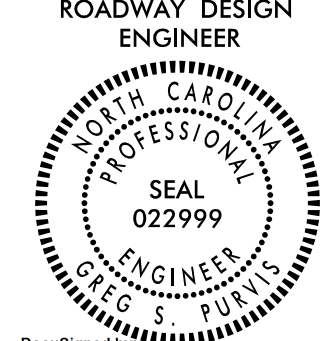


5/14/23

PROJECT REFERENCE NO.	SHEET NO.
BP4.R011	1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
DocuSigned by: Greg S. Purvis/30/2023	
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 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

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 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
 DUKENET - POWER
 BRIGHTSPEED - TELECOMMUNICATIONS
 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	
200.03	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
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation

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
2C-1	DETAIL FOR GUARDRAIL INSTALLATION
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-7	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS SECTIONS

5/30/2023 10:58:41 AM R011.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-S-
Potential Contamination Area: Soil	-S-S-
Known Contamination Area: Water	-W-W-
Potential Contamination Area: Water	-W-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	↓
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:

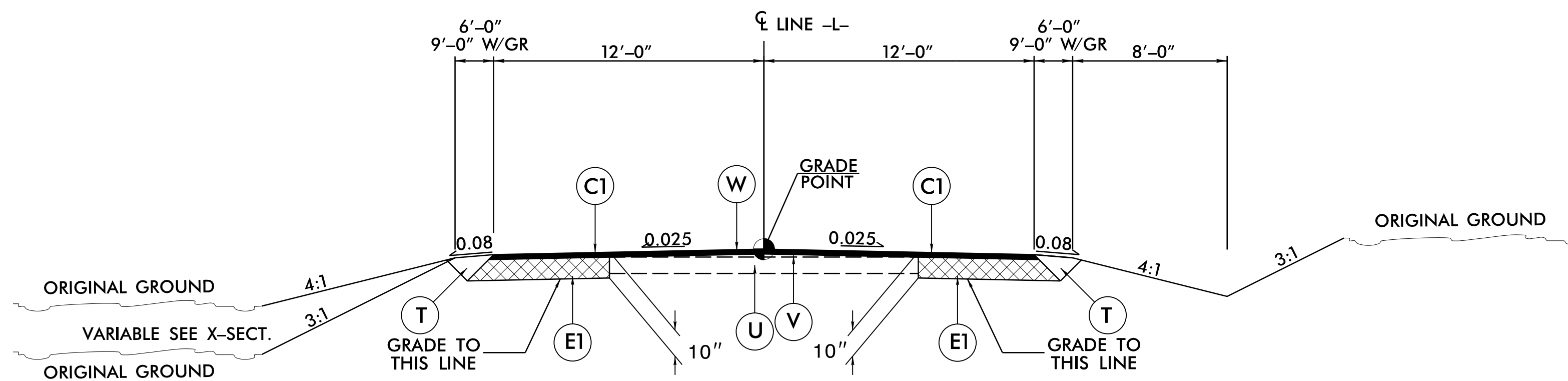
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Force Main Line Test Hole (SUE - LOS A)*	○
SS Force Main Line (SUE - LOS B)*	-----
SS Force Main Line (SUE - LOS C)*	-----
SS Force Main Line (SUE - LOS D)*	-----

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.

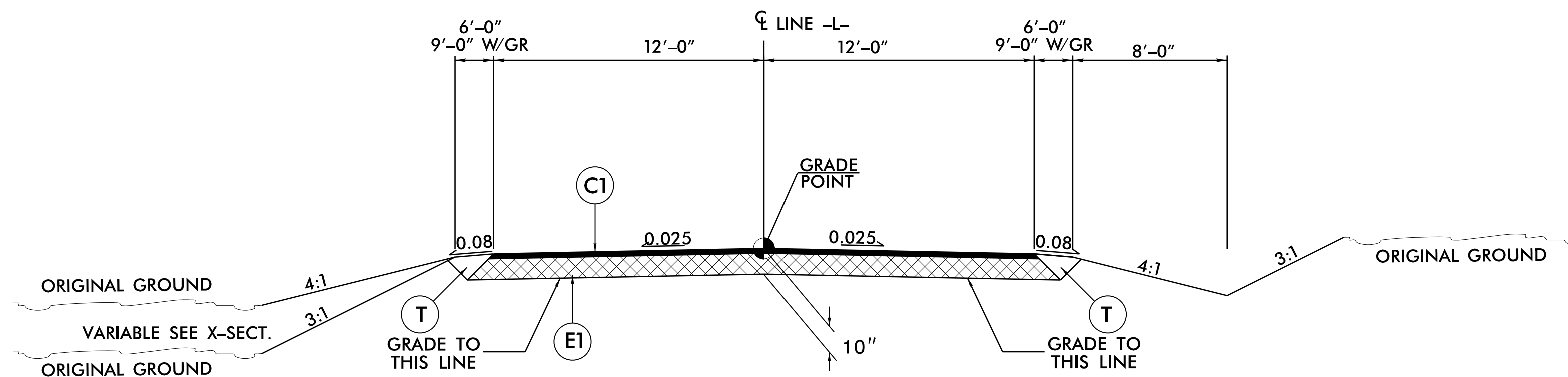
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
E1	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5 1/2" 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.



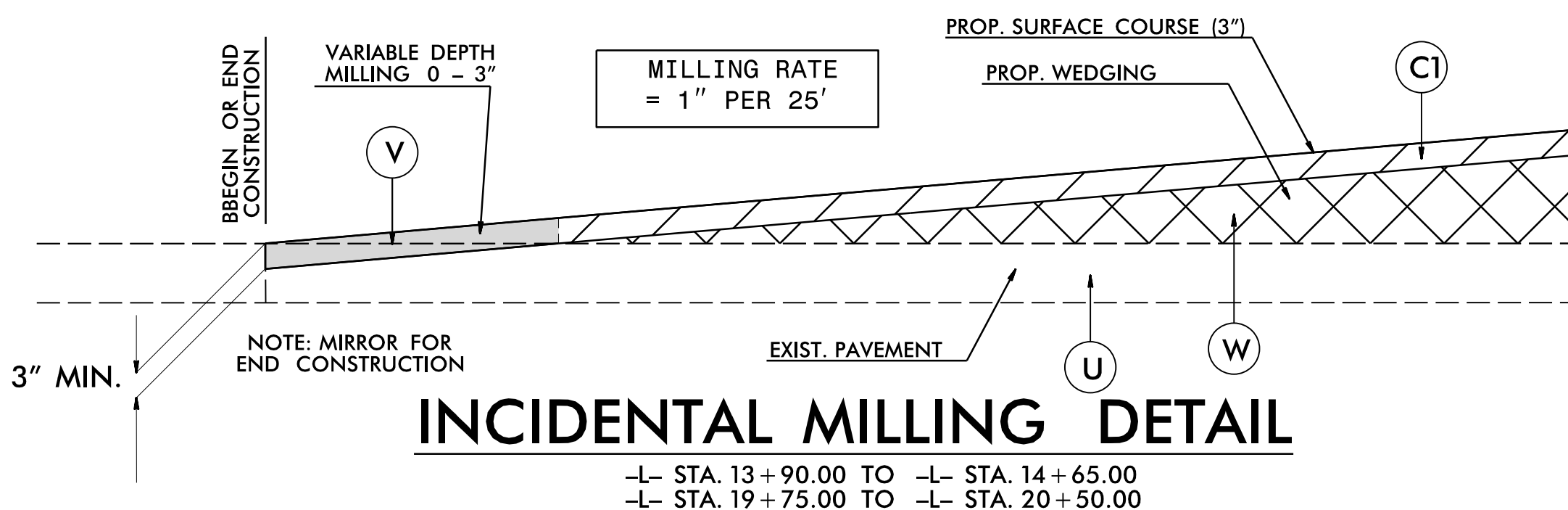
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
 -L- STA. 13+90.00 TO -L- STA. 16+56.00
 -L- STA. 17+96.00 TO -L- STA. 20+50.00



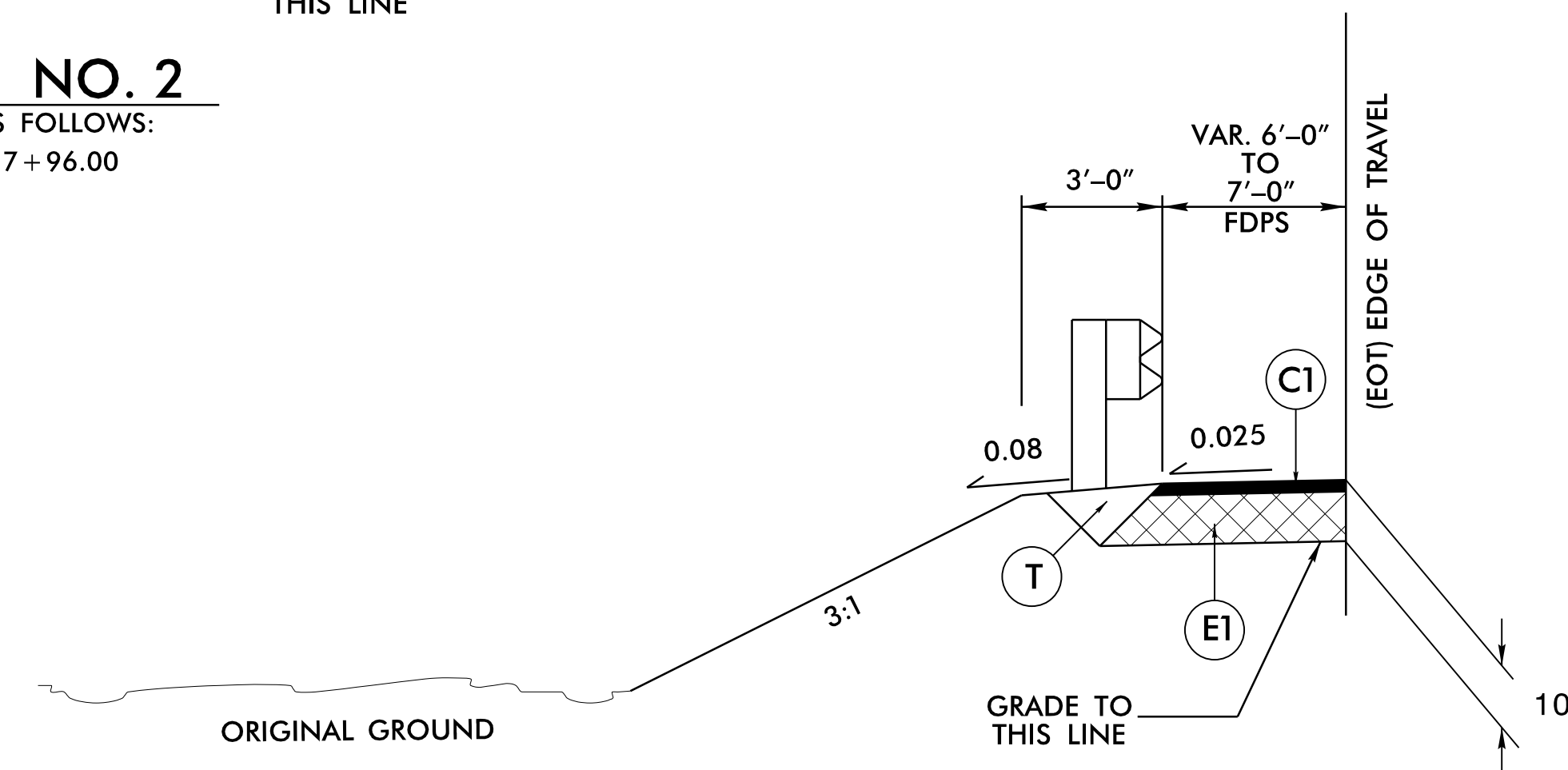
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
 -L- STA. 16+56.00 TO -L- STA. 17+96.00



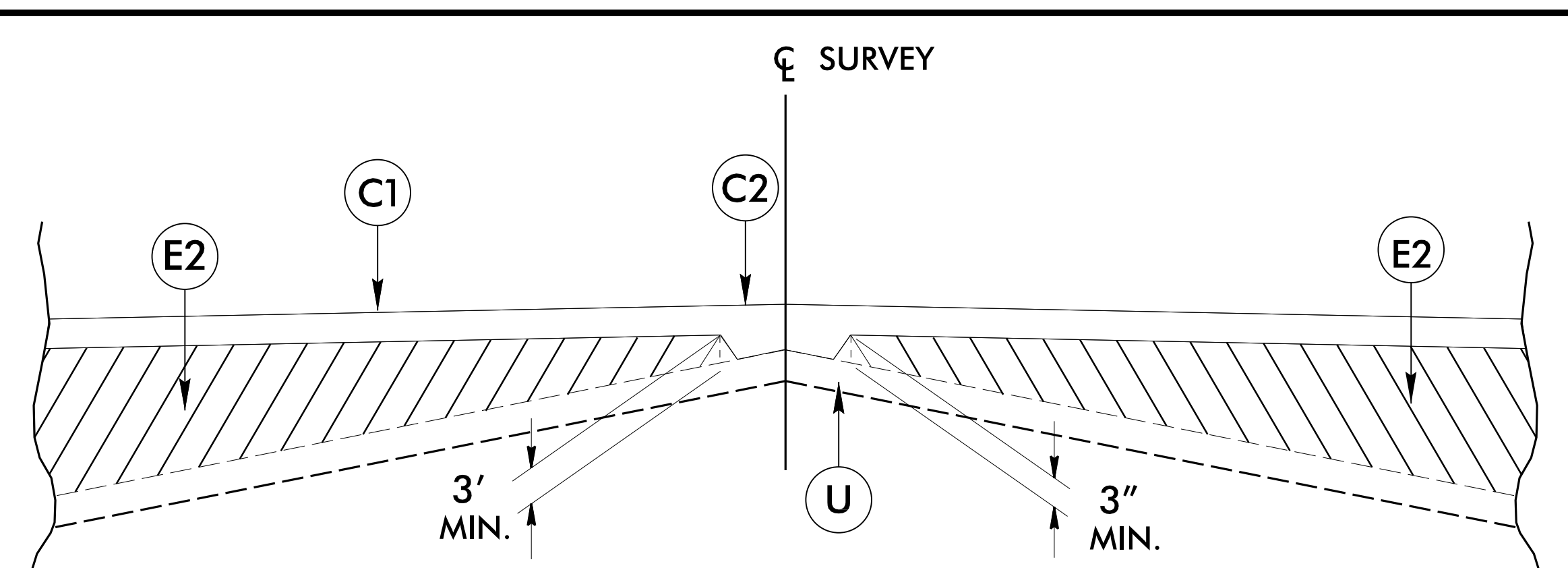
INCIDENTAL MILLING DETAIL

-L- STA. 13+90.00 TO -L- STA. 14+65.00
 -L- STA. 19+75.00 TO -L- STA. 20+50.00



SHOULDER DETAIL

USE SHOULDER DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2:
 -L- STA. 14+70.00 TO -L- STA. 19+45.00 RT.
 -L- STA. 15+31.00 TO -L- STA. 19+68.50 LT.



W: Detail Showing Method of Wedging

-L-			
PI Sta 15+28.22	PI Sta 16+82.46	PI Sta 18+48.05	PI Sta 20+13.95
$\Delta = 5^{\circ} 27' 21.1''$ (LT)	$\Delta = 7^{\circ} 32' 20.6''$ (LT)	$\Delta = 1^{\circ} 12' 58.4''$ (LT)	$\Delta = 2^{\circ} 57' 32.9''$ (LT)
$D = 3^{\circ} 34' 00.1''$	$D = 4^{\circ} 51' 03.3''$	$D = 7^{\circ} 25' 50.2''$	$D = 1^{\circ} 57' 25.7''$
$L = 152.97'$	$L = 155.41'$	$L = 150.95'$	$L = 151.20'$
$T = 76.54'$	$T = 77.82'$	$T = 75.71'$	$T = 75.62'$
$R = 1,606.41'$	$R = 1,181.13'$	$R = 771.08'$	$R = 2,927.51'$
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

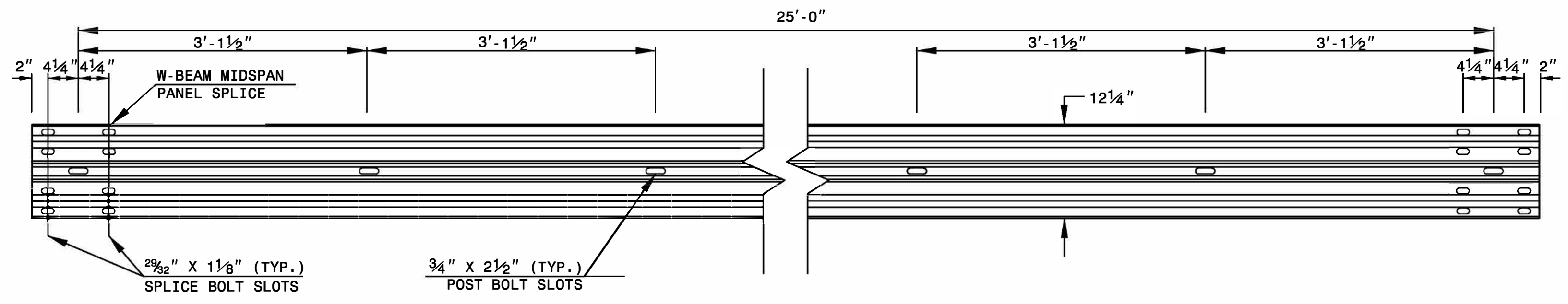
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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107	
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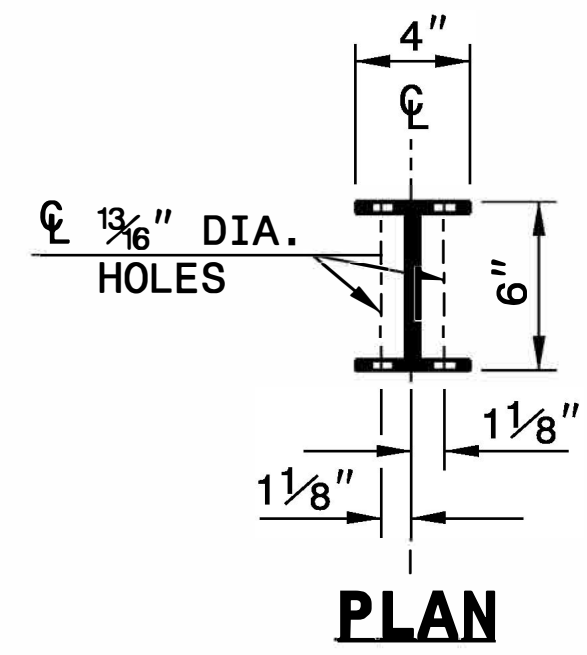
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

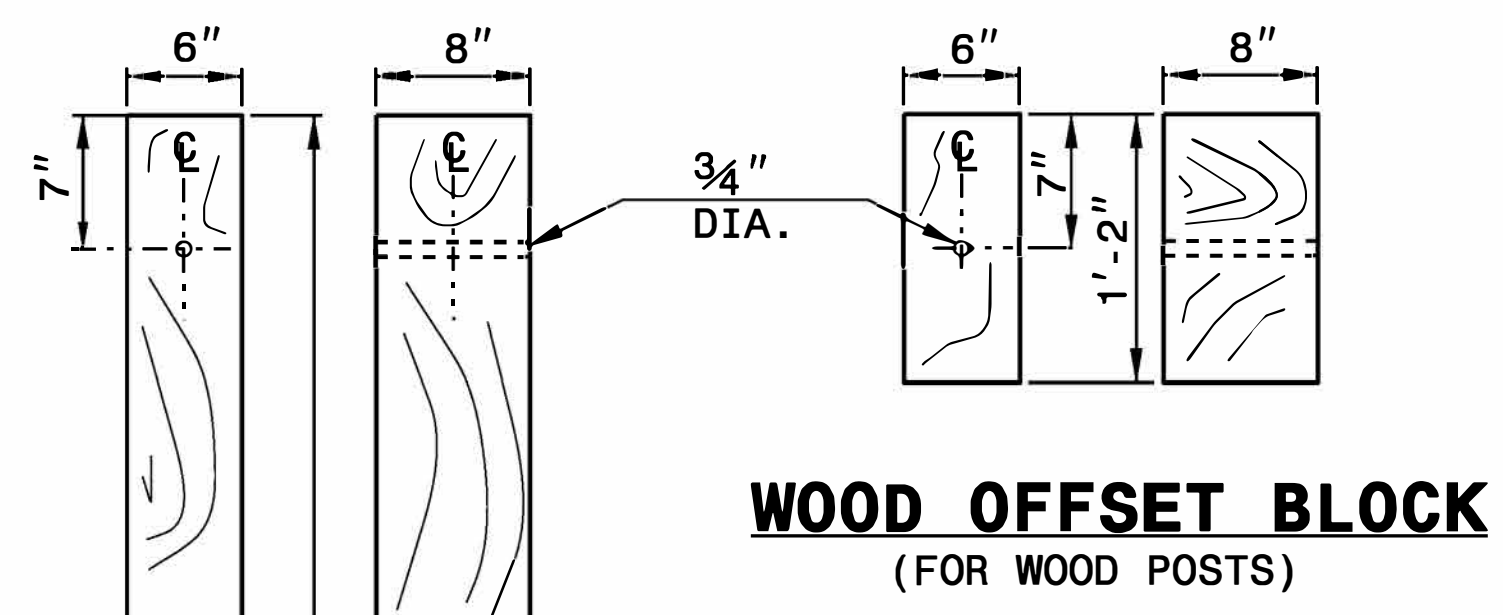
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



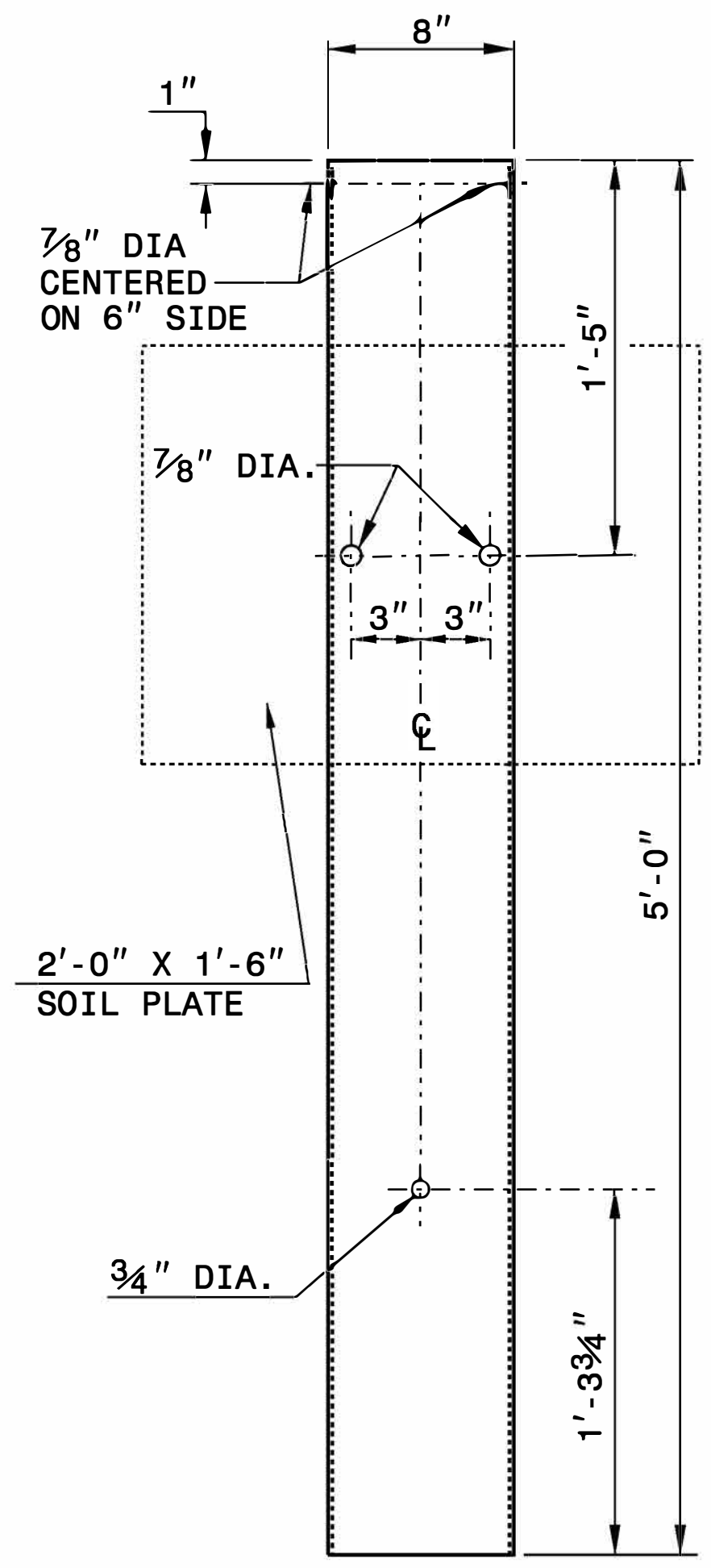
PLAN



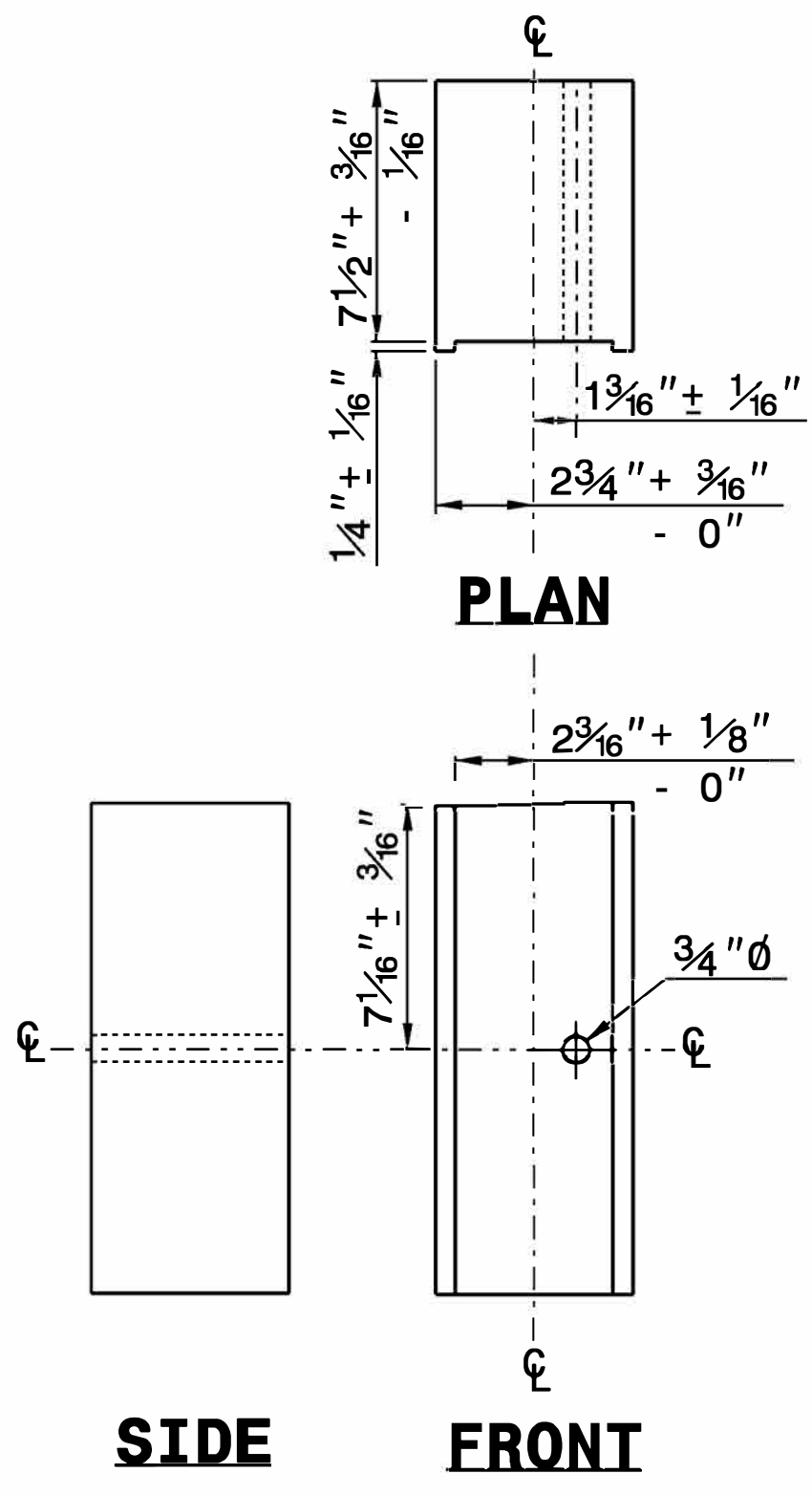
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



