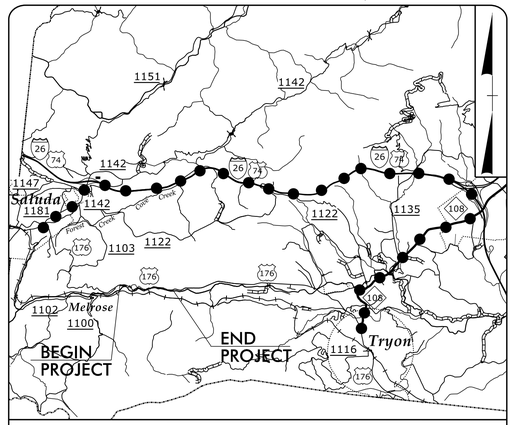
PROJECT: W03293

03/08/93

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



VICINITY MAP
Offsite Detour

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

POLK COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W03293	1	

STATE PROJ. NO.		DESCRIPTION
18314.1075015		936
18314.1075016		937
18314.1075017		938
18314.1075018		939
18314.1075019		940
18314.1075035		941
18314.1075020		942
18314.1075021		943
18314.1075022		944

LOCATION: US 176

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND RETAINING WALLS

END CONSTRUCTION
–L943–942– STA. 23+62.00
(Sites 943 & 942)

BEGIN CONSTRUCTION
–L941–937– STA. 11+62.07
(Site 941)

BEGIN CONSTRUCTION
–L943–942– STA. 13+50.00
(Sites 943 & 942)

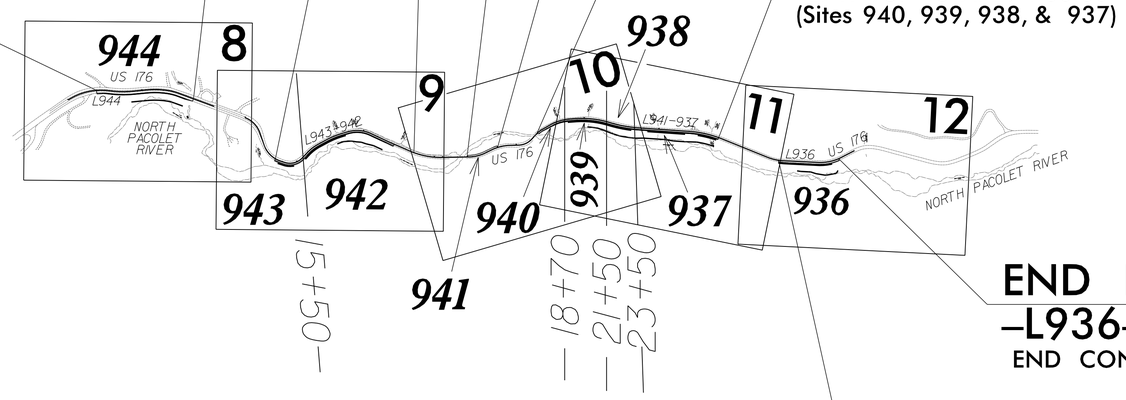
END CONSTRUCTION
–L941–937– STA. 13+75.00
(Sites 941)

END CONSTRUCTION
–L944– STA. 18+50.00
(Site 944)

BEGIN CONSTRUCTION
–L941–937– STA. 16+63.00
(Sites 940, 939, 938, & 937)

END CONSTRUCTION
–L941–937– STA. 29+00.00
(Sites 940, 939, 938, & 937)

BEGIN PROJECT W03293
–L944– STA. 12+00.00
BEGIN CONSTRUCTION (SITE 944)



END PROJECT W03293
–L936– STA. 18+00.00
END CONSTRUCTION (SITE 936)

PART II

BEGIN CONSTRUCTION
–L936– STA. 14+00.00
(Site 936)

NAD 83/2011

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 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2025 = 1,230
ADT 2050 = 1,570
V = 60 MPH

FUNC CLASS =
MAJOR COLLECTOR
SUBREGIONAL

PROJECT LENGTH

LENGTH ROADWAY SITE 944	=	0.123	MILES
LENGTH ROADWAY SITE 943	=	0.038	MILES
LENGTH ROADWAY SITE 942	=	0.154	MILES
LENGTH ROADWAY SITE 941	=	0.040	MILES
LENGTH ROADWAY SITE 940	=	0.039	MILES
LENGTH ROADWAY SITE 939	=	0.053	MILES
LENGTH ROADWAY SITE 938	=	0.038	MILES
LENGTH ROADWAY SITE 937	=	0.104	MILES
LENGTH ROADWAY SITE 936	=	0.076	MILES

TOTAL LENGTH ROADWAY PROJECT W03293 = 0.665 MILES

NCDOT CONTACT: JEANETTE WHITE, PE

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

PLANS PREPARED FOR:
NORTH CAROLINA DEPARTMENT OF TRANSPORATION
DIVISION 14
252 Webster Rd
Sylva, NC 28779

RIGHT OF WAY DATE:
AUGUST 12, 2025

LETTING DATE:
JULY 21, 2026

2024 STANDARD SPECIFICATIONS

JIMMY L. TERRY, PE
PROJECT ENGINEER

AUSTIN R. TURNER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
5/21/2026
Signed by: John W. Twisdale, Jr. P.E.
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale, Jr.

ROADWAY DESIGN ENGINEER
5/21/2026
DocuSigned by: Jimmy Terry P.E.
SIGNATURE:
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

5/21/2026
X:\NCDOT\Div 14 US 176 Repair\Roadway\Design\Title_Typicals_Details_Summaries\US176_Rdy_900_tsh.dgn
User:aturner

FINAL PAVEMENT SCHEDULE
(Nov 11, 2025)

C1	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.
C2	PROP. APPROX. 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
R2	8" X 12" CONCRETE CURB
T	EARTH MATERIAL.
U	EXISTING PAVEMENT

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

NOTE:

DUE TO UNKNOWN DAMAGE TO THE EXISTING PAVEMENT STRUCTURE FROM HELENE, FULL DEPTH PAVEMENT IS SHOWN TO EXTEND FOR THE FULL LENGTH OF AREAS COVERED BY TYPICAL SECTIONS NO. 1 THRU 5.
IF AGREED UPON BY THE RESIDENT ENGINEER AND CONTRACTOR DURING CONSTRUCTION TO OVERLAY EXISTING PAVEMENT ONLY, STANDARD NCDOT MILLING AND RESURFACING/WEDGING METHODS SHALL APPLY. THE ENGINEER OF RECORD SHALL BE NOTIFIED OF CHANGES, AND STANDARD DETAILS CAN BE PROVIDED UPON REQUEST.

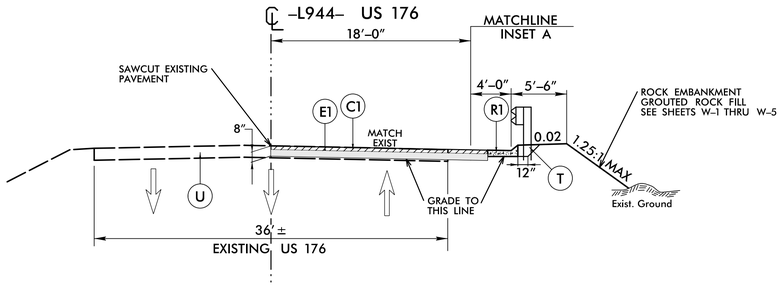
PROJECT REFERENCE NO.	SHEET NO.
W03293	2A-1

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L TERRY
1/5/2026

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 045542 ENGINEER KELLY DE MONTBRUN
1/5/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



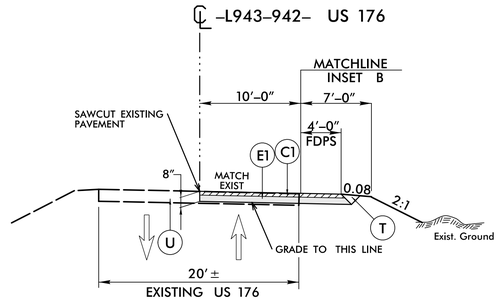
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

–L944– STA. 12+50.00 TO –L944– STA. 18+00.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 1 AS FOLLOWS:

–L944– STA. 12+00.00 TO –L944– STA. 12+50.00
–L944– STA. 18+00.00 TO –L944– STA. 18+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

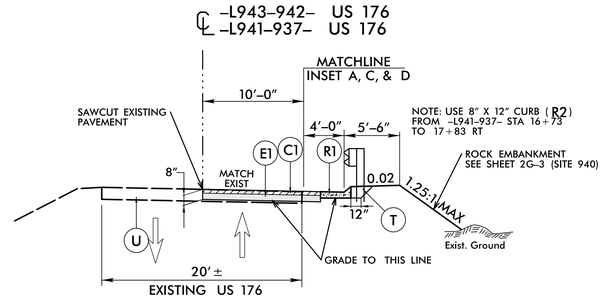
–L943–942– STA. 14+00.00 TO –L943–942– STA. 15+75.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 2 AS FOLLOWS:

–L943–942– STA. 13+50.00 TO –L943–942– STA. 14+00.00

TRANSITION BETWEEN TYP. SECT. NO. 2 AND TYP. SECT. NO. 3 AS FOLLOWS:

–L943–942– STA. 15+50.00 TO –L943–942– STA. 15+75.00



TYPICAL SECTION NO. 3

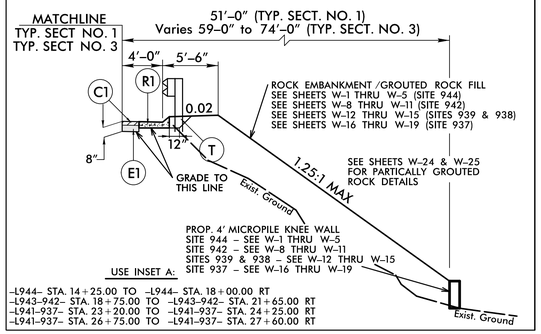
USE TYPICAL SECTION NO. 3

–L943–942– STA. 15+75.00 TO –L943–942– STA. 21+50.00
–L941–937– STA. 17+70± TO –L941–937– STA. 28+50.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 3 AS FOLLOWS:

–L943–942– STA. 21+50.00 TO –L943–942– STA. 22+20.00
–L941–937– STA. 16+63.00 TO –L941–937– STA. 17+70±
–L941–937– STA. 28+50.00 TO –L941–937– STA. 29+00.00

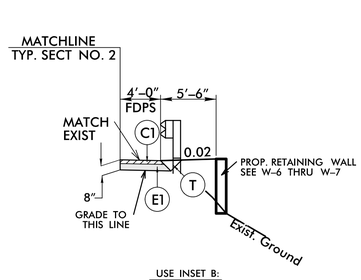
INSET A



USE INSET A:

–L944– STA. 14+25.00 TO –L944– STA. 18+00.00 RT
–L943–942– STA. 18+75.00 TO –L943–942– STA. 21+65.00 RT
–L941–937– STA. 23+20.00 TO –L941–937– STA. 24+25.00 RT
–L941–937– STA. 26+75.00 TO –L941–937– STA. 27+60.00 RT

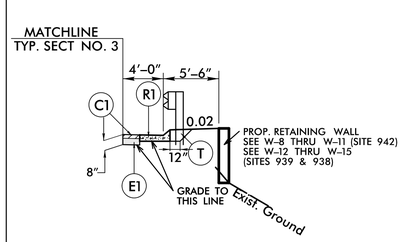
INSET B



USE INSET B:

–L943–942– STA. 13+75.00 TO –L943–942– STA. 14+75.00 RT

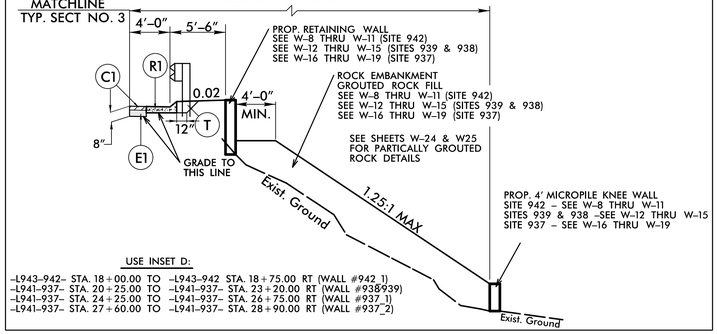
INSET C



USE INSET C:

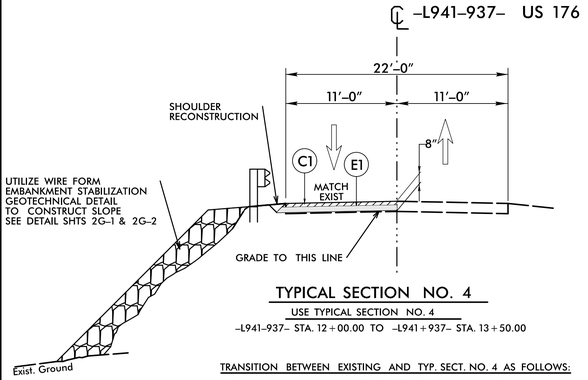
–L943–942– STA. 15+50.00 TO –L943–942 STA. 18+00.00 (WALL #942_1)
–L941–937– STA. 18+90.00 TO –L941–937– STA. 20+25.00 (WALL #938/939)

