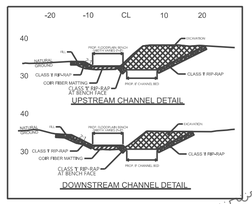
Type of Liner= CL B Rip-Rap

FROM STA.16+00 TO STA.16+50–L– RT.

DETAIL 5
CUT DITCH
(Not to Scale)



FROM STA.15+25 TO STA.16+50–L– LT.



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

HURSEL B JOHNSON LIMITED LIABILITY COMPANY
Deed Book/Page 1519/755
Plat Book/Page 5/275

G H JOHNSON JR
Deed Book/Page 1479/839

ALTON MARK SESSOMS et al
Deed Book/Page 1626/937
Plat Book/Page 11/247

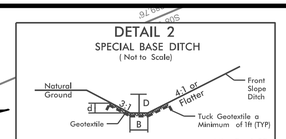
BRADLEY FAMILY FARMS, LLC
Deed Book/Page 1828/611
Plat Book/Slide 10/169

BATTS CHAPEL BAPTIST CHURCH
Deed Book/Page 957/524

BEGIN TIP Project BP4-R034
-L- POC STA. 13+00.00

END TIP Project BP4-R034
-L- POT STA. 20+25.00

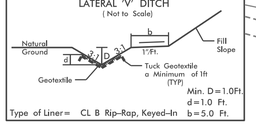
DETAIL 2
SPECIAL BASE DITCH
(Not to Scale)



Type of Liner= CL B Rip-Rap, Keyed–In

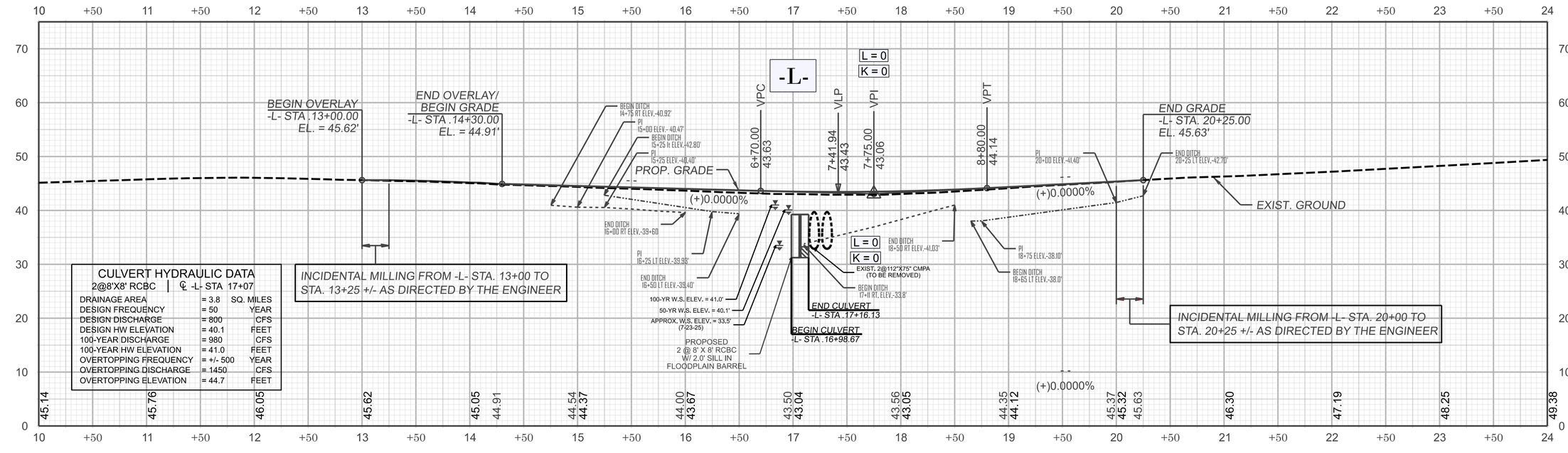
FROM STA.18+65 TO STA.20+25–L– LT.

DETAIL 1
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL B Rip-Rap, Keyed–In

FROM STA.17+11 TO STA.18+50–L– RT.



CULVERT HYDRAULIC DATA
2@8'X8' RCBC | ℄ -L- STA 17+07

DRAINAGE AREA	= 3.8	SQ. MILES
DESIGN FREQUENCY	= 50	YEAR
DESIGN DISCHARGE	= 800	CFS
DESIGN HW ELEVATION	= 40.1	FEET
100-YEAR DISCHARGE	= 980	CFS
100-YEAR HW ELEVATION	= 41.0	FEET
OVERTOPPING FREQUENCY	= +/- 500	YEAR
OVERTOPPING DISCHARGE	= 1450	CFS
OVERTOPPING ELEVATION	= 44.7	FEET

INCIDENTAL MILLING FROM -L- STA. 13+00 TO STA. 13+25 +/- AS DIRECTED BY THE ENGINEER

INCIDENTAL MILLING FROM -L- STA. 20+00 TO STA. 20+25 +/- AS DIRECTED BY THE ENGINEER

BP4-R034

EC-05/CONST.04

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
EDGECOMBE COUNTY

ROADWAY DESIGN UNIT

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PREPARED BY

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0279

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

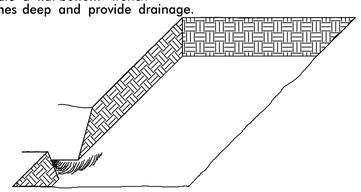
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R034	RF–1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

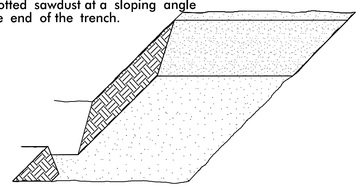
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

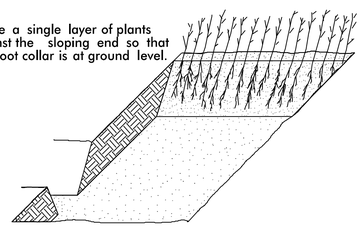
1. Locate a healing–in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



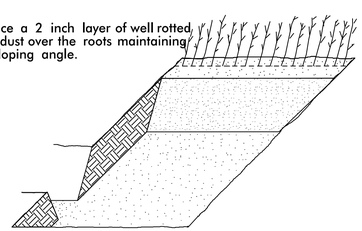
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

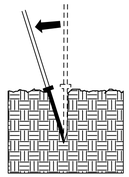


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

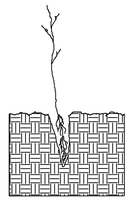


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

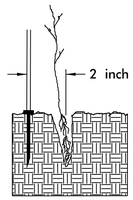
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



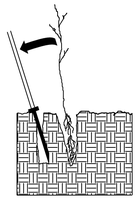
1. Insert planting bar as shown and pull handle toward planter.



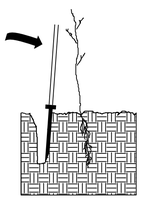
2. Remove planting bar and place seedling at correct depth.



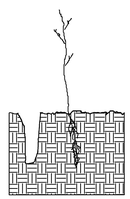
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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

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

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

REFORESTATION

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

REFORESTATION

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

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

REFORESTATION DETAIL SHEET

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

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJECT: BP4-R034

CONTRACT:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TIP NO.	SHEET NO.
BP4-R034	SIGN-1

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 10/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGNING PLAN
EDGECOMBE COUNTY

LOCATION: *REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND CULVERT*

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS

GENERAL NOTES

. SIGNS FURNISHED BY STATE

. CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.

. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.

. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER

. ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

. THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	79	L.F.
4102000000	904	SIGN ERECTION, TYPE E	9	EA.
4108000000	904	SIGN ERECTION, TYPE F	1	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	10	EA.

INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET
SIGN-2	TYPE "E" AND "F" SIGNS
SIGN-3	EXISTING AND PROPOSED SIGN DETAIL SHEETS

PLAN SUBMITTED TO: NCDOT

RUSSELL BROADWELL, P.E. DIVISION 4 BRIDGE PROGRAM ENGINEER

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · ROAD

PLAN PREPARED BY: TGS ENGINEERS

DON A. PARKER, P.E. PROJECT ENGINEER

JAMES J. LAPLANTE DESIGN ENGINEER

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

9/8/2026
X:\NCDOT\Division 4 Edgecombe BP4R034\Signing and Delineation\Signing\BP4R034_SGN_SGN-01.dgn
User:nlail

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

TYPE "E" SIGNS

401 QUANTITY REQ'D 01

36" X 36"
W1-10L

ONE "U" POST PER SIGN

405 QUANTITY REQ'D 02

18" X 24"
W1-8R

MOUNT BACK TO BACK WITH
SIGN 404 IN ONE INSTALLATION

402 QUANTITY REQ'D 02

24" X 24"
W13-1

MOUNT BELOW SIGNS 401 AND
403 IN ONE INSTALLATION

406 QUANTITY REQ'D 01

36" X 36"
R1-1

ONE "U" POST PER SIGN

403 QUANTITY REQ'D 01

36" X 36"
W1-10R

ONE "U" POST PER SIGN

404 QUANTITY REQ'D 02

18" X 24"
W1-8L

ONE "U" POST PER SIGN

TYPE "F" SIGNS

501 QUANTITY REQ'D 01

24" X 12"
M3-1

30" X 24"
M1-4

ONE "U" POST PER SIGN

TIP NO.	SHEET NO.
BP4-R034	SGN-2

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

DATE: 10/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

TYPE "E" AND "F" SIGNS

9/8/2026
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Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

TIP NO.	SHEET NO.
BP4-R034	SGN-3

APPROVED: Signed by: Don A. Parker 75DB9E90ADEF440...

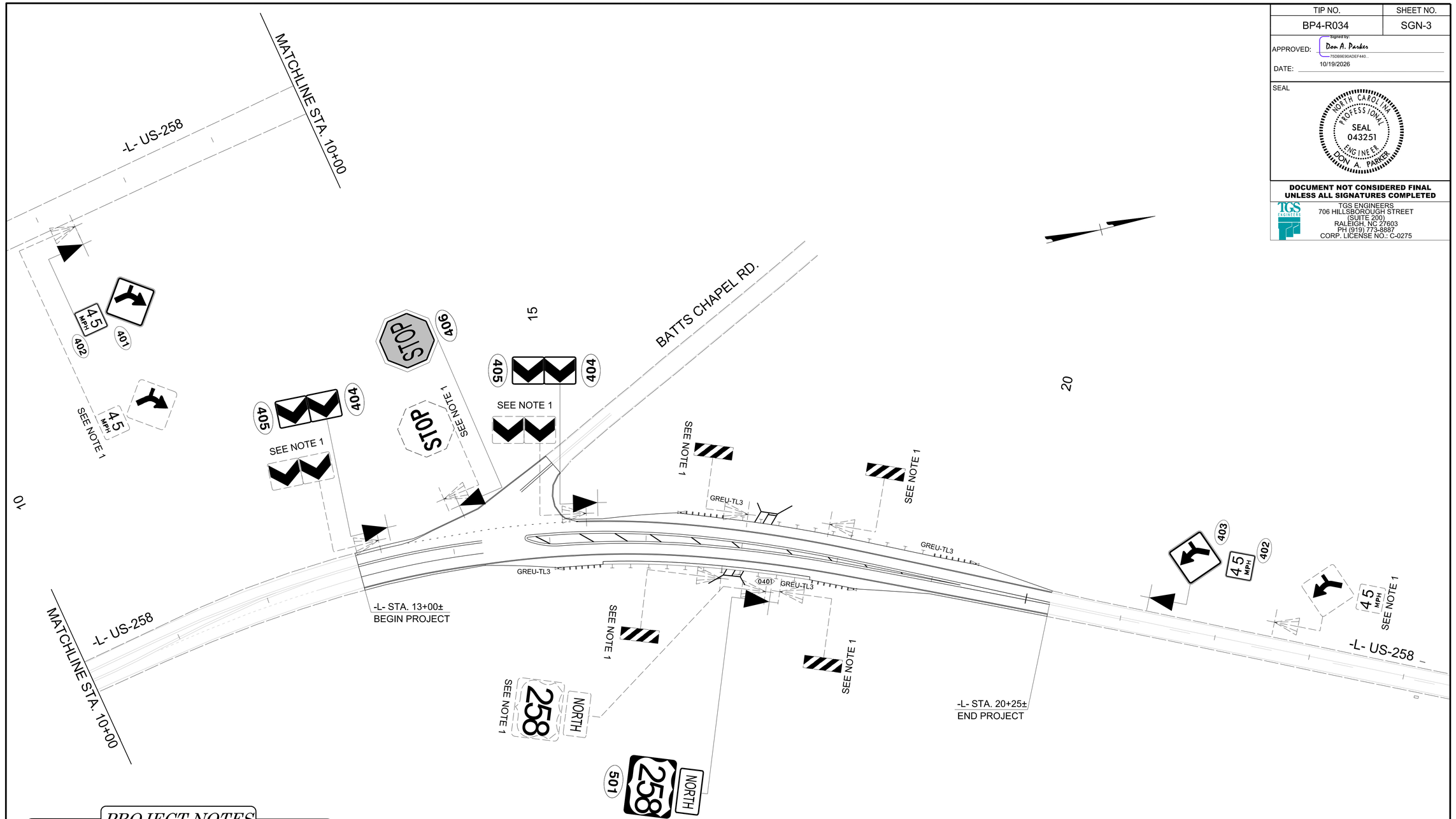
DATE: 10/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043251 ENGINEER DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



PROJECT NOTES

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL

EXISTING/PROPOSED SIGNS

9/8/2026
X:\NCDOT\Division 4 Edgecombe BP4R034\Signing and Delineation\Signing\BP4R034_SGN_Exist Proposed.dgn
User:rhicil

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

TIP PROJECT: BP4-R034

CONTRACT: _____

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

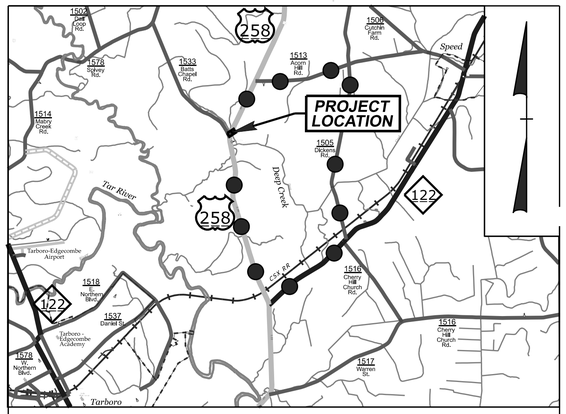
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R034	1	

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

UTILITY CONSTRUCTION PLANS
EDGECOMBE COUNTY

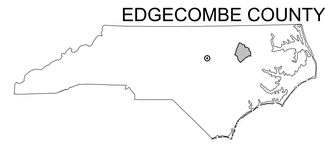
LOCATION: REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK

TYPE OF WORK: RELOCATE WATER LINE

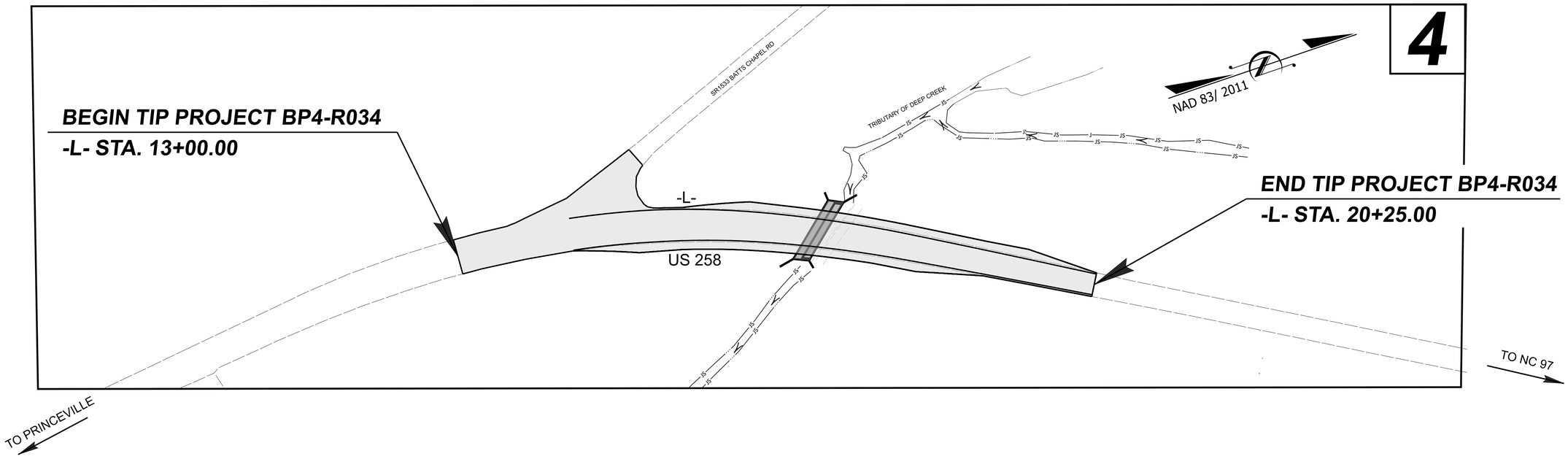


VICINITY MAP (NTS)
OFFSITE DETOUR

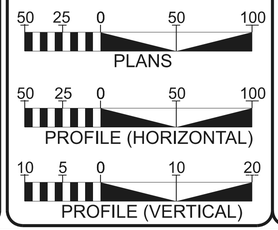
EDGECOMBE COUNTY



4



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UC–1	*TITLE SHEET*
UC–2	*UTILITY SYMBOLOGY*
UC–3	*NOTES*
UC–3A	*DETAILS*
UC–4	*UTILITY CONSTRUCTION SHEETS & PROFILE SHEETS*

WATER AND SEWER OWNERS ON PROJECT

(A) EDGECOMBE COUNTY

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 30499 ENGINEER BOBBY C HOUSER

6/19/2026

PREPARED IN THE OFFICE OF

TGS ENGINEERS

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476–0003
CORP. LICENSE NO.: C–0275

CHAD HOUSER P.E. UTILITY DESIGN ENGINEER

DIVISION OF HIGHWAYS
DIVISION 4
509 WARD BLVD.
PO BOX 3165
WILSON NC 27895
PHONE (252) 640–6400
FAX (252) 234–6174

LONNY SLEEPER — *DIVISION UTILITIES ENGINEER*

JIMMY G. SHARPE — *SENIOR DIVISION UTILITY COORDINATOR*

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

06/16/22

UTILITY CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — REH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — SS
- Force Main Sewer Line (Sized as Shown) — FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — OH POW
- Trenchless Installation — TRENCHLESS WL
- Encasement Method — OPEN CUT
- Encasement
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

EXISTING UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Utility Pole
- Utility Pole with Base
- H-Frame Pole
- Power Transmission Line Tower
- Water Manhole
- Power Manhole
- Telephone Manhole
- Sanitary Sewer Manhole
- Hand Hole for Cable
- Power Transformer
- Telephone Pedestal
- CATV Pedestal
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.
- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas G
- *Underground Water Line — W
- Aboveground Water Line — A/G Water W
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer SS
- *Underground SS Forced Main Line — FSS
- Underground Unknown Utility Line — ?UTL
- SUE Test Hole
- Water Meter
- Water Valve
- Fire Hydrant
- Sanitary Sewer Cleanout

*For Existing Utilities

- Utility Line Drawn from Record (Type as Shown) — W
- Designated Utility Line (Type as Shown)

BP4-R034
UC | 2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION PLANS ONLY

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

DESIGNED BY: BCH
DRAWN BY: ADC
CHECKED BY:
APPROVED BY:
REVISED:

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

06/16/22

GENERAL NOTES

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING WATER LINE BELONGS TO EDGECOMBE COUNTY. THE CONTACT FOR EDGECOMBE COUNTY IS PAUL MOSELEY (UTILITIES DIRECTOR) AND HIS PHONE NUMBER AND EMAIL ARE 252-567-9252 AND PAULMOSELEY@EDGECOMBECO.COM.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES

1. ALL PROPOSED WATER LINE 4 TO 12 INCHES IN DIAMETER, SHALL BE DUCTILE IRON PIPE - PRESSURE CLASS 350.

2. ALL WATER LINE FITTINGS 4 TO 12 INCHES IN DIAMETER, SHALL BE PRESSURE CLASS 350 DUCTILE IRON RESTRAINED JOINT IN ACCORDANCE WITH ANSI A21.10 / AWWA C110 AND ANSI A21.4 / AWWA C104.