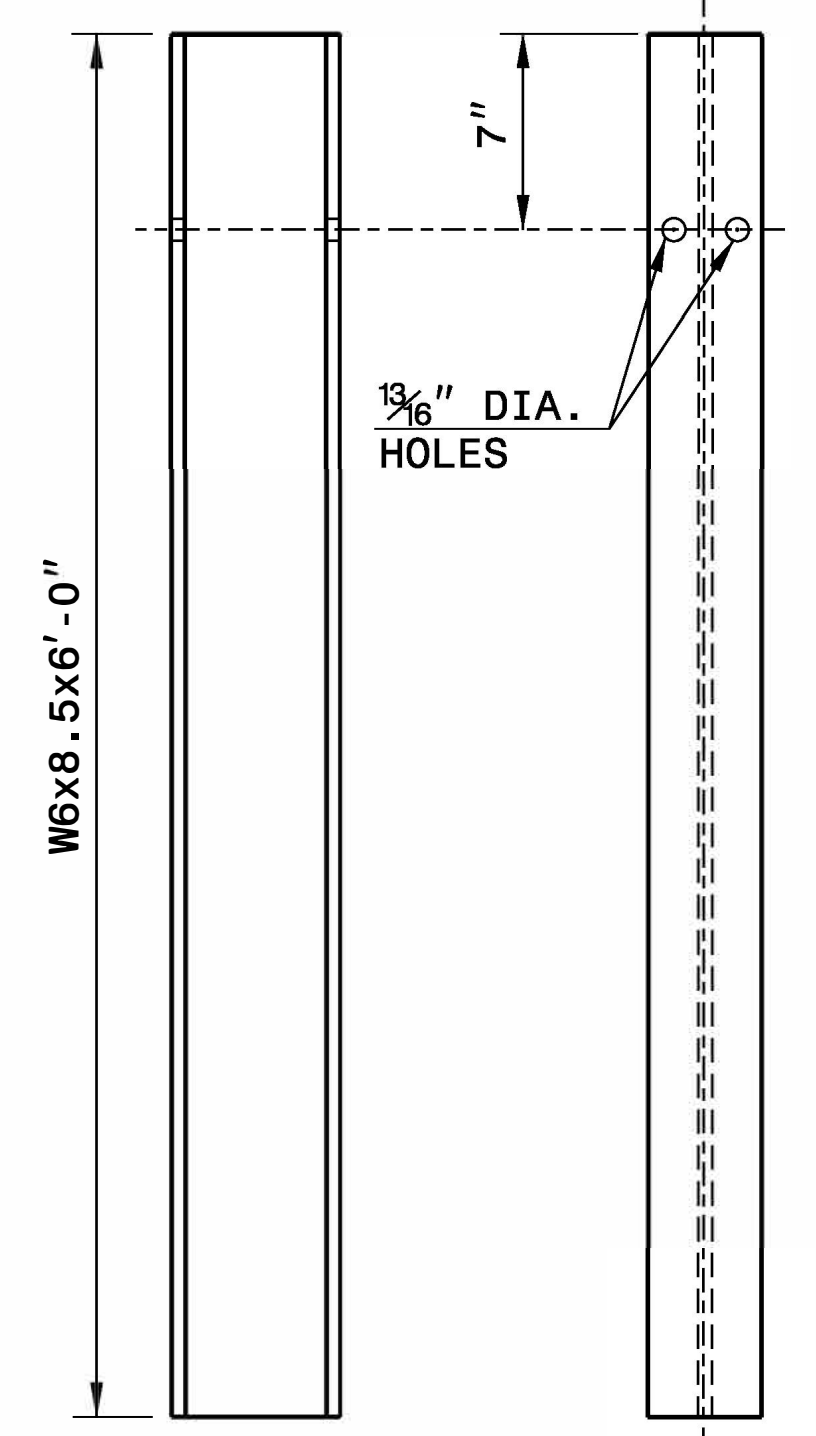
**STEEL TUBE
TS 6"x8"x0.1875"**



SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

FRONT

"W6" STEEL POST

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

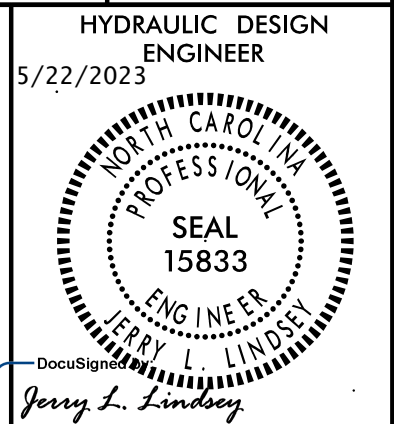
SHEET 6 OF 8
862D02



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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____



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

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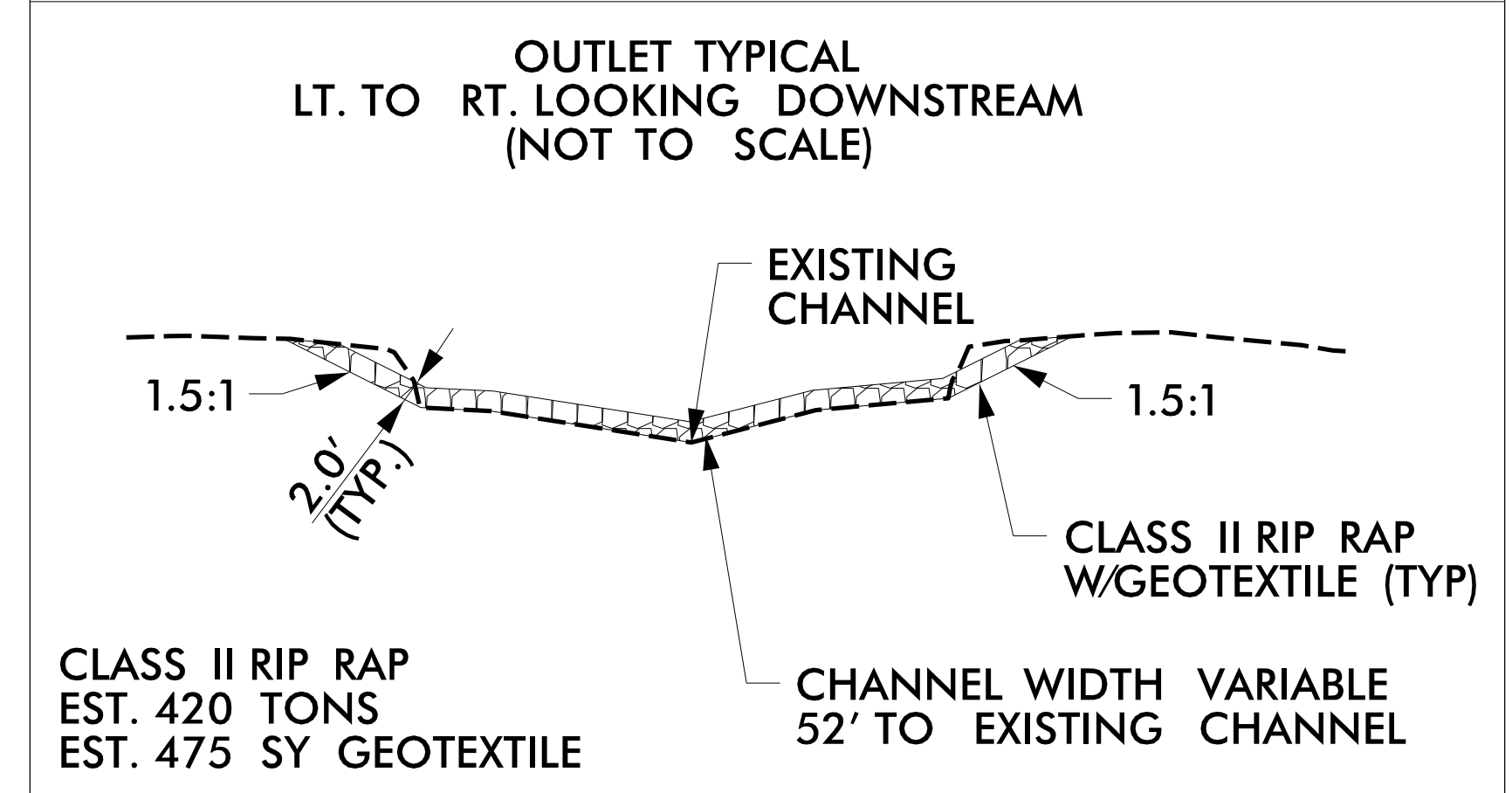
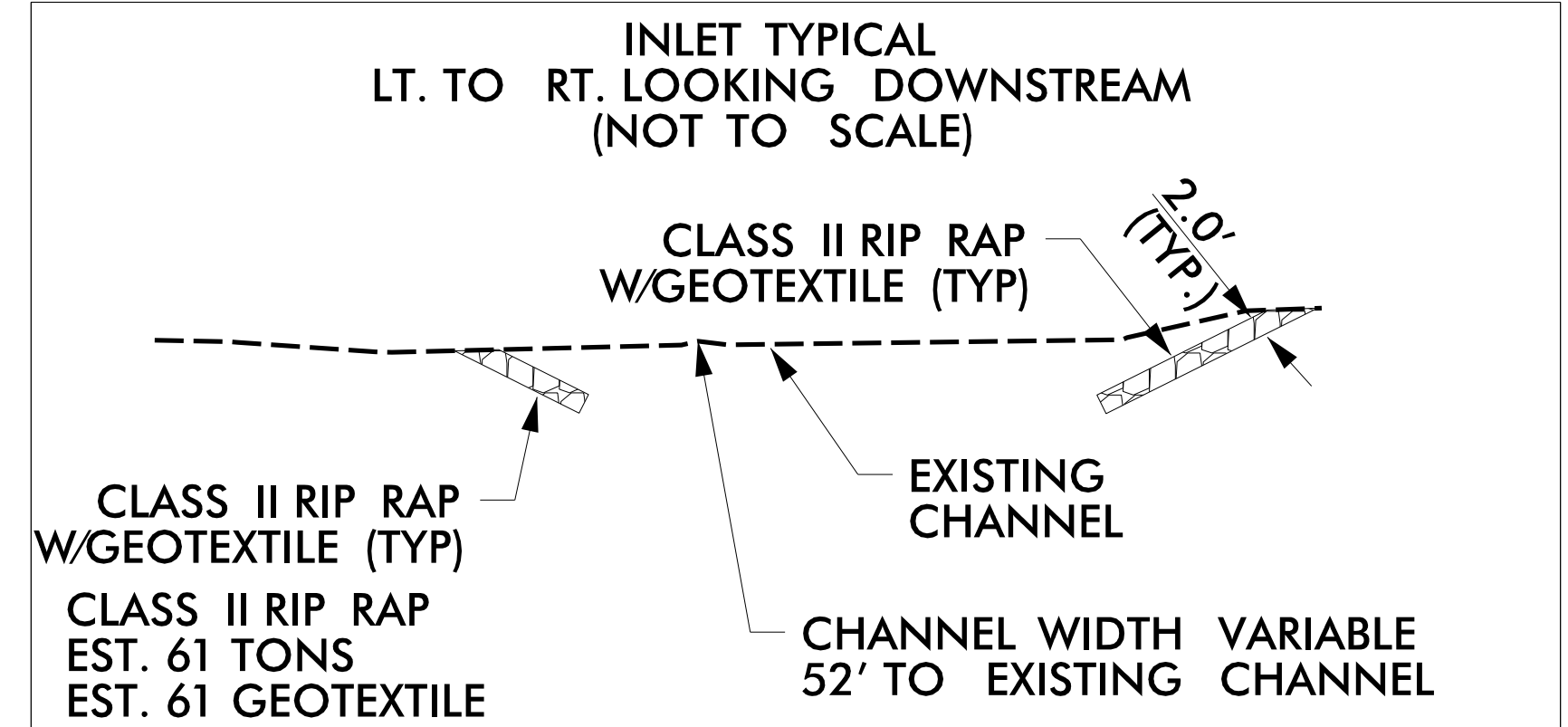
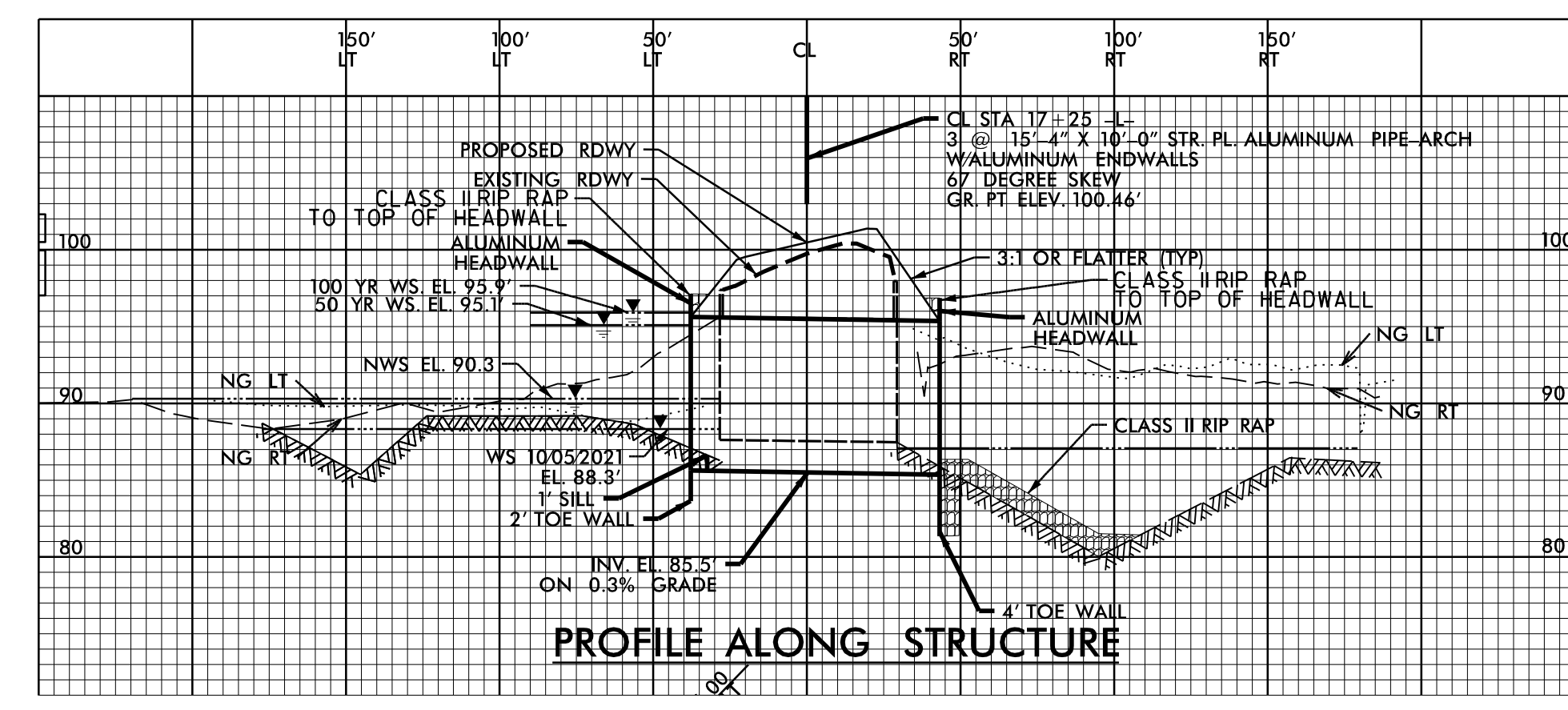
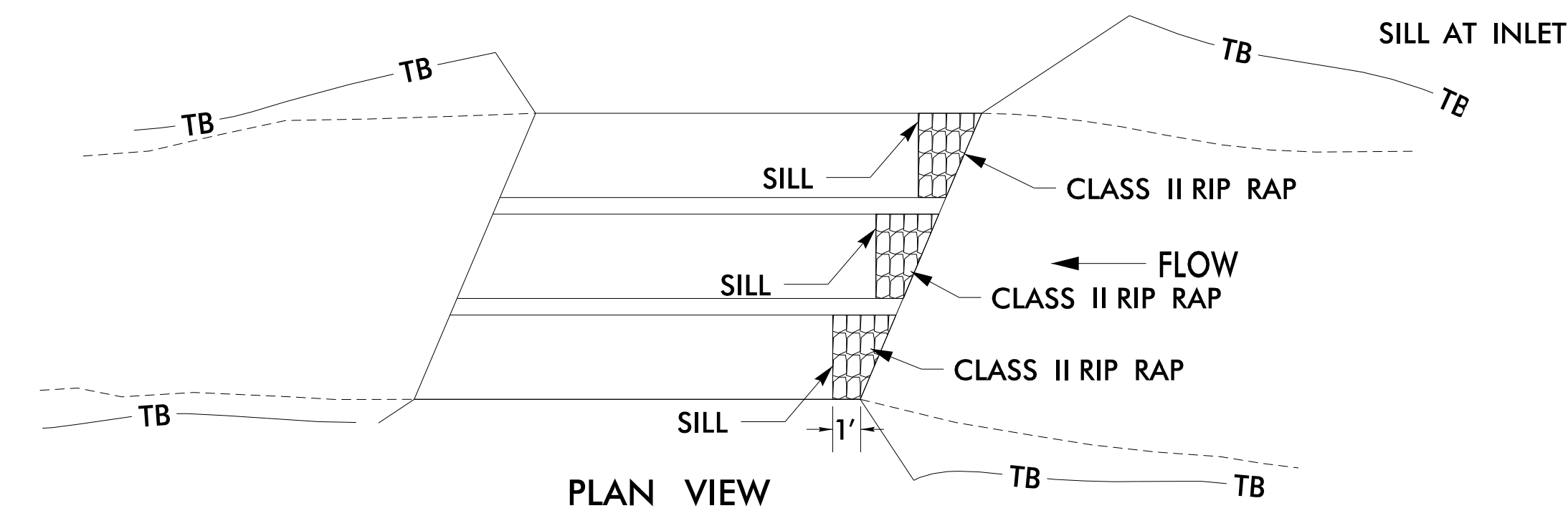
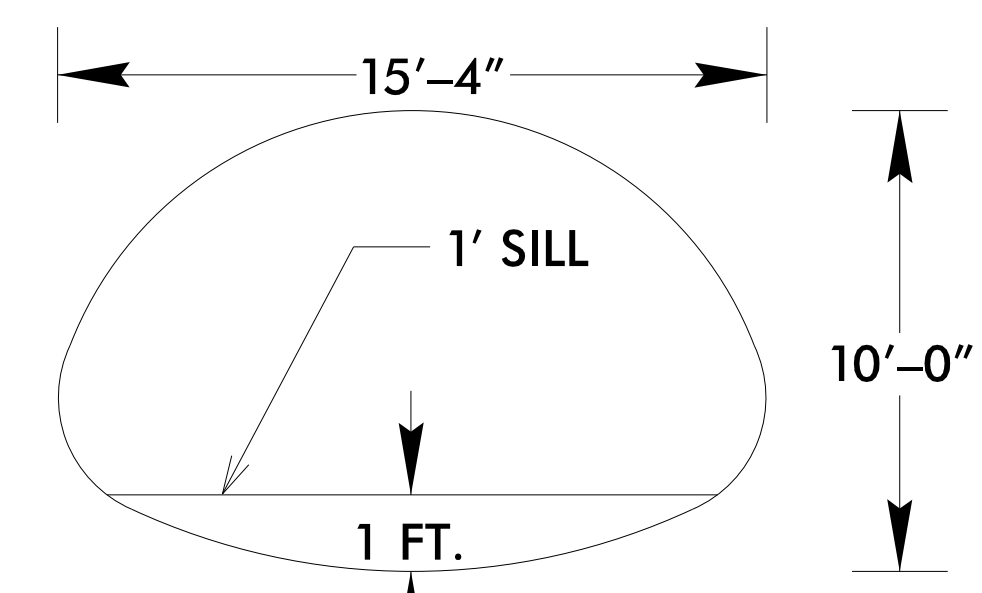
SILL DETAIL

(NOT TO SCALE)

SILL AT INLET

***NOTES:**

- 1) SILL TO BE ALUMINUM STRUCTURAL PLATE.
- 2) SILL TO BE 1' HIGH AND SET BACK 1' FROM HDWLL.



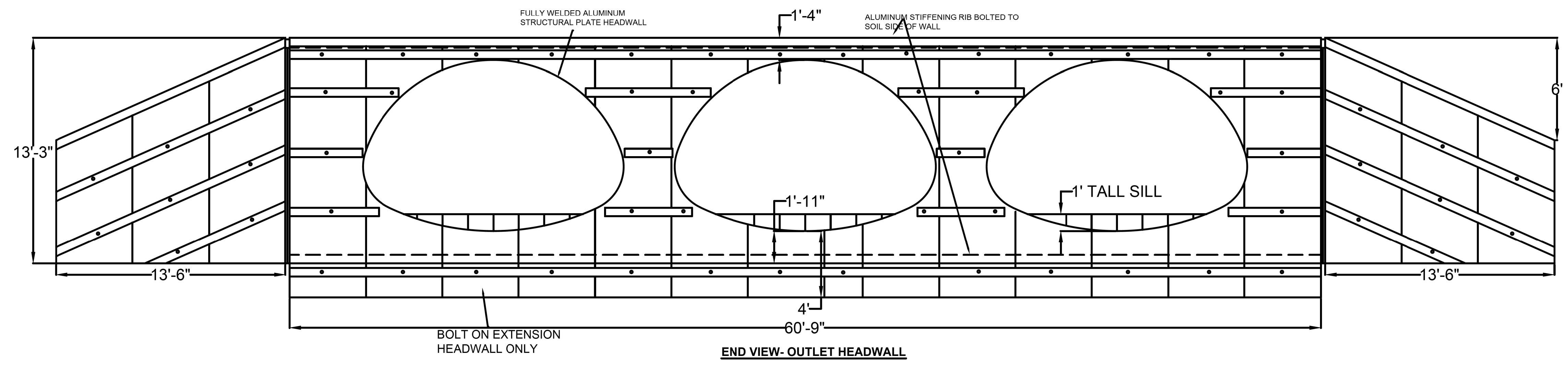
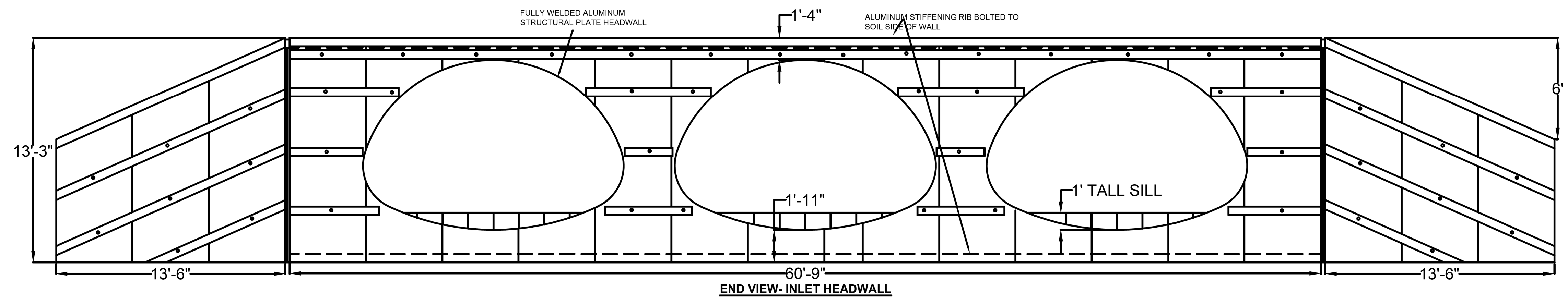
CULVERT HEADWALL DETAILS

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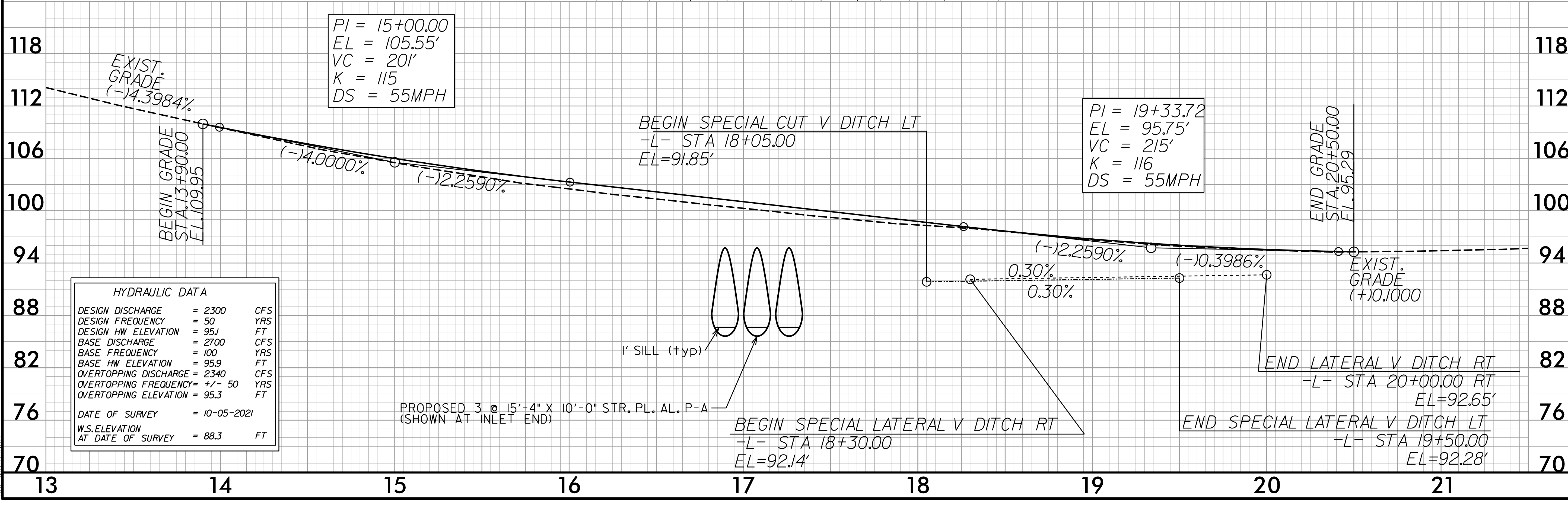
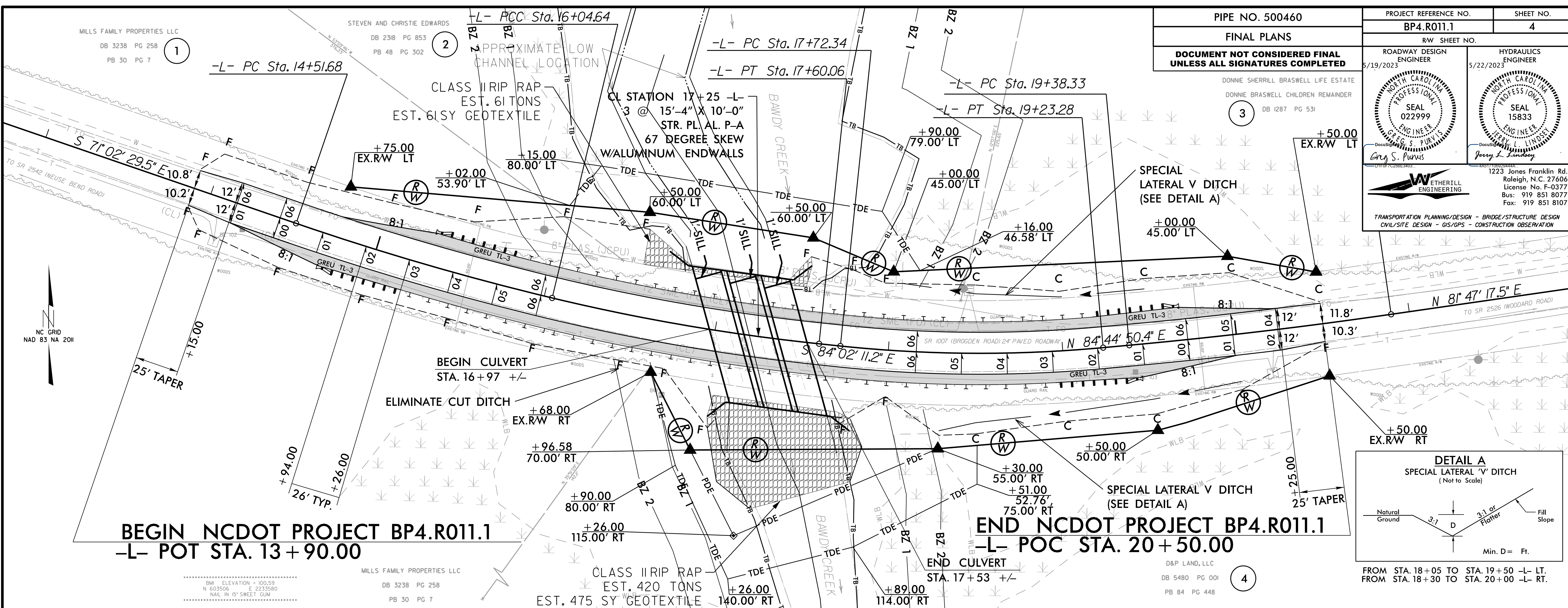
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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8/17/19



