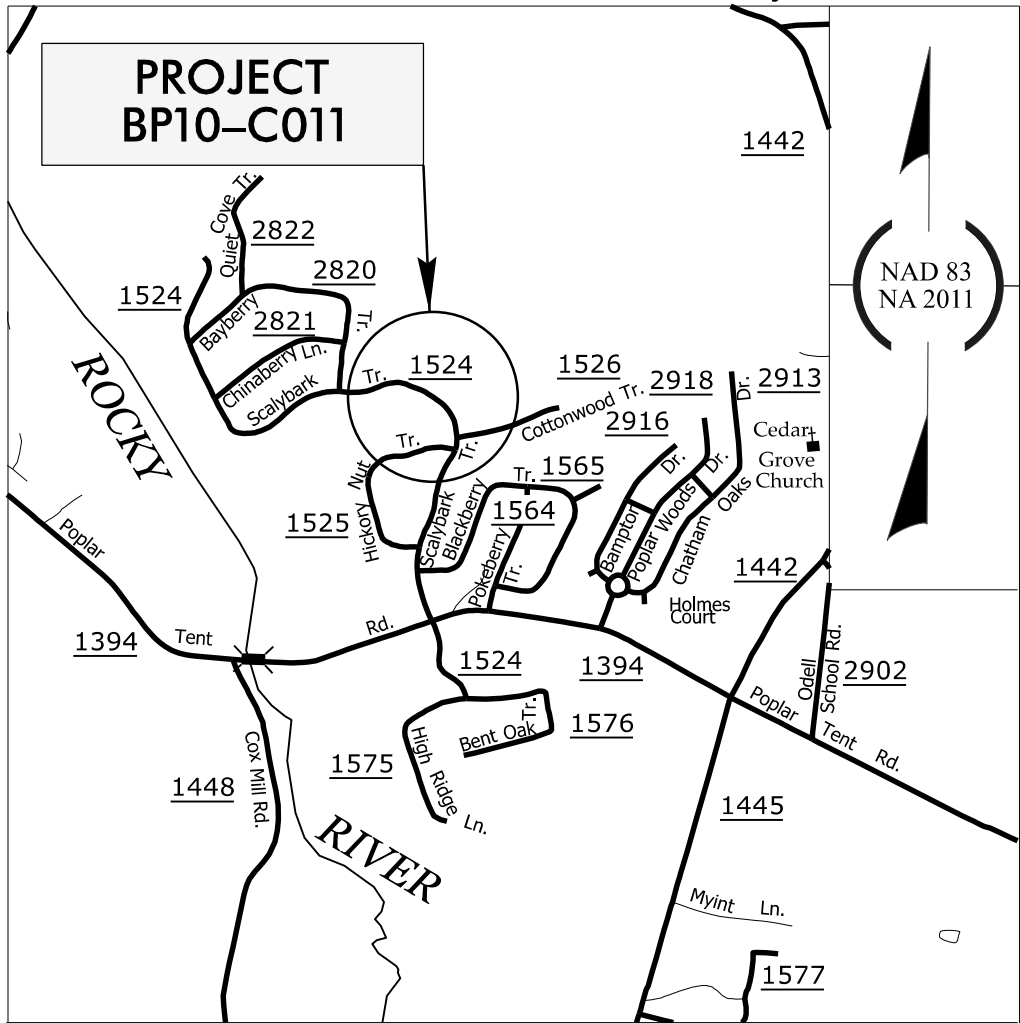


PROJECT: BP10-C011

CONTRACT: DJ00571

See Sheet 001A For Index of Sheets
See Sheet 001B For Conventional Symbols



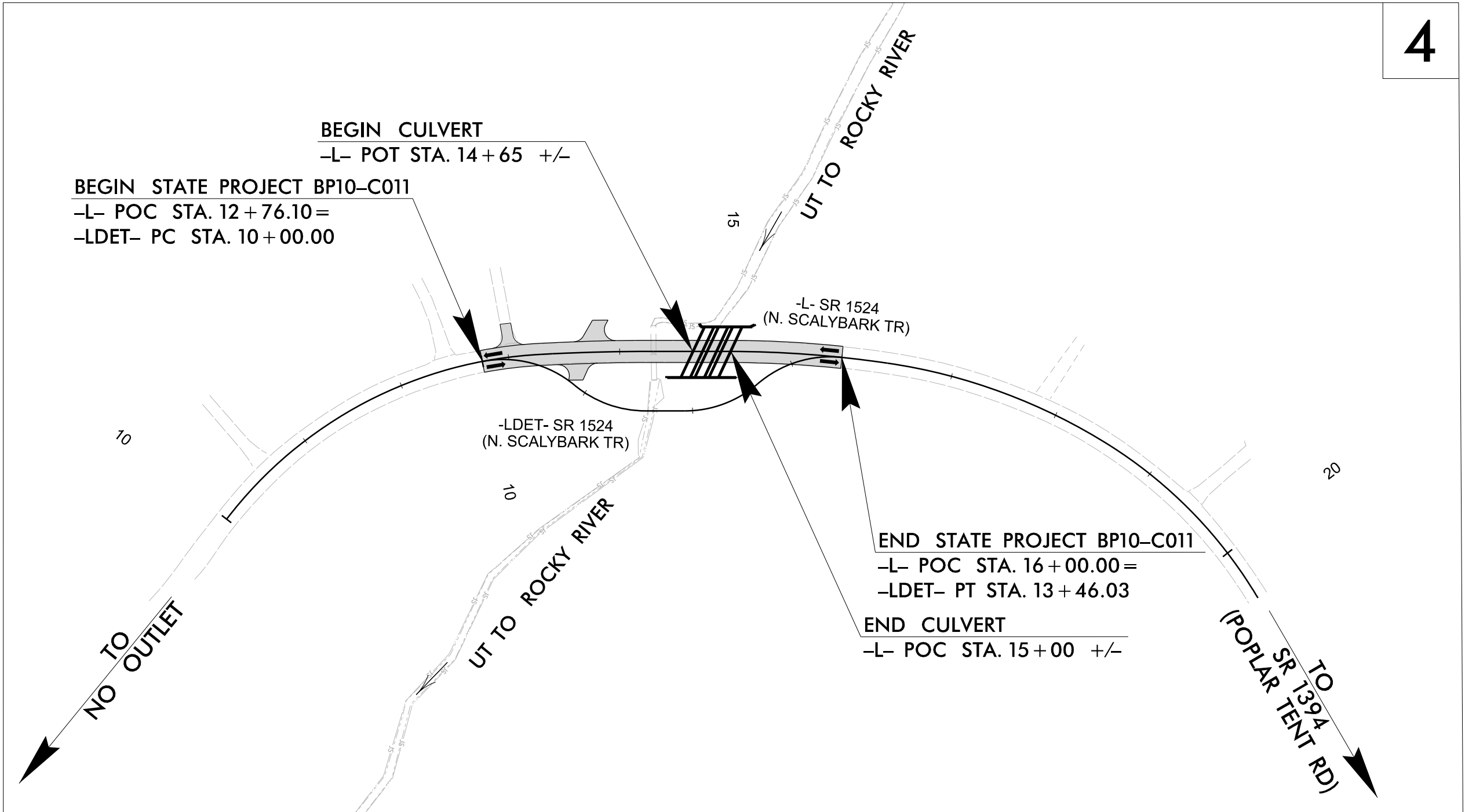
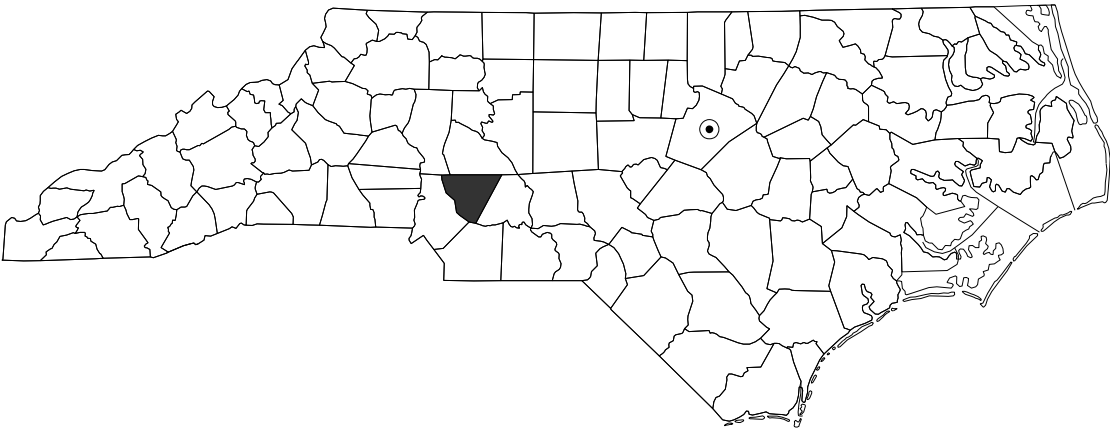
VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

LOCATION: *REPLACE CULVERT ON SR 1524*
(N. SCALYBARK TR)

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

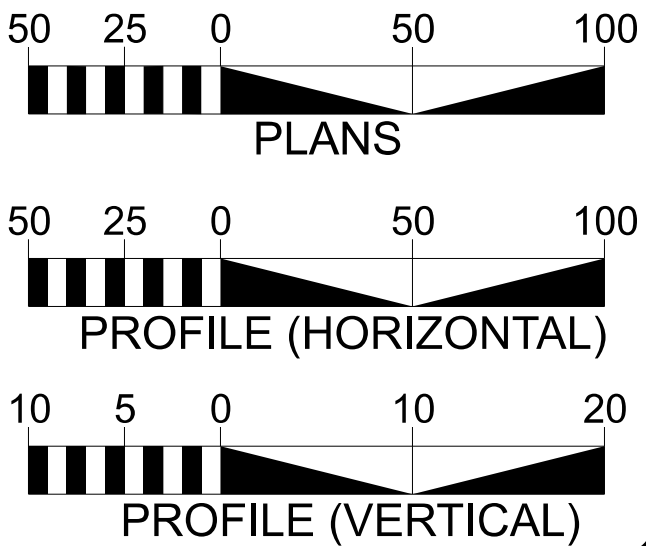


4



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UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2026 = 320
ADT 2046 = 320
K = N/A
D = N/A
T = <1 % *
V = 30 MPH
* TTST =<1% DUAL <1%
FUNC CLASS =
LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT BP10-C011 = 0.054 MILES
LENGTH OF CULVERT PROJECT BP10-C011 = 0.007 MILES
TOTAL LENGTH OF PROJECT BP10-C011 = 0.061 MILES

PREPARED IN THE
OFFICE OF:

CDM
Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 25, 2024

LETTING DATE:
OCTOBER 1, 2025

KIT A. PERSIANI, P.E.
PROJECT ENGINEER

KEVIN P. SABO, E.I.
PROJECT DESIGN ENGINEER

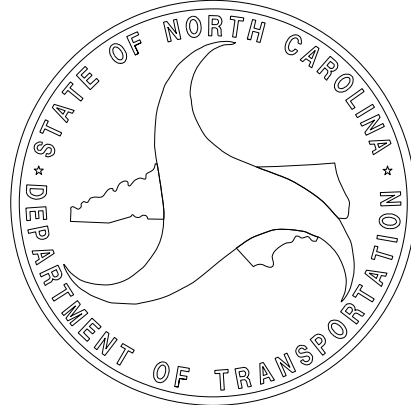
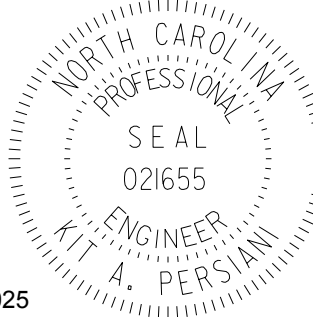
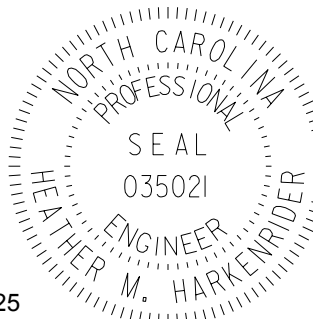
YANWEI MA, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by:
Heather Harkewider
SIGNATURE
P.E. 8/26/2025

ROADWAY DESIGN ENGINEER

DocuSigned by:
Kit A. Persiani
SIGNATURE
P.E. 8/26/2025



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
001A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
001B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAILS - ON-SITE DETOUR LAYOUT PLAN AND PROFILE SHEET
2C-1 THRU 2C-7	ROADWAY SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-2	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
004	PLAN AND PROFILE SHEET
RW02C-1	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT, AND PROPERTY TIES
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SHEET INDEX
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-11	CROSS-SECTIONS
C-1 THRU C-13	CULVERT PLANS

EFF. 01-16-2024
REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

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 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
862.01	Guardrail Placement (Use Details in Lieu of Standard for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation (Use Detail in Lieu of Standard for Sheet 5 of 9)
876.01	Rip Rap in Channels and Ditches

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 815.02 AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CHARTER/SPECTRUM, CITY OF CONCORD, CORRIHER WATER SYSTEMS, DOMINION ENGERGY, DUKE ENERGY, SEGRA, WINDSTREAM COMMUNICATIONS, AND ZAYO.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

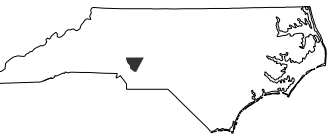
RIGHT-OF-WAY MARKERS:

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

BPIO-COM

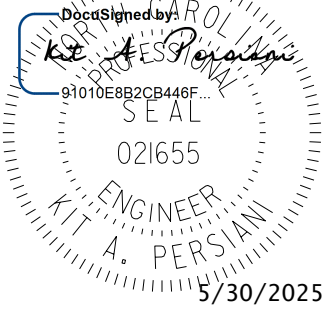
4R01001A

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CABARRUS COUNTY



DIVISION 10

ROADWAY DESIGN
ENGINEER



PREPARED BY



CDM Smith Inc.
4603 Park Road
Suite 240
Charlotte, NC 28210-3738
NC COR No. F-1255

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel / Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	
BUILDINGS AND OTHER CULTURE:	
Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	
HYDROLOGY:	
Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

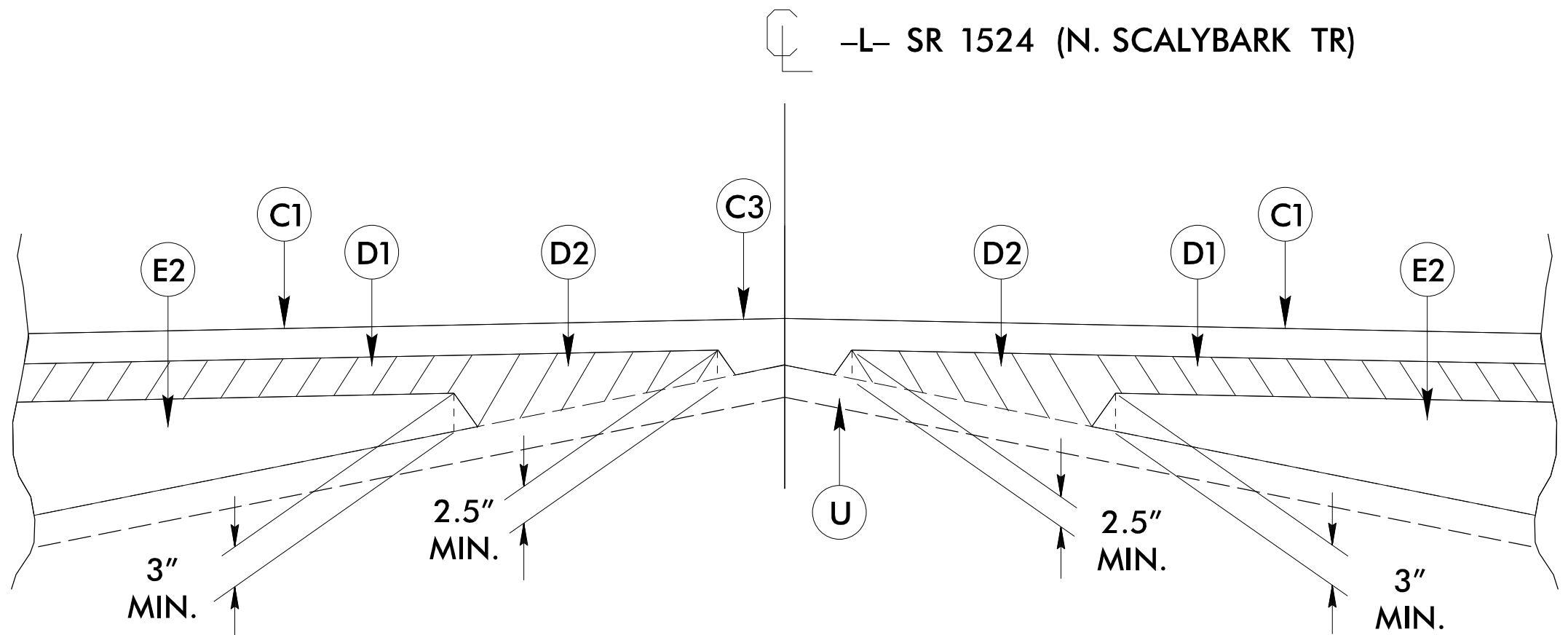
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE - LOS A)*	
SS Force Main Line (SUE - LOS B)*	
SS Force Main Line (SUE - LOS C)*	
SS Force Main Line (SUE - LOS D)*	

MISCELLANEOUS:

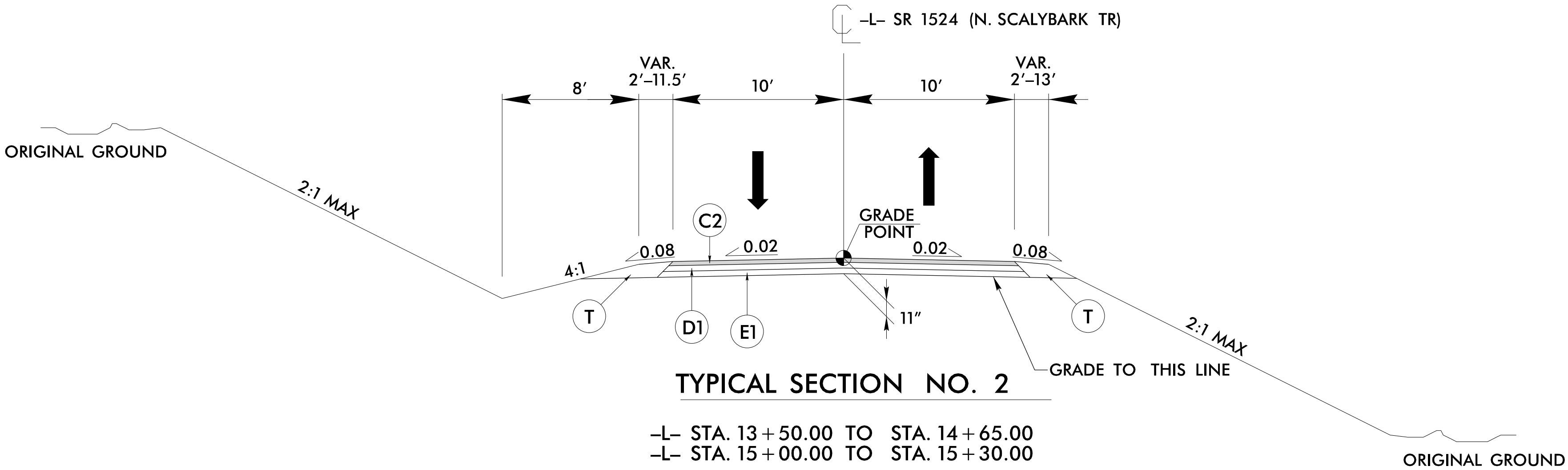
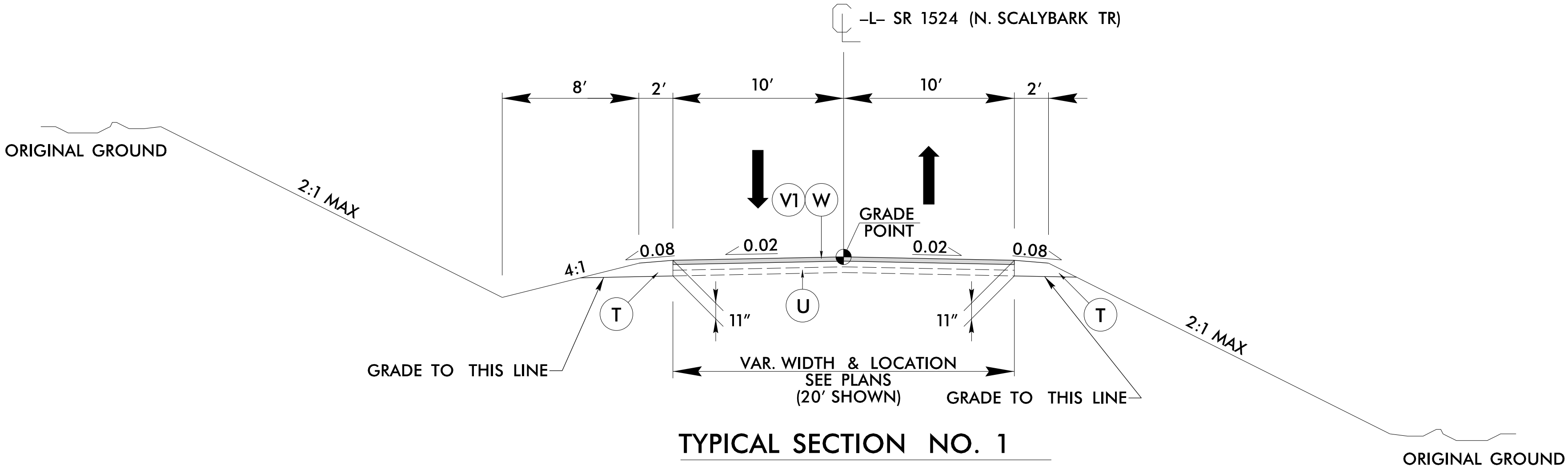
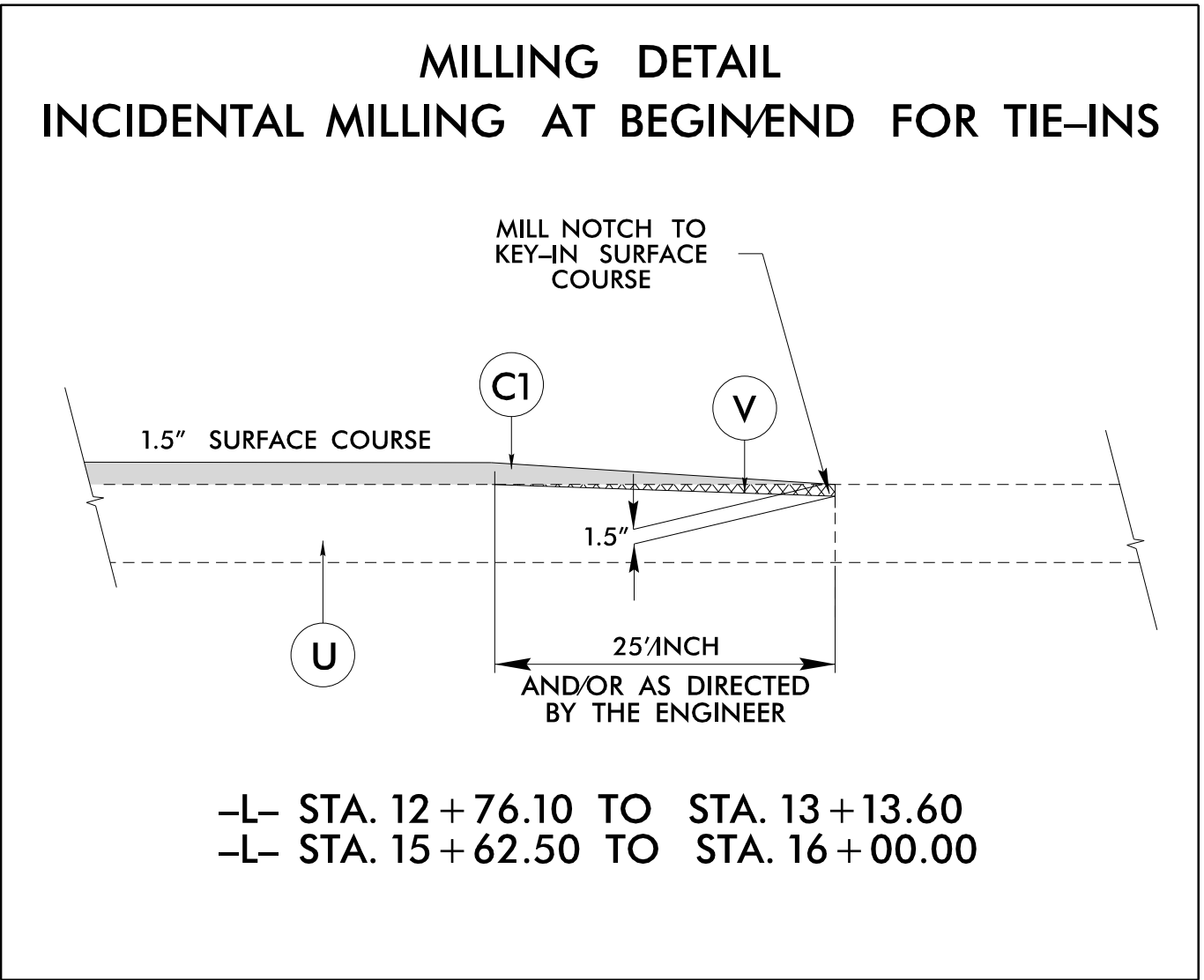
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenviromental Boring	
Abandoned According to Utility Records	
End of Information	

PAVEMENT SCHEDULE	
(FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" 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 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.
J1	PROP. 6" INCIDENTAL STONE BASE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING.
V1	1.5" MILLING.
W	WEDGING EXISTING PAVEMENT (SEE WEDGING DETAIL).

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
DRIVEWAY CONCRETE PAVEMENT SHALL BE 6" JOINTED CONCRETE WITH WIRE MESH.



