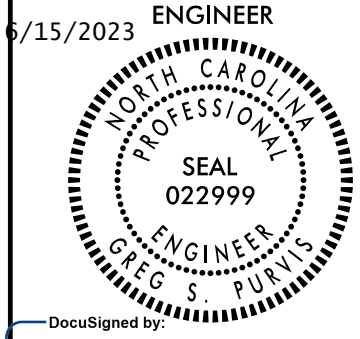


5/14/23

PROJECT REFERENCE NO.	SHEET NO.
BP4.R012	1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
6/15/2023	
	
Documented by: <i>Greg S. Purvis</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GENERAL NOTES

2018 ROADWAY ENGLISH STANDARD DRAWINGS

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

EFF. 01-16-2018
REV.

GRADING AND SURFACING OR RESURFACING AND WIDENING:

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

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE
CENTURY LINK (TELEPHONE/FIBER OPTICS)

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

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method 11
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
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method 1

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS, PAVEMENT SCHEDULE, & MISCELLANEOUS DETAILS
2D-1	DRAINAGE DETAILS
3B-1	EARTHWORK SUMMARY AND PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
RW01 THRU RW04	RIGHT OF WAY SHEETS, SURVEY CONTROL SHEETS, PROPOSED ALIGNMENT CONTROL SHEET AND PROPOSED EASEMENT CONTROL SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-3	CROSS SECTIONS

6/15/2023 6:15 AM
I:\B-1160010\BP4.R012.RDY_PSH_1A.dgn

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

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	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	---S---
Potential Contamination Area: Soil	---S---
Known Contamination Area: Water	---W---
Potential Contamination Area: Water	---W---
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊕
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	⊙
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	△
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	⊙
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Existing Control of Access Line	-----
Proposed Control of Access Line	-----
Proposed ROW and CA Line	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage/Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
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:

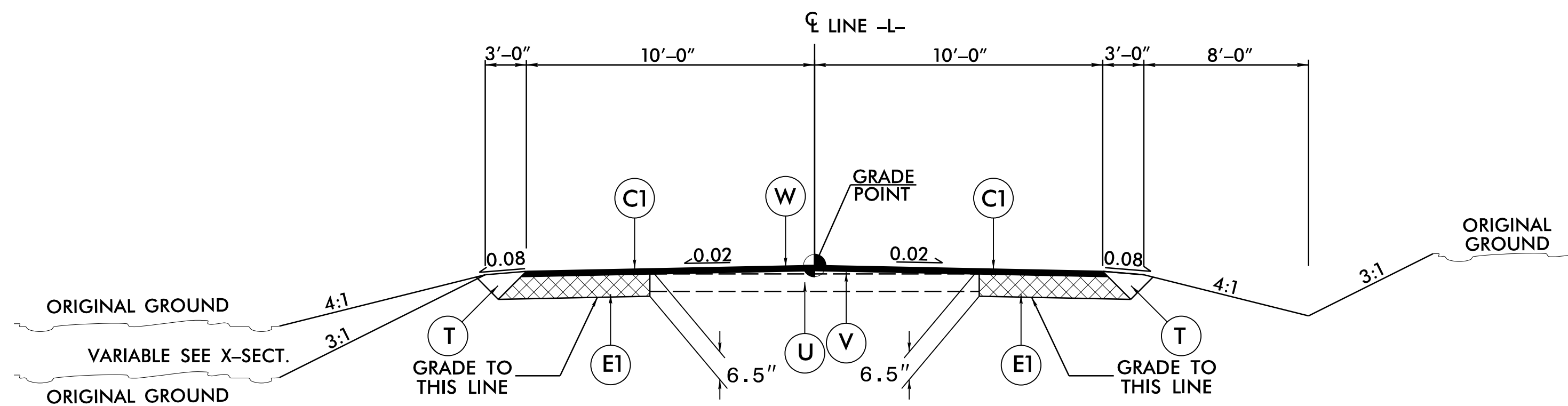
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Force Main Line Test Hole (SUE - LOS A)*	⊕
SS Force Main Line (SUE - LOS B)*	-----
SS Force Main Line (SUE - LOS C)*	-----
SS Force Main Line (SUE - LOS D)*	-----

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	-----
Geoenvironmental Boring	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

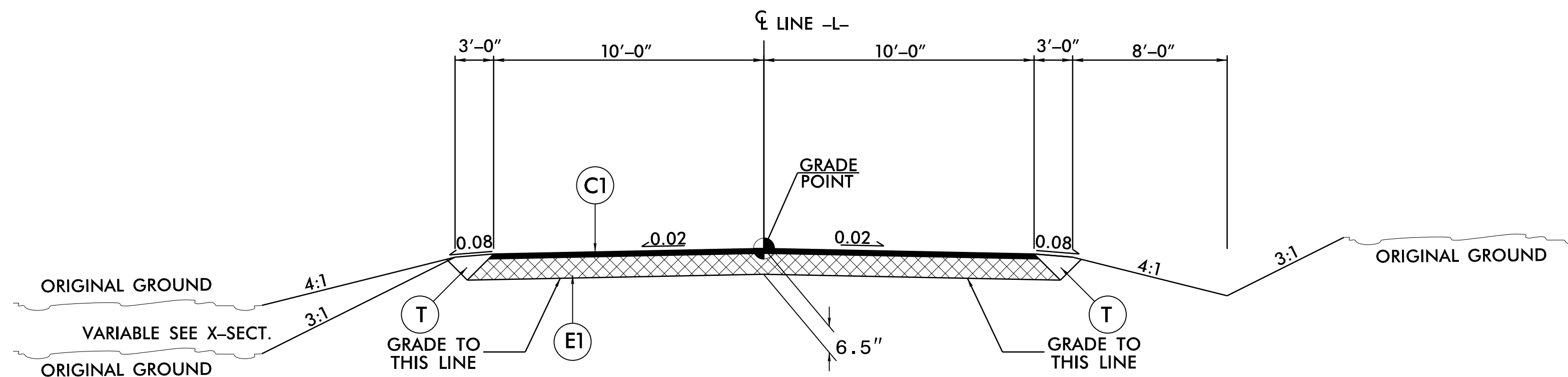
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. (SEE MILLING DETAIL)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



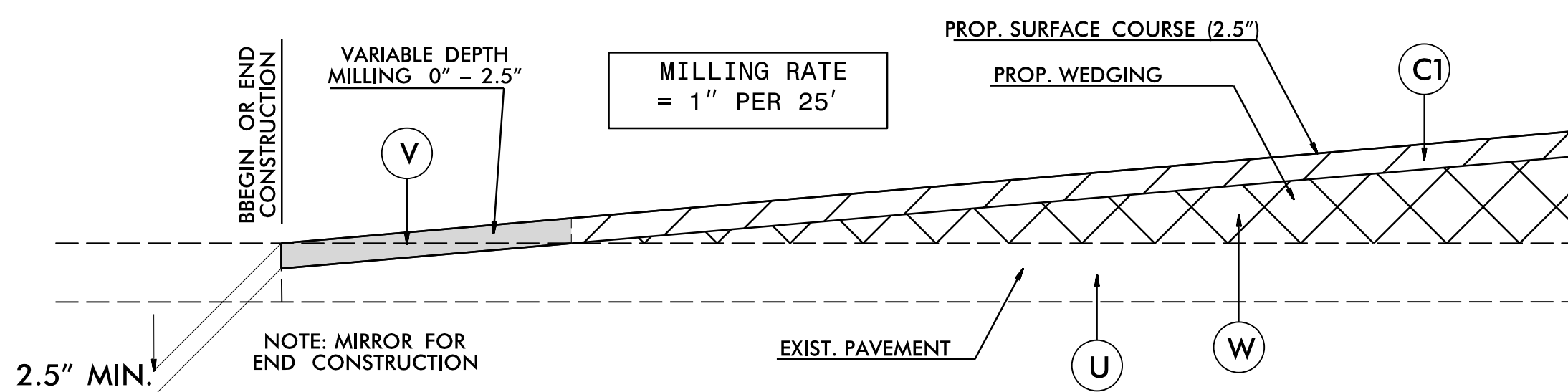
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
 -L- STA. 14+50.00 TO -L- STA. 15+00.00
 -L- STA. 15+86.00 TO -L- STA. 16+30.00



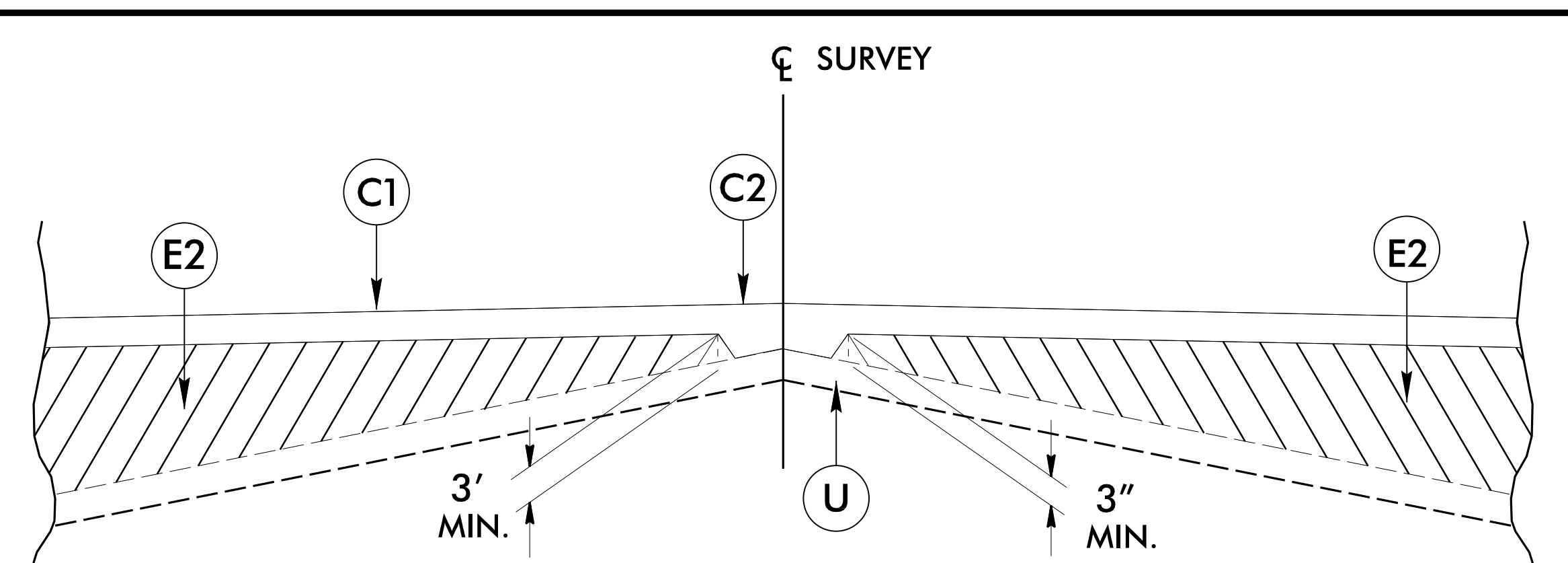
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
 -L- STA. 15+00.00 TO -L- STA. 15+86.00



INCIDENTAL MILLING DETAIL

-L- STA. 14+50.00 TO -L- STA. 15+00.00
 -L- STA. 15+86.00 TO -L- STA. 16+30.00



W: Detail Showing Method of Wedging

PROJECT REFERENCE NO. BP4.R012	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 6/15/2023 	PAVEMENT DESIGN ENGINEER 6/15/2023
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

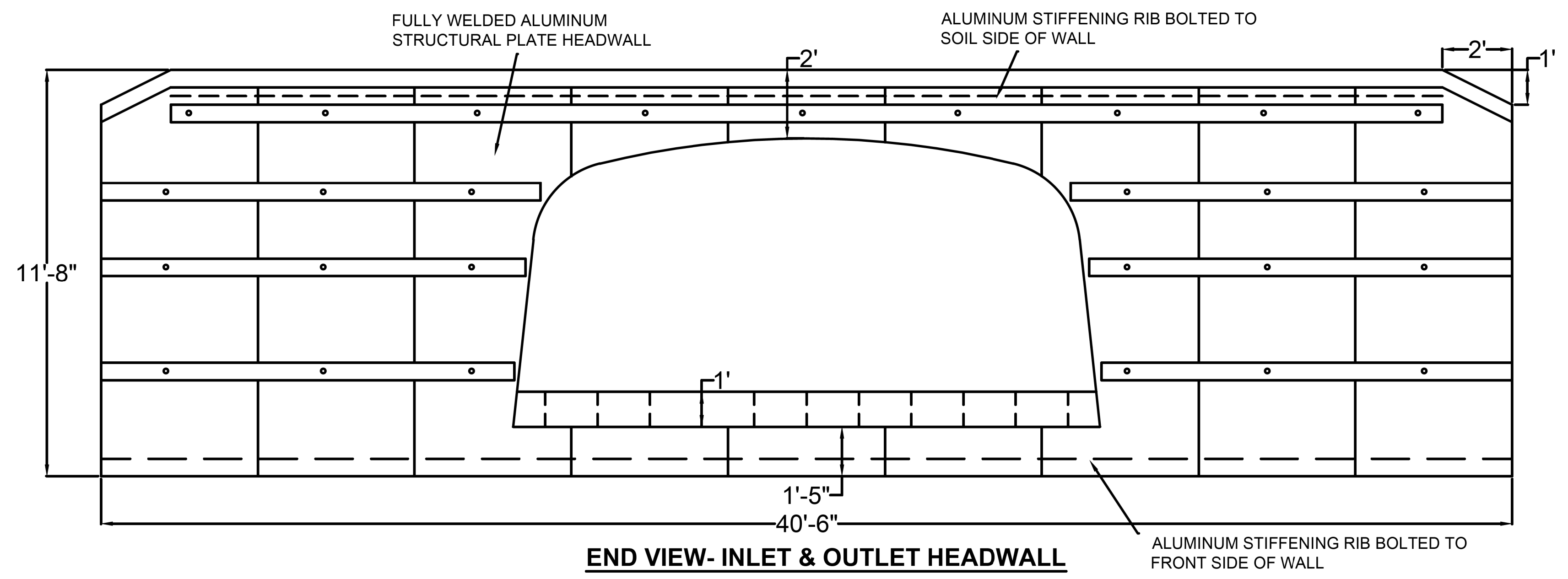
6/15/2023 8:24:00 AM BP4.R012.RDY_TYP_2A-1.dgn

