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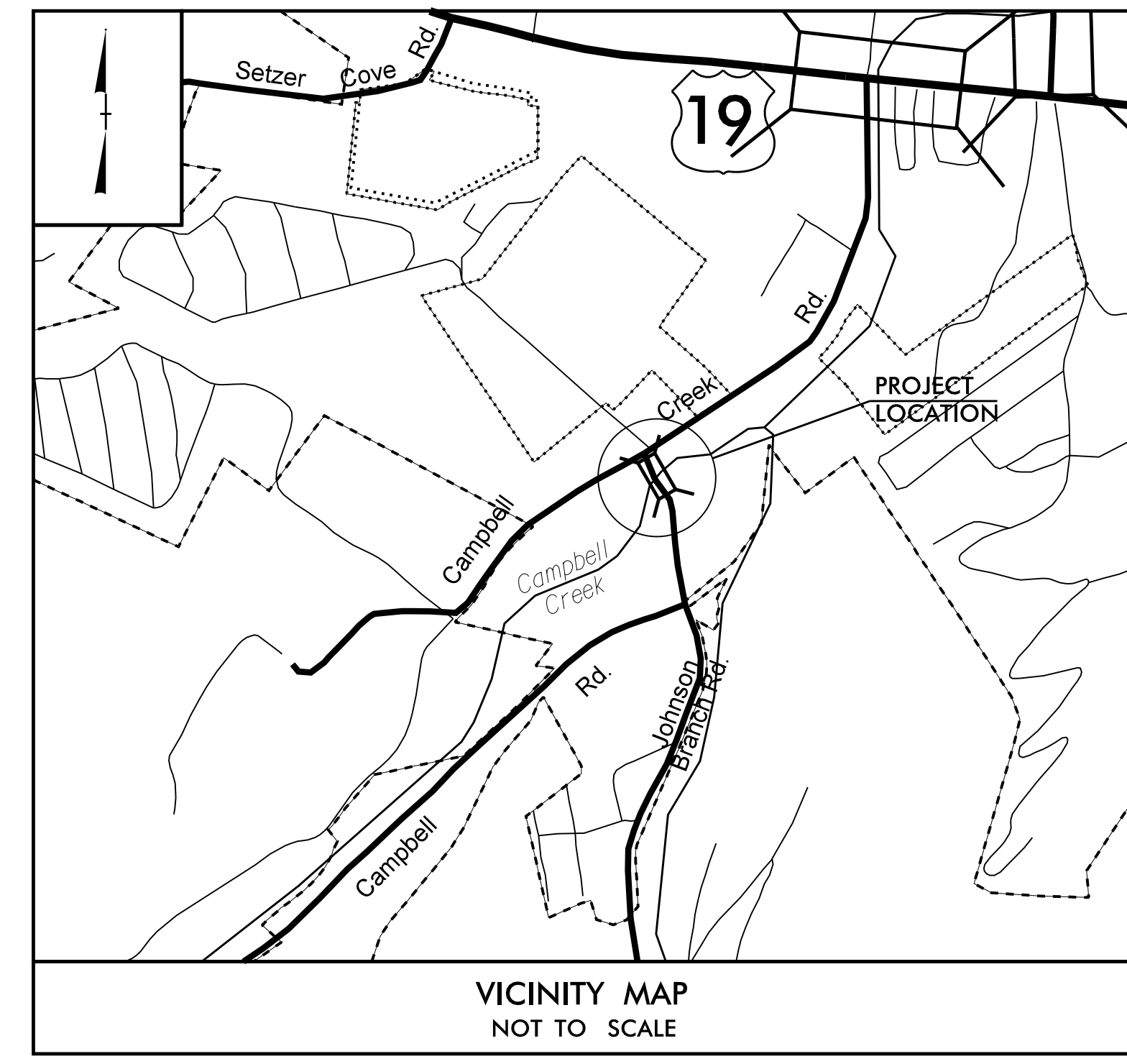
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09\_08/2019

STATE PROJECT: DF18314.2044195

CONTRACT: DN01137

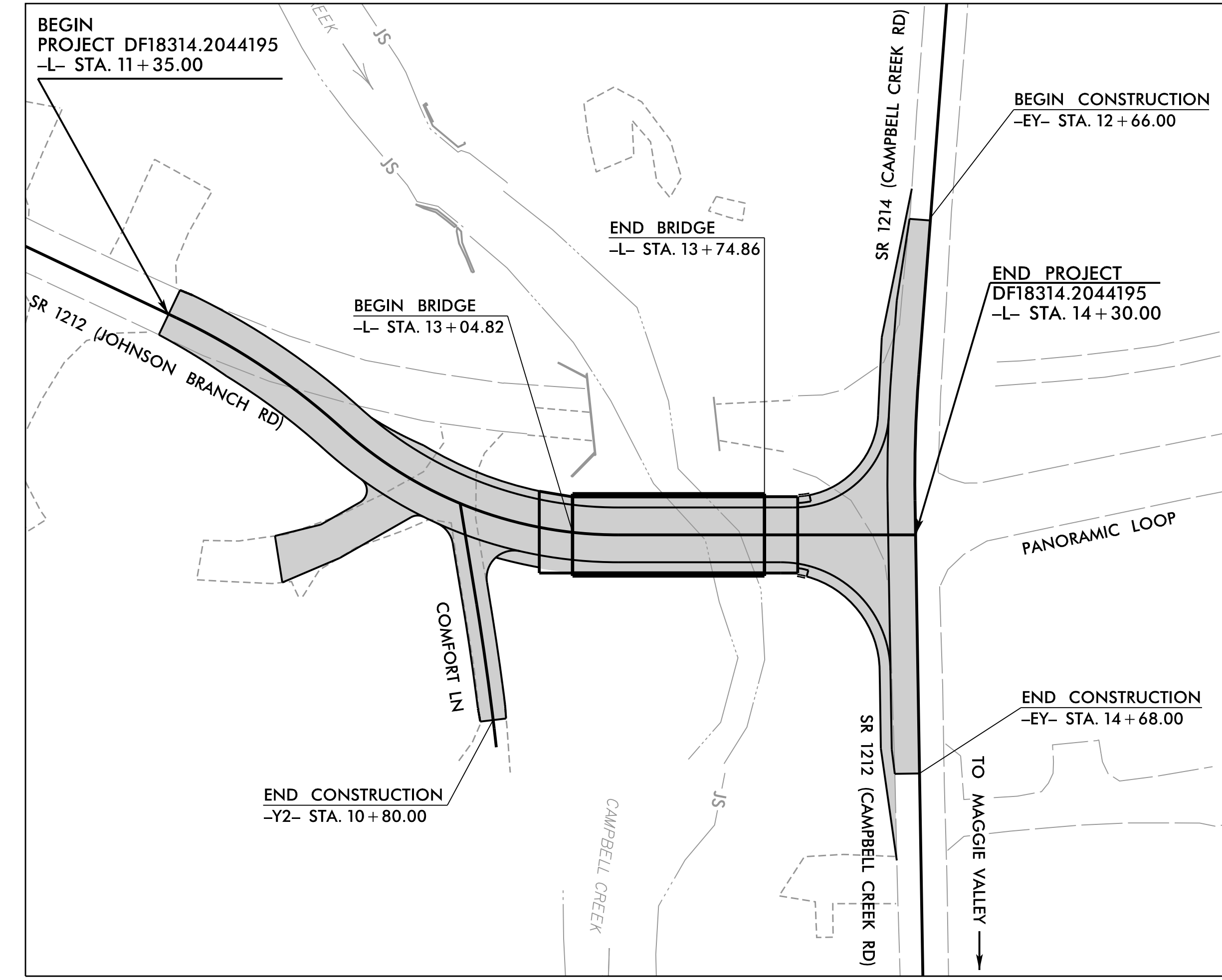
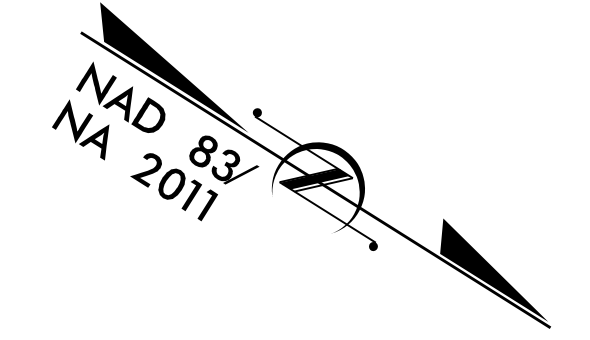
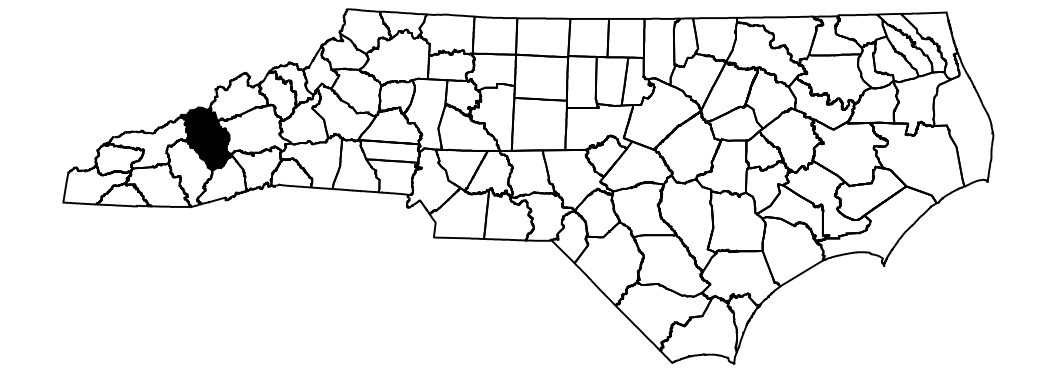