3. WATER LINE UTILIZING RESTRAINED JOINTS SHALL BE TYTON JOINT, HP LOK, AMERICAN "FAST GRIP", US PIPE "FIELD-LOK" OR APPROVED EQUAL.

4. ALL WATERLINE SHALL HAVE COATED TRACER WIRE NO SMALLER THAN 14 AWG SOLID COPPER.

5. ALL VALVES - 2" THROUGH 12" SHALL BE RESILIENT WEDGE GATE, CAST IRON BODY, CONFORMING TO AWWA C509, LATEST VERSION. SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE AGAINST THE LINE FLOW FROM EITHER DIRECTION AND BE DESIGNED SUCH THAT NO EXPOSED METAL SEAMS, EDGES, SCREWS, ETC. ARE WITHIN THE WATERWAY IN THE CLOSED POSITION. THE GATE SHALL NOT BE WEDGED INTO A POCKET NOR SLIDE ACROSS THE SEATING SURFACE TO OBTAIN TIGHT CLOSURE. ALL INTERNAL AND EXTERNAL FERROUS SURFACES OF THE VALVE, INCUDING THE INTERIOR OF THE GATE, SHALL BE COATED WITH A PROTECTIVE COATING CONFORMING TO AWWA C550, LATEST VERSION. COATING SHALL BE APPLIED TO CASTINGS PRIOR TO ASSEMBLY TO ASSURE ALL EXPOSED AREAS WILL BE COVERED. VALVES SHALL BE RATED AT 200 PSI WORKING PRESSURE. UNLESS OTHERWISE NOTED, UNDERGROUND VALVES SHALL HAVE AN OPERATING NUT AND EXPOSED VALVES SHALL HAVE A HAND WHEEL OPERATOR. OPERATING NUT SHALL BE 2"X2", OPEN LEFT.

6. EACH VALVE BURIED IN THE GROUND SHALL BE PROVIDED WITH AN APPROVED TYPE OF VALVE BOX AND COVER. THE BOXES SHALL BE ADJUSTABLE SCREW TYPE 24-INCH OR 36-INCH.

7. ALL VALVE BOXES SHALL BE SET LEVEL WITH THE GROUND AND HAVE A CONCRETE COLLAR PLACED AROUND IT. VALVE BOX SHALL BE FIVE AND ONE QUARTER (5 ¼) INCH CAST IRON WITH WATER STAMPED LID. THE VALVE BOX SHALL ALSO BE OF THE SCREW TYPE NATURE TO ALLOW FOR FURTHER ADJUSTMENT IN HEIGHT.

8. PROVIDE THRUST RESTRAINT ON THE EXISTING WATER LINE WHERE TIE-INS ARE MADE AS NECESSARY.

9. CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING UTILITY SYSTEMS. CONTRACTOR SHALL CONTACT THE UTILITY OWNER TO CONDUCT STRATEGIC OPERATION OF VALVES FOR SERVICE INTERRUPTION IN ORDER TO PERFORM SPECIFIC WORK.

10. ANY BENDS OF PVC WATER PIPE NOT SPECIFICALLY CALLED OUT WITH A 90, 45, 22.5, OR 11.25 DEGREE BEND FITTING, SHALL BE CONSTRUCTED BY A RADIAL BEND OF THE PIPE AS NOTED ON THE PLANS OR IN ACCORDANCE WITH PIPE MANUFACTURER'S SPECIFICATIONS (WHICHEVER IS MORE STRINGENT) - OR A COMBINATION OF BEND FITTINGS AND A RADIAL BEND OF THE PIPE. DEFLECTION OF THE PIPE JOINTS ON PVC PIPE MATERIAL IS NOT AN ACCEPTABLE METHOD OF PIPE BENDING.

12. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKSMANSHIP SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

13. UTILITY OWNER MUST BE PRESENT FOR ANY TESTING OR CONNECTIONS TO THE EXISTING SYSTEM INCLUDING BUT NOT LIMITED TO ALL TAPS AND TEMPORARY CONSTRUCTION CONNECTIONS. A NOTICE OF 72 HOURS MUST BE PROVIDED.

BP4-R034

UC 3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION PLANS ONLY

DESIGNED BY: BCH

DRAWN BY: ADC

CHECKED BY:

APPROVED BY:

REVISED:

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

6/19/2026

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

02/02/22

PROJECT TYPICAL DETAILS

RESTRAINED JOINT DESIGN TABLE FOR DUCTILE IRON PIPE

FITTING	REQUIRED RESTRAINED LENGTH (FT) OF BARE D.I. PIPE BY DEPTH OF COVER							
HORIZONTAL BENDS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
6 INCH DIA - 11.25 DEG	3	2	2	2	2	1	1	1
6 INCH DIA - 22.5 DEG	5	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	11	9	8	7	7	6	5	5
6 INCH DIA - 90 DEG	26	22	19	17	16	14	13	12
8 INCH DIA - 11.25 DEG	3	3	2	2	2	2	2	2
8 INCH DIA - 22.5 DEG	7	6	5	5	4	4	3	3
8 INCH DIA - 45 DEG	14	12	10	9	8	8	7	7
8 INCH DIA - 90 DEG	33	29	25	23	20	19	17	16
12 INCH DIA - 11.25 DEG	5	4	4	3	3	3	2	2
12 INCH DIA - 22.5 DEG	9	8	7	6	6	5	5	5
12 INCH DIA - 45 DEG	20	17	15	13	12	11	10	10
12 INCH DIA - 90 DEG	47	41	36	33	29	27	25	23
16 INCH DIA - 11.25 DEG	6	5	5	4	4	3	3	3
16 INCH DIA - 22.5 DEG	12	11	9	8	8	7	6	6
16 INCH DIA - 45 DEG	25	22	19	17	16	14	13	12
20 INCH DIA - 11.25 DEG	7	6	6	5	5	4	4	4
20 INCH DIA -22.5 DEG	15	13	11	10	9	9	8	7
20 INCH DIA - 45 DEG	31	27	24	21	19	18	16	15
20 INCH DIA - 90 DEG	74	65	57	52	47	43	40	37
VERTICAL BENDS - DOWN	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
6 INCH DIA - 11.25 DEG	7	6	6	5	4	4	4	3
6 INCH DIA - 22.5 DEG	15	13	11	10	9	8	8	7
6 INCH DIA - 45 DEG	31	27	23	21	19	17	16	15
8 INCH DIA - 11.25 DEG	10	8	7	6	6	5	5	5
8 INCH DIA - 22.5 DEG	19	17	15	13	12	11	10	9
8 INCH DIA - 45 DEG	40	35	30	27	25	22	21	19
12 INCH DIA - 11.25 DEG	14	12	10	9	8	8	7	7
12 INCH DIA - 22.5 DEG	28	24	21	19	17	16	14	13
12 INCH DIA - 45 DEG	57	50	44	39	35	32	30	28
16 INCH DIA - 11.25 DEG	18	15	14	12	11	10	9	9
16 INCH DIA - 22.5 DEG	36	31	27	25	22	20	19	17
16 INCH DIA - 45 DEG	74	65	57	51	46	42	39	36
20 INCH DIA - 11.25 DEG	22	19	17	15	14	12	11	11
20 INCH DIA -22.5 DEG	44	38	34	30	27	25	23	21
20 INCH DIA - 45 DEG	91	79	70	63	57	52	48	44
VERTICAL BENDS - UP	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
6 INCH DIA - 11.25 DEG	3	2	2	2	2	1	1	1
6 INCH DIA - 22.5 DEG	5	4	4	3	3	3	3	2
6 INCH DIA - 45 DEG	11	9	8	7	7	6	5	5
8 INCH DIA - 11.25 DEG	3	3	2	2	2	2	2	2
8 INCH DIA - 22.5 DEG	7	6	5	5	4	4	3	3
8 INCH DIA - 45 DEG	14	12	10	9	8	8	7	7
12 INCH DIA - 11.25 DEG	5	4	4	3	3	3	2	2
12 INCH DIA - 22.5 DEG	9	8	7	6	6	5	5	5
12 INCH DIA - 45 DEG	20	17	15	13	12	11	10	10
16 INCH DIA - 11.25 DEG	6	5	5	4	4	3	3	3
16 INCH DIA - 22.5 DEG	12	11	9	8	8	7	6	6
16 INCH DIA - 45 DEG	25	22	19	17	16	14	13	12
20 INCH DIA - 11.25 DEG	7	6	6	5	5	4	4	4
20 INCH DIA -22.5 DEG	15	13	11	10	9	9	8	7
20 INCH DIA - 45 DEG	31	27	24	21	19	18	16	15
DEAD ENDS / VALVES	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
6 INCH DIA	50	45	41	38	35	33	31	29
8 INCH DIA	65	59	54	50	46	43	40	38
10 INCH DIA	80	72	66	61	56	52	49	46
12 INCH DIA	94	85	78	72	66	62	58	54
16 INCH DIA	123	111	102	94	87	81	76	71
20 INCH DIA	151	137	125	115	107	100	93	88
REDUCERS	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
12 INCH X 8 INCH	50	45	41	38	35	33	31	29
TEES	**3 FT**	**4 FT**	**5 FT**	**6 FT**	**7 FT**	**8 FT**	**9 FT**	**10 FT**
8" RUN X 8" BRANCH : RL = 1 FT	64	58	53	48	44	41	38	36
8" RUN X 8" BRANCH : RL = 5 FT	59	52	47	42	39	35	32	30
12" RUN X 12" BRANCH : RL = 1 FT	93	84	77	70	65	60	56	53
12" RUN X 12" BRANCH : RL = 5 FT	88	79	71	65	59	54	50	47

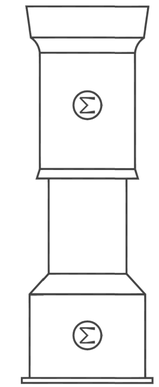
ASSUMPTIONS

LAYING CONDITION = TYPE 4
SOIL DESIGNATION = COHESIVE-GRANULAR
DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
SAFETY FACTOR = 1.5

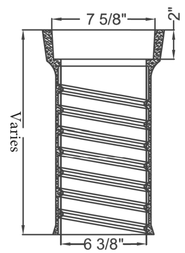
NOTES

1. RESTRAINED LENGTH IS MEASURED AS FOLLOWS:
   A. HORIZONTAL/VERTICAL BENDS: ALONG EACH SIDE OF BEND.
   B. HORIZONTAL/VERTICAL BENDS - OFFSET: ALONG THE OUTER SIDE OF EACH BEND. ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT.
2. WHEN IT IS NOT POSSIBLE TO INSTALL THE RESTRAINED LENGTHS AS NOTED BY THIS TABLE, CONTRACTOR SHALL INSTALL THE APPROPRIATE CONCRETE THRUST RESTRAINTS AS PER THE DETAILS HEREIN.

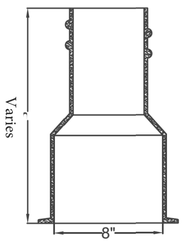
SCREW TYPE



VALVE BOX COMPLETE

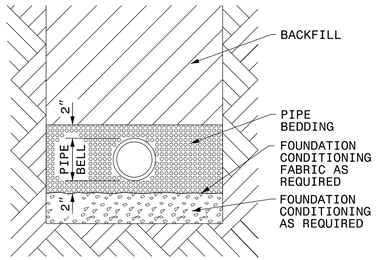


TOP SECTION



BOTTOM SECTION

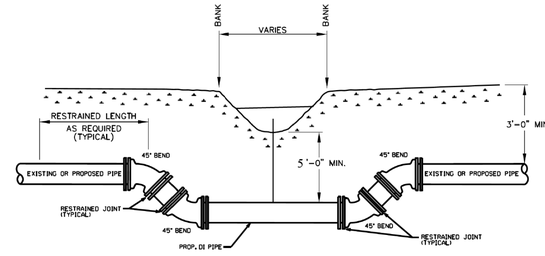
TRENCH DETAIL



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

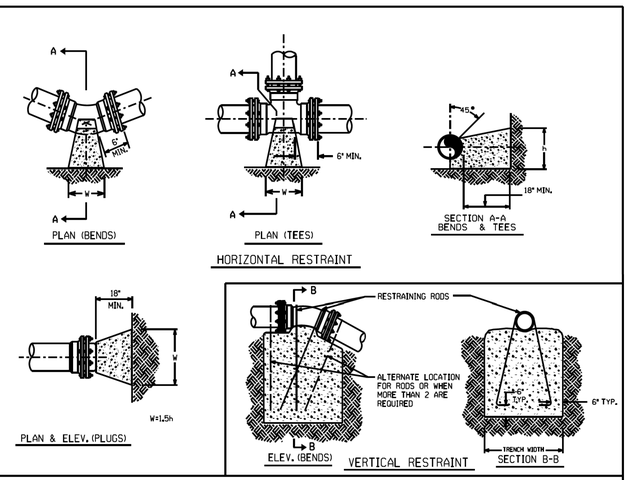
WATER VALVE BOX INSTALLATION FOR 4", 6", 8", AND 12" GATE VALVES

UTILITY CONSTRUCTION

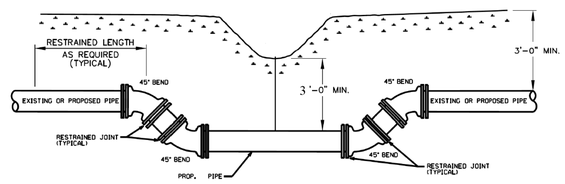


CROSS SECTION

CREEK CROSSING DETAIL



THRUST RESTRAINT FOR PIPE LINES



CROSS SECTION

DITCH CROSSING DETAIL

REVISIONS

BP4-R034	
UC	3A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WAKE COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION PLANS ONLY

DESIGNED BY: BCH
DRAWN BY: ADC
CHECKED BY:
APPROVED BY:
REVISED:

UTILITIES ENGINEERING SEC.
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6/19/2026