CULVERT HEADWALL DETAILS

WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

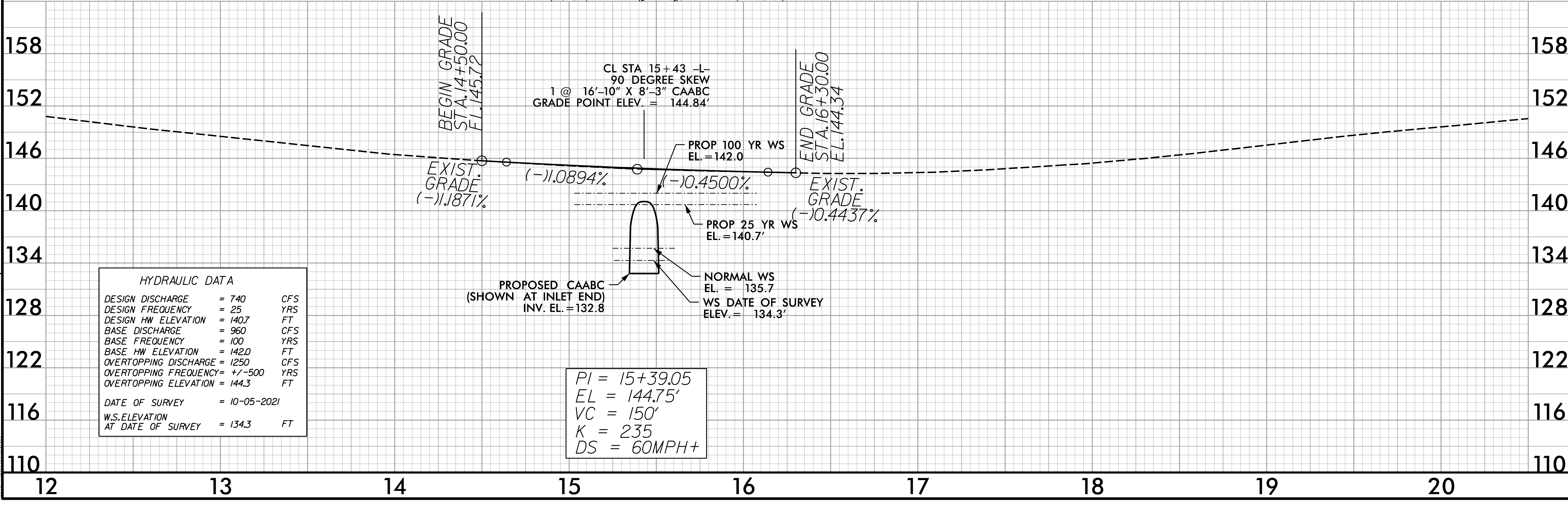
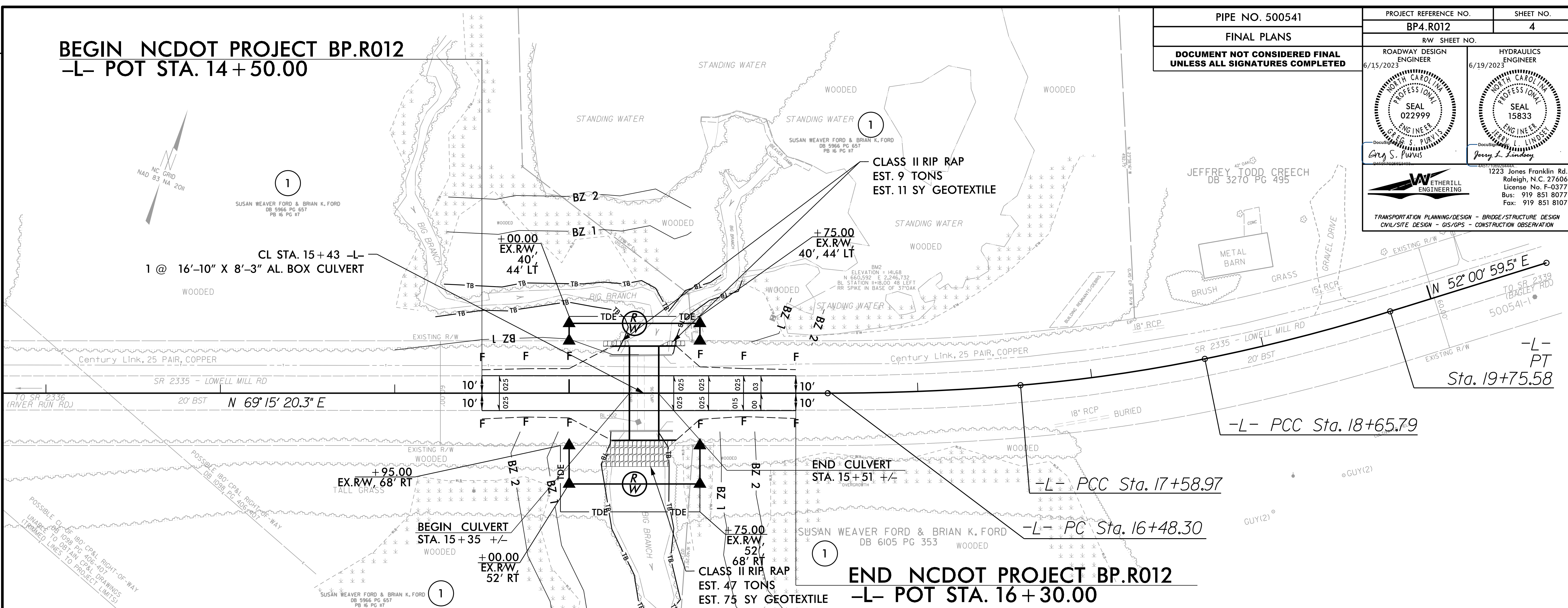


6/15/2007 8:08 AM BP4.R012.RDY.TYP.2D-2.dgn
USER: jhessard

8/17/19

BEGIN NCDOT PROJECT BP.R012
-L- POT STA. 14+50.00

PIPE NO. 500541	PROJECT REFERENCE NO. BP4.R012	SHEET NO. 4
FINAL PLANS	R/W SHEET NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	ROADWAY DESIGN ENGINEER 6/15/2023	HYDRAULICS ENGINEER 6/19/2023
 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION		



HYDRAULIC DATA	
DESIGN DISCHARGE	= 740 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 140.7 FT
BASE DISCHARGE	= 960 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 142.0 FT
OVERTOPPING DISCHARGE	= 1250 CFS
OVERTOPPING FREQUENCY	= +/-500 YRS
OVERTOPPING ELEVATION	= 144.3 FT
DATE OF SURVEY	= 10-05-2021
W.S.ELEVATION AT DATE OF SURVEY	= 134.3 FT

REVISIONS

6/15/2023
 P:\04\BP4.R012_PSH_4.dgn
 JSE

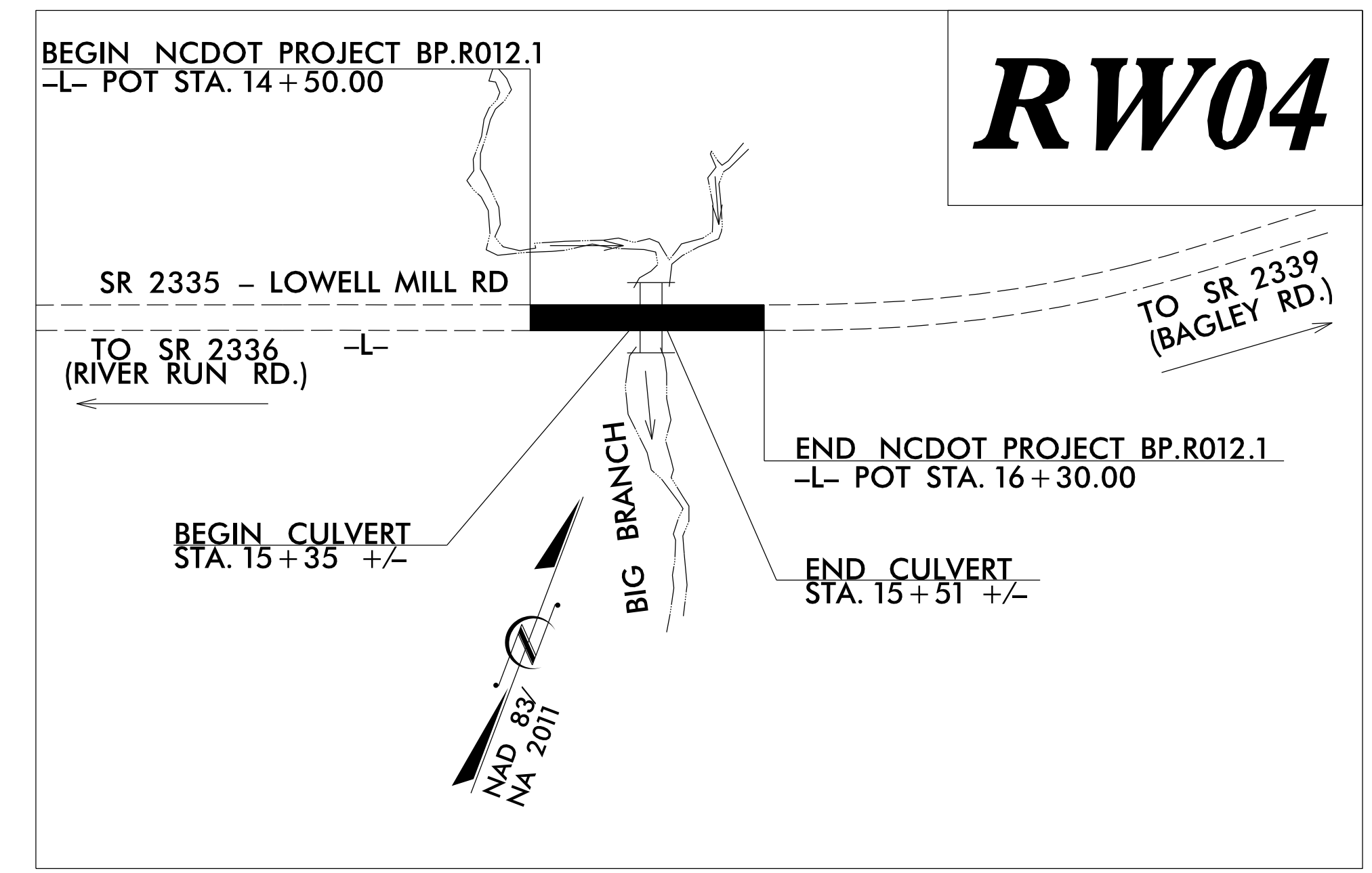
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R012.1	RW01	4

TIP PROJECT: BP4.R012

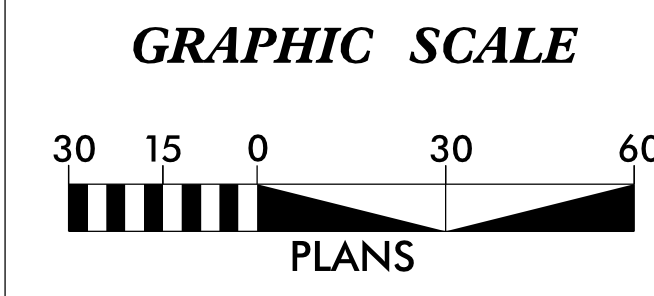
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

JOHNSTON COUNTY



23-MAY-2022 09:22
 P:\2021\NCDOT_Location_and_Surveys\Div 4 3-Bridge RW Staking-April2022\80-Drawings\BP4.R012\FOR REVIEW\bp4_r012_ls_rw01.dgn
 amoire AT RAL-WS094



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "500541-1" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 660,757.8423(ft) EASTING: 2,247,135.8632(ft) ELEVATION: 150.184(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998855

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "500541-1" TO -L- STATION 10+00.00 IS S 66°14'30.2" W 1,055.25(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 03/31/2022

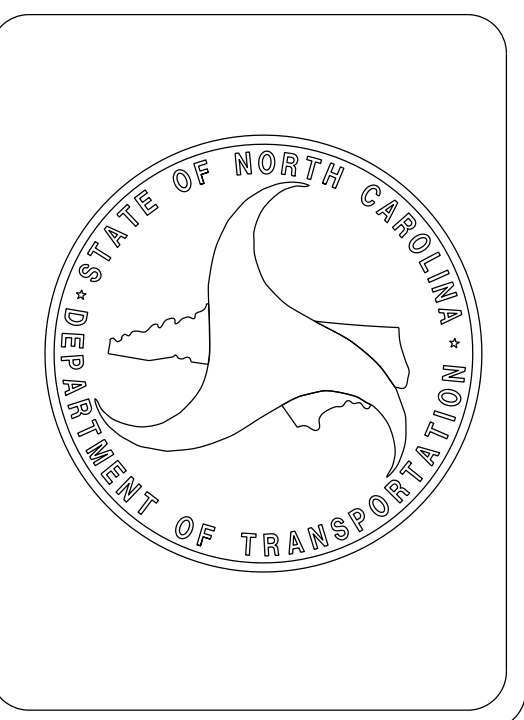
LETTING DATE: 03/14/2023

PROFESSIONAL LAND SURVEYOR

DocuSigned by:
Anthony K. Alford
22BA29B2F0BA44E...

5/23/2022

SIGNATURE: _____ Date: _____



6/2/09

REVISIONS

I:\JUN-2019\1518_190095\07-D\4 BP - 3 Bridges\Geomatics\NCDOT\50-0541\Drawings\500541\1.s-rw02c-1.dgn
K:\1815-0030\1 AT WRT701
r.vandervalde

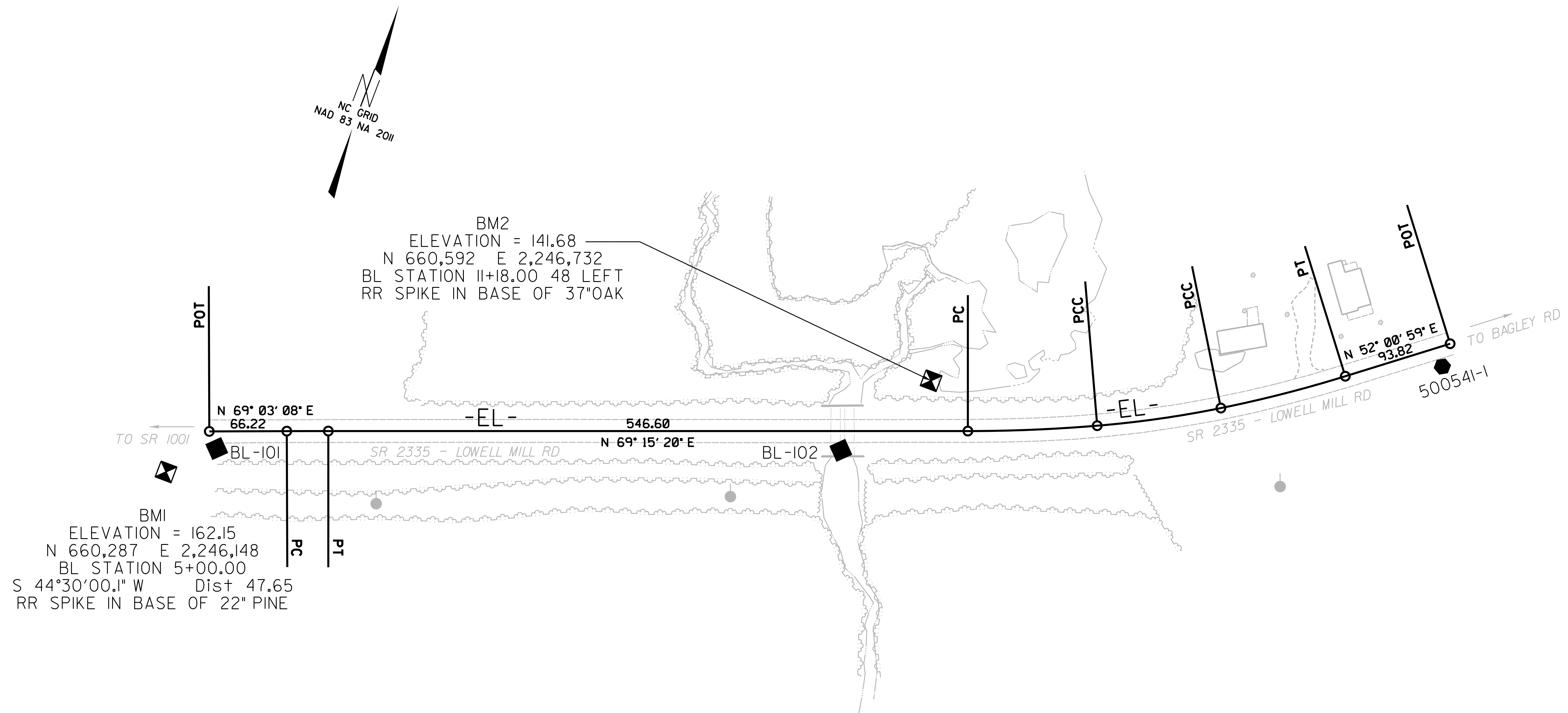
SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0541	RW02C-1
Location and Surveys	
WITHERSRAVENEL	

PRIMARY OFFSITE CONTROL

500541-2
 N: 661,175.7935
 E: 2,247,663.5000
 ELEV: 154.753'



NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- THE SURVEY 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.

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0541	RW02C-2
Location and Surveys	
WITHERSRAVENEL	

```

*****
BM1      ELEVATION = 162.15
N 660287      E 2246148
BL STATION 5+00.00
S 44°30'00.1" W      DIST 47.65
RR SPIKE IN BASE OF 22" PINE
*****
BM2      ELEVATION = 141.68
N 660592      E 2246732
BL STATION 11+18.00 48 LEFT
RR SPIKE IN BASE OF 37" OAK
*****
    
```

BL	POINT	DESC.	NORTH	EAST	ELEVATION
	101	BL - 101	660321.2110	2246181.1350	154.98
	102	BL - 102	660508.7000	2246680.4620	143.81
	1	500541-1	660757.8423	2247135.8632	150.18
	2	500541-2	661175.7935	2247663.5000	154.75

EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
	POT	660332.706	2246170.045							
	LINE			N 69°03'08.4" E	66.22					
	PC	660356.380	2246231.887							
	CURVE			N 69°09'14.4" E	35.48	00°12'11.9"(RT)	00°34'22.6"	35.48	17.74	10000.00
	PT	660369.006	2246265.047							
	LINE			N 69°15'20.3" E	546.60					
	PC	660562.611	2246776.208							
	CURVE			N 66°52'46.0" E	110.64	04°45'08.7"(LT)	04°17'39.6"	110.67	55.37	1334.22
	PCC	660606.054	2246877.957							
	CURVE			N 61°08'19.2" E	106.77	06°43'44.9"(LT)	06°17'56.8"	106.83	53.47	909.58
	PCC	660657.588	2246971.461							
	CURVE			N 54°53'43.1" E	109.74	05°45'27.3"(LT)	05°14'40.1"	109.78	54.94	1092.50
	PT	660720.695	2247061.238							
	LINE			N 52°00'59.5" E	93.82					
	POT	660778.436	2247135.186							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY 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.



REVISIONS

6/2/19

REVISIONS

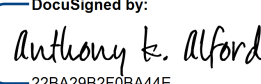
23 MAY 2022 11:52
 P:\2021\NCDOT\Location and Surveys\Div 4 3-Bridge RW Staking-Apr112022\80-Drawings\BP4.R012\FOR REVIEW\bp4.r012.ls.rw02d-1.dgn
 AT RAL-WS094
 enoore

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. BP4.R012	SHEET NO. RW02D-1
Location and Surveys	
 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Anthony K. Alford, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 23rd day of May, 2022.