INSET D



USE INSET D:

–L943–942– STA. 18+00.00 TO –L943–942 STA. 18+75.00 RT (WALL #942_1)
–L941–937– STA. 20+25.00 TO –L941–937– STA. 23+20.00 RT (WALL #938/939)
–L941–937– STA. 24+25.00 TO –L941–937– STA. 26+75.00 RT (WALL #937_1)
–L941–937– STA. 27+60.00 TO –L941–937– STA. 28+90.00 RT (WALL #937_2)



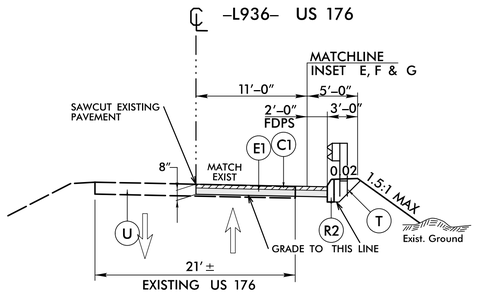
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–L941–937– STA. 12+00.00 TO –L941+937– STA. 13+50.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 4 AS FOLLOWS:

–L941–937– STA. 11+68± (END EXIST BRIDGE) TO –L941–937– STA. 12+00.00
–L941–937– STA. 13+50.00 TO –L941–937– STA. 13+75.00



TYPICAL SECTION NO. 5

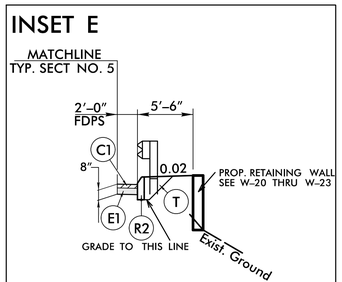
USE TYPICAL SECTION NO. 5

–L936– STA. 14+50.00 TO –L936– STA. 17+50.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 5 AS FOLLOWS:

–L936– STA. 14+00.00 TO –L936– STA. 14+50.00
–L936– STA. 17+50.00 TO –L936– STA. 18+00.00

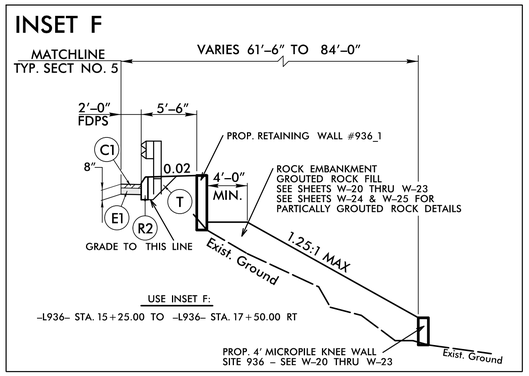
INSET E



USE INSET E:

–L936– STA. 14+00.00 TO –L936– STA. 15+25.00 RT

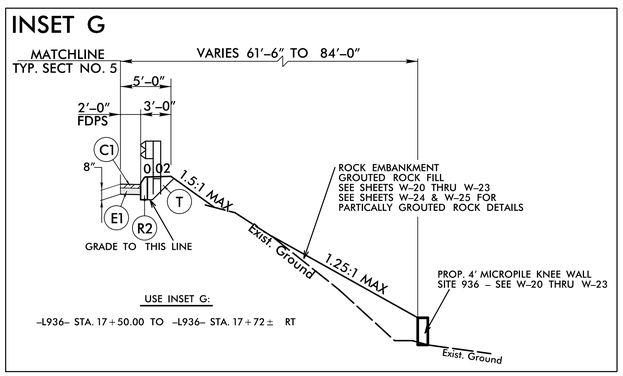
INSET F



USE INSET F:

–L936– STA. 15+25.00 TO –L936– STA. 17+50.00 RT

INSET G

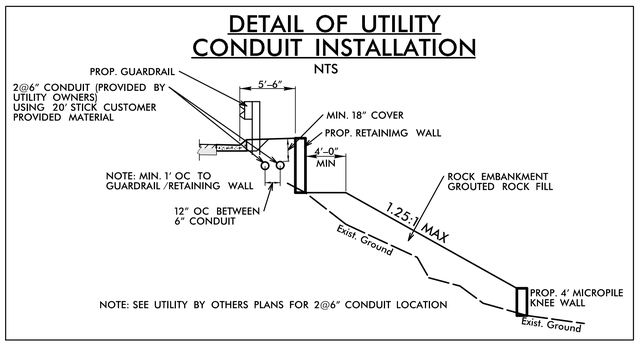


USE INSET G:

–L936– STA. 17+50.00 TO –L936– STA. 17+72± RT

DETAIL OF UTILITY CONDUIT INSTALLATION

NTS



PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	3″ S9.6C
E1	5″ B25.0C
R1	SHOULDER BERM GUTTER
R2	8″ X 12″ CONC. CURB
T	EARTH MATERIAL
U	EXIST. PAVEMENT

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
W03293	2A–2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L TERRY

1/5/2026

PAVEMENT DESIGN ENGINEER

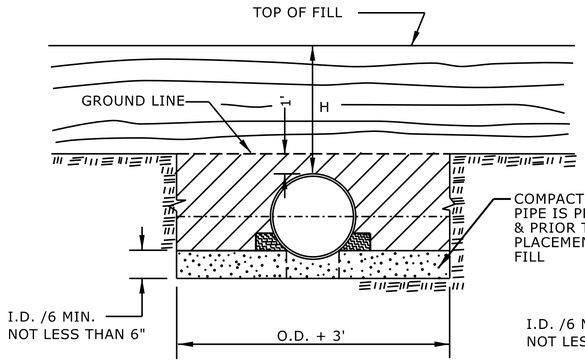
NORTH CAROLINA PROFESSIONAL SEAL 045542 ENGINEER KELLY DE MONTBRUN

1/5/2026

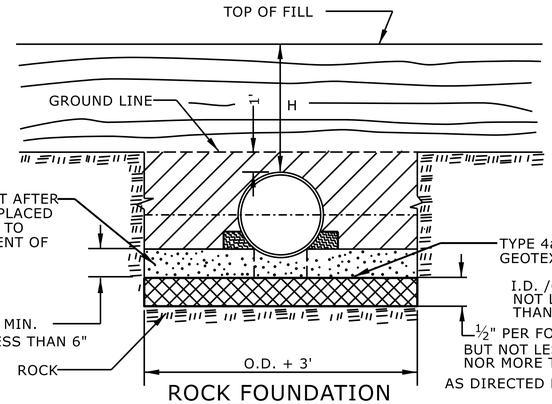
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

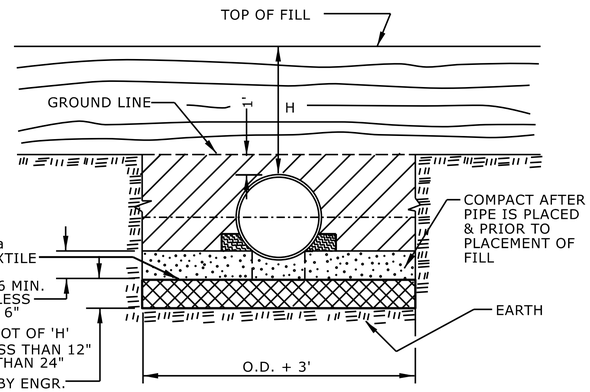
PROJECT REFERENCE NO.	SHEET NO.
W03293	2C-1



NORMAL EARTH FOUNDATION

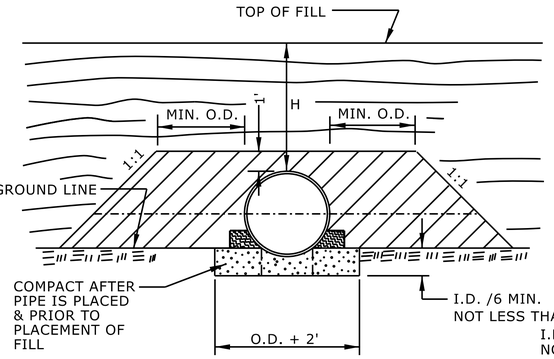


ROCK FOUNDATION

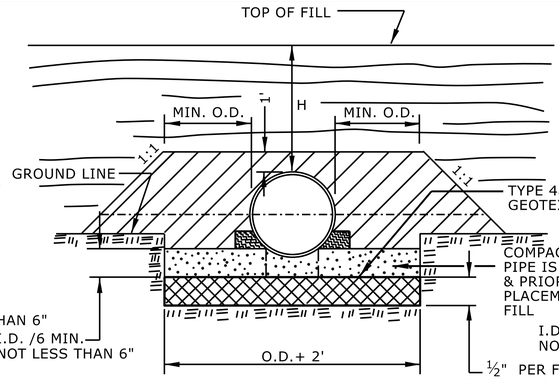


UNSUITABLE MATERIAL FOUNDATION

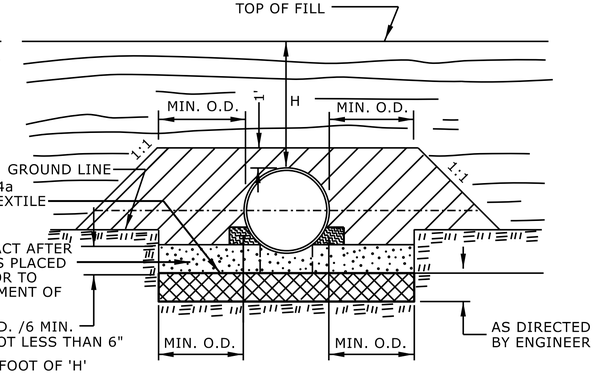
PIPE IN TRENCH



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

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

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKER Signed by: 164C5
1/5/2026

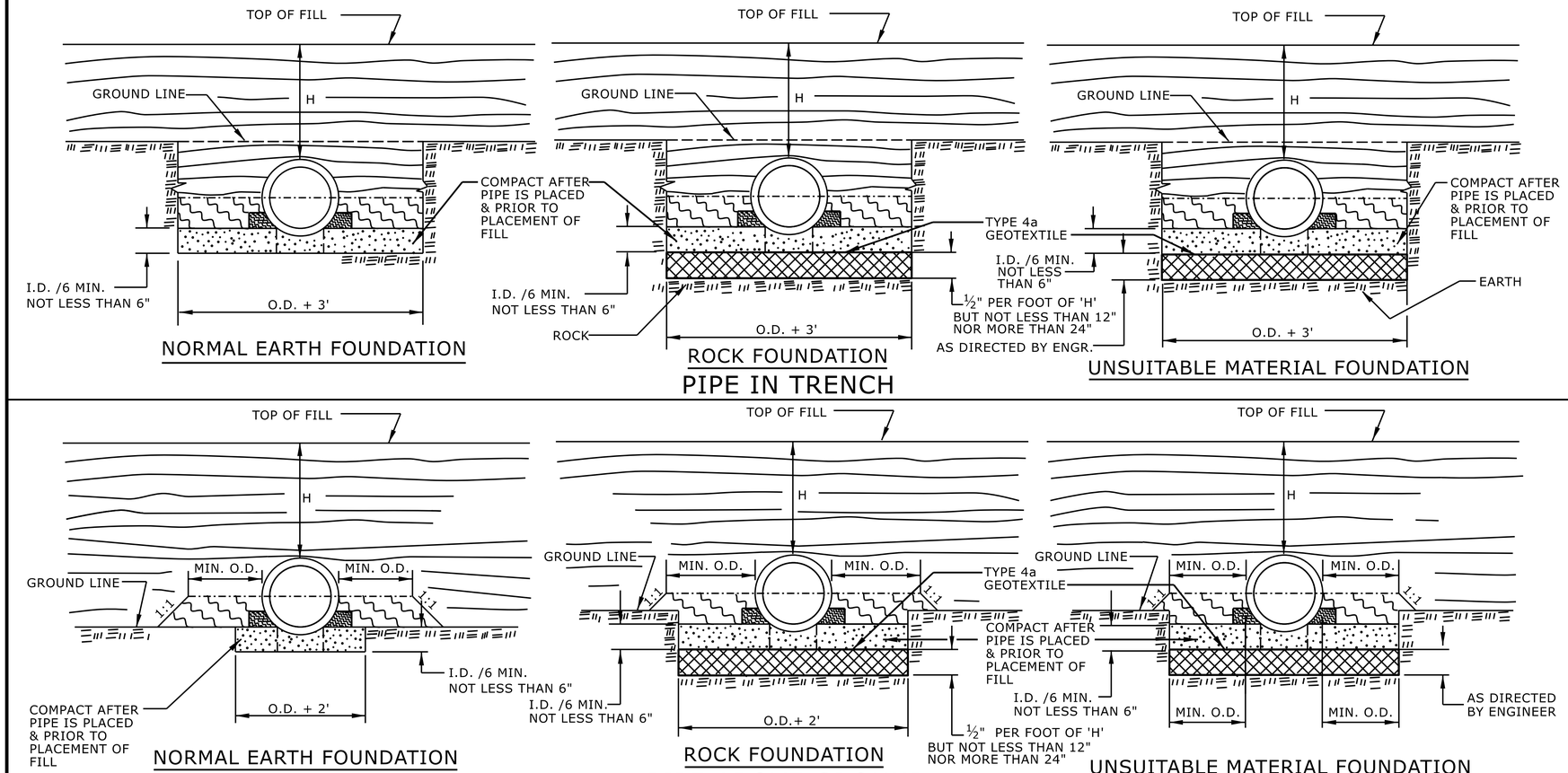
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
W03293	2C-2



GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Nicole M. Hackler
1/5/2026

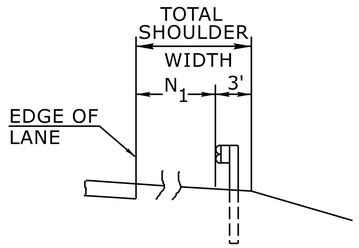
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

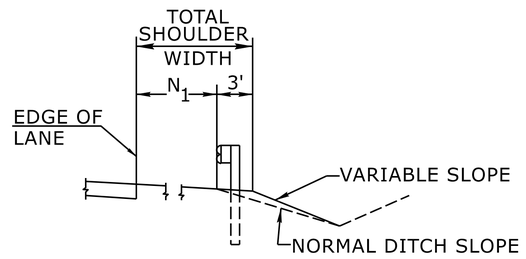
SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
W03293	2C-3

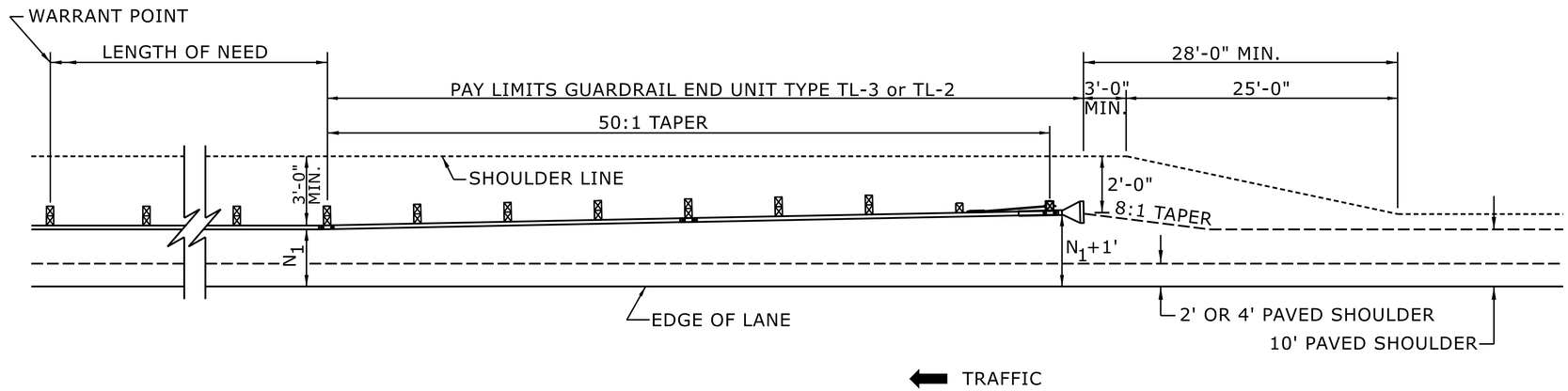


FILL SECTION



CUT SECTION

"N_1"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



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

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15

862D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Digitally signed by Nicole M. Hackler
1/5/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

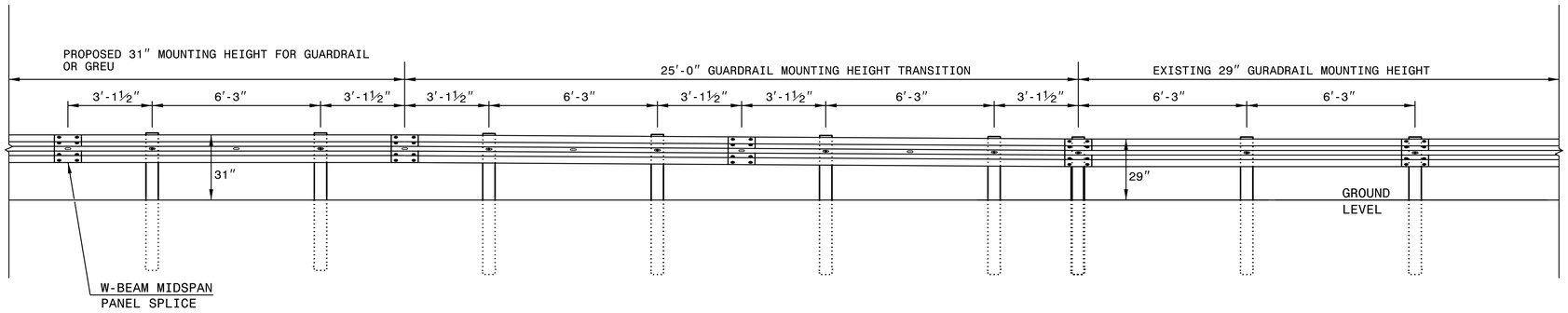
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
W03293	2C-4

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



ELEVATION VIEW

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

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

ROADWAY DETAIL DRAWING FOR

GUARDRAIL INSTALLATION

SHEET 5 OF 9

862D02

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
Signed by: Nicole Hackler
1/5/2026

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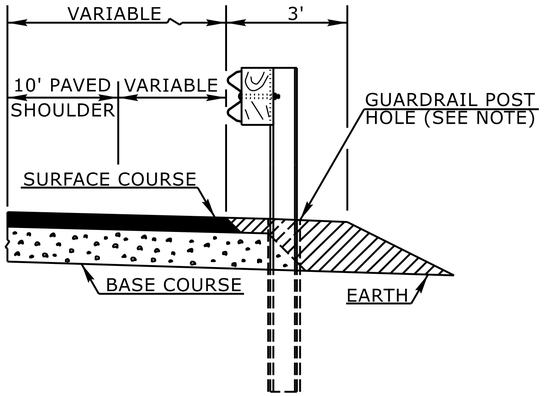
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

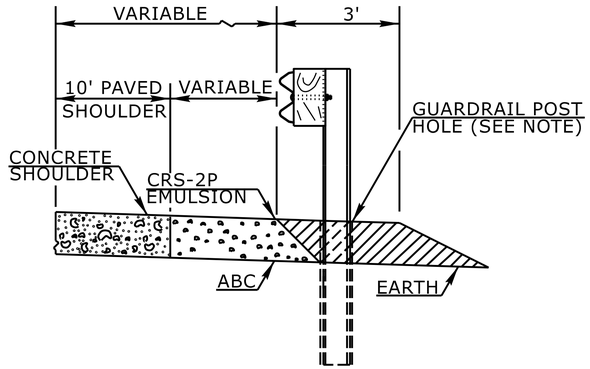
ORIGINAL BY: K. Aldridge DATE: 02-25
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

05-FEB-2025 07:53
U:\Special Details Revisions\862D02 Detail\862D02.dgn
$$$$USERNAME$$$$

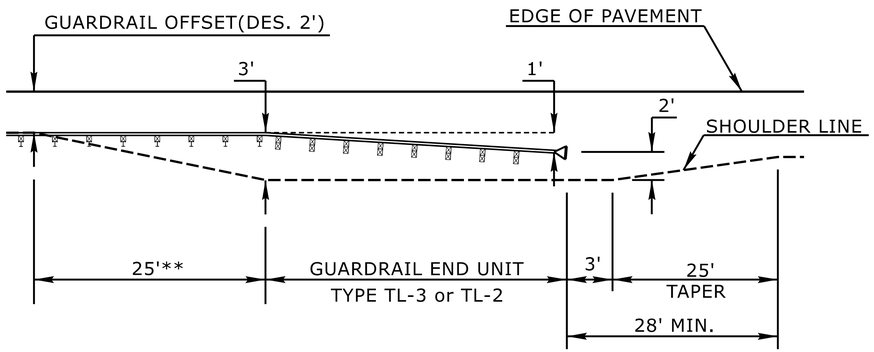
PROJECT REFERENCE NO.	SHEET NO.
W03293	2C-5



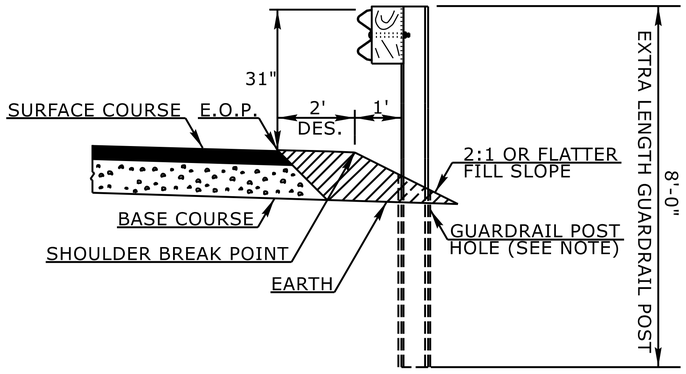
FLEXIBLE PAVED SHOULDER



CONCRETE PAVED SHOULDER



8' GUARDRAIL POST ON 2:1 SLOPE-END UNIT TRANSITION*
PLAN VIEW



8' GUARDRAIL POST ON 2:1 SLOPE*

* THE 8' GUARDRAIL POST ON 2:1 SLOPE DETAIL IS INTENDED FOR USE ONLY IN SEVERELY CONSTRAINED AREAS WITH A POSTED SPEED ≤ 60 MPH. GUARDRAIL END UNITS MAY NOT BE PLACED ON THE 2:1 SLOPE AND MUST TRANSITION TO THE SHOULDER.
** 8' GUARDRAIL POST SHOULD BE USED IN THIS RANGE

NOTE:
WHEN WOODEN GUARDRAIL POSTS ARE USED, DRILL HOLES THROUGH EARTH MATERIAL AND BASE COURSE.THE POST MAY THEN BE DRIVEN TO THE PROPER DEPTH. DRILL THE HOLE OF SUFFICIENT SIZE TO ACCOMMODATE THE PARTICULAR POST BEING USED. BACKFILL AND TAMP HOLES USING THE EXCAVATED MATERIAL.

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 11OF 15

862D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER
1/5/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

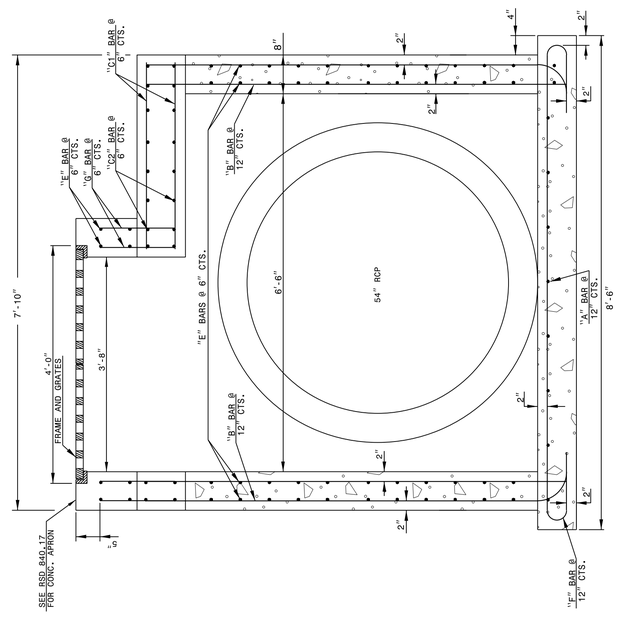
ORIGINAL BY: L.SMITH DATE: 10-14-2025
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.
W03293	2D-1

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

ENGLISH DETAIL DRAWING FOR
TRAFFIC BEARING GRATED INLET
FOR PIPES UP TO 54"

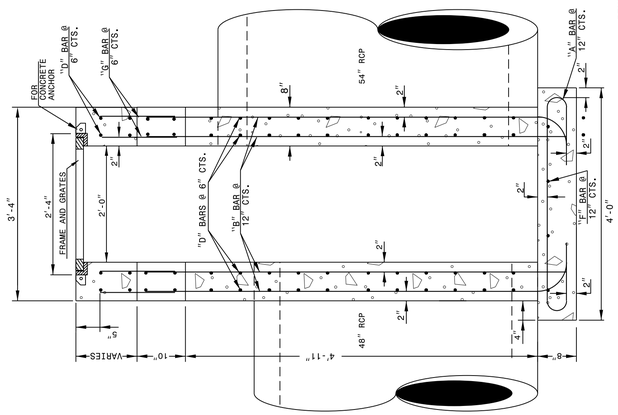
SHEET 1 OF 2
840D35



SECTION X-X

GENERAL NOTES:
-CONCRETE CLASS 'AA' CONCRETE
-ALL EXPOSED CONCRETE CORNERS 3".
-CHAMFER ALL EXPOSED CONCRETE
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE, FOLLOW CONSTRUCTION
-PROCEDURES SHOWN BY STD. DWG. 840.00.
-PRECAST UNITS CONCRETE MAY BE
USED IN LIEU CAST IN PLACE CONCRETE.
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE
-PROVIDE DROP INLETS OVER 4'-0" DEEP WITH STEPS AS
DIRECTED BY STD. DWG. 840.66
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEM.