VICINITY MAP  
NOT TO SCALE  
ROADWAY FINAL PLAN SET

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**HAYWOOD COUNTY**

**LOCATION: BRIDGE #430266 OVER CAMPBELL CREEK  
ON SR 1212 (JOHNSON BRANCH RD)**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2044195	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
DF18314.2044195		P.E.	
DF18314.2044195		ROW	
DF18314.2044195		CONST.	

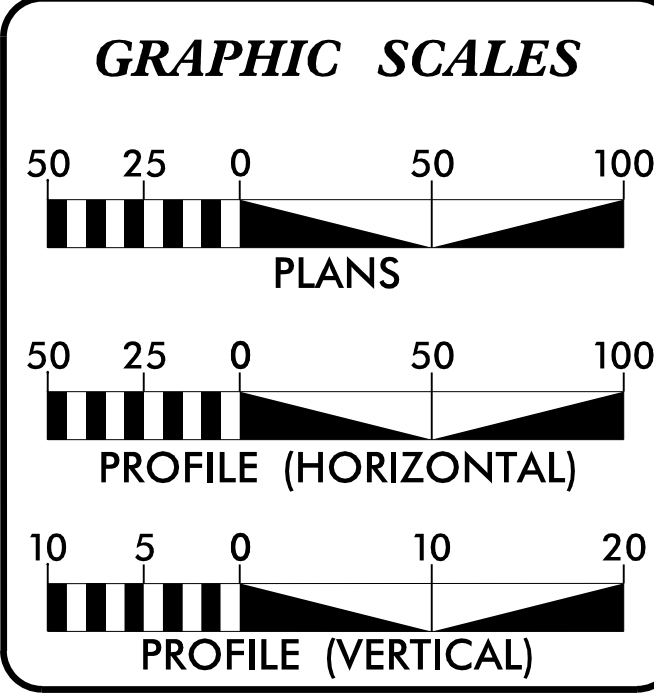


LOCATION SKETCH  
NOT TO SCALE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

THIS PROJECT HAS NO CONTROLLED ACCESS  
THIS PROJECT IS WITHIN THE MAGGIE VALLEY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

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



**DESIGN DATA**

ADT 2024 =	< 400
	(ASSUMED)
ADT 2045 =	< 400
	(ASSUMED)
T =	
V =	
*TTST =	DUAL =
FUNC CLASS =	

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT BP14.R024 =	0.043 MI
LENGTH STRUCTURES PROJECT BP14.R024 =	0.013 MI
TOTAL LENGTH PROJECT BP14.R024 =	0.056 MI

**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

2024 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
SEPTEMBER 10, 2025

**LETTING DATE:**  
APRIL 28, 2026

**ANDY ABERNATHY, PE**  
PROJECT ENGINEER

**KYLE HIPP, PE**  
PROJECT DESIGN ENGINEER

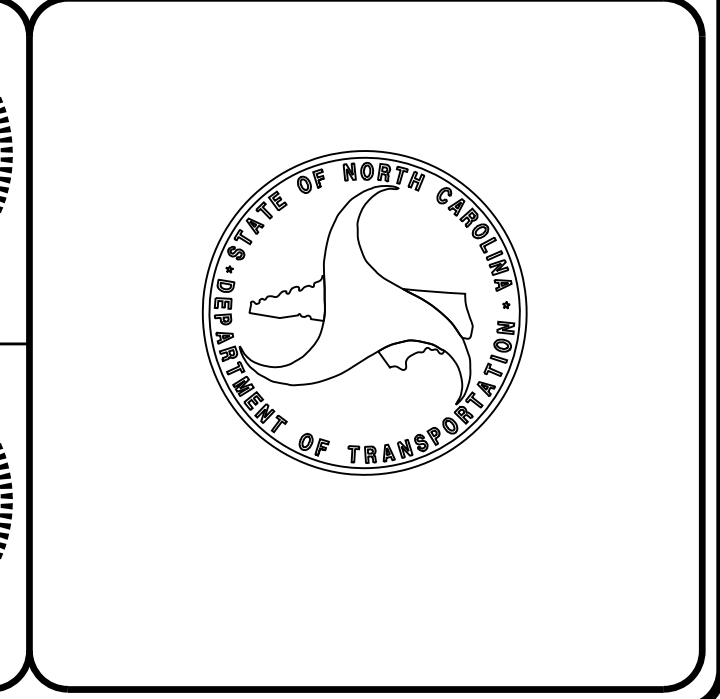
**ZACH SHULER, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

Signature: *Dean W. Lewis*

**ROADWAY DESIGN ENGINEER**

Signature: *Kyle Hipp*



4/2/2026  
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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