DocuSigned by:

 228A2982F0BA44E


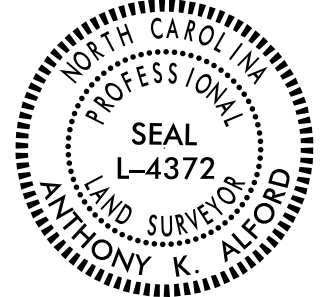
Professional Land Surveyor L-4372

		L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	660332.7057	2246170.0451
PC	10+66.22	660356.3797	2246231.8868
PT	11+01.70	660369.0065	2246265.0467
PC	16+48.30	660562.6107	2246776.2083
PCC	17+58.97	660606.0535	2246877.9572
PCC	18+65.79	660657.5881	2246971.4612
PT	19+75.58	660720.6952	2247061.2378
POT	20+69.40	660778.4355	2247135.1860

NOTES:

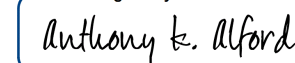
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. BP4.R012	SHEET NO. RW03E-1
Location and Surveys	
	
1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
<small>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</small>	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Anthony K. Alford, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 05/17/2022 to 07/22/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 25th day of July, 2022.

DocuSigned by:

 228A2982F68A44E

Professional Land Surveyor L-4372

ROW MARKER IRON PIN AND CAP-E



ALIGN	STATION	OFFSET	NORTH	EAST
L	15+00.00	52.00	660461.4548	2246655.9425
L	15+00.00	30.00	660482.0285	2246648.1501
L	15+00.00	-40.00	660547.4904	2246623.3562
L	15+00.00	-30.00	660538.1387	2246626.8982
L	15+75.00	52.00	660488.0197	2246726.0803
L	15+75.00	30.00	660508.5935	2246718.2879
L	15+75.00	-40.00	660574.0554	2246693.4940
L	15+75.00	-30.00	660564.7037	2246697.0360

REVISIONS

25 JUL 2022 09:21
 P:\2021\N\001\Location and Surveys\BP4R012 Rev RW 22148.30\80-Drawings\FOR REVIEW\BP4.r012.ls.rw03e-1.dgn
 AT RAL-WS094
 enoore

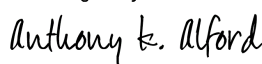
NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 05/17/2022 TO 07/22/2022 .

PROJECT REFERENCE NO. BP4.R012	SHEET NO. RW04
Location and Surveys	
	
1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
<small>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</small>	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

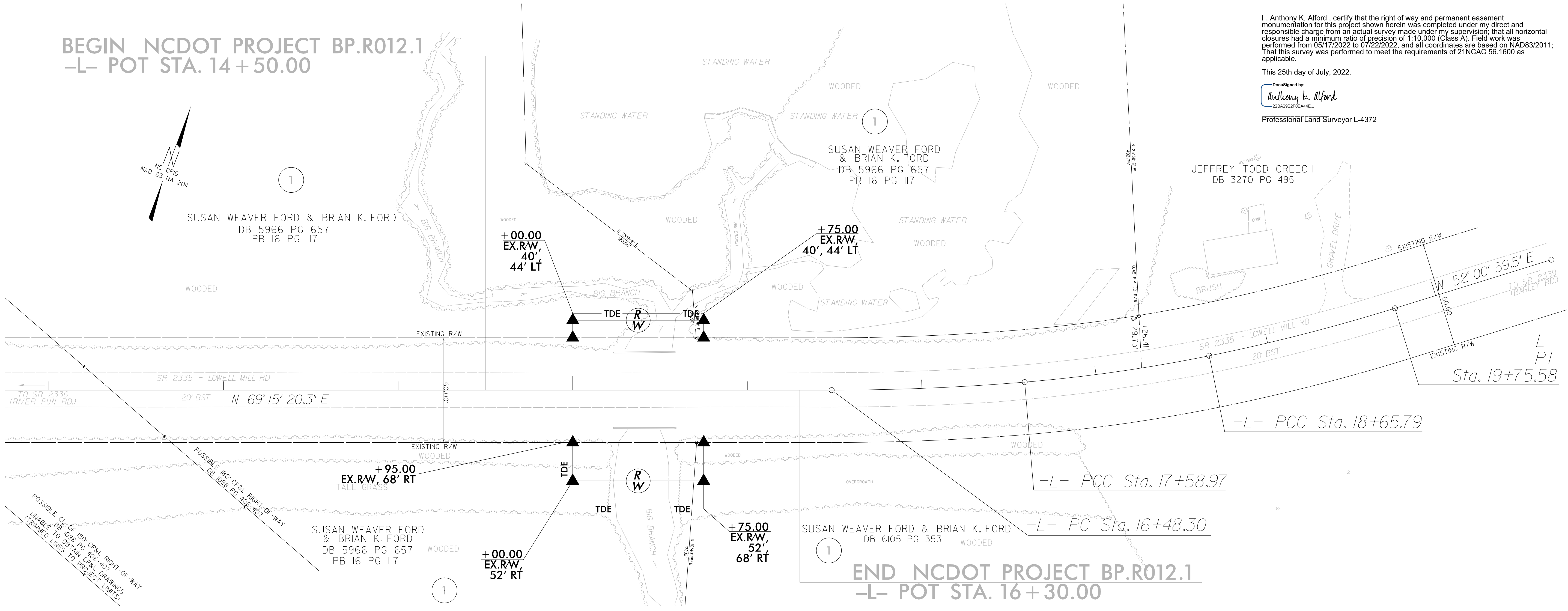
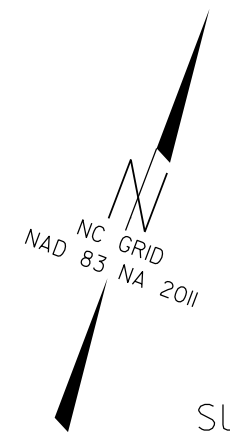
I, Anthony K. Alford, certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from 05/17/2022 to 07/22/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 58.1600 as applicable.

This 25th day of July, 2022.

DocuSigned by:

 228A2982F68A44E

Professional Land Surveyor L-4372

BEGIN NCDOT PROJECT BP.R012.1
-L- POT STA. 14 + 50.00



REVISIONS

P5: JUL 2022 15:01 Location and Surveys\BP4R012 Rev RW 22148.30\80-Drawings\FOR REVIEW\BP4.R012.LS.RW04.dgn
 AT: RAL-WS0914

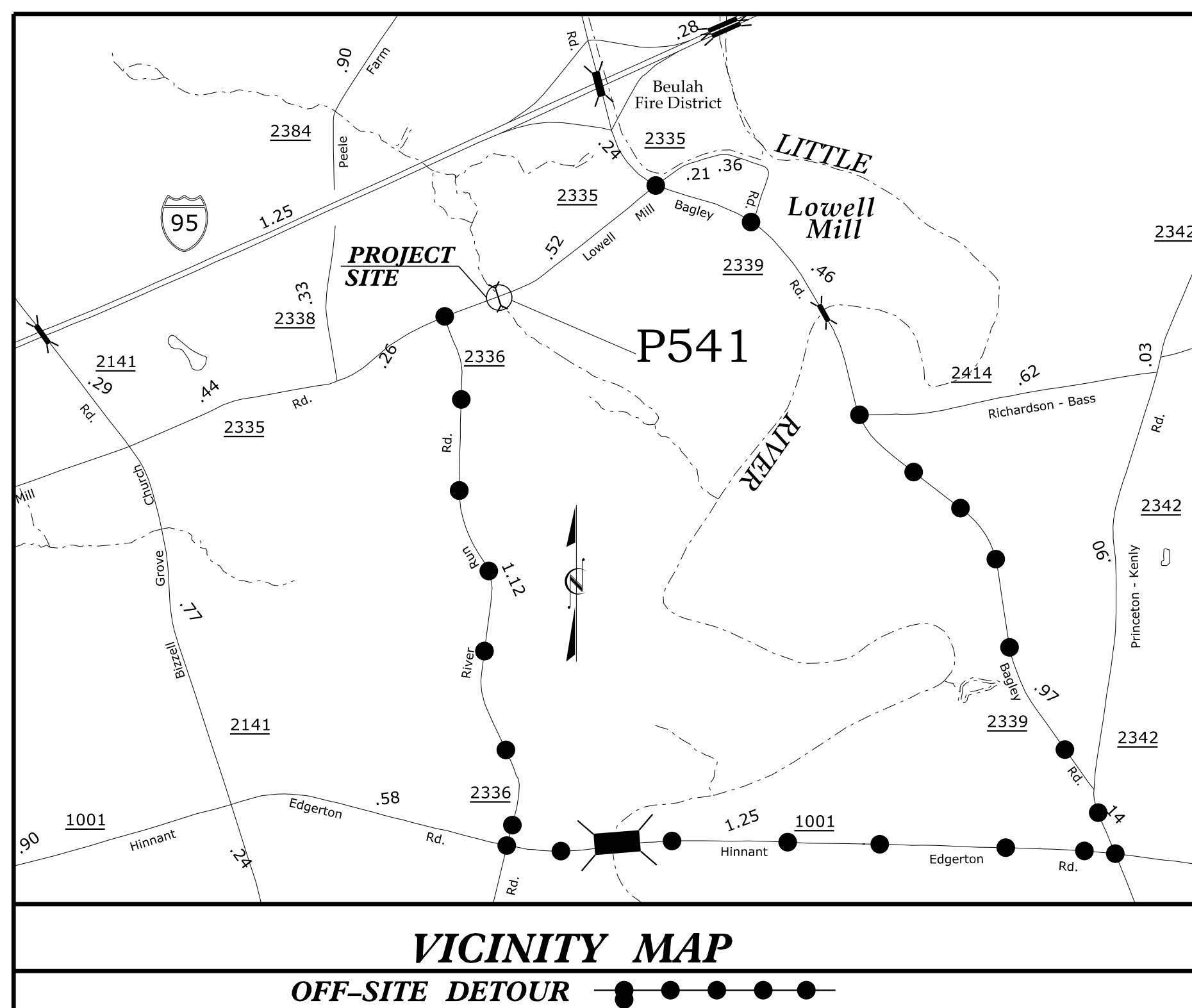
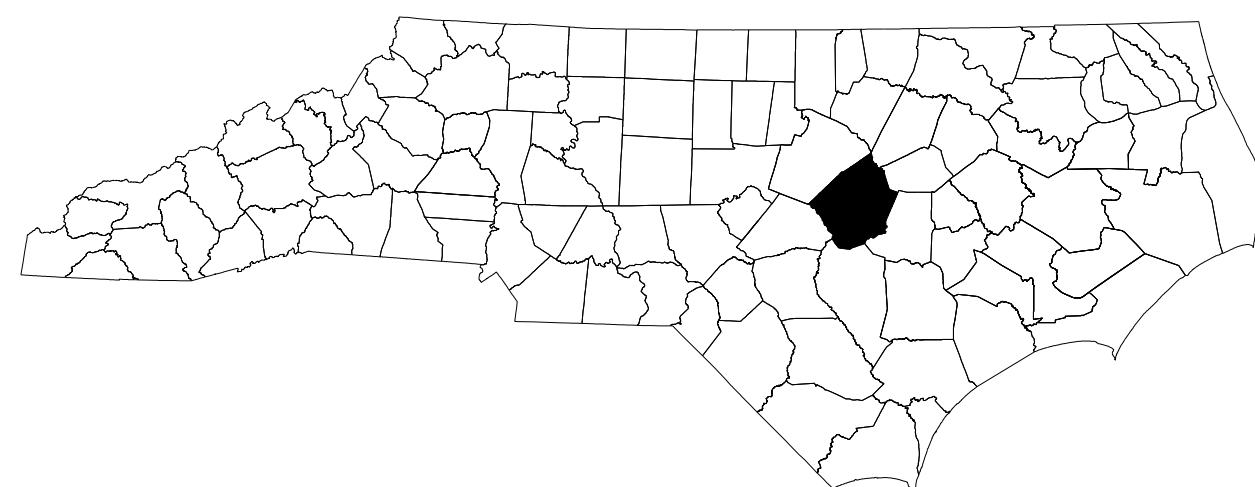
NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 05/17/2022 TO 07/22/2022 .

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JOHNSTON COUNTY



**LOCATION: PIPE NO. 500541 OVER BIG BRANCH
ON SR 2335 (LOWELL MILL RD.)**

TYPE OF WORK: GRADING, DRAINAGE, & PAVING

INDEX OF SHEETS

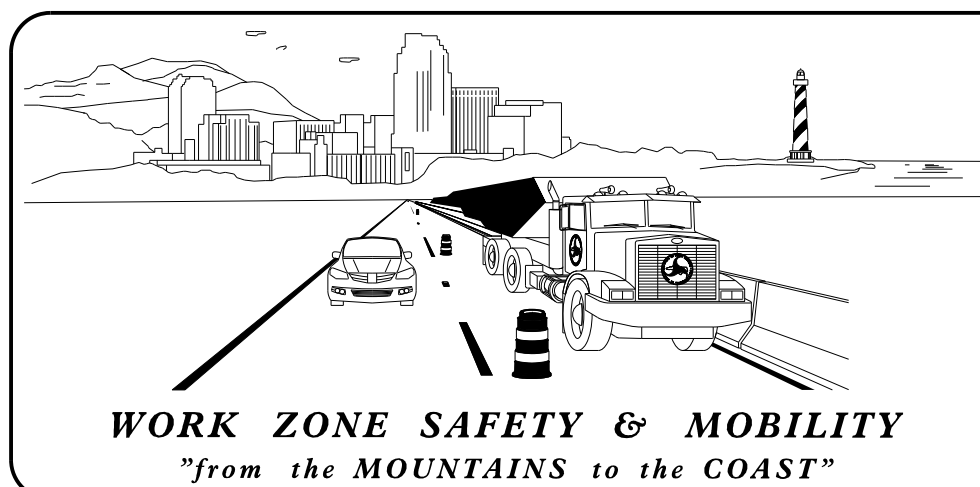
SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B	SIGN AND DEVICE LEGEND
TMP-02	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES) AND PHASING
TMP-03	SPECIAL SIGN DESIGN
TMP-04	OFFSITE DETOUR

SHEET NO.
TMP-01

BP4.R012

TIP PROJECT:

10/3/2022
P:\2021\2102_01_BP4.R012_Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP4.R012_TMP_01 Title.dgn
User: AHayes

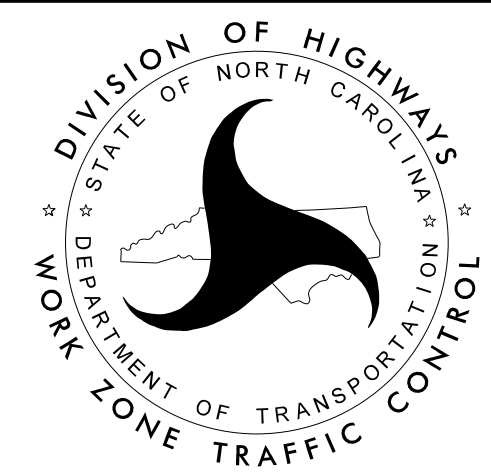


PLANS PREPARED BY:
GREG PURVIS, P.E.