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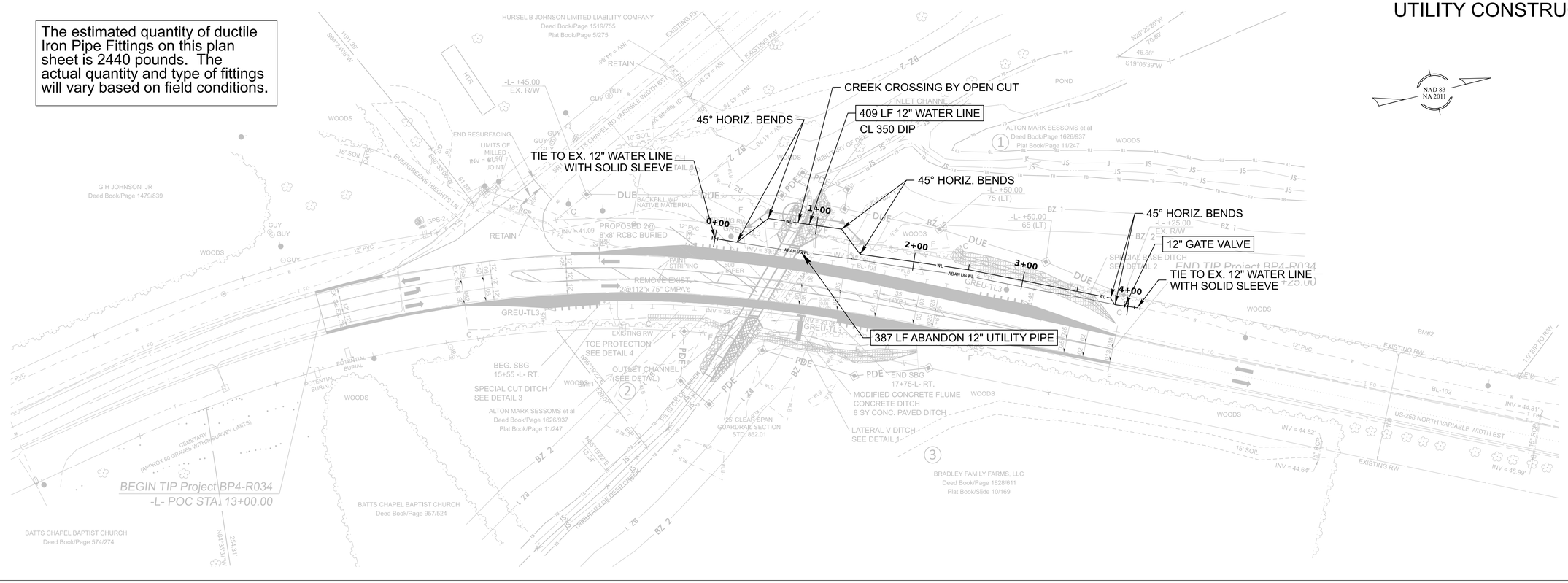
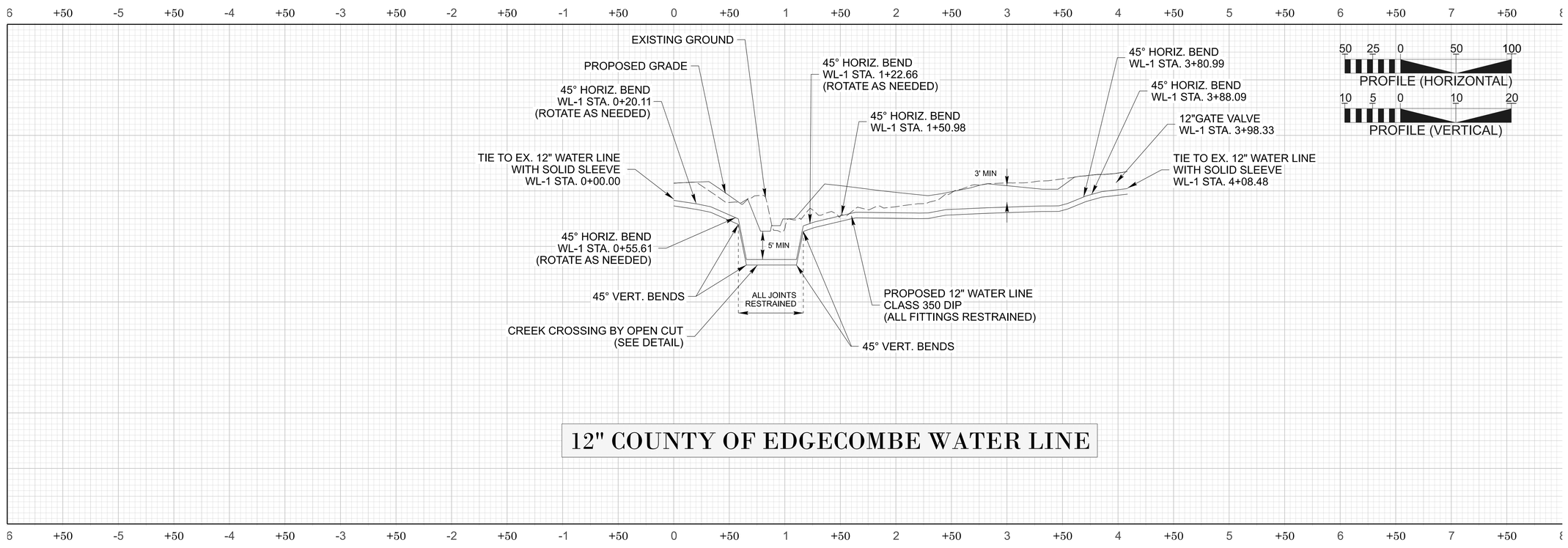
10/28/24

UTILITY CONSTRUCTION

The estimated quantity of ductile Iron Pipe Fittings on this plan sheet is 2440 pounds. The actual quantity and type of fittings will vary based on field conditions.





12" COUNTY OF EDGECOMBE WATER LINE

BP4-R034	
UC	4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION -- COUNTY

UTILITY DESIGN UNIT

UTILITY CONSTRUCTION PLANS ONLY

DESIGNED BY: BCH
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NORTH CAROLINA PROFESSIONAL SEAL 039681 ENGINEER BOBBY C HOUSER

6/19/2026

REVISIONS

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

TIP PROJECT: BP4-R034

CONTRACT:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R034	1	

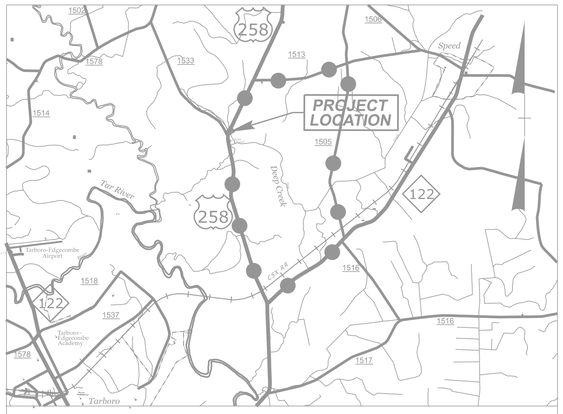
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
EDGECOMBE COUNTY

EDGECOMBE COUNTY

LOCATION: *REPLACE STRUCTURE NO. 320094 ON US 258 OVER A BRANCH OF DEEP CREEK.*

TYPE OF WORK: *UTILITY BY OTHERS*



VICINITY MAP (NTS)
OFFSITE DETOUR

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 50
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UBO-01	TITLE SHEET
UBO-04	UBO PLAN SHEET
UBO-05	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

A. ELECTRIC - DOMINION ENERGY
B. TELECOMMUNICATION - BRIGHTSPEED

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 4
509 Ward Blvd.
Wilson NC, 27529

LONNY SLEEPER *UTILITY ENGINEER*

KENNETH E. STUTTS *UTILITY COORDINATOR*

DIVISION OF HIGHWAYS
DIVISION 4
509 WARD BOULEVARD WILSON NC 27529

ADDISON GAINEY, PE *DIVISION PROJECT DEVELOPMENT ENGINEER*

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

-L- POB 10+00.00
N10°35'38.3"W
-L- PC 11+03.64
N03°19'07.3"W
-L- PT 12+41.73
-L- PC 12+68.07
-L- PT 14+08.75
-L- PC 14+37.29
-L- PT 16+46.26
N06°00'47.8"E
-L- PT 18+08.56
N18°40'27.1"E
-L- PT 19+76.01
N25°05'09.8"E
20

BEGIN TIP Project BP4-R034
-L- POC STA. 13+00.00

END TIP Project BP4-R034
-L- POT STA. 20+25.00

DOMINION TO DIRECTIONAL BORE
15' MINIMUM DEPTH BELOW CREEK BED

BRIGHTSPEED DIRECTIONAL BORE
10' MINIMUM DEPTH BELOW CREEK BED

BRIGHTSPEED
DOMINION
BORE PIT 4'X4'X4'
REMOVE
EXISTING RW
PROP PED & HH
LOW POINT -L- STA. 17+41.94 EL. 43.43'
25' CLEAR SPAN GUARDRAIL SECTION STD. 862.01
CEMETERY (APPROX 50 GRAVES WITHIN SURVEY LIMITS)
POTENTIAL BURIAL
TRIBUTARY OF DEEP CREEK
US-258 NORTH VARIABLE WIDTH BST
SR1553 BATTS CHAPEL RD VARIABLE WIDTH BST
EVERGREENS HEIGHTS LN
HTR
POND
WOODS
GREU-TL3
PAINT STRIPING
500' TAPER
END RESURFACING
LIMITS OF MILLED JOINT
-L- +45.00 EX. R/W
-L- +00.00 EX. R/W 65 (LT)
-L- +10.00 81 (LT)
-L- +25.00 104 (LT)
-L- +65.00 77.15 (LT) 95 (LT)
-L- +65.00 65 (LT)
-L- +50.00 65 (LT)
-L- +25.00 EX. R/W
-L- +35.00 EX. R/W 95 (RT)
-L- +10.00 60 (RT)
-L- +00.00 70 (RT)
-L- +65.00 114 (RT)
-L- +65.00 EX. R/W
MATCHLINE SEE SHEET 5

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

11/14/23

BP4.R034
UBO | 005

S09°53'21"E
389.76'

S76°06'40"W
253.05'

N25°37'23"E
835.68'

EIP

S64°39'49"E
300.01'

-L- POE 24+95.84

JS
JS

N48°51'46"W

1.0' EIP TO R/W

0.97' EIP TO R/W

CARLTON Y HUDSON
Deed Book/Page 1782/972
Plat Book/Page 5/94

WOODS

EXISTING RW

EIP

EIP

12" PVC

UG COMM

12" PVC

UG COMM

T FO

T FO

ABANDON

-BL-

N25°43'10.6"E

US-258 NORTH VARIABLE WIDTH BST

100'

EXISTING RW

MATCHLINE SEE SHEET 4

16" RCP

15" RCP

20'
SOIL
15" RCP

PROP HH

BORE PIT
4'X4'X4'

UG COMM

T FO

ABANDON

RETAIN

T

BORE PIT
4'X4'X4'

EIP

EIP

S81°20'01"E
613.11'

TGSI TW1102 9/16/2026 X:\NCDOT\Division 4 Edgecombe BP4R034\Roadway\Sheets\XSC\Earthwork XSC Volume Summary.xls
Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

PROJ. REFERENCE NO.	SHEET NO.
BP4-R034	X-1

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)	Station L	Undercut (cu. yd.)
14+30.00	0	0	17+50.00	145
14+50.00	5	6	17+75.00	144
14+75.00	4	9	18+00.00	56
15+00.00	5	9	18+25.00	58
15+25.00	10	10	19+50.00	56
15+50.00	8	16		
15+75.00	10	26		
16+00.00	9	45		
16+25.00	5	59		
16+50.00	4	52		
16+75.00	16	42		
17+00.00	17	3		
17+25.00	23	19		
17+50.00	20	95		
17+75.00	1	71		
18+00.00	13	0		
18+25.00	14	66		
18+50.00	6	115		
18+75.00	14	84		
19+00.00	29	57		
19+25.00	24	41		
19+50.00	19	39		
19+75.00	16	34		
20+00.00	15	23		
20+25.00	7	9		

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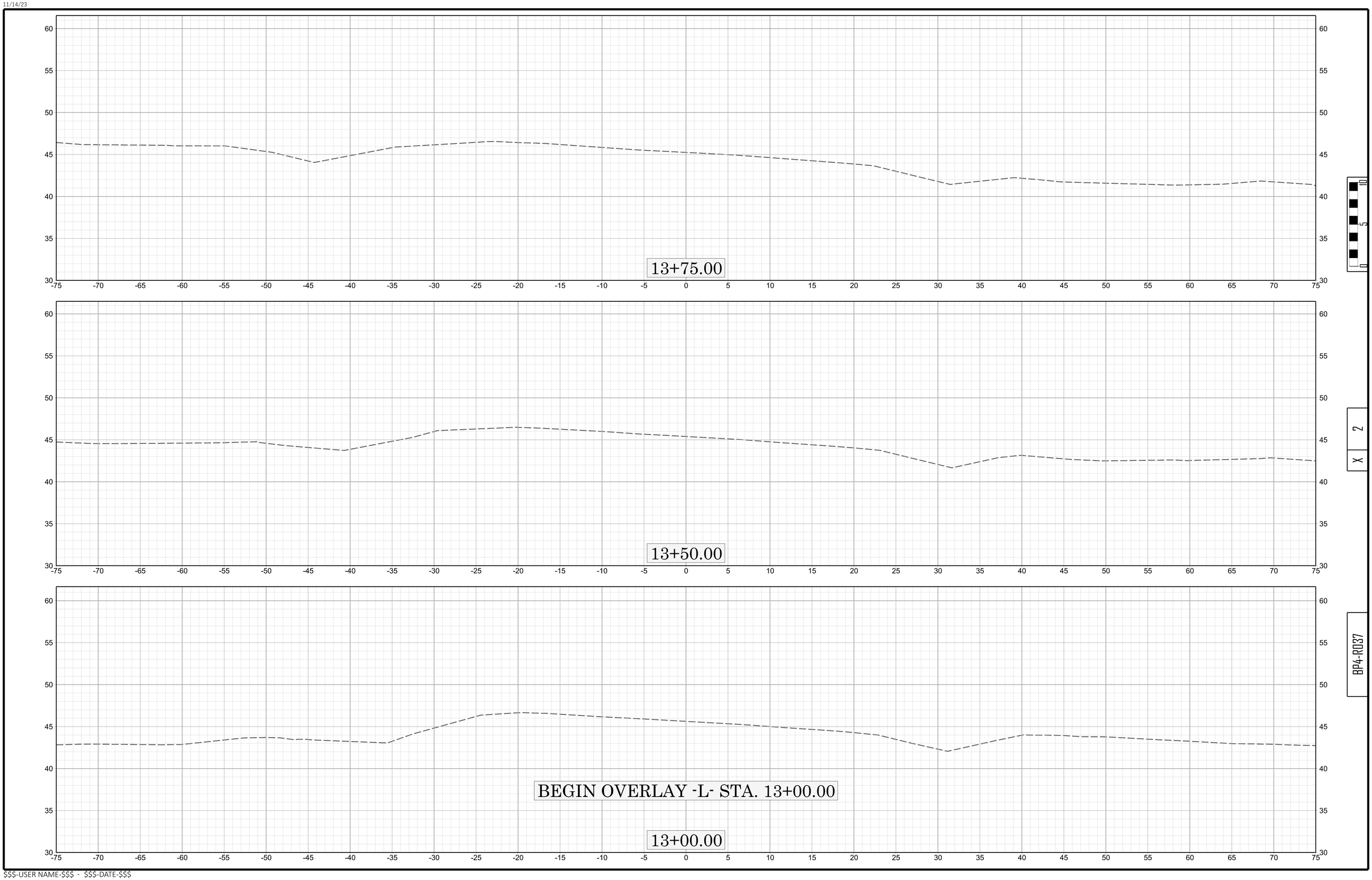

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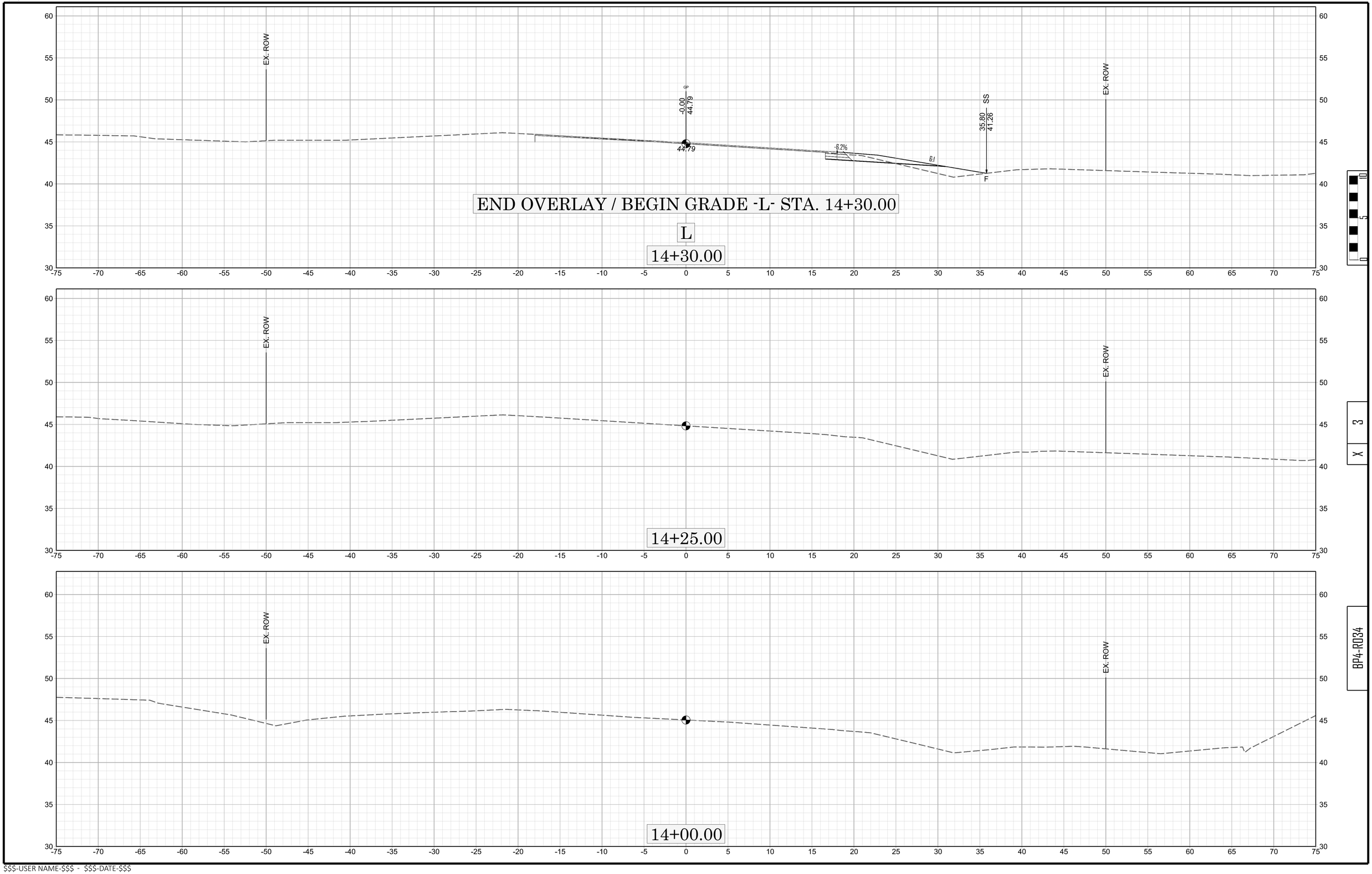
11/14/23



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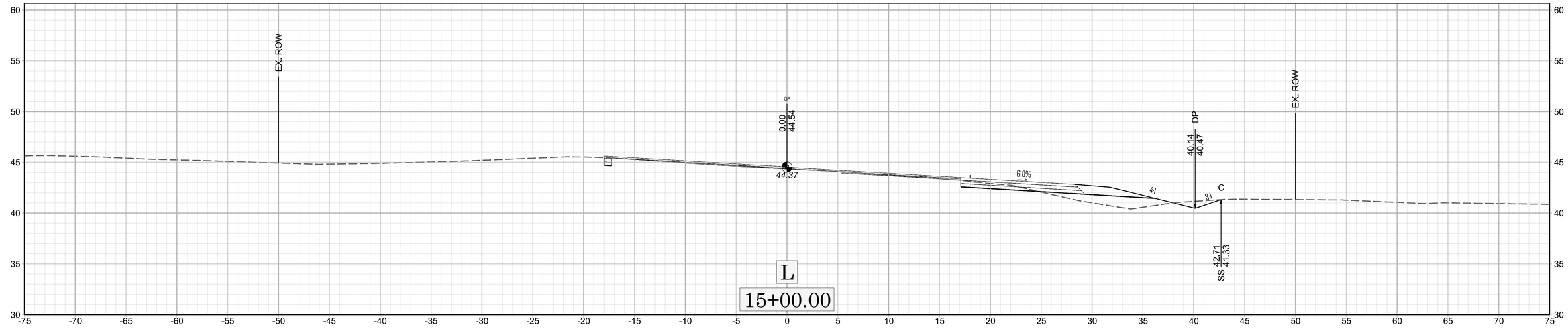