Detail Showing Method of Wedging – W



NOTE: SHOULDER CROSS SLOPES VARIES BETWEEN 0.02 AND 0.08

BP10-COM

4R012A-I

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

CABARRUS COUNTY

DIVISION 10

ROADWAY DESIGN

ENGINEER

Seal of Engineer

SEAL

021655

ENGINEER

MIT A. PERSIMMON

5/30/2025

PAVEMENT DESIGN

ENGINEER

FINAL PAVEMENT DESIGN

APPROVED BY

DIVISION 10 BRIDGE PROGRAM

12033 E. INDEPENDENCE BLVD

MATTHEWS, NC 28105

PREPARED BY

CDM Smith

CDM Smith Inc.

4603 Park Road

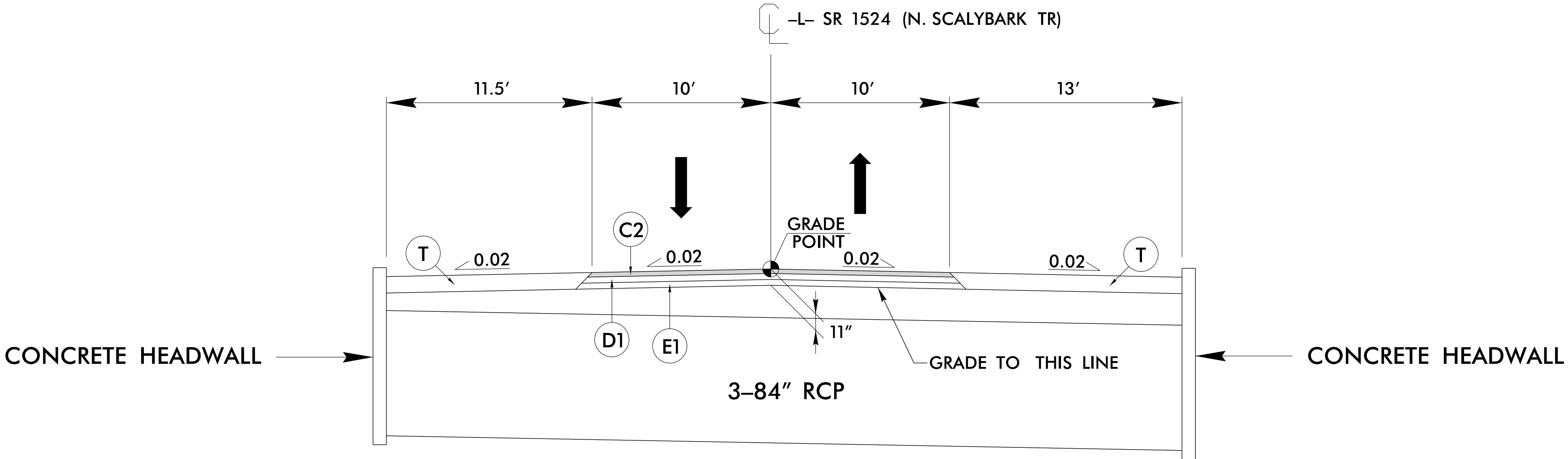
Suite 240

Charlotte, NC 28210-3730

NC COR No. F-1255

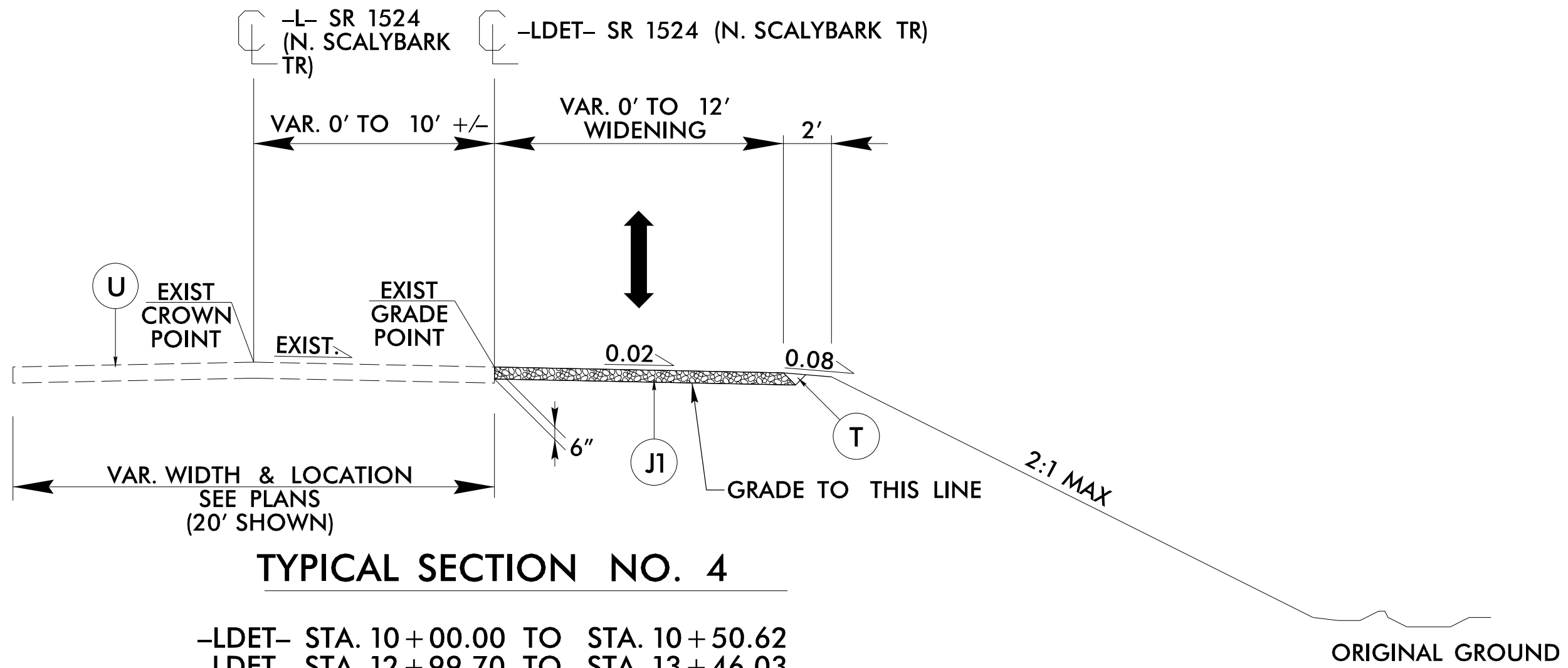
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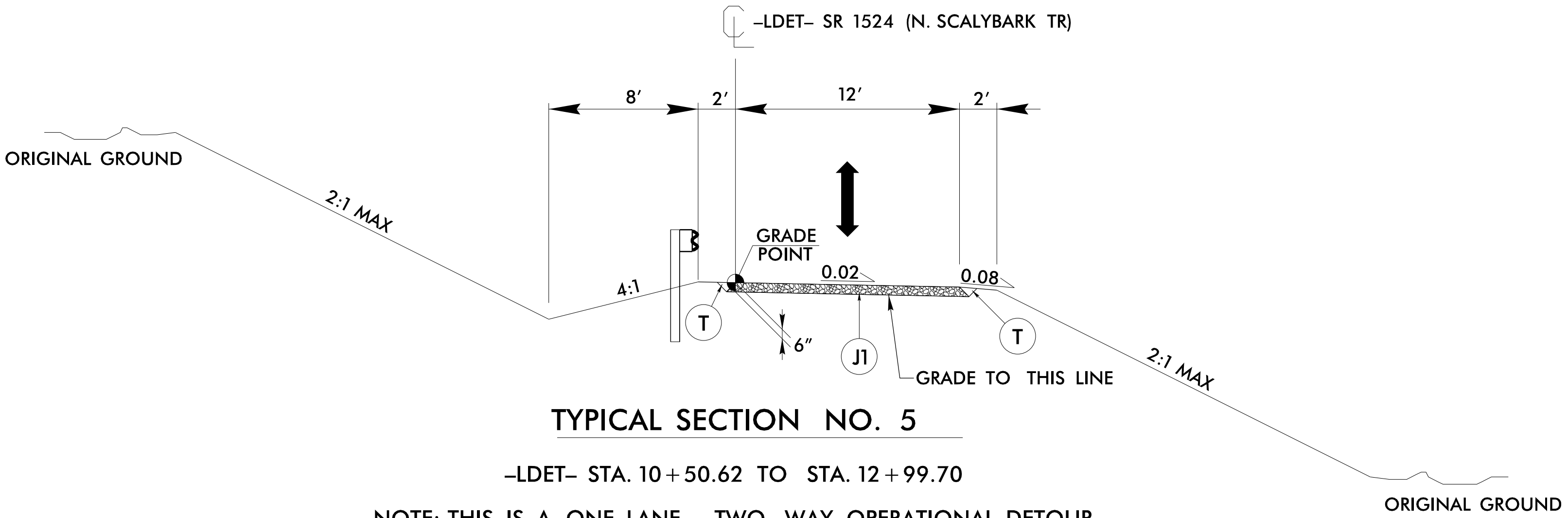
-L- STA. 14 + 65.00 TO STA. 15 + 00.00



TYPICAL SECTION NO. 4

-LDET- STA. 10 + 00.00 TO STA. 10 + 50.62
-LDET- STA. 12 + 99.70 TO STA. 13 + 46.03

NOTE: THIS IS A ONE LANE - TWO WAY OPERATIONAL DETOUR



TYPICAL SECTION NO. 5

-LDET- STA. 10 + 50.62 TO STA. 12 + 99.70

NOTE: THIS IS A ONE LANE - TWO WAY OPERATIONAL DETOUR

NOTE: GUARDRAIL POSTS MUST BE 8'-0" LONG

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J1	6" INC. STONE BASE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INC. MILLING
V1	1.5" MILLING
W	WEDGING

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

DRIVEWAY CONCRETE PAVEMENT SHALL BE 6" JOINTED CONCRETE WITH WIRE MESH.

BP10-COM

4R012A-2

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

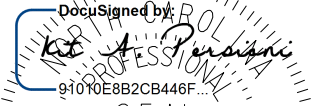
CABARRUS COUNTY

DIVISION 10

ROADWAY DESIGN

ENGINEER

DESIGNED BY



SEAL

021655

ENGINEER

MIT A. PERSIMMON

5/30/2025

PAVEMENT DESIGN

ENGINEER

FINAL PAVEMENT DESIGN

APPROVED BY

DIVISION 10 BRIDGE PROGRAM

12033 E. INDEPENDENCE BLVD

MATTHEWS, NC 28105

PREPARED BY



CDM Smith Inc.

4603 Park Road

Suite 240

Charlotte, NC 28209-3730

NC COR No. F-1255

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UNLESS ALL SIGNATURES COMPLETED

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

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE IN TRENCH**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

NORMAL EARTH FOUNDATION

TOP OF FILL

**ROCK FOUNDATION
PIPE ABOVE GROUND**

TOP OF FILL

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

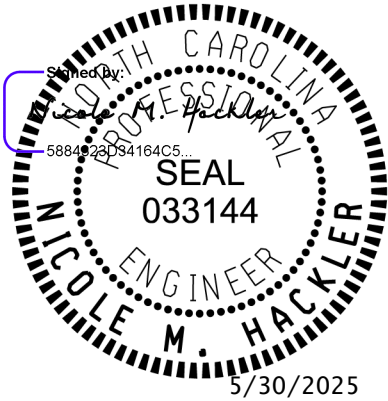
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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

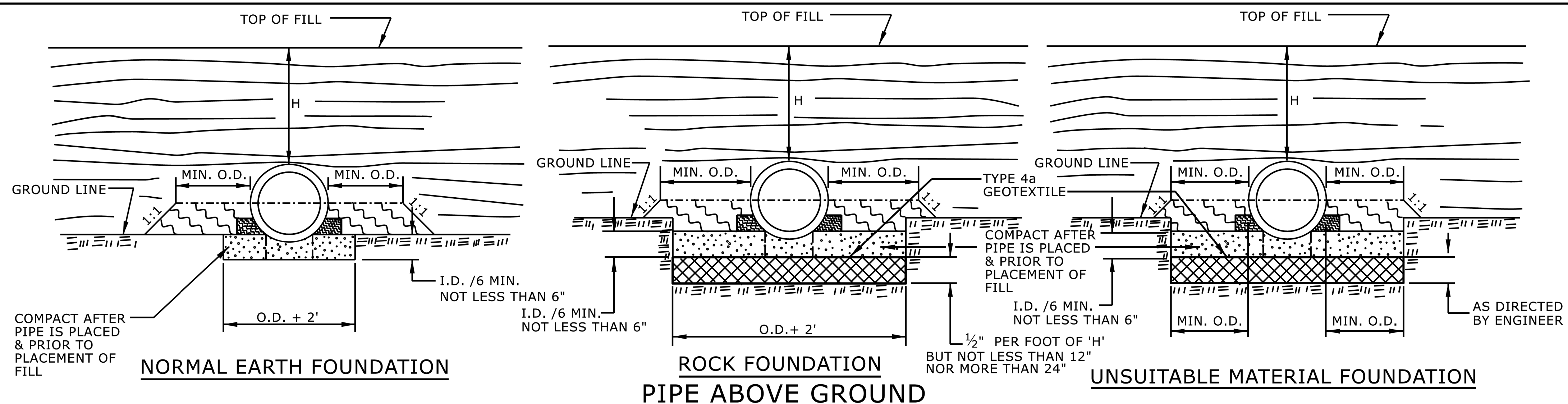
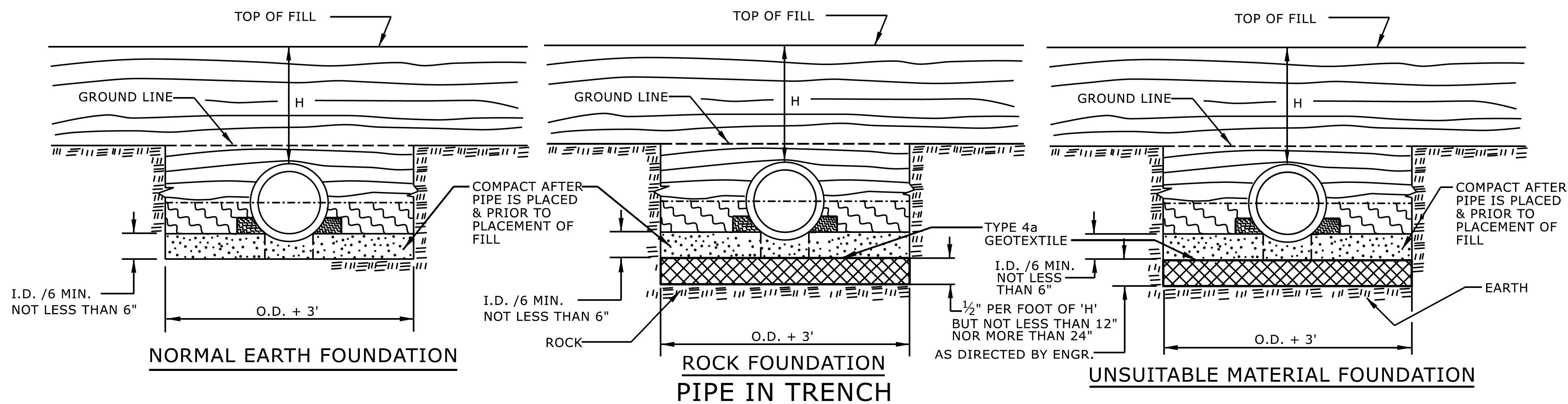


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UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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



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

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

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

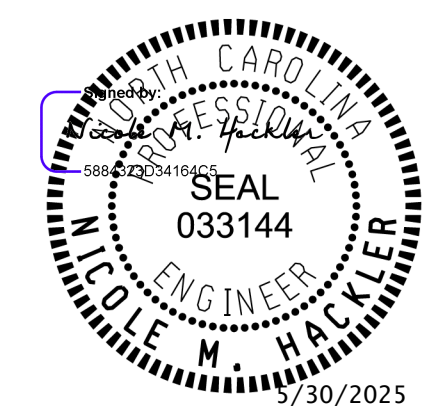
REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

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

STATE OF
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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



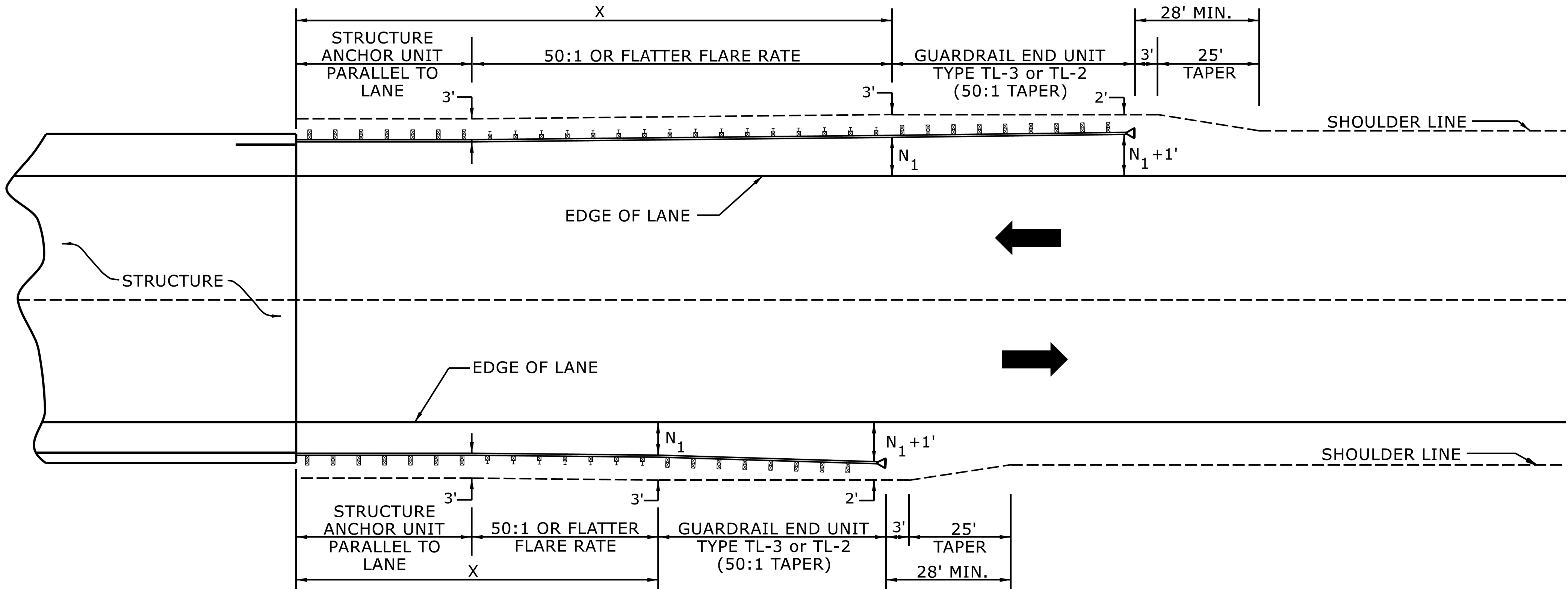
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
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.
BP10-C011	2C-3



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

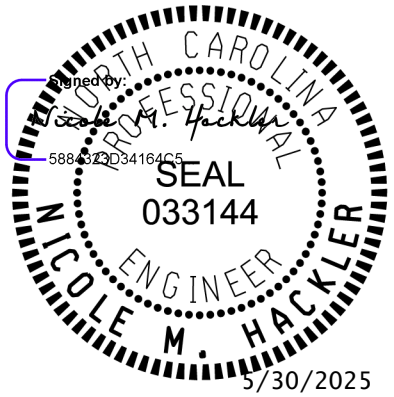
SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



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

SHEET 4 OF 15
862D01

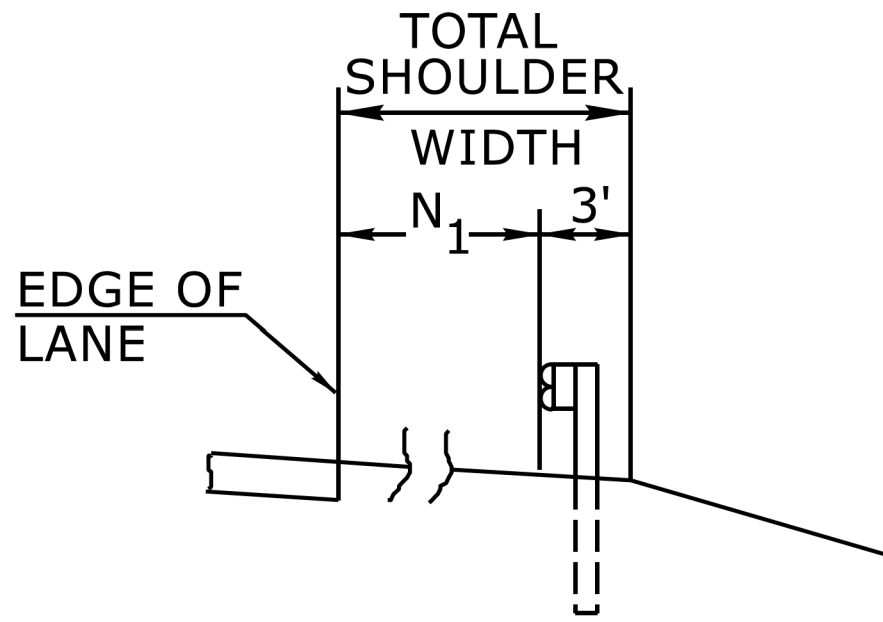
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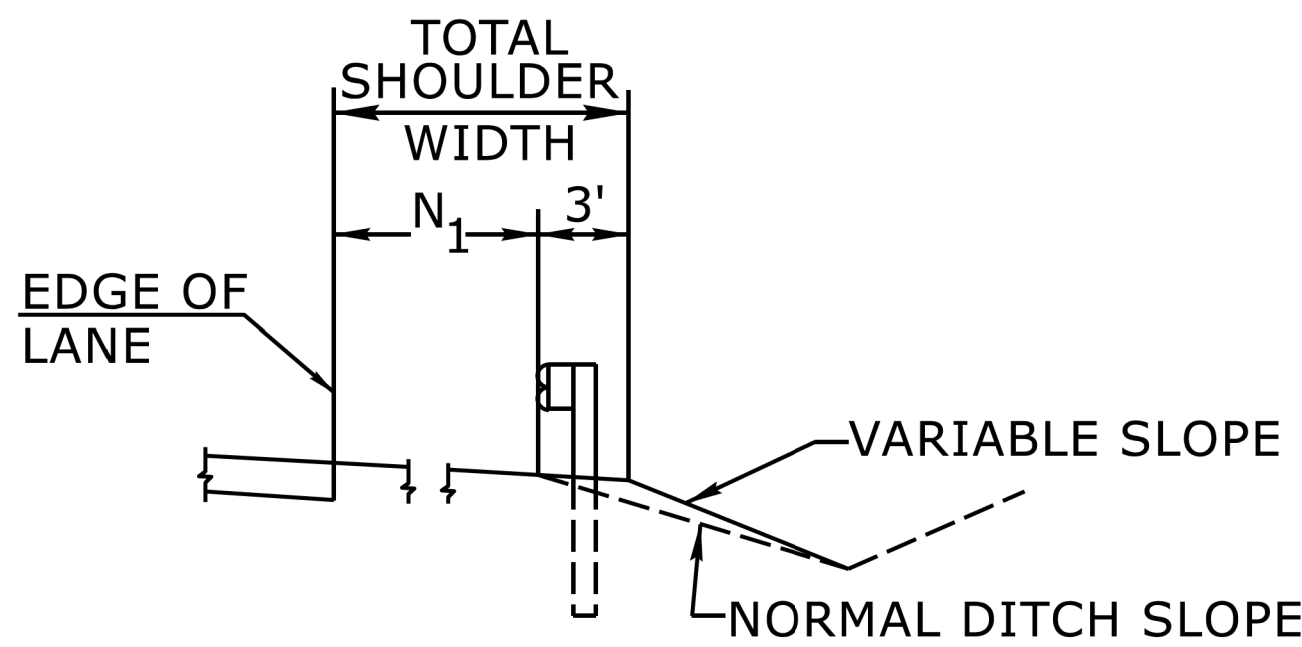
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ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
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FILE SPEC.:

PROJECT REFERENCE NO.	SHEET NO.
BP10-C011	2C-4

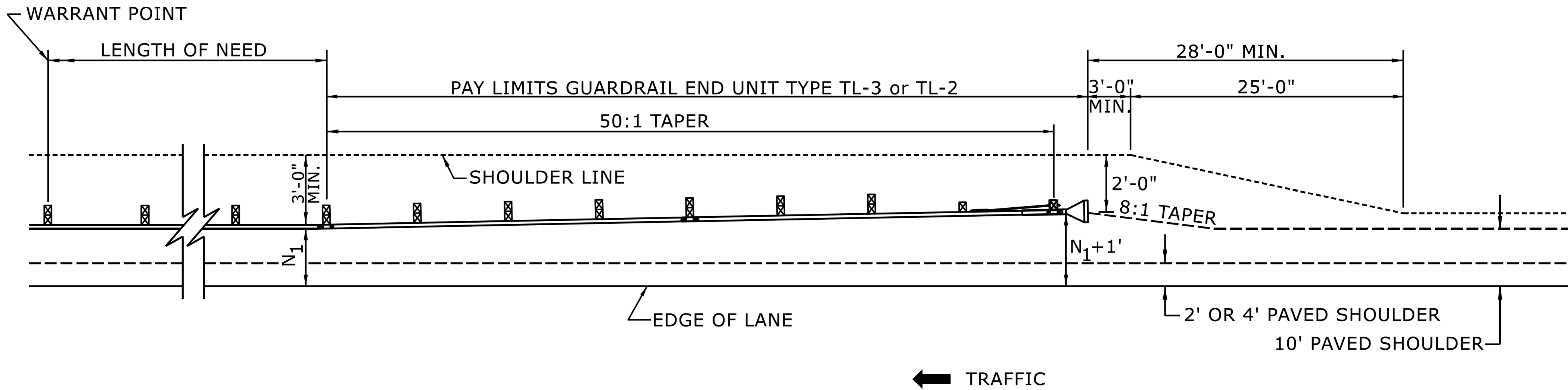


FILL SECTION



CUT SECTION

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

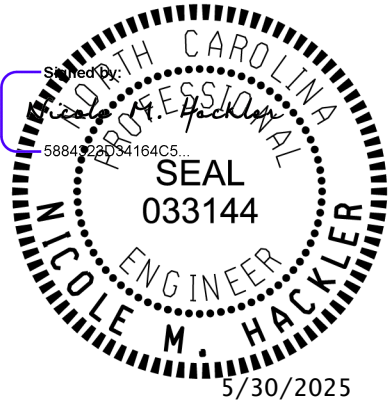


FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



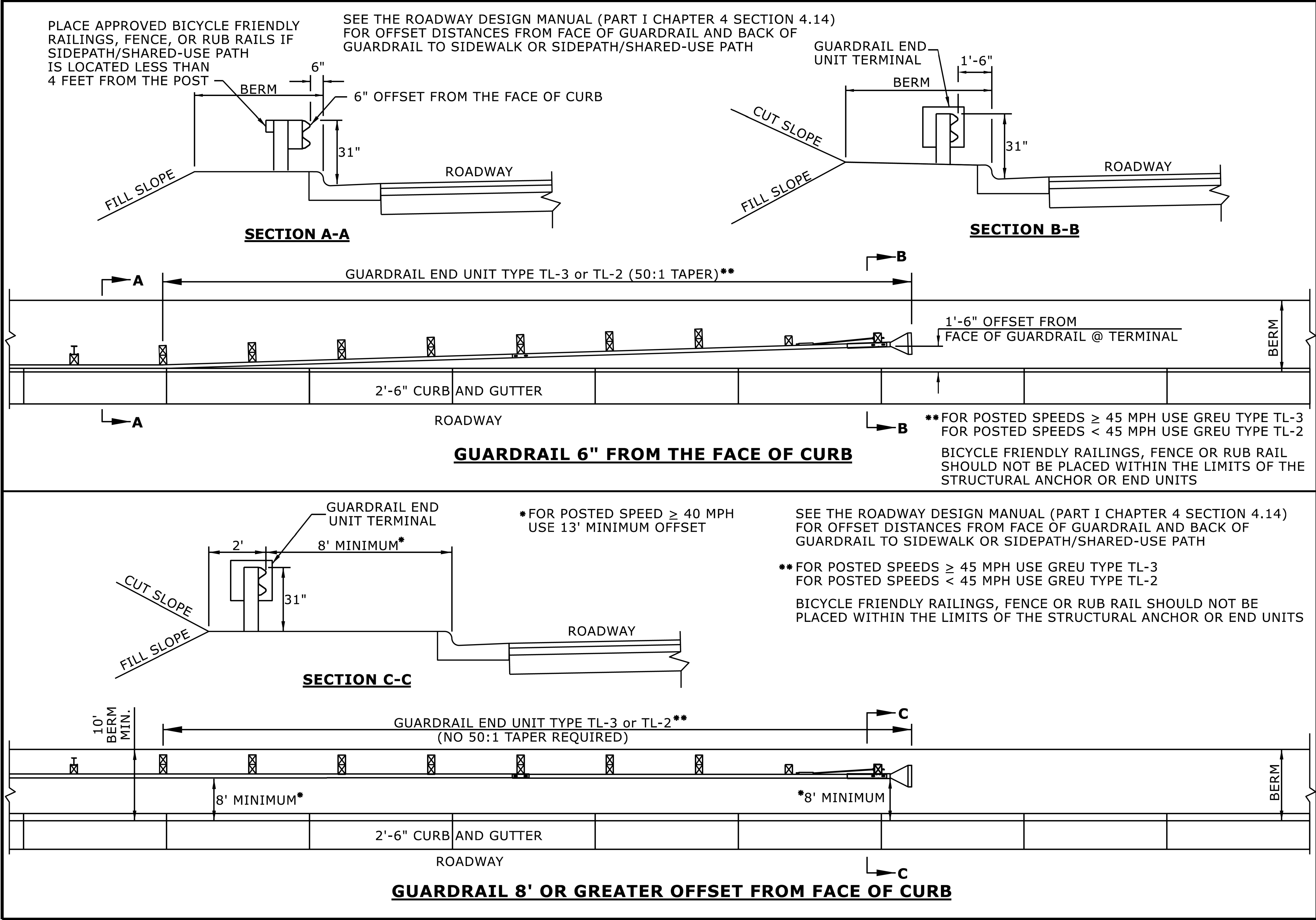
SHEET 6 OF 15
862D01

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

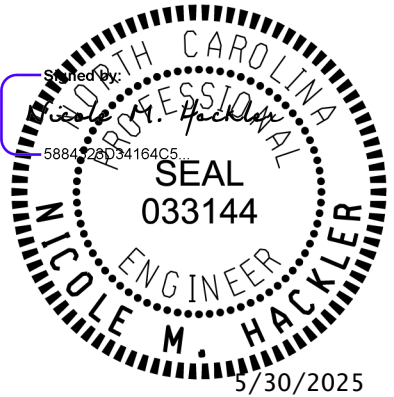
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CHECKED BY: DATE:
FILE SPEC.: DATE:



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

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



SHEET 12 OF 15
862D01

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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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SEE TITLE BLOCK

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



Professional Engineer Seal for Nicole M. Hackler, State of North Carolina, License No. 033144, expires 5/30/2025.

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CONTRACTS STANDARDS AND DEVELOPMENT UNIT

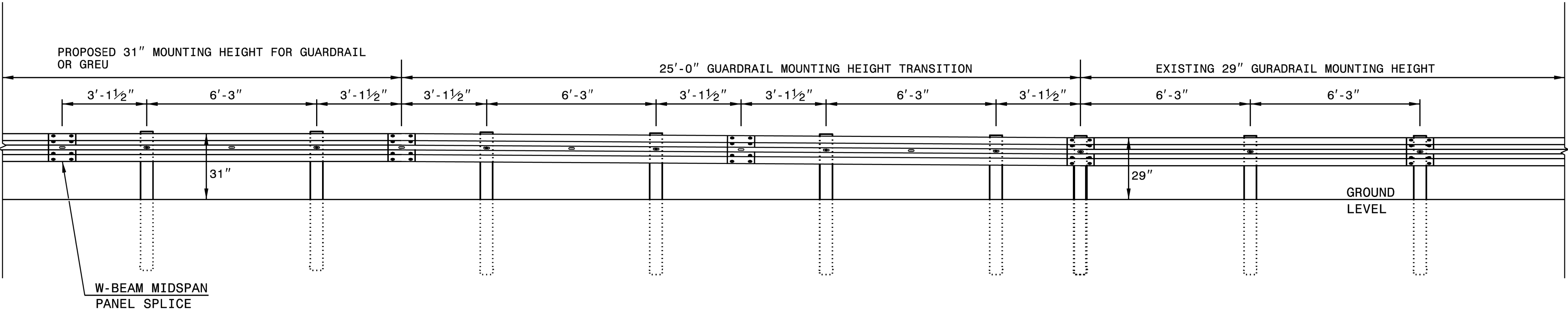
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
BP10-C011	2C-7

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



ELEVATION VIEW

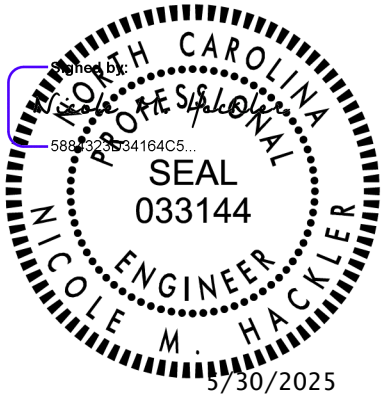
TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

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DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 5 OF 9

862D02



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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
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SEE TITLE BLOCK

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

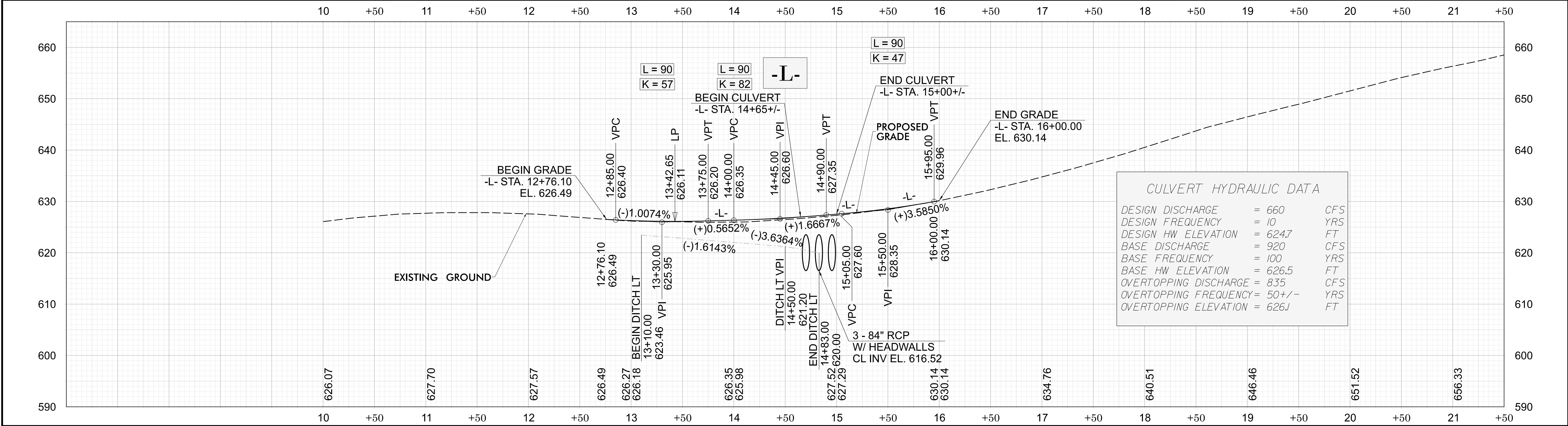
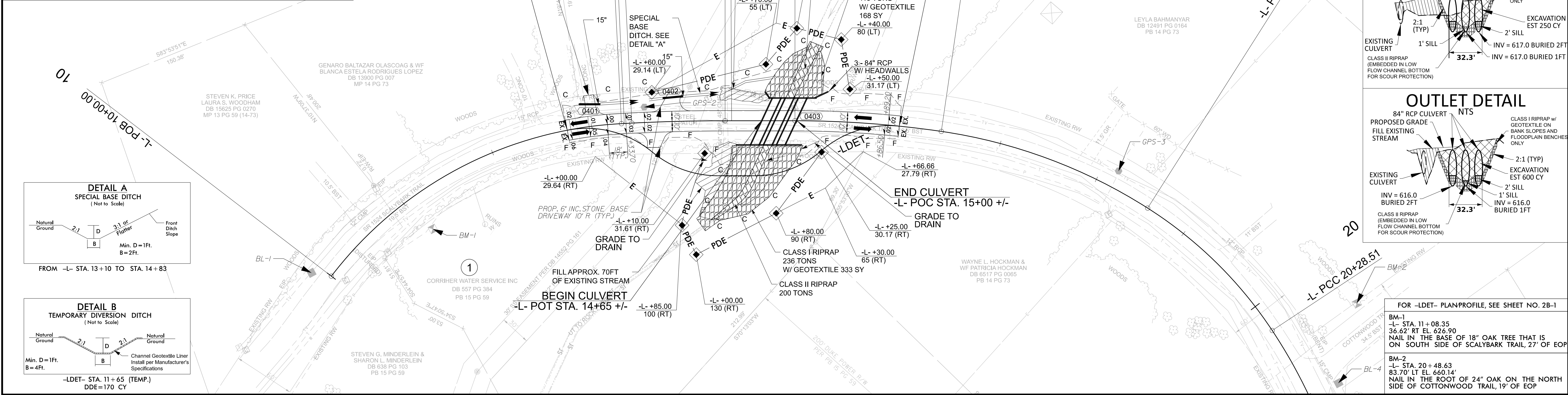
SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	100
				TOTAL LF:	100

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

11/14/23

CUR DATA -L- Plc 11+75.79 Δc = 49°39'05.6" (RT) D = 15°04'40.2" Lc = 329.30 Tc = 175.79 R = 380 SE = EXIST. RO = EXIST.	CUR DATA -L- Plc 13+84.85 Δc = 02°53'23.6" (RT) D = 03°10'59.2" Lc = 90.79 Tc = 45.40 R = 1,800 SE = NC RO = N/A	CUR DATA -L- Plc 15+69.90 Δc = 08°18'41.1" (RT) D = 05°48'40.0" Lc = 143.03 Tc = 71.64 R = 985.97 SE = NC RO = N/A
CUR DATA -L- Plc 17+50.89 Δc = 24°07'38.6" (RT) D = 11°10'22.8" Lc = 215.94 Tc = 109.60 R = 512.81 SE = EXIST. RO = EXIST.	CUR DATA -L- Plc 19+44.15 Δc = 24°04'34.3" (RT) D = 14°03'25.2" Lc = 171.28 Tc = 86.92 R = 407.6 SE = EXIST. RO = EXIST.	CUR DATA -L- Plc 21+78.57 Δc = 32°42'49.2" (RT) D = 11°12'22.3" Lc = 291.93 Tc = 150.06 R = 511.29 SE = EXIST. RO = EXIST.



BP10-COM
4R01 004
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CABARRUS COUNTY

DIVISION 10
ROADWAY DESIGN
ENGINEER

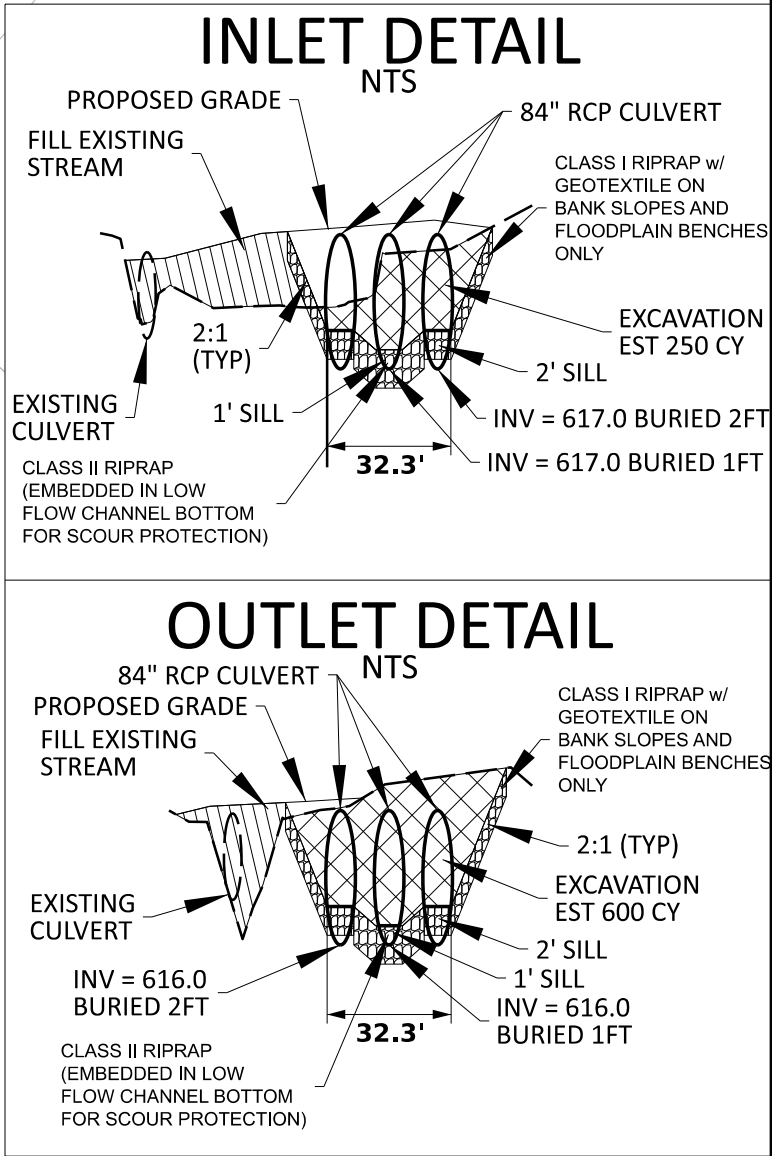
North Carolina
Professional Engineer
021655
A. PERSIMMON
5/30/2025

North Carolina
Professional Engineer
035021
M. HARKINDER
5/31/2025

HYDRAULICS
ENGINEER

PREPARED BY
CDM Smith
CDM Smith Inc.
5602 Park Road
Charlotte, NC 28210-3738
NC CDR No. F-1255

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FOR -LDET- PLAN/PROFILE, SEE SHEET NO. 28-1

BM-1
-L- STA. 11+08.35
36.62' RT EL. 626.90
NAIL IN THE BASE OF 18" OAK TREE THAT IS
ON SOUTH SIDE OF SCALYBARK TRAIL, 27' OF EOP

BM-2
-L- STA. 20+48.63
83.70' LT EL. 660.14'
NAIL IN THE ROOT OF 24" OAK ON THE NORTH
SIDE OF COTTONWOOD TRAIL, 19' OF EOP

I, RANDY W. NANCE, PLS, CERTIFY THAT THE 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:

I ALSO CERTIFY THAT THE BASELINE CONTROL FOR THIS PROJECT 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 1:20,000 (CLASS AA) AND VERTICAL ACCURACY TO CLASS A. FIELD WORK WAS PERFORMED FROM 4/1/24 TO 4/18/24 , 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.

DocuSigned by: Randy W Nance
50651A61233442D

DocuSigned by: Randy W Nance
50651A61233442D

PROFESSIONAL LAND SURVEYOR L-4185

PROFESSIONAL LAND SURVEYOR L-4185
SEAL
4/19/2024

BENCHMARKS				
BENCHMARK	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM-1	610857.346	1485960.437	626.895	Nail in the Root Of 24 Oak on the North Side of Cottonwood Trail 19' of EOP
BM-2	610368.936	1486719.488	660.144	Nail in The Base Of 18 Oak That Is on South Side of Scalybark Trail 27' of EOP

EXISTING ALIGNMENT NAME:EY1									
POINT	NORTHING	EASTING	BEARING	DIST	DELTA	D	L	T	R
START	610349.791	1486773.398							
LINE			S79°18'11.759"W	139.342					
END	610323.928	1486636.477							

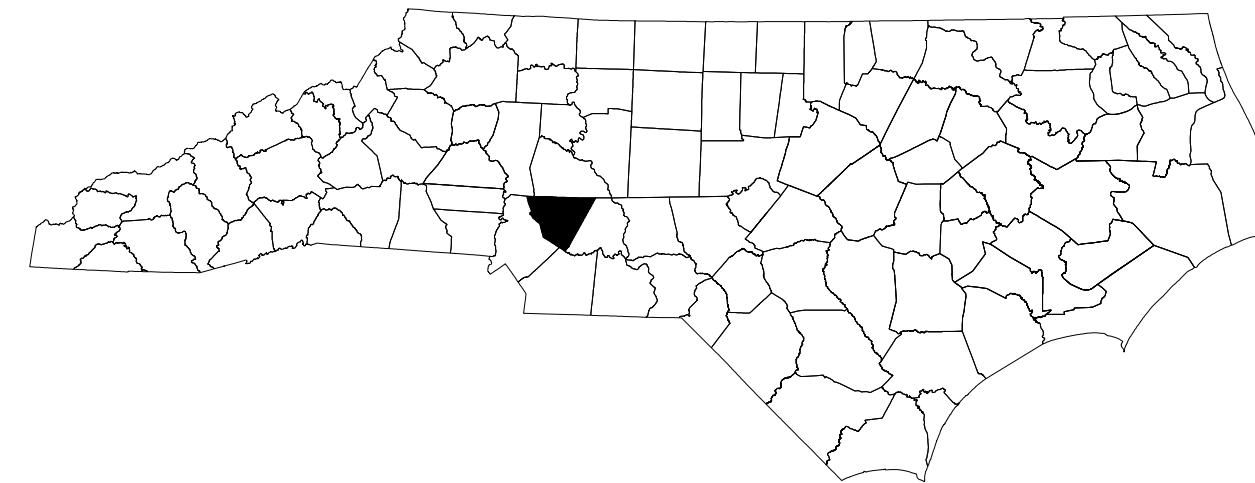
1. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

2024 STANDARD SPECIFICATIONS

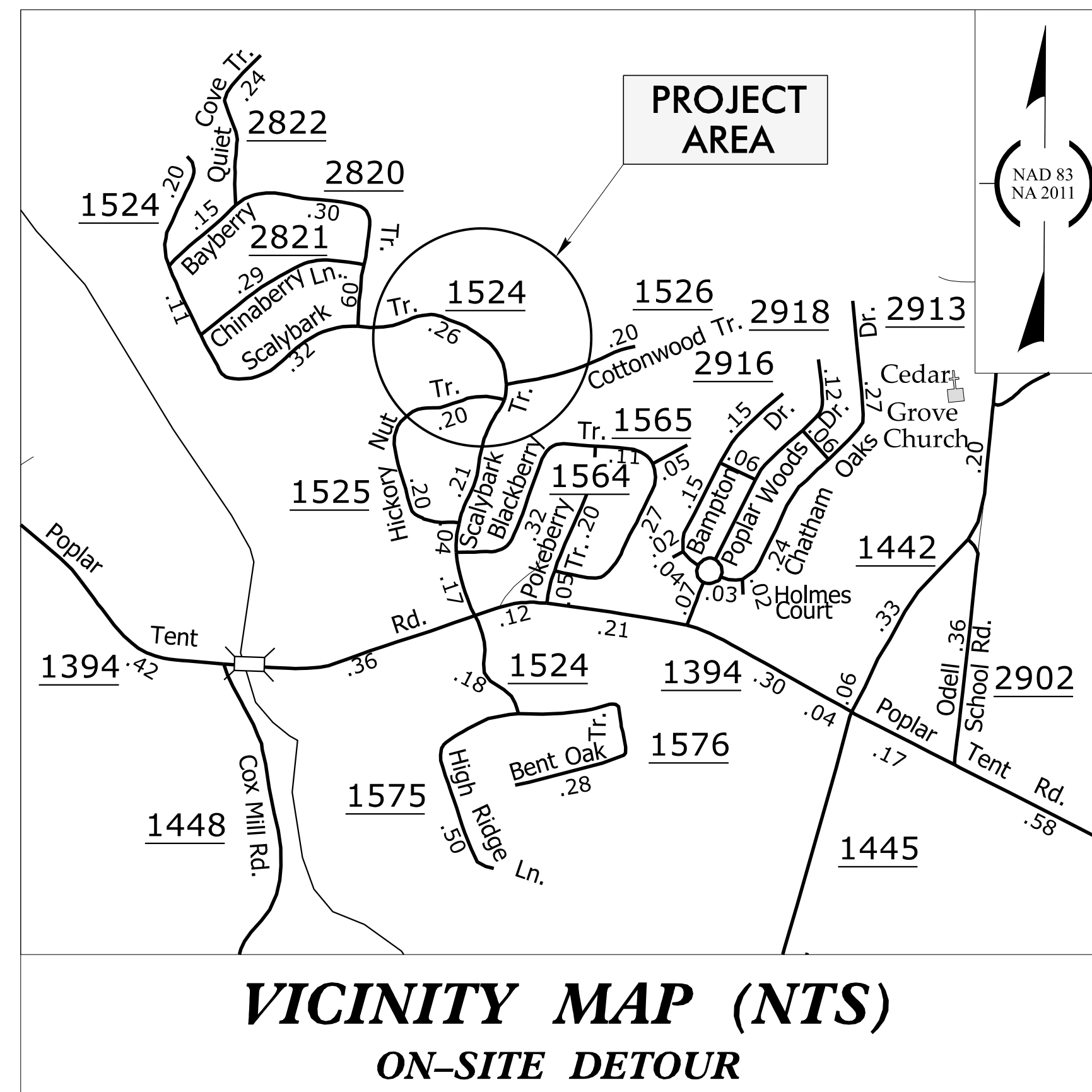


ESP Associates, Inc.
5375 Lakemont Blvd Fort Mill, SC 29708

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



**LOCATION: REPLACE CULVERT ON SR 1524
(N. SCALYBARK TR)**



INDEX OF SHEETS

<u>SHEET NO.</u>	<u>TITLE</u>
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 AND GENERAL NOTES)
TMP-1C	TRANSPORTATION OPERATIONS PLAN: (LOCAL NOTES AND PHASING)
TMP-1D	TEMPORARY SHORING DATA
TMP-2	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

TMP-1

BP10-C011

PROJECT:



PLANS PREPARED BY:

KIT A. PERSIANI, P.E.
PROJECT ENGINEER

KEVIN P. SABO, E.I.
PROJECT DESIGN ENGINEER

NCDOT CONTACT:

YANWEI MA, P.E.
PROJECT MANAGER



CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

APPROVED:_____

DATE: 5/30/2025

SEAL



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5/9/2025
[www.jcdsmith-az02-pw.bentley.com:pw_pl1/Documents/117240/296514/10 Transportation/04 Client Folder Structure/BP10-C011/Work Zone Traffic Control/BP10-C011_TMP_TC01.dgn](http://www.jcdsmith-az02-pw.bentley.com:pw_pl1/Documents/117240/296514/10%20Transportation/04%20Client%20Folder%20Structure/BP10-C011/Work%20Zone%20Traffic%20Control/BP10-C011_TMP_TC01.dgn)
 User:SABOKP

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 ADVANCE WARNING SIGNS FOR TWO-WAY UNDIVIDED FACILITIES
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

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

SIGNALS

	EXISTING		PROPOSED		TEMPORARY		PORTABLE
	DS		DRIVEWAY SIGNAL				

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
--	--------------------------

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
	COLD APPLIED PLASTIC PAVEMENT MARKINGS LINES, TYPE 4 (24")
C61	WHITE STOPBAR

MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:

- A) LANE SHIFTS OR CLOSURES
- B) SHOULDER CLOSURES
- C) ONE-LANE, TWO WAY OPERATION (FLAGGING)
- D) ONE-LANE, TWO WAY OPERATION (SIGNALIZED)
- E) WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
- F) ON-SITE DETOURS

WORK ZONE SAFETY & MOBILITY STRATEGIES:

- G) SPEED LIMIT REDUCTION
- H) TEMPORARY TRAFFIC SIGNALS

CONTRACTING & INNOVATIVE CONSTRUCTION STRATEGIES:

- I) INTERMEDIATE CONTRACT TIMES / LIQUIDATED DAMAGES

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 UNDESIRE

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

-L- SR 1524 (N. SCALYBARK TR) - PHASE I ONLY

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31st TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

B) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 200 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) 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.

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

M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 200 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

N) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

PAVEMENT MARKINGS AND MARKERS

P) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
-L- SR 1524 (N. SCALYBARK TR)	COLD APPLIED PLASTIC	NONE

MISCELLANEOUS

Q) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 200 FT AND 400 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

LOCAL NOTES

- A) NOTIFY CABARRUS COUNTY EMERGENCY SERVICES AND PUBLIC SCHOOLS AT LEAST ONE MONTH PRIOR TO CONSTRUCTION.
- B) NOTIFY PROPERTY OWNERS WITH DRIVEWAY SIGNALS AT LEAST ONE MONTH PRIOR TO PHASE 2 STEP 1. REFER TO TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM SPECIAL PROVISION, ATTACHMENT 1: PUBLIC NOTICE.