D. ALLEN HAYES, E.I.

NCDOT CONTACTS:
D. A. PARKER, P.E.
PROJECT ENGINEER

SPENCER JENNINGS
PROJECT DESIGN ENGINEER



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

PIPE NO. 500541

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-6377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:
DATE: 10/3/2022

SEAL

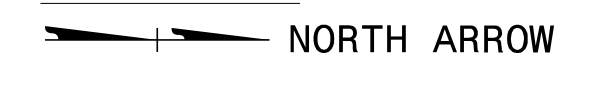
ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

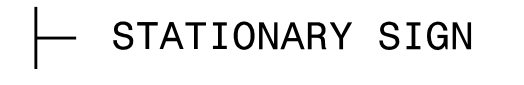
GENERAL



TRAFFIC CONTROL DEVICES

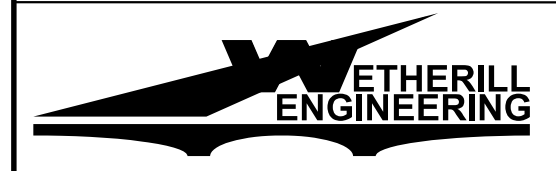


TEMPORARY SIGNING



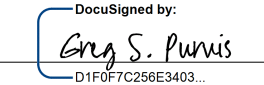
10/3/2022
P:\2021\2120.01\BP4.R012\Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP4.R012_TMP_01A_ Legend.dgn
User: AHayes

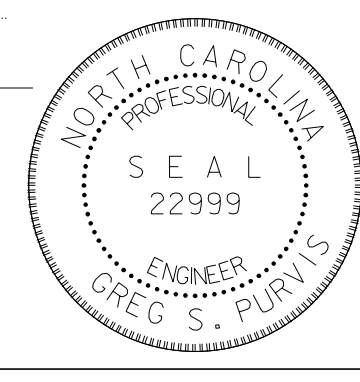
PIPE NO. 500541



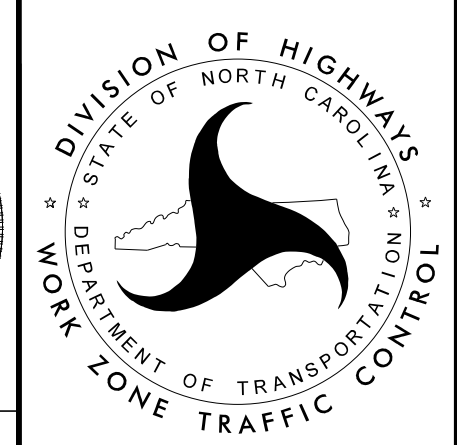
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: 
DATE: 10/3/2022



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



**LIST OF APPLICABLE
ROADWAY STANDARD
DRAWINGS, AND LEGEND**

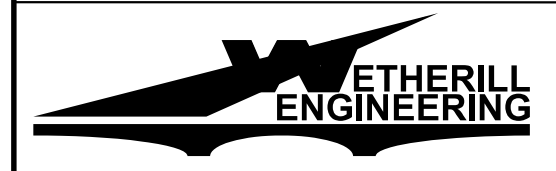
<p>A</p>		<p>B</p>		<p>D</p>		<p>A</p>		<p>B</p>		<p>C</p>		<p>D</p>			
<p>E</p>		<p>F</p>		<p>G</p>		<p>H</p>		<p>I</p>		<p>J</p>		<p>K</p>		<p>L</p>	

10/3/2022
P:\2021\2102\01_BP4.R012_Traffic\Traffic\Pre-Let\Plan\WZTC\BP4.R012_TMP_01B_SDL.dgn
User: AHayes

X BARRICADES
-WITH MOUNTED SIGNING

X SIGNING
-STATIONARY MOUNTED

PIPE NO. 500541

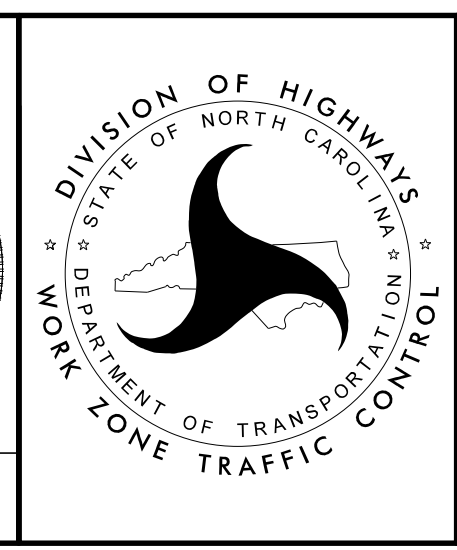


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:
DATE: 10/3/2022

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



SIGN AND DEVICE LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP4.R012	TMP-02

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

AND

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

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

AND

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

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

TRAFFIC CONTROL DEVICES

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

MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
ONE-LANE, TWO WAY OPERATION (FLAGGING)
OFF-SITE DETOURS

LOCAL NOTES

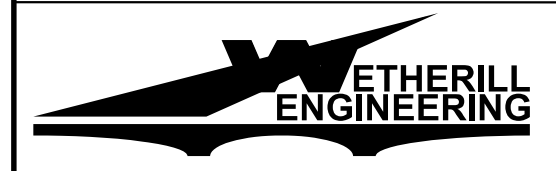
- 1) IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSESSES, JOHNSTON COUNTY SCHOOLS WILL BE CONTACTED AT (919) 934-6031 AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.
- 2) JOHNSTON COUNTY EMERGENCY MANAGEMENT WILL BE CONTACTED AT (919) 989-5050 LEAST ONE MONTH PRIOR TO ROAD CLOSURE TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

PHASING

- STEP 1) INSTALL ALL OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING. COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER. INSTALL SIGN ASSEMBLY "J" EVERY 0.90 MILES ON SR 2339 (BAGLEY RD), STARTING FROM THE BEGINNING OF EACH DIRECTION OF THE ROAD DETOUR. [SEE SHEETS TMP-01B & 04]
- STEP 2) WHEN READY TO CLOSE THE ROADWAY, UNCOVER THE DETOUR AND ROAD CLOSURE SIGNING, CLOSE -L- (SR 2335), AND DETOUR TRAFFIC. [SEE SHEETS TMP-01B & 04]
- STEP 3) AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE, AND CONSTRUCT PROPOSED -L- STRUCTURE AND APPROACHES FROM THE BEGIN PROJECT LIMITS TO THE END PROJECT LIMITS UP TO AND INCLUDING THE FINAL LIFT OF SURFACE COURSE, AND FINAL PAVEMENT MARKINGS. [SEE ROADWAY PLANS AND FINAL PAVEMENT MARKING PLAN]
- STEP 4) OPEN -L- TO THE FINAL TRAFFIC PATTERN, AND REMOVE ALL ROAD CLOSURE SIGNING, OFFSITE DETOUR SIGNING, TEMPORARY TRANSPORTATION MANAGEMENT DEVICES. [SEE SHEET TMP-04 FOR SIGN LOCATIONS]

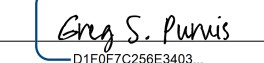
10/3/2022
 P:\2021\2120.01.BP4.R012\Traffic\Traffic\Pre-Let\Plan\WZTC\BP4.R012.TMP_02_GN&P.dgn
 User: AHayes


PIPE NO. 500541



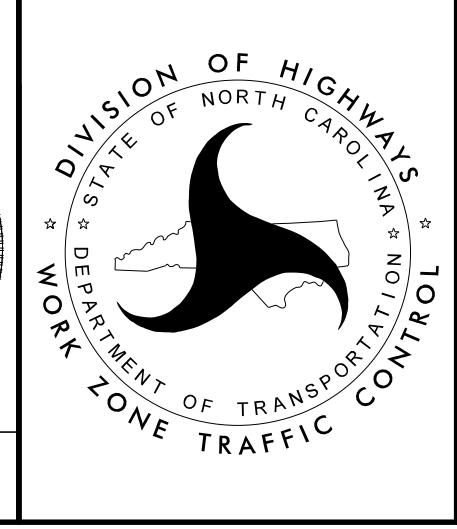
1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

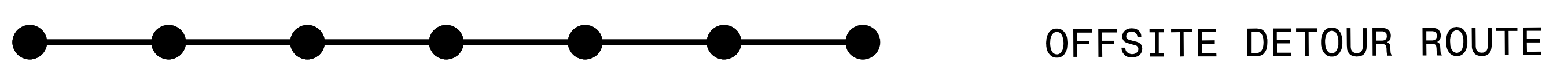
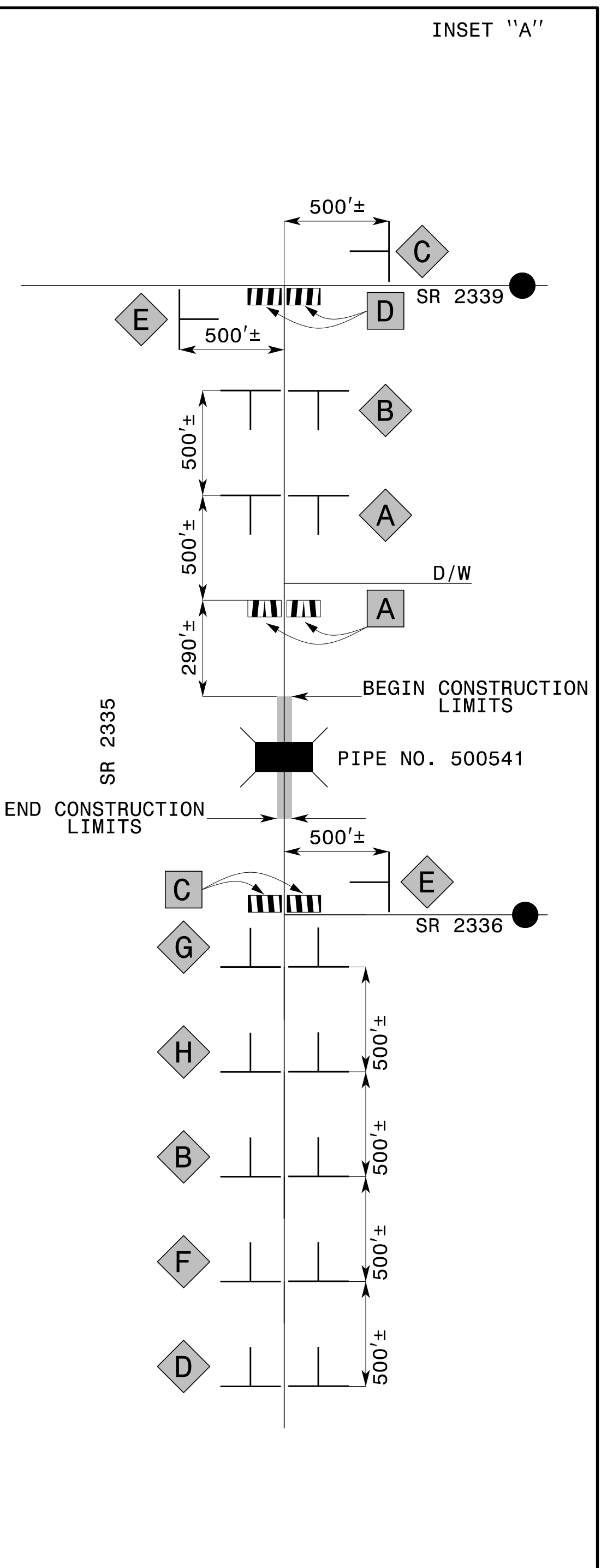
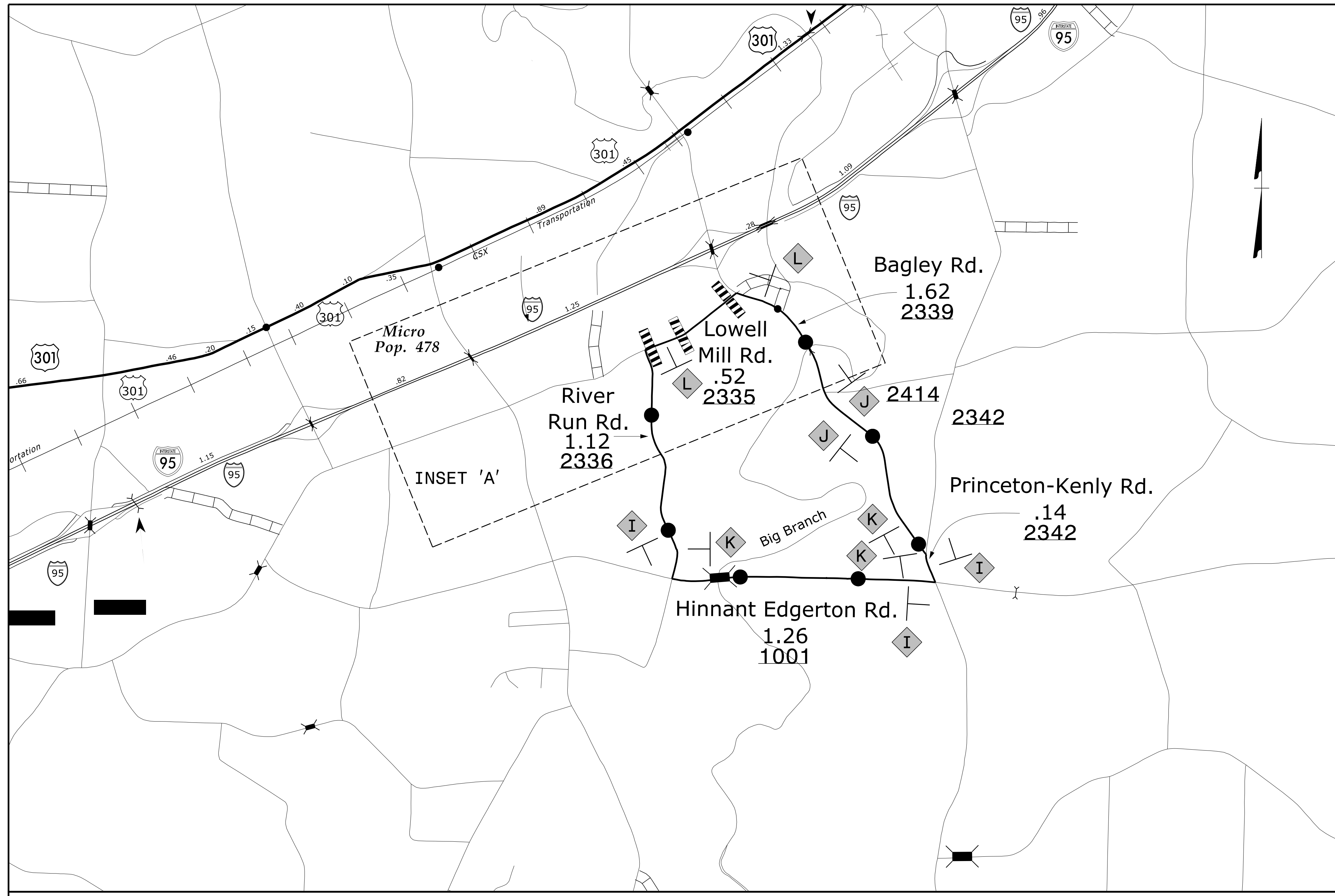
APPROVED: 
 DATE: 10/3/2022



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



**TRANSPORTATION OPERATIONS
 PLAN: (MANAGEMENT
 STRATEGIES AND GENERAL
 NOTES) AND PHASING**

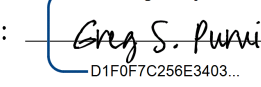


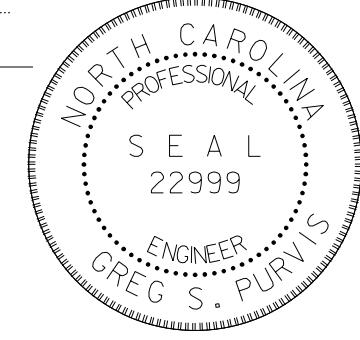
NOTES:
 1) REFER TO SHEET TMP-01B FOR SIGN AND DEVICE LEGEND.
 2) FOR INSET "A", REFER TO ROADWAY STANDARD DRAWINGS 1101.03, SHEETS 1 & 2 OF 9 FOR APPLICABLE NOTES.

PIPE NO. 500541

ETHERILL ENGINEERING

1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

APPROVED: 
 DATE: 6/19/2023



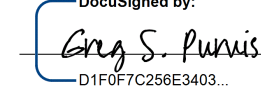

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

OFFSITE DETOUR



DEPARTMENT OF TRANSPORTATION
 NORTH CAROLINA

6/19/2023
 P:\2023\2120.01_BP4.R012\Traffic\Traffic\Pre-Let\Plan\WZTC\BP4.R012_TMP_04 OSD.dgn
 User: AHayes

TIP NO. BP4.R012	SHEET NO. PMP-01
APPROVED:  DATE: 6/19/2023	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
JOHNSTON COUNTY**

T.I.P.: BP4.R012

INDEX

SHEET NO.	DESCRIPTION
PMP-01	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-02	PAVEMENT MARKING DETAIL

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

- THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.
- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

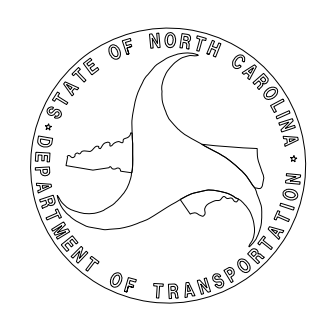
ROAD NAME	MARKING	MARKER
SR 1928	THERMOPLASTIC	NONE
 - B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
 - C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
 - D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
 - E) ALL STATIONS ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM
T1	WHITE SOLID EDGE LINE	THERMOPLASTIC (4", 90 MIL)
T13	YELLOW DOUBLE CENTER	THERMOPLASTIC (4", 90 MIL)

PLAN SUBMITTED TO:


Ayman I. Alqudwah, P.E., Signing and Delineation Regional Engineer



PLAN PREPARED BY: Wetherill Engineering, Inc.