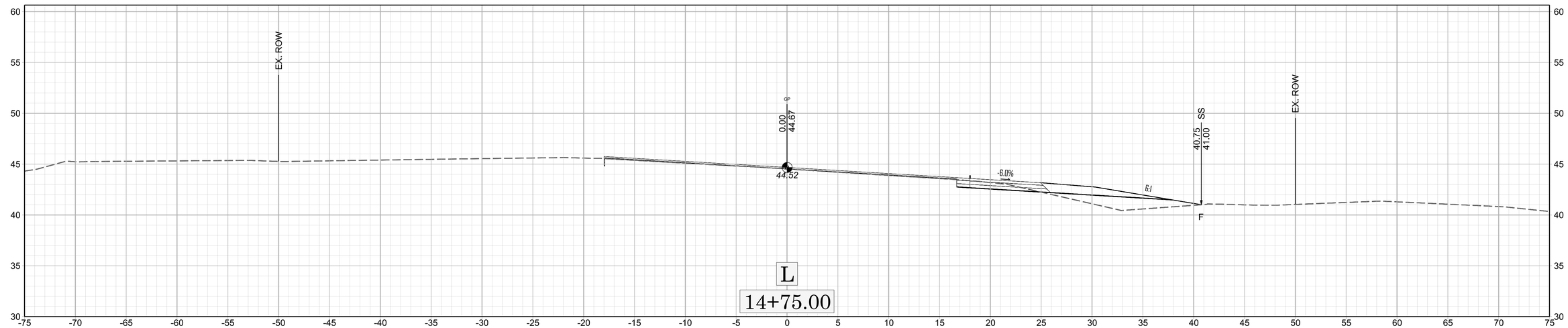

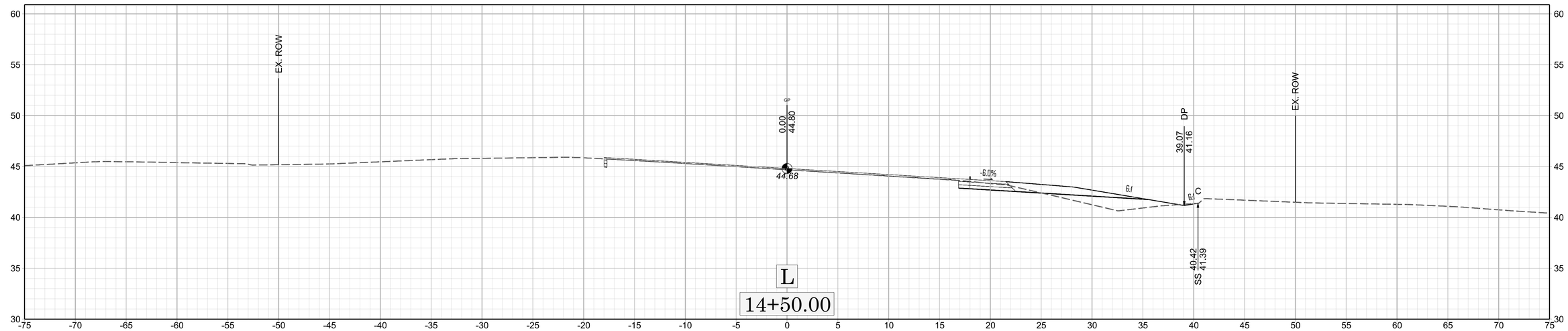

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X

BP4-R034

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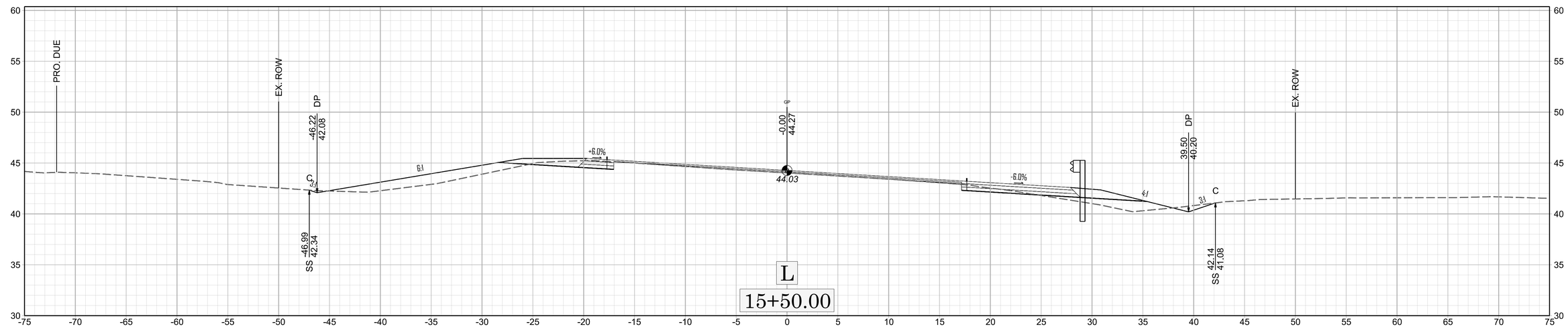

X 5

BP4-R034

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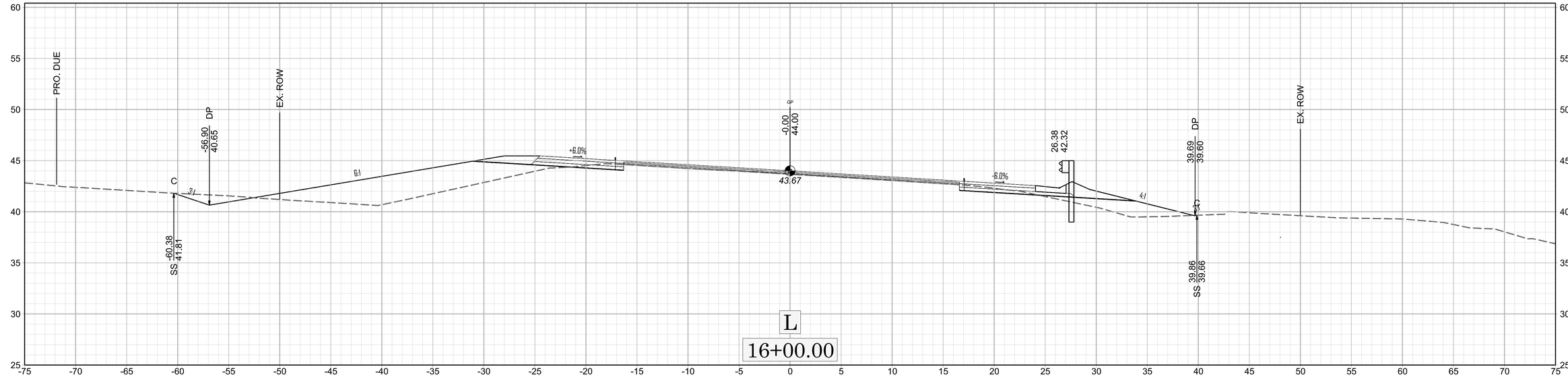

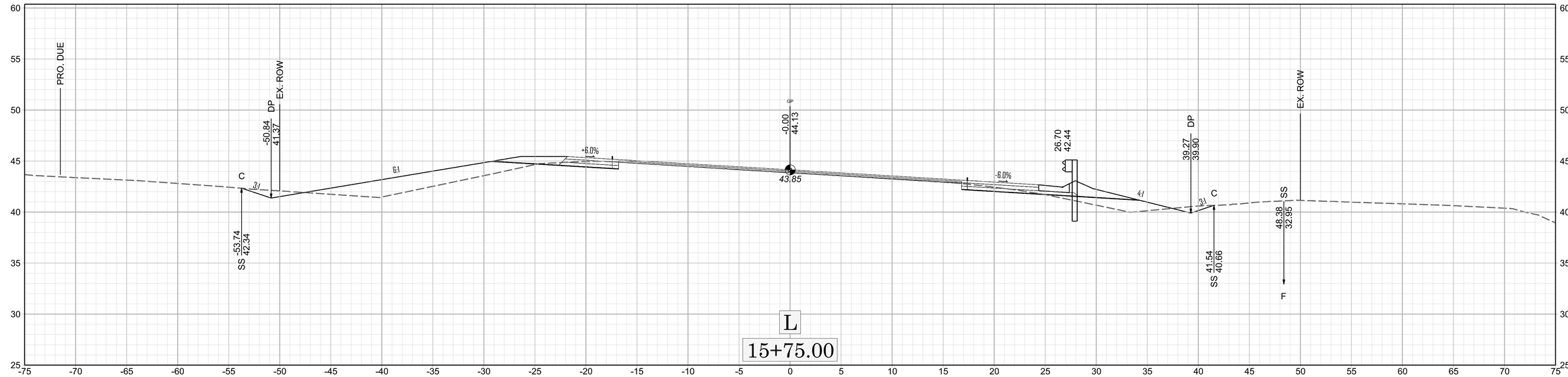

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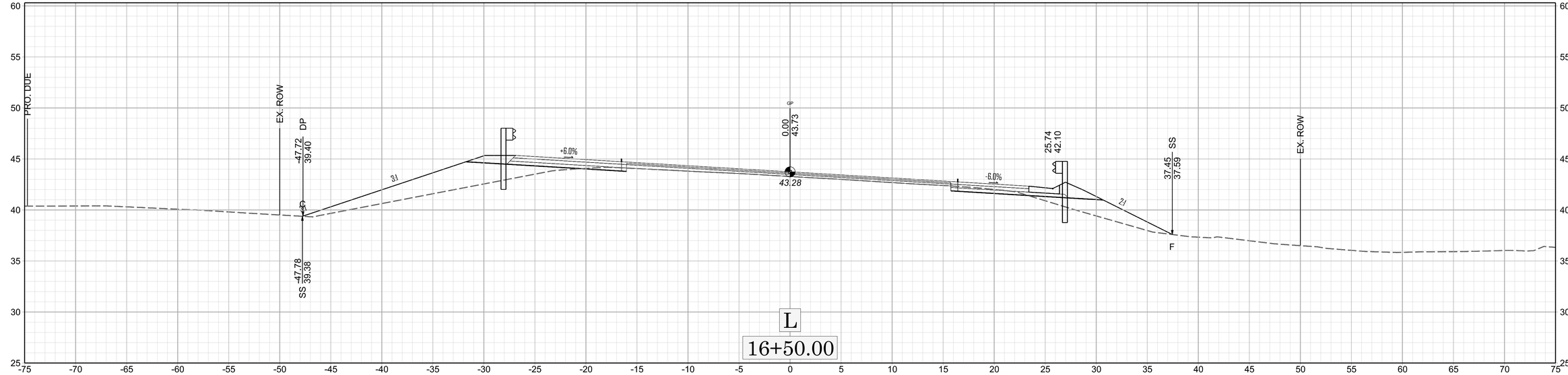

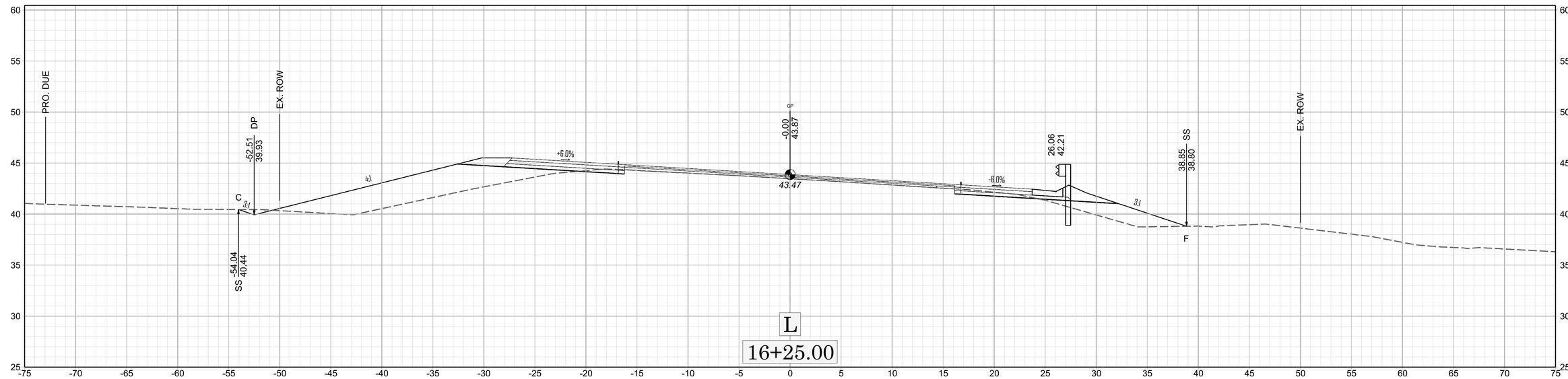

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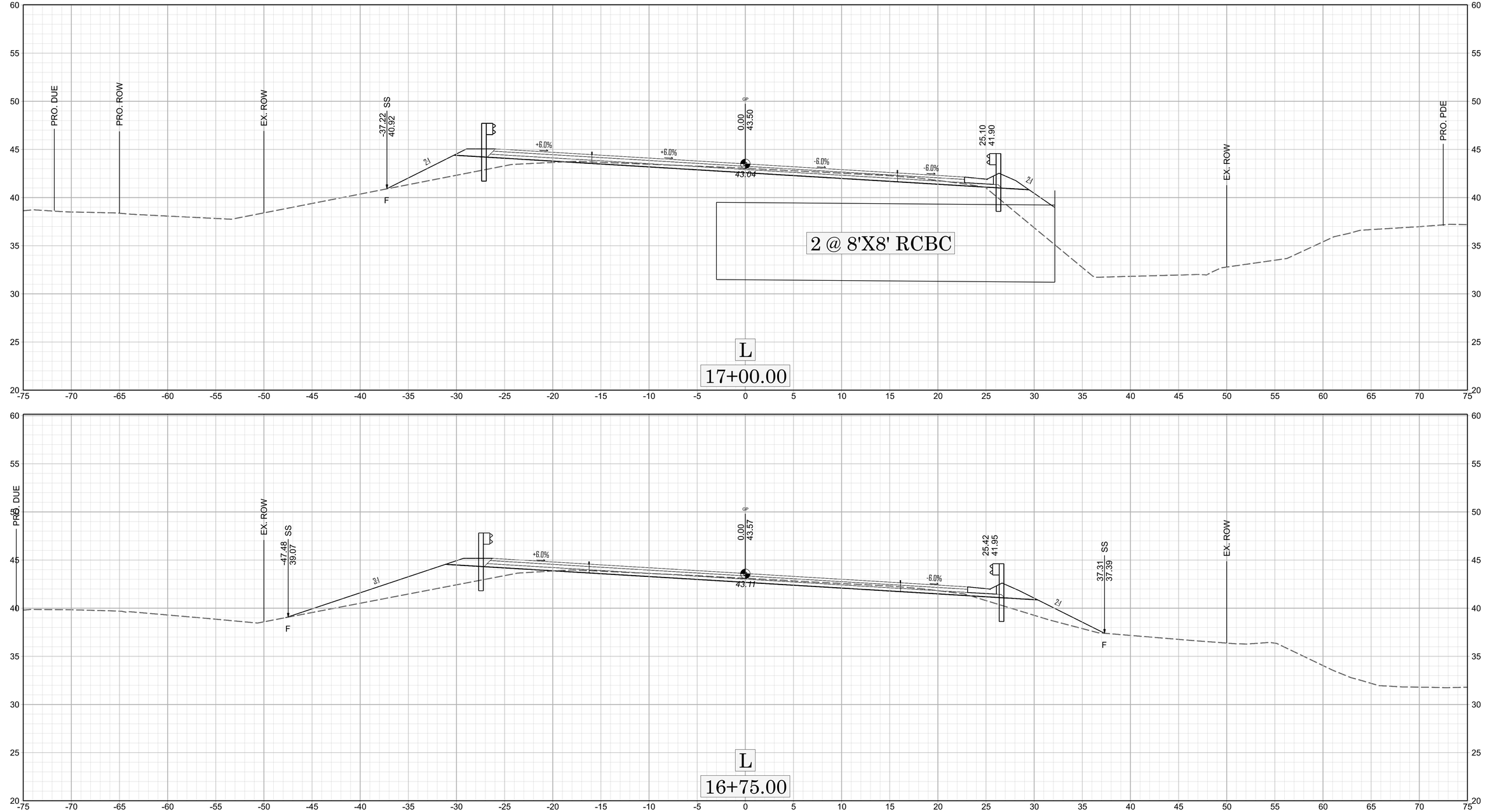