PHASING

PHASE I

STEP 1:

INSTALL ADVANCE WORK ZONE WARNING SIGNS ACCORDING TO RSD 1101.01 (SHEET 3 OF 3).

STEP 2:

AWAY FROM TRAFFIC AND USING RSD 1101.02 (SHEET 1 OF 19) AND FLAGGERS AS NEEDED, WHILE MAINTAINING TRAFFIC ON EXISTING, CONSTRUCT THE DETOUR CULVERT, ROADWAY, TEMPORARY GUARDRAIL, AND TEMPORARY DRIVEWAY ON -LDET- FROM -LDET- STA. 10+00 +/- TO -LDET- STA. 13+46 +/- (SEE SHEET TMP-2). ENSURE FLAGGERS DIRECT DRIVEWAY TRAFFIC IN THE APPROPRIATE DIRECTION.

PHASE II

INTERMEDIATE CONTRACT TIME: COMPLETE THE WORK REQUIRED IN PHASE II IN FORTY-TWO (42) CONSECUTIVE CALENDAR DAYS (SEE CONTRACT FOR LIQUIDATED DAMAGES).

STEP 1:

USING RSD 1101.02 (SHEET 17 OF 19), INSTALL THE TEMPORARY PORTABLE TRAFFIC SIGNALS, DRIVEWAY SIGNALS, AND TEMPORARY PAVEMENT MARKINGS PRIOR TO SHIFTING TRAFFIC. REFER TO RSD 1101.03 (SHEET 3 OF 9) FOR ADDITIONAL SIGNS AND GENERAL NOTES. SHIFT TRAFFIC ONTO THE ONE LANE - TWO WAY -LDET- (SEE SHEET TMP-3). INSTALL THE TEMPORARY BYPASS PUMPING SYSTEM AND DIVERT FLOW FROM THE EXISITNG CULVERT.

STEP 2:

AWAY FROM TRAFFIC, INSTALL PROPOSED CULVERT AND HEADWALLS (SEE CULVERT PLANS), REMOVE EXISTING CULVERT, AND CONSTRUCT -L- FROM -L- STA. 13+50 +/- TO -L- STA. 15+30 +/- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE SHEET TMP-3). REMOVE TEMPORARY BYPASS PUMPING SYSTEM AFTER FLOW HAS BEEN DIVERTED INTO NEW CULVERT BARRELS.

PHASE III

STEP 1:

USING RSD 1101.02 (SHEET 1 OF 19) AND FLAGGERS AS NEEDED, REMOVE ALL TEMPORARY PORTABLE TRAFFIC SIGNALS, DRIVEWAY SIGNALS AND DEVICES, AND TEMPORARY PAVEMENT MARKINGS, AND SHIFT TRAFFIC INTO THE FINAL TRAFFIC PATTERN.

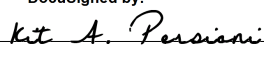
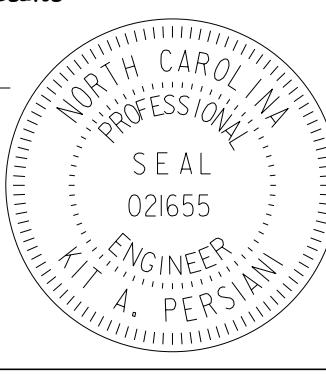
STEP 2:

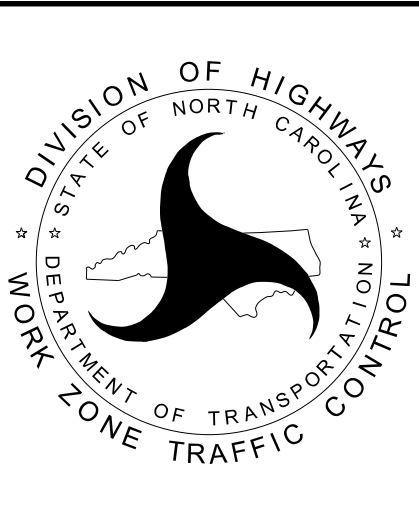
AWAY FROM TRAFFIC AND USING RSD 1101.02 (SHEET 1 OF 19) AND FLAGGERS AS NEEDED, CONSTRUCT ALL PERMANENT DRIVEWAYS, PERFORM MILLING, WEDGING, AND PLACEMENT OF FINAL LAYER OF SURFACE COURSE FROM -L- STA. 12+76 +/- TO -L- STA. 16+00 +/- . REMOVE THE DETOUR ROADWAY, CULVERT, TEMPORARY GUARDRAIL, AND TEMPORARY DRIVEWAY FROM -LDET- STA. 10+00 +/- TO -LDET- STA. 13+46 +/- .

STEP 3:

REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.



APPROVED:  DATE: 6/9/2025	
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



TRANSPORTATION OPERATIONS
PLAN

PROJ. REFERENCE NO.	SHEET NO.
BP10-C011	TMP-1D

TEMPORARY SHORING NOTES

SHORING LOCATION NO. 1
FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR
TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING
PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT CONSTRUCTION
FROM STATION 12+25 -LDET-, 5' LT, TO STATION 12+65 -LDET-, 5' LT.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR
CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE
VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING
HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 12+25 -LDET-, 5' LT, TO
STATION 12+65 -LDET-, 5' LT, FOR THE FOLLOWING ASSUMED SOIL
PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 115 PCF
FRICTION ANGLE (ϕ) = 28 DEGREES
COHESION (c) = 0 PSF
GROUNDWATER ELEVATION = UNKNOWN FT

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF
TEMPORARY SHORING FROM STATION 12+25 -LDET-, 5' LT, TO STATION
12+65 -LDET-, 5' LT. THE TEMPORARY SHORING SHALL BE DESIGNED BY
A REGISTERED PROFESSIONAL ENGINEER. THE INFORMATION
PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY
NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED
DURING CONSTRUCTION. SUBMIT SHORING DESIGN PACKAGE FOR
REVIEW.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM
STATION 12+25 -LDET-, 5' LT, TO STATION 12+65 -LDET-, 5' LT.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED
THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING
UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON JANUARY 27, 2025
AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, PH.D, P.E., LICENSE # 031361.

5/9/2025 10:15:33 AM C:\Users\jyang\Documents\117240\296514\10 Transportation\04 Client Folder Structure\BP10-C011\Work Zone Traffic Control\BP10-C011_TMP_1D.dgn User:JSABORP

CDM
Smith

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

APPROVED:

DocuSigned by:
Shiping Yang
7A7310E97F76411...

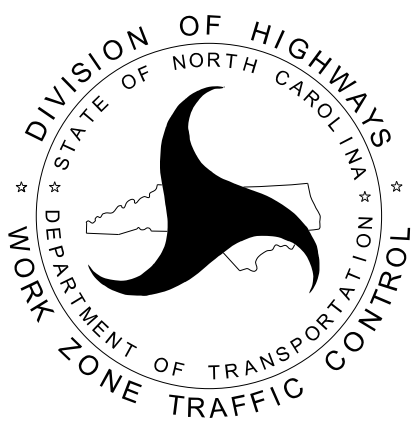
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SEAL

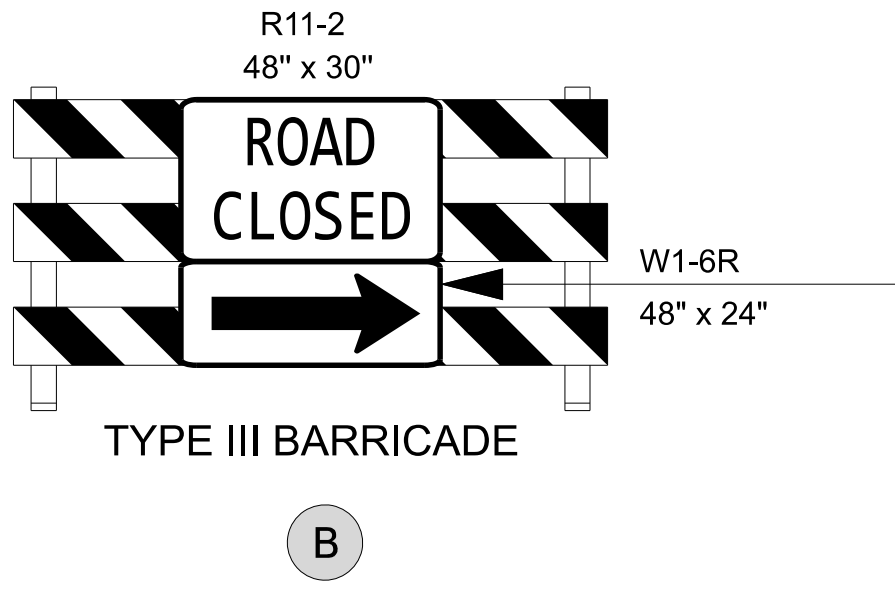
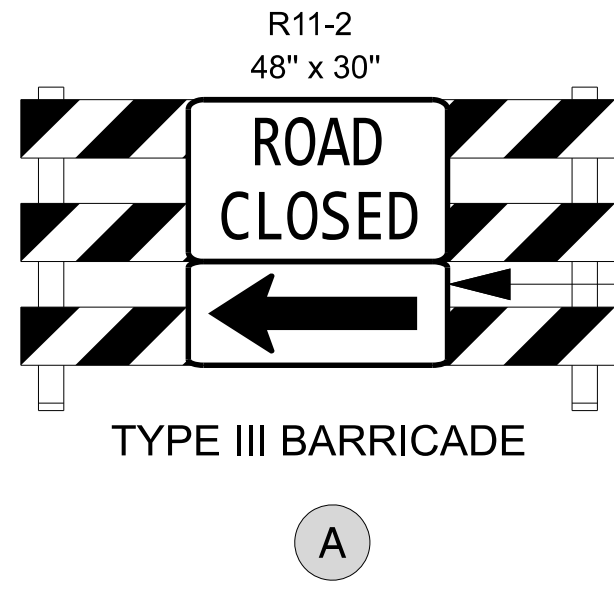
SEAL

NORTH CAROLINA
PROFESSIONAL
ENGINEER
SHIPING YANG
031361

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



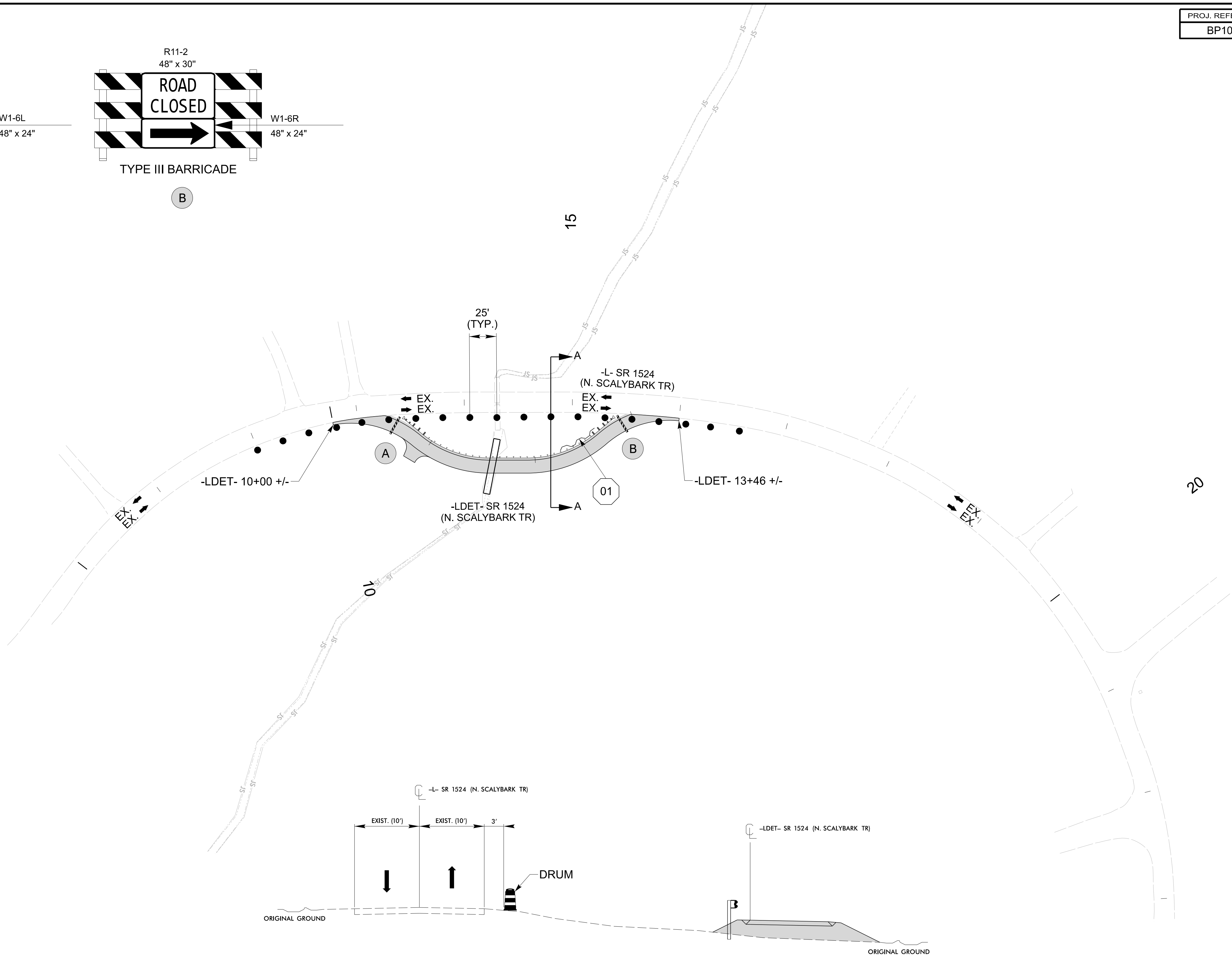
TEMPORARY SHORING DATA



10

15

20



01 QUANTITY = 280 SQ. FT.

TEMPORARY SHORING
FROM -LDET- STA. 12+25.00, 5.00' LT
TO -LDET- STA. 12+65.00, 5.00' LT

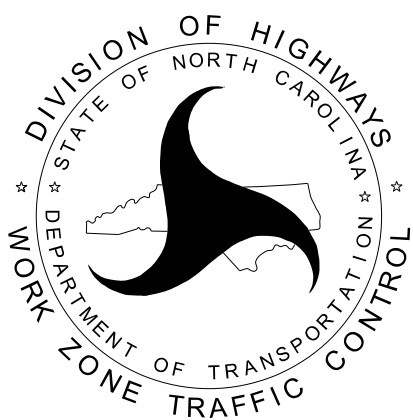
(SEE SHEET TMP-1D FOR
TEMPORARY SHORING NOTES)

-L- STA. 14+80 +/-
PHASE I STEP 2
SECTION A-A

**CDM
Smith**

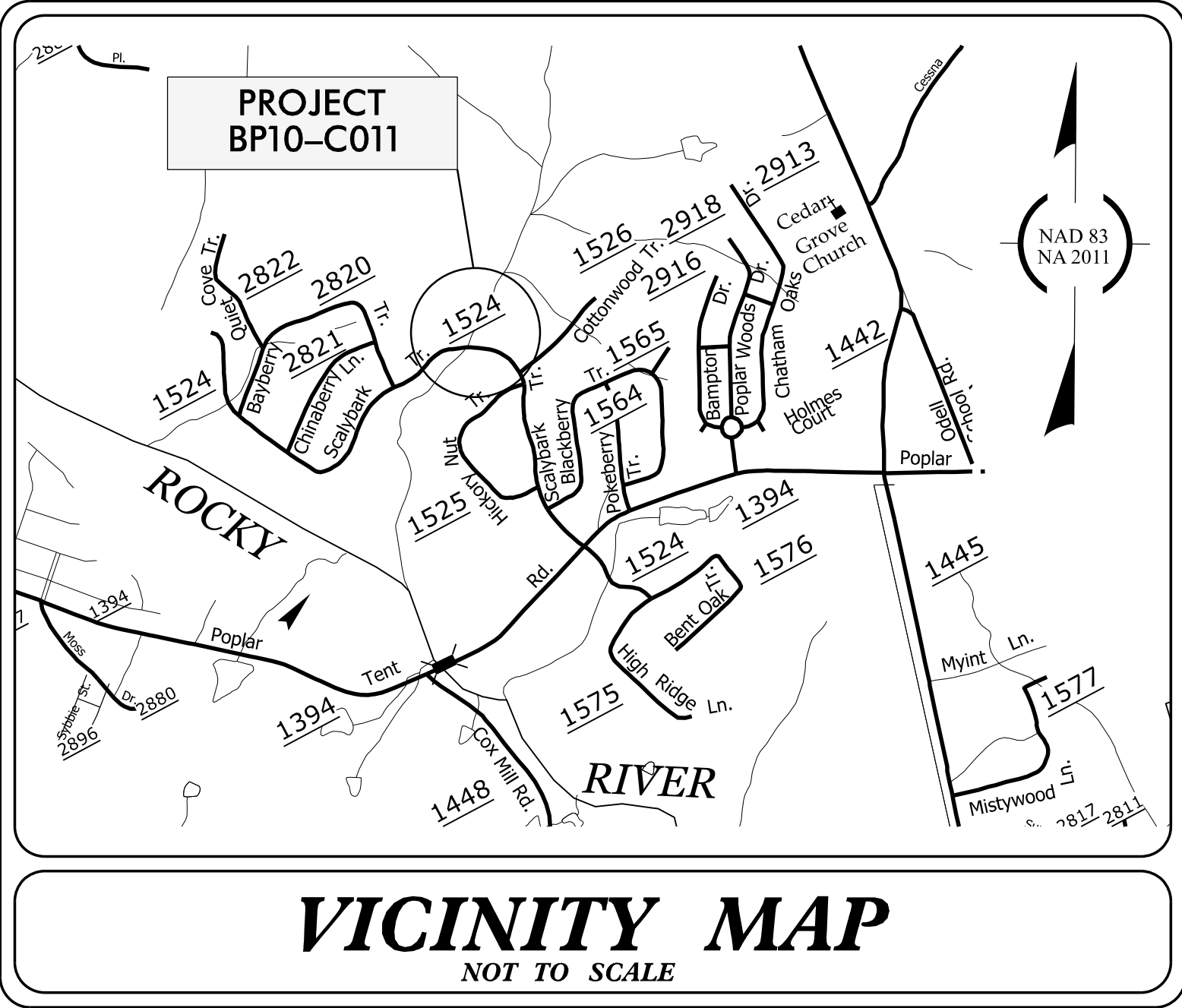
CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

APPROVED: <i>Kit A. Persiani</i>	
DATE: 5/30/2025	
SEAL	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



TEMPORARY TRAFFIC CONTROL
PHASE I DETAIL

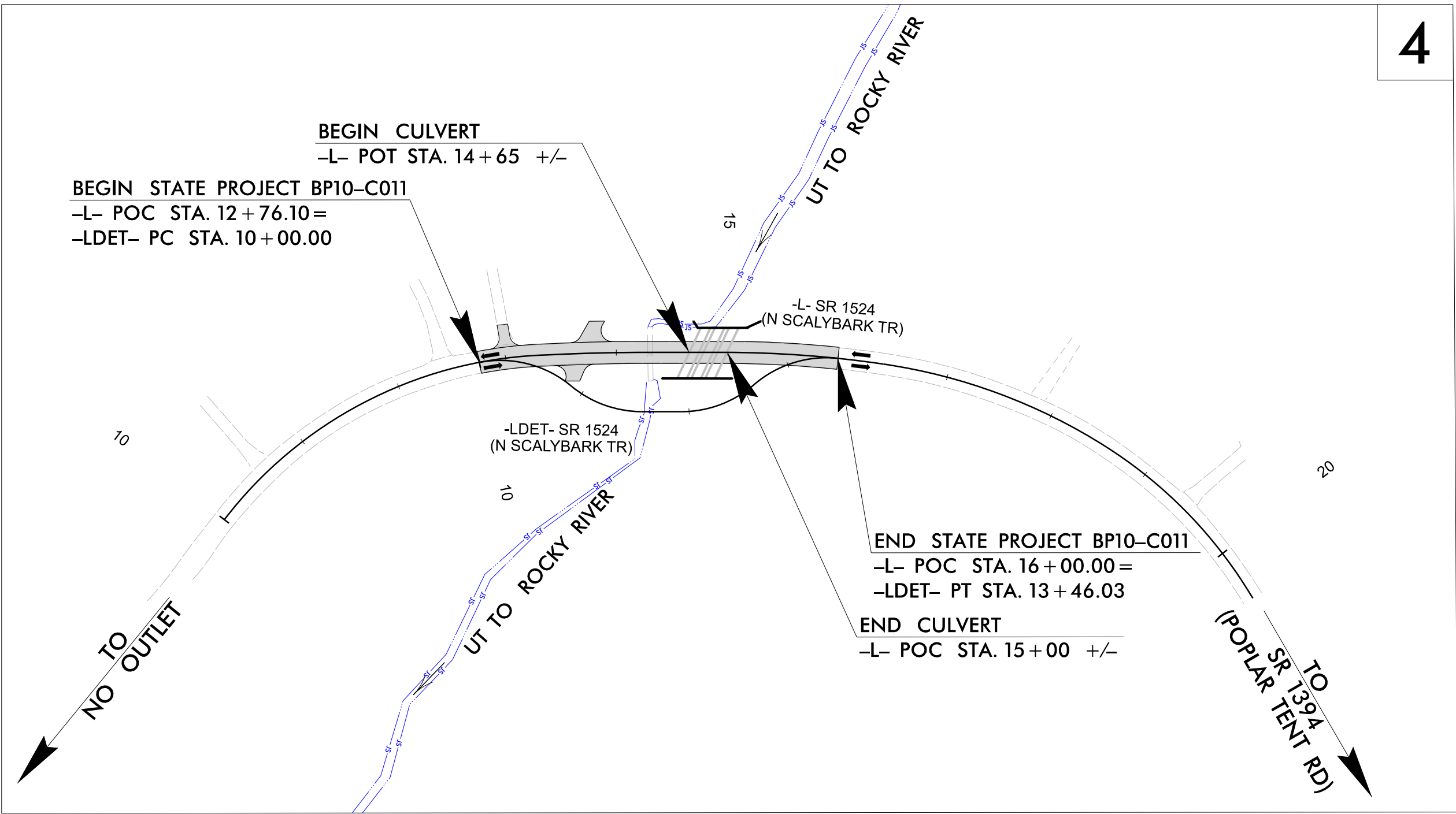
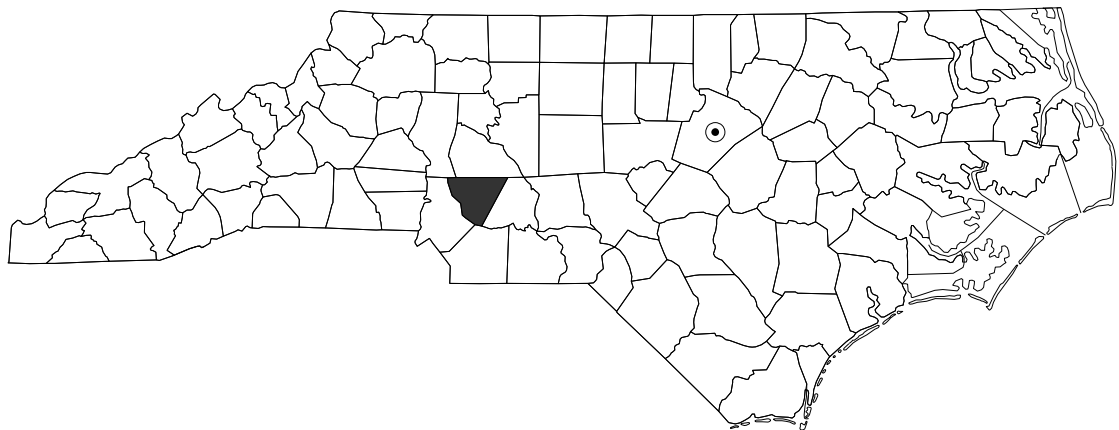
PROJECT: BP10-C011



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
CABARRUS COUNTY

LOCATION: *REPLACE CULVERT ON SR 1524*
(N. SCALYBARK TR)

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



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

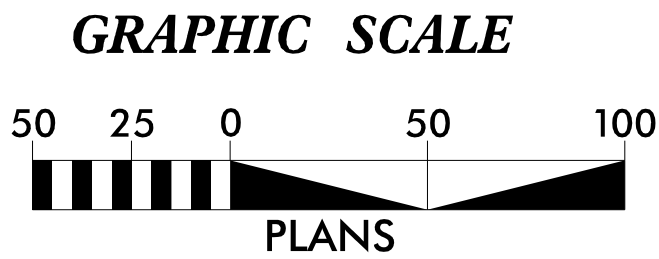
THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

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

303(d) IMPAIRED WATER(S) EXIST
ON THIS PROJECT

*303(d) Impaired Water Zone(s) Exist
From Sta. L 14+70
to Sta. L 14+96
Refer To E. C. Special Provisions
for Special Considerations.*



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.