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

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

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

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

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

DRIVEWAYS: DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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

UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY; AT&T DISTRIBUTION; SPECTRUM CATV; TOWN OF MAGGIE VALLEY WATER & SEWER ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

2024 ROADWAY ENGLISH STANDARD DRAWINGS  
EFF. 01-16-2024  
REV.

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

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
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
<b>DIVISION 4 - MAJOR STRUCTURES</b>	
423.01	Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 8 - INCIDENTALS</b>	
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation
862.03	Structure Anchor Units (Use Detail in Lieu of Standard for Sheet 8 of 9)

INDEX OF SHEETS

SHEET NUMBER	SHEET NAME
1	TITLE SHEET
1A	INDEX OF SHEETS
1B	CONVENTIONAL SYMBOLS
2A-1 - 2A-2	PAVEMENT SCHEDULE, TYPICAL SECTIONS AND WEDGING DETAILS
3B-1	SUMMARY OF GUARDRAIL, EARTHWORK AND SHOULDER BERM GUTTER
3B-2	PARCEL INDEX SHEET
4	PLAN SHEET
5	PROFILE SHEET
RW-01 - RW-04	SURVEY CONTROL SHEETS
TMP-1 - TMP-3	TRANSPORTATION MANAGMENT PLANS
PMP-1 - PMP-2	PAVEMENT MARKING PLANS
EC-01 - EC-05	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1	SIGNING PLANS
UC-1 - UC-4	UTILITY CONSTRUCTION PLANS
UO-1 - UO-4	UTILITIES BY OTHERS PLANS
X-1 - X-4	CROSS SECTIONS
S-01 - S-17	STRUCTURE PLANS

REVISIONS

PLOT DRIVER: NCDOT\_color\_eng\_50.plt  
PENTABLE: NCDOT\_pshp.plt.tbl  
USER: KHIPP  
DATE: 12/9/2025  
TIME: 1:49:27 PM  
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# 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	⑩
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:

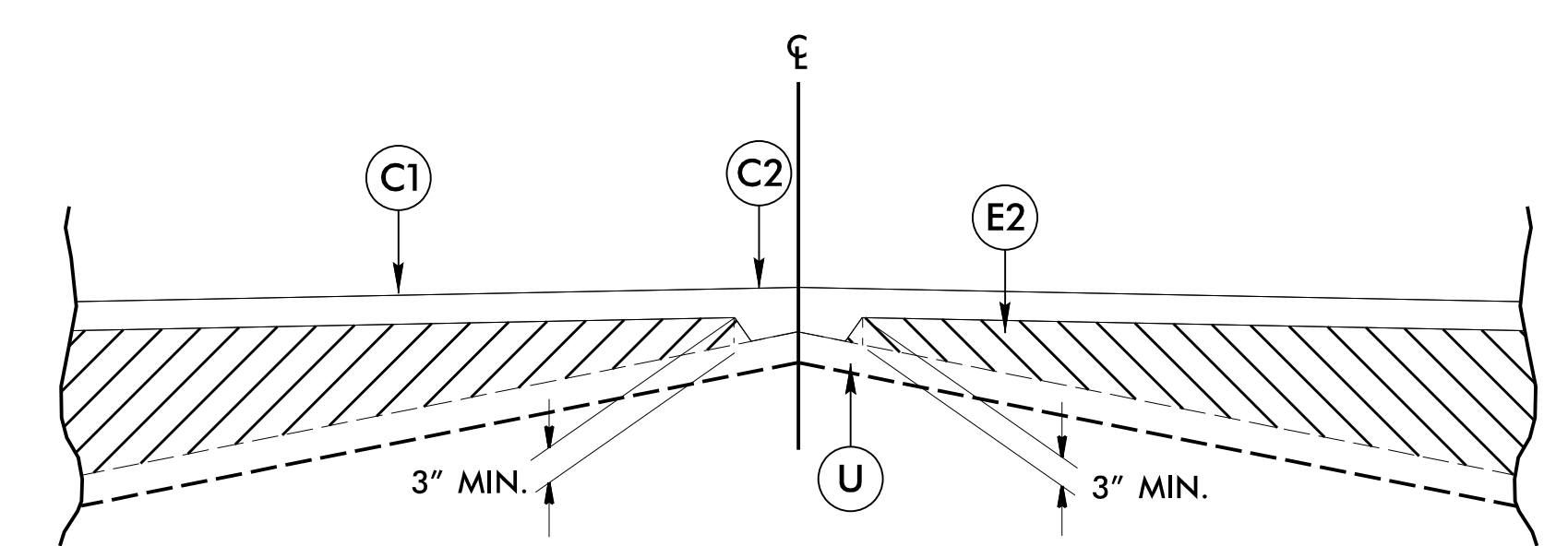
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊕
Abandoned According to Utility Records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

8/17/99

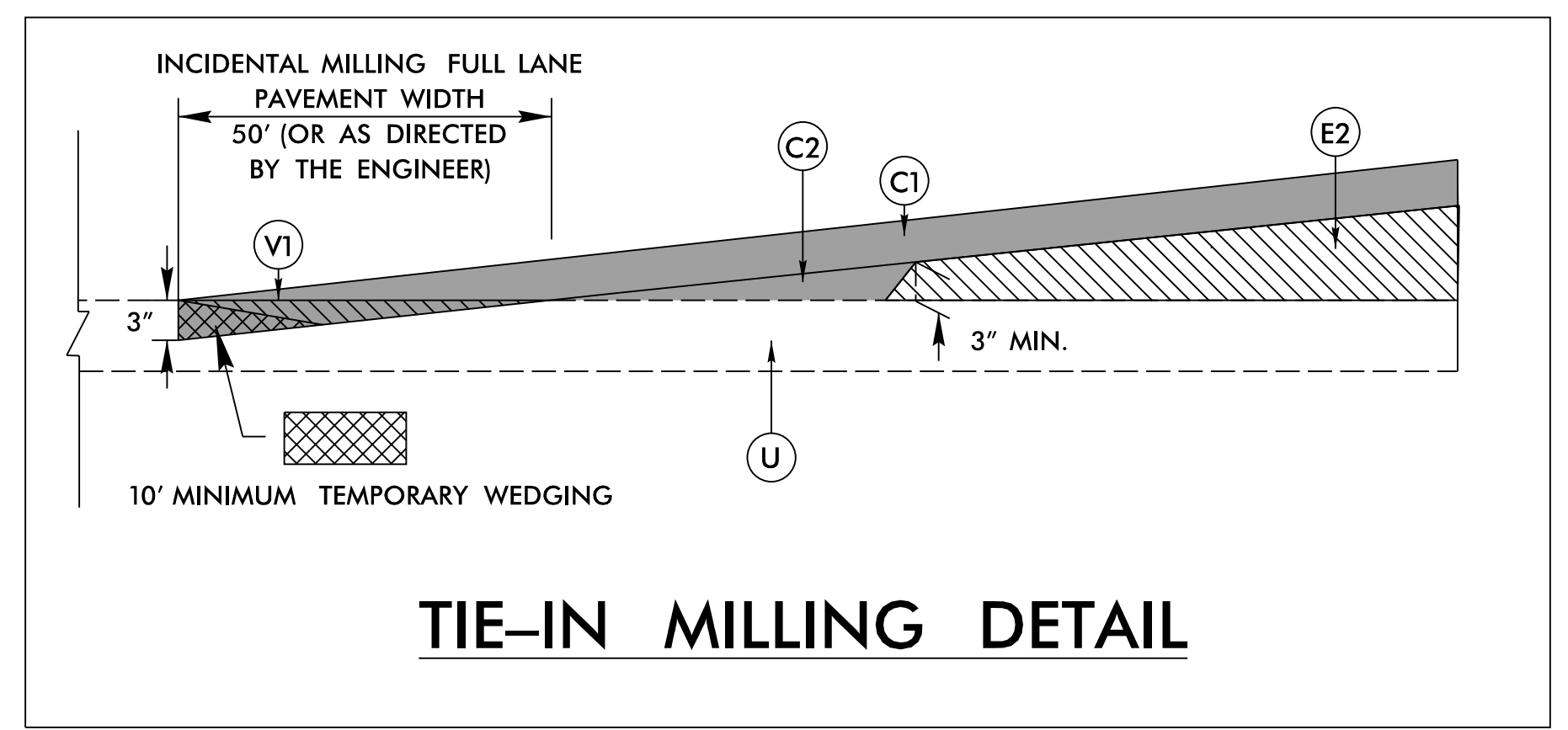
# FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS PER SQUARE YARD 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 IN. DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 1.5 IN. DEPTH OR LESS THAN 1.0 IN. DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS PER SQUARE YARD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1 IN. DEPTH TO BE PLACED IN LAYERS NOT GREATER THAN 5.5 IN. DEPTH OR LESS THAN 3.0 IN. DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ. YD.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING
V2	3" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