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09/06/99

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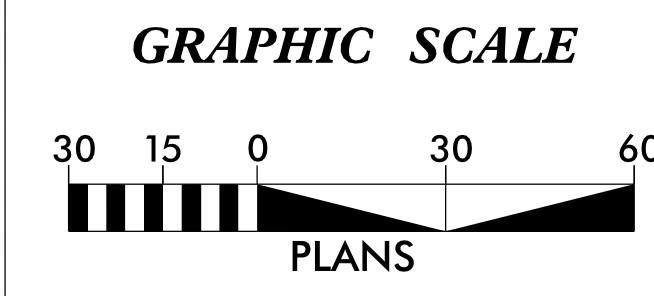
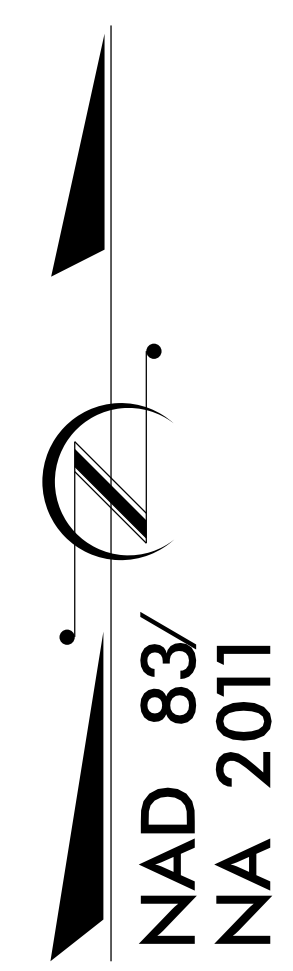
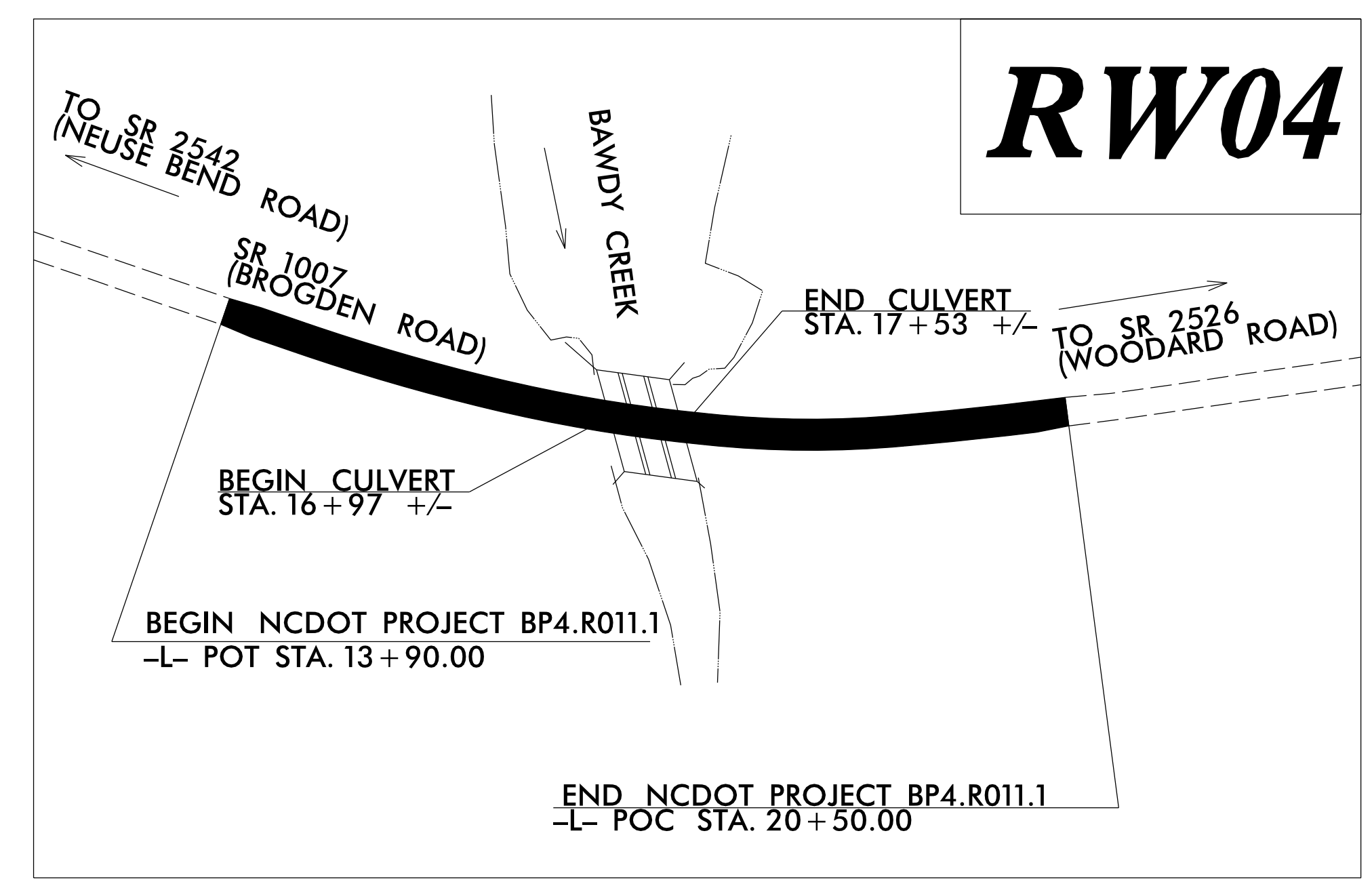
TIP PROJECT: BP4.R011

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R011.2	RW01	4

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

JOHNSTON COUNTY



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "500460-AZ2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 603,824.575 (ft) EASTING: 2,232,422.483 (ft) ELEVATION: 134.03 (ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987522717

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "500460-AZ2" TO -L- STATION 10+00.00 IS S 81-05'38.7" E 524.22 (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

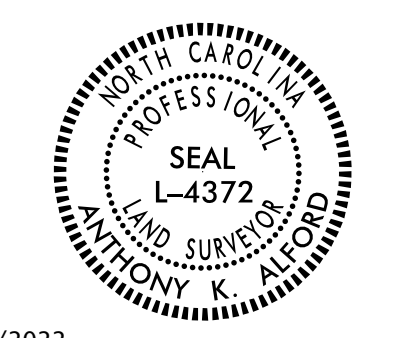
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
03/31/2022

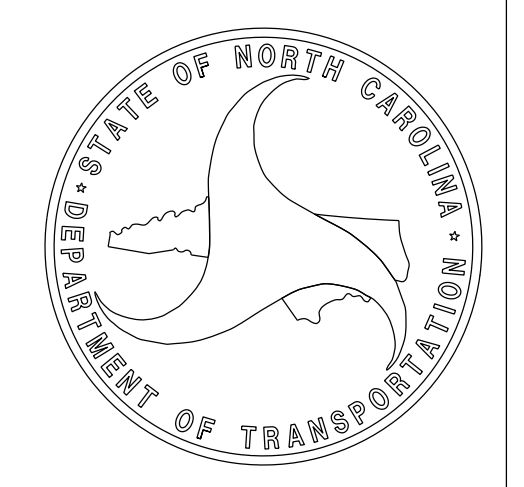
LETTING DATE:
03/14/2023

PROFESSIONAL LAND SURVEYOR



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

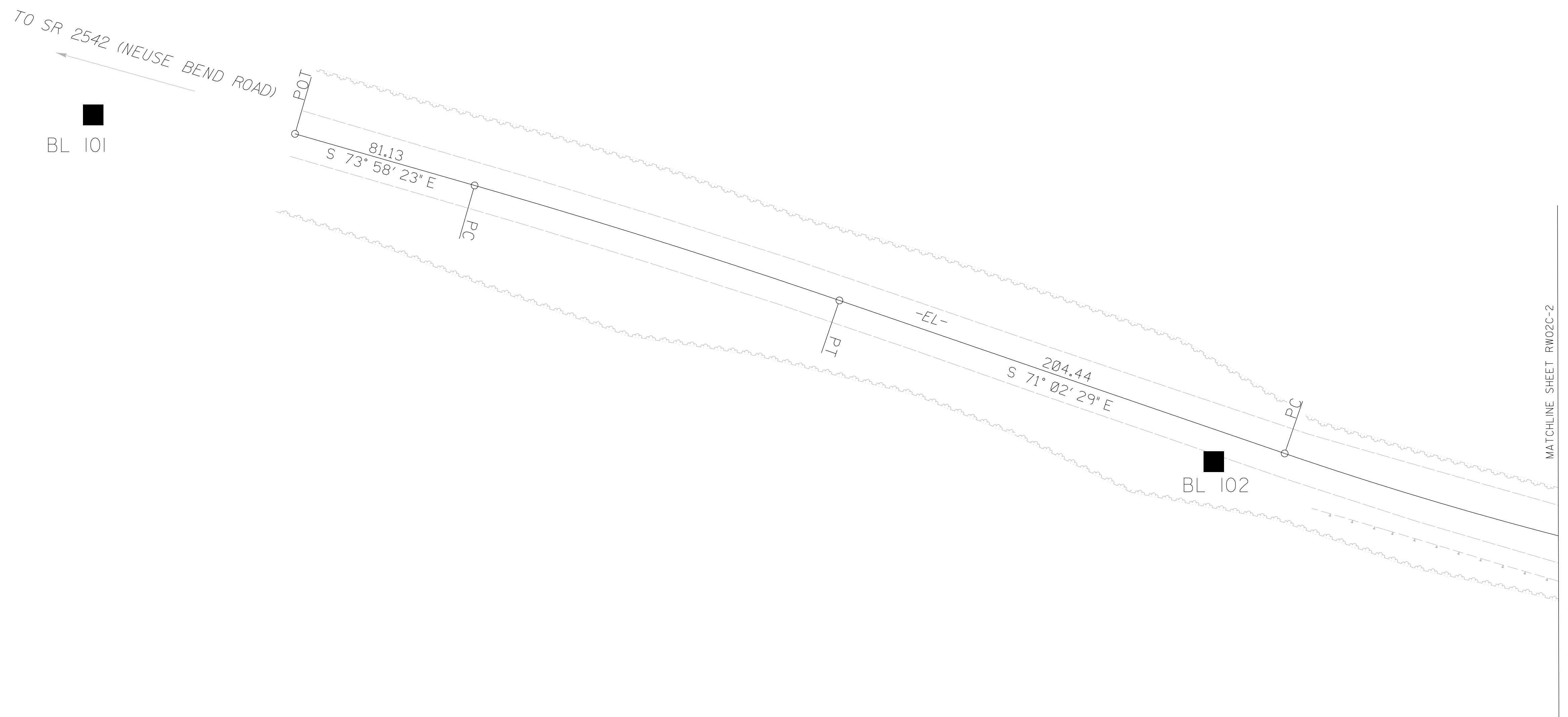
5/23/2022
Date:



SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0460 (BP4.R.011)	RW02C-1
Location and Surveys	
SO-DEEP SAM NC	



NOTES:

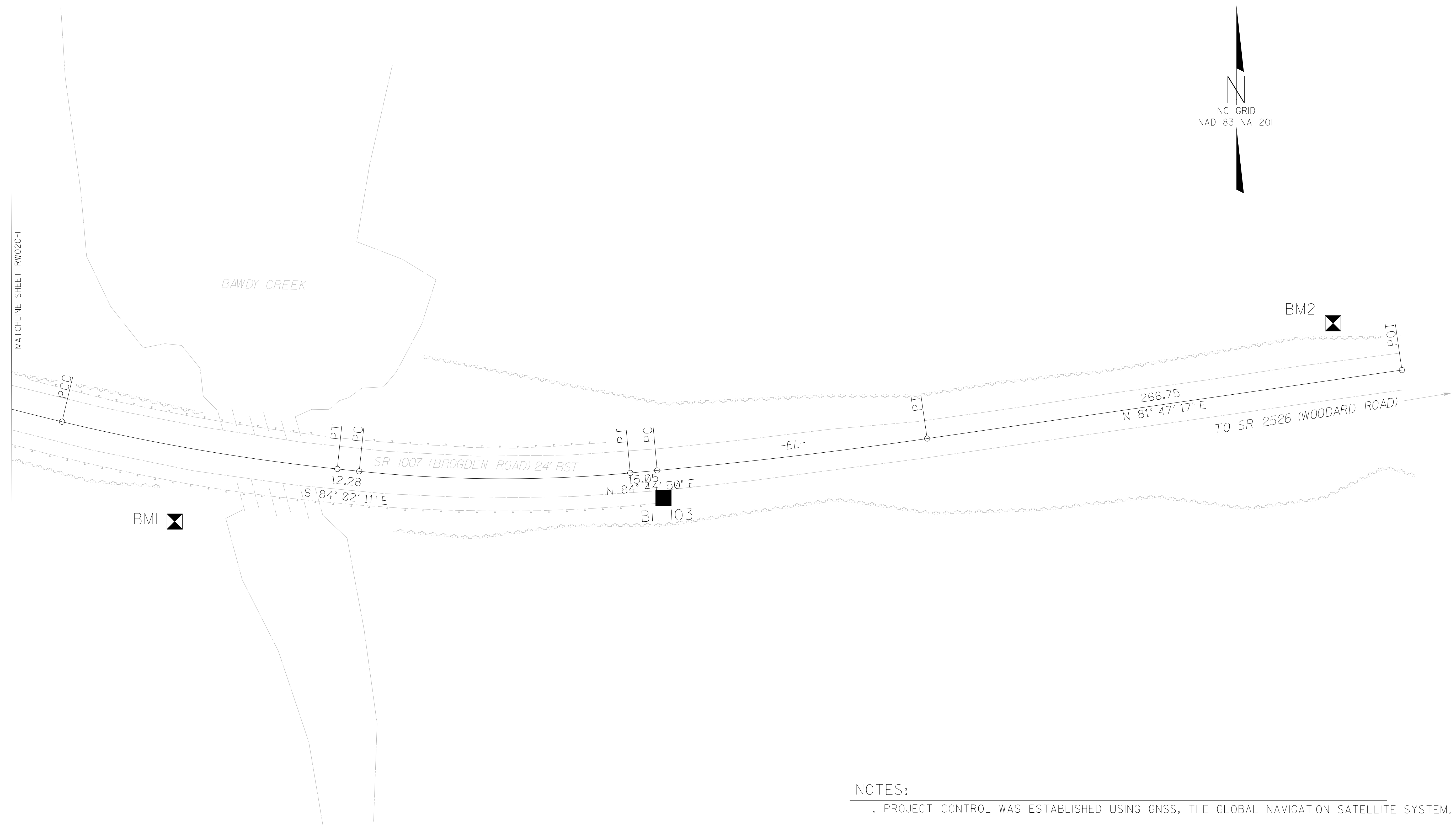
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

I:\PR-2022_09\59
 S:\Units\50-0460
 50-0460 (BP4.R.011,17BP.4.R.122)\Revise for Plans (Control Stats)\041222\Fields\500460_1s_rw02c-1.dgn
 AT Div 04-323023
 bburner

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0460 (BP4.R.011)	RW02C-2
Location and Surveys	
SO-DEEP SAM NC	



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.

I:\PRJ\2022_09\55\Units\50-0460\Projects\Conventional\50-0460 (BP4.R.011,17BP,4.R.122)\Revise for Plans (Control Stats) 041222\FIELD\500460_1s_rw02c-2.dgn
bburner AT DIV04-323023

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0460 (BP4.R011)	RW02C-3
Location and Surveys	
SO-DEEP SAM NC	

REVISIONS

BL POINT	DESC	NORTH	EAST	ELEVATION	
AZ1	500460-1	602830.452	2232308.765	133.08	OUTSIDE SURVEY LIMITS
AZ2	500460-2	603824.575	2232422.483	134.03	OUTSIDE SURVEY LIMITS
BL-101	BL101	603751.599	2232852.714	129.73	
BL-102	BL102	603601.101	2233339.238	107.64	
BL-103	BL103	603519.567	2233851.394	95.75	
AZ3	500460-3	603601.935	2234457.838	104.66	OUTSIDE SURVEY LIMITS
AZ4	500460-4	603696.855	2235247.126	110.65	OUTSIDE SURVEY LIMITS

BM1 ELEVATION = 100.59
 N 603506 E 2233580
 NAIL IN 15" SWEET GUM

BM2 ELEVATION = 99.59
 N 603617 E 2234224
 NAIL IN 18" OAK

- 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.

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
50-0460 (BP4.R011)	RW02C-4
Location and Surveys	
SO-DEEP SAM NC	

REVISIONS



EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	603743.238	2232940.381							
LINE			S 74°32'01.8" E	16.94					
PC	603738.720	2232956.710							
CURVE			S 72°45'49.9" E	255.95	03°32'23.8" (RT)	01°22'59.1"	255.91	128.01	4142.65
PT	603662.892	2233201.124							
LINE			S 70°59'38.1" E	194.51					824.61
PC	603599.547	2233385.029							
CURVE			S 76°15'50.4" E	241.48	10°32'24.8" (LT)	04°21'53.4"	241.14	121.08	1312.67
PT	603542.289	2233619.272							
LINE			S 81°32'02.8" E	19.98					
PC	603539.348	2233639.031							
CURVE			S 87°48'31.9" E	180.59	12°32'58.2" (LT)	06°56'56.6"	180.23	90.66	824.51
PCC	603532.457	2233819.132							
CURVE			N 83°51'54.6" E	151.79	04°06'08.7" (LT)	02°42'10.0"	151.75	75.93	2119.91
PT	603548.674	2233970.017							
LINE			N 81°48'50.3" E	258.86					
POT	603585.533	2234226.238							
LINE			N 82°24'04.7" E	36.13					
POT	603590.310	2234262.049							

NOTES:

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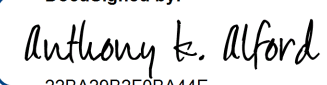
6/2/19

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. BP4.R011	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 18th day of May, 2022.

DocuSigned by:

 22BA29B2F08A4E...

Professional Land Surveyor L-4372

		L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	603743.4195	2232940.3810
PC	10+81.13	603721.0215	2233018.3532
PT	12+47.24	603671.0959	2233176.7671
PC	14+51.68	603604.6776	2233370.1147
PCC	16+04.64	603561.9391	2233516.9295
PT	17+60.06	603535.6839	2233669.9970
PC	17+72.34	603534.4083	2233682.2082
PT	19+23.28	603533.4733	2233832.9104
PC	19+38.33	603534.8511	2233847.8966
PT	20+89.53	603552.5738	2233998.0340
POT	23+56.28	603590.6745	2234262.0490


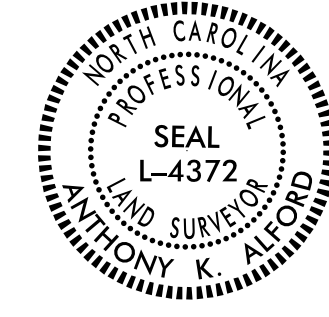
NOTES:

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.

REVISIONS

18 MAY 2022 14:23
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 AT RAL-WS014
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RIGHT OF WAY & PERMANENT EASEMENT CONTROL SHEET

PROJECT REFERENCE NO. BP4.R011	SHEET NO. RW03E-1
Location and Surveys	
	
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	
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 5/11/2022 to 5/11/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 18th day of May, 2022.

DocuSigned by:

 228A2982F58A44E

Professional Land Surveyor L-4372

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+75.00	-29.84	603625.6199	2233401.5116
L	16+50.00	-60.00	603611.0344	2233572.9847
L	16+68.00	29.87	603519.4329	2233573.4964
L	16+96.58	70.00	603474.8413	2233596.0720
L	17+50.00	-60.00	603596.3914	2233666.7399
L	18+00.00	-45.00	603576.9235	2233712.8356
L	18+30.00	55.00	603475.5899	2233738.1200
L	19+50.00	50.00	603486.1711	2233864.2904
L	20+00.00	-45.00	603585.8575	2233904.1802
L	20+50.00	-29.91	603576.8518	2233955.0027
L	20+50.00	30.09	603517.3549	2233962.7704

ROW MARKER PERMANENT EASEMENT-E


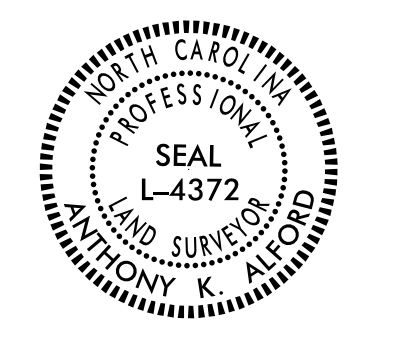
ALIGN	STATION	OFFSET	NORTH	EAST
L	17+26.00	115.00	603425.7245	2233620.9386

REVISIONS

18-MAY-2022 14:24
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 AT RAL-WS014
 amore

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 05/11/2022 TO 05/11/2022 .

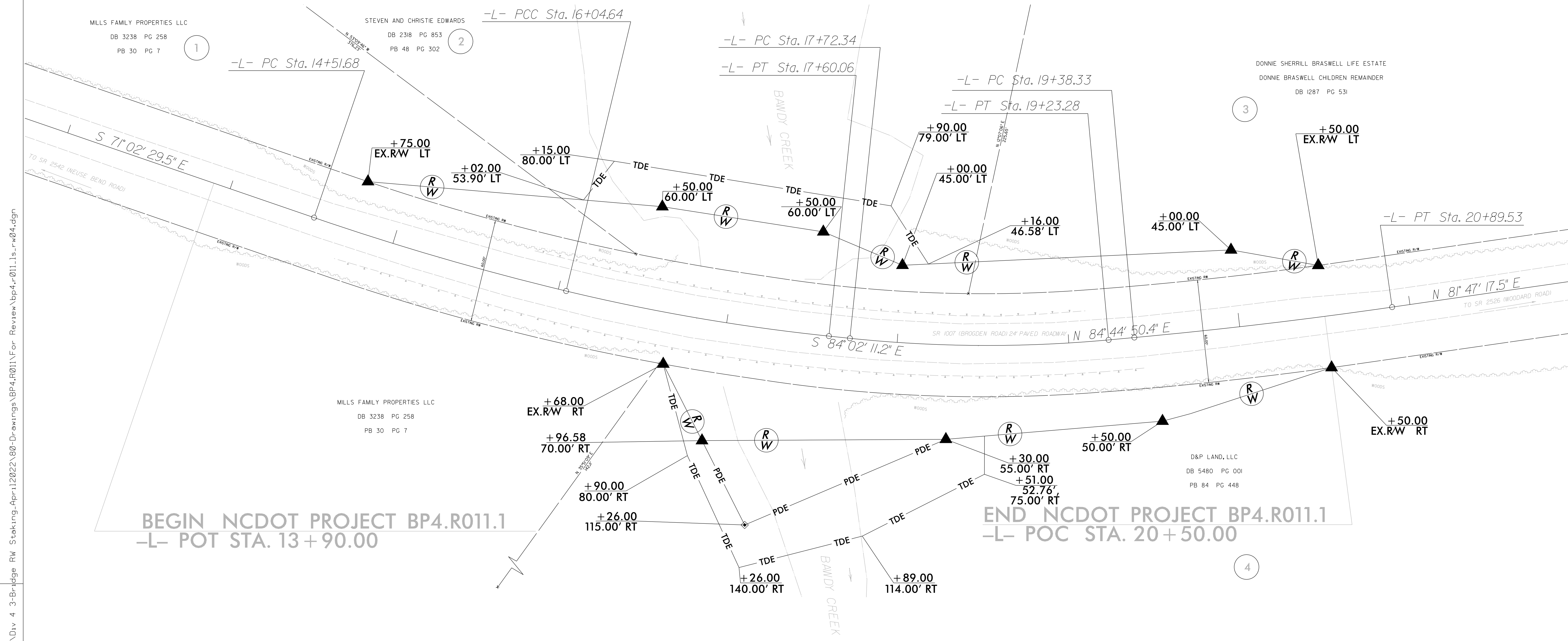
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Location and Surveys	
	
<small>1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-6277 Bus: 919 851 8077 Fax: 919 851 8107</small>	
<small>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</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 05/11/2022 to 05/11/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NAC 56.1600 as applicable.