NOTES:
-HORIZONTAL (UP TO 10' MAX. IN BOTH DIRECTIONS) AND VERTICAL (UP TO 20' MAX.)
DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGNS
ROUTE.
-ALL ADJUSTMENTS ARE TO BE MADE AS DIRECTED BY THE ENGINEER.

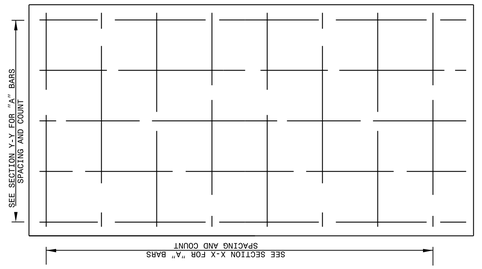


SECTION Y-Y

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

ENGLISH DETAIL DRAWING FOR
TRAFFIC BEARING GRATED INLET
FOR PIPES UP TO 54"

SHEET 2 OF 2
840D35



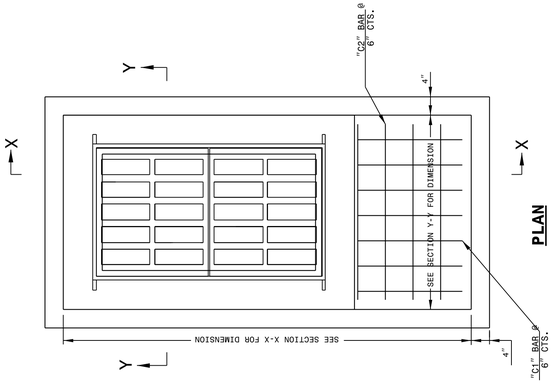
PLAN OF BASE

BILL OF MATERIALS

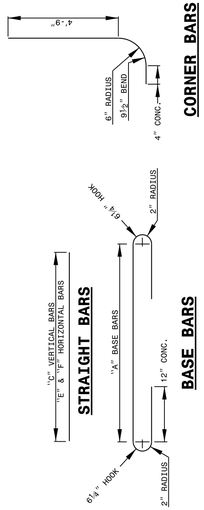
BAR	SIZE	LENGTH	QUANTITY	WEIGHT
A	#5	5'-0"	42	47
B	#5	7'-6"	104	780
C1	#5	3'-4"	9	32
C2	#5	3'-0"	6	19
D	#5	7'-6"	48	376
E	#5	3'-0"	48	151
F	#5	10'-0"	4	42
G	#5	1'-8"	104	181
REINF. STEEL (TOTAL WEIGHT LBS.)				1628
CONCRETE TOTAL (CU.YDS.) CLASS 'AA'				5.1

NO DEDUCTIONS HAVE BEEN MADE TO ACCOMMODATE PIPES
FOR EVERY 1 FOOT OF RISER USE 0.41 CU.YDS
CONCRETE AND 390 LBS STEEL.

DOWEL-H



PLAN



CORNER BARS

STRAIGHT BARS

BASE BARS

1/5/2026

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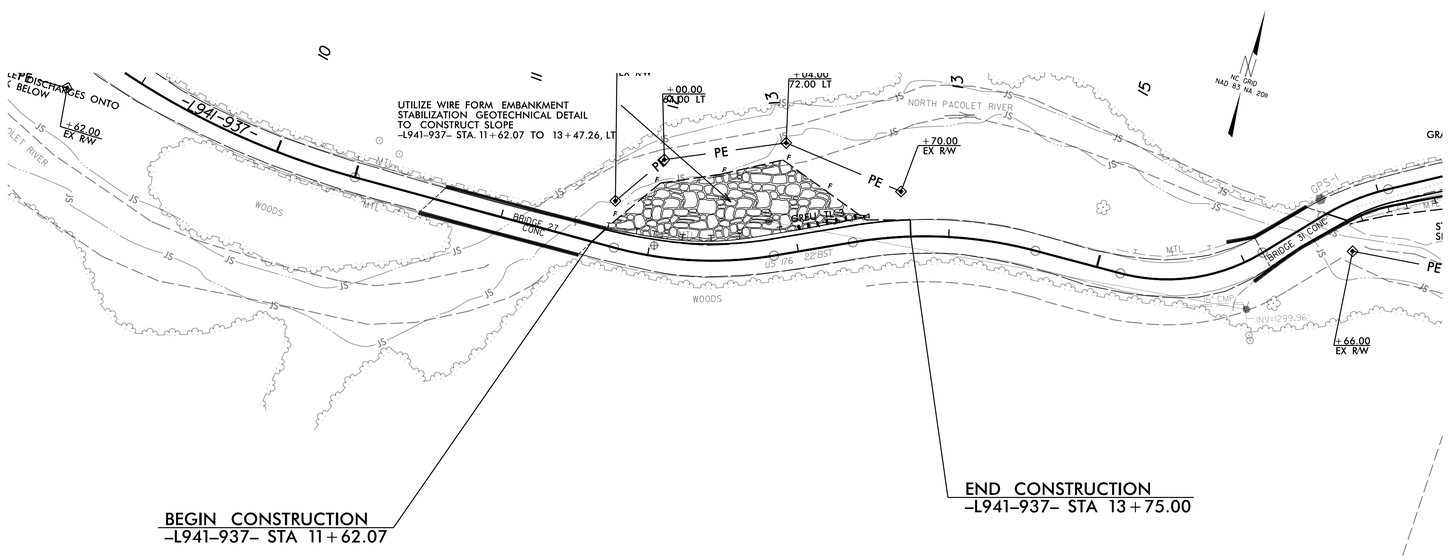
UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

ORIGINAL BY: K. KEMPF DATE: 03-03-2015
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: jhowerton/840d35 TBDI Up to 54in.dgn

13-AUG-2018 09:00
S:\Contracts\Contracts\Special Details\jhowerton\840d35 TBDI Up to 54in.dgn
jhowerton
AT CSD-29295



BEGIN CONSTRUCTION
-L941-937- STA 11+62.07

END CONSTRUCTION
-L941-937- STA 13+75.00

SITE 941 – PLAN

NOT TO SCALE

GEOTECHNICAL ENGINEER

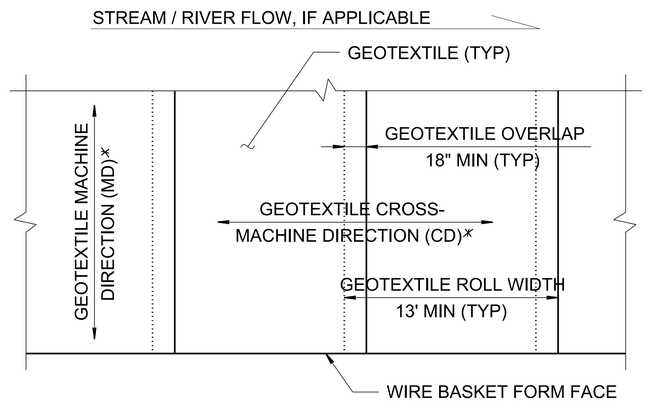
NORTH CAROLINA PROFESSIONAL SEAL 042642 ENGINEER ROBERT E. KRAL

Signed by: Robert E. Kral 12/3/2025
SIGNATURE DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



GEOTEXTILE PLACEMENT

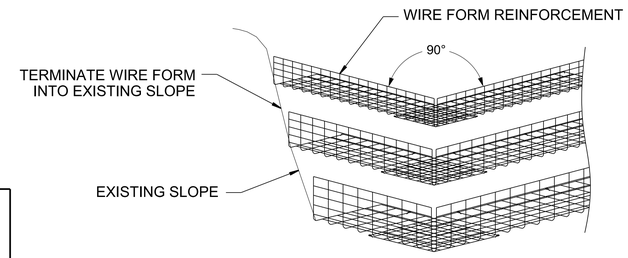
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)

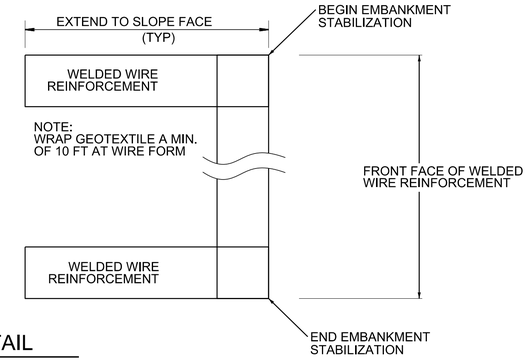
ESTIMATED QUANTITIES - SITE 941

WIRE BASKET FORMS	400 EA
GEOTEXTILE FOR WIRE FORM EMBANKMENT, TYPE 5A	19,200 SY
BORROW	4,900 CY
SHOT ROCK PLATING	4,650 TON

WIRE FORM EMBANKMENTS

STA. -L941-937-	TOP OF SLOPE OFFSET	TOP OF SLOPE ELEVATION (FT)	SLOPE INCLINATION (H:V)	TOE OF SLOPE OFFSET	TOE OF SLOPE ELEVATION (FT)
12+00.00	17.1' LT	1320.9	1:1	48.3' LT	1289.7
12+50.00	27.0' LT	1318.2	1:1	57.0' LT	1288.2
13+00.00	33.1' LT	1315.8	1:1	61.3' LT	1287.6





TERMINATION DETAIL

PROJECT NO.: W03293

POLK COUNTY

STATION: -L941-937- STA. 11+62.07 TO 13+75.00, LT

PREPARED BY: KND	DATE: 10/25
REVIEWED BY: MJW	DATE: 10/25

Prepared in the Office of:

CAROLINAS GEOTECHNICAL GROUP

1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

SITE 941 WIRE FORM EMBANKMENT

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

GEOTECHNICAL ENGINEER

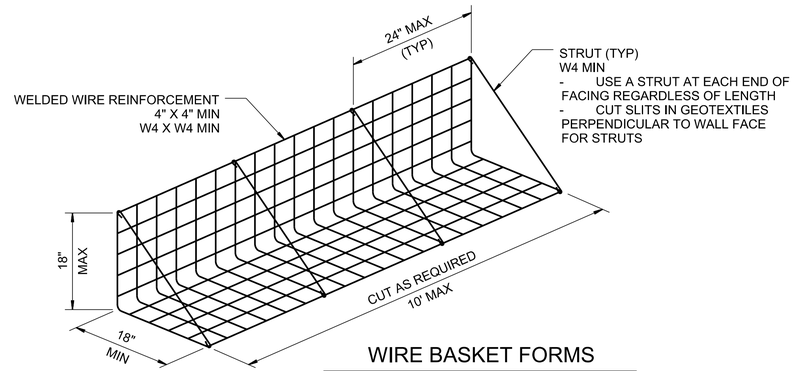
NORTH CAROLINA PROFESSIONAL SEAL 042642 ENGINEER ROBERT E. KRAL

Signed by: Robert E. Kral 12/3/2025
AAF88FF73D6B4A... SIGNATURE DATE

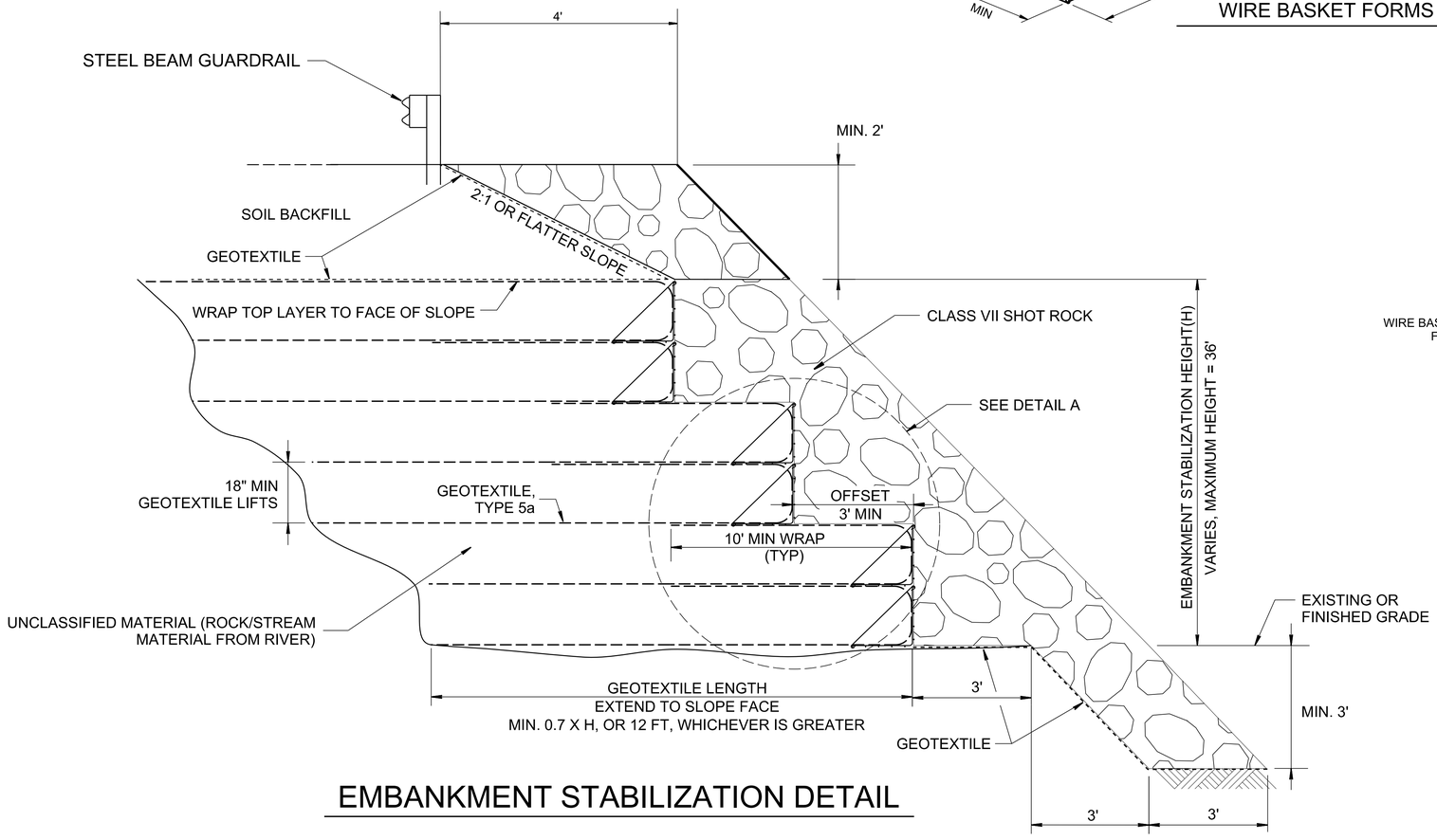
ENGINEER

SIGNATURE DATE

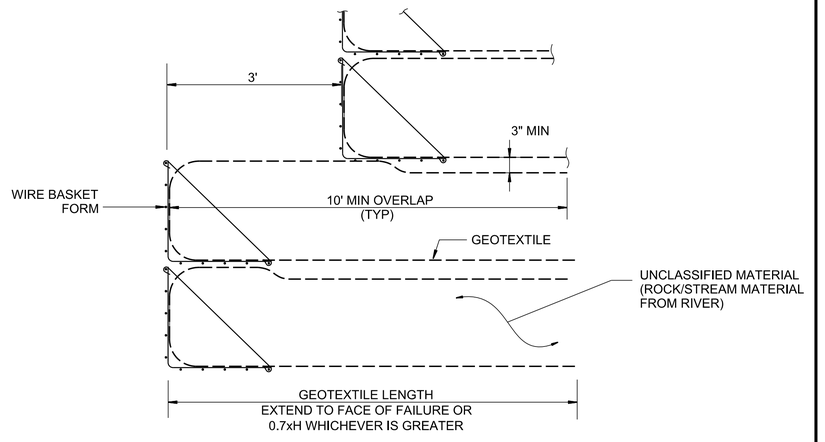
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



WIRE BASKET FORMS



EMBANKMENT STABILIZATION DETAIL



DETAIL A

NOTES:

1. USE WIRE BASKET FORMS AND TYPE 5a GEOTEXTILE FOR CONSTRUCTION.
2. BACKFILL WITH SUITABLE BORROW. MAY ALSO BACKFILL WITH ON-SITE SOILS CONSISTING OF ROCK/SAND FROM STREAM BED WITH MAXIMUM AGGREGATE SIZE OF 6 INCHES.
3. WRAP GEOTEXTILE BACK 10 FEET AT EACH WIRE FORM FACE AND AT EACH END OF EVERY COURSE OF WIRE FORMS.
4. MAXIMUM STABILIZATION HEIGHT = 36 FEET

PROJECT NO.: W03293
POLK COUNTY
STATION: -L941-937- STA. 11+62.07 TO 13+75.00, LT

PREPARED BY: KND	DATE: 10/25
REVIEWED BY: MJW	DATE: 10/25

Prepared in the Office of:
CAROLINAS GEOTECHNICAL GROUP
1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SITE 941 WIRE FORM EMBANKMENT

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

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 045542 ENGINEER KELLY DE MONTBRUN

Signed by: Kelly de Montbrun 12/2/2025
BA86070E83A4... SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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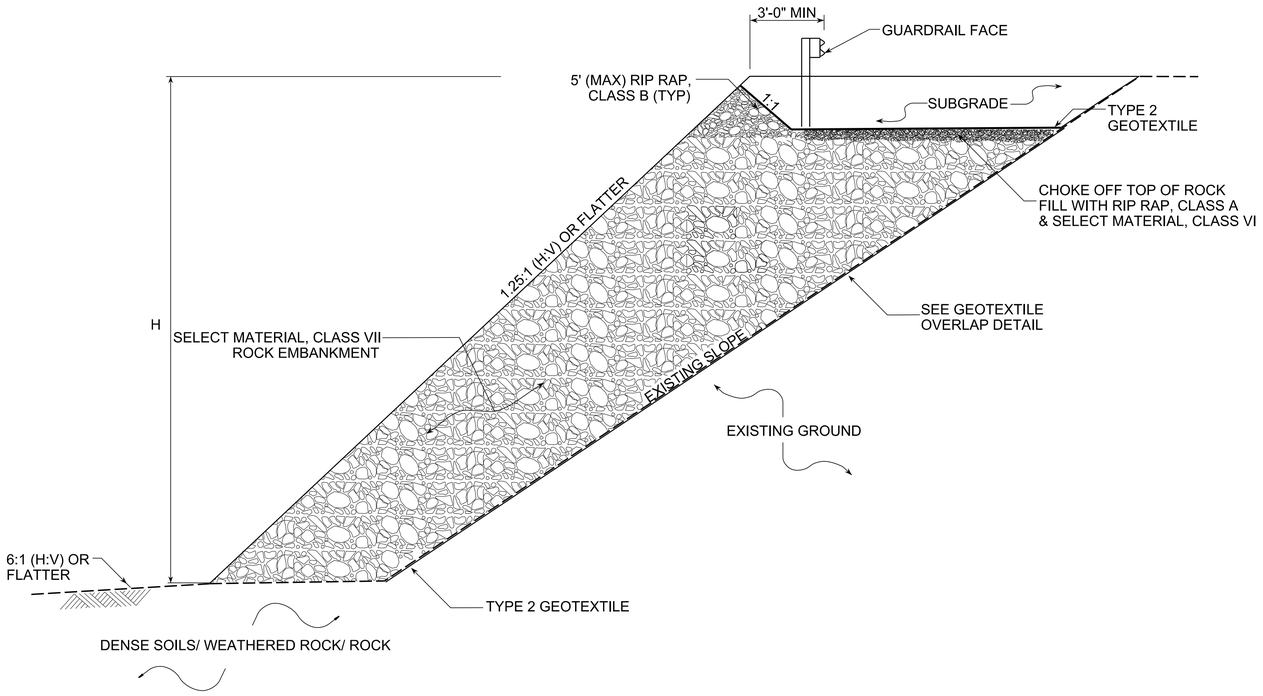
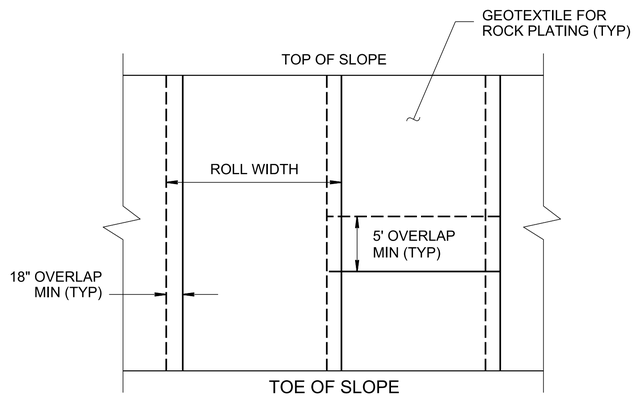
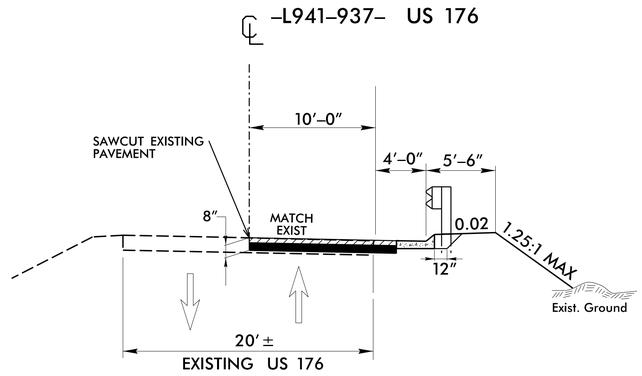


ROCK EMBANKMENT DETAIL



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW)



TYPICAL SECTION

–L941–937– STA. 17+00.00 TO –L941–937– STA. 18+70.00

TRANSITION BETWEEN EXISTING AND TYP. SECT. AS FOLLOWS:

–L941–937– STA. 16+63.00 TO –L941–937– STA. 17+00.00

NOTES:

1. USE ROCK EMBANKMENTS WHERE SLOPES WITH AN INCLINATION OF UP TO 1.25:1 (H:V) ARE PLANNED: -L941-937- STA. 16+63.00 TO -L314- STA. 18+70.00
2. THE MAXIMUM ALLOWABLE HEIGHT FOR THE ROCK EMBANKMENT DETAIL IS 80'.
3. FOR ROCK EMBANKMENT, BENCH EXISTING SLOPE IN ACCORDANCE WITH SECTION 235 OF THE STANDARD SPECIFICATIONS, WHERE POSSIBLE.
4. FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS SPECIAL PROVISION.

ESTIMATED SITE 940 QUANTITIES

ROCK EMBANKMENTS	425 TONS
GEOTEXTILE FOR ROCK EMBANKMENTS	500 SY

PROJECT NO.: W03293

POLK COUNTY

STATION: -L940- STA. 16+63 TO 18+70, RT

PREPARED BY: KND	DATE: 10/25
REVIEWED BY: MJW	DATE: 10/25

Prepared in the Office of:

CAROLINAS GEOTECHNICAL GROUP
1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SITE 940
ROCK EMBANKMENTS

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

COMPUTED BY: SGM DATE: 9/18/2025	PROJECT NO.	SHEET NO.
CHECKED BY: JLT DATE: 11/10/2025	W03293	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY TGS ENGINEERS. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

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".

PROJECT TOTALS SITE	EXCAVATION TOTAL UNCLASS.	BORROW	WASTE	
SITE 944	310		273	SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 943	11	76		SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 942	449	277		SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 941	2			SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 940	100		91	SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 939	116	515		SEE SHEET 3B-2 FOR EARTHWORK SUMMARY
SITE 938	37	389		SEE SHEET 3B-3 FOR EARTHWORK SUMMARY
SITE 937	97	318		SEE SHEET 3B-3 FOR EARTHWORK SUMMARY
SITE 936	130	425		SEE SHEET 3B-3 FOR EARTHWORK SUMMARY
GRAND TOTALS	1,252	2,000	364	
SAY W03293 (Part II)	**1,260**	**2,050**		

BORROW FOR WIRE FORM EMBANKMENT (CY)	**4,900**
SELECT GRANULAR MATERIAL (CY)	**1,800**
EST. SHALLOW UNDERCUT (CY)	**450**
ESTIMATED UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER PER GEOTECH RECOMMENDATION. (CY)	**1,800**

COMPUTED BY: SGM DATE: 10/6/2025
CHECKED BY: JLT DATE: 11/10/2025

PROJECT NO.	SHEET NO.
W03293	3B-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY TGS ENGINEERS. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 944

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L944- 12+00.00	-L944-18+50.00	360	37		323
SUBTOTALS:		360	37		323
TOTALS:		360	37		323
LOSS DUE TO CLEARING & GRUBBING		-50			-50
PROJECT TOTALS:		310	37		273
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTALS:		310	37		273

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 943

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L943- 13+50.00	-L943- 15+50.00	61	83	22	
SUBTOTALS:		61	83	22	
TOTALS:		61	83	22	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		11	83	72	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				4	
GRAND TOTALS:		11	83	76	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 942

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L942-942- 15+50.00	-L942-942- 20+20.00	499	713	214	
SUBTOTALS:		499	713	214	
TOTALS:		499	713	214	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		449	713	264	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				13	
GRAND TOTALS:		449	713	277	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 941

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L941- 11+62.07	-L941- 13+75.00	52	2		50
SUBTOTALS:		52	2		50
TOTALS:		52	2		50
LOSS DUE TO CLEARING & GRUBBING		-50			-50
PROJECT TOTALS:		2	2		0
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTALS:		2	2		