Detail Showing Method of Wedging

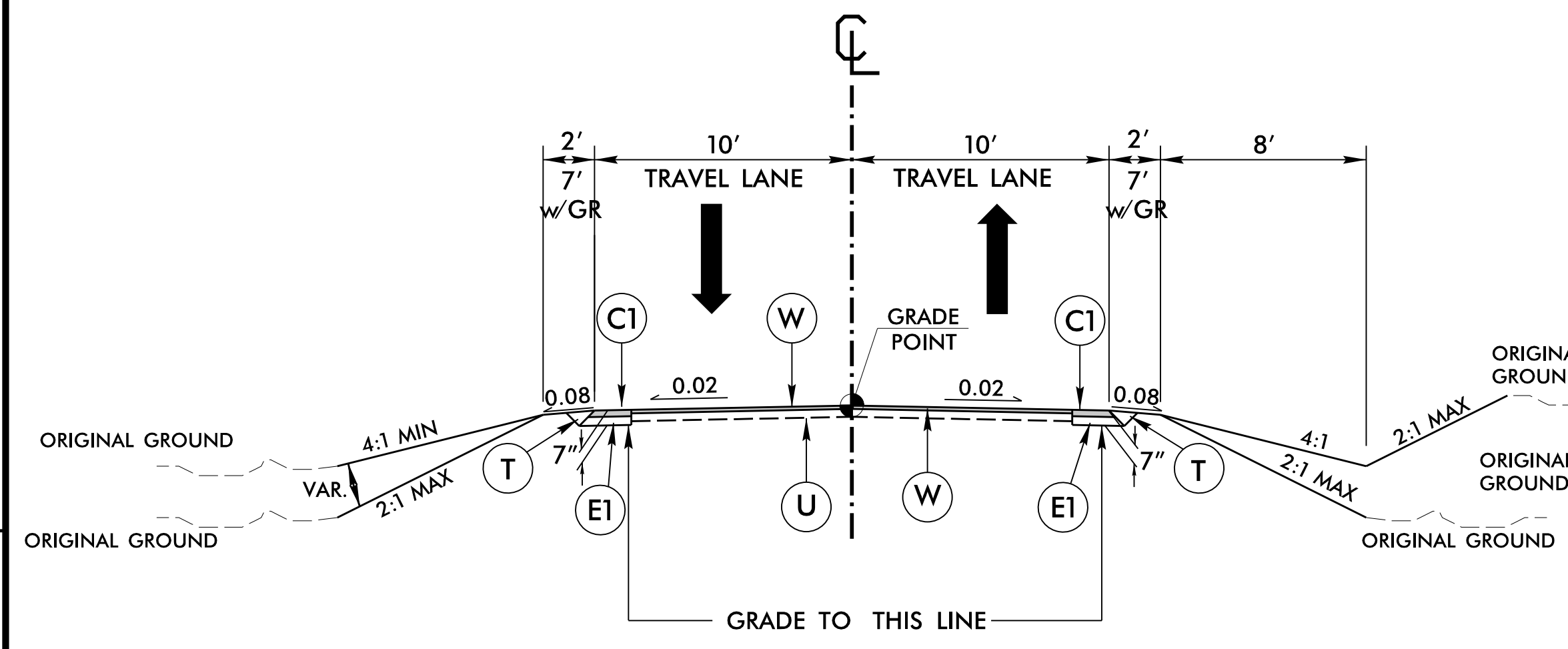


TIE-IN MILLING DETAIL

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER KYLE S. HIPP	PAVEMENT DESIGN ENGINEER ANDREW D. WARGO
3/5/2026	3/6/2026
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900, Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	