This 18th day of May, 2022.
 DocuSigned by:
 Anthony K. Alford
 22BA29B2F8B44E
 Professional Land Surveyor L-4372



REVISIONS



BEGIN NCDOT PROJECT BP4.R011.1
 -L- POT STA. 13 + 90.00

END NCDOT PROJECT BP4.R011.1
 -L- POC STA. 20 + 50.00

NOTES:

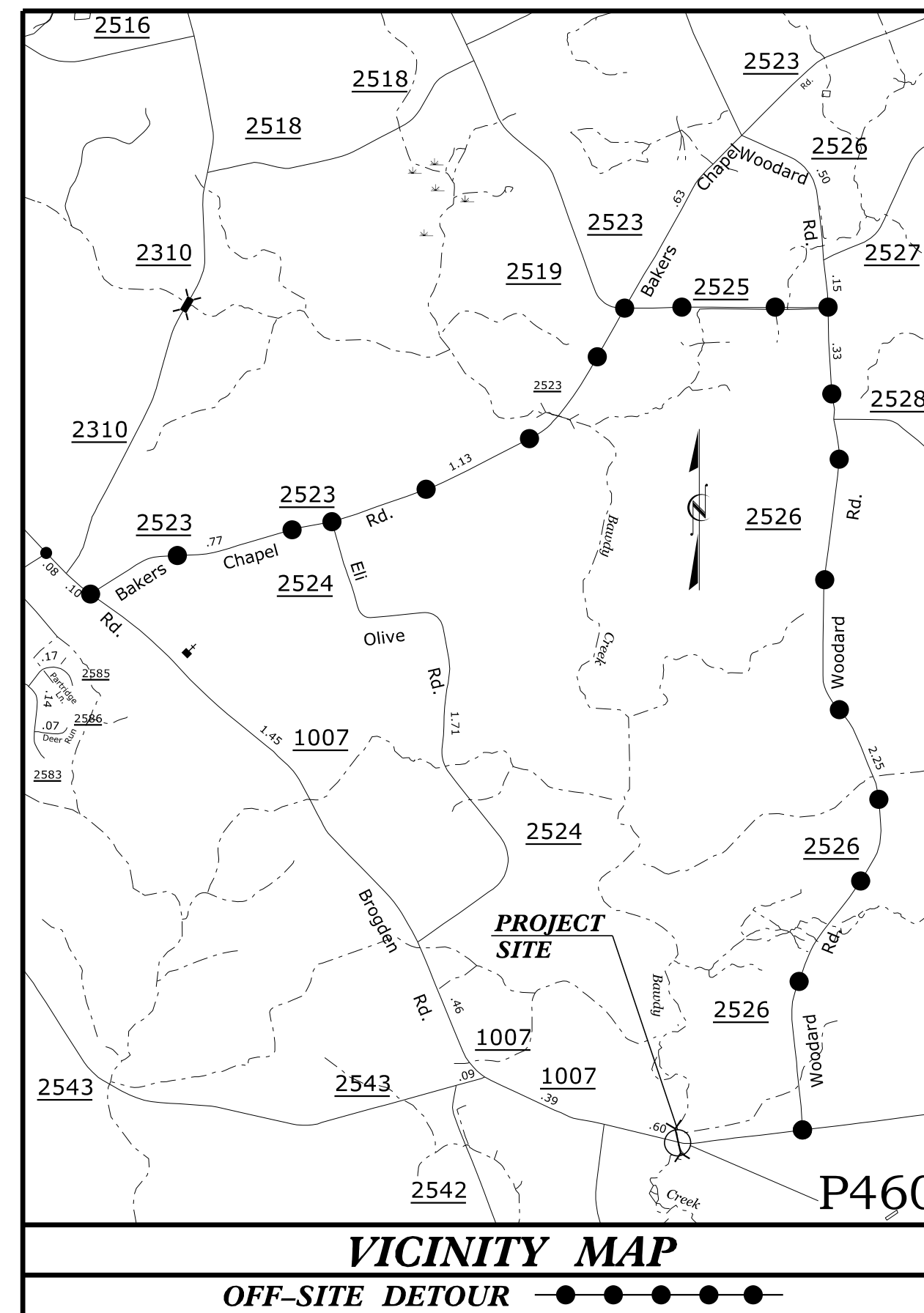
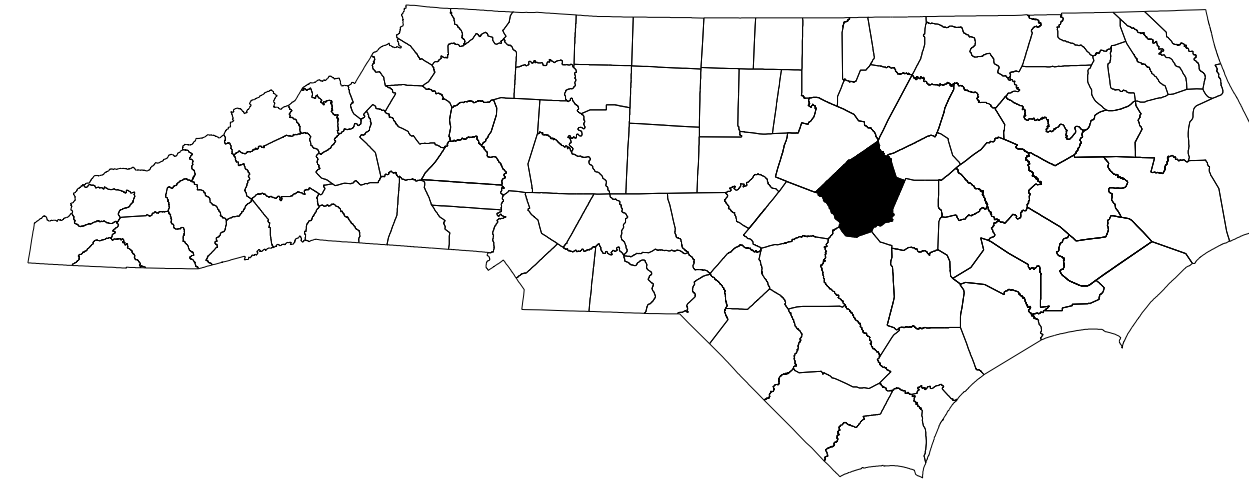
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3. RIGHT OF WAY MONUMENTATION ESTABLISHED 05/11/2022 TO 05/11/2022 .

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 amore

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

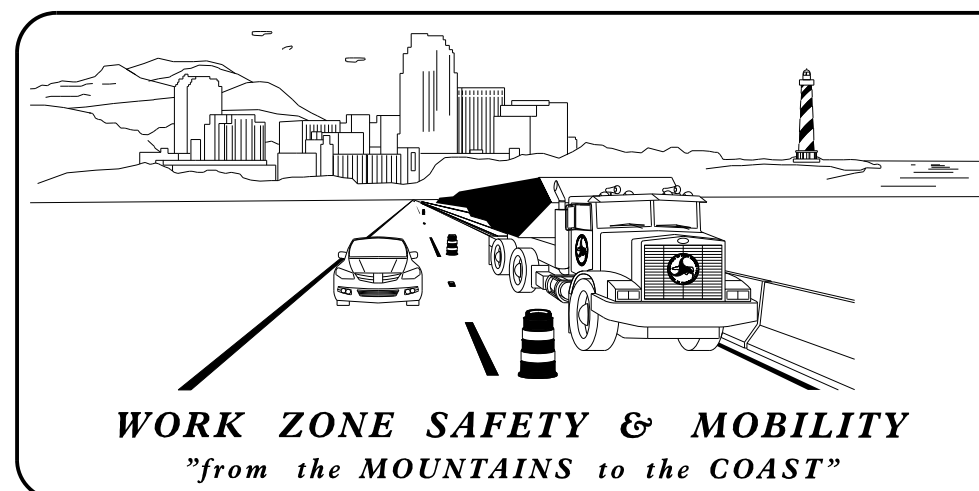
TRANSPORTATION MANAGEMENT PLAN

JOHNSTON COUNTY



**LOCATION: PIPE NO. 500460 OVER BAWDY CREEK
ON SR 1007 (BROGDEN RD.)**

TYPE OF WORK: GRADING, DRAINAGE, & PAVING



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



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.R011

TIP PROJECT:

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

PIPE NO. 500460

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

APPROVED: *Greg S. Purvis*
DocuSigned by: Greg S. Purvis D1F0FC256E3403

DATE: 10/3/2022

SEAL

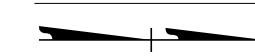
ROADWAY STANDARD DRAWINGS

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:

<u>STD. NO.</u>	<u>TITLE</u>
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

 NORTH ARROW

TRAFFIC CONTROL DEVICES

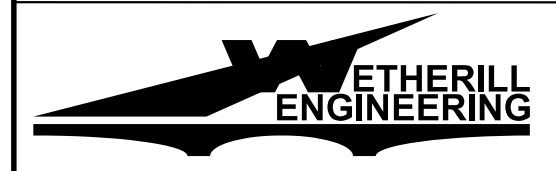
 BARRICADE (TYPE III)

TEMPORARY SIGNING

 STATIONARY SIGN

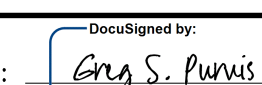
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PIPE NO. 500460



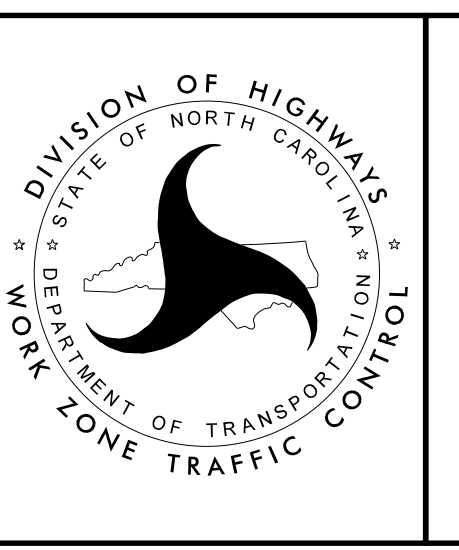
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

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

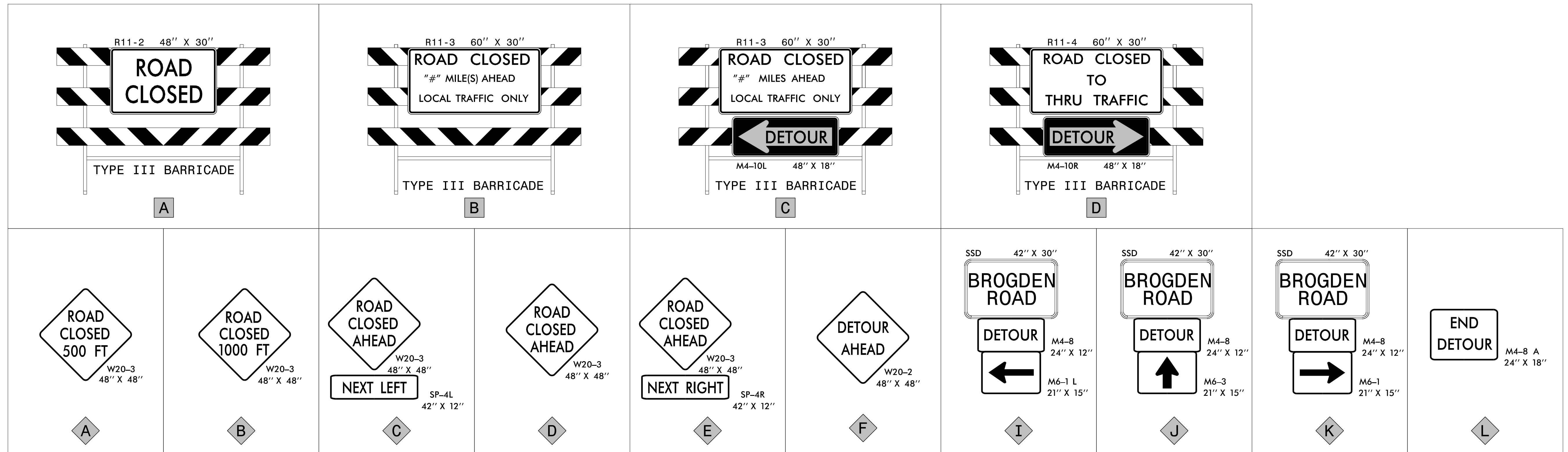
APPROVED: 
DATE: 10/3/2022



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UNLESS ALL SIGNATURES COMPLETED**



LIST OF APPLICABLE
ROADWAY STANDARD
DRAWINGS, AND LEGEND



10/3/2022 P:\2021\21g\01_BP4_R011\Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP4\BP4_R011_TMP_01B_SDL.dgn User:AHayes

X BARRICADES
-WITH MOUNTED SIGNING

X SIGNING
-STATIONARY MOUNTED

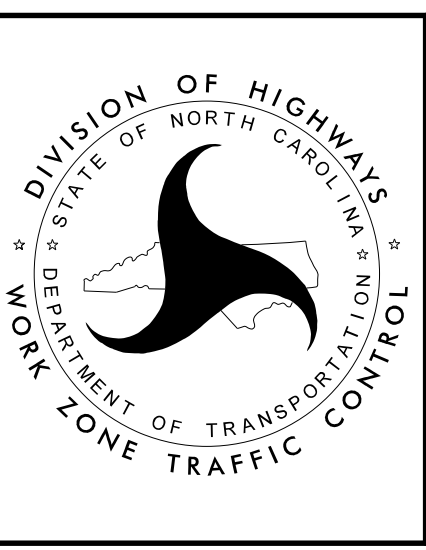
PIPE NO. 500460

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: *Greg S. Purvis*
DATE: 10/3/2022

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



SIGN AND DEVICE LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP4.R011	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

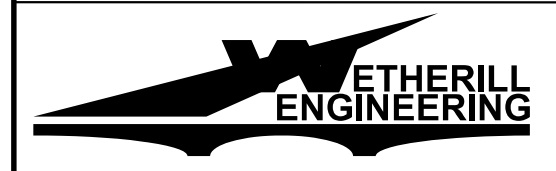
- 1) IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSESSES, JOHNSTON COUNTY SCHOOLS WILL BE CONTACTED AT (919) 934-6031 AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.
- 2) JOHNSTON COUNTY EMERGENCY MANAGEMENT WILL BE CONTACTED AT (919) 989-5050 LEAST ONE MONTH PRIOR TO ROAD CLOSURE TO MAKE THE NECESSARY 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 2523 (BAKERS CHAPEL RD) AND SR 2526 (WOODARD RD), STARTING FROM THE BEGINNING OF EACH DIRECTION OF EACH LEG OF THE OFF-SITE DETOUR.
[SEE SHEETS TMP-01B & 04]
- STEP 2) WHEN READY TO CLOSE THE ROADWAY, UNCOVER THE DETOUR AND ROAD CLOSURE SIGNING, CLOSE -L- (SR 1007), 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]

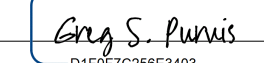
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PIPE NO. 500460



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

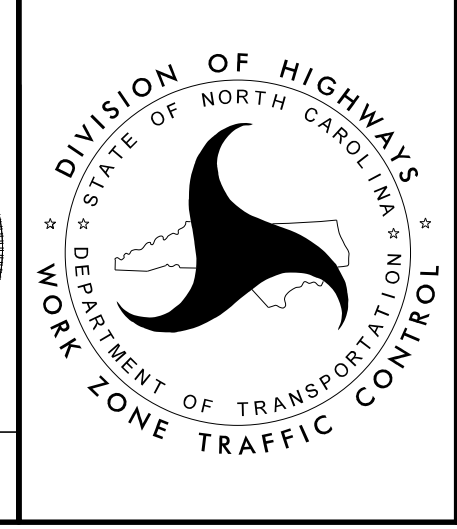
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: 
D1F07C26E3403

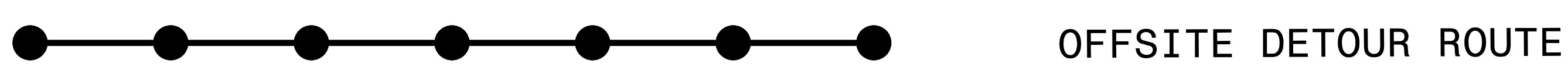
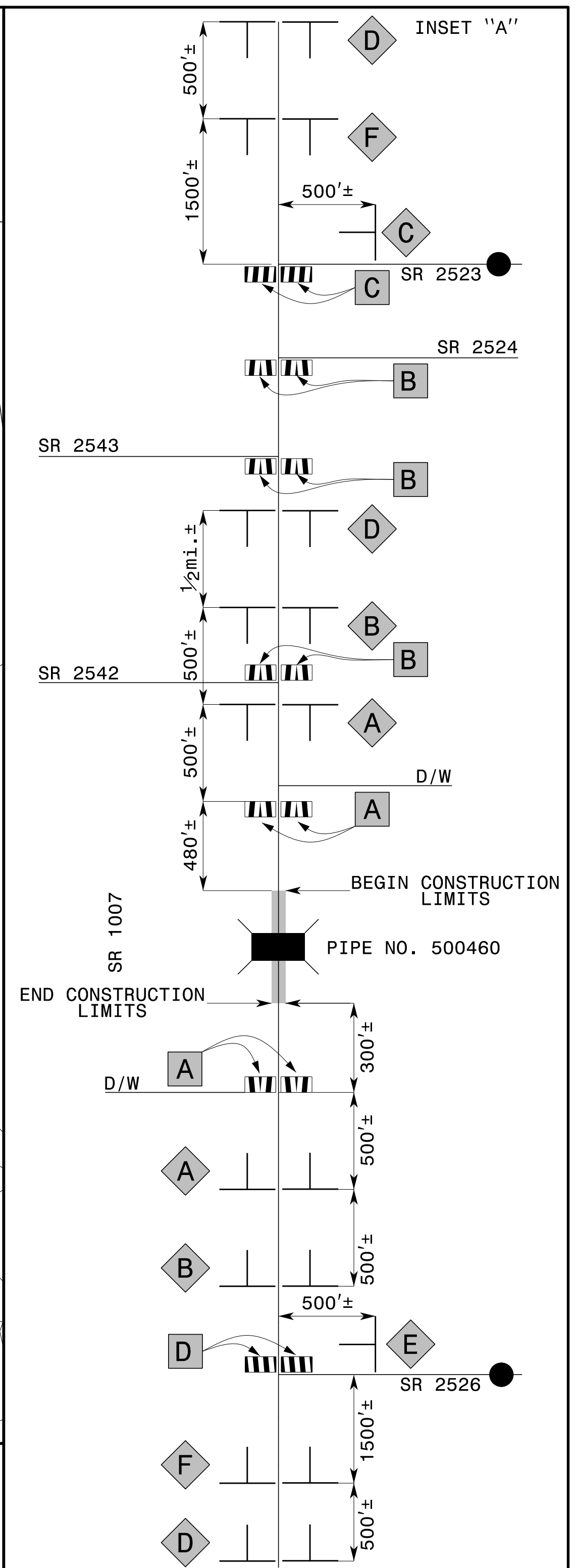
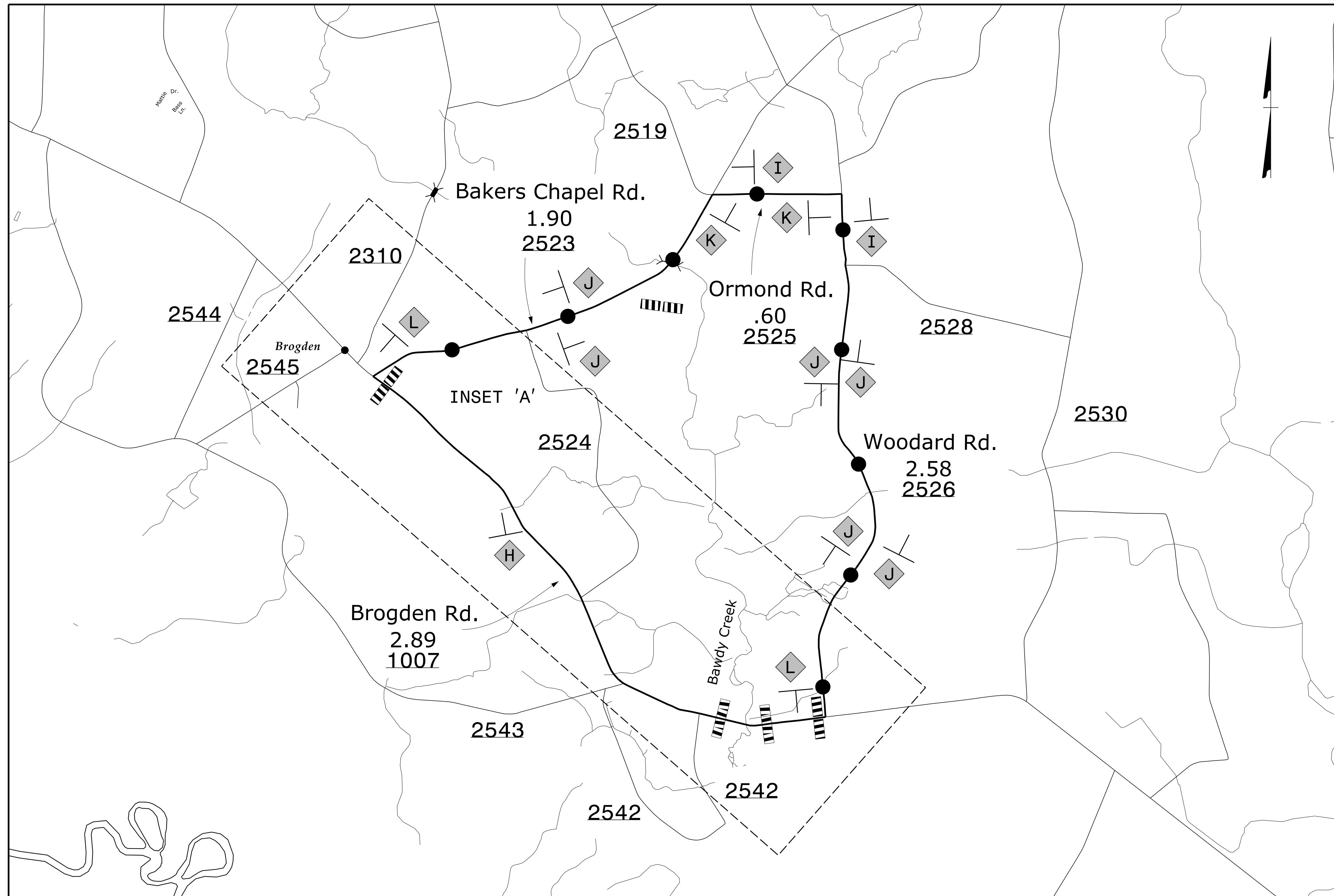
DATE: 10/3/2022

NORTH CAROLINA
 PROFESSIONAL
 SEAL
 22999
 ENGINEER
 GREG S. PURVIS

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

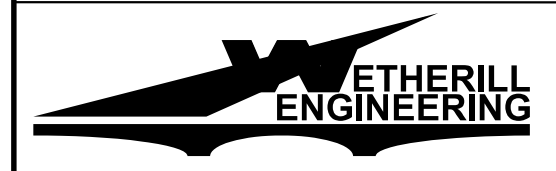


PROJECT NOTES AND PHASING



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. 500460



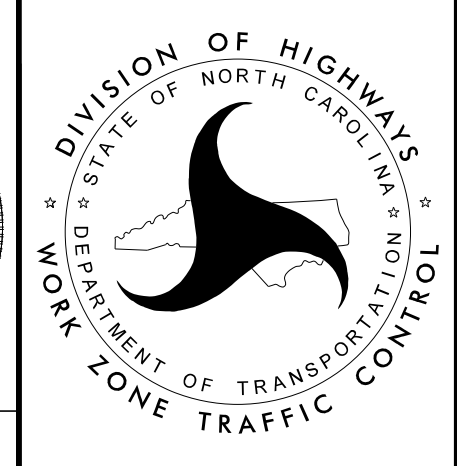
1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

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

APPROVED: *Greg S. Purvis*
 DATE: 10/3/2022

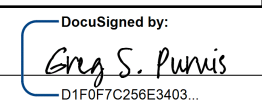



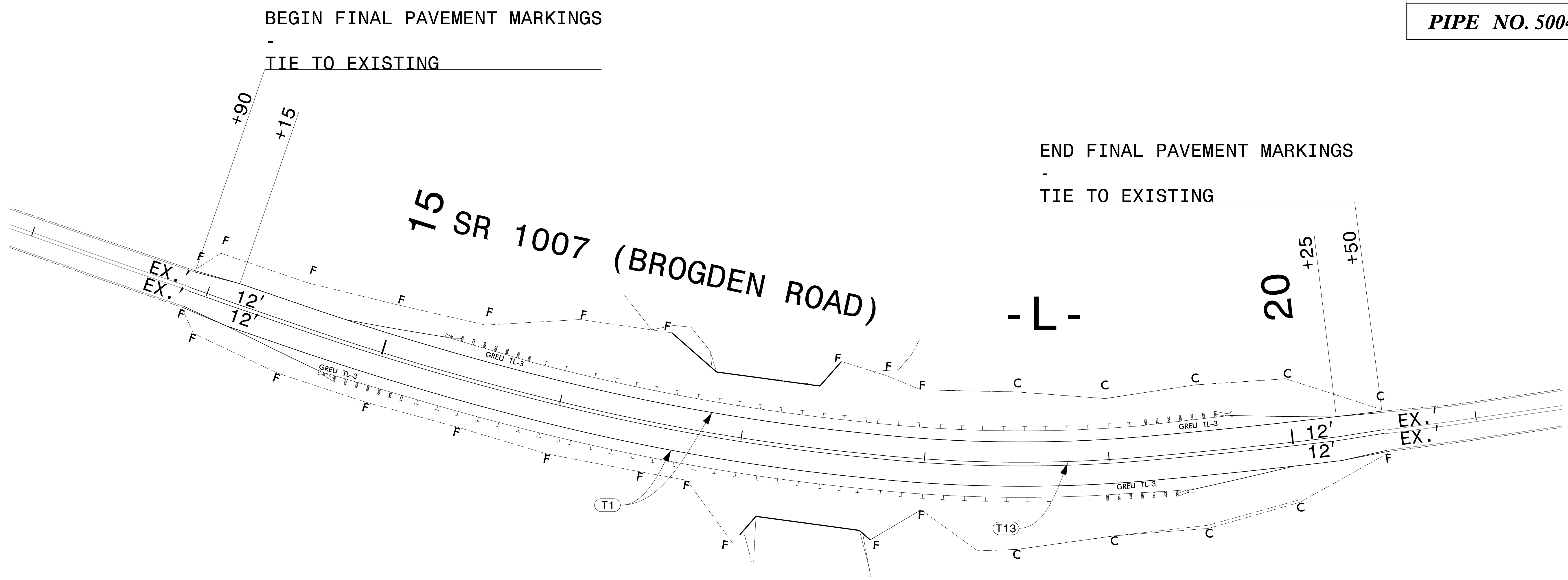
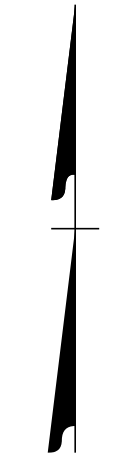
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**



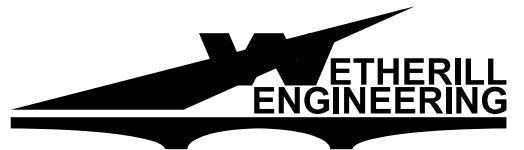
OFFSITE DETOUR

10/3/2022
 P:\2021\2109.01_BP4.R011\Traffic\Traffic\Design\Pre-Let\Plan\WZTC\BP4.R011.TMP_04_05D.dgn
 User: AHayes

TIP NO. BP4.R011	SHEET NO. PMP-02
APPROVED:  DATE: 10/3/2022	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PIPE NO. 500460	



10/3/2022
PX 2022\sig\01.BP4.R011.TrafficTrafficTraffic Design\Pre-Let\Plan\Pavement Markings\BP4.R011.PMP-02 DTL.dgn
User:ahayes



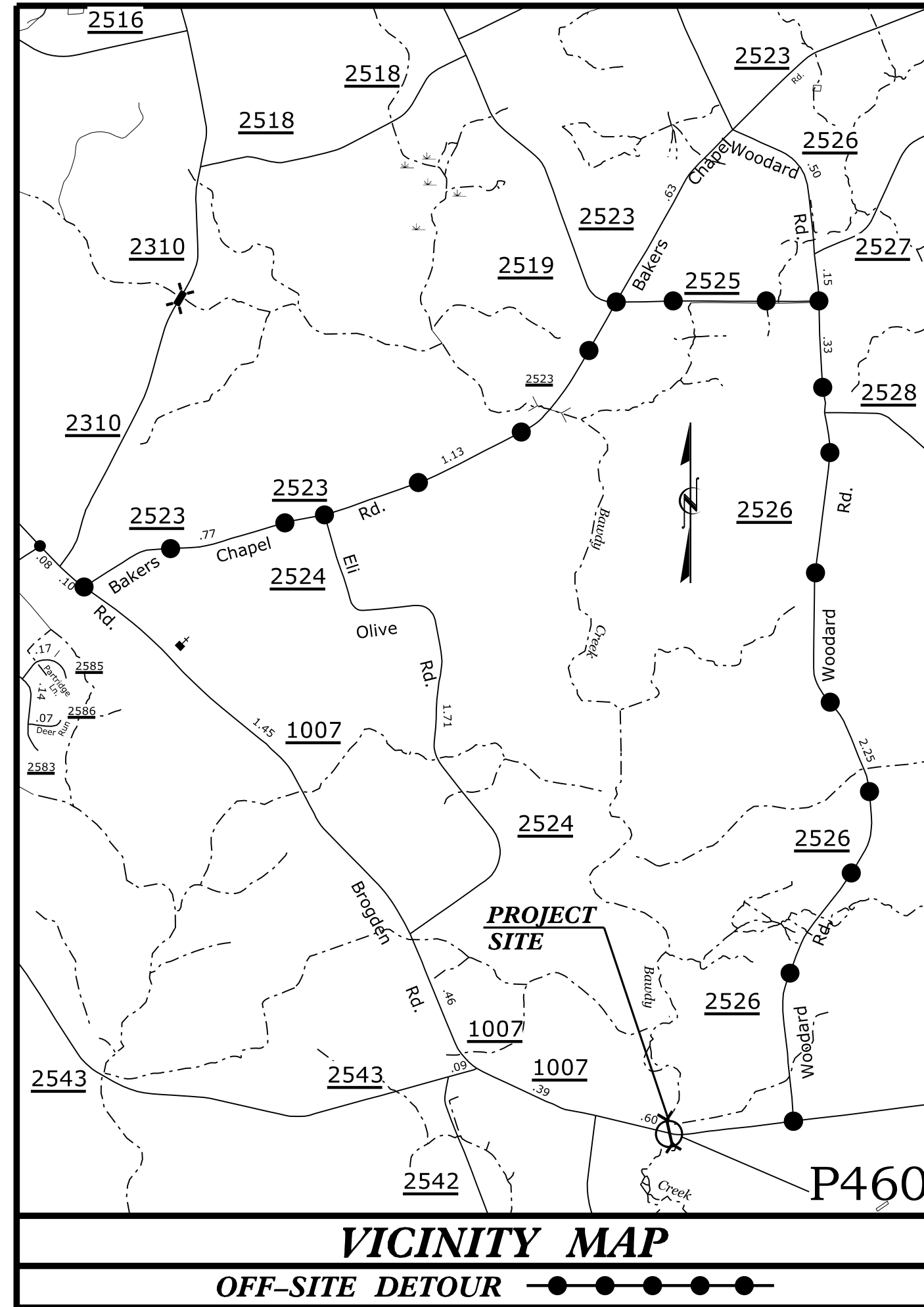
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PAVEMENT MARKING DETAIL