PIPE NO. 500541

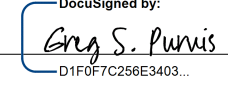
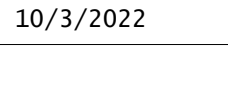

GREG PURVIS, P.E.	PROJECT MANAGER
D. ALLEN HAYES, E.I.	TRAFFIC DESIGN ENGINEER

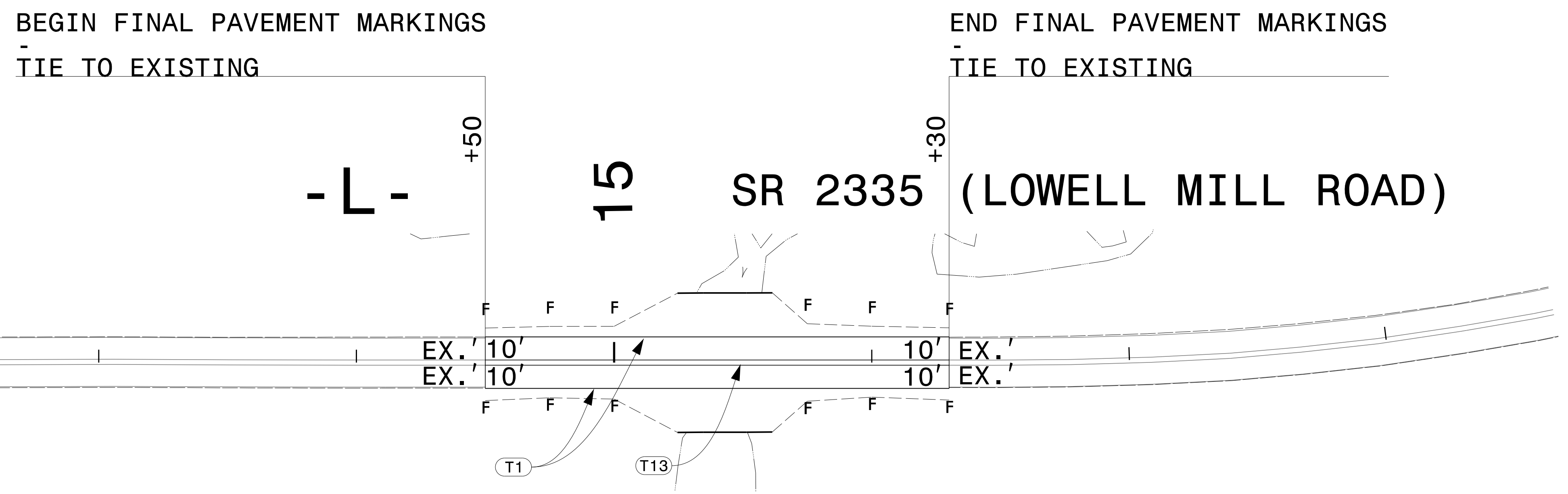
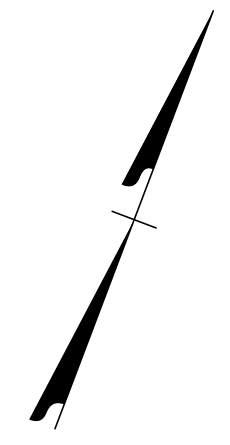


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

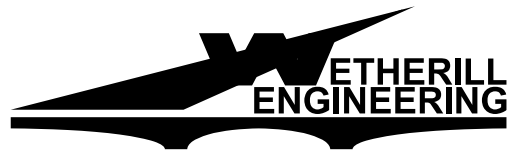
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

6/19/2023
P:\2023\20230619\20230619\Plan\Pavement+ Markings\BP4.R012.PMP_01 Title.dgn
User: AHayes

TIP NO. BP4.R012	SHEET NO. PMP-02
APPROVED:  DESIGNED BY: 	
DATE: 10/3/2022	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PIPE NO. 500541	



10/3/2022
P:\2022\1020_01_BP4.R012\Traffic\Design\Pre-Let\Plan\Pavement Markings\BP4.R012.PMP_02.DTL.dgn
User: Ahayes

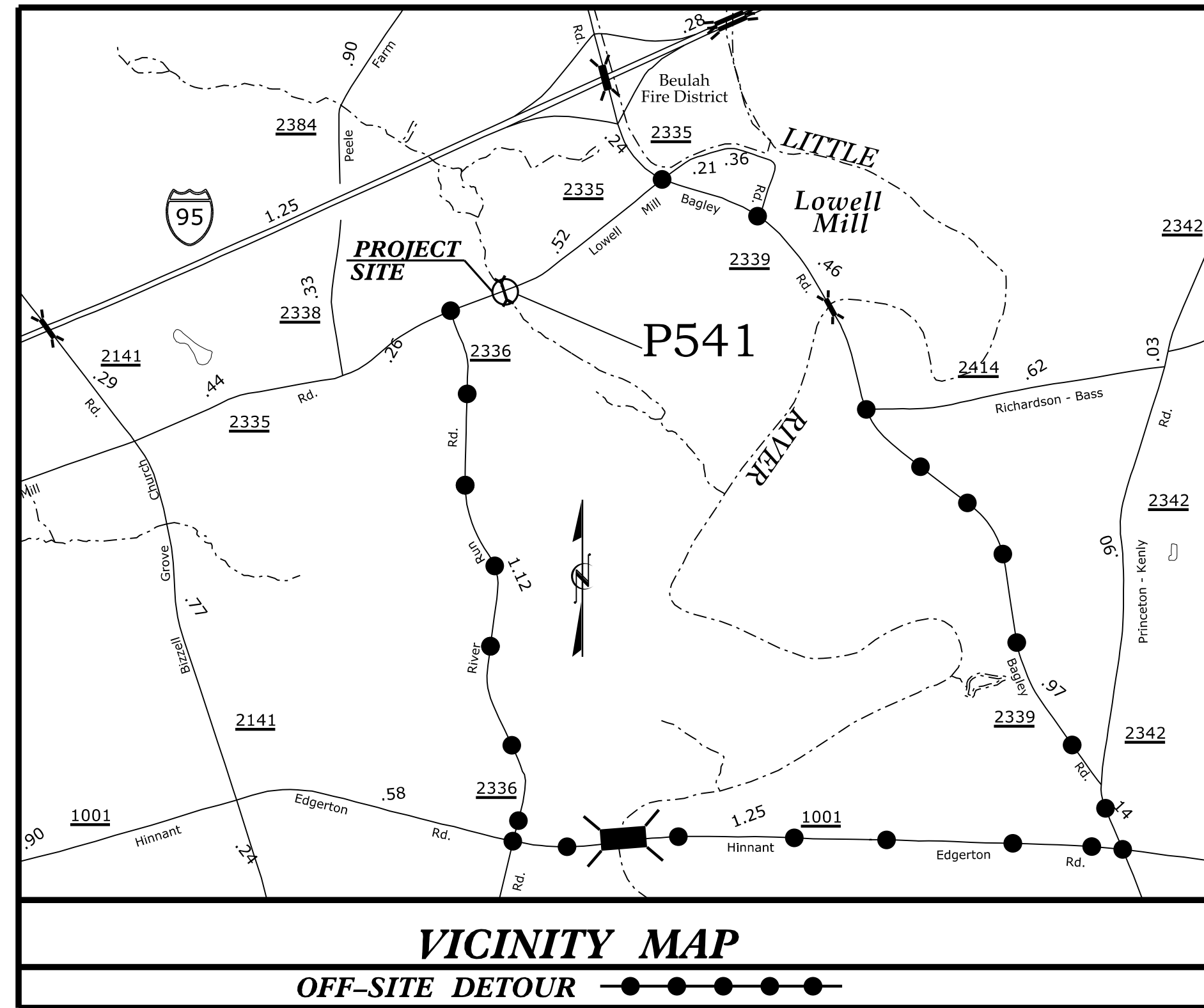


1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PAVEMENT MARKING DETAIL

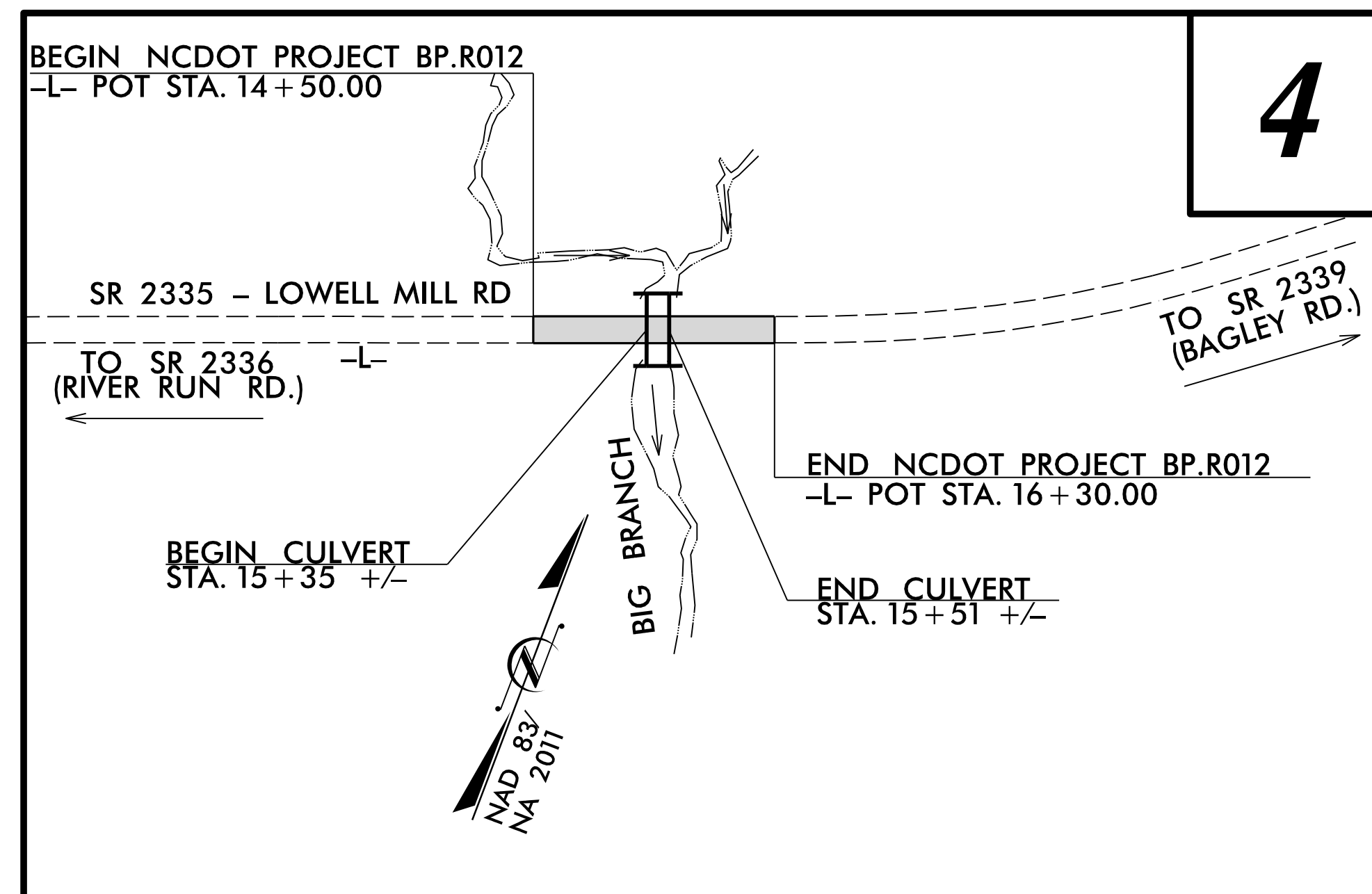
PROJECT: BP4.R012



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

**LOCATION: PIPE NO. 500541 OVER BIG BRANCH
ON SR 2335 (LOWELL MILL RD.)**

TYPE OF WORK: GRADING, DRAINAGE, & PAVING



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BPR4.R012	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP4.R012.1		PE	
BP4.R012.2		ROW, UTIL.	
BP4.R012.3		CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

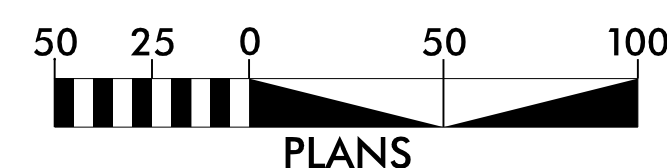
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	III III III
1630.02	Silt Basin Type B	III III III
1633.01	Temporary Rock Silt Check Type-A	III III III
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	III III III
1633.02	Temporary Rock Silt Check Type-B	III III III
	Wattle / Coir Fiber Wattle	III III III
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	III III III
1634.01	Temporary Rock Sediment Dam Type-A	III III III
1634.02	Temporary Rock Sediment Dam Type-B	III III III
1635.01	Rock Pipe Inlet Sediment Trap Type-A	III III III
1635.02	Rock Pipe Inlet Sediment Trap Type-B	III III III
1630.04	Stilling Basin	III III III
1630.06	Special Stilling Basin	III III III
	Rock Inlet Sediment Trap:	III III III
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	III III III
	Tiered Skimmer Basin	III III III
	Infiltration Basin	III III III

**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.*

GRAPHIC SCALE



**THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH
THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000
GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.**



1223 JONES FRANKLIN ROAD
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

Prepared in the Office of:



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

1223 JONES FRANKLIN ROAD
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

Designed by:

KATIE ESTEP
NAME

4485
LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

B.17/99

BEGIN NCDOT PROJECT BP.R012 -L- POT STA. 14+50.00

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

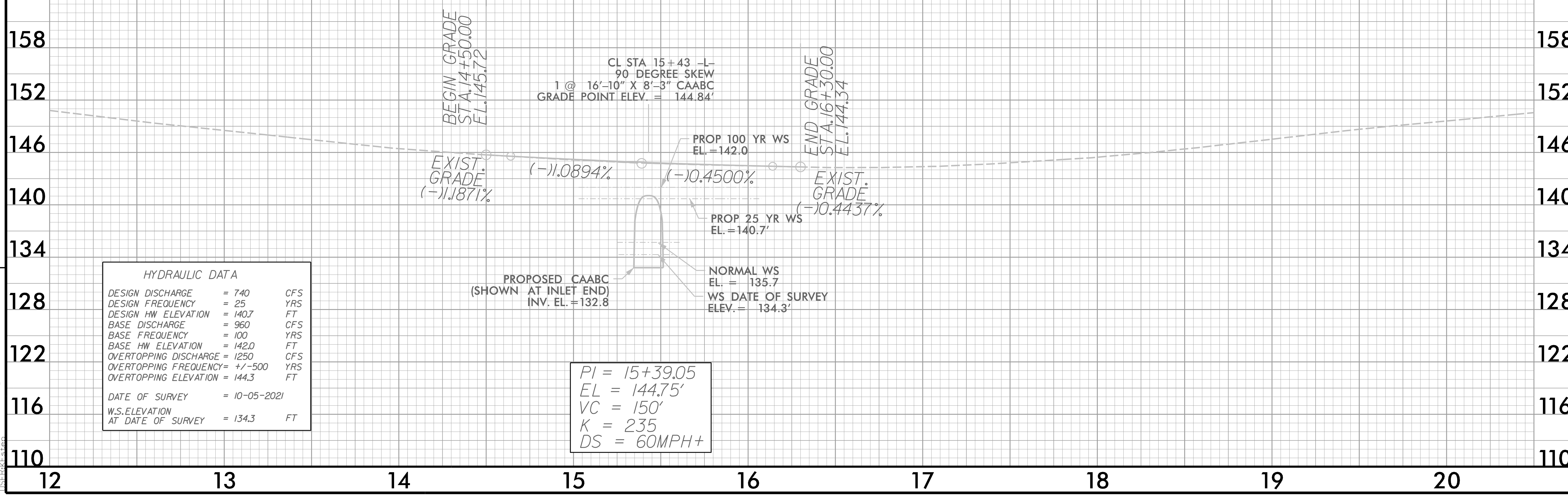
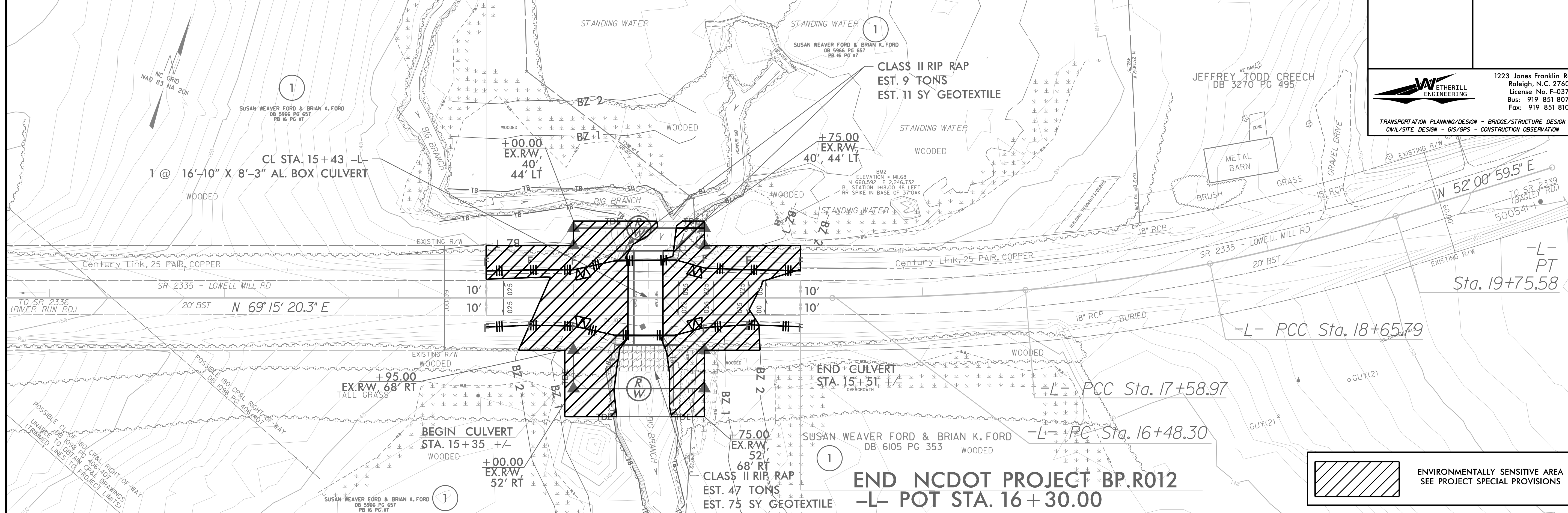
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