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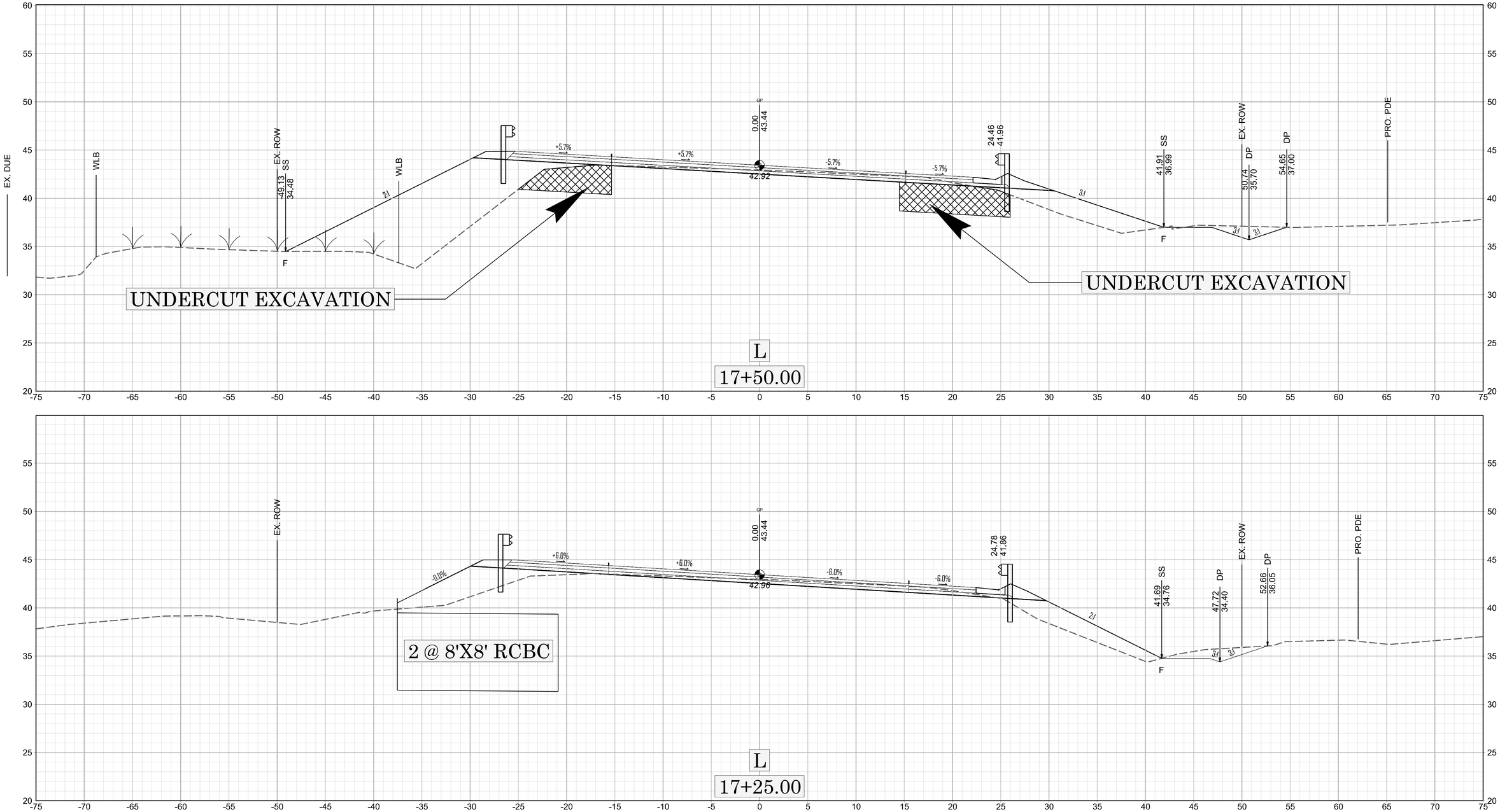

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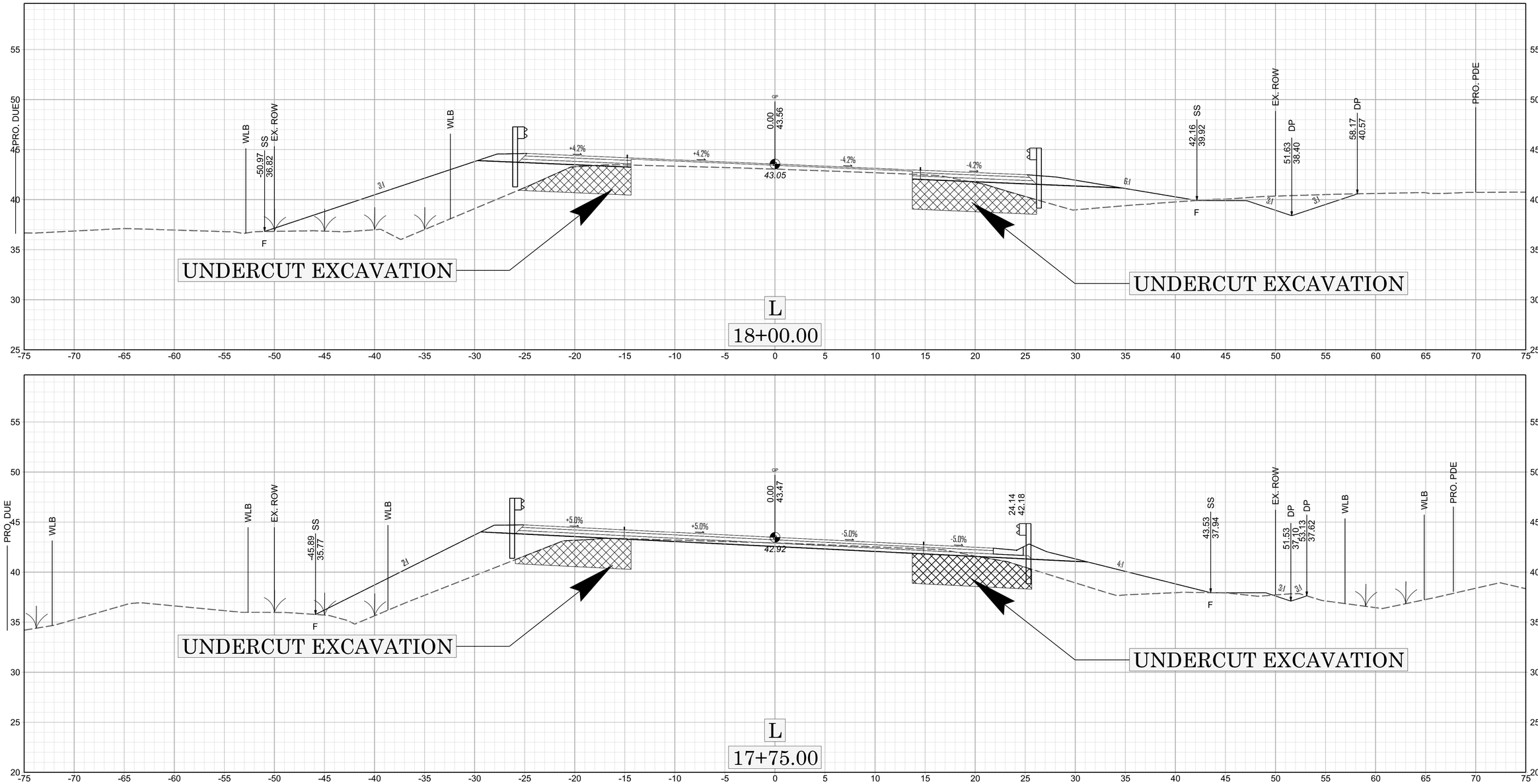

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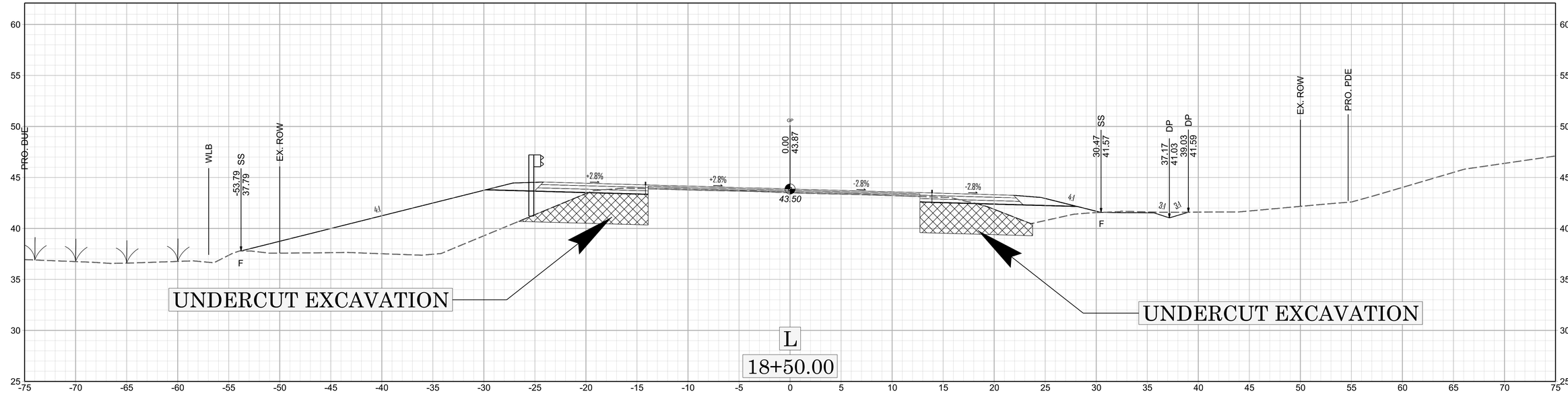

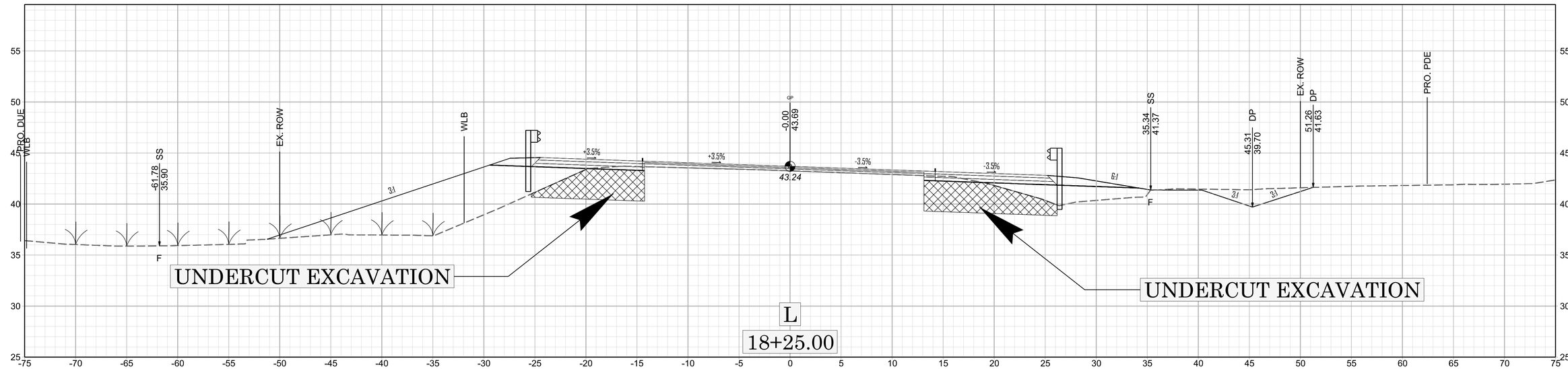

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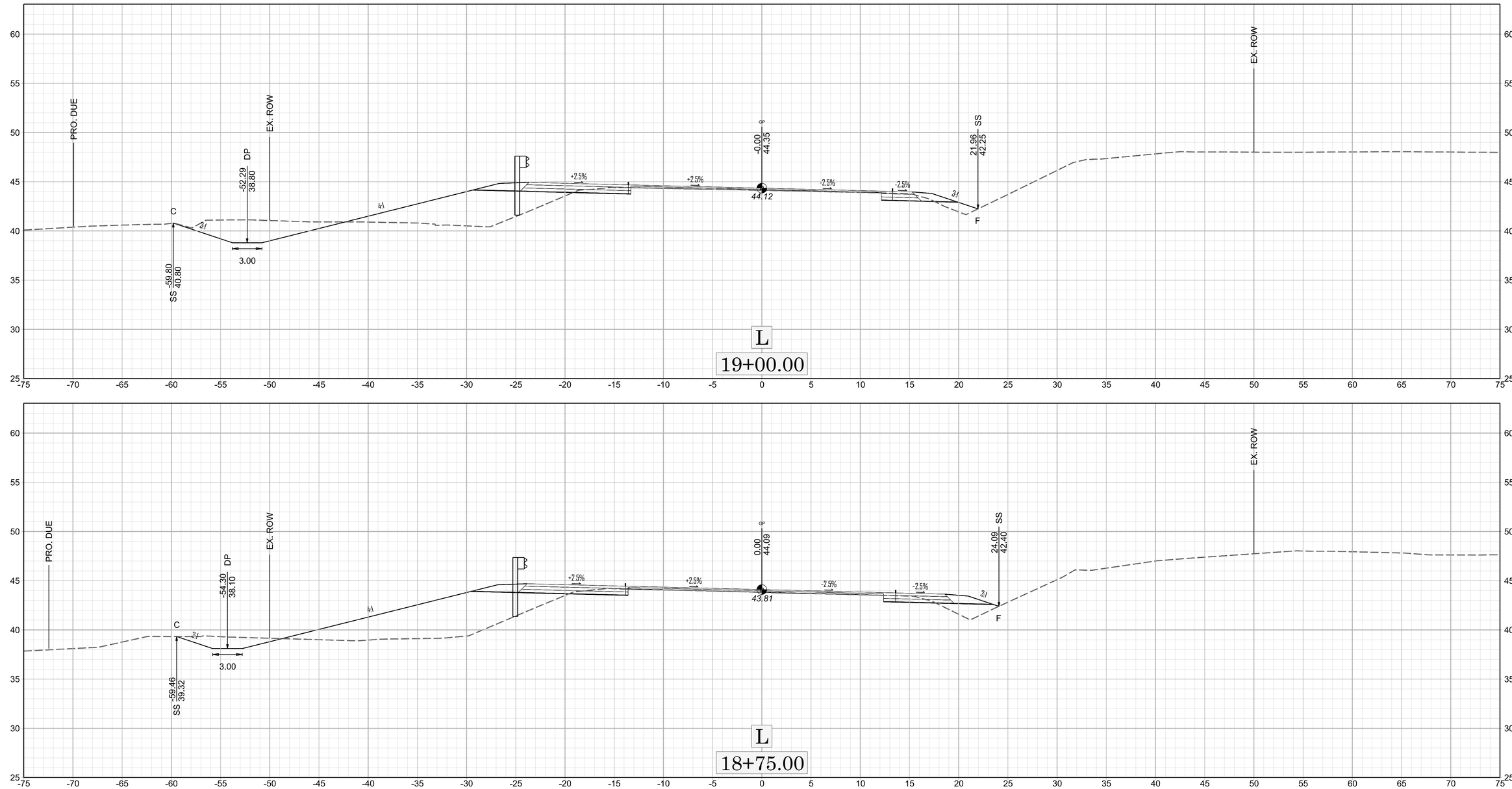

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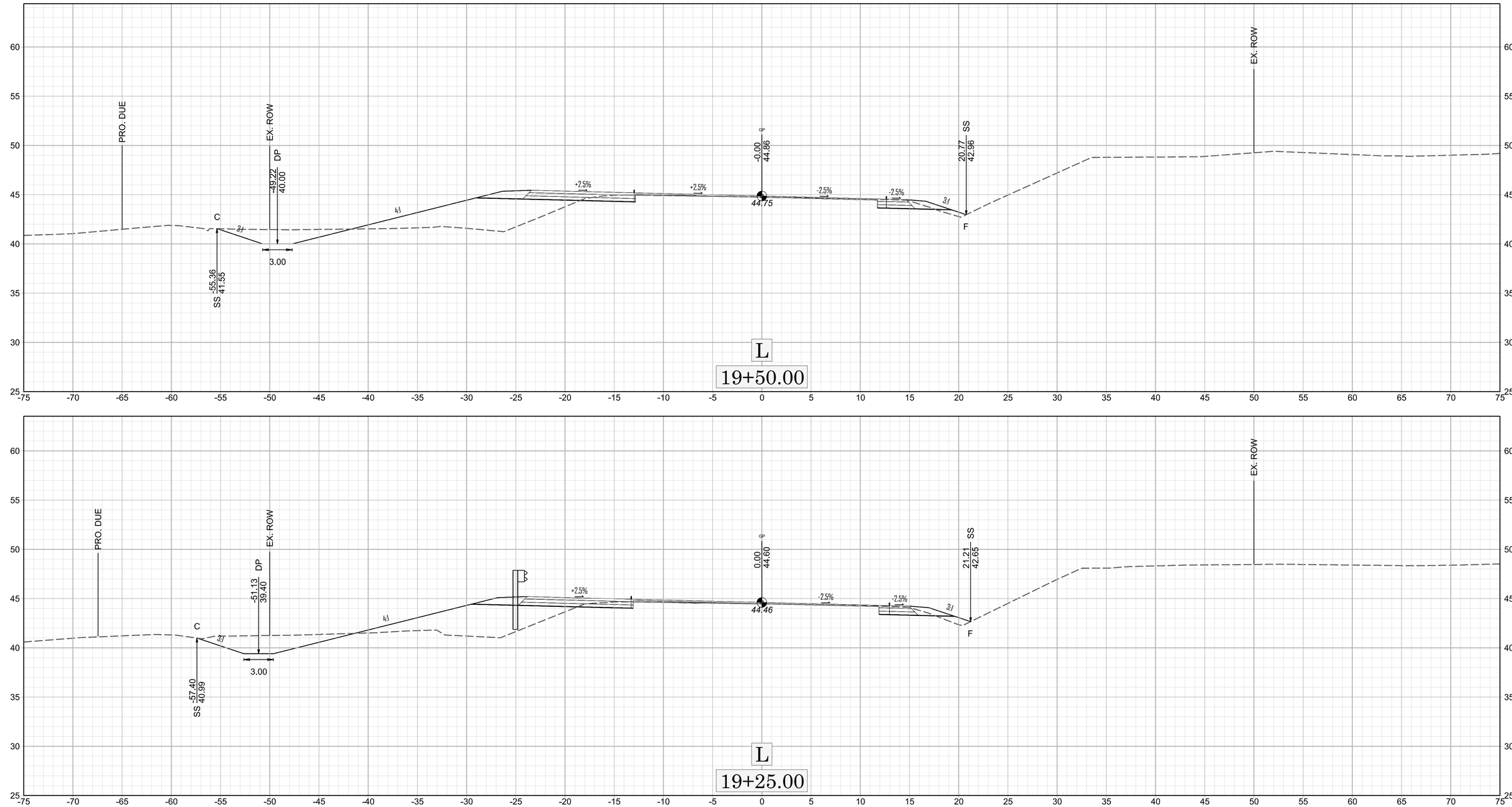