PROJECT: BP4.R011.1

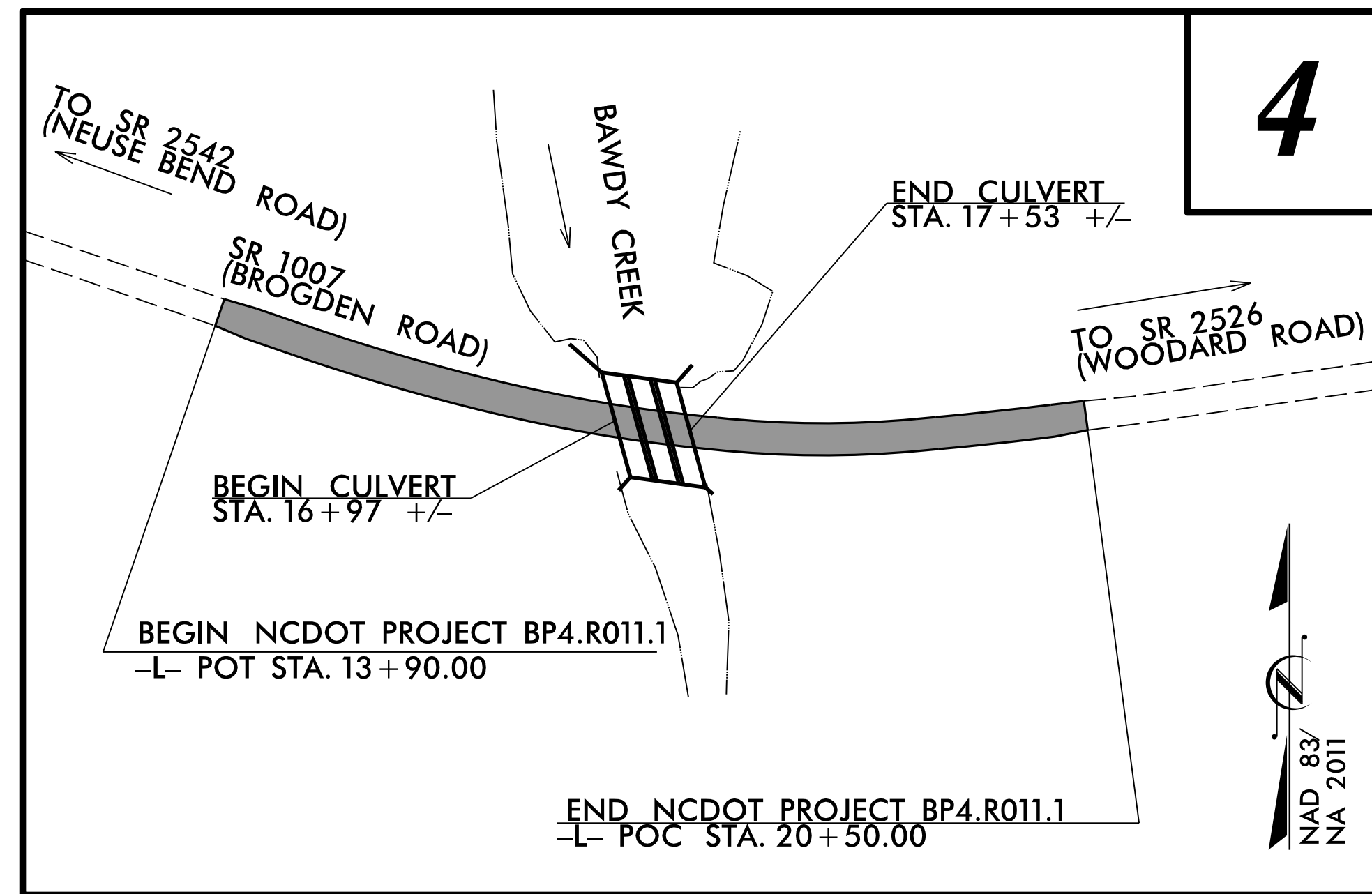
See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



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

**LOCATION: PIPE NO. 500460 OVER BAWDY CREEK
ON SR 1007 (BROGDEN RD.)**

TYPE OF WORK: GRADING, DRAINAGE, & PAVING



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R011.1	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

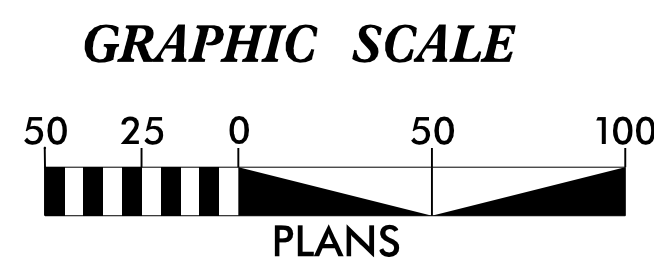
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	— TD —
1630.05	Temporary Diversion	— TD —
1605.01	Temporary Silt Fence	— SIF —
1606.01	Special Sediment Control Fence	— SCF —
1622.01	Temporary Berms and Slope Drains	— TBSD —
1630.02	Silt Basin Type B	— SB —
1633.01	Temporary Rock Silt Check Type-A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

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

**ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT**
*Refer To E. C. Special Provisions
for Special Considerations.*

**THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.**

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.



**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
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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:

Matthew Harvey
NAME

3487
LEVEL III CERTIFICATION NO.

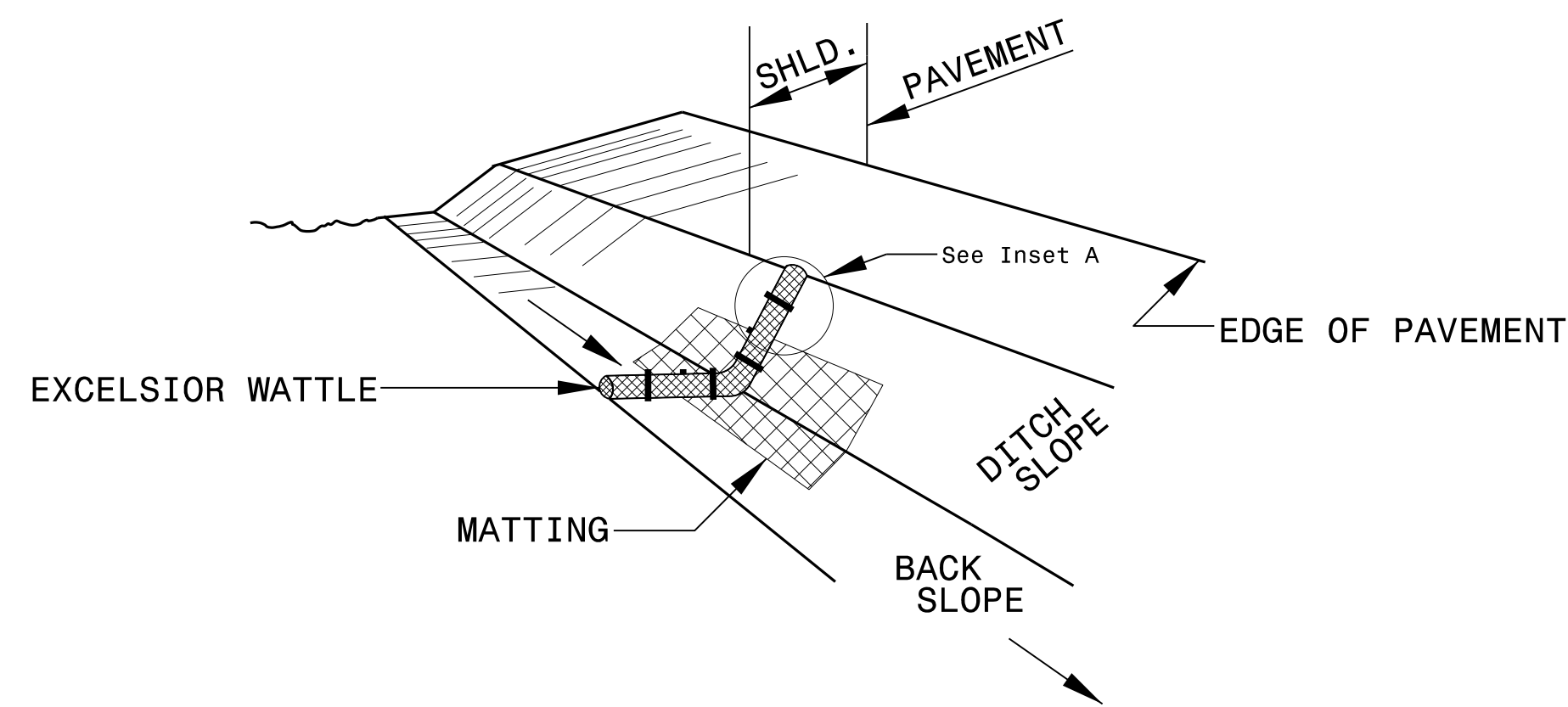
Roadway Standard Drawings

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.

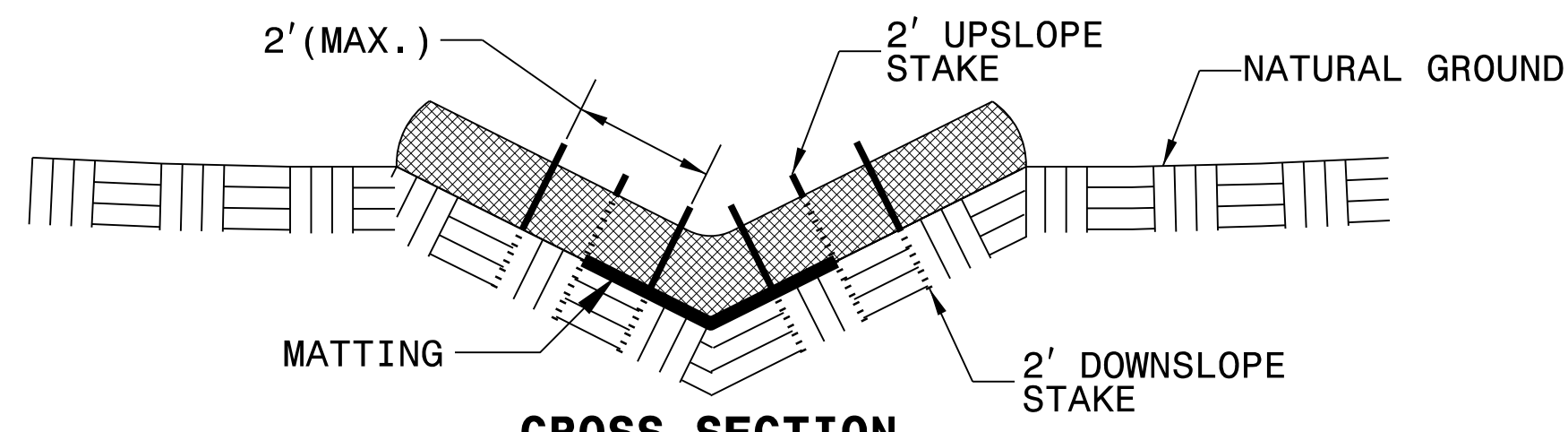
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type 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		

PROJECT REFERENCE NO.	SHEET NO.
BP4.R011.J	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

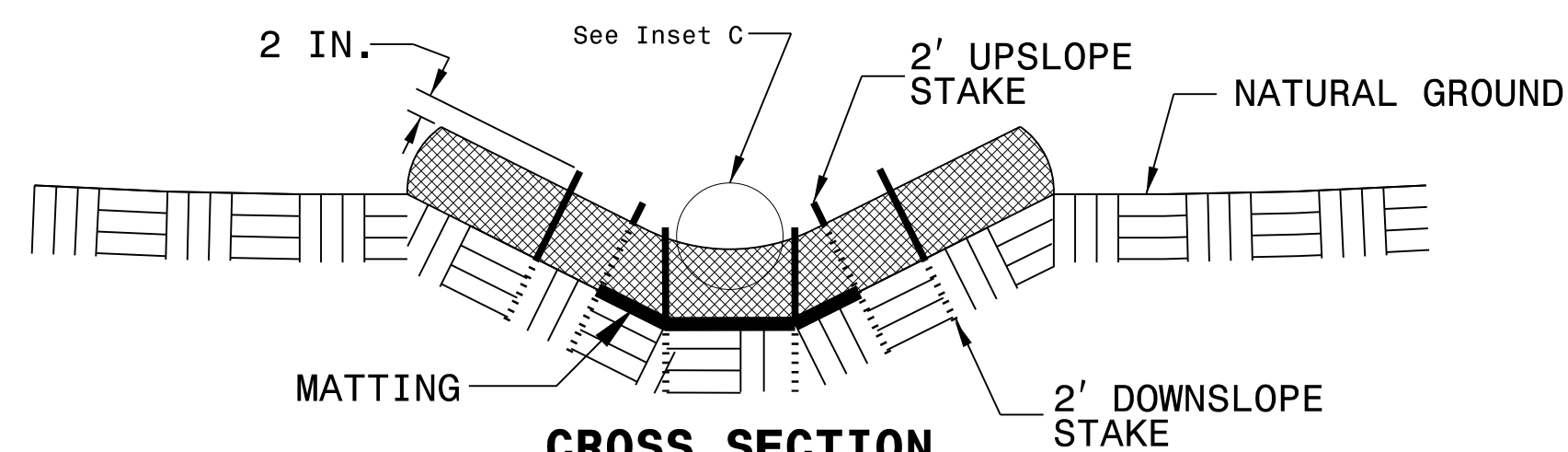
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



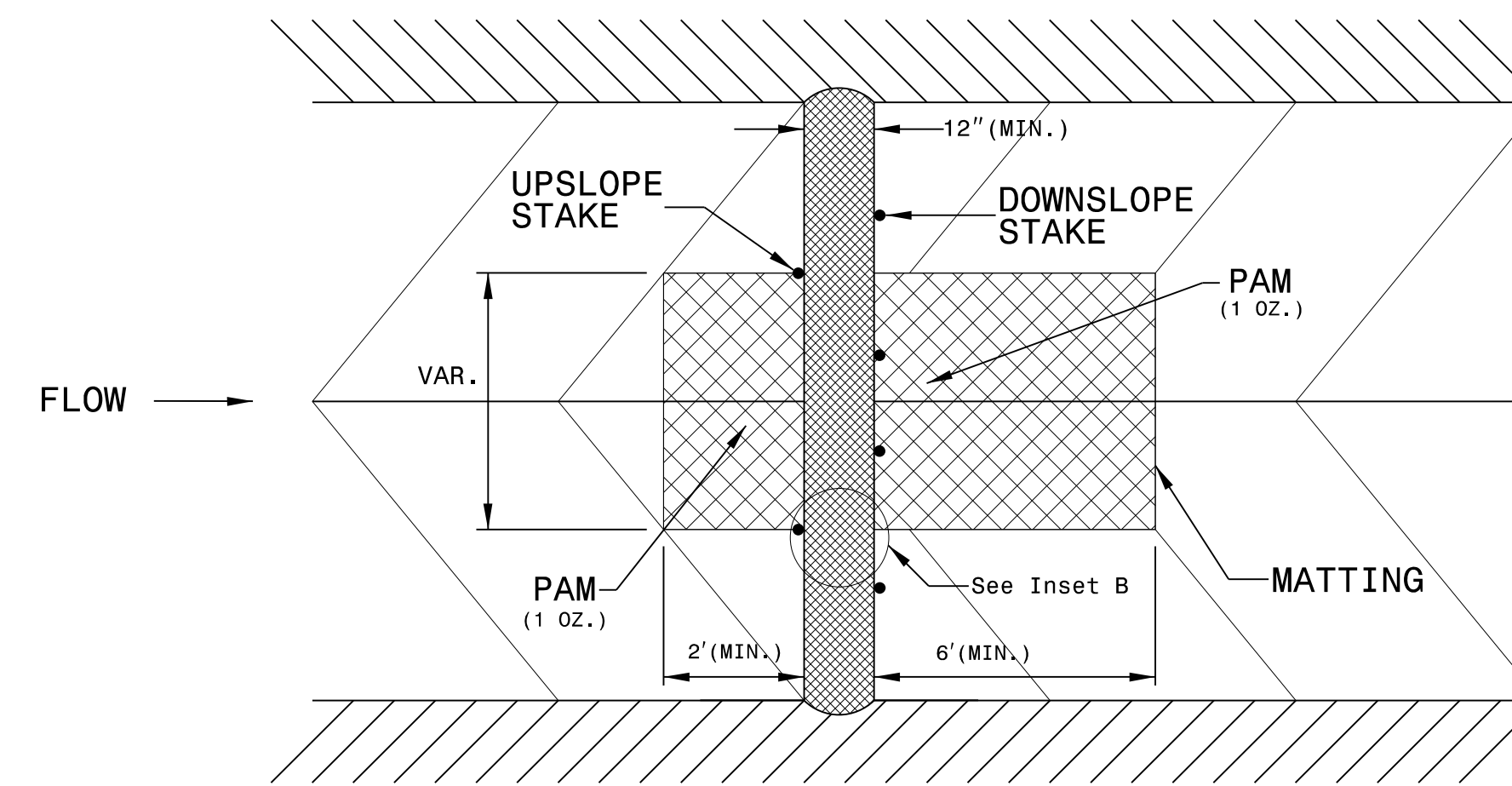
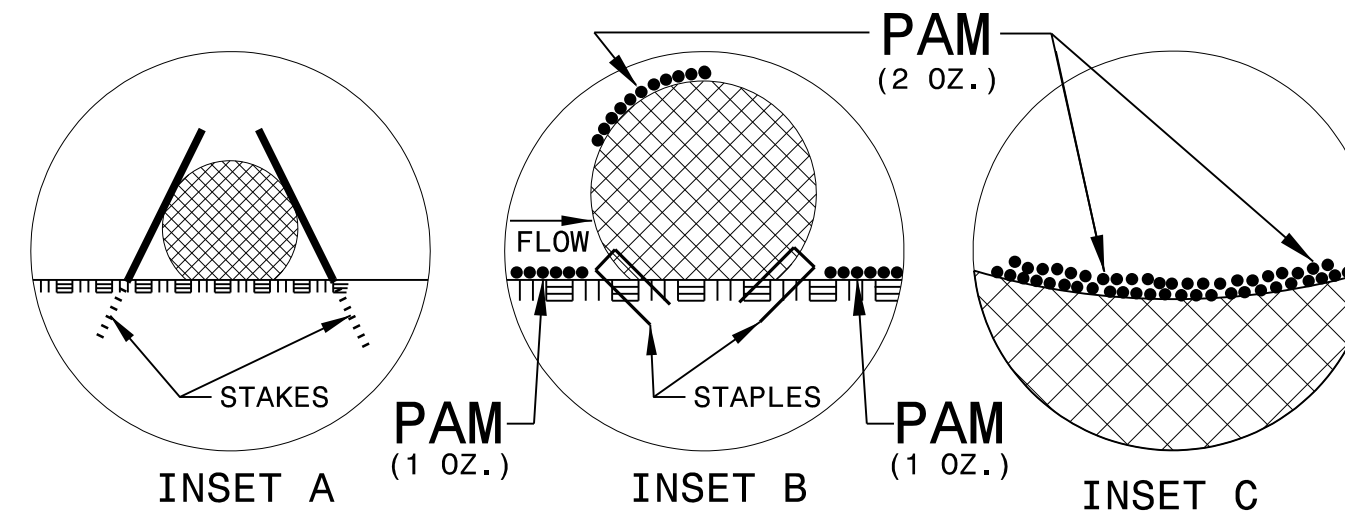
**CROSS SECTION
VEE DITCH**



**CROSS SECTION
TRAPEZOIDAL DITCH**

NOTES:

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
- INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



TOP VIEW

REVISIONS

8/17/99

I:\23\2023
R:\Eregion\Contr-ol\BP4.R011.J_EC_Details.dgn
USFP\WHarvey

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

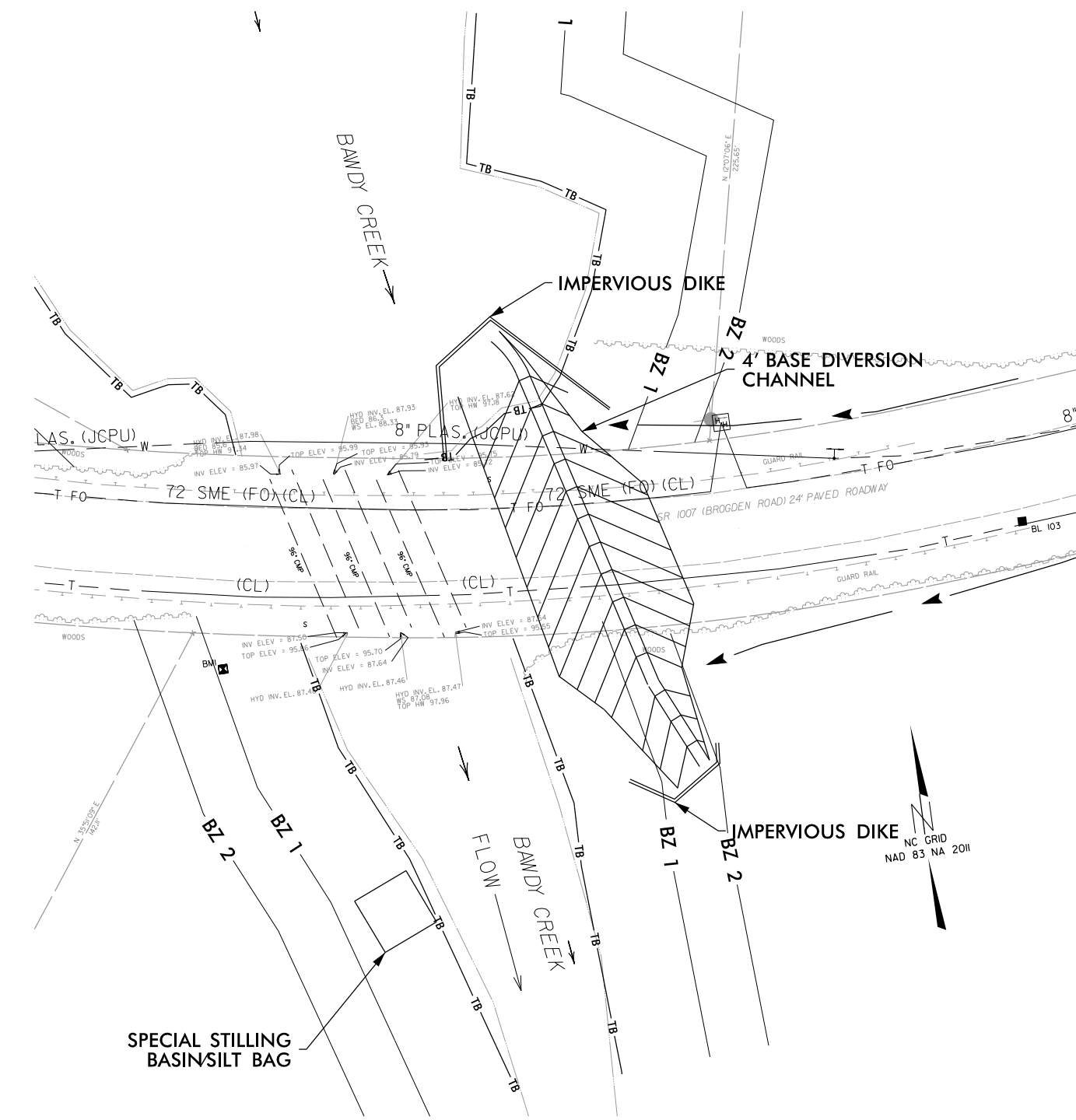
SOIL STABILIZATION TIMEFRAMES

<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.

PROJECT REFERENCE NO.	SHEET NO.
BP4.R011J	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE

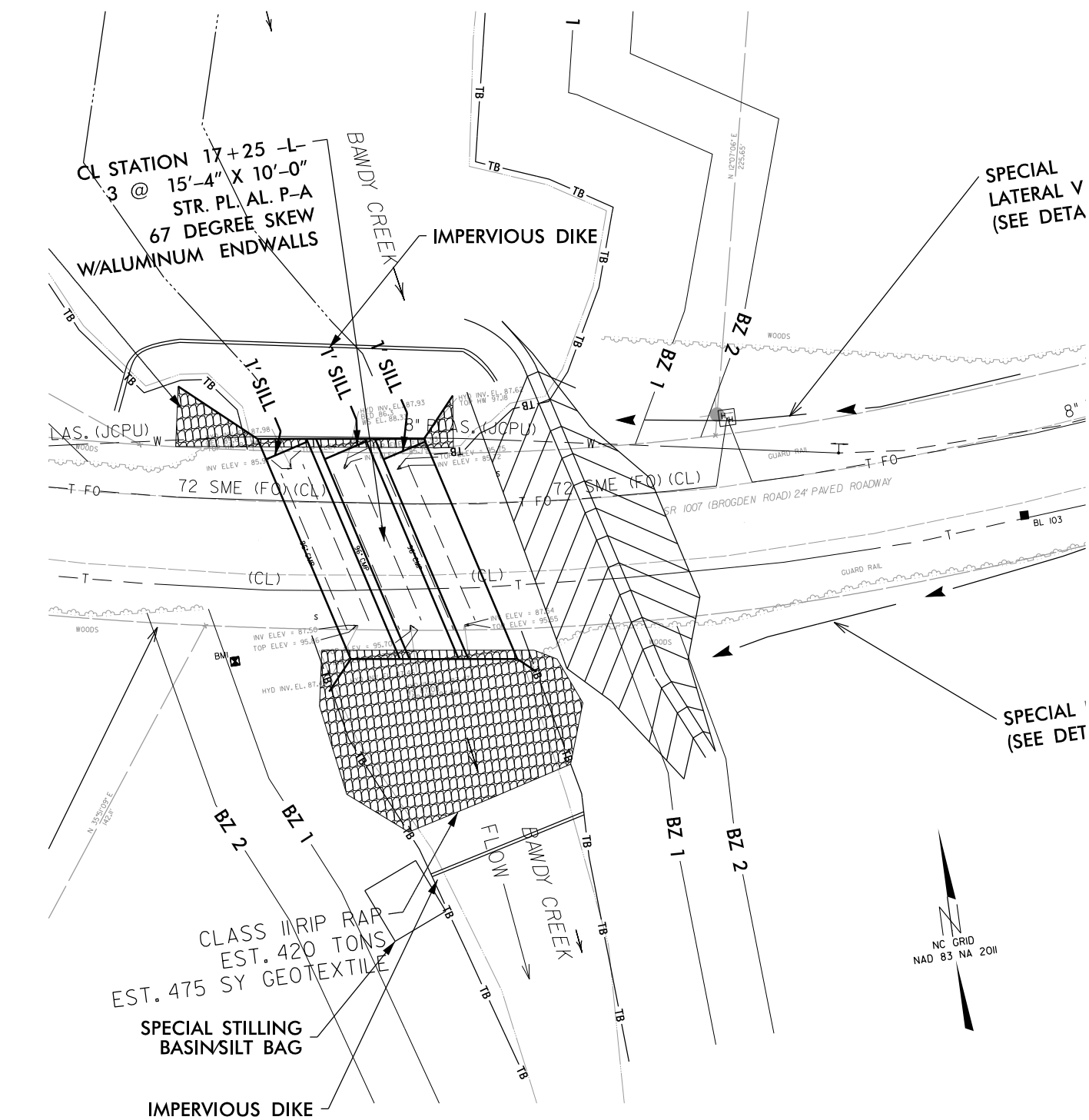
PHASE I



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

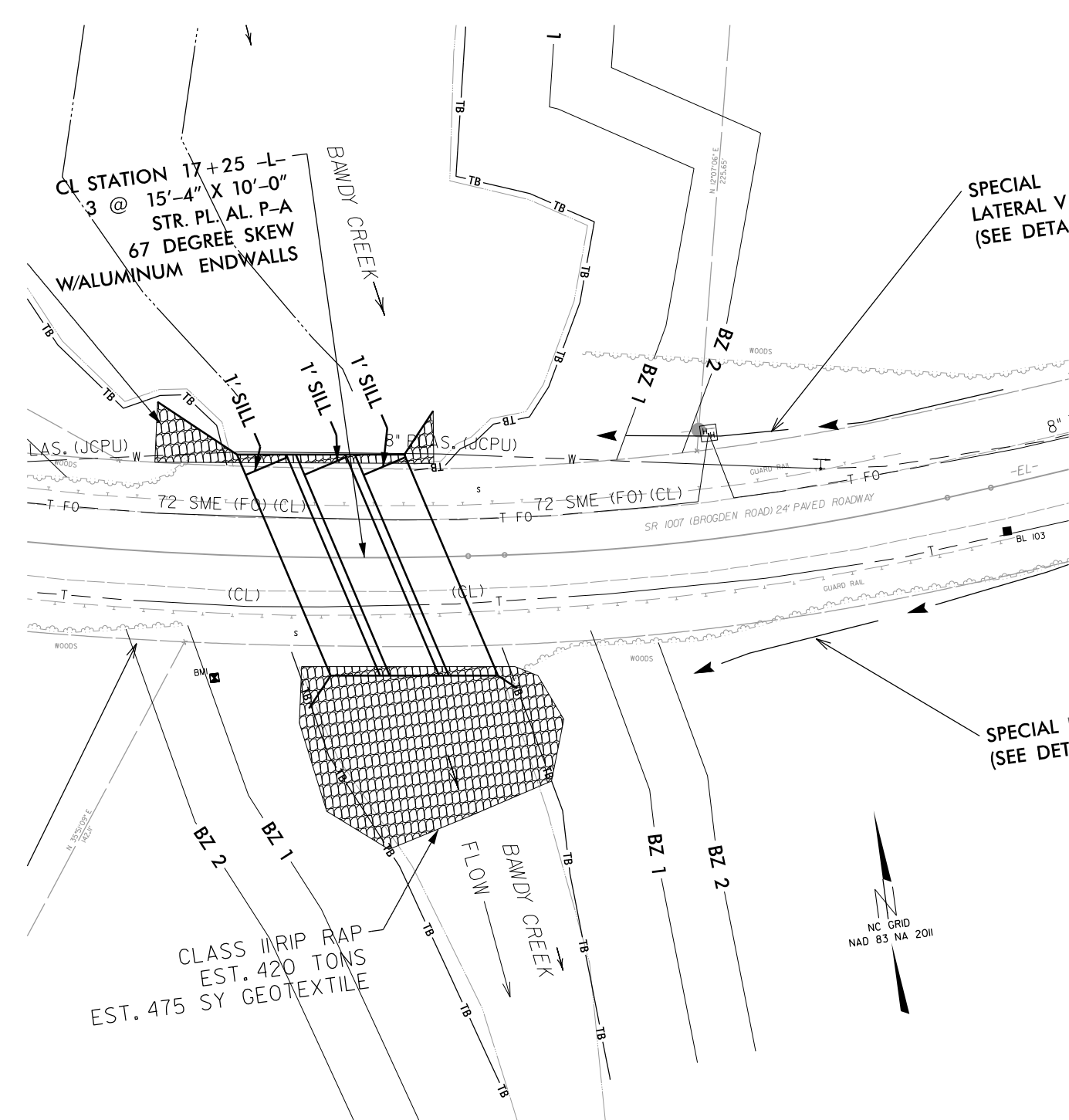
1. INSTALL SPECIAL STILLING BASINS AS NEEDED FOR DEWATERING OF THE PROJECT SITE THROUGHOUT CONSTRUCTION SEQUENCING.
2. INSTALL TEMPORARY IMPERVIOUS DIKE
3. INSTALL 4' BASE DIVERSION CHANNEL
4. REMOVE TEMPORARY IMPERVIOUS DIKE

PHASE II



1. INSTALL IMPERVIOUS DIKES AND DIVERT FLOW THROUGH DIVERSION CHANNEL
2. DEWATER WORK SITE, REMOVE EXISTING STRUCTURE AND INSTALL NEW PIPES, HEADWALLS, AND RIP RAP.