BORROW FOR WIRE FORM EMBANKMENT (CY) = 4,900 CUBIC YARDS
SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 940

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L941-937- 16+63.00	-L941-937- 18+70.00	150	9		141
SUBTOTALS:		150	9		141
TOTALS:		150	9		141
LOSS DUE TO CLEARING & GRUBBING		-50			-50
PROJECT TOTALS:		100	9		91
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT					
GRAND TOTALS:		100	9		91

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 939

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L941-937- 18+70.00	-L941-937- 21+50.00	166	606	440	
SUBTOTALS:		166	606	440	
SUBTOTALS:					
TOTALS:		166	606	440	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		116	606	490	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				25	
GRAND TOTALS:		116	606	515	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

COMPUTED BY: SGM DATE: 10/6/2025
CHECKED BY: JLT DATE: 11/10/2025

PROJECT NO.	SHEET NO.
W03293	3B-3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY TGS ENGINEERS. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 938

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L941-937- 21+50.00	-L941-937- 23+50.00	87	407	320	
SUBTOTALS:		87	407	320	
TOTALS:		87	407	320	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		37	407	370	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				19	
GRAND TOTALS:		37	407	389	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 937

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L941-937- 23+50.00	-L941-937- 29+00.00	147	400	253	
SUBTOTALS:		147	400	253	
TOTALS:		147	400	253	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		97	400	303	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				15	
GRAND TOTALS:		97	400	318	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Site 936

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L369- 14+00.00	-L936- 18+00.00	180	535	355	
SUBTOTALS:		180	535	355	
TOTALS:		180	535	355	
LOSS DUE TO CLEARING & GRUBBING		-50		50	
PROJECT TOTALS:		130	535	405	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				20	
GRAND TOTALS:		130	535	425	

SELECT GRANULAR MATERIAL = 200 CUBIC YARDS
EST. SHALLOW UNDERCUT = 50 CUBIC YARDS

PER GEOTECH RECOMMENDATION, ESTIMATED 200 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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".

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

Site	SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	SITE TOTAL
944	-L944-	12+00	18+00	RT	1,298.42	1,298.42
943	-L943-942-	13+50	15+50	RT	273.41	273.41
942	-L943-942	15+50	22+20	RT	743.01	743.01
941	-L941-937	11+62	13+75	LT	246.62	246.62
940	-L941-937-	16+63	18+70	RT	189.75	189.75
320	-L941-937-	18+70	21+50	RT	271.15	271.15
941	-L941-937-	21+50	23+50	RT	211.36	211.36
940	-L941-937-	23+50	29+00	RT	607.00	607.00
940	-L936-	14+00	18+00	RT	464.40	464.40

TOTAL (PART II):	4,305.12
SAY (PART II):	4,350

SHOULDER BERM GUTTER SUMMARY

IN FEET

Site	LINE	Station	Station	LENGTH	SAY
944	-L944-, RT	12+50	18+00	550.00	575
942	-L943-942,RT	15+75	21+70	595.00	625
940	-L941-937,RT	17+83	18+70	87.00	95
939	-L941-937,RT	18+70	21+50	280.00	290
938	-L941-937,RT	21+50	23+50	200.00	210
937	-L941-937,RT	23+50	29+00	550.00	575

TOTAL (PART II):	2,262.00	2,370

8" X 12" CONCRETE CURB SUMMARY

IN FEET

Site	LINE	Station	Station	LENGTH	SAY
940	-L941-937,RT	16+73	17+83	110.00	120
936	-L936-, RT	14+00	18+00	400.00	425

TOTAL (PART II):	510.00	545

COMPUTED BY: SGM DATE: 10/2/2025
CHECKED BY: JLT DATE: 11/10/2025

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
GUARDRAIL SUMMARY

PROJECT REFERENCE NO.	SHEET NO.
W03293	3B -4

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR		EXTRA DEPTH POSTS	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END		CAT-1		GREU, TL-3						G	NG				
SITE 944																												
-L944-	12+00.00	18+50.00	RT	650.00			12+50	18+00	4'	5'-6" Berm	50'	50'	1'	1'				2										
			SUB-TOTALS	650.00														2										
			LESS ANCHOR DEDUCTIONS																									
		GREU, TL-3	2 @ 50.00 ft	100.00																								
			ANCHOR TOTALS	100.00																								
			SITE 944 TOTALS	550.00														2										
			SAY	**562.5**			**Additional Guardrail Po**											**2**										
SITE 943																												
-L943-	13+50.00	15+50.00	RT	200.00																						187.6		TIE TO EXIST. GUARDRAIL
			SITE 943 TOTALS	200.00																						187.6		
			SAY	**206.25**			**Additional Guardrail Posts = 2 EA**																			**190**		
SITE 942																												
-L943	15+50.00	22+25.00	RT	675.00				21+50	4'	5'-6" Berm		50'		1'				1								585		SHOULDER BERM GUTTER INSTALLATION
			SUB-TOTALS	675.00														1										
			LESS ANCHOR DEDUCTIONS																									
		GREU, TL-3	1 @ 50.00 ft	50.00																								
			ANCHOR TOTALS	50.00																								
			SITE 942 TOTALS	625.00														1								585.0		
			SAY	**631.25**			**Additional Guardrail Posts = 2 EA**											**1**								**600**		
SITE 941																												
-L941-937	11+68.75	13+50.00	LT	181.25			11+68.75				50'		1'					1								99.2		RETAIN EXIST. STRUCTUE ANCHOR
			SUB-TOTALS	181.25														1								99.2		
			LESS ANCHOR DEDUCTIONS																									
		GREU, TL-3	1 @ 50.00 ft	50.00																								
			ANCHOR TOTALS	50.00																								
			SITE 941 TOTALS	131.25														1								99.2		
			SAY	**143.75**			**Additional Guardrail Posts = 2 EA**											**1**								**105**		
SITE 940																												
-L941-937	16+70.00	18+70.00	RT	200.00																						172.4		TIE TO EXIST. GUARDRAIL
			SITE 940 TOTALS	200.00																						172.4		
			SAY	**206.25**			**Additional Guardrail Posts = 2 EA**																			**180**		
SITE 939																												
-L941-937	18+70.00	21+50.00	RT	280.00																						218.8		
			SITE 939 TOTALS	280.00																						218.8		
			SAY	**281.25**			**Additional Guardrail Posts = 2 EA**																			**220**		
SITE 938																												
-L941-937	21+50.00	23+50.00	RT	200.00																						140.5		
			SITE 938 TOTALS	200.00																						140.5		
			SAY	**206.25**			**Additional Guardrail Posts = 2 EA**																			**141**		
SITE 937																												
-L941-937	23+50.00	29+00.00	RT	550.00																						183.6		
			SITE 937 TOTALS	550.00																						183.6		
			SAY	**556.25**			**Additional Guardrail Posts = 2 EA**																			**185**		
SITE 936																												
-L936-	14+00.00	18+00.00	RT	400.00																						400		
			SITE 936 TOTALS	400.00																						400.0		
			SAY	**412.5**			**Additional Guardrail Posts = 2 EA**																			**410**		
W03293 (PART II) TOTALS				**3206.25**			**Additional Guardrail Posts = 18 EA**											**4**								**2031**		

PROJECT NO.	SHEET NO.
W03293	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".

COMPUTED BY: Rusty Lassiter DATE: 9/11/2025
CHECKED BY: Jay Twisdale, PE DATE: 9/11/2025

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

STATION	OFFSET	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION FT	INVERT ELEVATION FT	INVERT ELEVATION FT	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 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 PPP	DO NOT USE PVC
								THICKNESS OR GAUGE:													
L944 17+00	21 RT	0800		1433.4																	
		0800	0801		1430.2	1429.4	0.9														
L944 18+00	21 RT	0801		1434.8																	
		0801	0802		1429.4	1405.0															
L944 18+04	68 RT	0802																			
SITE 944 TOTALS																					
L943 18+32	16 LT	0900																			
		0900	0901		1373.8	1371.4															
L943 18+32	13 RT	0901		1375.8																	
		0901	0902		1370.6	1365.9															
L943 19+17	13 RT	0902		1371.2																	
		0902	0903		1365.9	1363.1															
L943 19+65	13 RT	0903		1368.4																	
		0903	0904		1363.1	1359.7															
-L943 20+18	13 RT	0904		1364.9																	
		0904	0905		1359.7	1349.8															
-L943 21+66	13 RT	0905		1355.0																	
		0905	0906		1349.8	1320.0															
L943 21+66	64 RT	0906																			
L943 22+64	0 CL	0907																			
L943 18+33	0 CL																				
L943 22+64	0 CL																				
SITE 942 TOTALS																					
L941-937 18+40	16 LT	1000																			
		1000	1001		1294.0	1290.4															
L941-937 18+40	13 RT	1001		1294.3																	
		1001	1002		1290.4	1255.0															
L941-937 18+40	72 RT	1002		1371.2																	
L941-937 18+45	0 CL																				
SITE 940 TOTALS																					
L941-937 20+30	16 LT	1100																			
		1100	1101		1284.8	1282.2															
L941-937 20+30	13 RT	1101		1286.7																	
		1101	1102		1281.4	1276.8															
L941-937 21+14	13 RT	1102		1282.0																	
		1102	1103		1276.8	1272.1															
L941-937 20+30	0 CL																				
SITE 939 TOTALS																					
W03293 (PART II) SHT 3D-1 TOTALS																					

STATION	C.S.Pipe THICKNESS OR GAUGE: .064	12	15	18	24	.064	15	18	24	30	36	.079	15	18	24	30	36	42	48	.109	15	18	24	30	36	42	48	R.C. PIPE CLASS III 12	15	18	R.C. PIPE CLASS IV 12	15	18	24	30	36	42
L944 17+00																															92						
L944 18+00																																					
L944 18+04						48																															
SITE 944 TOTALS						48																									92						
L943 18+32																																			28		
L943 18+32																																			80		
L943 19+17																																			80		
L943 19+65																																			44		
-L943 20+18																																			144		
-L943 21+66																																			40		
L943 21+66																																					
L943 22+64						44																															
L943 18+33																																					
L943 22+64																																					
SITE 942 TOTALS						44																													336		
L941-937 18+40																																			28		
L941-937 18+40																																					
L941-937 18+40						60																															
L941-937 18+40																																					
L941-937 18+45																																					
SITE 940 TOTALS						60																													28		
L941-937 20+30																																					
L941-937 20+30																																			28		
L941-937 20+30																																			76		
L941-937 21+14																																			80		
L941-937 20+30																																					
SITE 939 TOTALS																																			184		
W03293 (PART II) SHT 3D-1 TOTALS			48		60				52						44				92	28	520																

STATION	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') 0' THRU 5' EACH	A 5' THRU 10' LIN.FT	B 10' AND ABOVE LIN.FT	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	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	T.B.G.D.I. (SEE SHEET 2D-1)840035	G.D.I. (N.S. FLAT) FRAME W/2 GRATES STD. 840.29	15" CS ELBOWS	24" CS ELBOWS	30" CS ELBOWS	FLOWABLE FILL CY	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71 CY	CONC. COLLARS CL. "B" C.Y. STD. 840.72 CY	PIPE REMOVAL LIN. FT. LIN.FT	REMARKS
L944 17+00			1															1								
L944 18+00																											
L944 18+04			1	1.4														1								15" CSP OUTLET
SITE 944 TOTALS			2	1.4														2								
L943 18+32																										30" RCP INLET
L943 18+32			1	0.3											1	1										840d35
L943 19+17			1	0.3											1	1										840d35
L943 19+65			1	0.3											1	1										840d35
-L943 20+18			1	0.3											1	1										840d35
-L943 21+66			1	0.3											1	1										840d35
L943 21+66																				2						30" CSP OUTLET
L943 22+64	9.800																									
L943 18+33																									70	
L943 22+64																									42	
SITE 942 TOTALS	9.800		5	1.5											5	5				2					112	
L941-937 18+40																										24" RCP INLET
L941-937 18+40			1												1			1								
L941-937 18+40																				2						
L941-937 18+40																										24" CSP OUTLET
L941-937 18+45																									50	
SITE 940 TOTALS			1												1			1		2					50	
L941-937 20+30																										30" RCP INLET
L941-937 20+30			1	0.3											1	1										840d35
L941-937 20+30			1	0.3											1	1										840d35
L941-937 21+14			1	0.3											1	1										840d35
L941-937 20+30																									28	
SITE 939 TOTALS			2	0.6											2	2									28	
W03293 (PART II) SHT 3D-1 TOTALS	9.800		10	3.5											3	7	7	3		2	2	2			190	

ABBREVIATIONS

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

PROJECT NO.	SHEET NO.
W03293	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".