**CDM
Smith**

Prepared in the Office of:

CDM Smith Inc.
4600 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COA No. F-1255

Designed by:

HEATHER HARKENRIDER 3281

NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

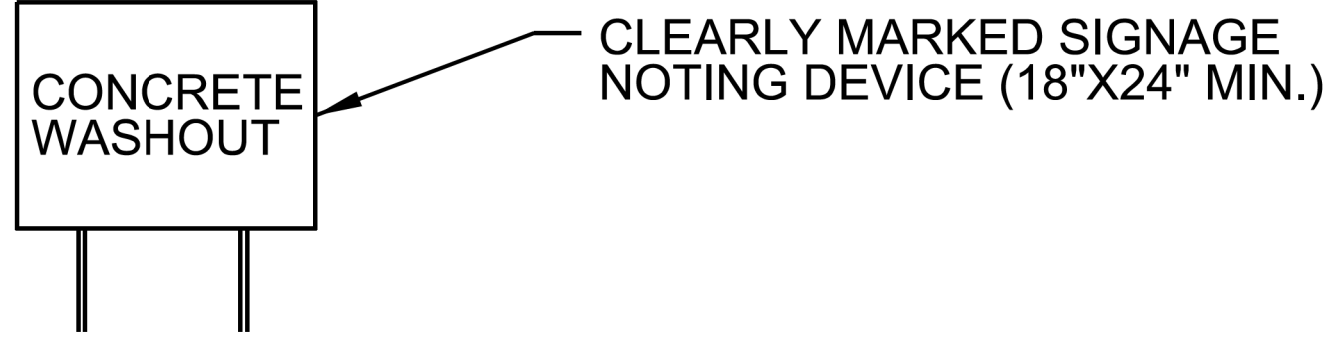
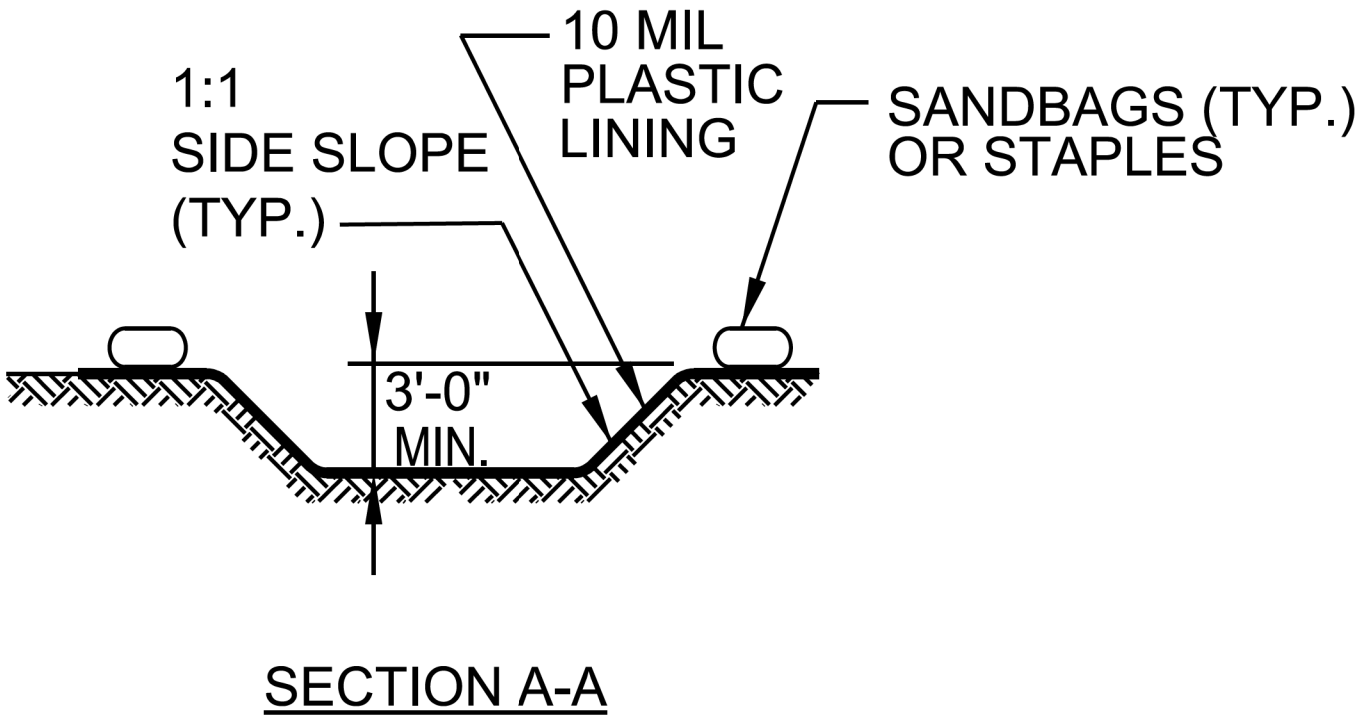
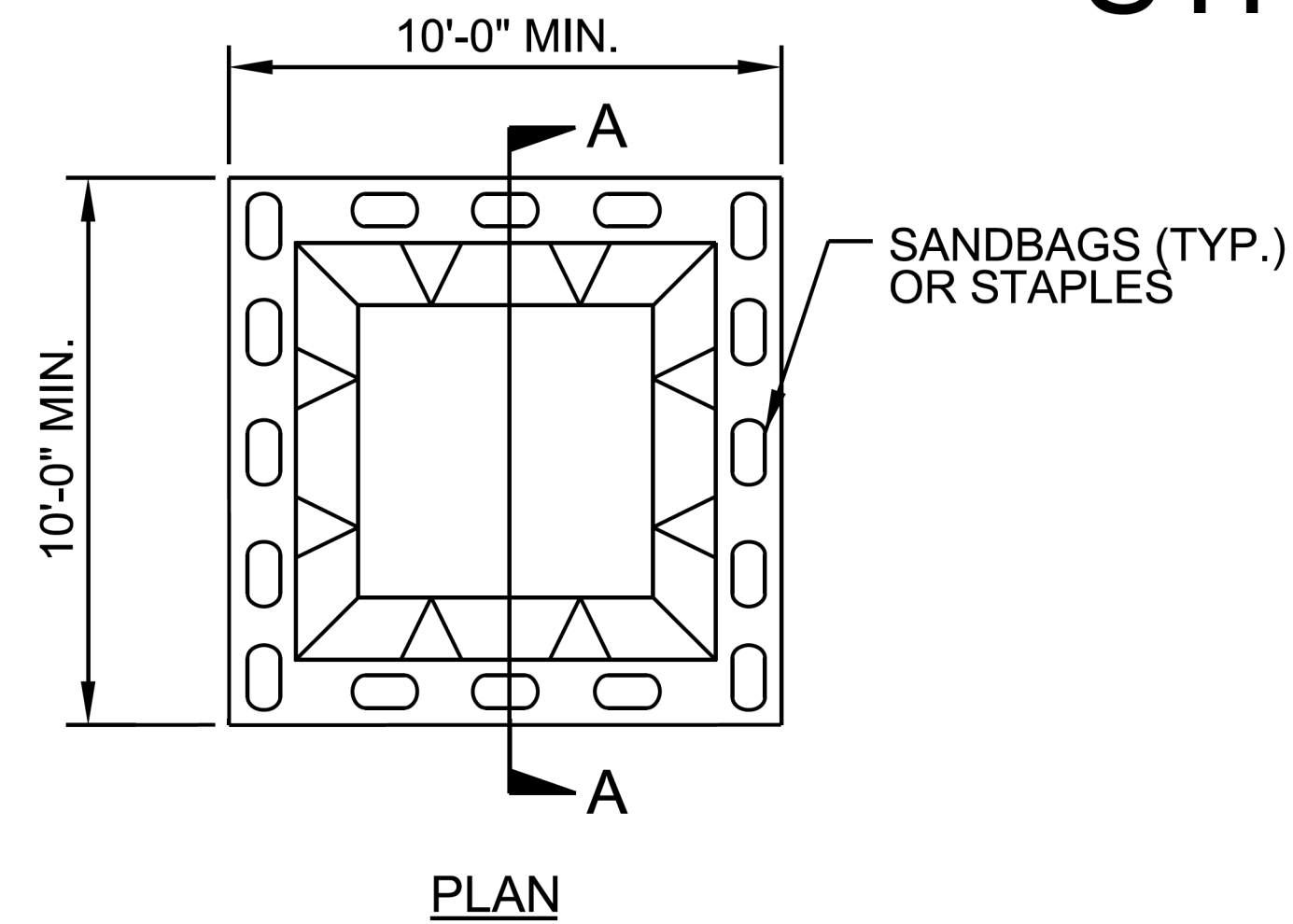
The "Roadway Standard Drawings"- Roadway Design Unit - N. C.
Department of Transportation - Raleigh, N. C., dated January 2024
and the latest revision thereto are applicable to this project and by
reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

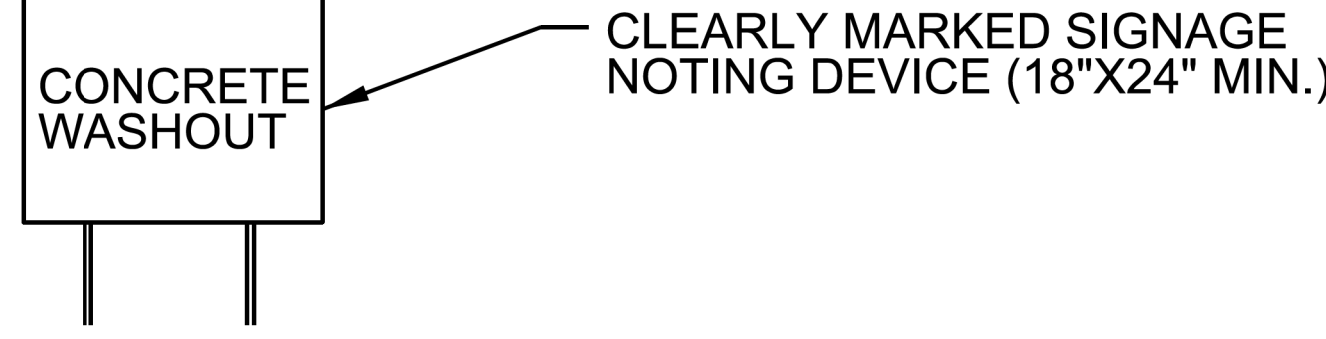
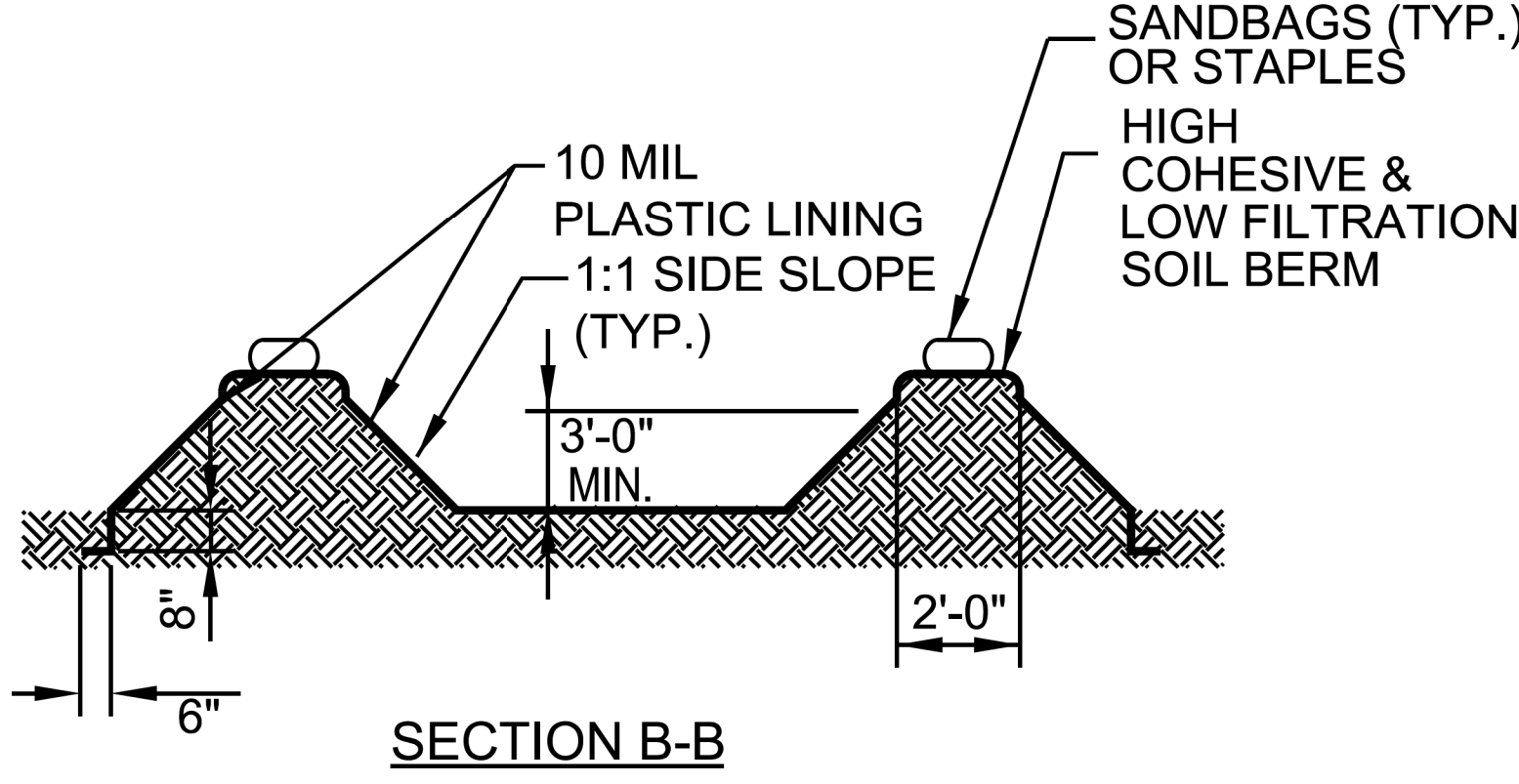
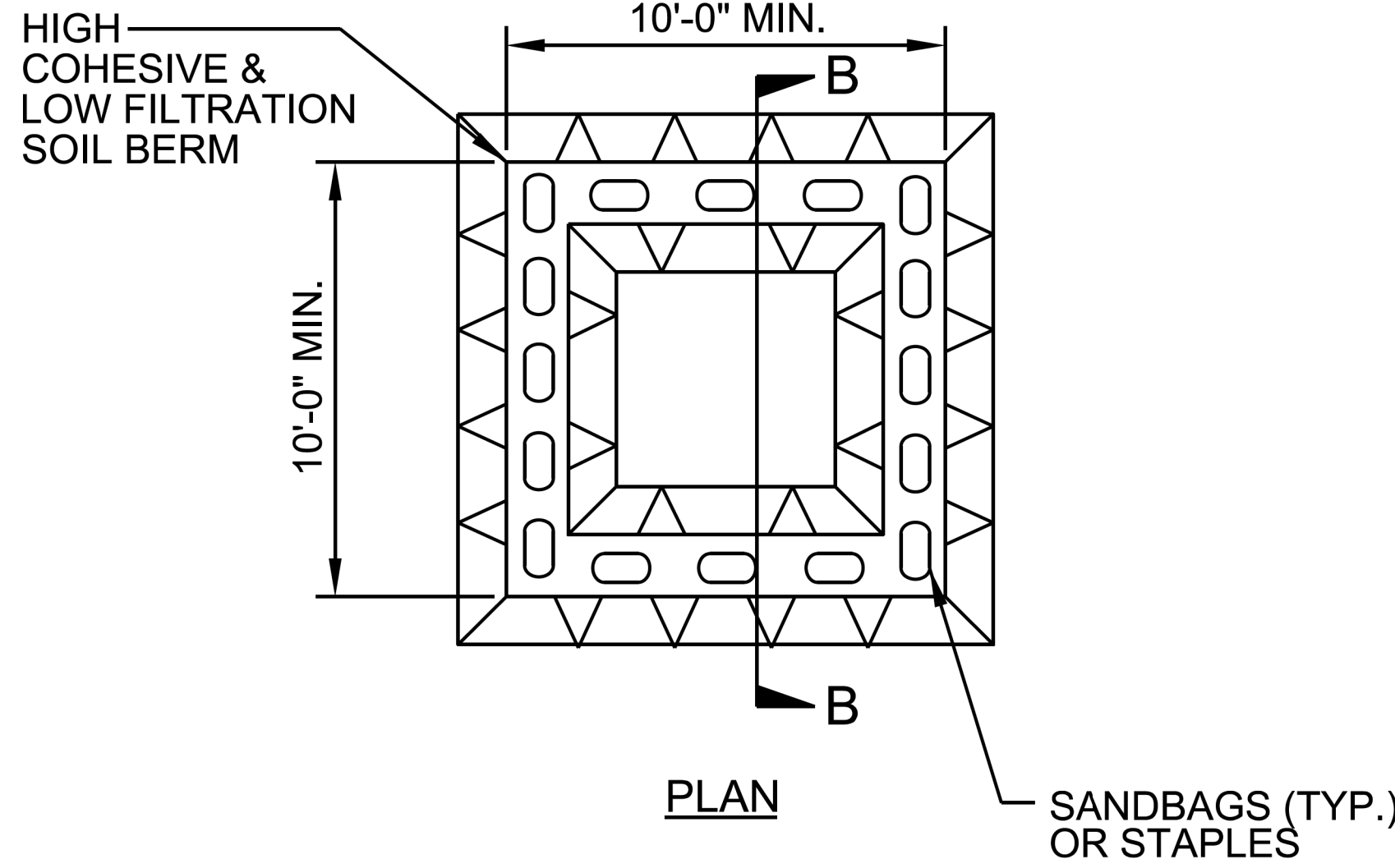
Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A				
1632.02	Type B		1636.03	Excelsior Wattle Barrier	
1632.03	Type C		1636.03	Coir Fiber Wattle Barrier	

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- 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 CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

- 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 CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

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

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL (SLOPES)

[illegible]

MATTING FOR EROSION CONTROL (DITCHES)

[illegible]

DETOUR EROSION CONTROL

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 2B-1

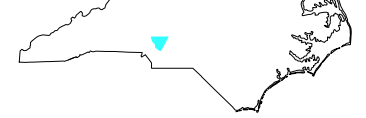
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

BP10-C011

4R01 EC-04/ CONST-2B-

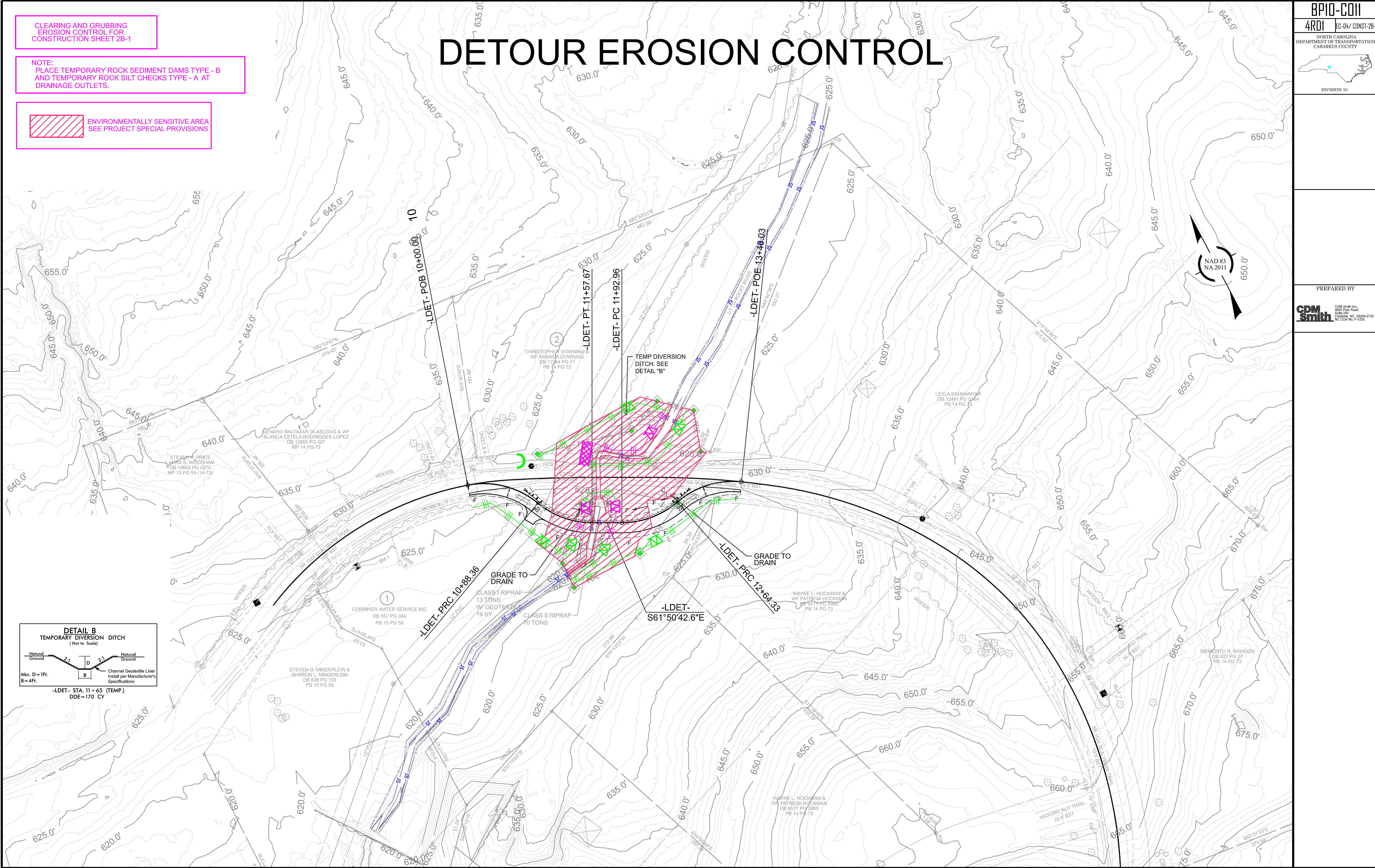
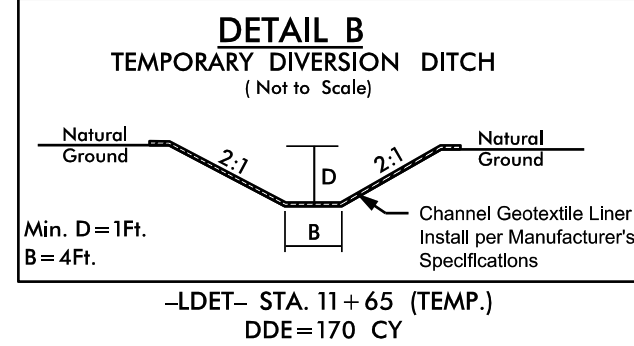
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CABARRUS COUNTY



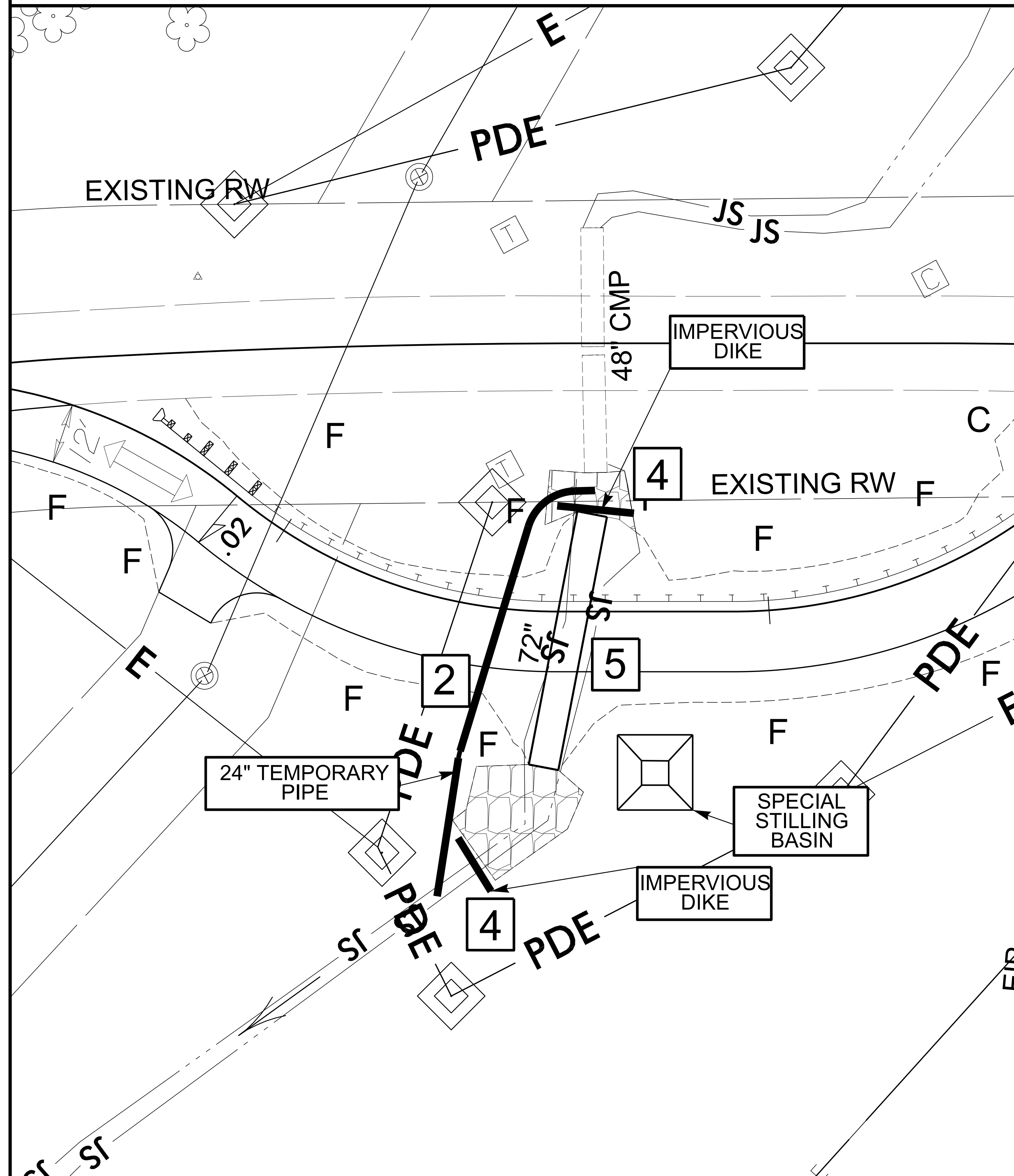
DIVISION 10

PREPARED BY

CDM Smith Inc.
6603 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COR No. F-1255



CULVERT CONSTRUCTION SEQUENCE STA 11+61.6 -LDET-



1. UTILIZE PUMP AND SPECIAL STILLING BASINS AS NEEDED FOR DEWATERING OF ALL WORK AREAS
2. INSTALL FLEXIBLE 24" TEMPORARY PIPE AT LOCATION SHOWN ON PLAN VIEW. INCLUDE RIPRAP AT OUTLET.
3. ENSURE TO ANCHOR ALL PIPES AND PUMPS SECURELY.
4. INSTALL IMPERVIOUS DIKES, DIVERTING FLOW THROUGH 24" TEMPORARY PIPE.
5. INSTALL PROPOSED 72" DETOUR CULVERT AND ADD RIPRAP AS SHOWN.
6. REMOVE IMPERVIOUS DIKES AND TEMPORARY 24" PIPE DIVERTING FLOW THROUGH PROPOSED 72" DETOUR CULVERT.
7. REMOVE SPECIAL STILLING BASINS AND CONSTRUCT DETOUR.