PHASE III



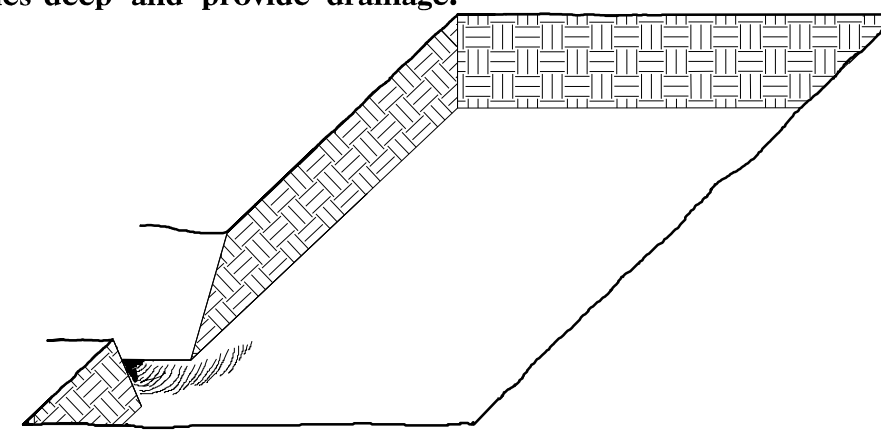
1. REMOVE IMPERVIOUS DIKES TO ALLOW NORMAL STREAM FLOW.
2. REMOVE DIVERSION CHANNEL AND STILLING BASIN/SILT BAG.
3. CONSTRUCT ROADWAY.

PLANTING DETAILS

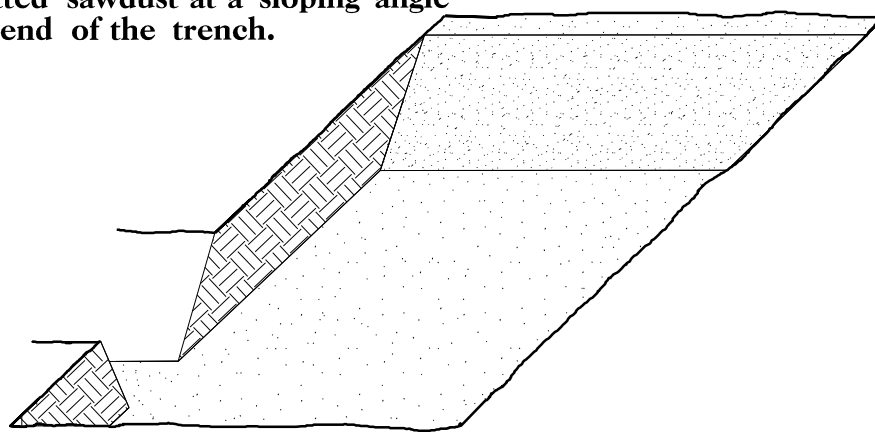
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

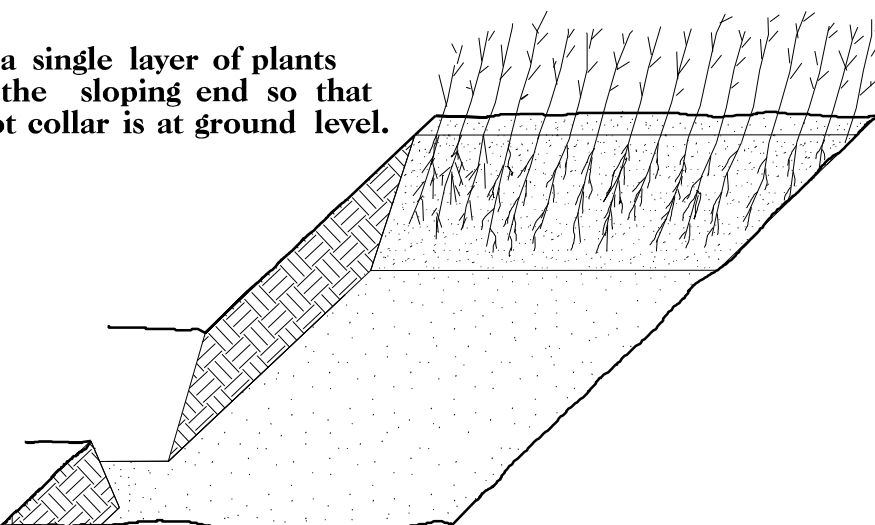
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



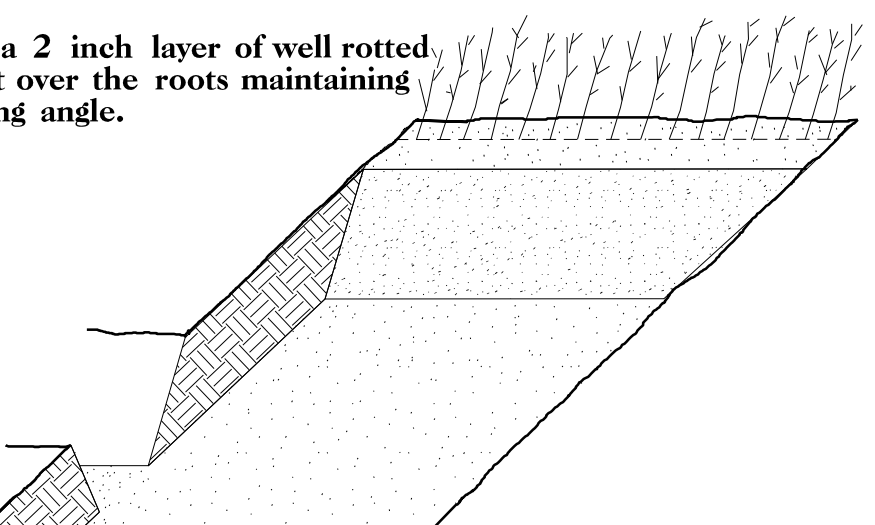
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

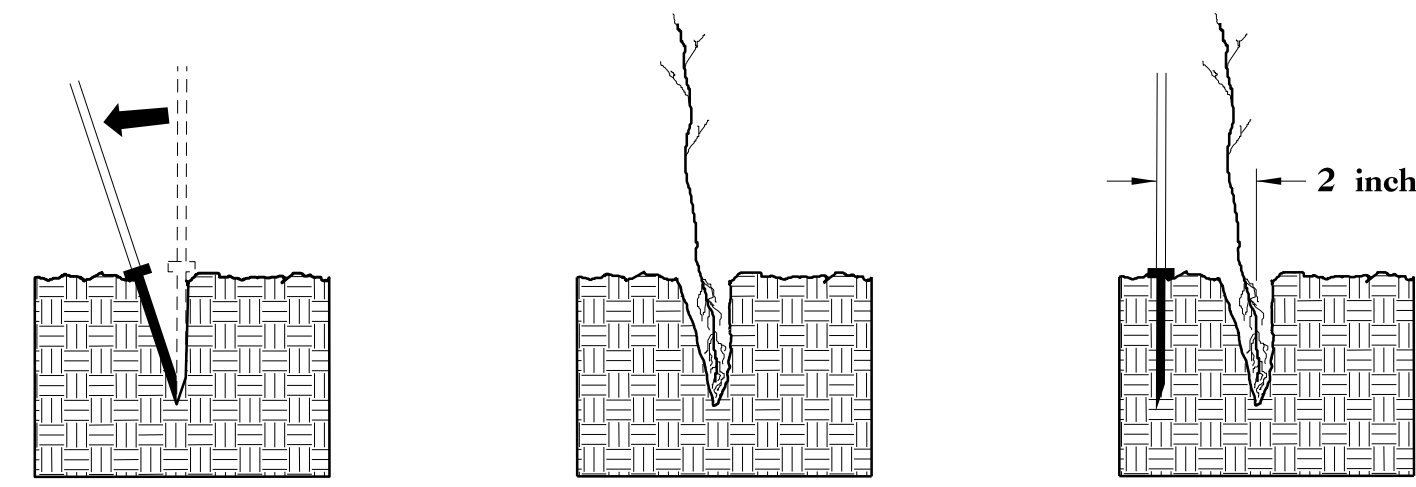


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



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

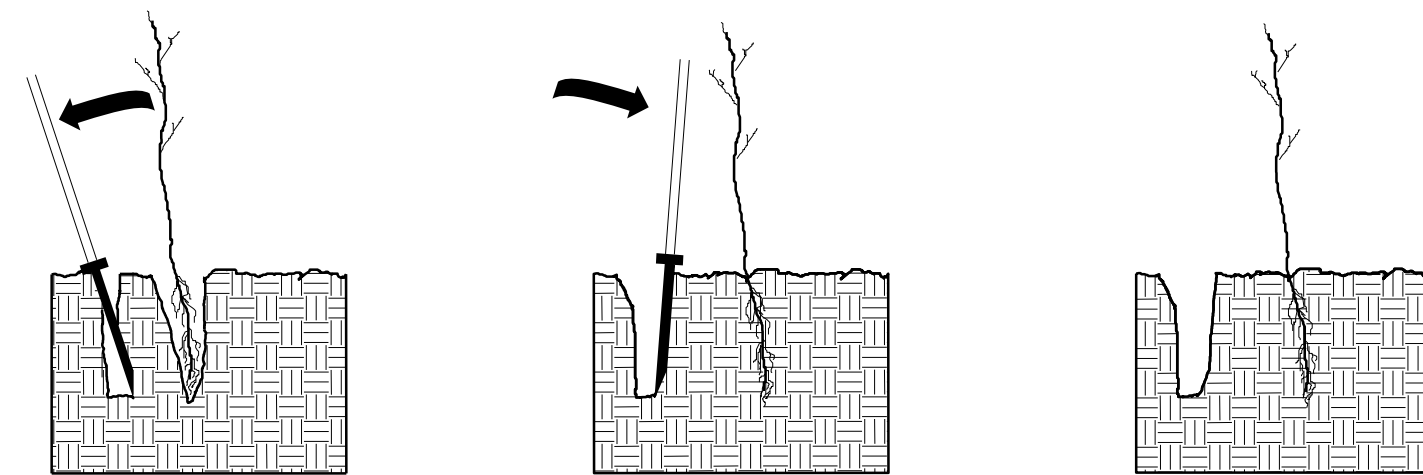
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



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.



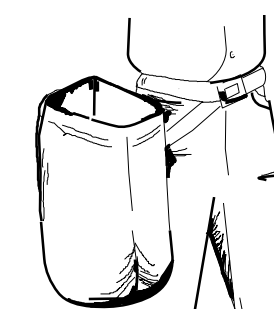
4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.

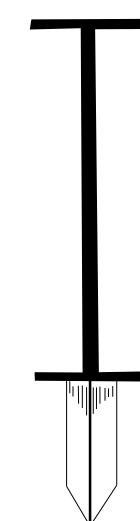
6. Leave compaction hole open. Water thoroughly.

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

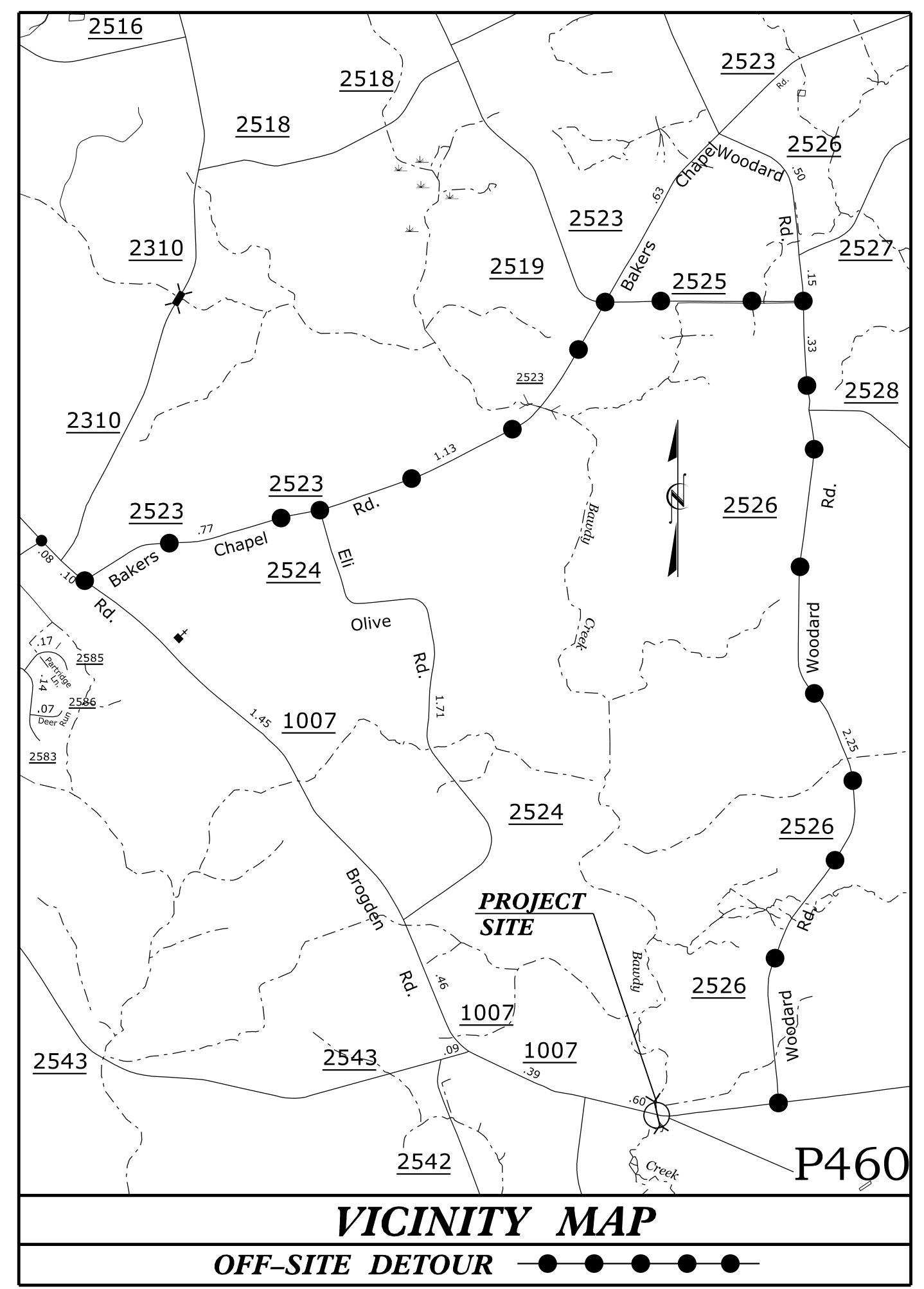
REFORESTATION DETAIL SHEET

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

09/08/2023

TIP PROJECT: BP4.R011.1

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS JOHNSTON COUNTY

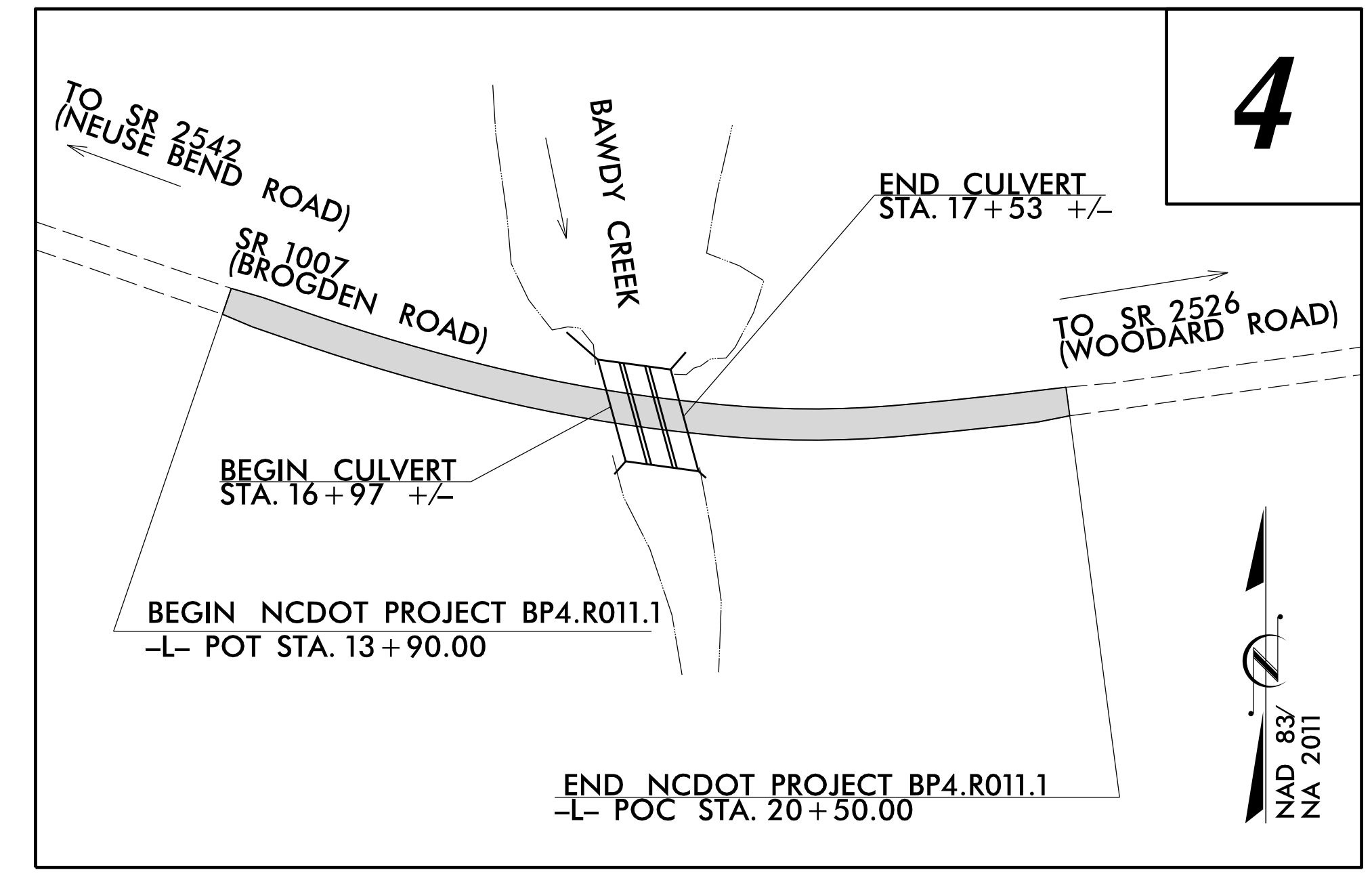
T.I.P. NO.	SHEET NO.
BP4.R011.1	UC-1

RELEASE FOR
CONSTRUCTION
DATE: 05/08/2023

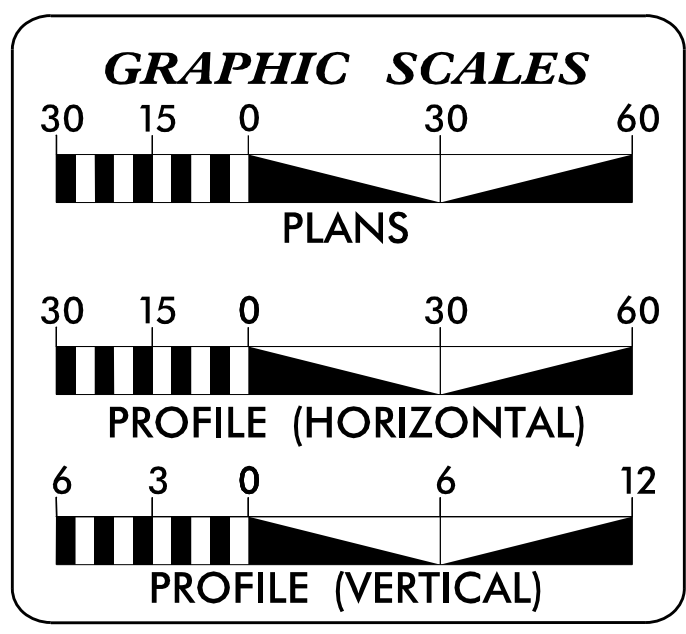
PIPE NO. 500460

LOCATION: PIPE NO. 500460 OVER BAWDY CREEK
ON SR 1007 (BROGDEN RD.)

TYPE OF WORK: WATER RELOCATION



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4	UTILITY CONSTRUCTION PLAN AND PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(A) WATER - JOHNSTON COUNTY

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 - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PANKIL PATEL UTILITY DESIGN SUPERVISOR
JOHN SCHRINER UTILITY COORDINATOR

SEAL 5/8/2023

EDWARD G. WETHERILL
ENGINEER
10773

DocuSigned by:
Edward G. Wetherill
08075EEBC0147D...

**DIVISION OF HIGHWAYS
UTILITIES UNIT**

1555 MAIL SERVICES CENTER
RALEIGH, NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

RACHEL C. EVANS, PE DIVISION PROJECT ENGINEER
KYLE A. PLEASANT DIVISION UTILITIES ENGINEER

\$\$\$ SYSTEM TIME \$\$\$
\$\$\$ DDN \$\$\$
\$\$\$ USERNAME \$\$\$

5/14/99

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

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/GIS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. BP4.R011.1	SHEET NO. UC-2
DESIGNED BY: PKP	
DRAWN BY: JDS	
CHECKED BY: PKP	
APPROVED BY: EGW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
UTILITY CONSTRUCTION	

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11 1/4 Degree Bend	
22 1/2 Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Remove Pole	
Plan Note	
Pay Item Note	

RELEASE FOR CONSTRUCTION
DATE: 05/08/2023

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities
Utility Line Drawn from Record (Type as Shown)

Designated Utility Line (Type as Shown)

08-MCY-23-R011-ut-UC-2-SYM.dgn
LISTED SYMBOLS

UTILITY CONSTRUCTION

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 - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO. BP4.R011.1	SHEET NO. UC-3
DESIGNED BY: PKP	
DRAWN BY: JDS	
CHECKED BY: PKP	
APPROVED BY: EGW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
UTILITY CONSTRUCTION	

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2018.
2. THE EXISTING UTILITIES BELONG TO JOHNSTON COUNTY. CONTACT MIKE KEEN (UTILITY PROJECT MANAGER) 919-209-8333.
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SECTION. ALL SANITARY SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, WQ PERMITTING SECTION, PERCS UNIT. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.
10. JOHNSTON COUNTY SHALL BE PROVIDED WITH TWO COPIES OF SURVEYED AS-BUILTS OF THE INSTALLED UTILITY. THE AS-BUILTS SHALL INCLUDE NOTATIONS OF THE SIZE AND TYPE OF MATERIAL INSTALLED; GPS COORDINATES OF ALL: FITTINGS, UTILITY CONTROLS, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE PIPING. PROVIDE BORING LOGS FROM TRENCHLESS INSTALLATIONS.