REVISIONS

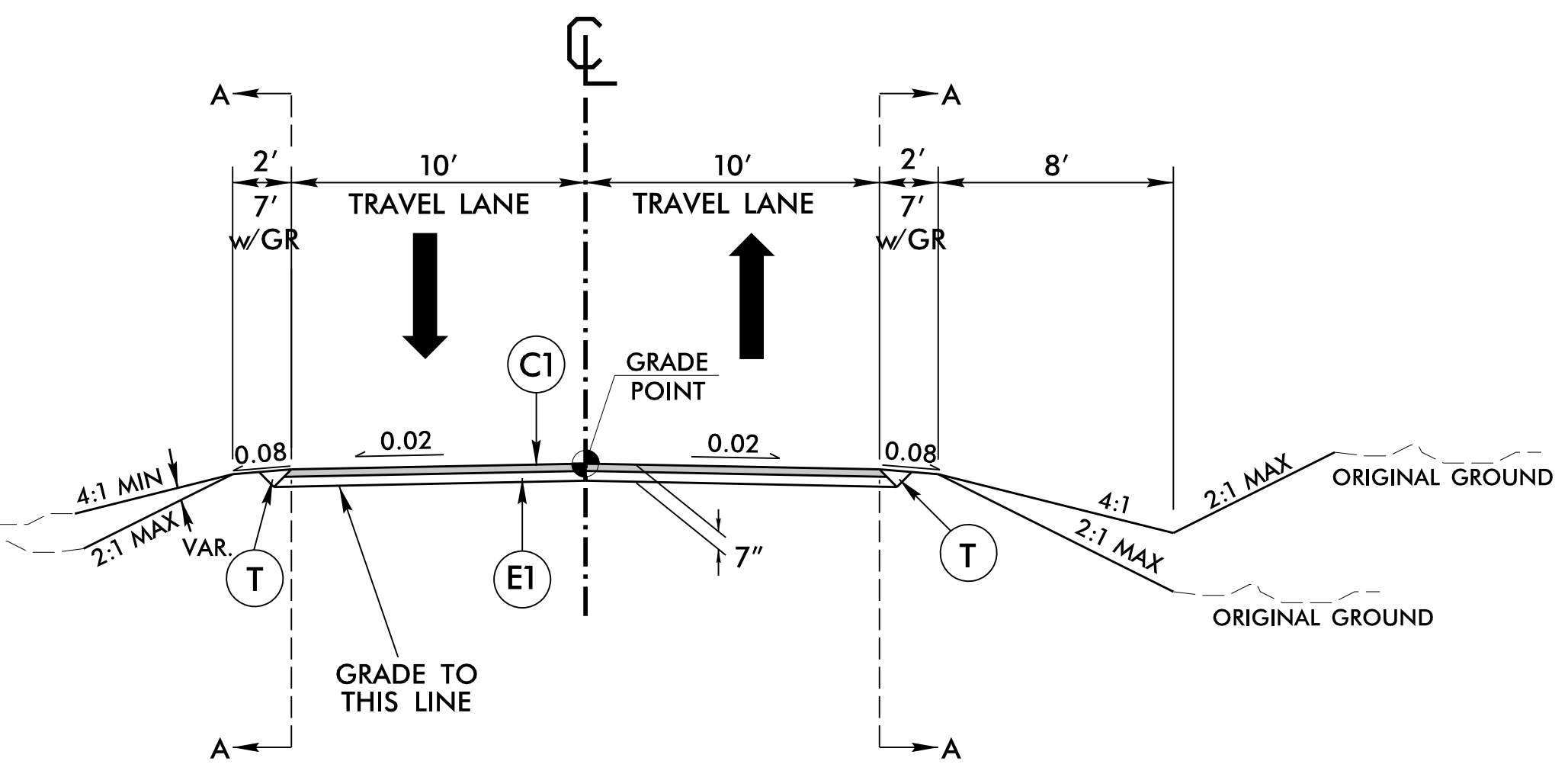
-L- SR 1212 (JOHNSON BRANCH RD)



TYPICAL SECTION NO. 1

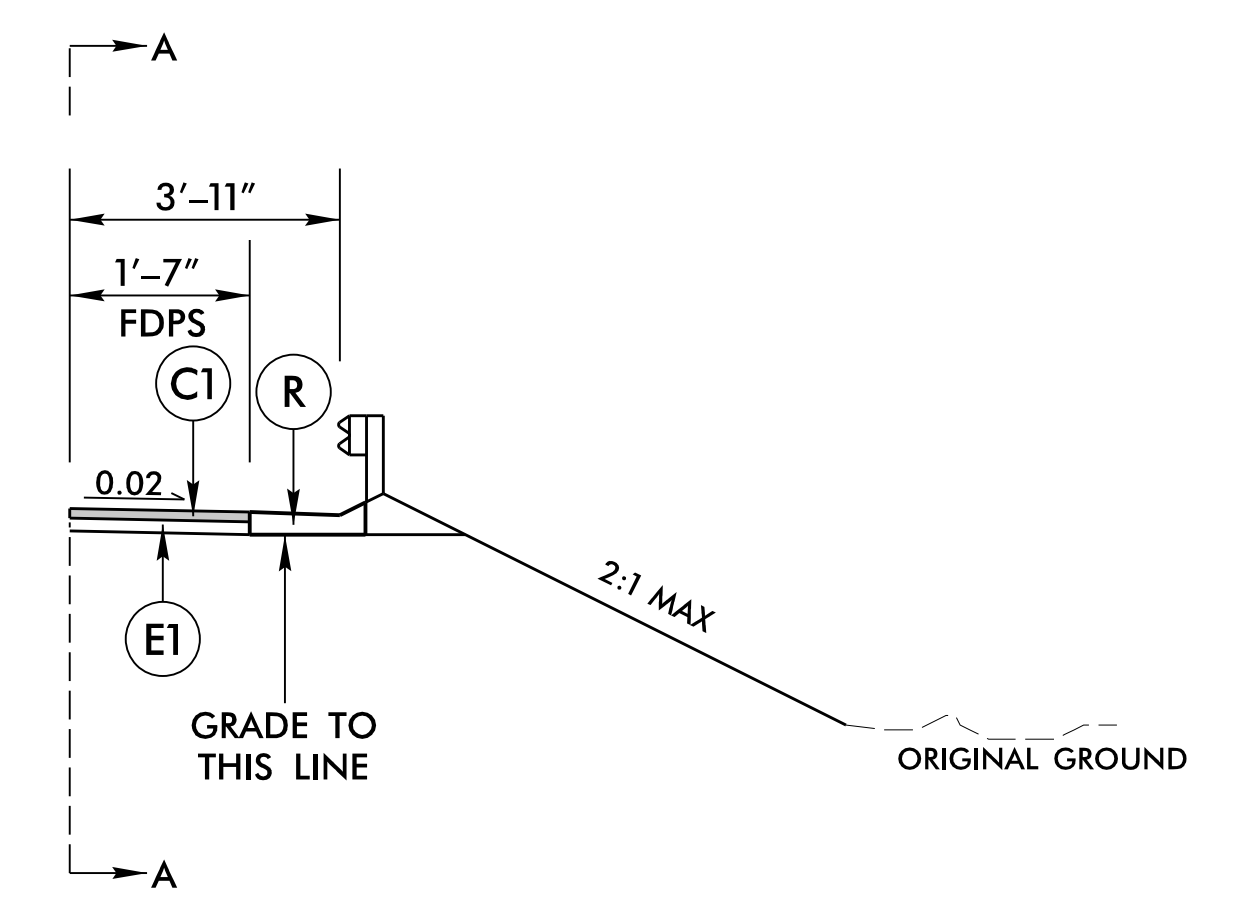
LINE	FROM STATION	TO STATION
-L-	11+35.00	12+09.72

-L- SR 1212 (JOHNSON BRANCH RD)