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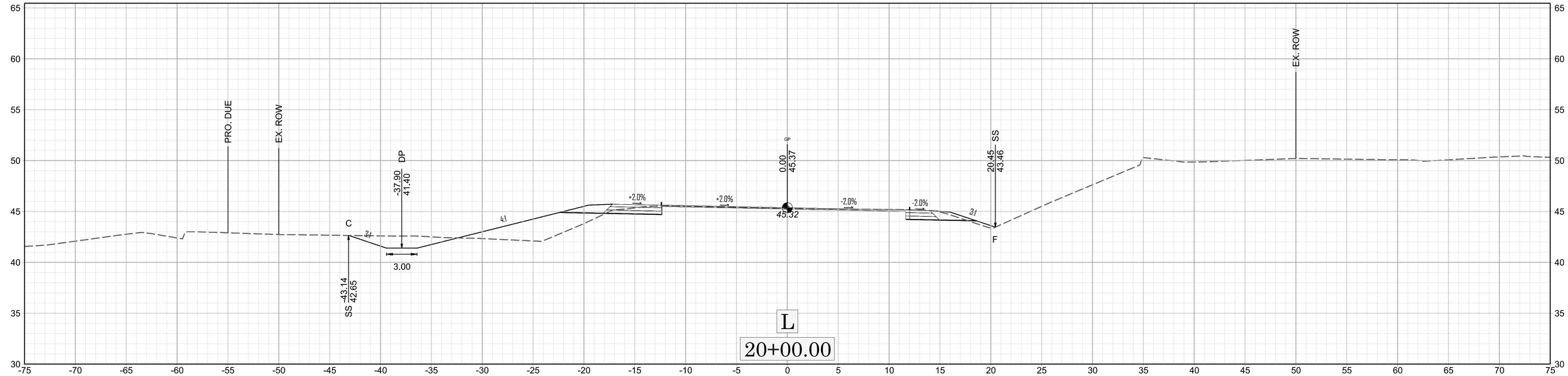

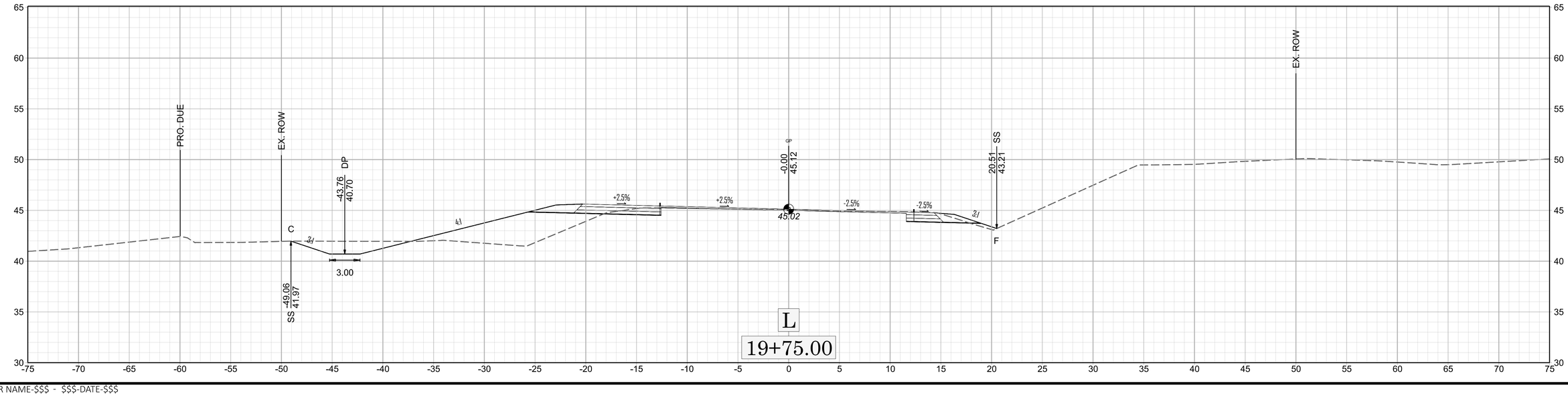

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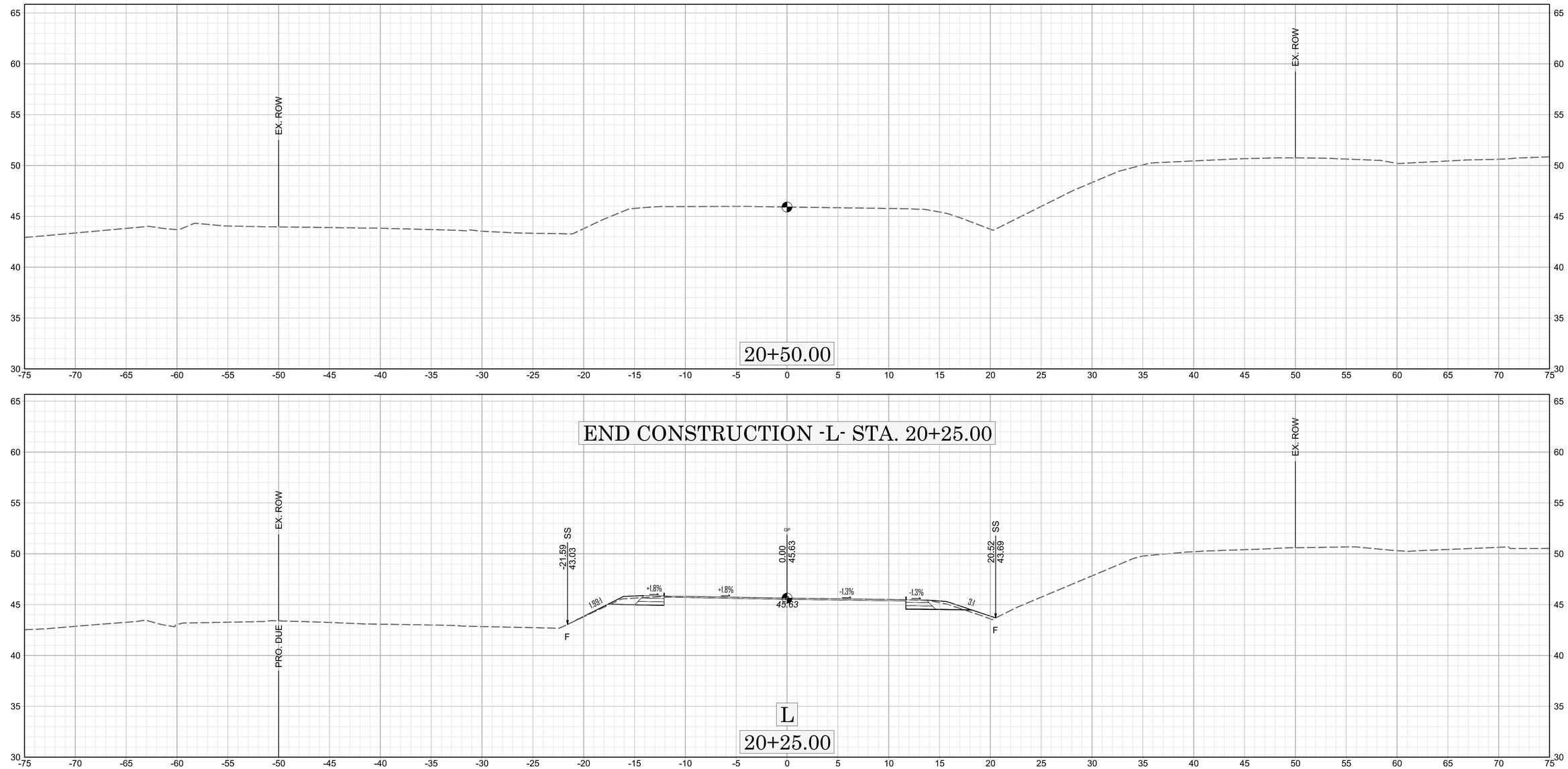
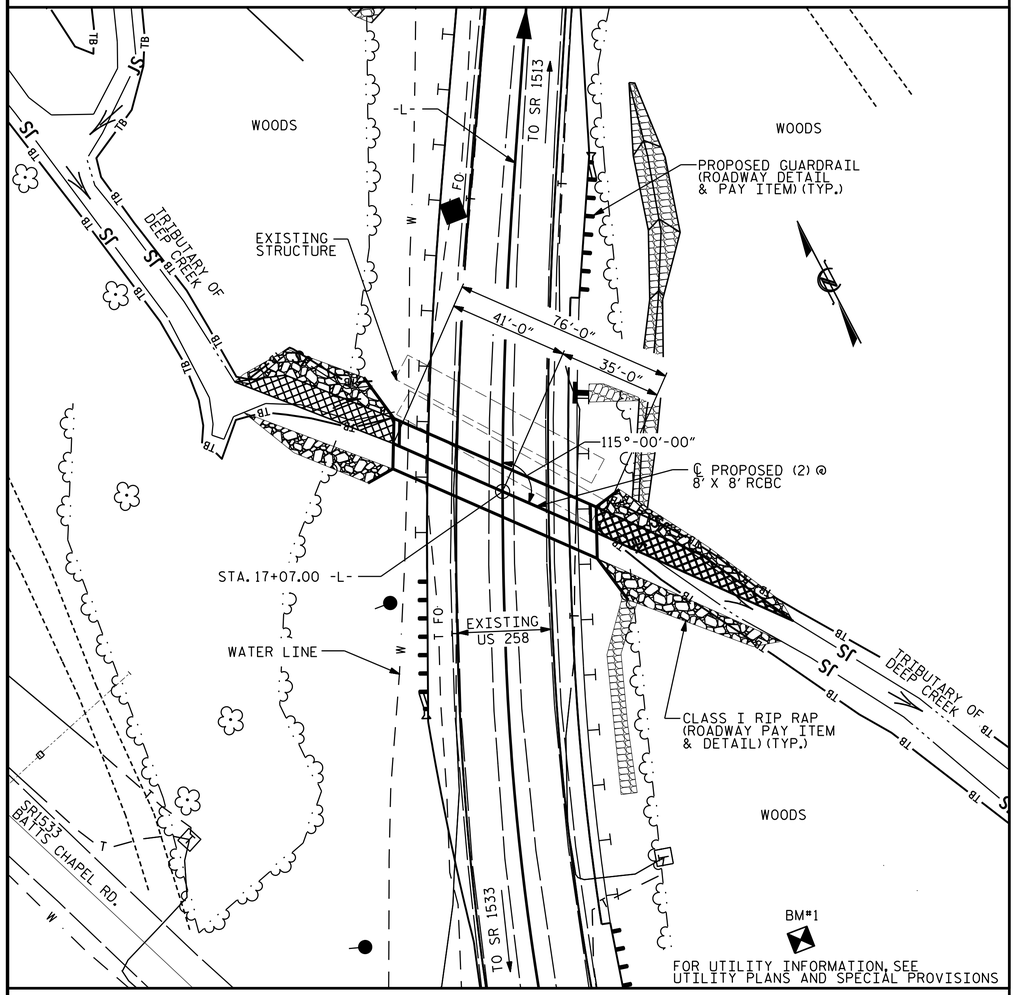


Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

BENCH MARK #1: RR SPIKE SET IN BASE OF 36" OAK
91' RT. OF STA. 15+38.50; ELEV 42.72



LOCATION SKETCH

ROADWAY DATA

GRADE POINT ELEV. @ STA. 17+07.00 -L-	= 43.41
BED ELEV. @ STA. 17+07.00 -L-	= 31.30
ROADWAY SLOPES	= 2 : 1

HYDRAULIC DATA

DESIGN DISCHARGE	= 800 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS
DESIGN HIGH WATER ELEVATION	= 40.1'
DRAINAGE AREA	= 3.8 SQ. MI.
BASIC DISCHARGE (Q100)	= 980 CFS
BASIC HIGH WATER ELEVATION	= 41.0'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1450 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500± YRS
OVERTOPPING FLOOD ELEVATION	= 44.7'

* OVERTOPPING ELEV. REPRESENTS THE LOWEST SHOULDER ELEV. WHICH OCCURS @ -L- STA. 17+39

WS EL. TAKEN @ RIVER STATION 931 (U/S) TOE

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE

BARREL @	2.00 CY/FT	152.0	C.Y.
SILLS		1.2	C.Y.
WINGS, ETC.		28.6	C.Y.
TOTAL		181.8	C.Y.

REINFORCING STEEL

BARREL	17,529	LBS.
WINGS, ETC.	1,671	LBS.
TOTAL	19,200	LBS.

CULVERT EXCAVATION	LUMP SUM
FOUNDATION COND. MATERIAL	119 TONS
REMOVAL OF EXISTING STRUCTURE	LUMP SUM

NOTES

ASSUMED LIVE LOAD ---------- HL-93 OR ALTERNATE LOADING.

DESIGN FILL---------- 1.25' MIN. FILL AND 4.5' MAX FILL.

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

3"Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. PHASE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF PHASE I WALLS AND PHASE I WINGS FULL HEIGHT.
3. PHASE II WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF PHASE II VERTICAL WALLS.
4. THE REMAINING PORTIONS OF PHASE II WALLS AND PHASE II WINGS FULL HEIGHT.
5. ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FT. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

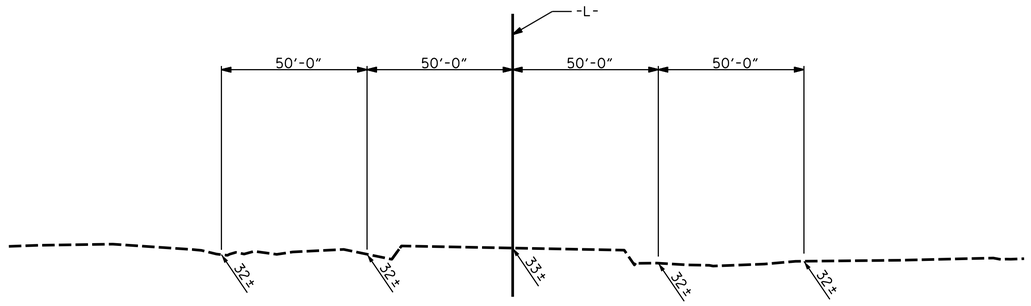
AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

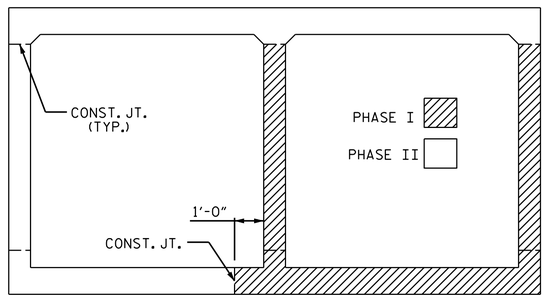
EXCAVATE 1 FOOT BELOW THE BOTTOM OF THE CULVERT AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS. FOUNDATION CONDITIONING MATERIAL SHOULD CONSIST OF SELECT MATERIAL CLASS V OR VI FOR CULVERTS.

IF REQUIRED, UNDERCUT LOOSE SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL.

REMOVAL OF THE EXISTING STRUCTURE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE EXISTING STRUCTURE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.



PROFILE ALONG ℄ CULVERT



CONSTRUCTION PHASING

(LOOKING DOWNSTREAM)

PROJECT NO. BP4-R034
EDGECOMBE COUNTY
STATION: 17+07.00 -L-

SHEET 1 OF 7 REPLACES STR. #320094

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.
5FBCC2F3A4DC413...
10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 8 FT. CONCRETE BOX CULVERT 115°-00'-00" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			7

DRAWN BY : ZCS DATE : 1/26
CHECKED BY : MGC DATE : 2/26
DESIGN ENGINEER OF RECORD: ZCS DATE : 2/26

3/12/2026
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ZSmith

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8/26/21

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE									COMMENT NUMBER
							LIVE-LOAD FACTORS (γ LL)	MOMENT				SHEAR				
								RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	RATING FACTOR	BOX NO.	ELEMENT TYPE	DISTANCE FROM LEFT END OF ELEMENT (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	1	1.11	--	1.75	1.11	1	BOTTOM SLAB	8.42	1.15	1	BOTTOM SLAB	7.82	
		HL-93 (OPERATING)	N/A		1.43	--	1.35	1.43	1	BOTTOM SLAB	8.42	1.49	1	BOTTOM SLAB	7.82	
		HS-20 (INVENTORY)	36.000	2	1.10	39.60	1.75	1.10	1	BOTTOM SLAB	8.42	1.14	1	BOTTOM SLAB	7.82	
		HS-20 (OPERATING)	36.000		1.42	51.12	1.35	1.42	1	BOTTOM SLAB	8.42	1.48	1	BOTTOM SLAB	7.82	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.49	33.62	1.40	2.49	1	TOP SLAB	4.23	3.06	1	TOP SLAB	7.55	
		SNGARBS2	20.000		2.17	43.40	1.40	2.17	1	BOTTOM SLAB	8.42	2.45	1	BOTTOM SLAB	7.82	
		SNAGRIS2	22.000		2.00	44.00	1.40	2.00	1	BOTTOM SLAB	8.42	2.17	1	BOTTOM SLAB	7.82	
		SNCOTTS3	27.250		1.55	42.24	1.40	1.55	1	BOTTOM SLAB	8.42	1.68	1	TOP SLAB	7.55	
		SNAGGRS4	34.925		1.53	53.44	1.40	1.53	1	BOTTOM SLAB	8.42	1.63	1	BOTTOM SLAB	7.82	
		SNS5A	35.550		1.49	52.97	1.40	1.49	1	BOTTOM SLAB	8.42	1.56	1	BOTTOM SLAB	7.82	
		SNS6A	39.950		1.38	55.13	1.40	1.38	1	BOTTOM SLAB	8.42	1.45	1	BOTTOM SLAB	7.82	
		SNS7B	42.000		1.38	57.96	1.40	1.38	1	BOTTOM SLAB	8.42	1.45	1	BOTTOM SLAB	7.82	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.99	65.67	1.40	1.99	1	BOTTOM SLAB	8.42	2.16	1	BOTTOM SLAB	7.82	
		TNT4A	33.075		1.57	51.93	1.40	1.57	1	BOTTOM SLAB	8.42	1.69	1	BOTTOM SLAB	7.82	
		TNT6A	41.600		1.58	65.73	1.40	1.58	1	BOTTOM SLAB	8.42	1.69	1	BOTTOM SLAB	7.82	
		TNT7A	42.000		1.56	65.52	1.40	1.56	1	BOTTOM SLAB	8.42	1.66	1	BOTTOM SLAB	7.82	
		TNT7B	42.000		1.45	60.90	1.40	1.45	1	BOTTOM SLAB	8.42	1.55	1	BOTTOM SLAB	7.82	
		TNAGRIT4	43.000		1.35	58.05	1.40	1.35	1	BOTTOM SLAB	8.42	1.43	1	BOTTOM SLAB	7.82	
		TNAGT5A	45.000		1.35	60.75	1.40	1.35	1	BOTTOM SLAB	8.42	1.43	1	BOTTOM SLAB	7.82	
		TNAGT5B	45.000	3	1.32	59.40	1.40	1.32	1	BOTTOM SLAB	8.42	1.39	1	BOTTOM SLAB	7.82	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.76	50.60	1.30	1.76	1	TOP SLAB	4.23	1.83	1	BOTTOM SLAB	7.82	
		EV3	43.000	4	1.43	61.49	1.30	1.43	1	BOTTOM SLAB	8.42	1.46	1	TOP SLAB	7.55	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS

LOAD TYPE	MAX FACTOR	MIN FACTOR
DC	1.25	0.90
DW	1.50	0.65
EV	1.30	0.90
EH	1.35	0.90
ES	1.35	0.90
LS	1.75	--
WA	1.00	--

NOTES:

RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATES.