DETOUR EROSION CONTROL



BPI0-C011

4R01 EC-05/CONST-28-1

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CABARRUS COUNTY

DIVISION 10

PREPARED BY

CDM Smith

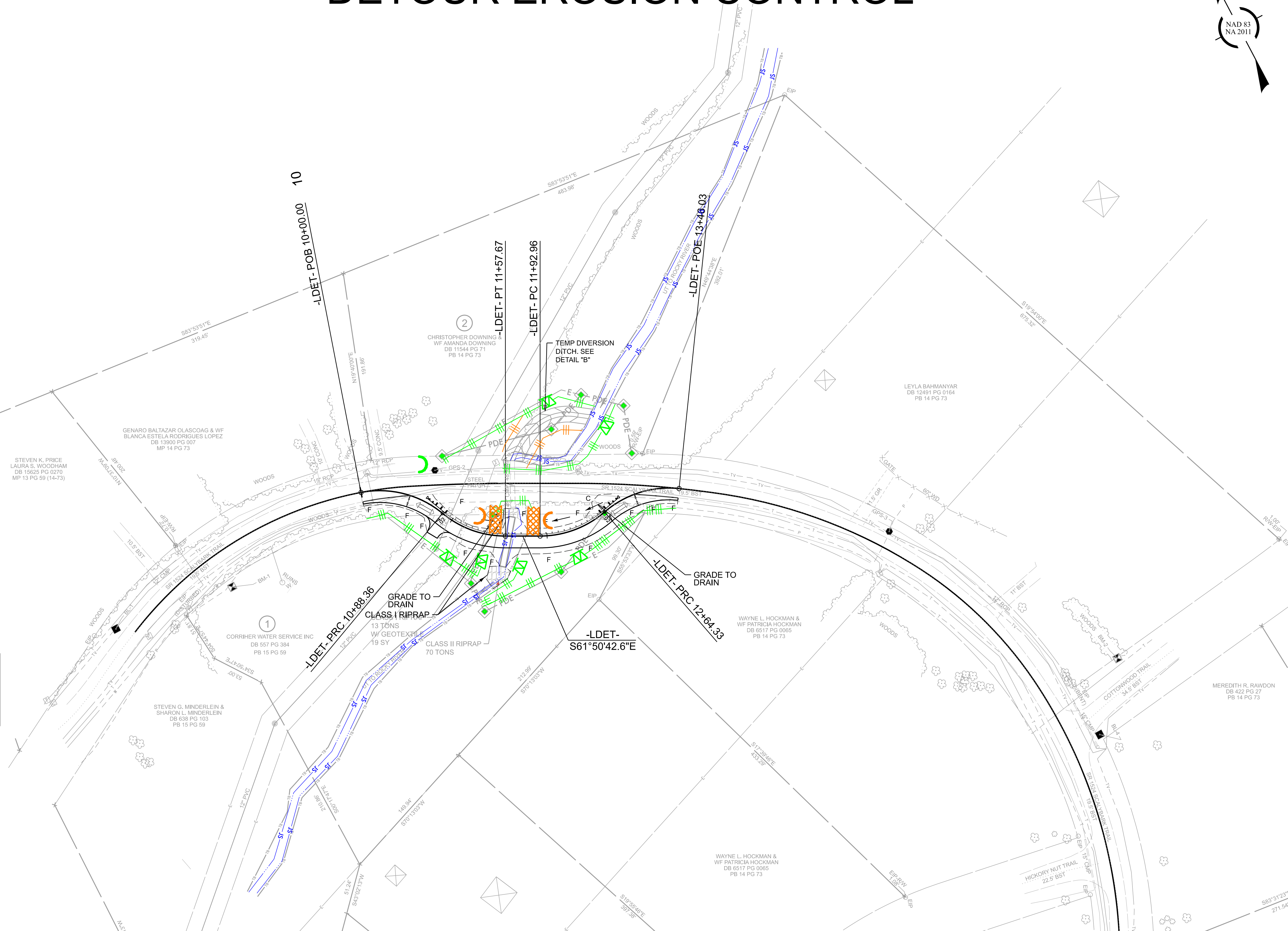
CDM Smith Inc.
8000 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COR No. F-1255

DETAIL B
TEMPORARY DIVERSION DITCH
(Not to Scale)

Min. D=1Ft.
B=4Ft.

Channel Geotextile Liner
Install per Manufacturer's
Specifications

-LDET- STA. 11+65 (TEMP.)
DDE=170 CY



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

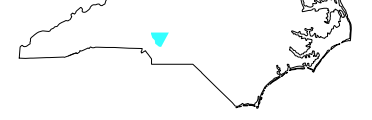
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

BP10-C011

4R01 EC-08/ CONST-04

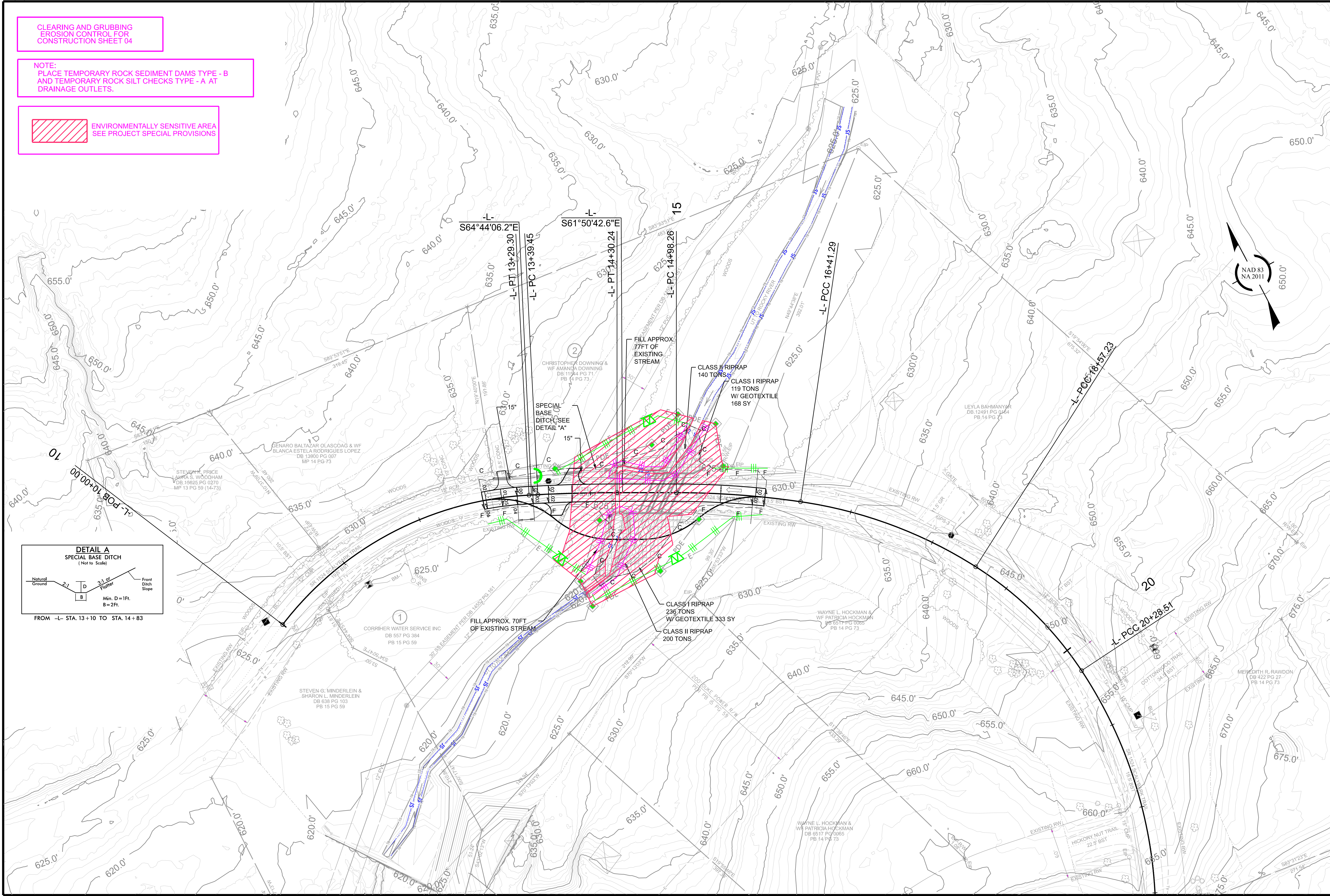
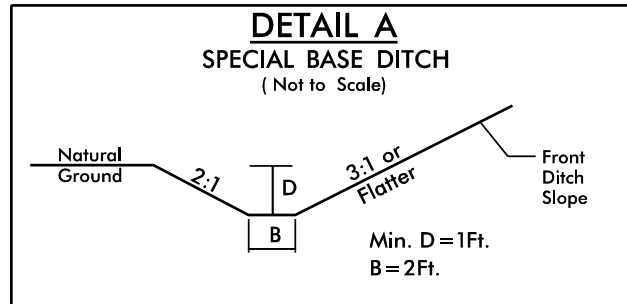
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
CABARRUS COUNTY



DIVISION 10

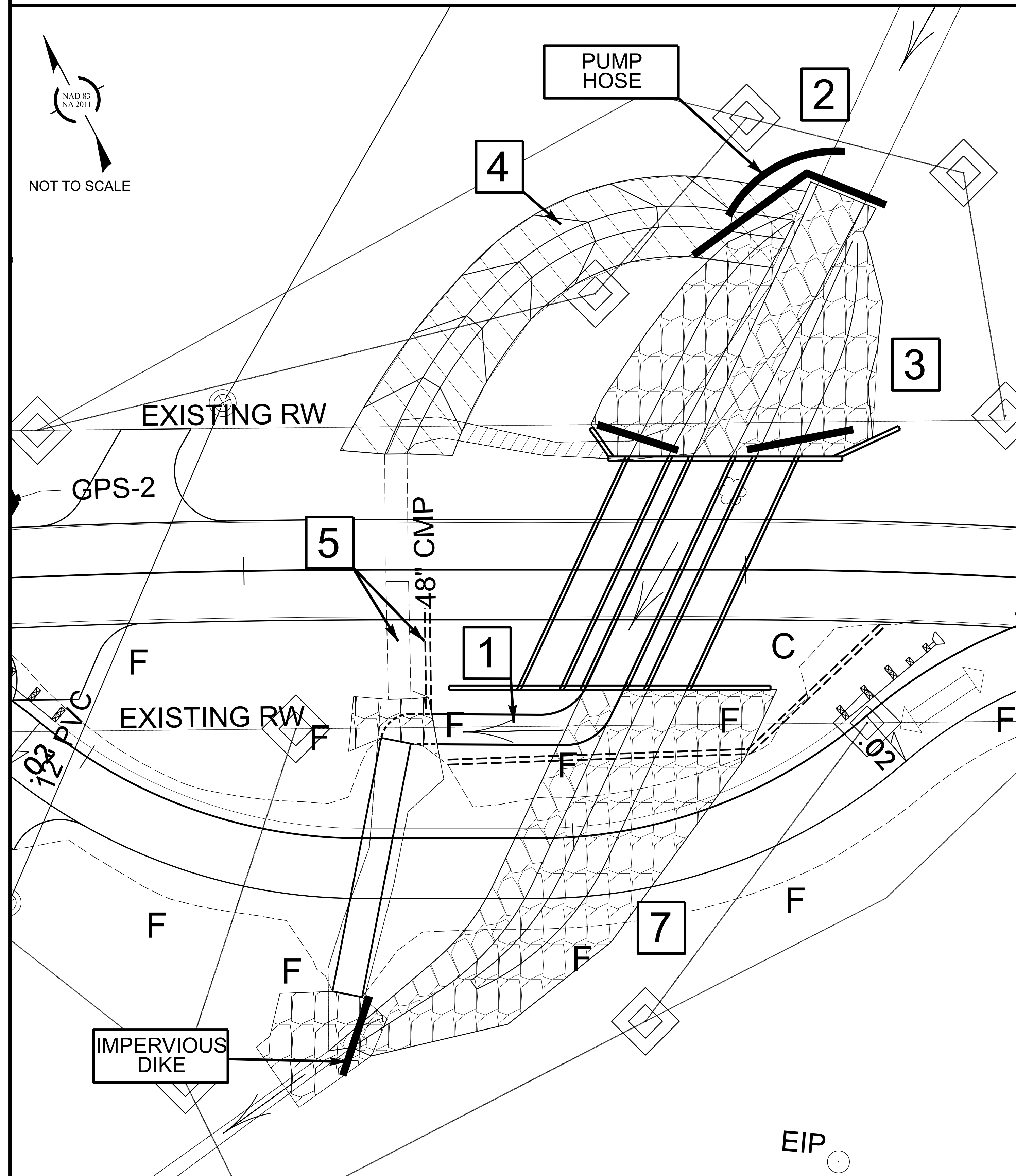
PREPARED BY

CDM Smith Inc.
6603 Park Road
Suite 240
Charlotte, NC 28209-3730
NC COR No. F-1255



CULVERT CONSTRUCTION SEQUENCE STA 14+82.8 -L-

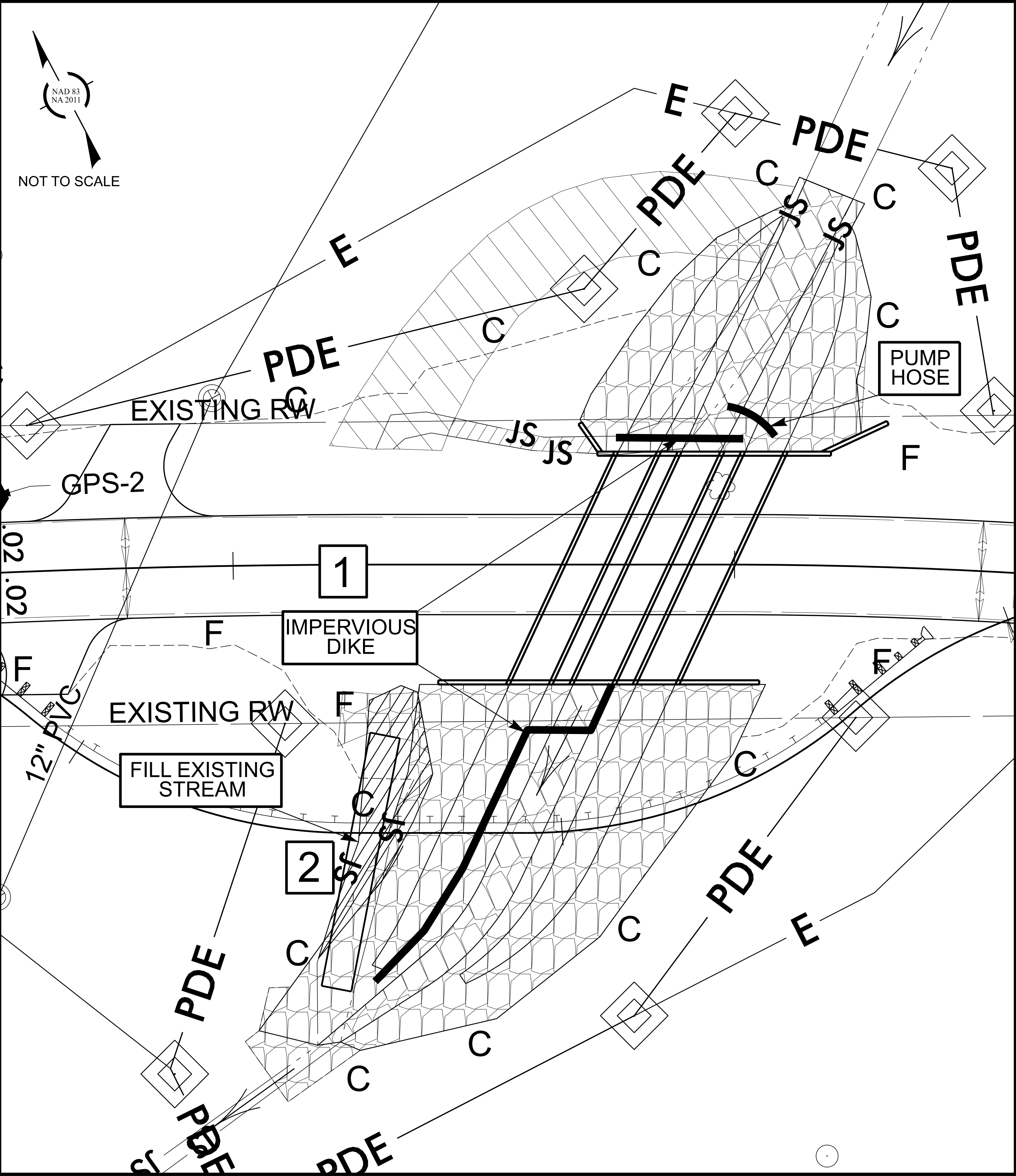
SHEET 2 OF 3



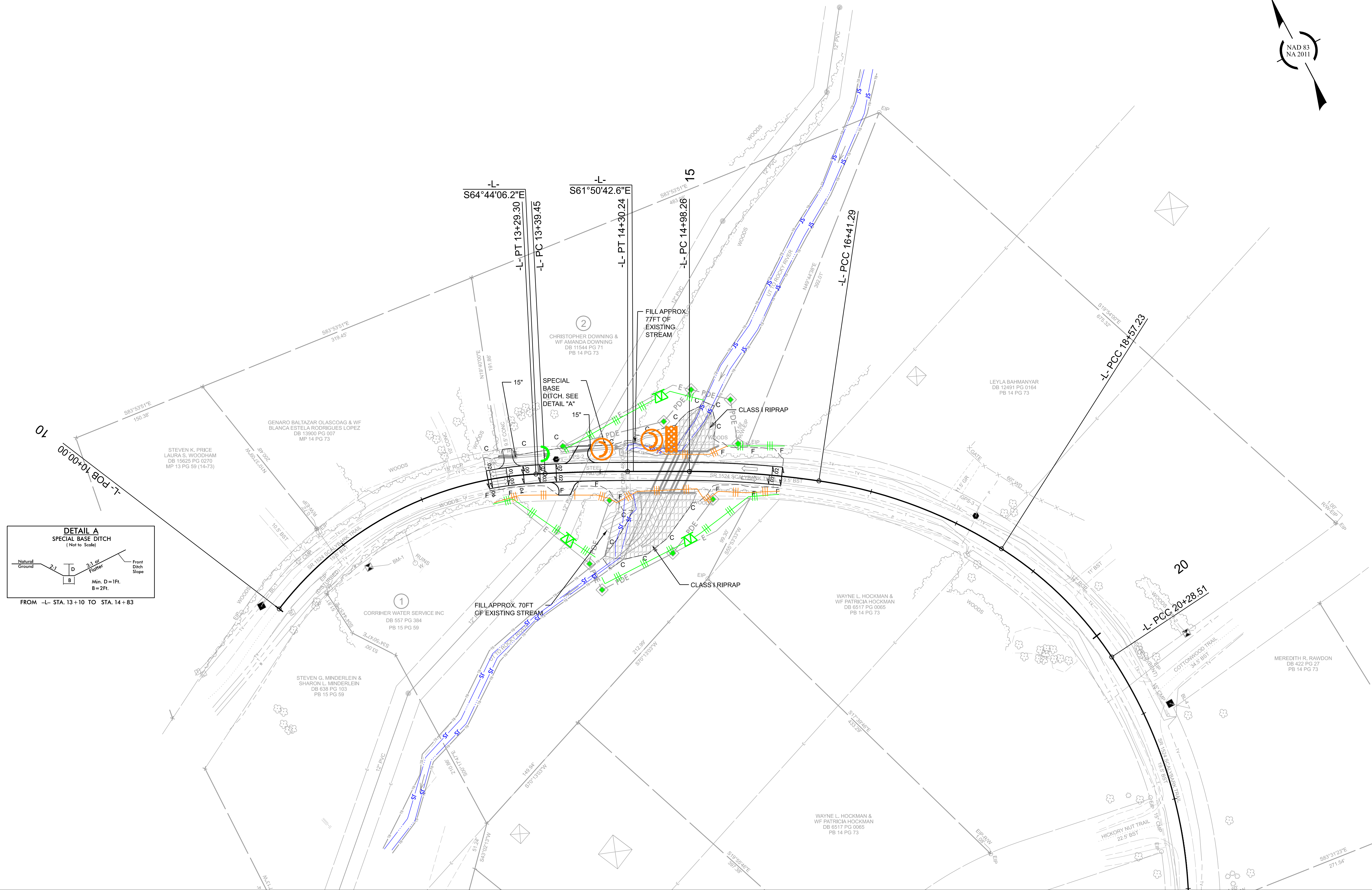
1. CONSTRUCT TEMPORARY 6FT BASE, 2:1 SIDE SLOPES CHANNEL WITH GEOTEXTILE LINER DOWNSTREAM OF PROPOSED CULVERTS.
2. RELOCATE IMPERVIOUS DIKE UPSTREAM OF PROPOSED CHANNEL IMPROVEMENTS AND USE A PUMP TO DIVERT STREAM WATER INTO THE TEMPORARY DIVERSION CHANNEL.
3. COMPLETE CONSTRUCTION OF UPSTREAM CHANNEL IMPROVEMENTS. PLACE IMPERVIOUS DIKES IN FRONT OF LEFT AND RIGHT 84" RCPs TO BLOCK FLOW. KEEP MIDDLE 84" RCP OPEN. REMOVE UPSTREAM IMPERVIOUS DIKE INSTALLED IN STEP 2. DIRECT FLOW INTO LOW FLOW CHANNEL AND MIDDLE 84" RCP CULVERT. SEE SHEET 004 FOR CHANNEL DETAILS.
4. FILL TEMPORARY DIVERSION CHANNEL UPSTREAM.
5. REMOVE PORTION OF SHORING PARALLEL TO EXISTING CULVERT. REMOVE EXISTING 48" CULVERT AND CONSTRUCT PROPOSED ROADWAY.
6. SHIFT DETOUR TRAFFIC TO PROPOSED ROADWAY.
7. MAINTAIN FLOW IN 72" DETOUR CULVERT AND TEMPORARY CHANNEL CONSTRUCTED FROM STEP 1. REMOVE TEMPORARY SHORING AND DETOUR EMBANKMENT IN AREA OF CENTER AND RIGHT 84" RCP CULVERTS AND CONSTRUCT DOWNSTREAM CHANNEL FOR RIGHT AND CENTER CULVERTS. TIE CONSTRUCTED CHANNEL INTO THE RECEIVING CHANNEL. UTILIZE SPECIALIZED STILLING BASINS AND PUMP FOR DEWATERING WORK AREA. SEE SHEET 004 FOR CHANNEL DETAILS.

CULVERT CONSTRUCTION SEQUENCE STA 14+82.8 -L-

SHEET 3 OF 3



1. RELOCATE UPSTREAM IMPERVIOUS DIKE FROM THE INLET OF THE RIGHT 84" RCP TO THE INLET OF THE MIDDLE 84" RCP BARREL. USE A PUMP TO DIVERT THE FLOW INTO THE RIGHT 84" RCP BARREL.
2. COMPLETE DOWNSTREAM LEFT BENCH AND LOW FLOW CHANNEL IMPROVEMENTS
3. REMOVE 72" DETOUR CULVERT AND REMAINING DETOUR EMBANKMENT. CONSTRUCT LEFT FLOODPLAIN BENCH AND LOW FLOW CHANNEL IMPROVEMENTS. BACKFILL EXISTING STREAM. SEE SHEET 004 FOR CHANNEL DETAILS.
4. REMOVE IMPERVIOUS DIKES TO ALLOW FLOW INTO ALL THREE 84" BARRELS.