COMPUTED BY: Rusty Lassiter DATE: 9/11/2025
CHECKED BY: Jay Twisdale, PE DATE: 9/11/2025

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

STATION	OFFSET	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION FT	INVERT ELEVATION FT	INVERT ELEVATION FT	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 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 PPP	DO NOT USE PVC
								THICKNESS OR GAUGE													
L941-937 22+00	13 RT	1103		1277.4																	
		1103	1104		1272.1	1266.8															
L941-937 23+00	14 RT	1104		1272.0																	
		1104	1105																		
SITE 938 TOTALS																					
L941-937 24+97	13 RT	1105		1259.3																	
L941-937 24+97	18 LT	1106																			
		1106	1105		1256.7	1254.9															
		1105	1107		1253.1	1241.0															
L941-937 26+87	13 RT	1107		1247.3																	
		1107	1108		1241.0	1236.4															
L941-937 27+65	13 RT	1108		1242.6																	
		1108	1110		1236.4	1231.8															
L941-937 28+47	13 RT	1110		1238.1																	
L941-937 28+47	16 LT	1109																			
		1109	1110		1234.9	1231.8															
L941-937 28+97	12 RT	1111		1,235.6																	
L941-937 24+96	0 CL																				
L941-937 28+47	0 CL																				
SITE 937 TOTALS																					
W03293 (PART II) SHT 3D-1 TOTALS											48	60				52					
W03293 (PART II) TOTALS											48	60				52					

STATION	C.S.Pipe 12	15	18	24	15	18	24	30	36	15	18	24	30	36	42	48	R.C. PIPE CLASS III 12	15	18	R.C. PIPE CLASS IV 12	15	18	24	30	36	42	ENDWALLS STD. 838.01 838.11 OR STD. 838.98 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	QUANTITIES FOR DRAINAGE STRUCTURES "TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') A 0' THRU 5' EACH	A 5' THRU 10' LIN.FT	B 10' AND ABOVE LIN.FT	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	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	T.B.G.D.I. (SEE SHEET 7D-1)840035	G.D.I. (N.S. FLAT) FRAME W/2 GRATES STD. 840.29	15" CS ELBOWS	24" CS ELBOWS	30" CS ELBOWS	FLOWABLE FILL CY	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT. LIN.FT	REMARKS
L941-937 22+00																								100				1	0.3																							840d35
																								196																												
L941-937 23+00																												1	0.5																							840d35
SITE 938 TOTALS																								296				2	0.8																							
L941-937 24+97																												1	1.3																							840d35
L941-937 24+97																																																					30" RCP INLET
																								28																												
																									188																											
L941-937 26+87																												1	1.3																							840d35
																									76																											
L941-937 27+65																												1	1.3																							840d35
																									80																											
L941-937 28+47																												1	2.3																							840d35
L941-937 28+47																																																					42" RCP INLET
																									28																											
L941-937 28+97																												1	2.3																							840d35
L941-937 24+96																																																					52
L941-937 28+47																																																					44
SITE 937 TOTALS																								28		372		5	8.5																							96
W03293 (PART II) SHT 3D-1 TOTALS											44					92				28	520					9.800		10	3.5																							190
W03293 (PART II) TOTALS											44					92				28	844		372			9.8		17	12.8																							286

ABBREVIATIONS

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

Note: Invert Elevations 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".

COMPUTED BY: Rusty Lassiter DATE: 9/11/2025
CHECKED BY: Jay Twisdale, PE DATE: 9/11/2025

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

STATION	OFFSET	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION FT	INVERT ELEVATION FT	INVERT ELEVATION FT	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) SIZE 54	60	66	72	78	84	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PPP	DO NOT USE PVC
		THICKNESS OR GAUGE																	
		1110	1111		1230.8	1226.4													
		1111	1112		1228.4	1195.0													
SITE 937 TOTALS																			
W03293 (PART II) TOTALS																			

STATION	C.S.Pipe 54	60	66	72	78	84	R.C. Pipe Class III 54	60	66	72	78	84	R.C. Pipe Class IV 54	60	66	72	R.C. Pipe Class V 54	60	66	72	Structural Plate Pipe 60	66	72	ENDWALLS STD. 838.01 838.11 OR STD. 838.98 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	QUANTITIES FOR DRAINAGE STRUCTURES "TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') A 0' THRU 5' EACH	A 5' THRU 10' LIN.FT	B 10' AND ABOVE LIN.FT	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	T.B.D.I. STD. 840.35	G.D.I. (N.S. FLAT) FRAME W/GRATE STD. 840.29	54" CS ELBOWS	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT. LIN.FT	REMARKS
SITE 937 TOTALS																																													
W03293 (PART II) TOTALS																																												

COMPUTED BY: PMP DATE: 07/31/2025
CHECKED BY: KND DATE: 07/31/2025

(9-17-24)

PROJECT NO.	SHEET NO.
W03293	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PART II

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY **(SITE 936 / 18314.1075015)**				SD	100
CONTINGENCY **(SITE 937 / 18314.1075016)**				SD	100
CONTINGENCY **(SITE 938 / 18314.1075017)**				SD	100
CONTINGENCY **(SITE 939 / 18314.1075018)**				SD	100
CONTINGENCY **(SITE 940 / 18314.1075019)**				SD	100
CONTINGENCY **(SITE 941 / 18314.1075035)**				SD	100
CONTINGENCY **(SITE 942 / 18314.1075020)**				SD	100
CONTINGENCY **(SITE 943 / 18314.1075021)**				SD	100
CONTINGENCY **(SITE 944 / 18314.1075022)**				SD	100
				TOTAL LF:	900

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY **(SITE 936 / 18314.1075015)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 937 / 18314.1075016)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 938 / 18314.1075017)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 939 / 18314.1075018)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 940 / 18314.1075019)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 941 / 18314.1075035)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 942 / 18314.1075020)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 943 / 18314.1075021)**			ASU1	12	50	100	150		
CONTINGENCY **(SITE 944 / 18314.1075022)**			ASU1	12	50	100	150		
				TOTAL CY/TONS/SY:	450	900**	1350**	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.**

PROJ. REFERENCE NO.	SHEET NO.
W03293	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

	PARCEL No.	SHEET No.	Site	PROPERTY OWNER NAME
900	1	8	944	LARRY C. ECKSTEIN
	2	8	944	STEVEN K. STAIRES & MARIE DAESCHEL
	3	8	944	ROBERT A. BARBER, II & STACI M. BARBER
	4	8	944	BENJAMIN C. TAYLOR & CHRISTINE M. TAYLOR
	5	9, 10, 11 & 12	942	CONSERVING CAROLINA
	6	9	943	SARA FRYE & AMANDA FRYE
	7	9, 10, 11 & 12	942	CONSERVING CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
W03293	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS

SHEETS 4 THROUGH 7 LEFT INTENTIONALLY BLANK.

REVISIONS

-L- 944 CURVE DATA

PI Sta 11+43.72	PI Sta 13+69.93	PI Sta 16+00.20	PI Sta 17+06.68
Δ = 39° 31' 32.2" (RT)	Δ = 11° 53' 19.4" (LT)	Δ = 13° 38' 21.6" (RT)	Δ = 11° 56' 03.8" (RT)
D = 14° 19' 26.2"	D = 8° 18' 13.5"	D = 9° 42' 40.1"	D = 16° 22' 12.8"
L = 275.94'	L = 143.17'	L = 140.45'	L = 72.90'
T = 143.72'	T = 71.84'	T = 70.56'	T = 36.58'
R = 400.00'	R = 690.00'	R = 590.00'	R = 350.00'
SE = EXIST.	SE = EXIST.	SE = EXIST.	SE = EXIST.

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
W03293	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 ENGINEER JIMMY L. TERRY
1/5/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024897 ENGINEER John W. Twisdale, Jr.
1/5/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

BEGIN PROJECT W-03293 (PART 2)
-L944- STA 12+00.0
BEGIN CONSTRUCTION SITE 944

END CONSTRUCTION
SITE 944
-L944- STA 18+50.00

-L944- PC 12+98.08
-L944- PT 14+41.26
-L944- PT 19+95.06
-L944- PT 12+75.94
-L944- PC 10+00.00
-L944- PC 15+29.64
-L944- PCC 16+70.09
-L944- PT 17+42.99

+00 TIE TO EXIST
+50 TIE TO EXIST

MAGNOLIA PARK INVESTMENTS, LLC
DB 465 PG 1718
PB E PG 931

DAVID P. CAREY
PATRICIA C. CAREY
DB 374 PG 1207
PB D PG 179

GEORGE H. DERWORT
MARGIE M. DERWORT
DB 200 PG 147
PB D PG 416

1 LARRY C. ECKSTEIN
DB 388 PG 659
PB E PG 644

2 STEVEN K. STAIRES
MARIE DAESCHEL
DB 465 PG 1463
PB G PG 77

3 ROBERT A. BARBER, II
STACI M. BARBER
DB 463 PG 426
PB E PG 1178

4 BENJAMIN C. TAYLOR
CHRISTINE M. TAYLOR
DB 461 PG 1702
PB E PG 1178

FSQUARE, LLC
DB 481 PG 1241
PB B PG 863

FSQUARE, LLC
DB 464 PG 1752
PB E PG 1178

SARA FRYE
AMANDA FRYE
DB 474 PG 1248
PB A251 PG 952

PARTIALLY GROUTED ROCK EMBANKMENT
-L944- 12+50 TO 18+50, RT
SEE SHEETS W-1 THRU W-5

PROP. SHOULDER BERM GUTTER
-L944- STA. 12+50.00 TO 18+00.00 RT

ROCK EMBANKMENT WITH MICROPILE KNEE WALL
-L944- 14+25 TO 18+00, RT
SEE SHEETS W-1 THRU W-5

SAWCUT EXISTING PAVEMENT AT CENTERLINE

CLEAN DEBRIS FROM INLET

STABILIZE SLOPE

CLASS I RIP RAP EST.-2 TONS GEOTEXT.- 6sqyds

ELBOWS W/ROD AND LUG AND SLEEVE GASKETS

US HWY 176 35'BST

SR 1102 PEARSON FALLS RD 60' BST

NORTH PACOLET RIVER

RIVER COVE LN

BEAR CREEK

CHARLESTON DA HARDY SOIL

EXISTING R/W

100.00'

80.00'

1/5/2026
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PROJECT REFERENCE NO.	SHEET NO.
W03293	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY — 5/15/2026

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024897 ENGINEER John W. Twisdale — 5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

NAD 83/2011

REVISIONS

GEORGE H. DERWORT
MARGIE M. DERWORT
DB 200 PG 147
PB D PG 416

JOSEPH C. ZEIGLER
DONNA C. ZEIGLER
DB 345 PG 335
DB 371PG 2314
PB A399 PG 887
PB E PG 1456

CONSERVING CAROLINA
DB 484 PG 357

SARA FRYE
AMANDA FRYE
DB 474 PG 1248
PB A251PG 952

CONSERVING CAROLINA
DB 264 PG 239
DB 333 PG 1459
PB A PG 224
PB B PG 22
PB D PG 904

-L943-942- PC 10+00.00
-L943-942- PT 11+44.11
-L943-942- PC 12+29.65
-L943-942- PT 13+85.15
-L943-942- PC 14+15.15
-L943-942- PT 15+42.48
-L943-942- PC 15+93.02
-L943-942- PT 16+79.71
-L943-942- PC 17+40.92
-L943-942- PT 18+64.72
-L943-942- PC 18+99.74
-L943-942- PT 20+48.42
-L943-942- PC 21+61.68
-L943-942- PT 21+95.18
-L943-942- PT 25+54.29 BK =
-L941-937- POT 10+00.00 AH
-L943-942- PC 23+29.65

BEGIN CONSTRUCTION
SITE 943
-L943-942- STA 13+50.00

END CONSTRUCTION SITE 943
BEGIN CONSTRUCTION SITE 942
-L943-942- STA 15+50.00

END CONSTRUCTION
SITE 942
-L943-942- STA 23+62.00

S 19°13'34" E 342.94'
S 72°04'08" E
N 67°07'15" E
N 74°01'02" E
S 65°36'35" E
S 66°53'22" E
N 87°48'07" E 35.04'
N 89°40'18" E 67.00'
S 64°19'03" E 266.17'
N 60°16'56" E 164.38'
S 00°58'06" W 205.45'

-L943-942- CURVE DATA

PI Sta 10+77.14	PI Sta 13+13.32	PI Sta 14+86.69	PI Sta 16+36.74
Δ = 50° 39' 16.3" (RT)	Δ = 52° 24' 33.7" (LT)	Δ = 65° 08' 20.4" (LT)	Δ = 18° 19' 44.1" (RT)
D = 35° 09' 02.8"	D = 33° 42' 12.2"	D = 51° 09' 25.0"	D = 21° 08' 32.5"
L = 144.11'	L = 155.50'	L = 127.33'	L = 86.69'
T = 77.14'	T = 83.67'	T = 71.54'	T = 43.72'
R = 163.00'	R = 170.00'	R = 112.00'	R = 271.00'
	SE = EXIST.	SE = EXIST.	SE = EXIST.
PI Sta 18+03.09	PI Sta 19+77.31	PI Sta 21+78.43	PI Sta 24+43.75
Δ = 12° 53' 47.9" (RT)	Δ = 40° 22' 21.5" (RT)	Δ = 1° 16' 47.0" (LT)	Δ = 24° 45' 07.9" (LT)
D = 10° 25' 02.7"	D = 27° 09' 15.8"	D = 3° 49' 11.0"	D = 11° 01' 06.3"
L = 123.80'	L = 148.68'	L = 33.50'	L = 224.64'
T = 62.16'	T = 77.58'	T = 16.75'	T = 114.10'
R = 550.00'	R = 211.00'	R = 1,500.00'	R = 520.00'
SE = EXIST.	SE = EXIST.	SE = EXIST.	