COMMENTS:

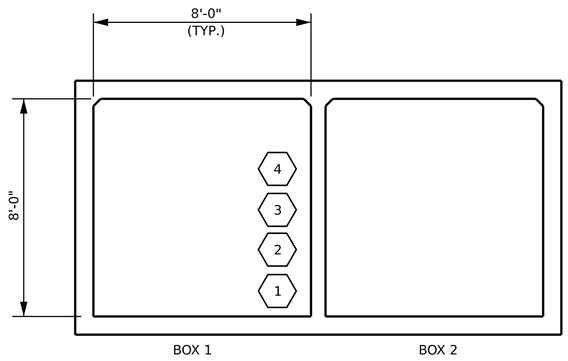
1.

2.

3.

4.

(#) CONTROLLING LOAD RATING
(1) DESIGN LOAD RATING (HL-93)
(2) DESIGN LOAD RATING (HS-20)
(3) LEGAL LOAD RATING * *
(4) EMERGENCY VEHICLE LOAD RATING * *
* * SEE CHART FOR VEHICLE TYPE



LRFR SUMMARY

(LOOKING DOWNSTREAM)

PROJECT NO. BP4-R034

EDGECOMBE COUNTY

STATION: 17+07.00 -L-

SHEET 2 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.

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10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			7

ASSEMBLED BY:	ZCS	DATE :	1/26
CHECKED BY :	MGC	DATE :	2/26
DRAWN BY : WMC	7/11	REV. 10/1/11	MAA/GM
CHECKED BY : GM	7/11	REV. 12/17	MAA/THC
		REV. 04/23	BNB/AAI

3/12/2026
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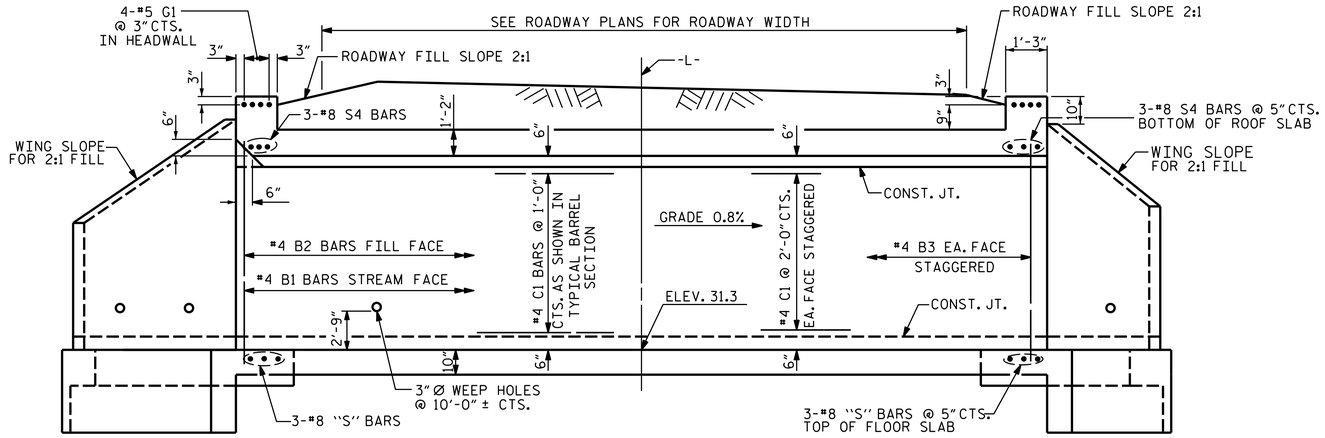
ZSmith

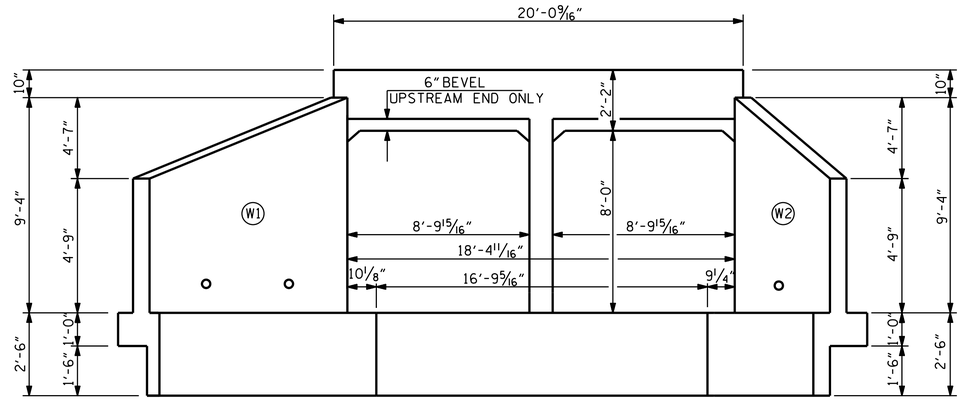
STD. NO. LRFR5

Docusign Envelope ID: 6FEAED09-9FD4-878D-81E4-BF2E42673348

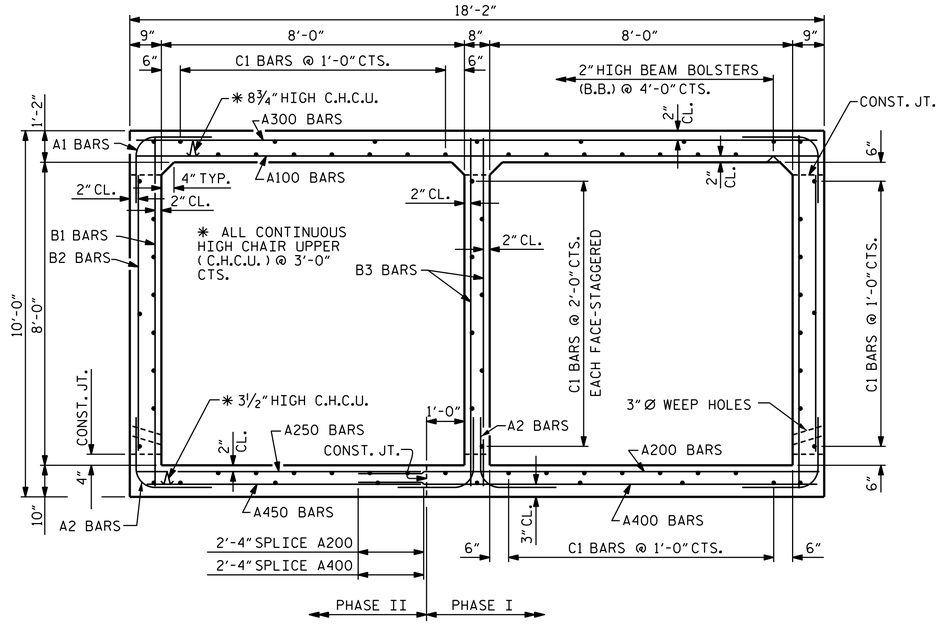


EXTERIOR WALL INTERIOR WALL

CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION NORMAL TO SKEW



RIGHT ANGLE SECTION OF BARREL

THERE ARE 72 "C" BARS IN SECTION OF BARREL.
LOOKING DOWNSTREAM

PROJECT NO. BP4-R034
EDGECOMBE COUNTY
STATION: 17+07.00 -L-

SHEET 3 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CREEK, JR.
5FBCC2F3A4C0413...
10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 8 FT. CONCRETE BOX CULVERT 115°-00'-00" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-3
1			3			TOTAL SHEETS
2			4			7

DRAWN BY : ZCS DATE : 1/26
CHECKED BY : MGC DATE : 2/26
DESIGN ENGINEER OF RECORD: ZCS DATE : 2/26

3/12/2026
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ZSmith

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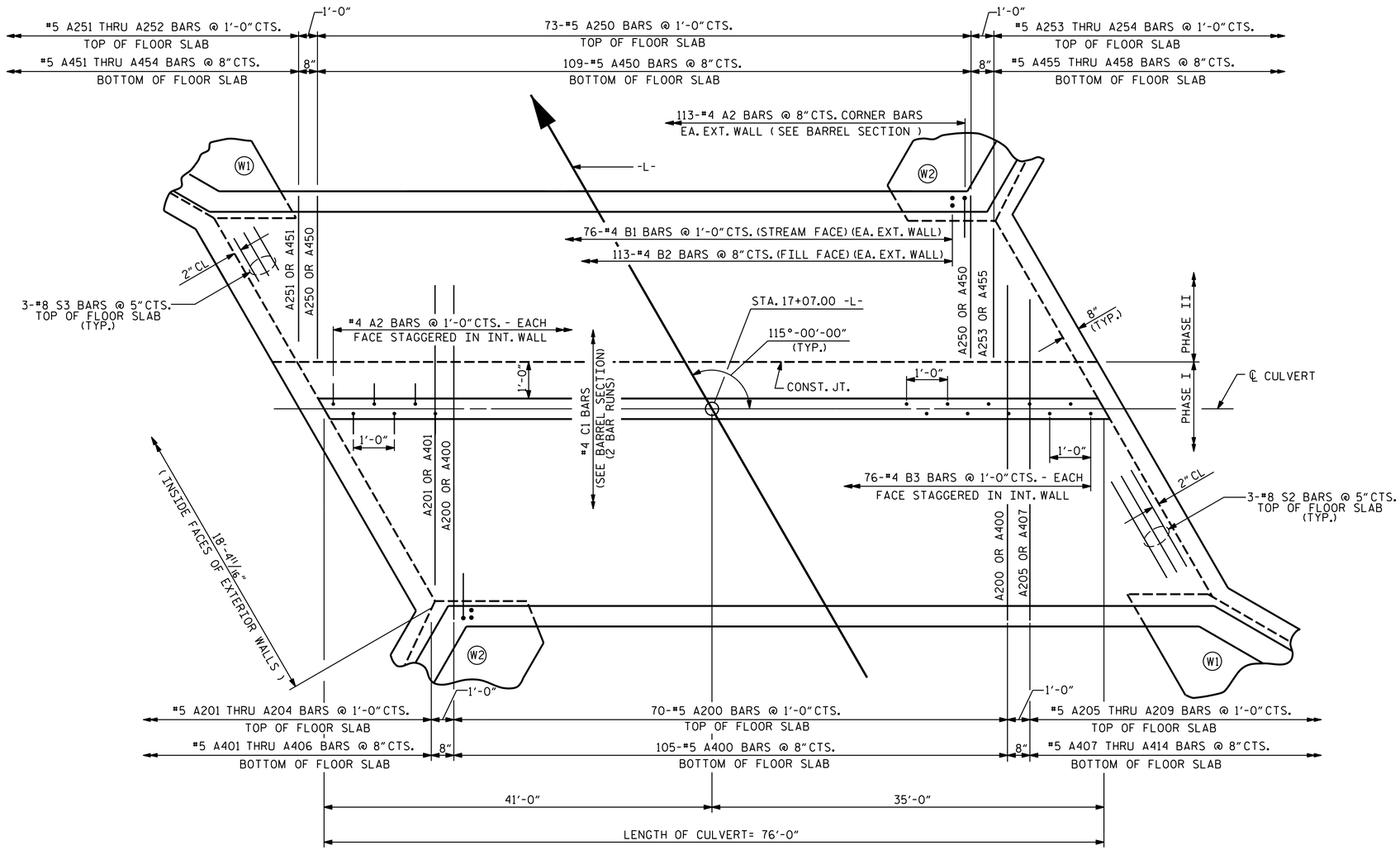

PART PLAN - FLOOR SLAB

FOR S1 BARS IN FLOOR SLAB & FOOTING, SEE WING SHEET.

PROJECT NO. BP4-R034

EDGECOMBE COUNTY

STATION: 17+07.00 -L-

SHEET 4 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. GERLICK, JR.
SFBCC2F3A4E4E0...
10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 8 FT. CONCRETE BOX CULVERT 115°-00'-00" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-4
1			3			TOTAL SHEETS
2			4			7

DRAWN BY :	ZCS	DATE :	1/26
CHECKED BY :	MGC	DATE :	2/26
DESIGN ENGINEER OF RECORD:	ZCS	DATE :	2/26

3/12/2026
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ZSmith

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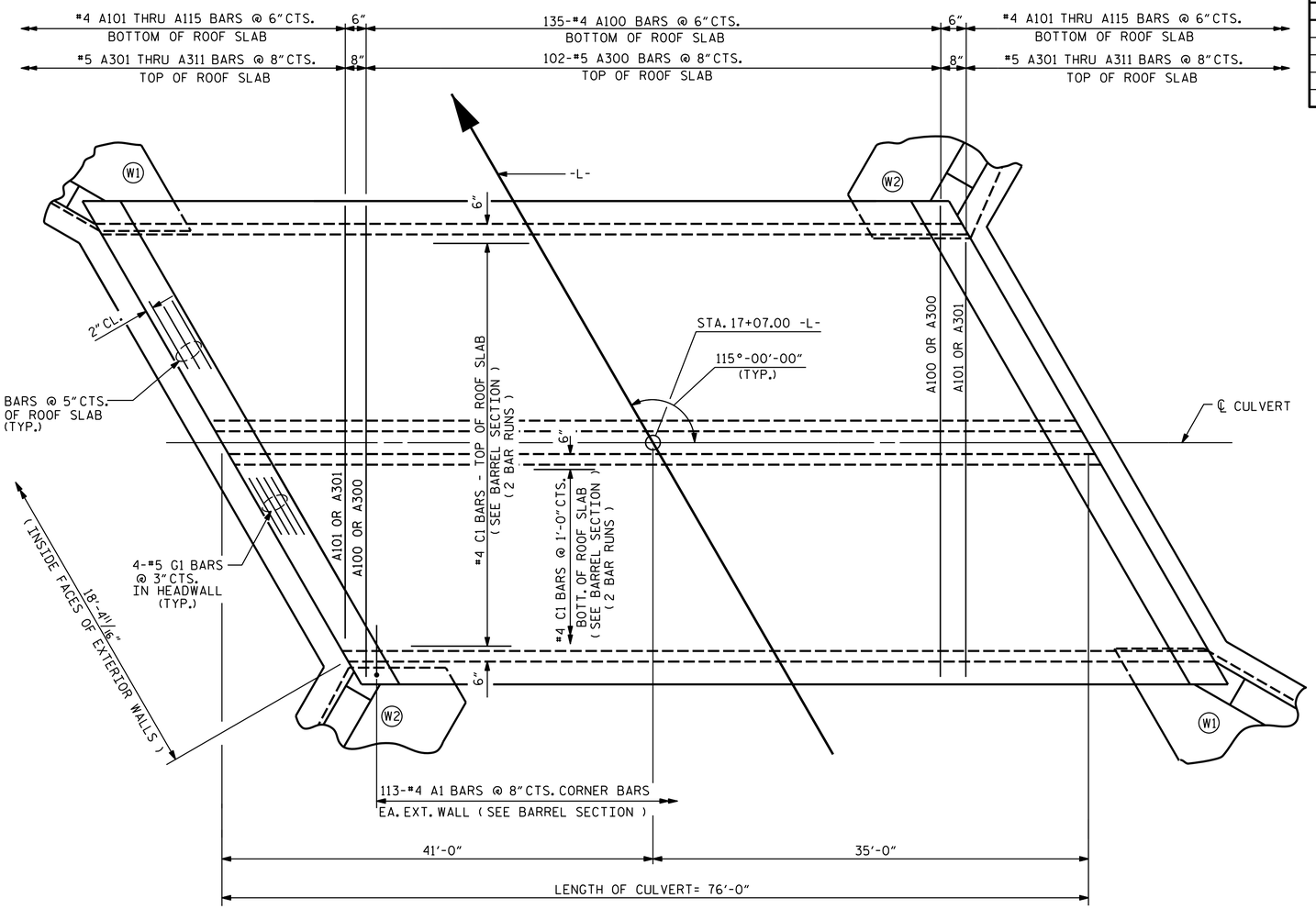
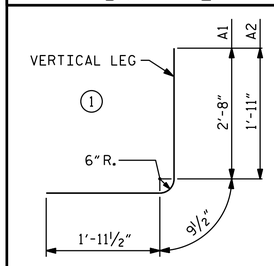


PART PLAN - ROOF SLAB

BAR TYPE



DIMENSIONS ARE OUT TO OUT

SPLICE LENGTH CHART

BAR	SIZE	SPLICE LENGTH
A200	#5	2'-4"
A400	#5	2'-4"
"B"	#4	1'-10"
C1	#4	1'-10"
"S"	#8	3'-8"

BAR SCHEDULE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	226	#4	1	5'-5"	818
A2	378	#4	1	4'-8"	1178
A100	135	#4	STR	17'-10"	1608
A101	2	#4	STR	17'-1"	23
A102	2	#4	STR	16'-0"	21
A103	2	#4	STR	14'-11"	20
A104	2	#4	STR	13'-10"	18
A105	2	#4	STR	12'-9"	17
A106	2	#4	STR	11'-8"	16
A107	2	#4	STR	10'-8"	14
A108	2	#4	STR	9'-7"	13
A109	2	#4	STR	8'-6"	11
A110	2	#4	STR	7'-5"	10
A111	2	#4	STR	6'-4"	8
A112	2	#4	STR	5'-3"	7
A113	2	#4	STR	4'-2"	6
A114	2	#4	STR	3'-1"	4
A115	2	#4	STR	2'-1"	3
A200	70	#5	STR	12'-9"	931
A201	1	#5	STR	10'-11"	11
A202	1	#5	STR	8'-9"	9
A203	1	#5	STR	6'-7"	7
A204	1	#5	STR	4'-6"	5
A205	1	#5	STR	11'-8"	12
A206	1	#5	STR	9'-7"	10
A207	1	#5	STR	7'-5"	8
A208	1	#5	STR	5'-3"	5
A209	1	#5	STR	3'-1"	3
A250	73	#5	STR	7'-5"	565
A251	1	#5	STR	5'-3"	5
A252	1	#5	STR	3'-1"	3
A253	1	#5	STR	5'-7"	6
A254	1	#5	STR	3'-5"	4
A300	102	#5	STR	17'-10"	1897
A301	2	#5	STR	16'-4"	34
A302	2	#5	STR	14'-11"	31
A303	2	#5	STR	13'-6"	28
A304	2	#5	STR	12'-1"	25
A305	2	#5	STR	10'-8"	22
A306	2	#5	STR	9'-2"	19
A307	2	#5	STR	7'-9"	16
A308	2	#5	STR	6'-4"	13
A309	2	#5	STR	4'-11"	10
A310	2	#5	STR	3'-6"	7
A311	2	#5	STR	2'-1"	4