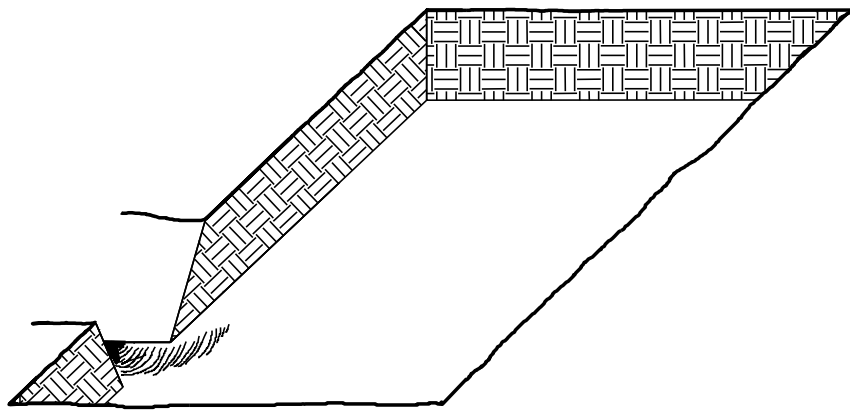
PLANTING DETAILS

SEEDLING / LINER BAREROOT PLANTING DETAIL

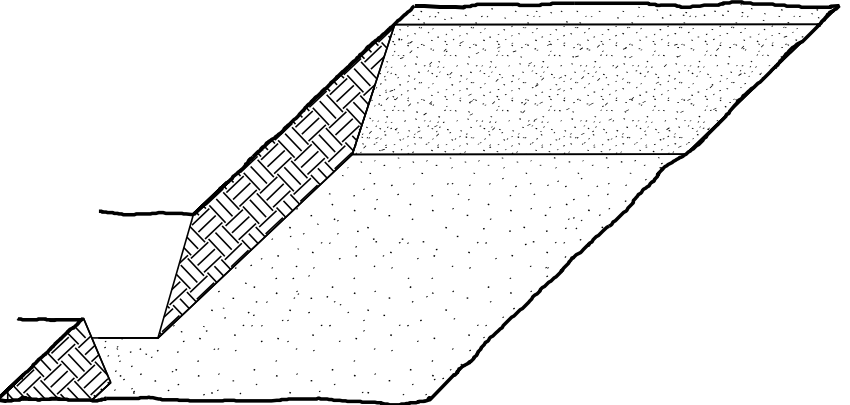
HEALING IN

1. Locate a healing-in site in a shady, well protected area.

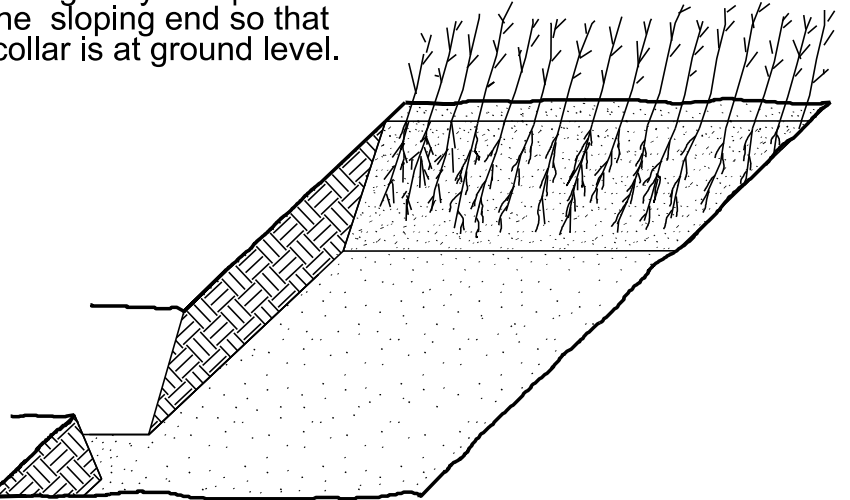
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



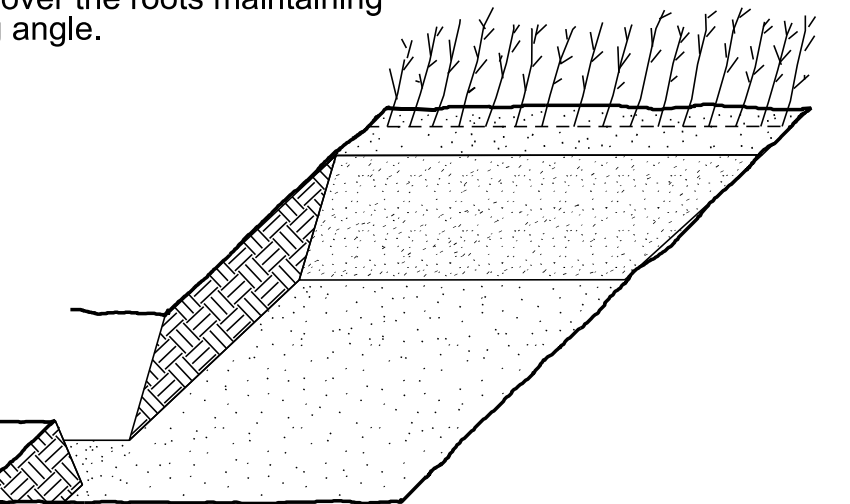
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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



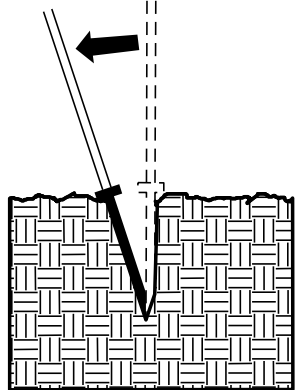
5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



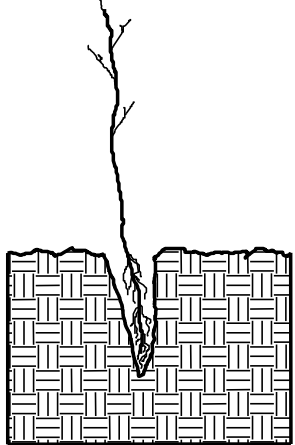
6. Repeat layers of plants and sawdust as necessary and water thoroughly.

DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR

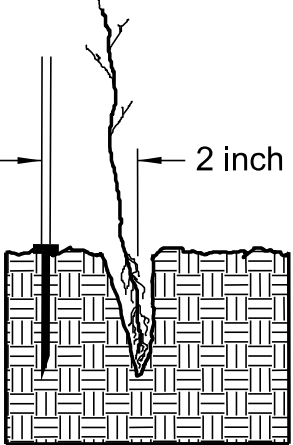
1. Insert planting bar as shown and pull handle toward planter.



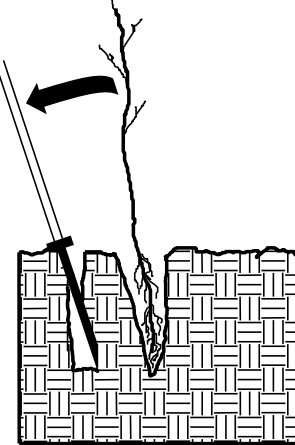
2. Remove planting bar and place seedling at correct depth.



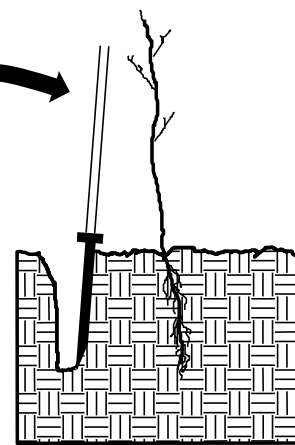
3. Insert planting bar 2 inches toward planter from seedling.



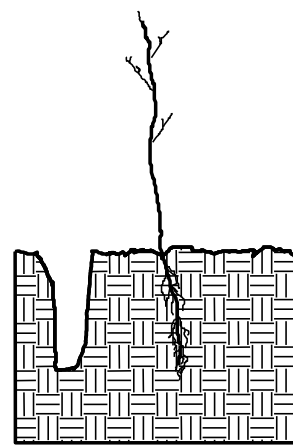
4. Pull handle of bar toward planter, firming soil at bottom.



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.

☐ TREE REFORESTATION SHALL BE PLANTED DURING THE DORMANT SEASON (OCTOBER THROUGH MARCH). DO NOT PLANT WHEN SOIL TEMPERATURE IS BELOW 45F.

☐ RIPARIAN SEED MIX TO BE APPLIED TO STREAM BANKS WHERE APPLICABLE.

REFORESTATION

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

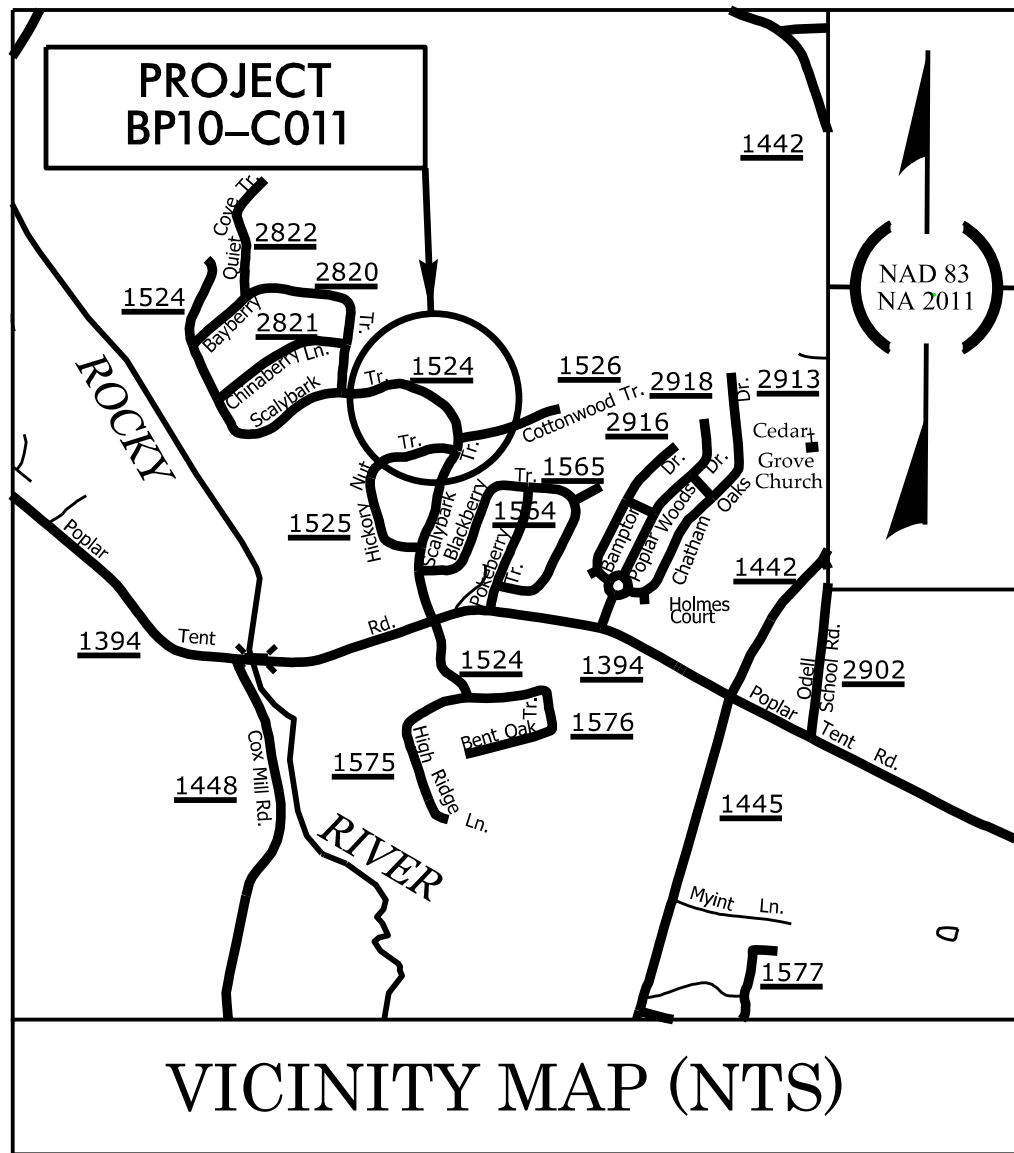
25% QUERCUS PALUSTRIS	PINE OAK	12 in – 18 in BR
25% PLANTANUS OCCIDENTALIS	SYCAMORE	12 in – 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR
25% NYSSA SYLVATICA	BLACK GUM	12 in – 18 in BR

REFORESTATION DETAIL SHEET

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

09.08/99

TIP PROJECT: BP10-C011



VICINITY MAP (NTS)

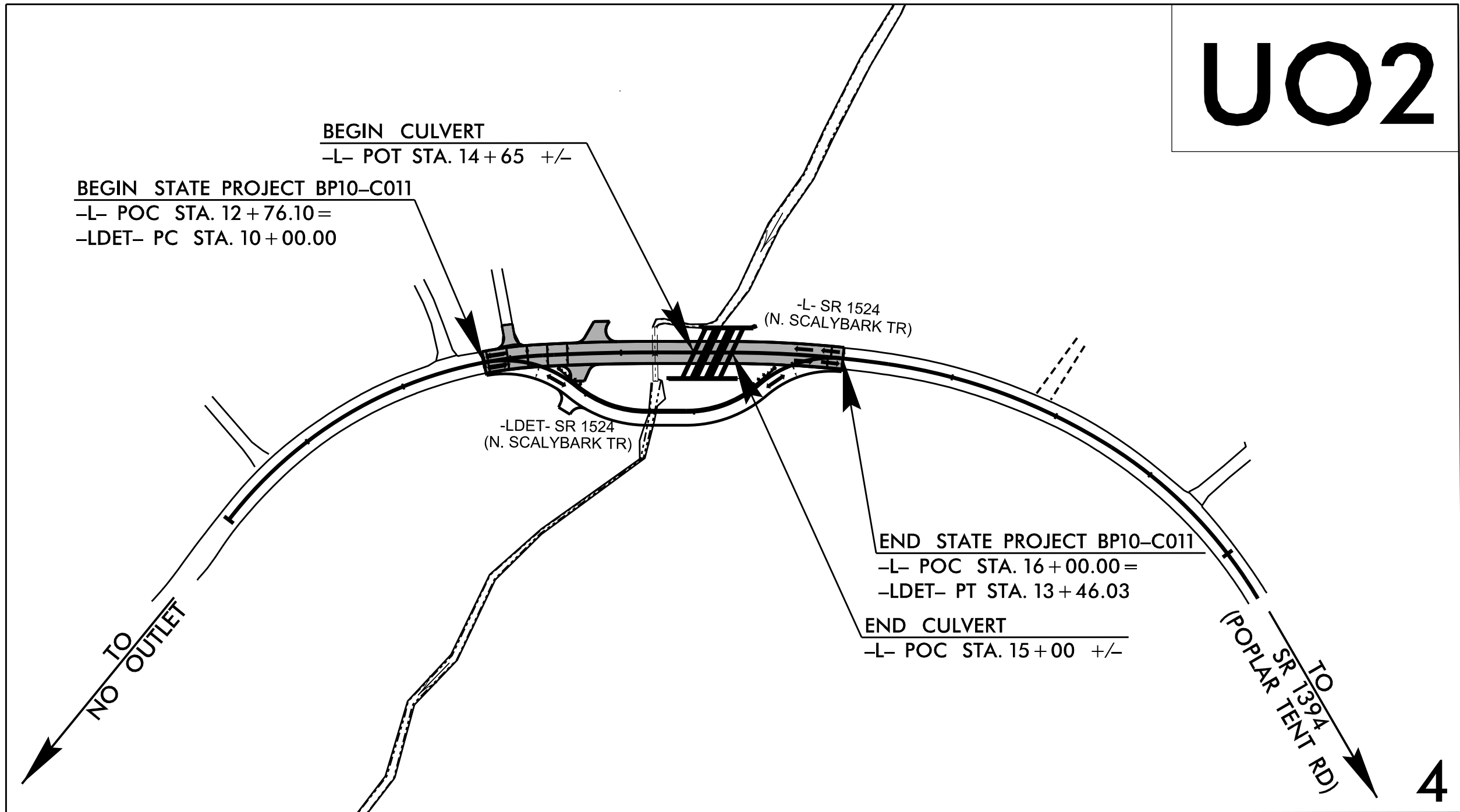
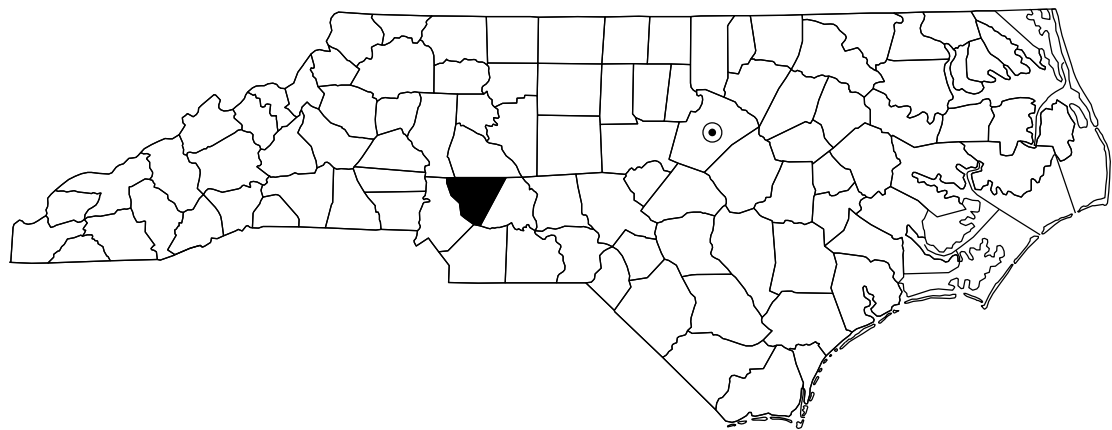
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
CABARRUS COUNTY

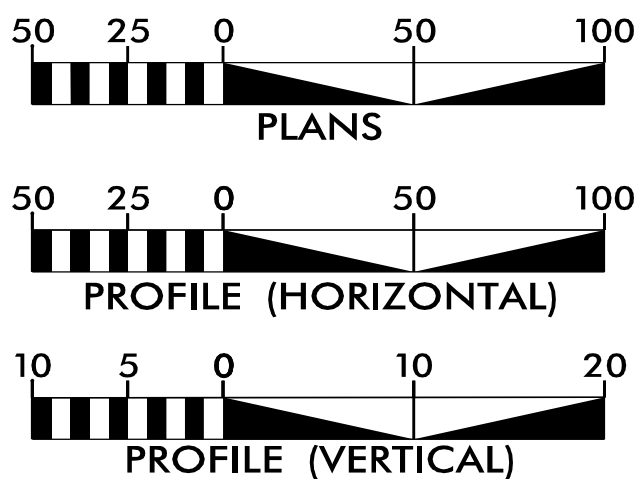
LOCATION: REPLACE CULVERT ON SR 1524 (N. SCALYBARK TR)
TYPE OF WORK: POWER (DISTRIBUTION) & COMMUNICATIONS

T.I.P. NO.	SHEET NO.
BP10-C011	UO-1

NOTE:
ALL 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.



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:

UO-1

UO-2

DESCRIPTION:

TITLE SHEET

UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

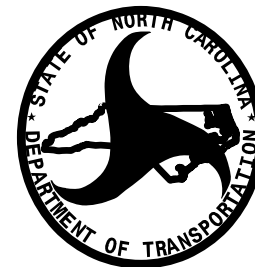
- (A) POWER DISTRIBUTION - DUKE ENERGY
(B) COMMUNICATIONS - WINDSTREAM
(C) COMMUNICATIONS - CHARTER

PREPARED IN THE OFFICE OF:



2641 Summer Boulevard
Suite 116
Raleigh, NC 27616
(919) 878-7466

TODD BUTNER UTILITY PROJECT MANAGER
WILL PACE PROJECT UTILITY COORDINATOR

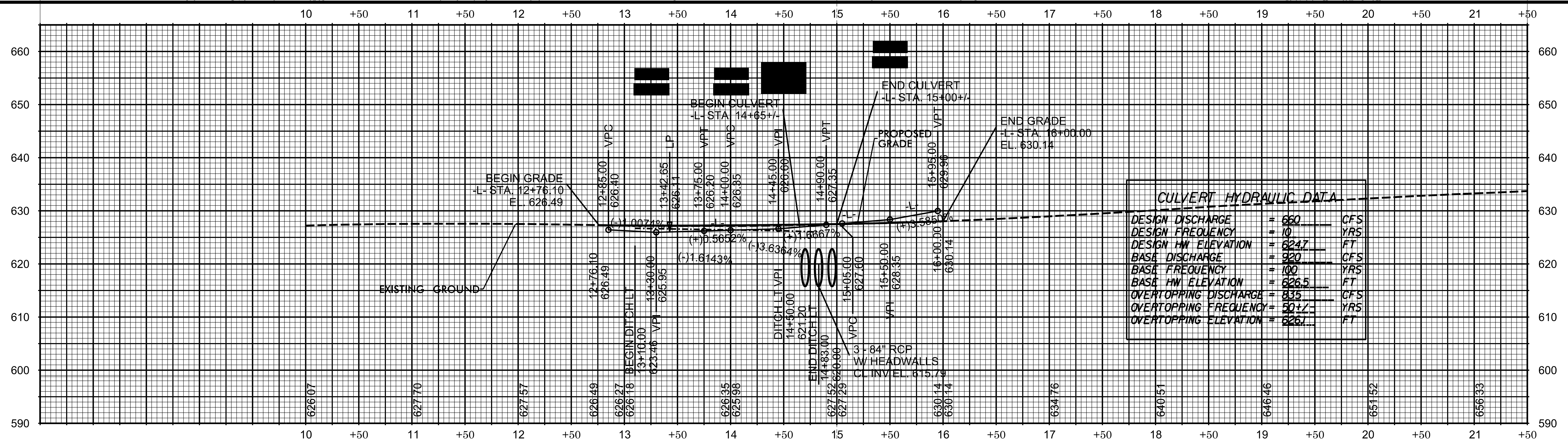


DIVISION OF HIGHWAYS
DIVISION 10

716 W. MAIN ST.
ALBERMARLE, 28001

LYNN BASINGER DIVISION UTILITY ENGINEER
BARRY CARLTON DIVISION UTILITY COORD

6/11/2025
\\working\BP10-C011-Rdy-t.sh.dgn
10:06:45 AM



CROSS SECTION SHEET INDEX

<i>X-1</i>	<i>CROSS SECTION SHEET INDEX</i>
<i>X-1A</i>	<i>CROSS SECTION SUMMARY SHEET</i>
<i>X-2</i>	<i>THRU X-6 -L-</i>
<i>X-7</i>	<i>THRU X-11 -LDET-</i>

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

PROJ. REFERENCE NO. BP10-C011	SHEET NO. X-1A
----------------------------------	-------------------

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".

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

[illegible]

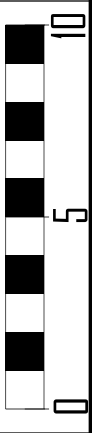
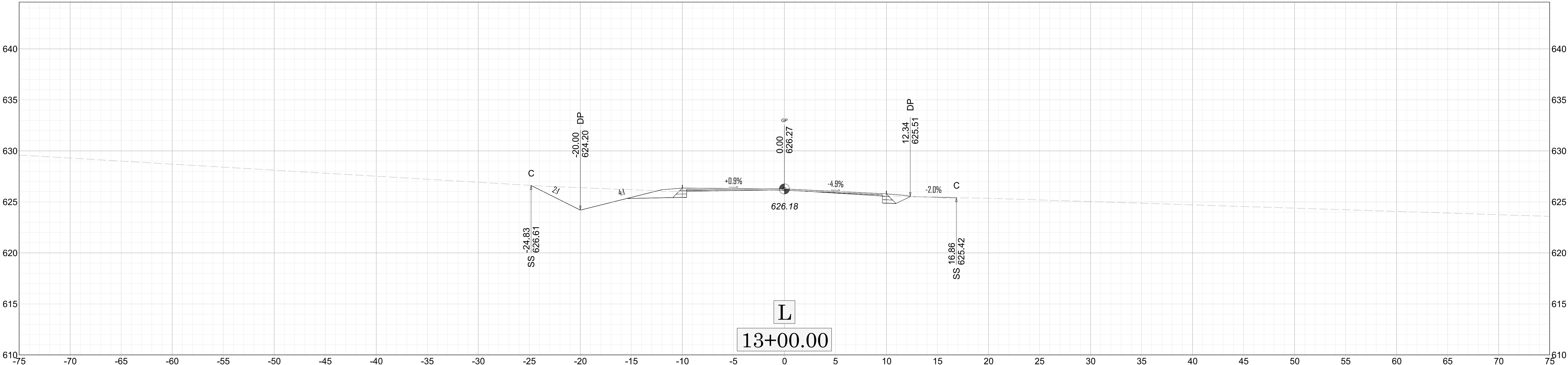
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

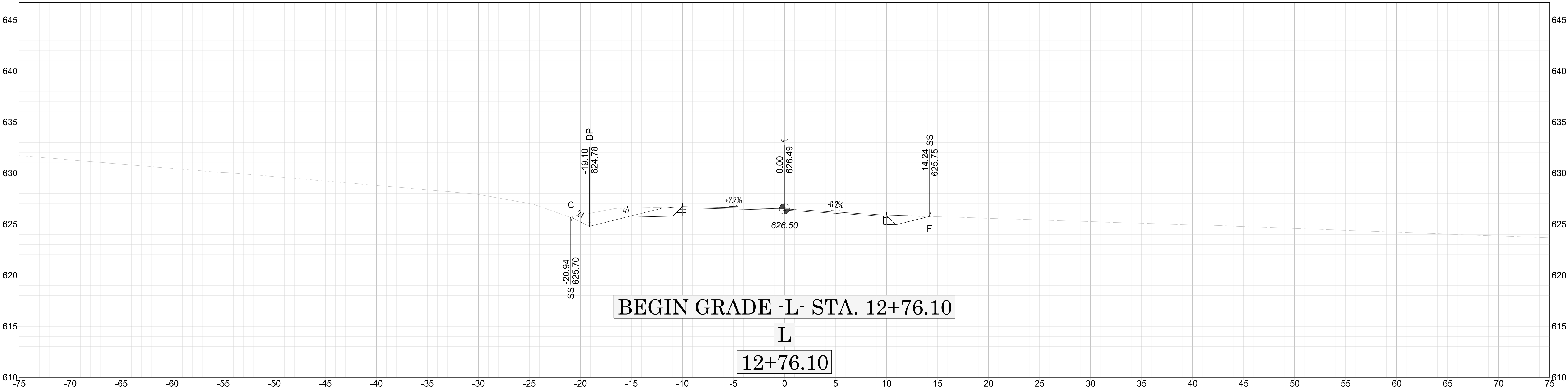
PROJ. REFERENCE NO.	SHEET NO.
BP10-C011	X-1A

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".