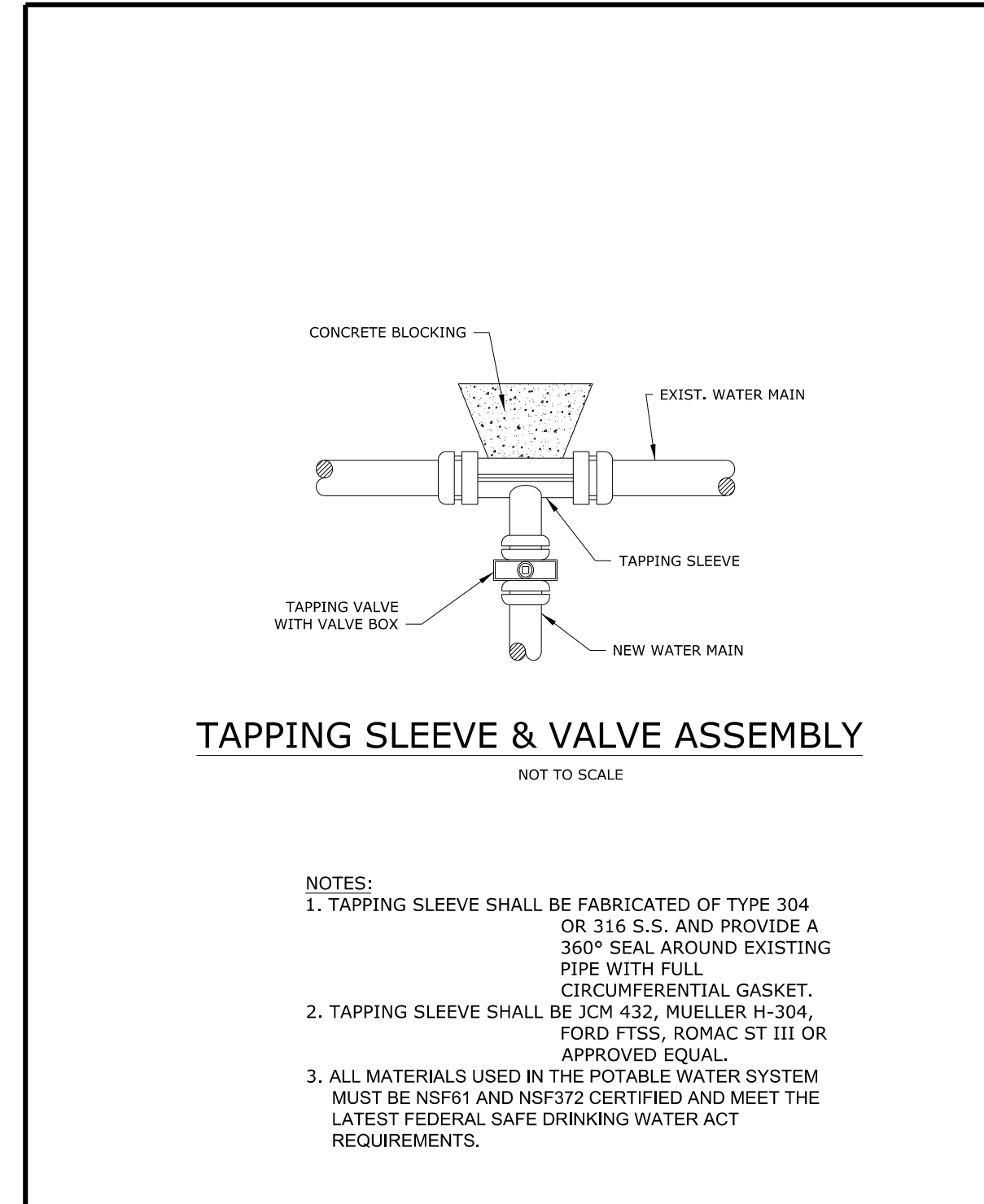
WATER INSTALLATION NOTES:

1. CONTRACTOR SHALL FULLY INSTALL, PRESSURE & LEAKAGE TEST, AND CHLORINATE NEW WATER MAIN PRIOR TO CONNECTION TO EXISTING SYSTEM.
2. CONTRACTOR SHALL PERFORM THE CONNECTION DURING OFF PEAK HOURS WITH A MAXIMUM SHUT DOWN TIME OF FIVE HOURS. (12 PM MIDNIGHT TO 5 AM)
3. ANY TEST PERFORMED WITHOUT NOTIFICATION AND CONTACT WITH UTILITY OWNER'S FIELD INSPECTORS SHALL BE PERFORMED AT THE CONTRACTOR'S RISK. TESTING SHALL BE PERFORMED IN THE PRESENCE OF UTILITY PERSONNEL.
4. OPERATION OF EXISTING GATE VALVES SHALL BE DONE BY UTILITY OWNERS.
5. TIE NEW WATER MAIN INTO EXISTING. INSTALL THRUST BLOCKS AND RODDING AS REQUIRED.
6. NEW WATER MAIN SHALL NOT BE CONNECTED TO EXISTING MAIN WITHOUT PRIOR APPROVAL AND COORDINATION WITH THE UTILITY OWNER.
7. FOR NEW WATER MAIN CONNECTIONS, USE GRIP RING PIPE RESTRAINER AS REQUIRED.
8. NEW WATER MAIN SHALL BE INSTALLED WITH BOTH ELECTRONIC MARKER TAPE/ TRACER WIRE AND ELECTRONIC MARKER BALLS

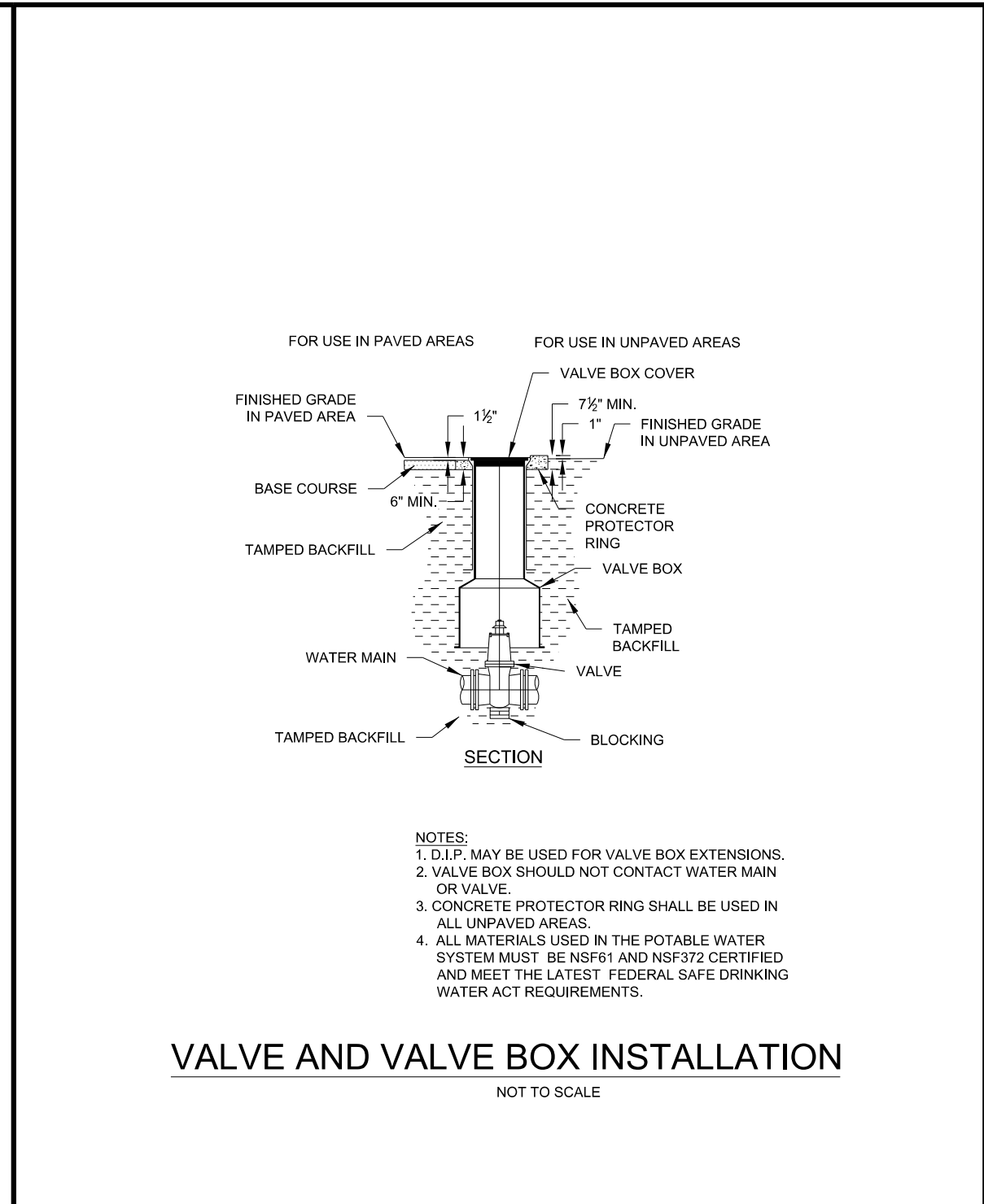
WATER INSTALLATION NOTES:

1. PROPOSED WATER LINE FROM WL STATION 10+00 +/- TO WL STATION 10+29 +/- SHALL BE 8" PVC SDR21, INSTALLED BY OPEN CUT METHOD.
2. PROPOSED WATER LINE FROM WL STATION 10+29 +/- TO WL STATION 13+29 +/- SHALL BE 8" FUSIBLE PVC C900, INSTALLED BY DIRECTIONAL DRILL.
3. PROPOSED WATER LINE FROM WL STATION 13+29 +/- TO WL STATION 15+50 +/- SHALL BE 8" PVC SDR21, INSTALLED BY OPEN CUT METHOD.

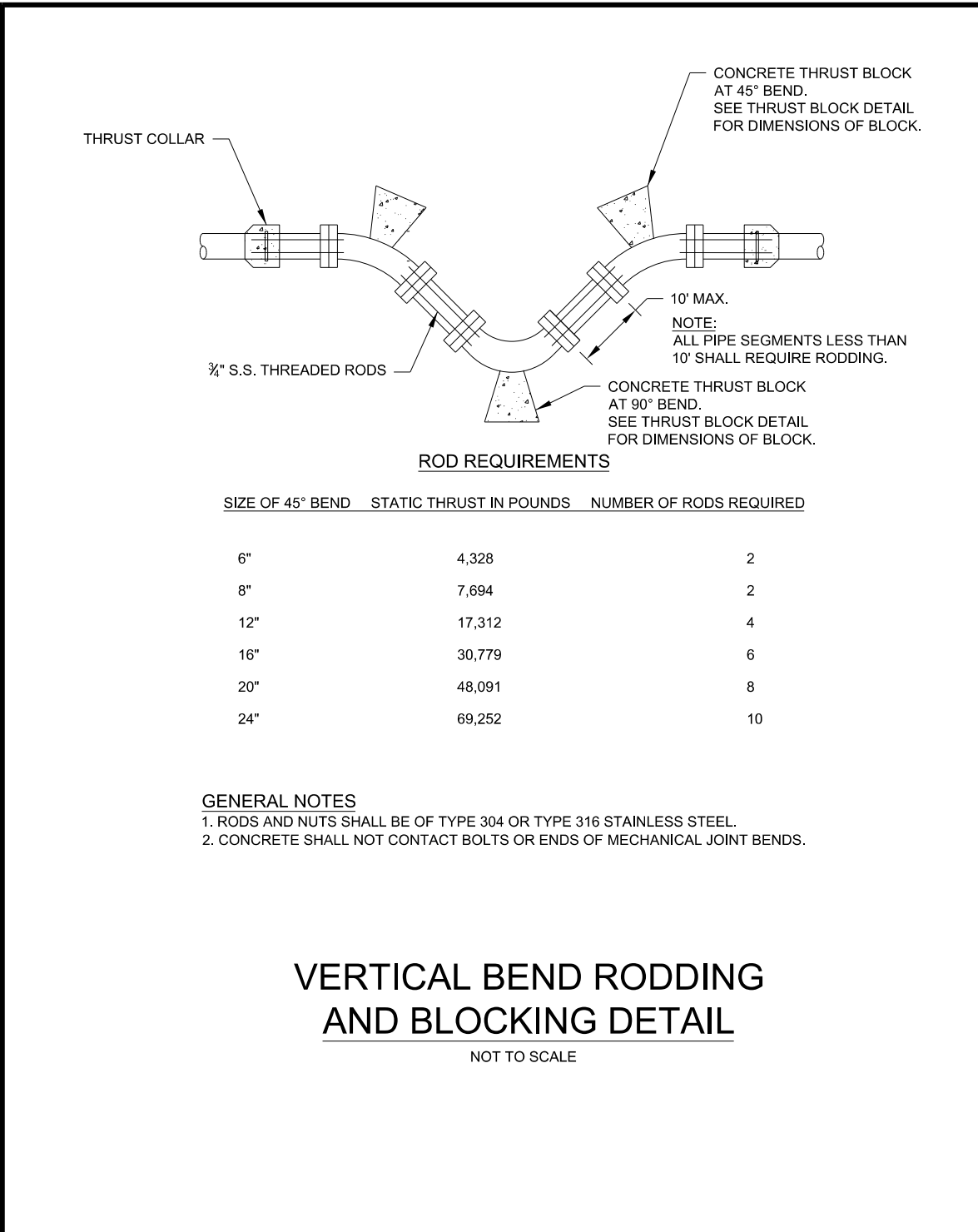
RELEASE FOR
CONSTRUCTION
DATE: 05/08/2023



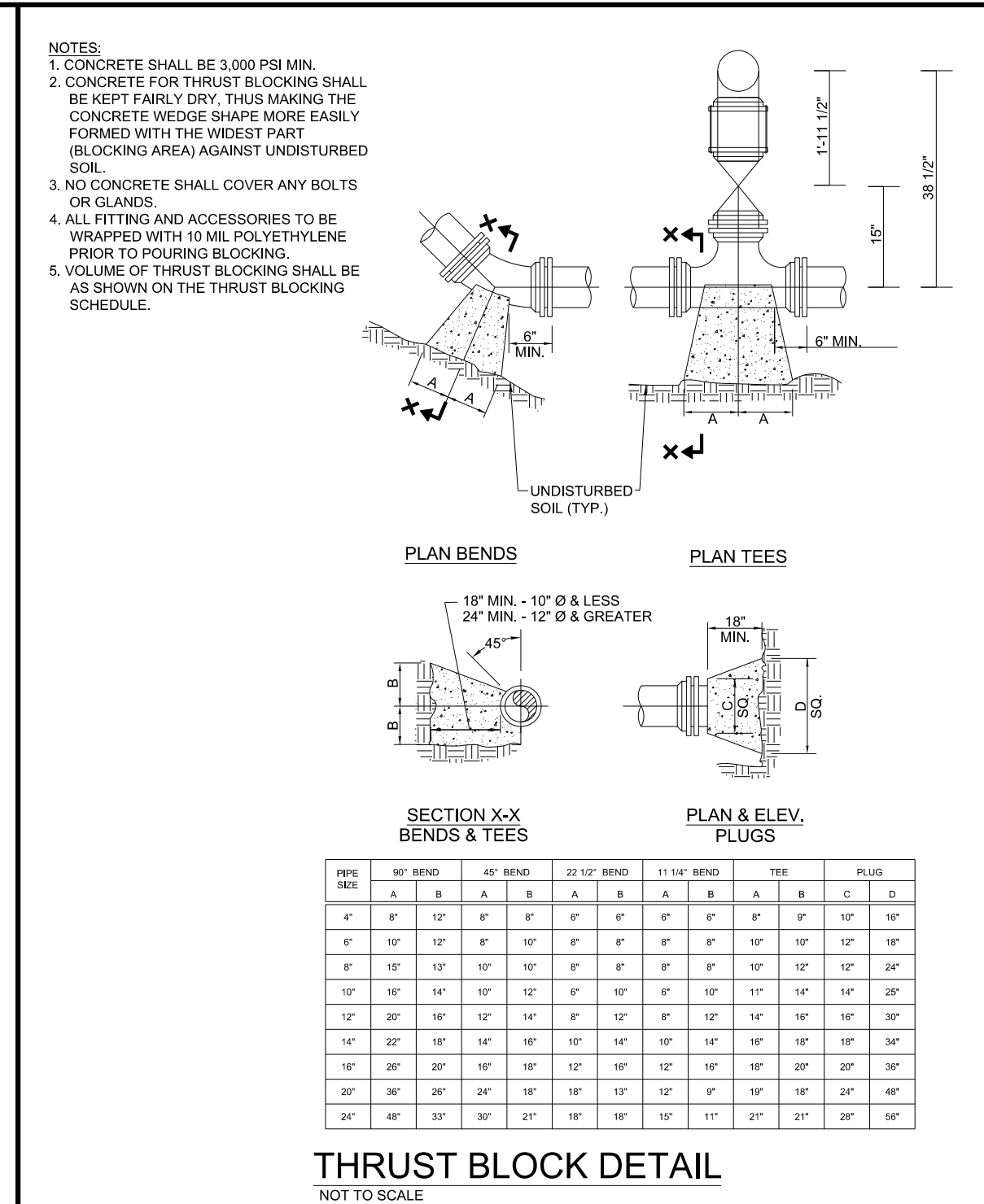
Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Tapping Sleeve and Valve Assembly	PAGE 5
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Valve and Valve Box Installation	PAGE 13
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

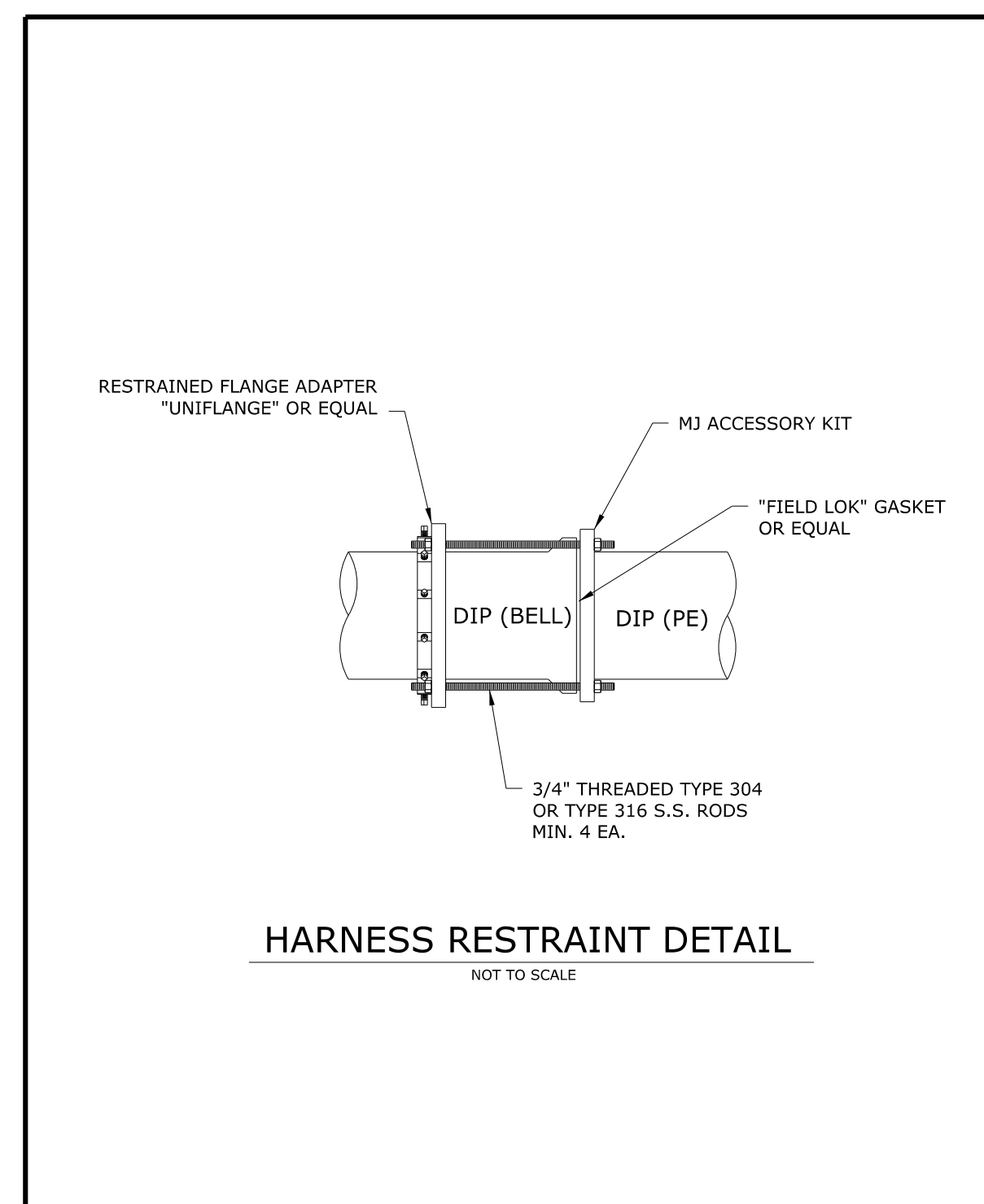


Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Critical Bend Rodding and Blocking Details	PAGE 7
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

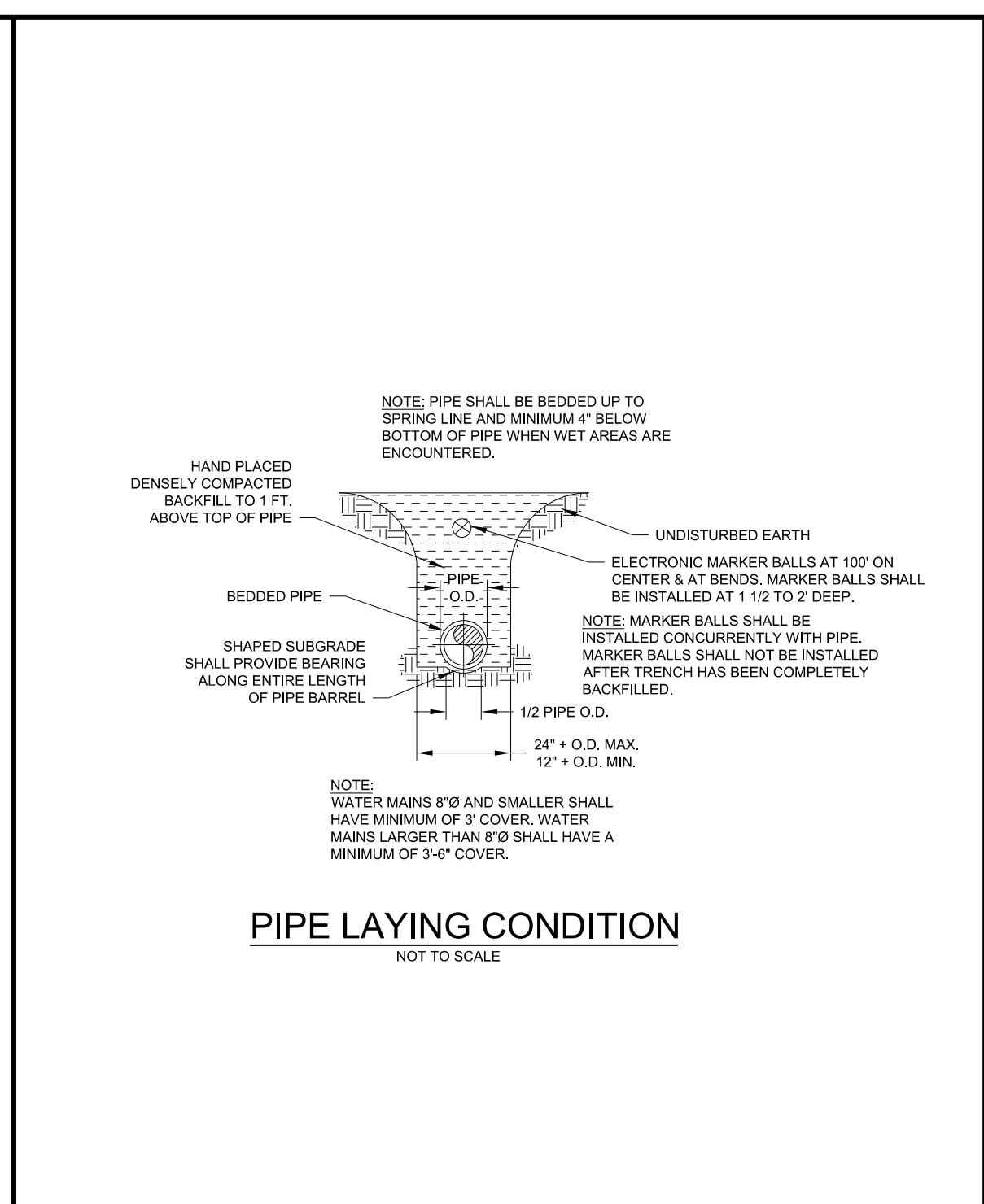


Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Thrust Block	PAGE 8
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

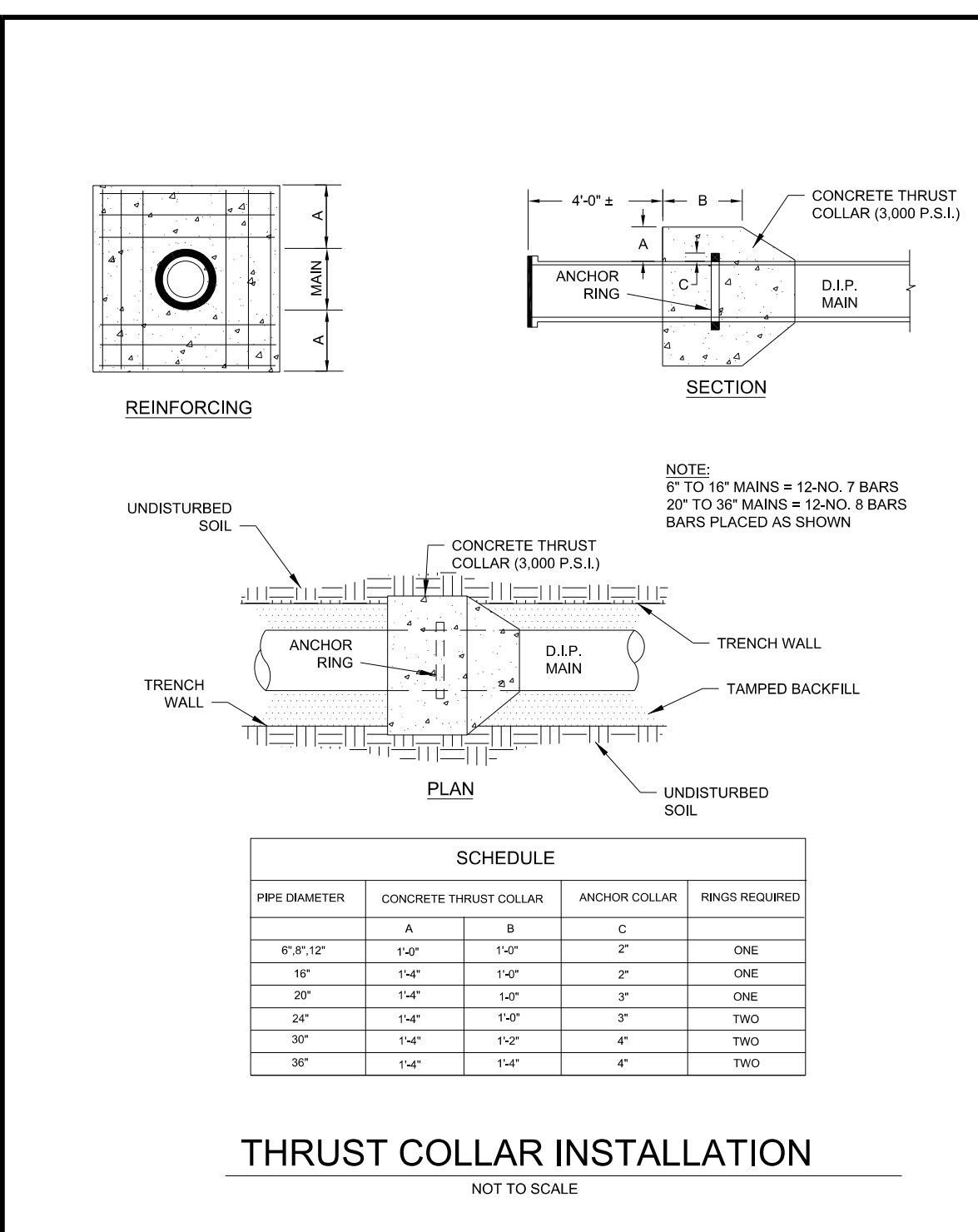
RELEASE FOR
CONSTRUCTION
DATE: 05/08/2023



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Restraint Harness	PAGE 10
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Pipe Laying Condition	PAGE 17
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		



Drawn By:	Name	Date	JOHNSTON COUNTY Department of Public Utilities P.O. Box 2263 Smithfield, NC 27577	WATER STANDARD DETAIL Thrust Collar Installation	PAGE 9
Checked By:					
Approved By:					
Scale:					
Rev.	Description	Date	Init.		