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A400	105	#5	STR	12'-9"	1396
A401	1	#5	STR	11'-4"	12
A402	1	#5	STR	9'-11"	10
A403	1	#5	STR	8'-6"	9
A404	1	#5	STR	7'-1"	7
A405	1	#5	STR	5'-7"	6
A406	1	#5	STR	4'-2"	4
A407	1	#5	STR	12'-1"	13
A408	1	#5	STR	10'-8"	11
A409	1	#5	STR	9'-2"	10
A410	1	#5	STR	7'-9"	8
A411	1	#5	STR	6'-4"	7
A412	1	#5	STR	4'-11"	5
A413	1	#5	STR	3'-6"	4
A414	1	#5	STR	2'-1"	2
A450	109	#5	STR	7'-5"	843
A451	1	#5	STR	6'-4"	7
A452	1	#5	STR	4'-11"	5
A453	1	#5	STR	3'-6"	4
A454	1	#5	STR	2'-1"	2
A455	1	#5	STR	5'-11"	6
A456	1	#5	STR	4'-6"	5
A457	1	#5	STR	3'-1"	3
A458	1	#5	STR	1'-8"	2
B1	152	#4	STR	9'-7"	973
B2	226	#4	STR	7'-4"	1107
B3	152	#4	STR	9'-7"	973
C1	144	#4	STR	38'-10"	3735
D1	6	#6	STR	2'-5"	22
G1	8	#5	STR	19'-8"	164
S2	6	#8	STR	15'-2"	243
S3	6	#8	STR	8'-2"	131
S4	6	#8	STR	19'-8"	315

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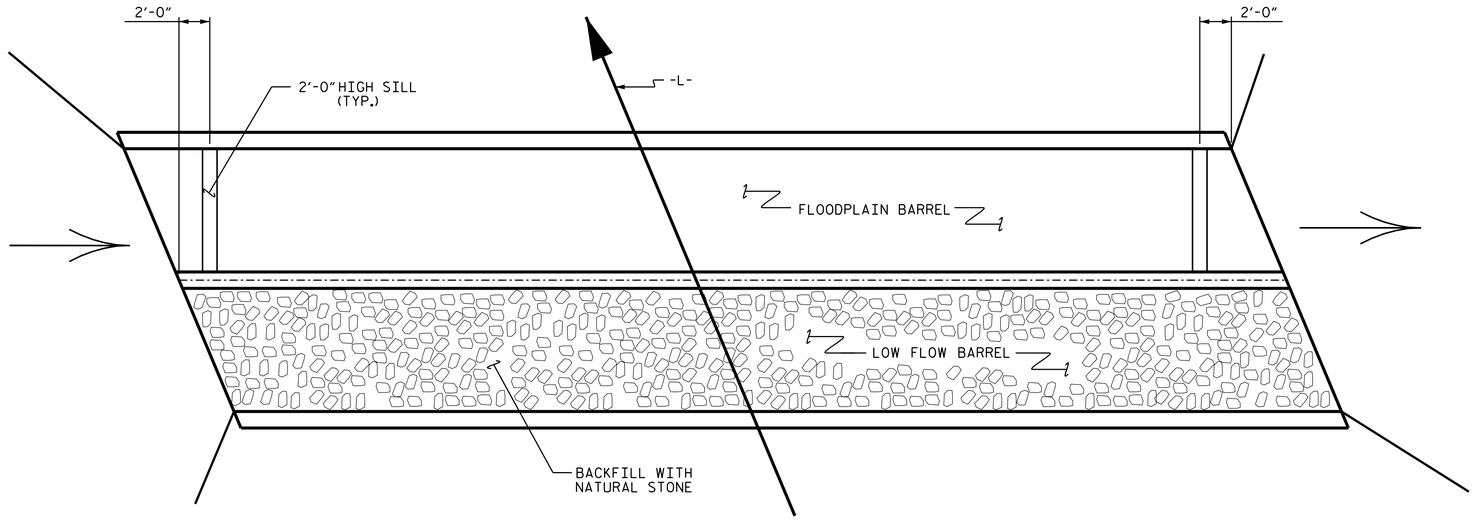
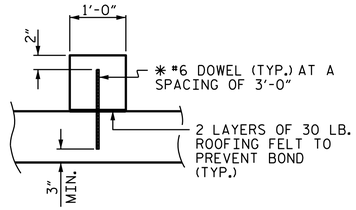


PLAN OF FLOOR SILL LAYOUT



SECTION THROUGH SILL

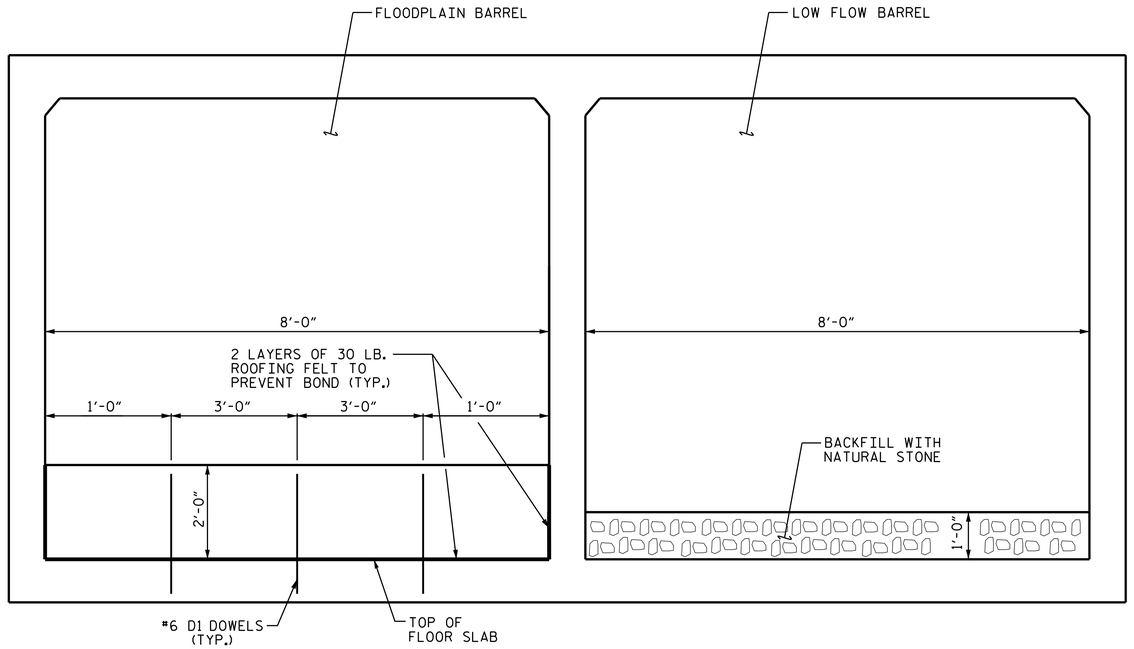
* DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.

NOTES

THE ENTIRE COST OF WORK REQUIRED TO PLACE EXCAVATED MATERIAL OR SUPPLEMENTAL MATERIAL AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE BID FOR CULVERT EXCAVATION.

THE ENTIRE COST OF WORK REQUIRED TO CONSTRUCT THE SILLS SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE ENGINEER, IN CONSULTATION WITH DEO STAFF, SHALL REVIEW ALL MATERIAL TO BE USED AS BACKFILL PRIOR TO CONDUCTING THE BACKFILL ACTIVITY. BACKFILL SHALL CONSIST OF NATIVE MATERIAL ONLY UNLESS THE ENGINEER, IN CONSULTATION WITH THE DEO STAFF, DETERMINES THAT (1) THE NATIVE MATERIAL IS UNSUITABLE, OR (2) ADDITIONAL MATERIAL IS REQUIRED TO SUPPLEMENT THE NATIVE MATERIAL. THE CHOSEN BACKFILL MATERIAL SHALL NOT HAVE ADVERSE EFFECTS TO AQUATIC LIFE, AQUATIC LIFE PASSAGE, OR WATER QUALITY. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION.



SILL DETAILS

LOOKING DOWNSTREAM

PROJECT NO. BP4-R034

EDGECOMBE COUNTY

STATION: 17+07.00 -L-

SHEET 6 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARCHANT C. CHANEY, JR.

10/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 8 FT. X 8 FT. CONCRETE BOX CULVERT 115°-00'-00" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-6
1			3			TOTAL SHEETS
2			4			7

DRAWN BY :	ZCS	DATE :	11/25
CHECKED BY :	MGC	DATE :	2/26
DESIGN ENGINEER OF RECORD:	ZCS	DATE :	2/26

3/12/2026
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ZSmith

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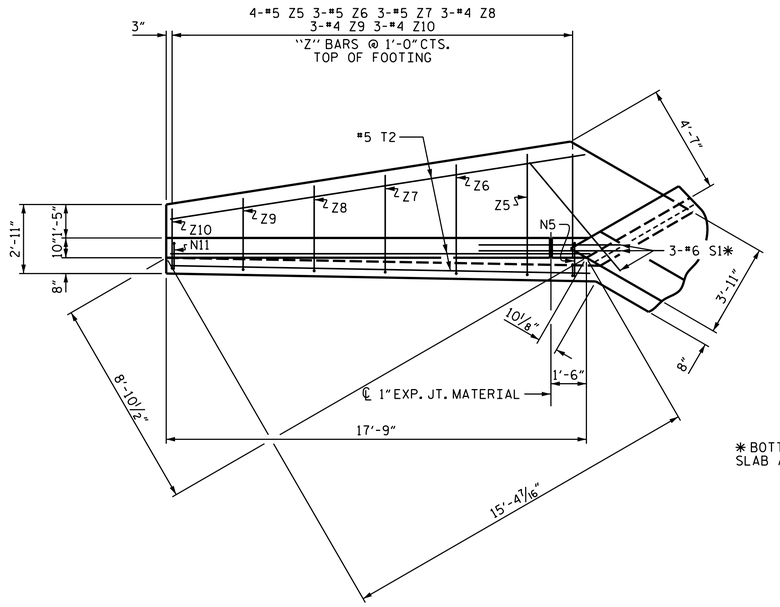
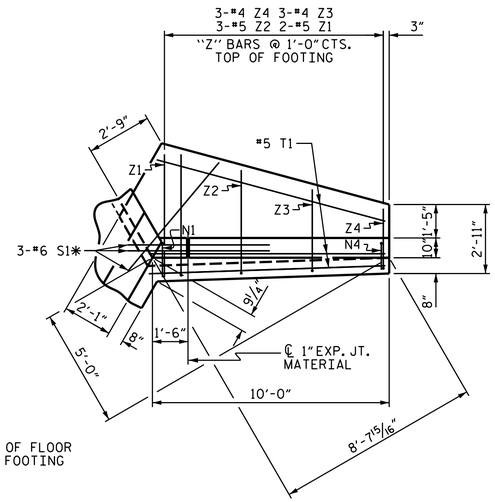
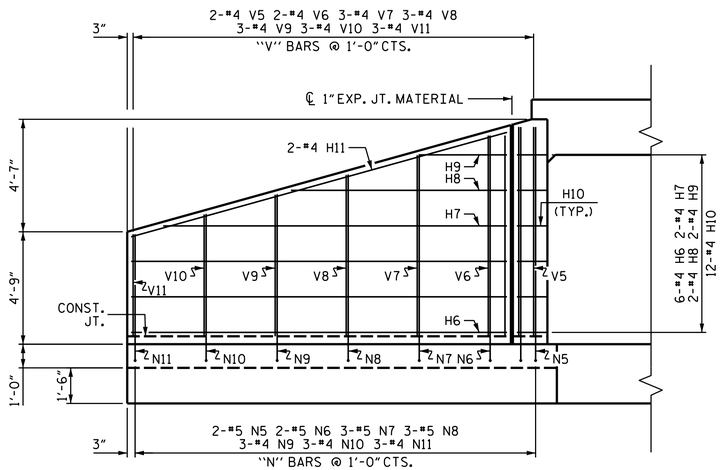


PLAN W1

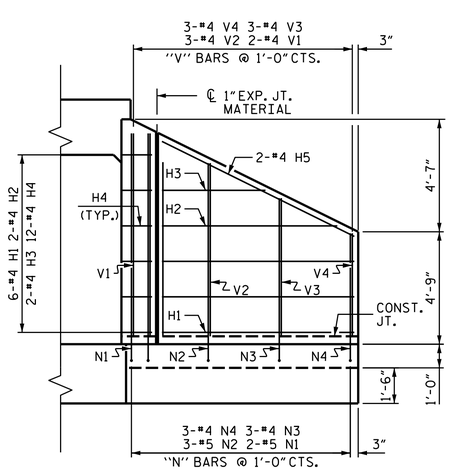


PLAN W2

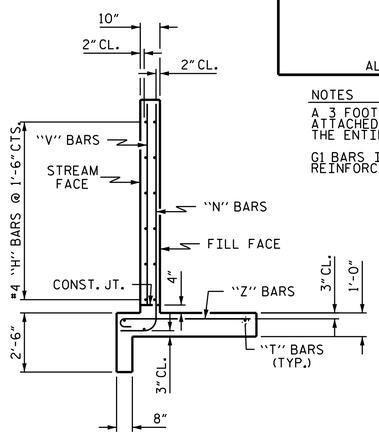
* BOTTOM OF FLOOR SLAB AND FOOTING



ELEVATION W1

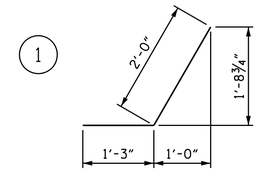


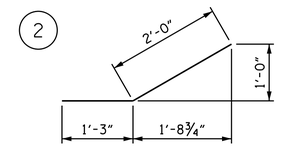
ELEVATION W2

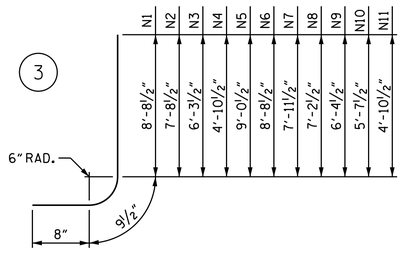


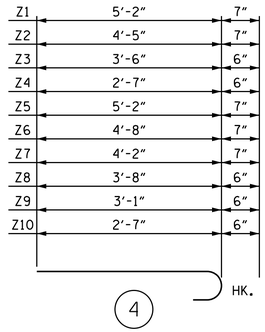
TYPICAL WING SECTION

BAR TYPES









ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	8'-1"	65
H2	4	#4	STR	7'-4"	20
H3	4	#4	STR	4'-4"	12
H4	24	#4	1	3'-3"	52
H5	4	#4	STR	9'-0"	24
H6	12	#4	STR	15'-10"	127
H7	4	#4	STR	14'-6"	39
H8	4	#4	STR	9'-1"	24
H9	4	#4	STR	3'-2"	8
H10	24	#4	2	3'-3"	52
H11	4	#4	STR	16'-5"	44
N1	4	#5	3	10'-2"	42
N2	6	#5	3	9'-2"	57
N3	6	#4	3	7'-9"	31
N4	6	#4	3	6'-4"	25
N5	4	#5	3	10'-6"	44
N6	4	#5	3	10'-2"	42
N7	6	#5	3	9'-5"	59
N8	6	#5	3	8'-8"	54
N9	6	#4	3	7'-10"	31
N10	6	#4	3	7'-1"	28
N11	6	#4	3	6'-4"	25
S1	12	#6	STR	6'-0"	108
T1	6	#5	STR	10'-0"	63
T2	6	#5	STR	17'-9"	111
V1	4	#4	STR	8'-0"	21
V2	6	#4	STR	7'-0"	28
V3	6	#4	STR	5'-7"	22
V4	6	#4	STR	4'-3"	17
V5	4	#4	STR	8'-5"	22
V6	4	#4	STR	8'-1"	22
V7	6	#4	STR	7'-3"	29
V8	6	#4	STR	6'-6"	26
V9	6	#4	STR	5'-9"	23
V10	6	#4	STR	5'-0"	20
V11	6	#4	STR	4'-3"	17
Z1	4	#5	4	5'-9"	24
Z2	6	#5	4	5'-0"	31
Z3	6	#4	4	4'-0"	16
Z4	6	#4	4	3'-1"	12
Z5	8	#5	4	5'-9"	48
Z6	6	#5	4	5'-3"	33
Z7	6	#5	4	4'-9"	30
Z8	6	#4	4	4'-2"	17
Z9	6	#4	4	3'-7"	14
Z10	6	#4	4	3'-1"	12

REINFORCING STEEL FOR 4 WINGS	1671 LBS

CLASS A CONCRETE		
4 WINGS	24.6	CY
2 HEADWALLS	1.9	CY
2 END CURTAIN WALLS	2.1	CY
TOTAL	28.6	CY

NOTES

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

GI BARS IN HEADWALL ARE INCLUDED WITH THE BARREL REINFORCING STEEL.

PROJECT NO. BP4-R034

EDGECOMBE COUNTY

STATION: 17+07.00 -L-

SHEET 7 OF 7

ASSEMBLED BY :	ZCS	DATE :	11/25
CHECKED BY :	MGC	DATE :	2/26
DRAWN BY : CCJ	11/99	REV. 6/19	MAA/THC
CHECKED BY : RWW	03/00		

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MICHAEL G. CHEEK, JR.
SFBCC2F2A5F4...
10/19/2026

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WINGS FOR CONCRETE BOX CULVERT

H = 8'-0" SLOPE = 2:1
115° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-7
1			3			TOTAL SHEETS
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STD. NO. CW12008

3/12/2026
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8/26/21

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE AASHTO
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE AASHTO
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO ½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{5}{16}$" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.