TYPICAL SECTION NO. 2

LINE	FROM STATION	TO STATION
-L-	12+09.72	13+04.82 (BEGIN BRIDGE)
-L-	13+74.86 (END BRIDGE)	14+20.00

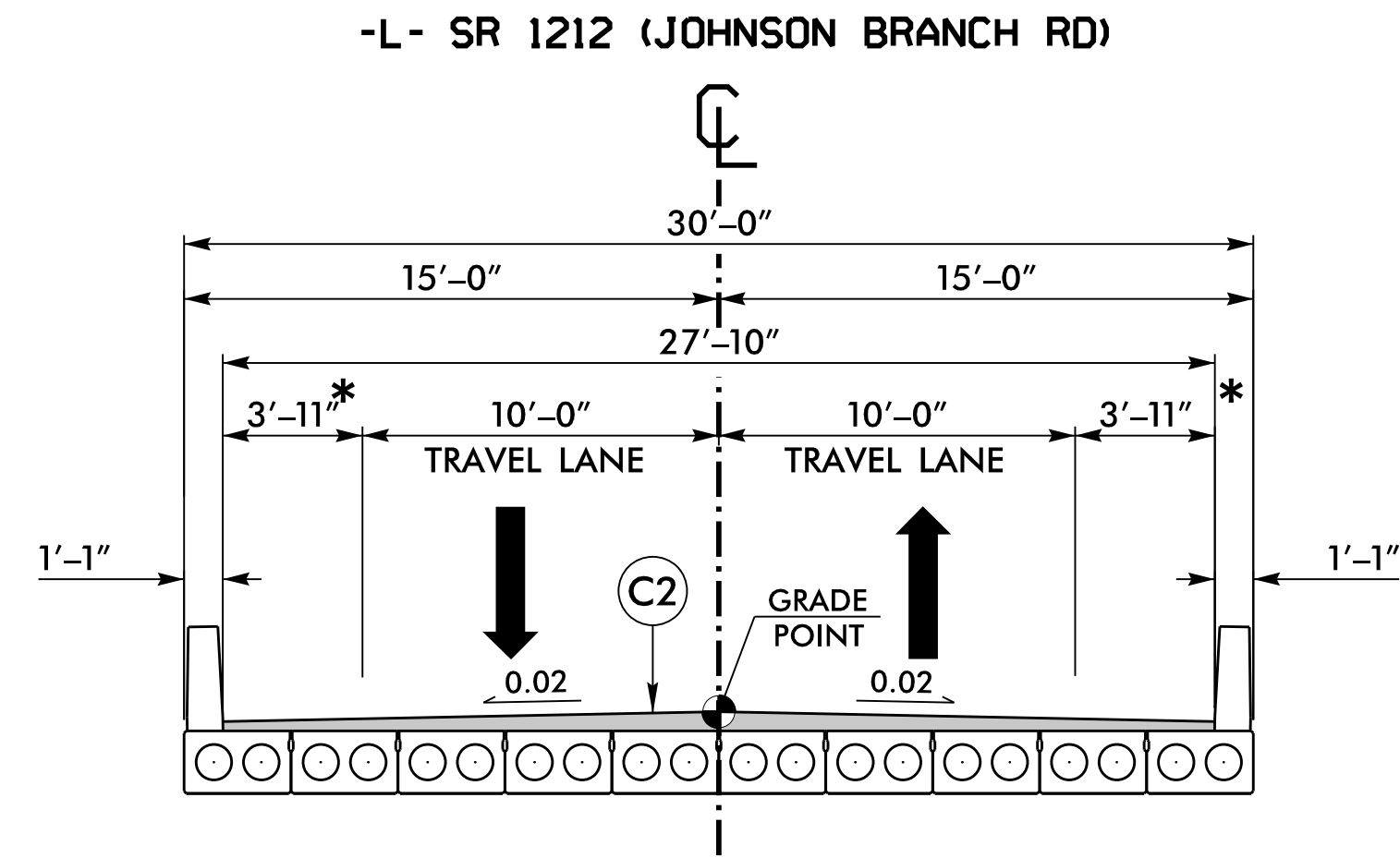


TYPICAL SECTION NO. 2A

LINE	FROM STATION	TO STATION
-L- LT (MIRRORED)	13+74.86 (END BRIDGE)	13+91.79
-L- RT	13+74.86 (END BRIDGE)	13+90.86

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PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. 2A-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900, Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	



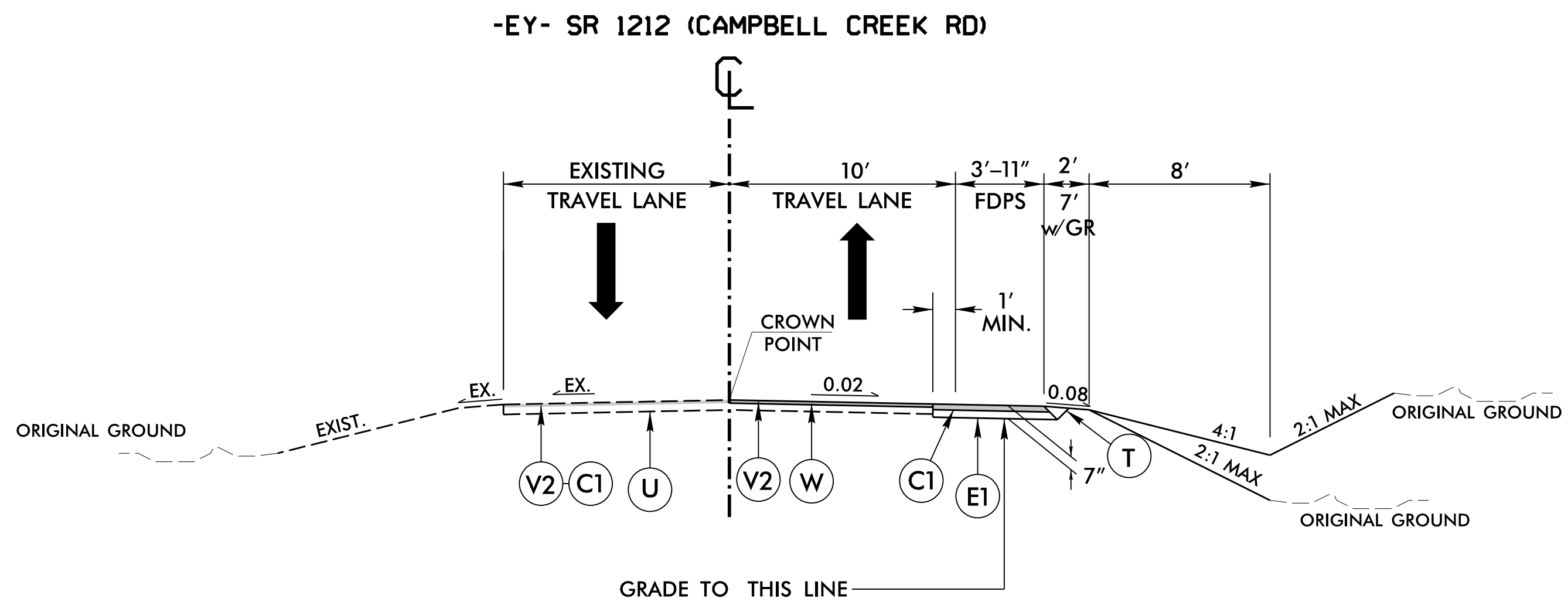
**TYPICAL SECTION NO. 3**  
**24" CORED SLAB BRIDGE**

LINE	FROM STATION	TO STATION
-L-	13 + 04.82 (BEGIN BRIDGE)	13 + 74.86 (END BRIDGE)

\* **NOTE:**  
LEFT SHOULDER WIDTH ON BRIDGE VARIES FROM 2'-11" TO 3'-11"  
RIGHT SHOULDER WIDTH ON BRIDGE VARIES FROM 3'-11" TO 4'-9"

PAVEMENT SCHEDULE	
C1	3" S9.5B
C2	VAR. S9.5B
E1	4" B25.0C
E2	VAR. B25.0C
J	8" ABC
P	PRIME COAT
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	INCIDENTAL MILLING
V2	3" MILLING
W	WEDGING