5/14/23

DIRECTIONAL DRILLING OF 300 LF 8" WATER LINE FUSIBLE PVC C900

3 @ 15'-4" X 10'-0" W/ALUMINUM ENDWALLS

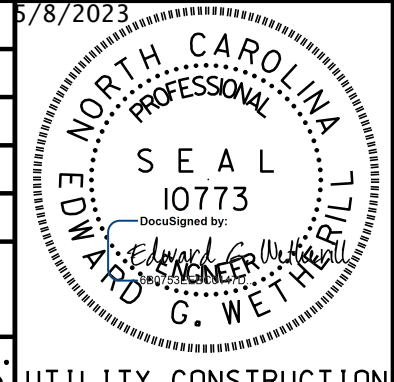
WETHERILL ENGINEERING
 1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GIS - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PIPE NO. 500460

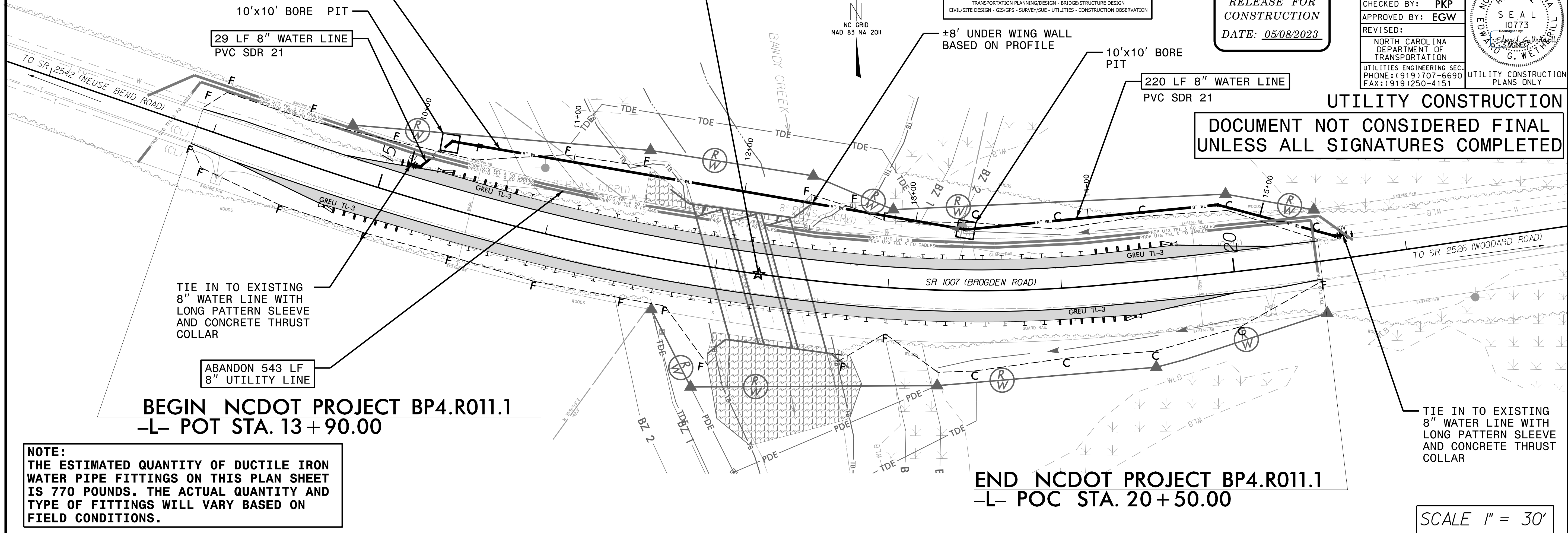
PROJECT REFERENCE NO. BP4.R011.1	SHEET NO. UC-4
DESIGNED BY: PKP	DATE: 5/8/2023
DRAWN BY: JDS	
CHECKED BY: PKP	
APPROVED BY: EGW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	

RELEASE FOR CONSTRUCTION
DATE: 05/08/2023



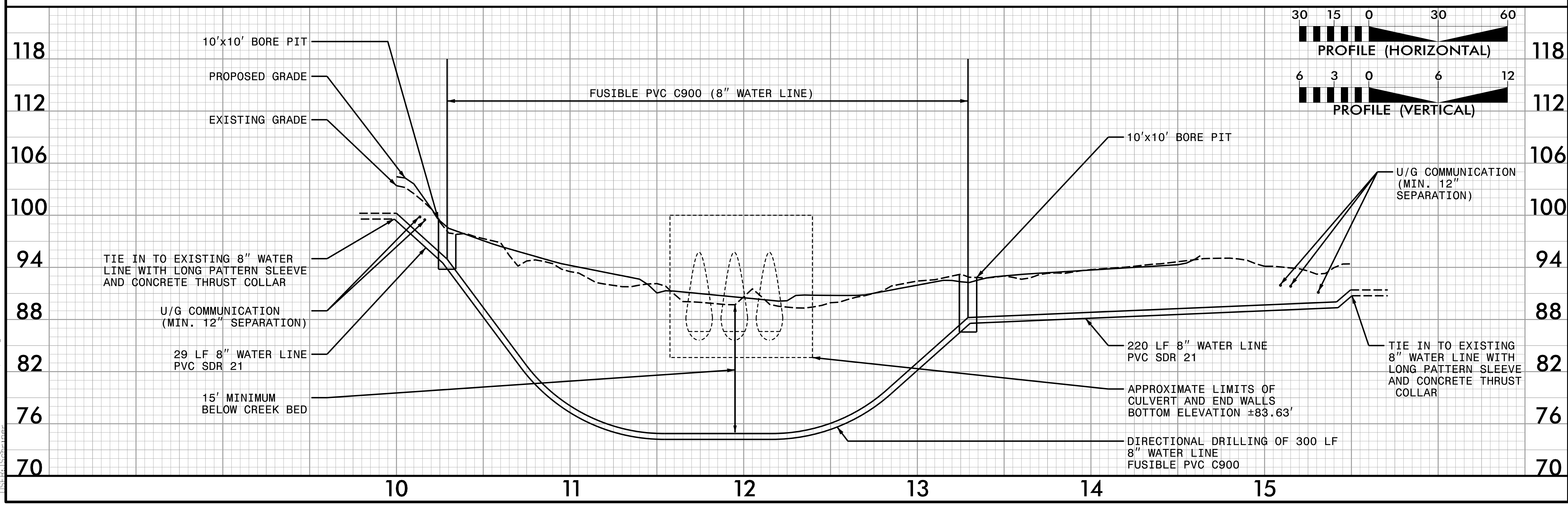
UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 770 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

SCALE 1" = 30'



05-MCY-23
0624_R011-ut-UC-4_psh.dgn
LISTEN: RSC/hammer

09.08/99

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R011.1	UO-1	2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP4.R011.1		PE	
BP4.R011.2		ROW, UTIL.	
BP4.R011.3		CONST.	

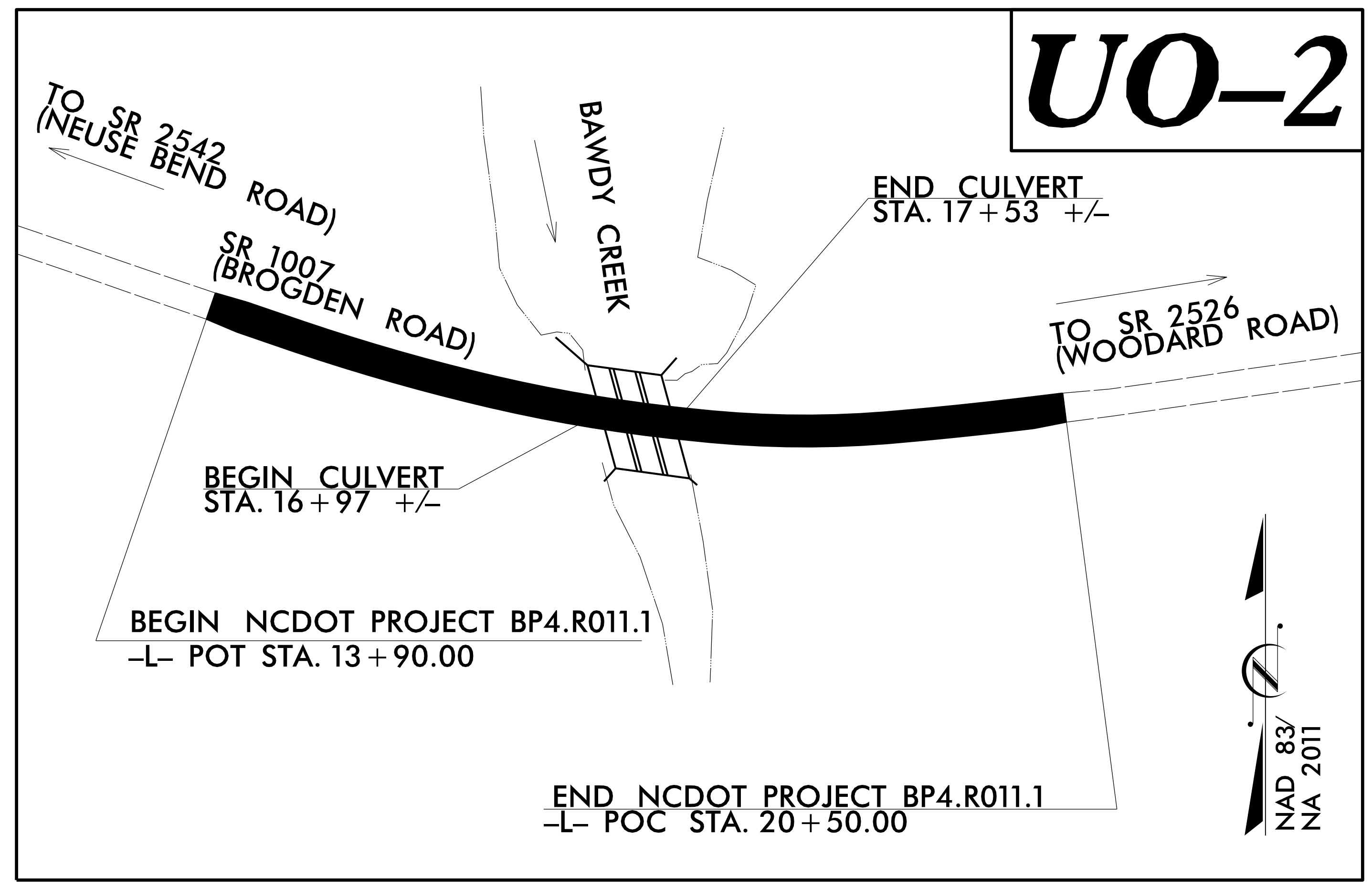
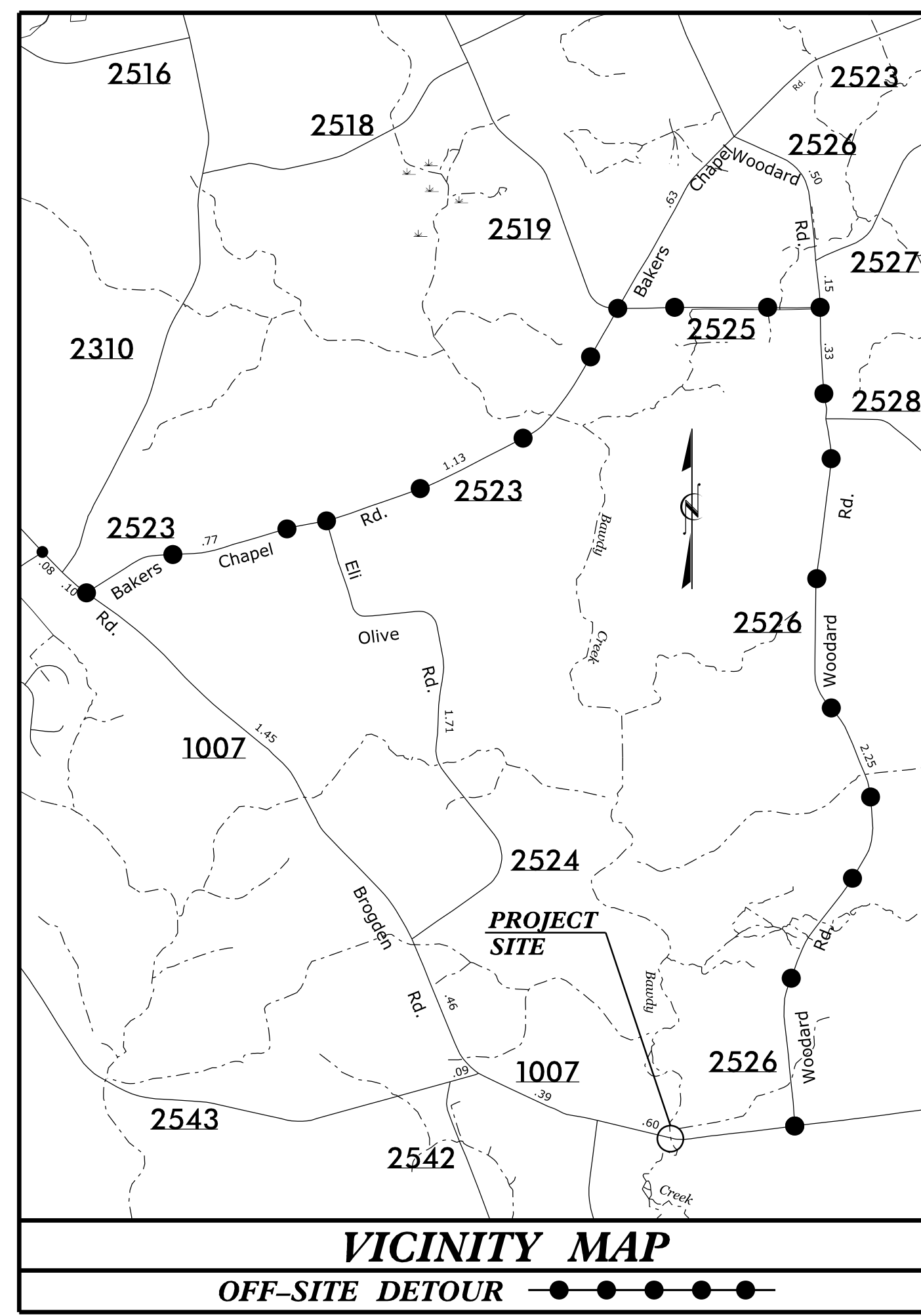
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
JOHNSTON COUNTY**

LOCATION: PIPE NO. 500460 OVER BAWDY CREEK
ON SR 1007 (BROGDEN RD.)

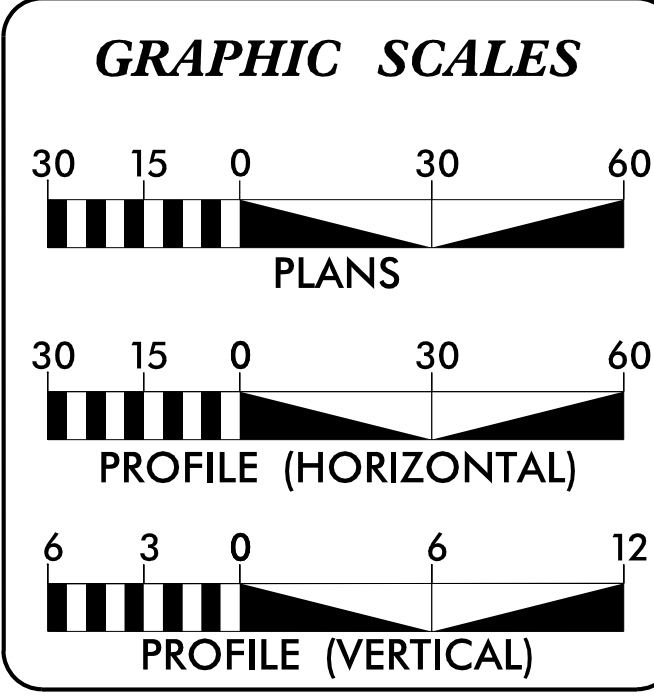
TYPE OF WORK: UTILITIES BY OTHERS

PROJECT: BP4.R011.1



UO-2

CONTRACT:



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS:

A. DUKENET - POWER
B. BRIGHTSPEED - TELECOMMUNICATIONS

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

KYLE PLEASANT PROJECT UTILITES ENGINEER
FRANK ZDELAR PROJECT UTILITES ENGINEER



ADDISON GAINNEY, PE
PROJECT CONTACT #1

17-FEB-2023 11:20
 C:\Users\sw\haddock\Desktop\UBO\BP4.R011\BPR_r011_UBO_Sheet1.dgn
 sw\haddock AT DIV04-312627

PROJ. REFERENCE NO.	SHEET NO.
BP4.R011	X-1A

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station	Uncl. Exc.	Embt
L	(cu. yd.)	(cu. yd.)
13+90.00	0	0
14+00.00	0	2
14+50.00	1	22
15+00.00	0	31
15+50.00	0	42
16+00.00	0	70
16+50.00	0	108
16+75.00	0	74
17+00.00	0	92
17+25.00	0	95
17+50.00	0	111
17+75.00	0	89
18+00.00	0	39
18+50.00	44	37
19+00.00	59	20
19+50.00	39	34
20+00.00	41	40
20+50.00	18	16

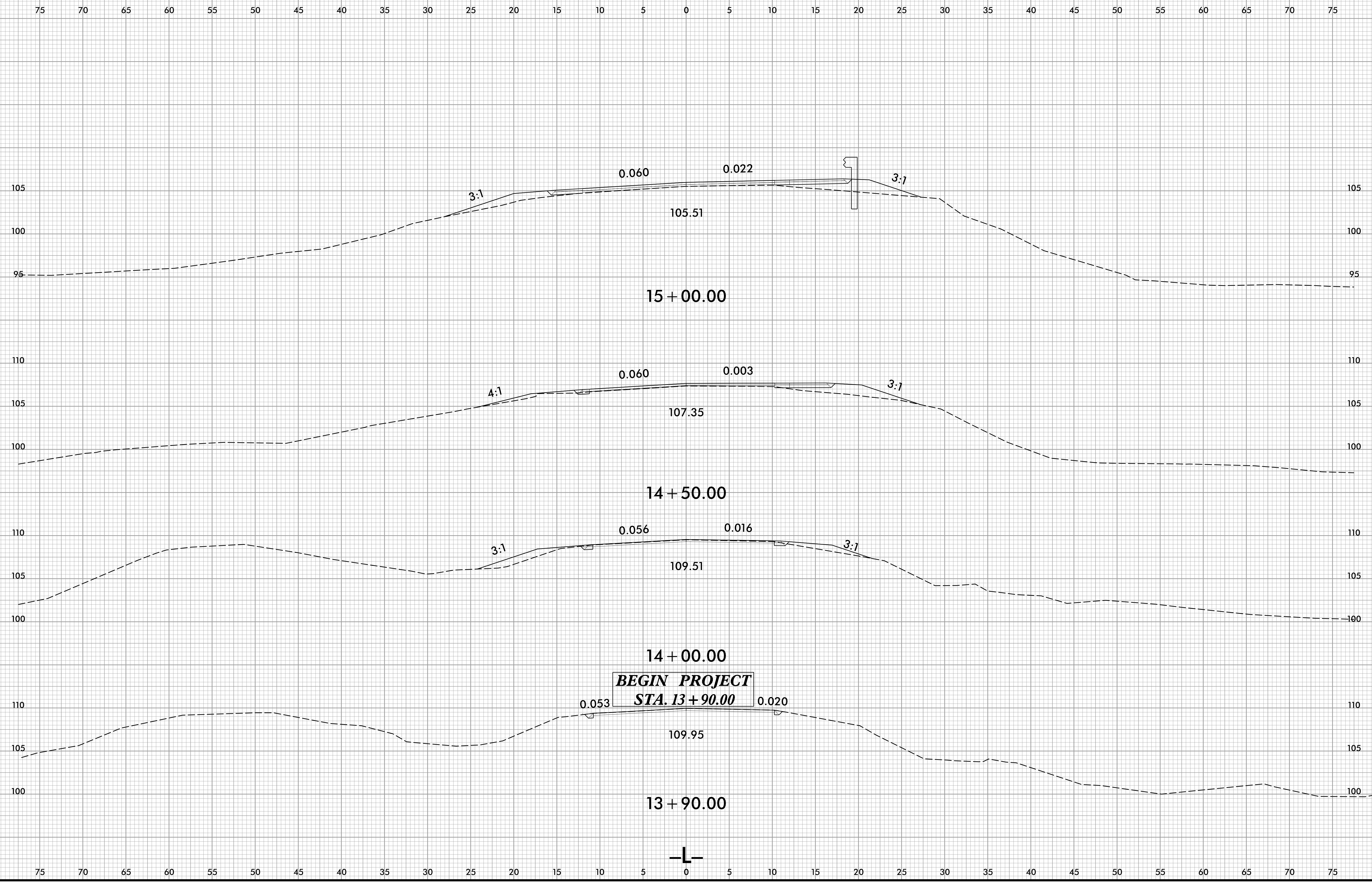
Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

CROSS SECTION INDEX

SHEET	LINE	BEGIN STATION	END STATION
X-1	-L-	13+90.00	15+00.00
X-2	-L-	15+50.00	16+75.00
X-3	-L-	16+97.00	17+75.00
X-4	-L-	18+00.00	20+50.00

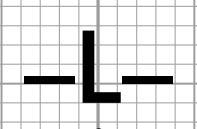
8/23/99

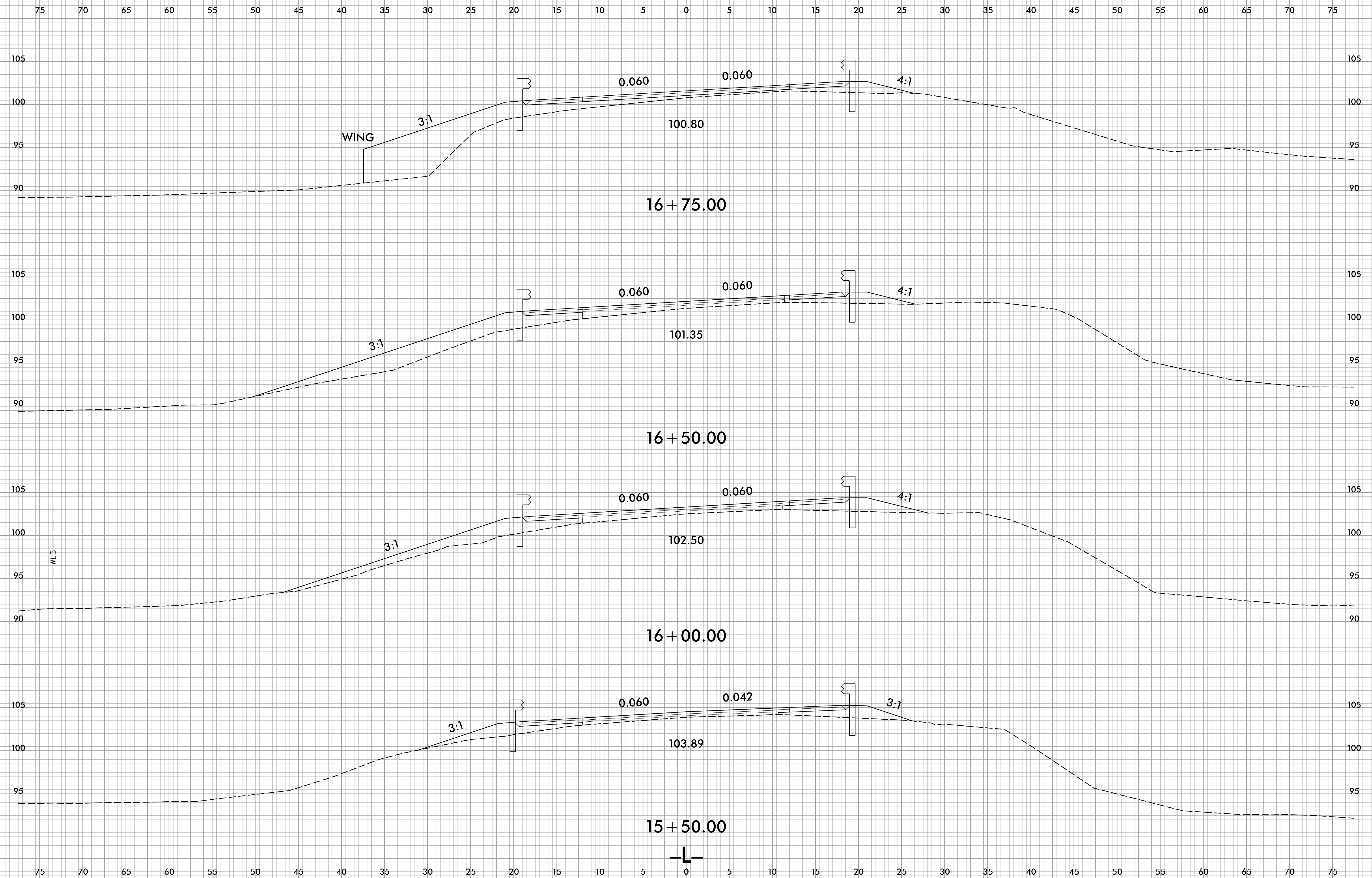
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R011.1	X-1



5/18/2023
\\BP4.R011.F0Y.XPL.dgn
USER: J.Rosado

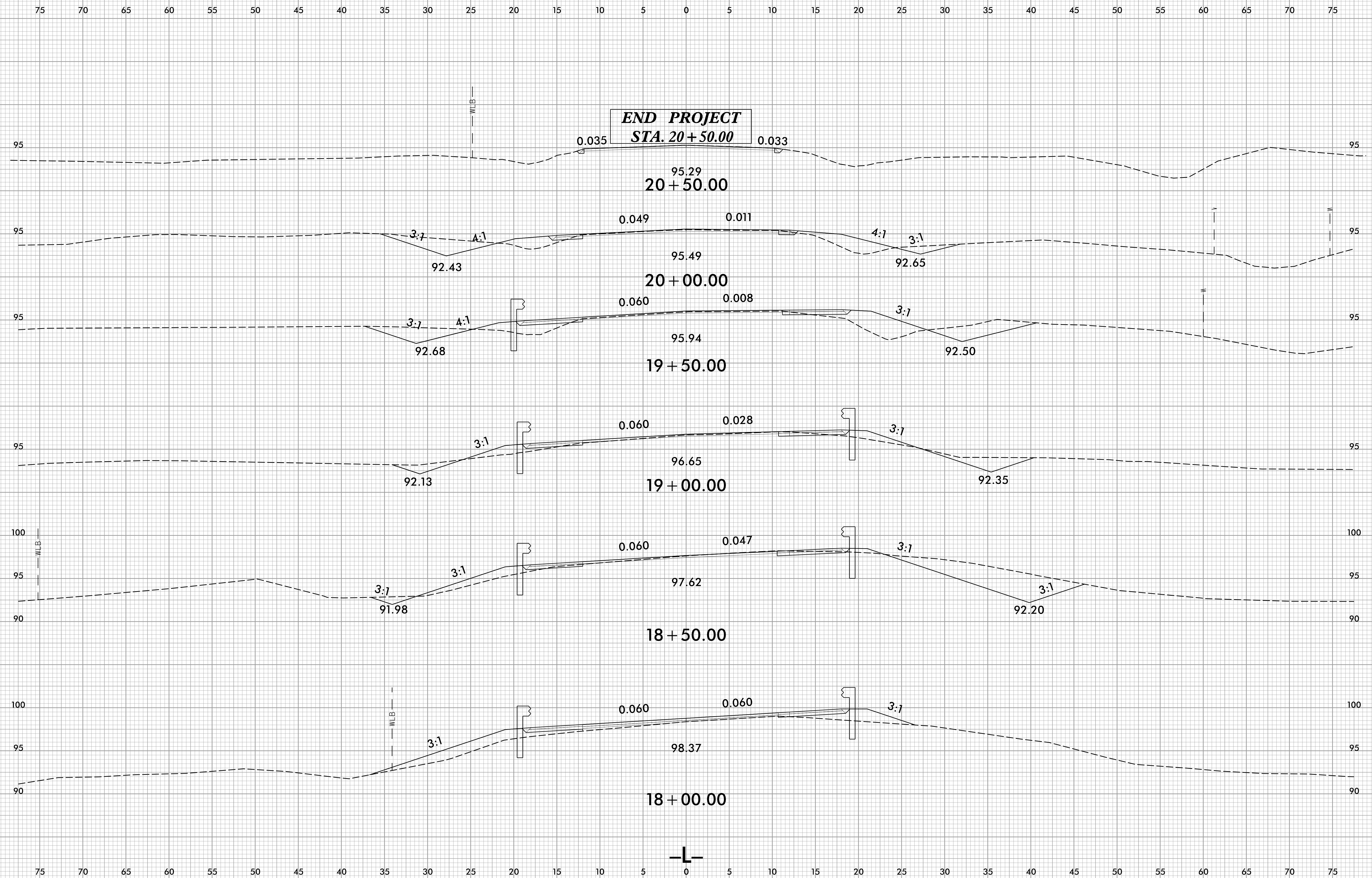
BEGIN PROJECT
STA. 13+90.00





8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R011.1	X-4



5/18/2023
 \BP4.R011.1.RDY.XPL.dgn
 USER: J. Rosado