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT



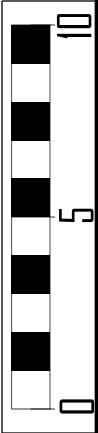
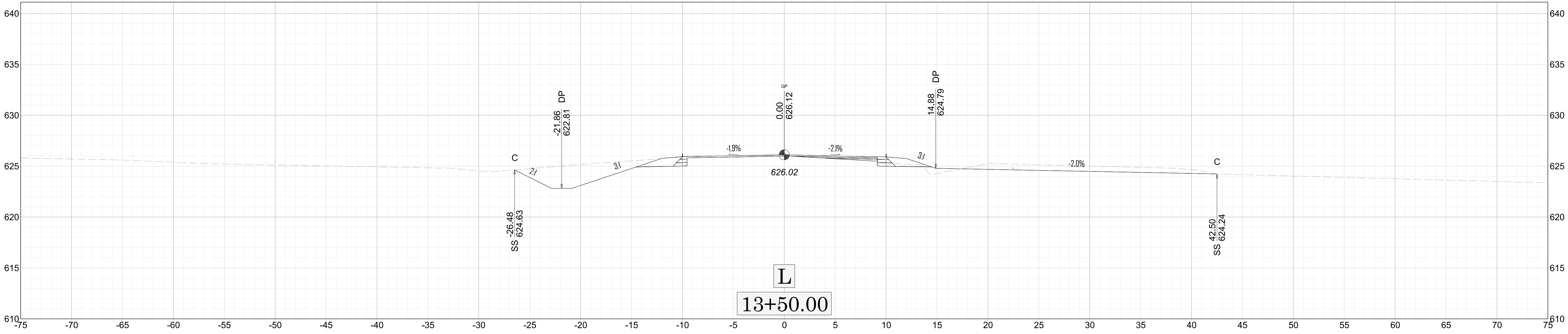
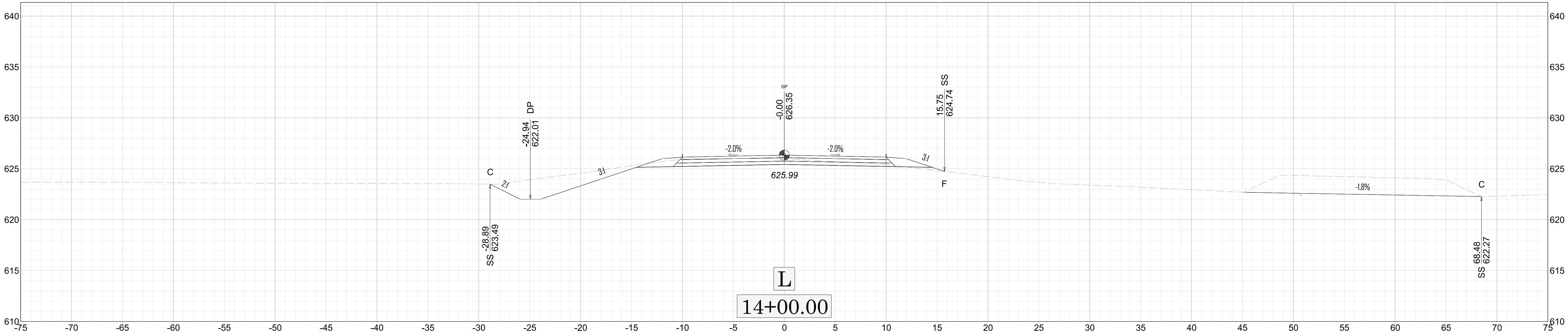
X-2 12+76.10



BP10-C011

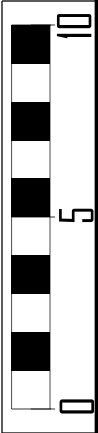
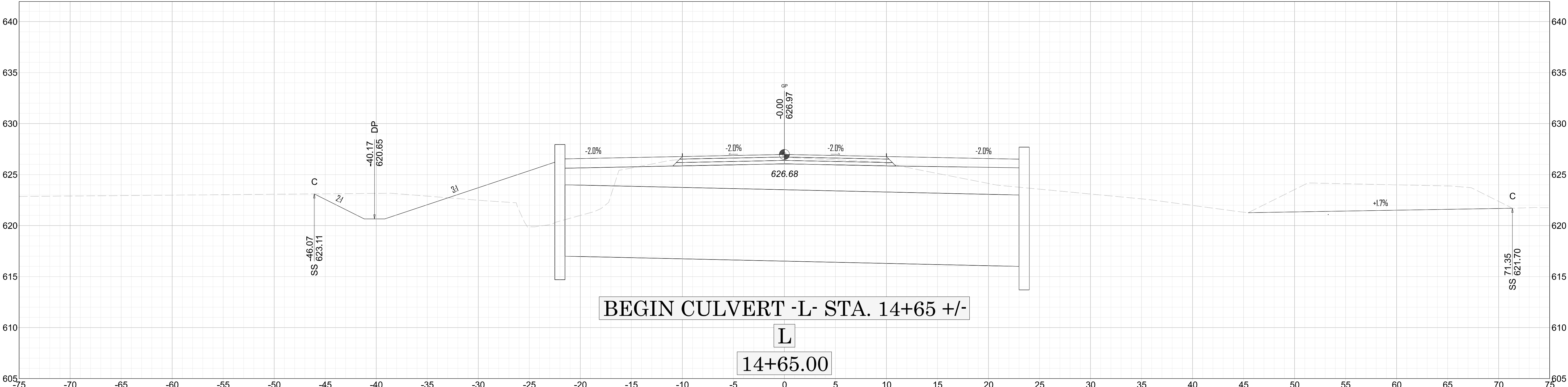
BEGIN GRADE -L- STA. 12+76.10

12+76.10

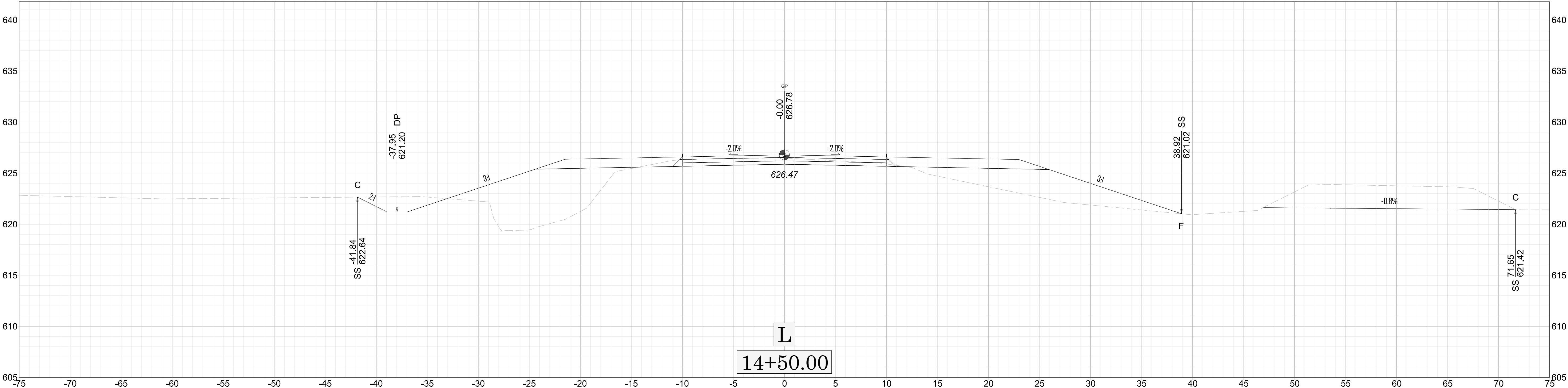


X-3 13+50.00

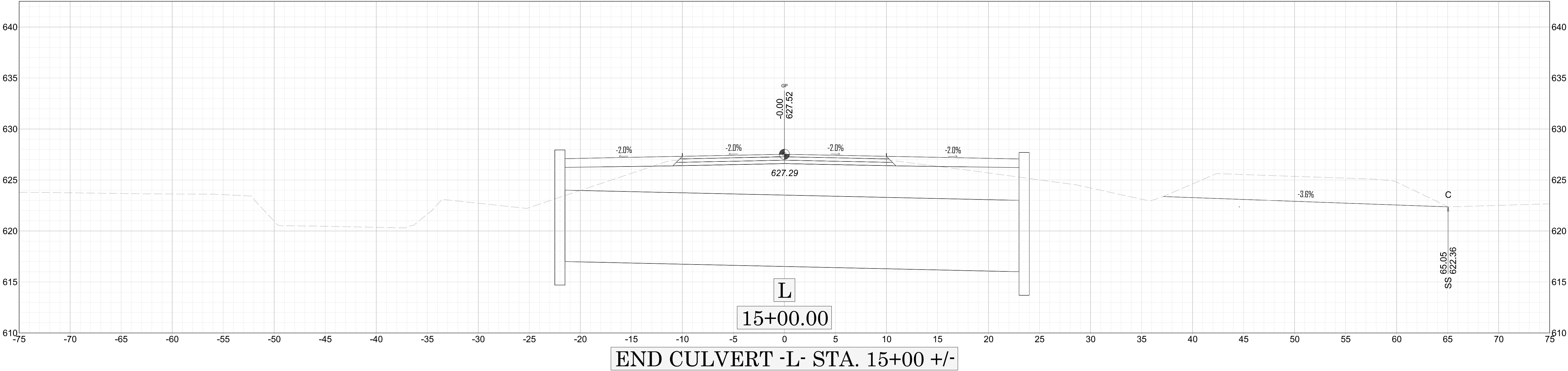
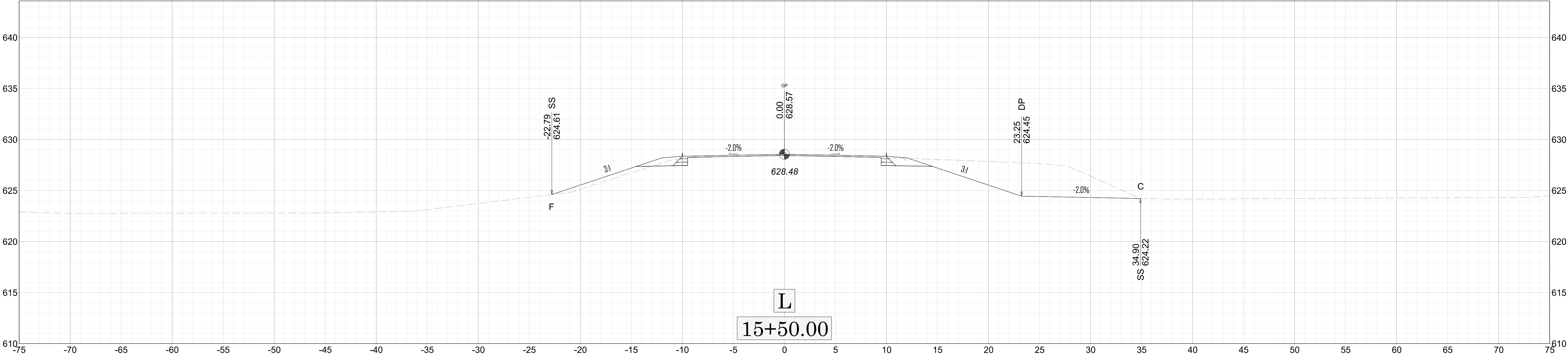
BP10-C011



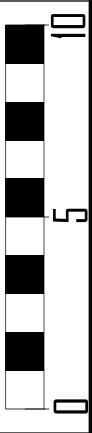
X-4 14+50.00



BP10-C011

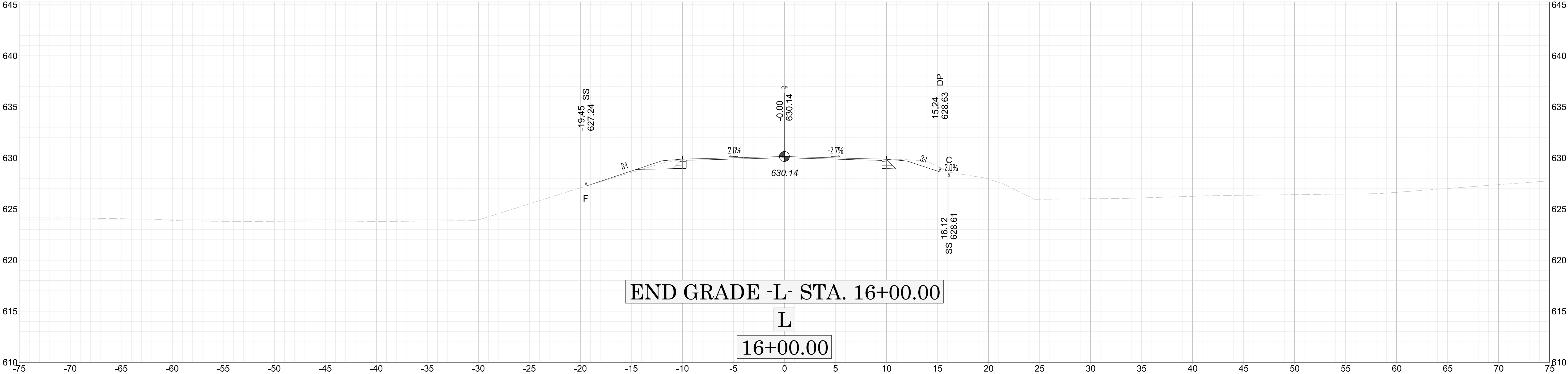


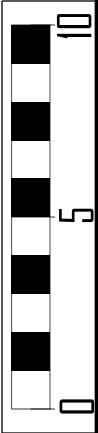
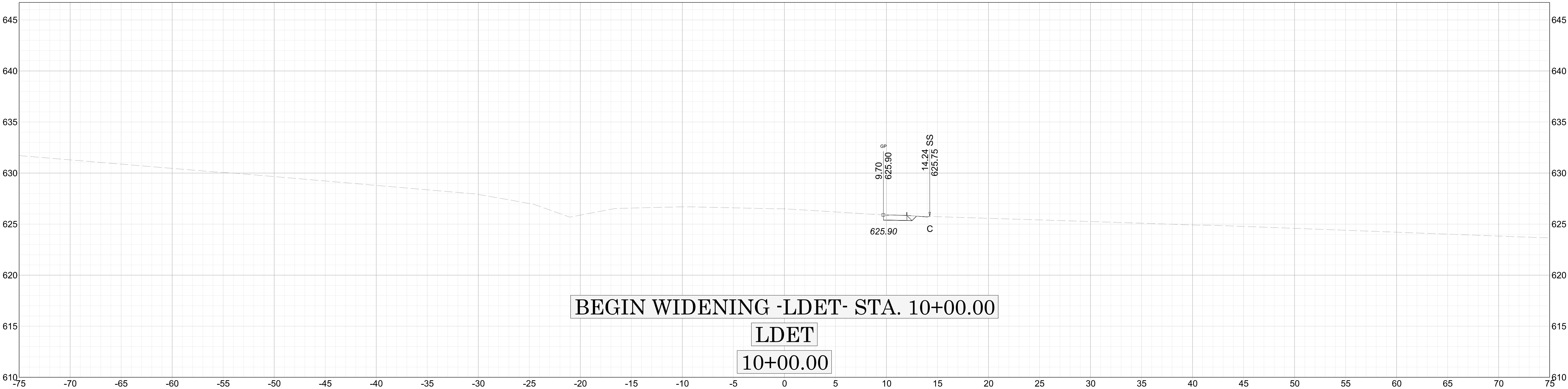
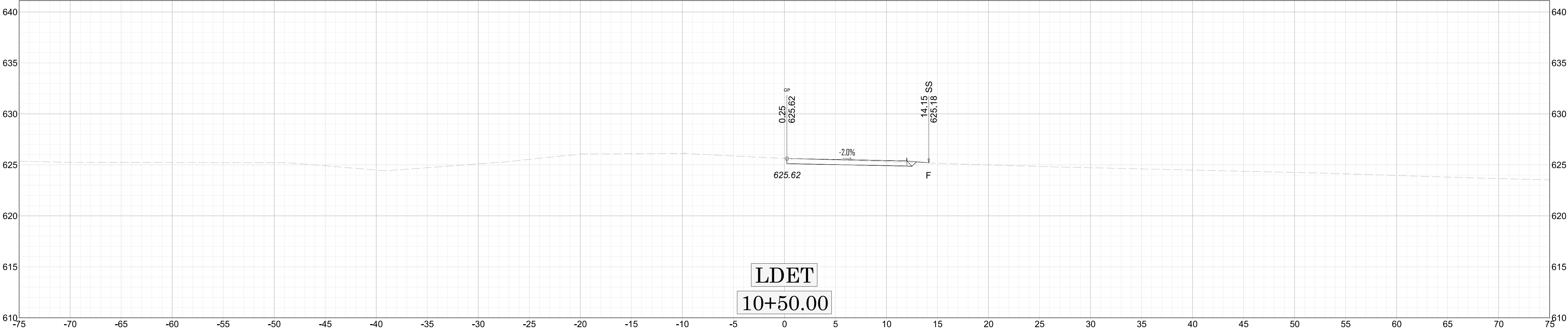
END CULVERT -L- STA. 15+00 +/-



X-B 16+00.00

BP10-CD11

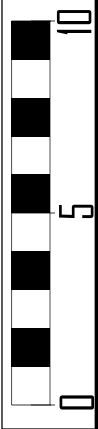
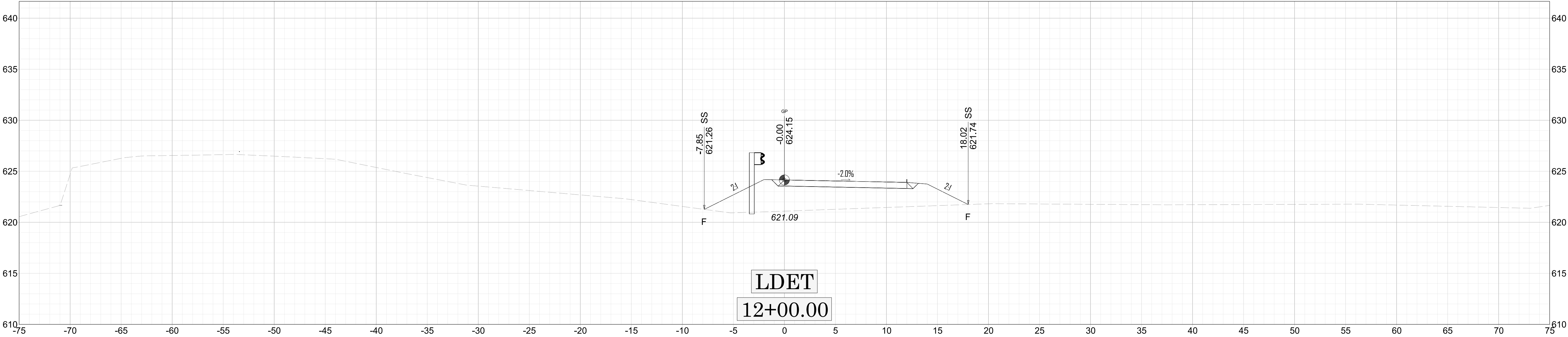




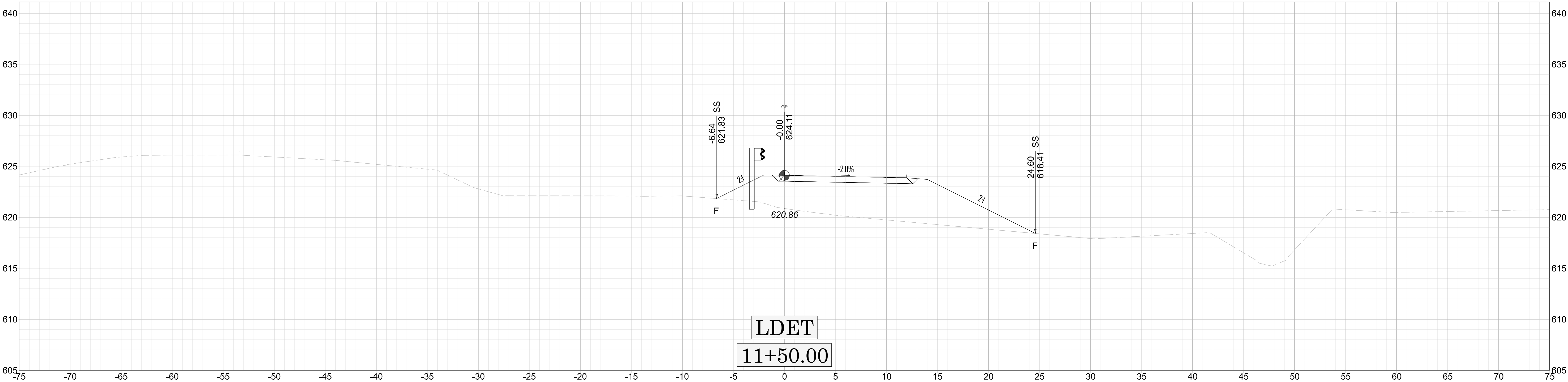
X-7 10+00.00

BP10-C011

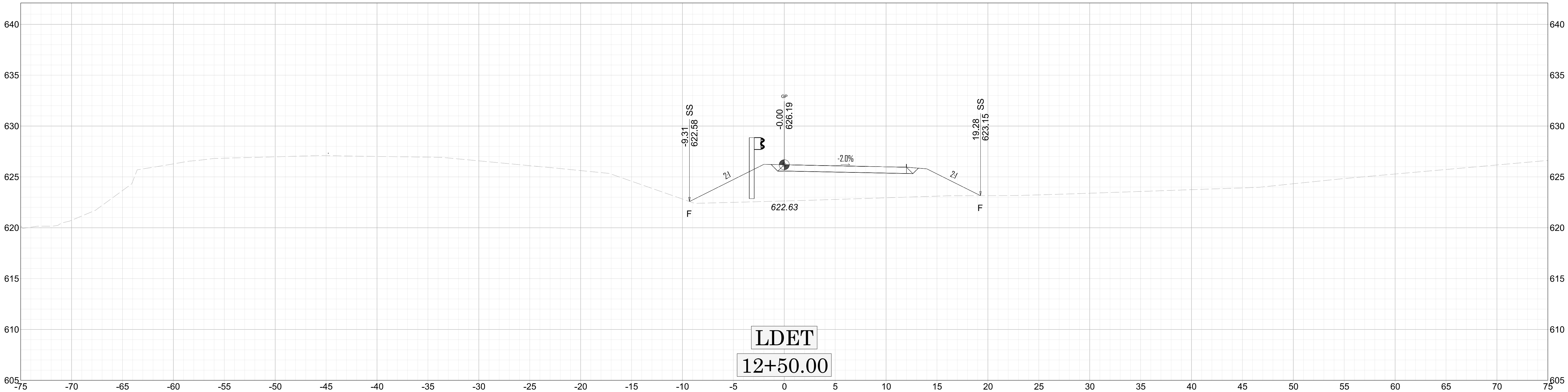
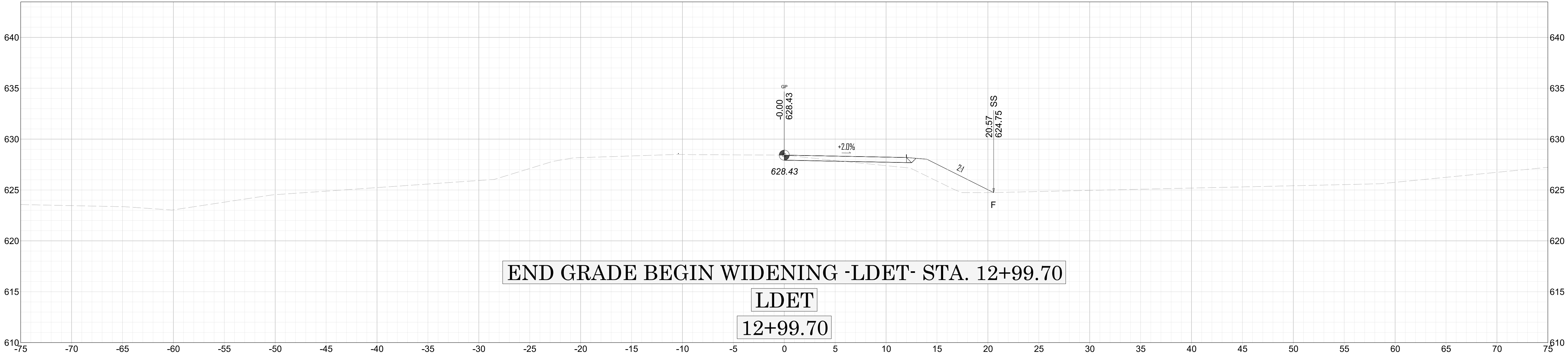


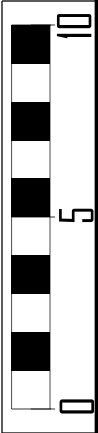
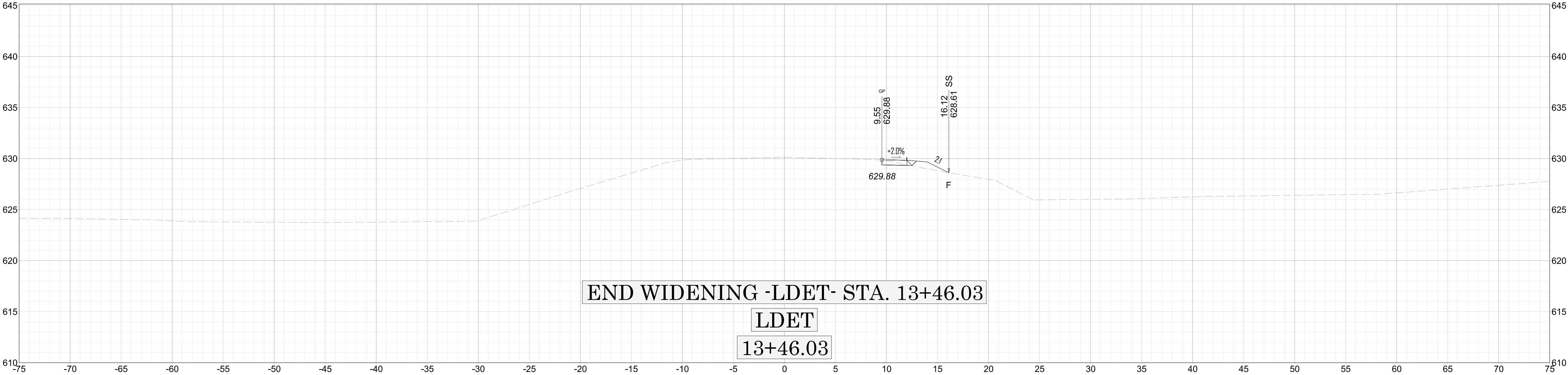


X-9 11+50.00

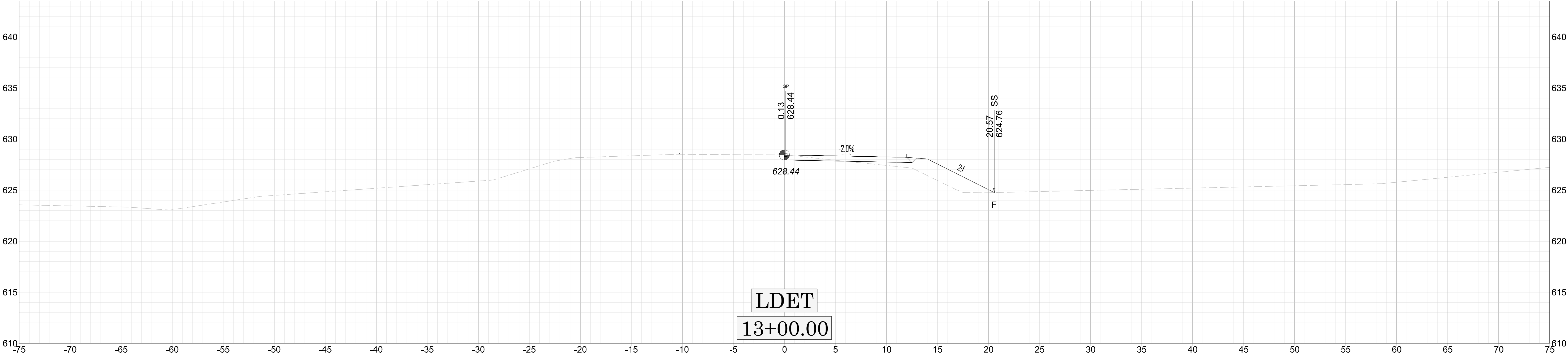


BP10-C011





X-11 13+00.00



BP10-C011