REVISIONS

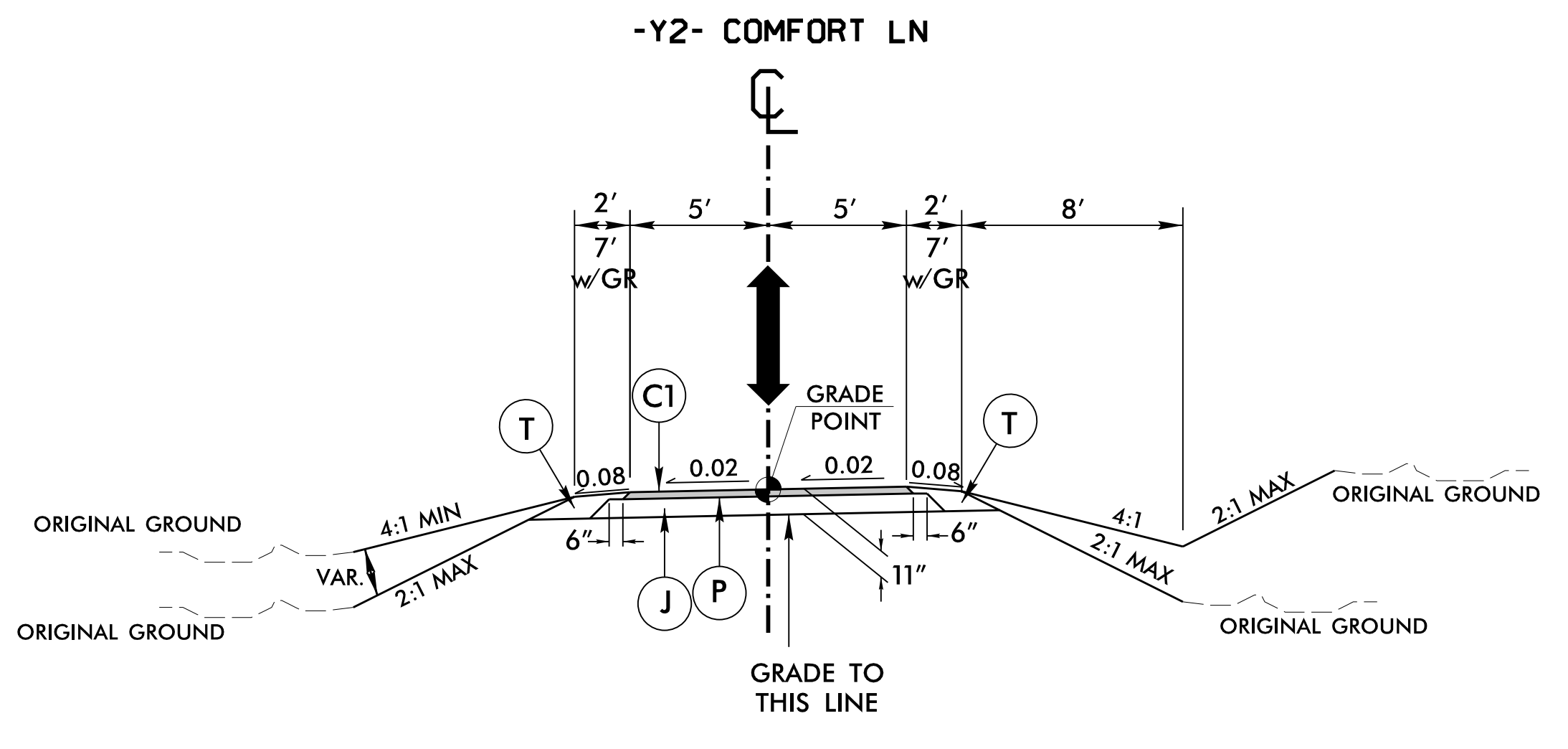


**TYPICAL SECTION NO. 4**

LINE	FROM STATION	TO STATION
-EY-	12 + 66.00	14 + 68.00

UNIFORM MILL AND REPLACE

LINE	FROM STATION	TO STATION
-EY-	12 + 54.97	12 + 66.00
-EY-	14 + 68.00	14 + 99.58



**TYPICAL SECTION NO. 5**

LINE	FROM STATION	TO STATION
-Y2-	10 + 11.64	10 + 80.00

-Y2- WILL BE BUILT UP IN LIFTS OF ABC STONE INSTEAD OF USING EARTHWORK

3/5/2026, 10:01 AM, B:\14\024-RDY\_TYP.dgn, 244436, 2/0



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNERS NAMES
1	4	FREDDIE WAYNE GRATSY
2	4	ROBERT J. KNOEDLER
3	4	JAMES W. WADDILL
4	4	MICHAEL E. NARDOZZI
5	4	BETTY F. LOWE