PIPE NO. 500541
FINAL PLANS

PROJECT REFERENCE NO.
BP4.R012
SHEET NO.
EC-3/CONST.4

RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

WETHERELL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



HYDRAULIC DATA	
DESIGN DISCHARGE	= 740 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 140.7 FT
BASE DISCHARGE	= 960 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 142.0 FT
OVERTOPPING DISCHARGE	= 1250 CFS
OVERTOPPING FREQUENCY	= +/- 500 YRS
OVERTOPPING ELEVATION	= 144.3 FT
DATE OF SURVEY	= 10-05-2021
W.S. ELEVATION AT DATE OF SURVEY	= 134.3 FT

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

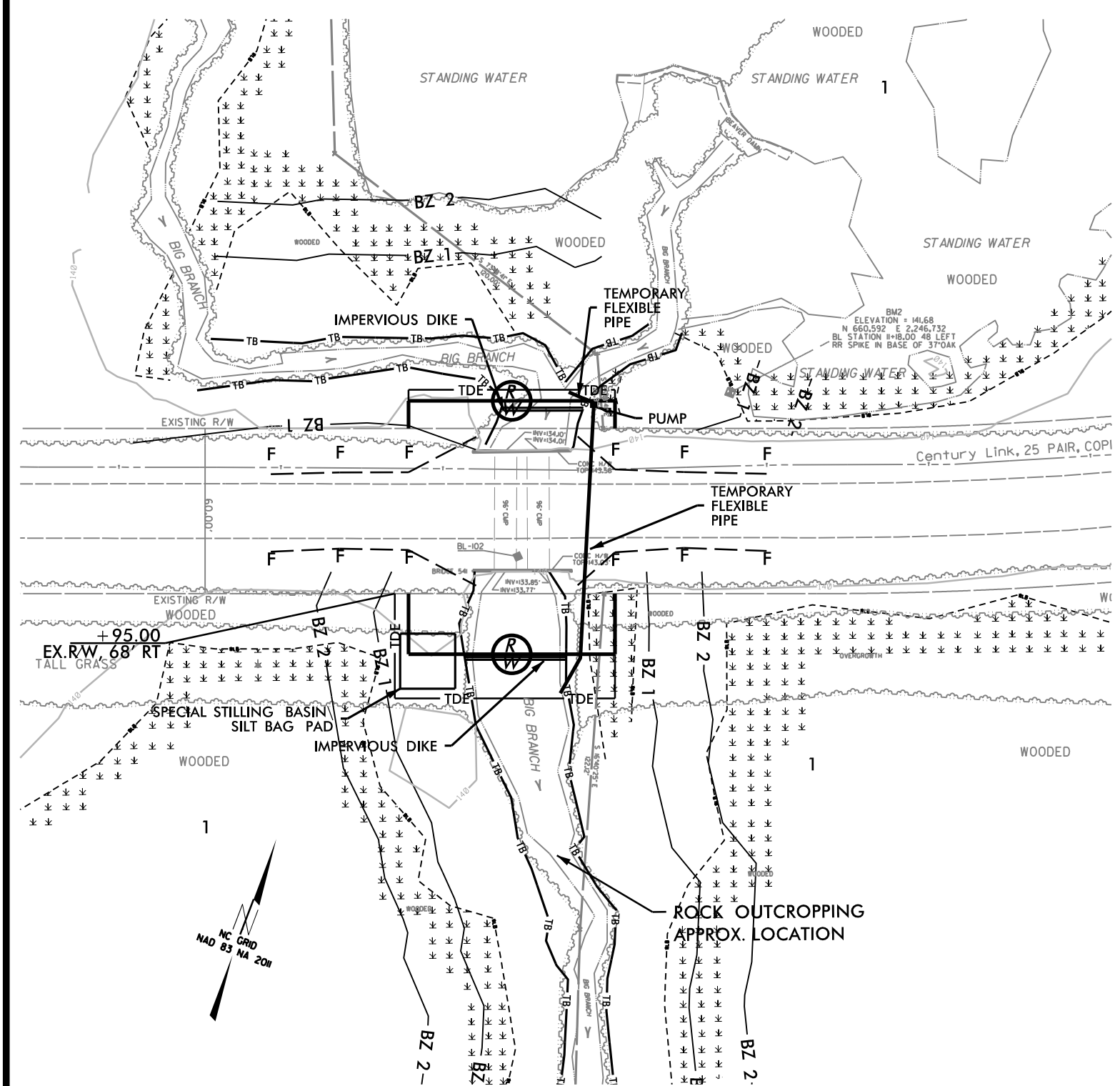
REVISIONS

6/15/2021 ec.psh.3.dgn

PROJECT REFERENCE NO.	SHEET NO.
BP4.R012	EC-4/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE

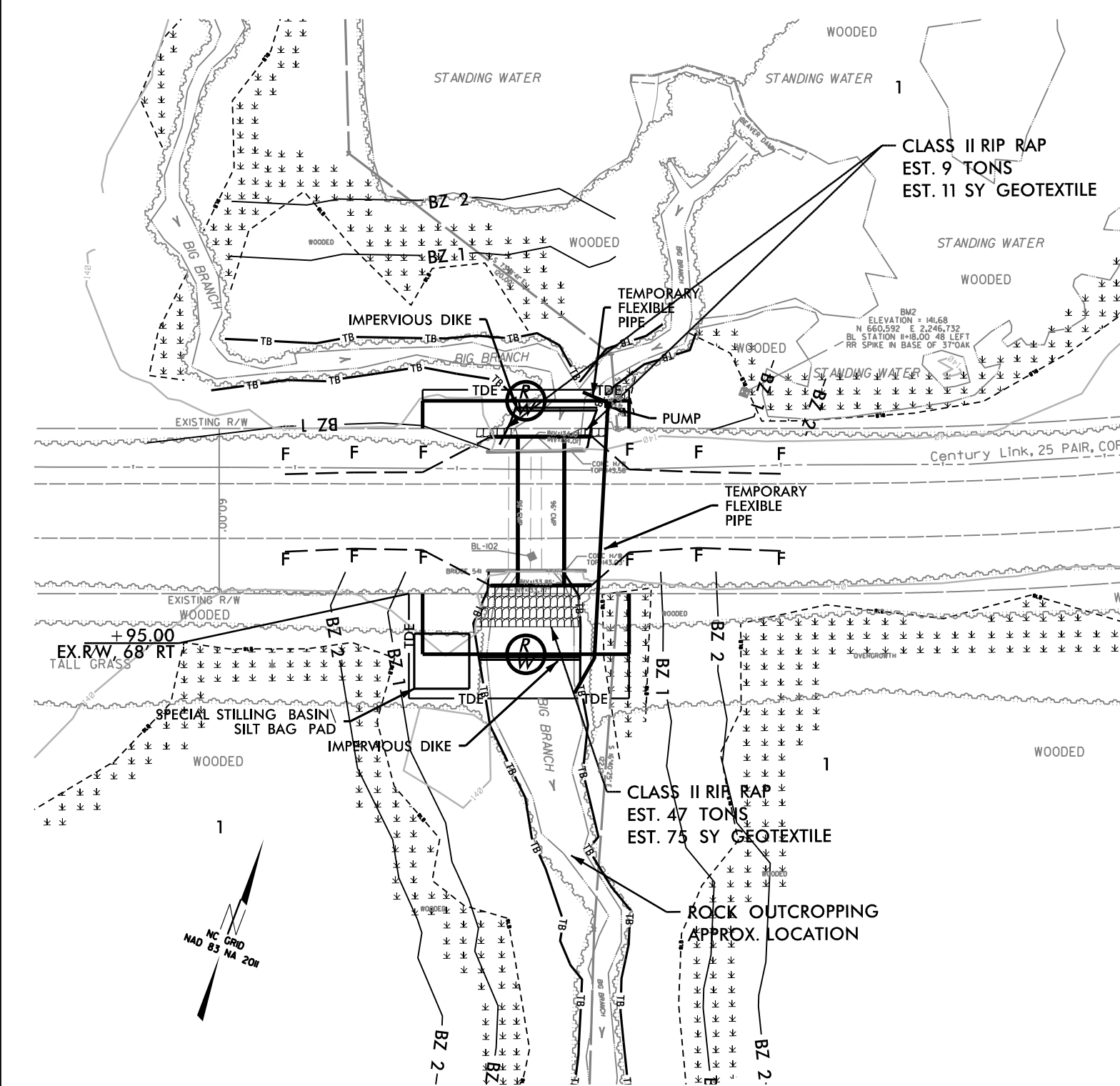
PHASE I



INSTALL EROSION CONTROL MEASURES FOR THIS SITE PRIOR TO COMMENCING CULVERT WORK. (NOT SHOWN FOR CLARITY).

1. INSTALL SPECIAL STILLING BASINS AS NEEDED FOR DEWATERING OF THE PROJECT SITE THROUGHOUT CONSTRUCTION SEQUENCING.
2. INSTALL IMPERVIOUS DIKE UPSTREAM AND DOWNSTREAM AND UTILIZE A PUMP AROUND TO MAINTAIN THE FLOW OF WATER.

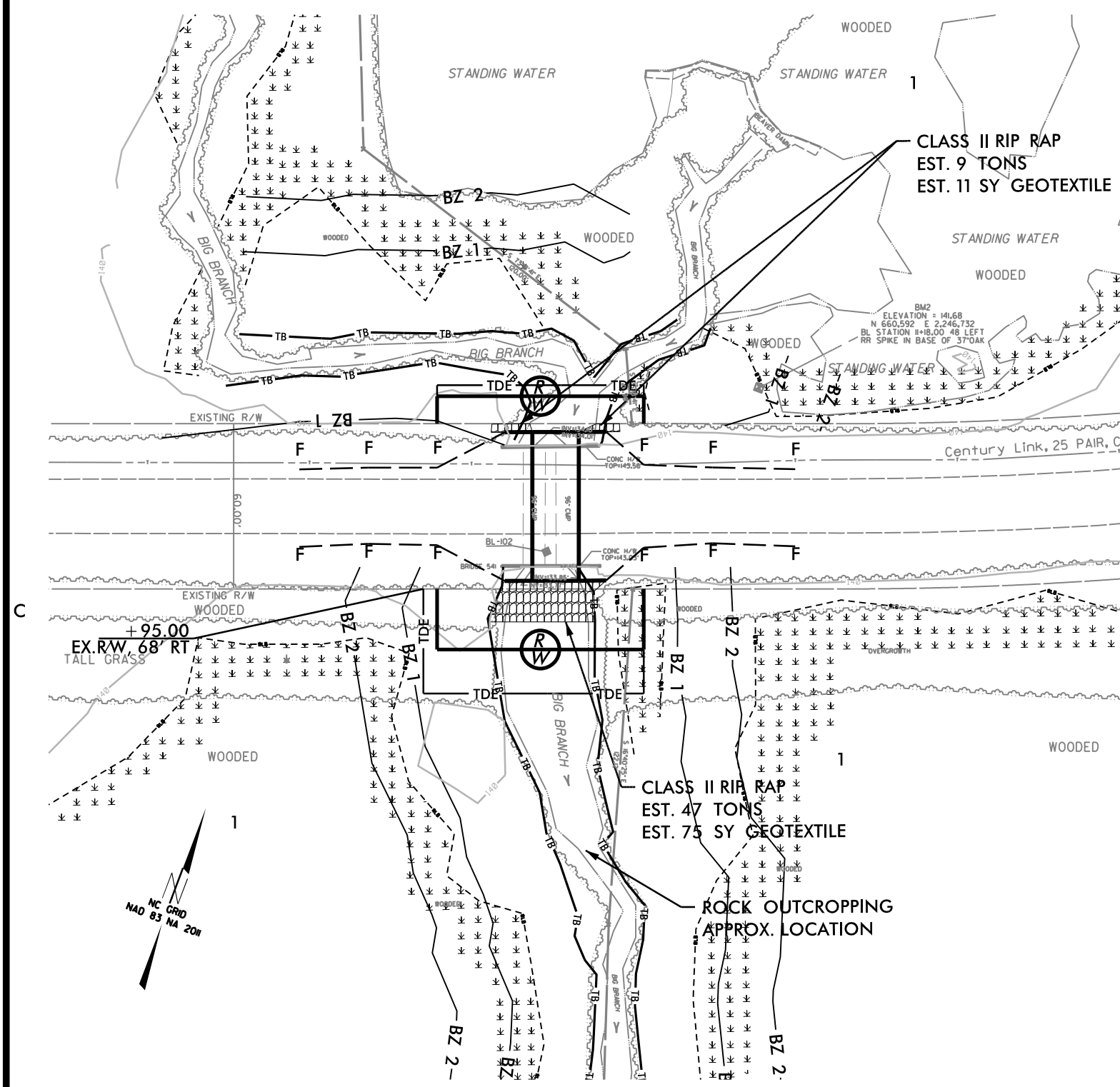
PHASE II



1. DEWATER WORK SITE USING SPECIAL STILLING BASIN/SILT BAG.


2. REMOVE EXISTING PIPES AND HEADWALLS. INSTALL ALUMINUM BOX CULVERT, HEADWALLS, AND PLACE RIP RAP ALL IN THE DRY.

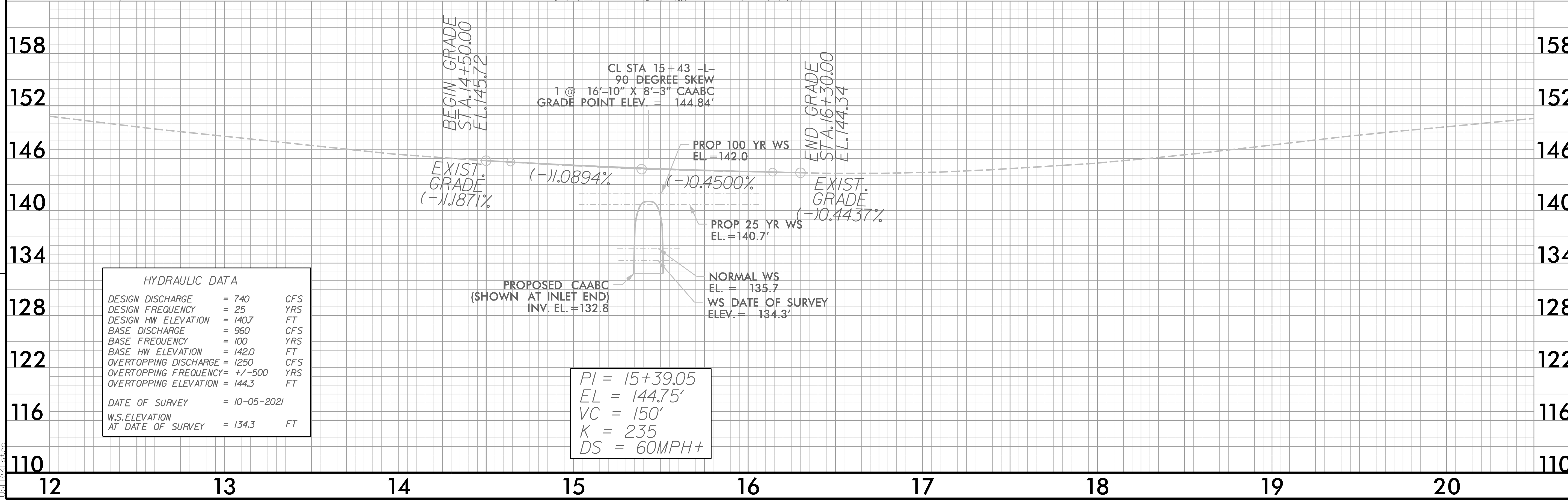
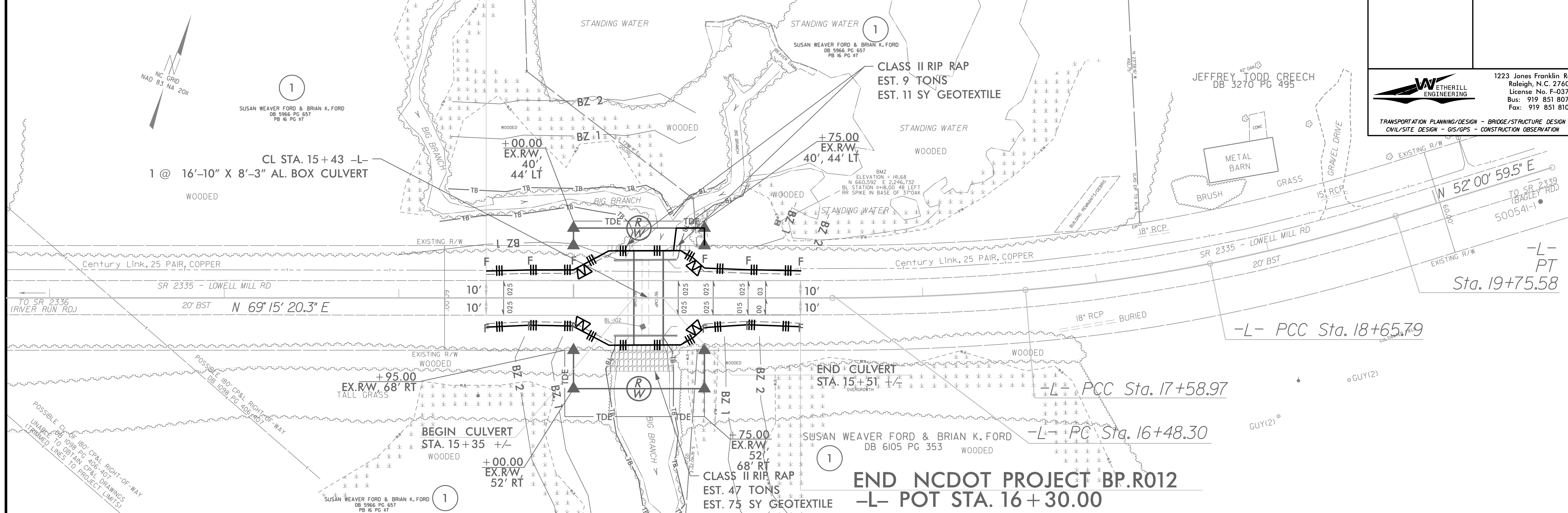
PHASE III



1. REMOVE IMPERVIOUS DIKES TO ALLOW NORMAL STREAM FLOW.
2. REMOVE PUMP, TEMPORARY FLEXIBLE PIPE, AND SPECIAL STILLING BASIN/SILT BAG.
3. CONSTRUCT ROADWAY.