5/15/2026
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PROJECT REFERENCE NO.	SHEET NO.
W03293	10
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY
5/15/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024897 John W. Twisdale, Jr.
5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS

NAD 83/2011

25 10 15

-L943-942- PT 25+54.29 BK =
-L941-937- POT 10+00.00 AH

-L941-937- PT 12+83.71

SAWCUT EXISTING PAVEMENT AT CENTERLINE

UTILIZE WIRE FORM EMBANKMENT STABILIZATION GEOTECHNICAL DETAIL TO CONSTRUCT SLOPE SEE SHEETS 2G-1 & 2G-2

-L941-937- PC 11+77.18

NOTE: RETAIN EXISTING STRUCTURE ANCHOR TIE PROP. GUARDRAIL

+68 ± TIE TO EXIST

BEGIN CONSTRUCTION
SITE 941
-L941-937- STA 11+62.07

BEGIN CONSTRUCTION
SITE 940
-L941-937- STA 16+63.00

-L941-937- PT 16+13.54

-L941-937- PC 15+16.07

5
CONSERVING CAROLINA
DB 484 PG 357

+75 TIE TO EXIST

-L941-937- PT 14+58.02

+73 ± TIE TO EXIST

-L941-937- PC 16+59.75

-L941-937- PT 17+06.90

-L941-937- PC 17+70.49

END CONSTRUCTION
SITE 941
-L941-937- STA 13+75.00

7
CONSERVING CAROLINA
DB 264 PG 239
DB 333 PG 1459
PB A PG 224
PB B PG 22
PB D PG 904

-L941-937- PC 13+36.50

END CONSTRUCTION SITE 940
BEGIN CONSTRUCTION SITE 939
-L941-937- STA 18+70.00

-L941-937- PC 19+33.76

-L941-937- PT 18+95.73

SAWCUT EXISTING PAVEMENT AT CENTERLINE & REPLACE/WIDEN EASTBOUND LANE (10')

97.49' TAPER TO EXIST

+70.49

GRADE TO DRAIN

UT TO NORTH PACOLET RIVER (SD)

REMOVE

ROADWAY UNDERDRAIN

ELBOWS W/ROD AND LUG WITH SLEEVE GASKETS

CLASS I RIP RAP EST.- 4 TONS GEOTEXT.-12sqyds

STABILIZE SLOPE

SHOULDER BERM GUTTER -L941-937- 16+73 RT TO 29+00 RT

PROP. RETAINING WALL #938939 -L941-937- STA. 18+90 RT TO 23+20 RT SEE SHEETS W-12 THRU W-15

8"x12" CONCRETE CURB -L941-937- 16+73 RT TO 17+83 RT

ROCK EMBANKMENT SEE SHEET 2G-3

NORTH PACOLET RIVER

WOODS

DRILL HOLE

MTL

EXISTING R/W

GPS-2

N 88° 21' 29.4" E

N 63° 38' 43.7" E

N 87° 59' 37.9" E

N 87° 50' 20.6" E

N 59° 51' 04.9" E

N 89° 46' 03.3" E

MATCH LINE STA. 20+00
MATCH TO SHEET NO. 11

-L943-942- CURVE DATA

PI Sta 24+43.75
△ = 24° 45' 07.9" (LT)
D = 11° 01' 06.3"
L = 224.64'
T = 114.10'
R = 520.00'

-L941-937- CURVE DATA

PI Sta 12+31.29	PI Sta 13+98.19	PI Sta 15+67.62	PI Sta 16+83.52	PI Sta 18+34.11	PI Sta 20+52.71
△ = 24° 42' 46.3" (LT)	△ = 24° 20' 44.8" (RT)	△ = 46° 09' 07.3" (LT)	△ = 18° 00' 44.3" (RT)	△ = 24° 54' 58.4" (RT)	△ = 21° 33' 01.3" (RT)
D = 23° 11' 48.0"	D = 20° 02' 00.6"	D = 47° 21' 06.8"	D = 38° 11' 49.9"	D = 19° 53' 39.7"	D = 9° 10' 02.4"
L = 106.54'	L = 121.53'	L = 97.47'	L = 47.16'	L = 125.24'	L = 235.08'
T = 54.11'	T = 61.69'	T = 51.55'	T = 23.77'	T = 63.63'	T = 118.94'
R = 247.00'	R = 286.00'	R = 121.00'	R = 150.00'	R = 288.00'	R = 625.00'
SE = EXIST.			SE = EXIST.	SE = EXIST.	SE = EXIST.

5/15/2026
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PROJECT REFERENCE NO.	SHEET NO.
W03293	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY — 5/15/2026

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024897 John W. Twisdale, Jr. — 5/15/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS

MATCH LINE STA. 20+00
MATCH TO SHEET NO. 10

MATCH LINE STA. 12+00 -L936-
MATCH TO SHEET NO. 12

NAD 83/2011

N 10°04'33" E
667.62'

-L941-937- PT 23+70.77

-L941-937- PRC 21+68.84

END CONSTRUCTION SITE 939
BEGIN CONSTRUCTION SITE 938
-L941-937- STA 21+50.00

END CONSTRUCTION
SITE 938
BEGIN CONSTRUCTION
SITE 937
-L941-937- STA 23+50.00

-L941-937- PT 29+23.89 BK =
-L936- POT 10+00.00 AH

END CONSTRUCTION SITE 937
-L941-937- STA 29+00.00

+00 TIE TO EXIST

5
CONSERVING CAROLINA
DB 484 PG 357

MICHAEL N. BELL
DB 481PG 2334
PB G PG 573

UT TO NORTH PACOLET RIVER (SP)
UT TO NORTH PACOLET RIVER (SD)
UT TO NORTH PACOLET RIVER (SSD)
UT TO NORTH PACOLET RIVER (SR)

S 86°32'13" E
S 68°28'52" E

WETLAND WA
GRADE TO DRAIN
WOODS
24" CMP CRUSHED/BURIED
18" CMP
REMOVE
REMOVE 24" CMP
CONC HW
54" RCP-IV
42" RCP-IV
30" RCP-IV
TB 2GI-A
NAIL
SPIKE
MTL
US 176 19'BST
EXISTING R/W
50.00'
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
ELBOWS W/ROD AND LUG WITH SLEEVE GASKETS
TIE TO EXIST. GUARDRAIL
STABILIZE SLOPE
DEBRIS
NORTH PACOLET RIVER
PE
JS
SI
+00.00
80.00 RT
+72.00
101.00 RT
+00.00
90.00 RT
+23.89 (-L941-937-)
90.00 RT
+55.00 (-L936-)
100.00 RT
CLASS I RIP RAP
EST.- 21 TONS
GEOTEXT.- 47sqyds

-L941-937- PC 27+03.30

7
CONSERVING CAROLINA
DB 264 PG 239
DB 333 PG 1459
PB A PG 224
PB B PG 22
PB D PG 904

PROP. RETAINING WALL #938-939
-L941-937- STA. 18+90 RT TO 23+20 RT
SEE SHEETS W-12 THRU W-15

PROP. RETAINING WALL #937_1
-L941-937- 24+25 RT TO 26+75 RT
SEE SHEETS W-16 THRU W-19

PROP. RETAINING WALL #937_2
-L941-937- 27+60 RT TO 28+90 RT
SEE SHEETS W-16 THRU W-19

ROCK EMBANKMENT WITH MICROPILE KNEE WALL
-L41-937- 20+25 TO 28+90 RT
SEE SHEETS W-12 THRU W-15 (SITES 939 & 938)
SEE SHEETS W-16 THRU W-19 (SITE 937)

PARTIALLY GROUTED ROCK DETAILS
SEE SHEETS W-24 AND W-25

ROCK EMBANKMENT WITH MICROPILE KNEE WALL
-L41-937- 20+25 TO 28+90, RT
SEE SHEETS W-12 THRU W-15 (SITES 939 & 938)
SEE SHEETS W-16 YHRU W-19 (SITE 937)

PARTIALLY GROUTED ROCK DETAILS
SEE SHEETS W-24 AND W-25

-L941-937- CURVE DATA

PI Sta 20+52.71	PI Sta 22+70.23	PI Sta 28+14.52
Δ = 21° 33' 01.3" (RT)	Δ = 12° 51' 17.7" (LT)	Δ = 18° 03' 20.5" (RT)
D = 9° 10' 02.4"	D = 6° 21' 58.3"	D = 8° 11' 06.4"
L = 235.08'	L = 201.92'	L = 220.59'
T = 118.94'	T = 101.39'	T = 111.22'
R = 625.00'	R = 900.00'	R = 700.00'
SE = EXIST.	SE = EXIST.	SE = EXIST.

5/15/2026
R:\NCDOT\US 14 US 176 Repair\Roadway\Design\PlanSheets\US176_Rdy.psh_11.dgn
User:rquett

PROJECT REFERENCE NO.	SHEET NO.
W03293	12
R/W SHEET NO.	

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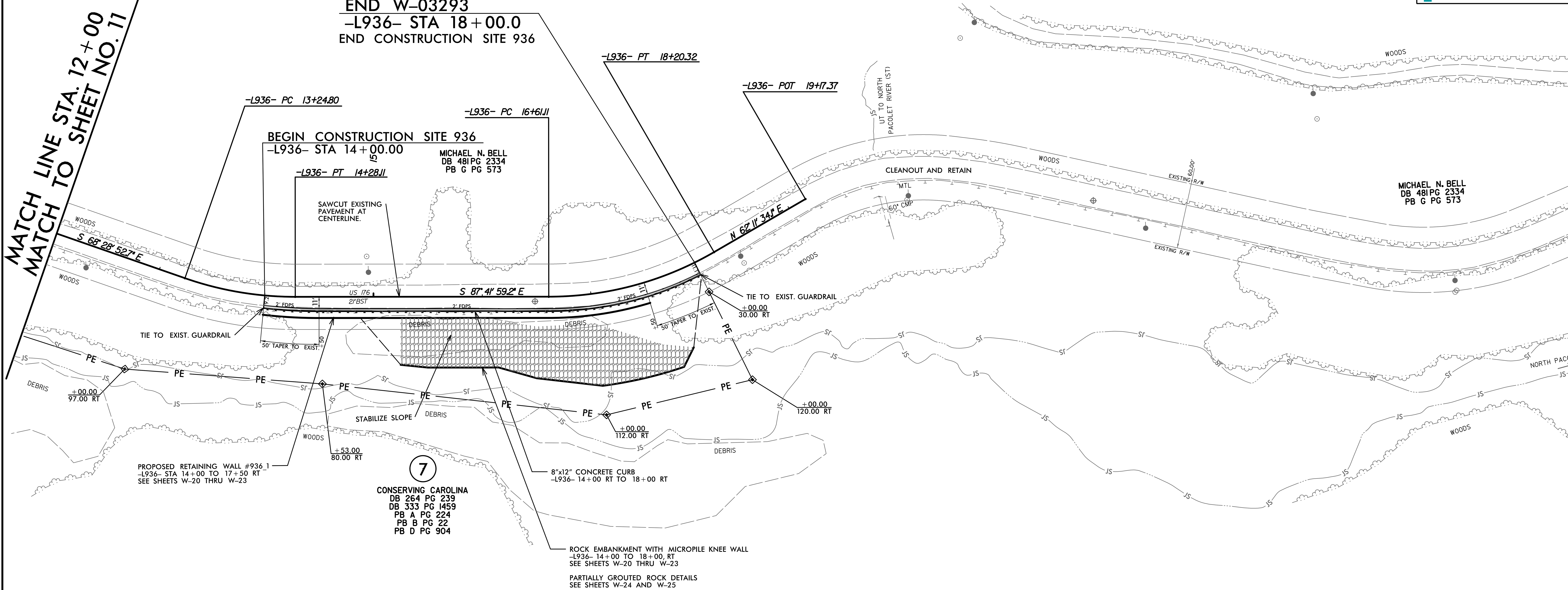
REVISIONS



-L936- CURVE DATA

PI Sta 13+76.95	PI Sta 17+42.60
Δ = 19° 13' 06.5" (LT)	Δ = 30° 06' 26.7" (LT)
D = 18° 36' 09.1"	D = 18° 54' 34.2"
L = 103.31'	L = 159.22'
T = 52.15'	T = 81.49'
R = 308.00'	R = 303.00'
SE = EXIST.	SE = EXIST.

X:\NCDOT\Div 14 US 176 Repair\Roadway\Design\PlanSheets\US176_Rdy_psh_12.dgn