**BEGIN NCDOT PROJECT BP.R012
-L- POT STA. 14 + 50.00**

PIPE NO. 500541	PROJECT REFERENCE NO. BP4.R012	SHEET NO. <i>EC-5/CONST. 4</i>
FINAL PLANS	RW SHEET NO.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION		



HYDRAULIC DATA	
DESIGN DISCHARGE	= 740 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 140.7 FT
BASE DISCHARGE	= 960 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 142.0 FT
OVERTOPPING DISCHARGE	= 1250 CFS
OVERTOPPING FREQUENCY	= +/- 500 YRS
OVERTOPPING ELEVATION	= 144.3 FT
DATE OF SURVEY	= 10-05-2021
W.S. ELEVATION AT DATE OF SURVEY	= 134.3 FT

REVISIONS

6/15/2021 ec.psh-4.dgn

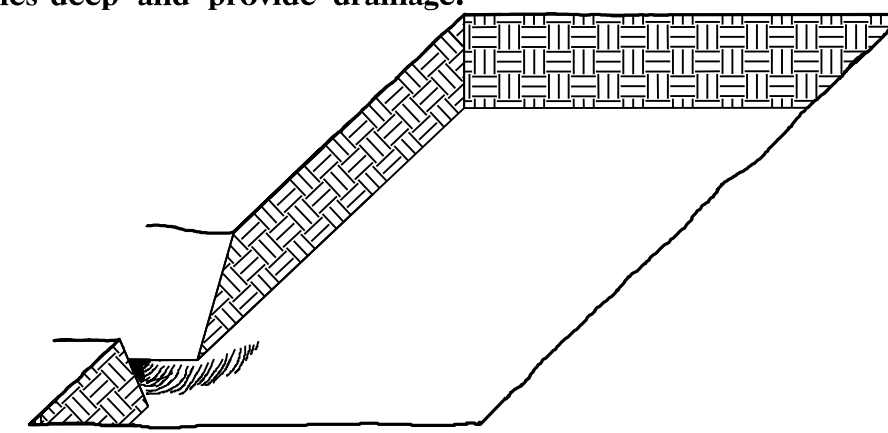
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R012	RF-1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

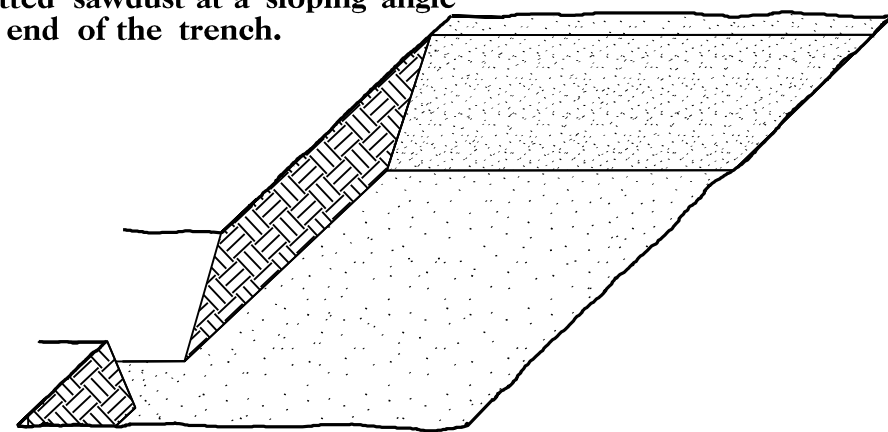
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

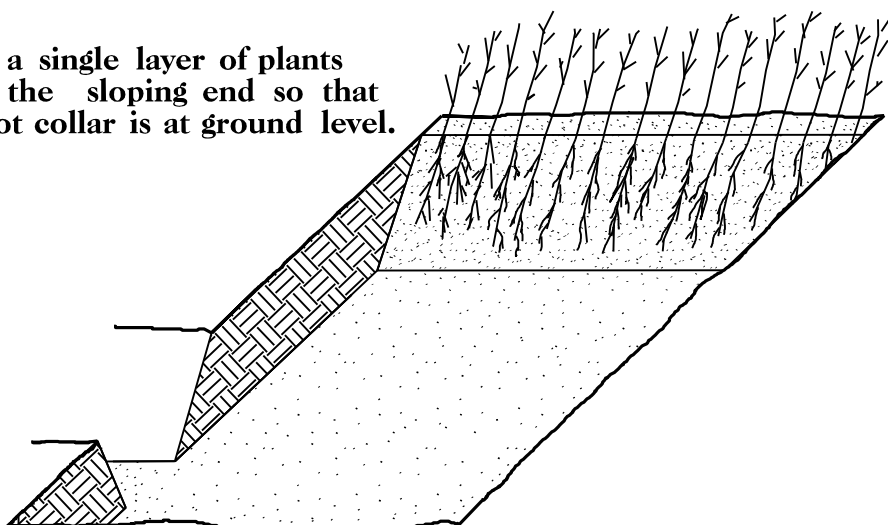
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



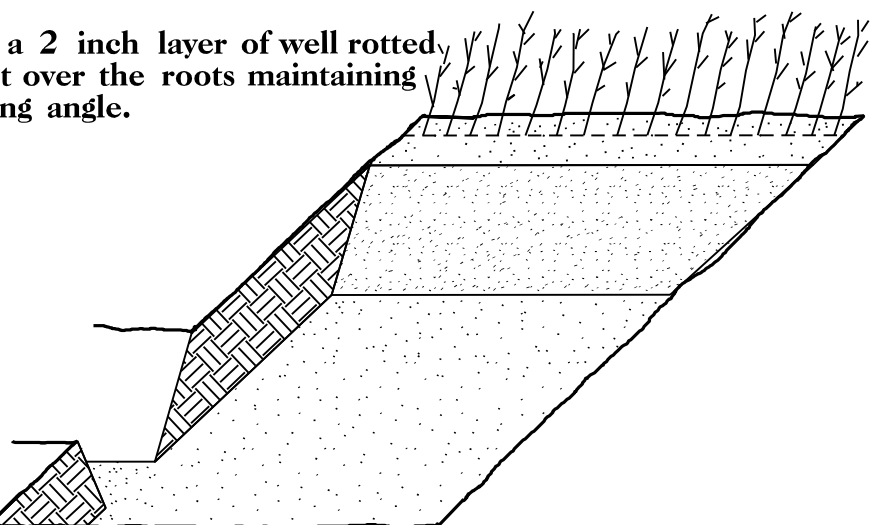
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

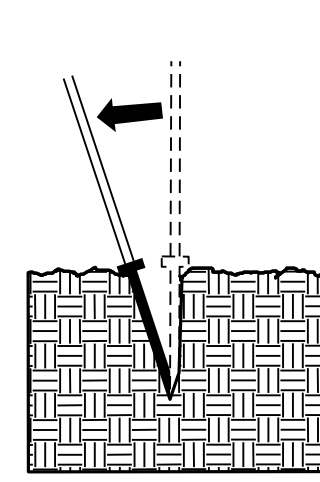


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

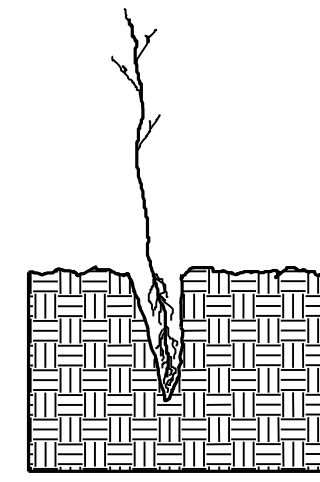


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

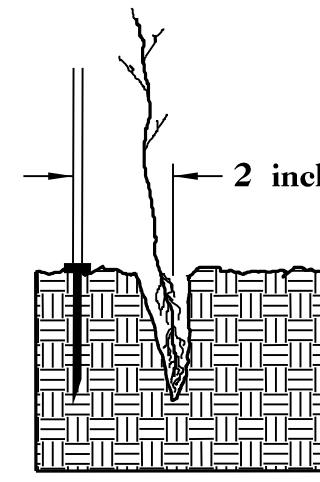
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



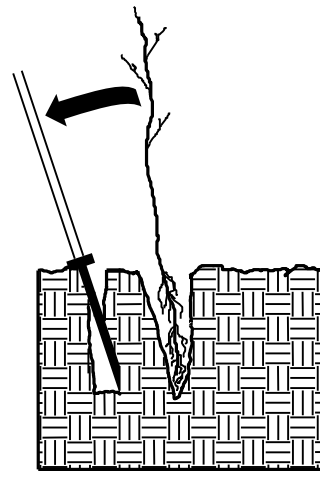
1. Insert planting bar as shown and pull handle toward planter.



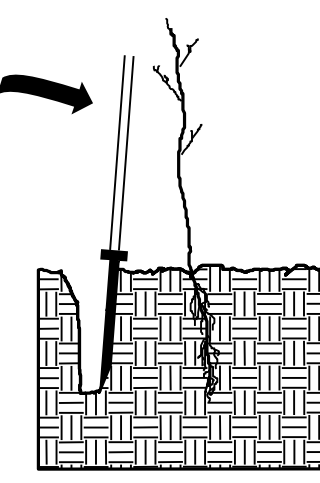
2. Remove planting bar and place seedling at correct depth.



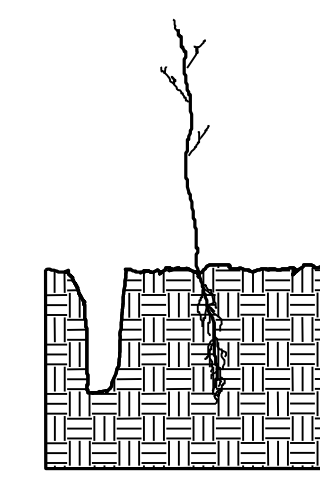
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



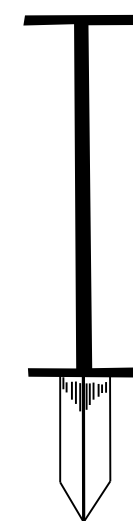
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



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



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

REFORESTATION

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

REFORESTATION

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

40%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
30%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
30%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

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

09.08/99

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R012.1	UO-1	2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP4.R012.1		PE	

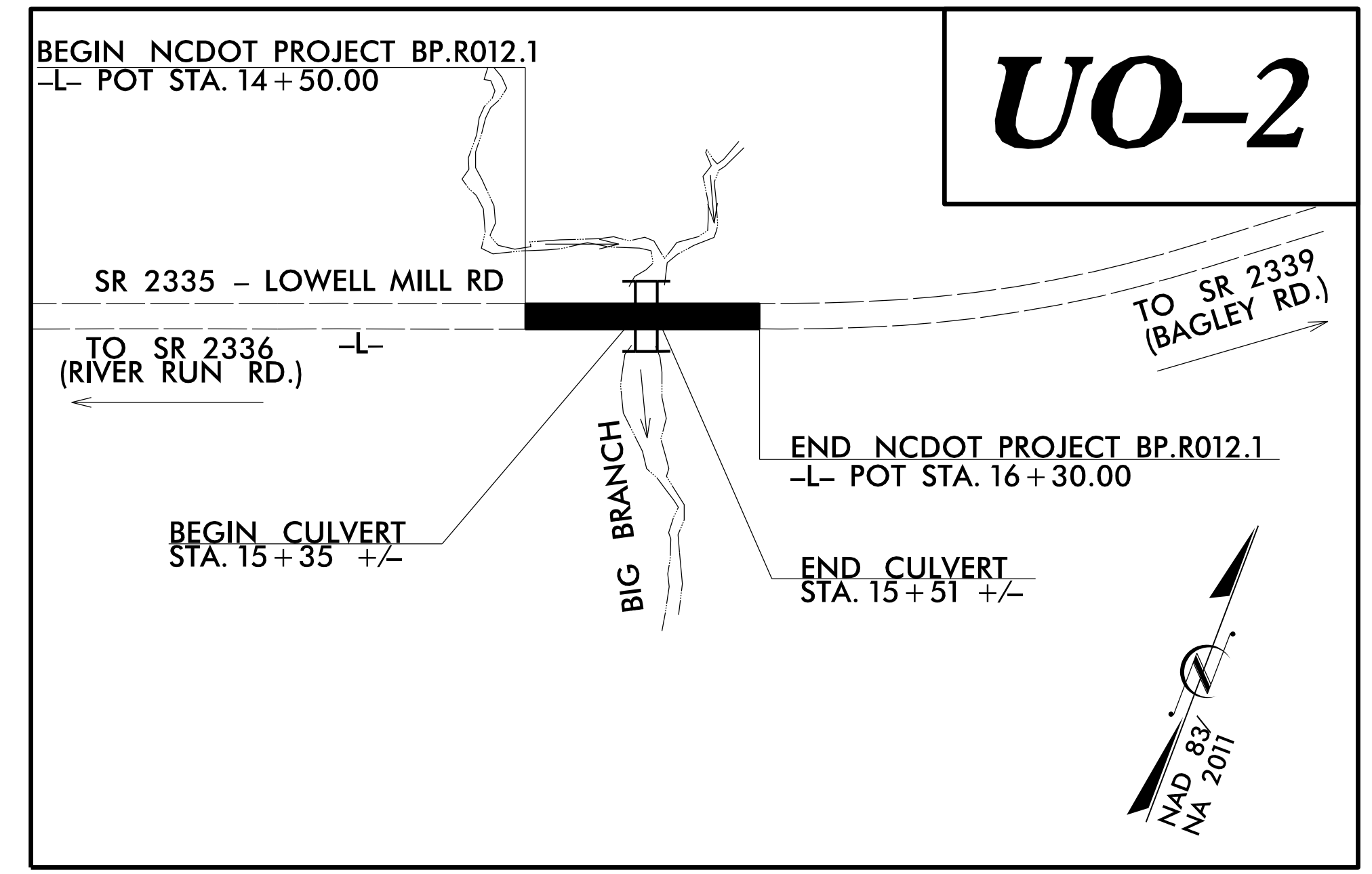
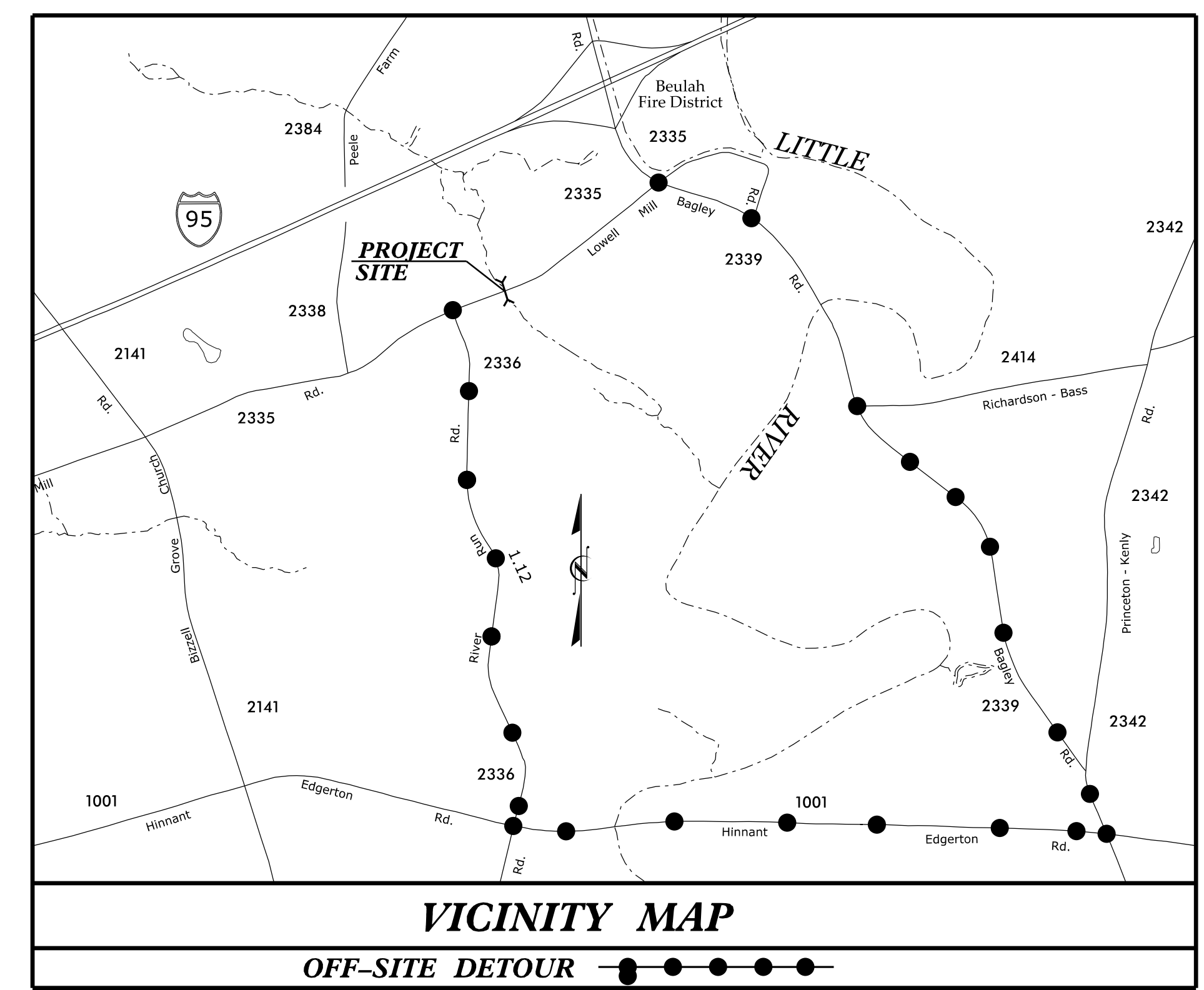
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS JOHNSTON COUNTY

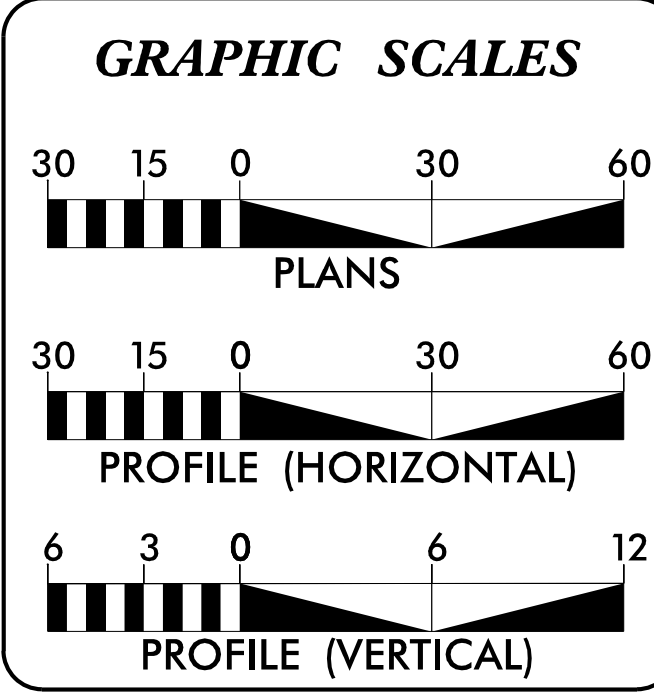
LOCATION: PIPE NO. 500541 OVER BIG BRANCH
ON SR 2335 (LOWELL MILL RD.)

TYPE OF WORK: UTILITIES BY OTHERS

PROJECT: BP4.R012.1



CONTRACT:



INDEX OF SHEETS

UO-1	TITLE SHEET
UO-2	PLAN SHEET

UTILITY OWNERS WITH CONFLICTS:

A. BRIGHTSPEED - TELECOMMUNICATIONS

**DIVISION OF HIGHWAYS
DIVISION FOUR**
509 Ward Boulevard, Wilson NC, 27895

KYLE PLEASANT PROJECT UTILITIES ENGINEER



ADDISON GAINNEY, PE
PROJECT CONTACT #1

19-JUN-2023 14:29
C:\Users\swindocck\Desktop\UB0\BP4.R012\bpr_r012_UO-1_TSH.dgn
swindocck AT DIV04-312627

B/17/99

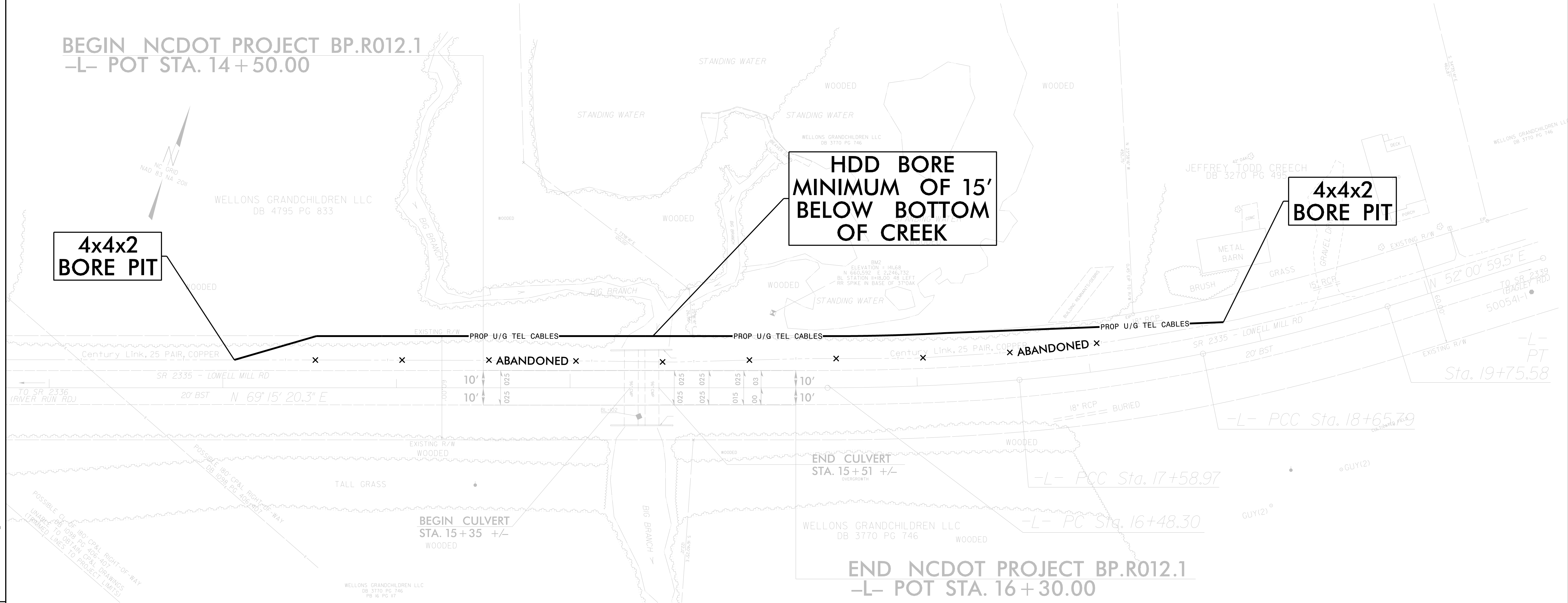
NOTE: PLACE NEW CABLE 1' INSIDE R/W

BEGIN NCDOT PROJECT BP.R012.1
-L- POT STA. 14 + 50.00

**4x4x2
BORE PIT**

**HDD BORE
MINIMUM OF 15'
BELOW BOTTOM
OF CREEK**

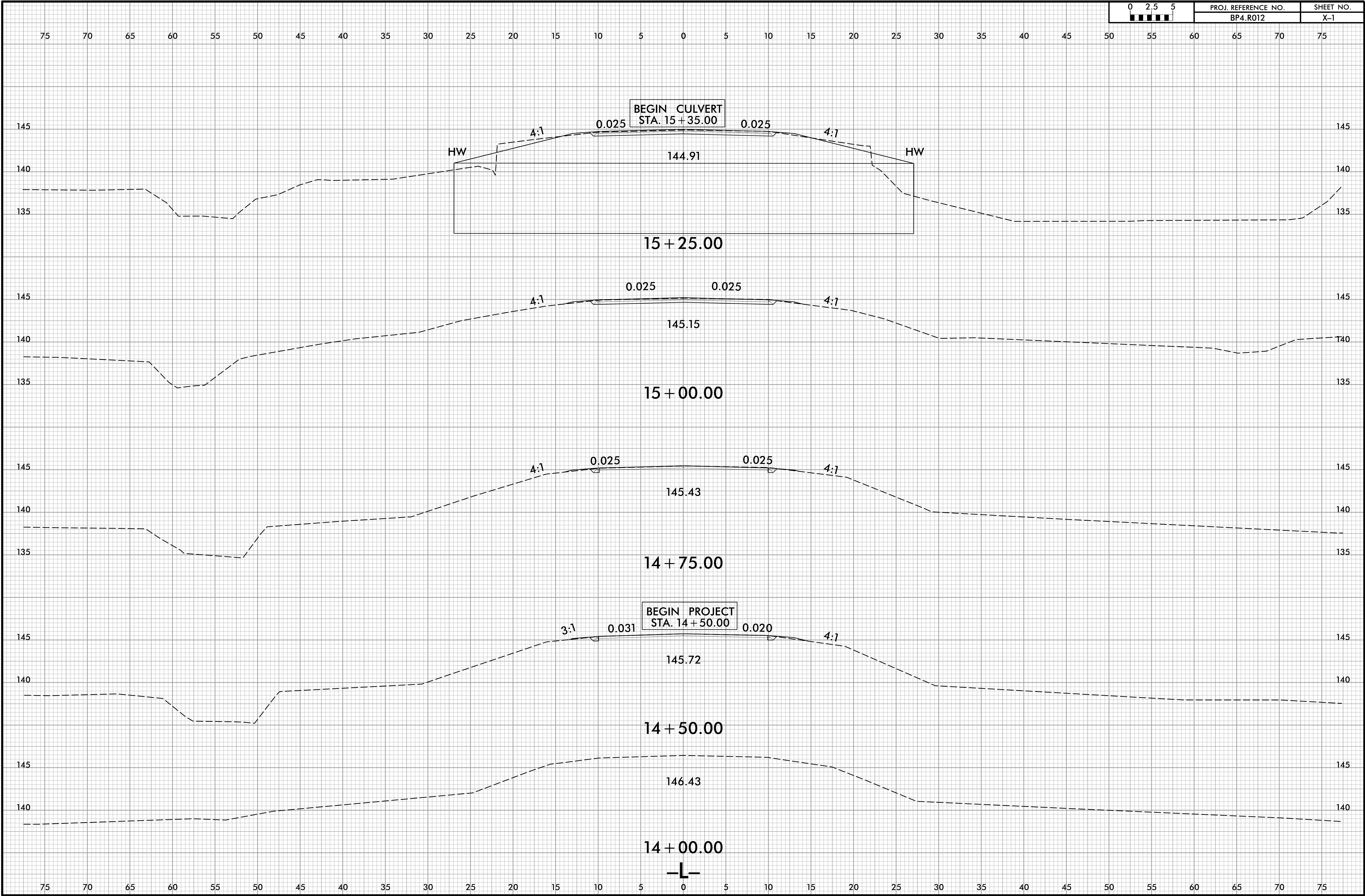
**4x4x2
BORE PIT**

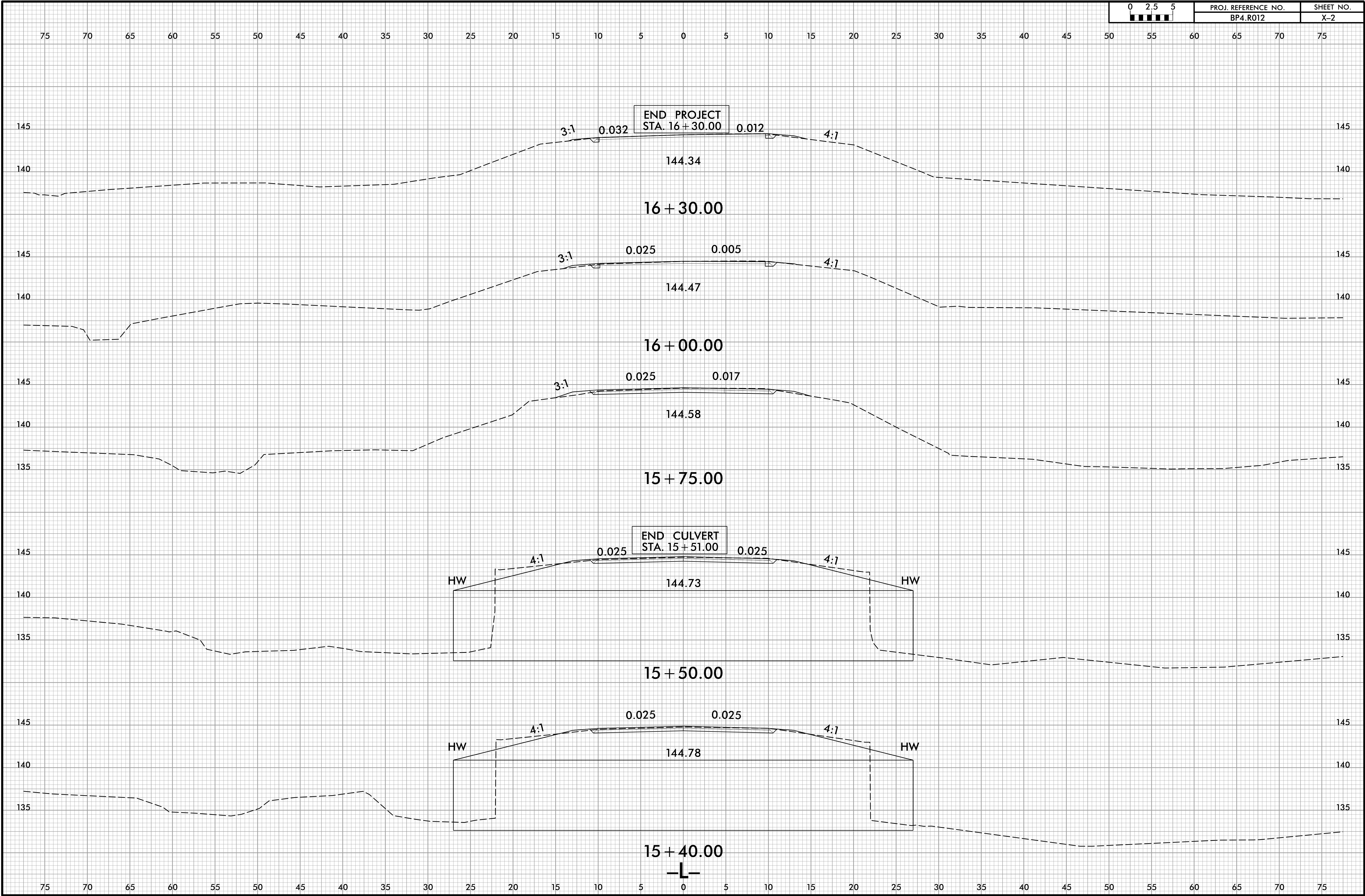


END NCDOT PROJECT BP.R012.1
-L- POT STA. 16 + 30.00

REVISIONS

C:\JUN-2023 09:26
 \$\$\$\$USERNAME\$\$\$\$
 \Desk\top\UB0\BP4.R012\lbr-012_UO-2_PSH.dgn

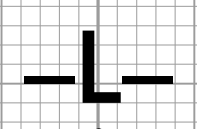




75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



144.29
16 + 80.00



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75