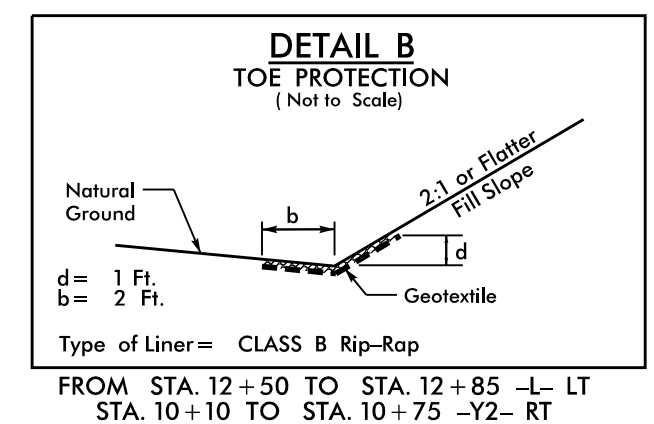
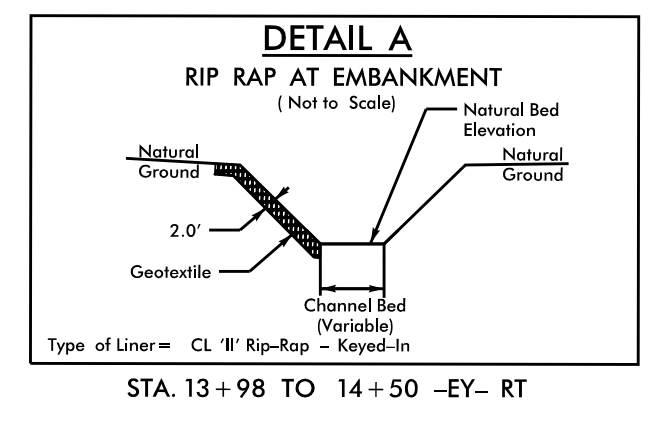
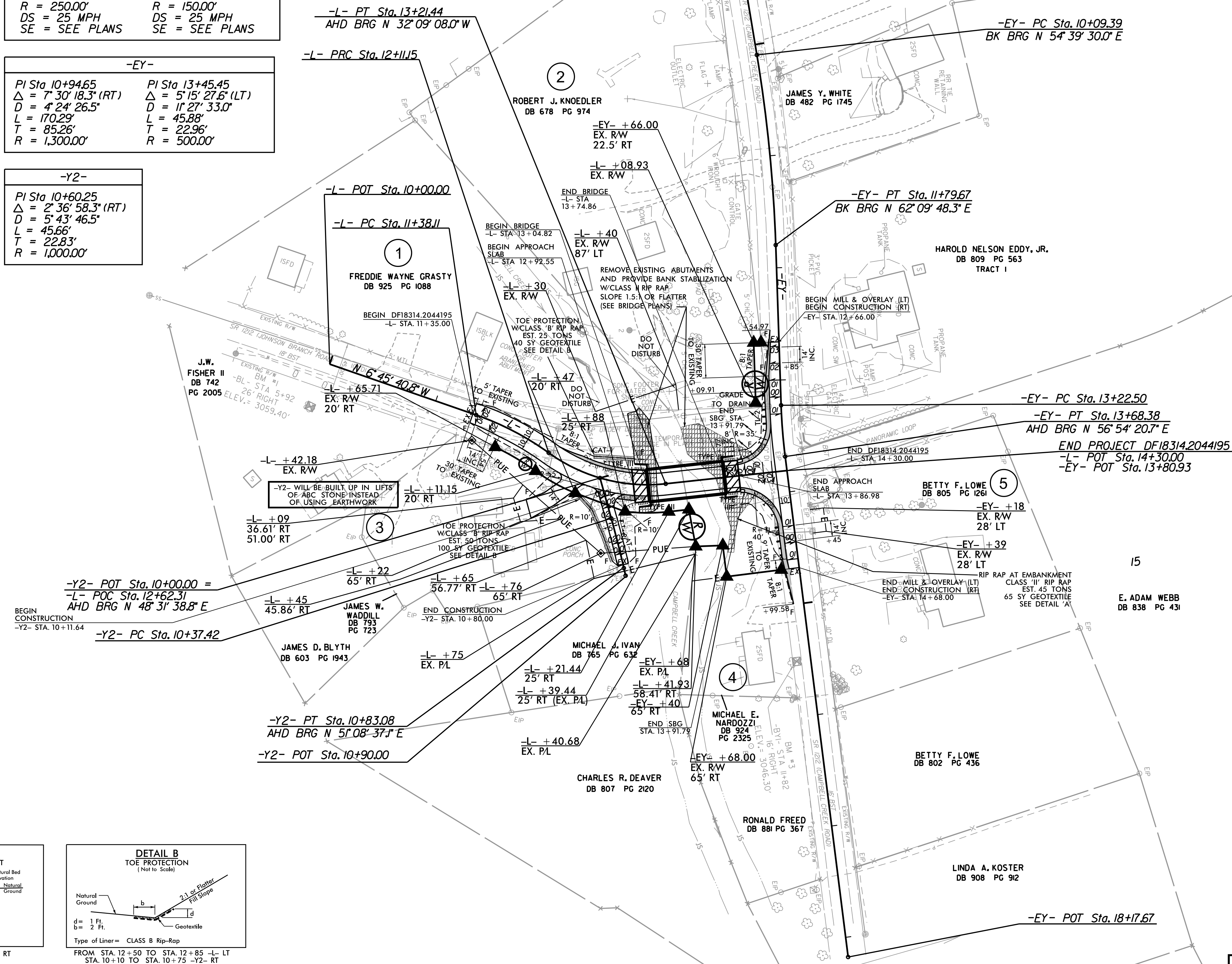
REVISIONS

PROJECT REFERENCE NO. <b>DF18314.2044195</b>	SHEET NO. <b>4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	

-L-	
PI Sta 11+74.89 $\Delta = 16' 44" 19.2" (RT)$ $D = 22' 55" 05.9"$ $L = 73.04'$ $T = 36.78'$ $R = 250.00'$ $DS = 25 MPH$ $SE = SEE PLANS$	PI Sta 12+68.92 $\Delta = 42' 07" 46.5" (LT)$ $D = 38' 11" 55.9"$ $L = 110.29'$ $T = 57.77'$ $R = 150.00'$ $DS = 25 MPH$ $SE = SEE PLANS$

-EY-	
PI Sta 10+94.65 $\Delta = 7' 30" 18.3" (RT)$ $D = 4' 24" 26.5"$ $L = 170.29'$ $T = 85.26'$ $R = 1,300.00'$	PI Sta 13+45.45 $\Delta = 5' 15" 27.6" (LT)$ $D = 11' 27" 33.0"$ $L = 45.88'$ $T = 22.96'$ $R = 500.00'$

-Y2-	
PI Sta 10+60.25 $\Delta = 2' 36" 58.3" (RT)$ $D = 5' 43" 46.5"$ $L = 45.66'$ $T = 22.83'$ $R = 1,000.00'$	



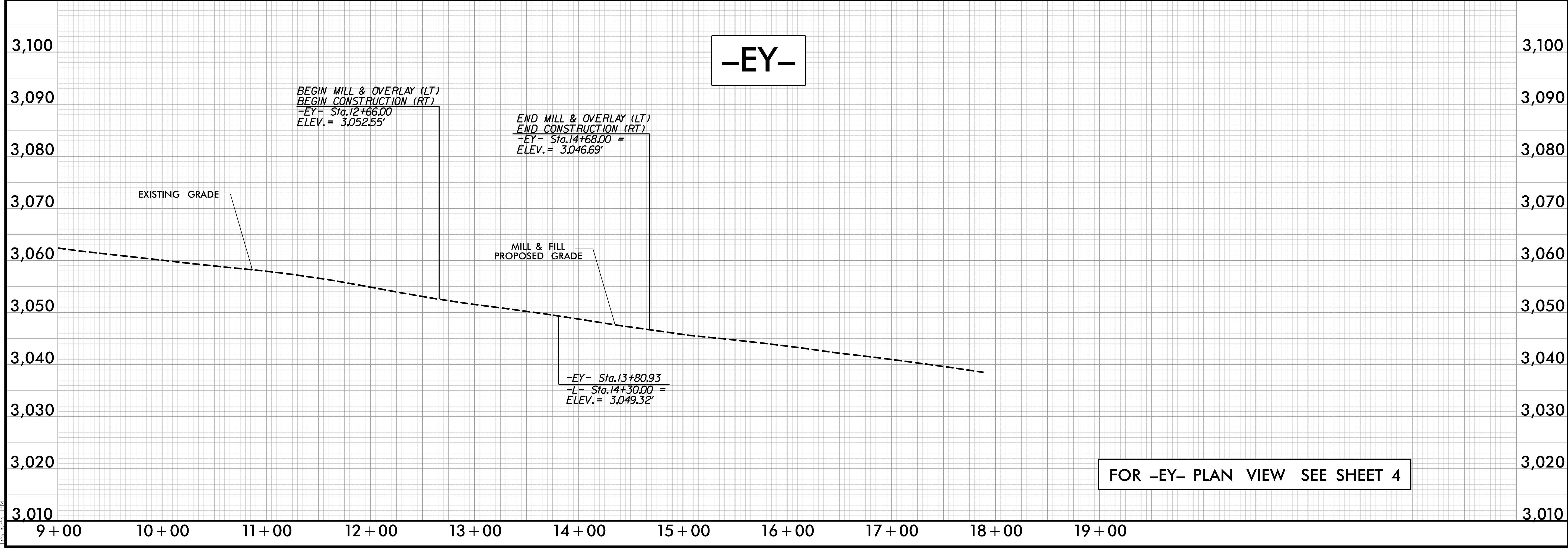
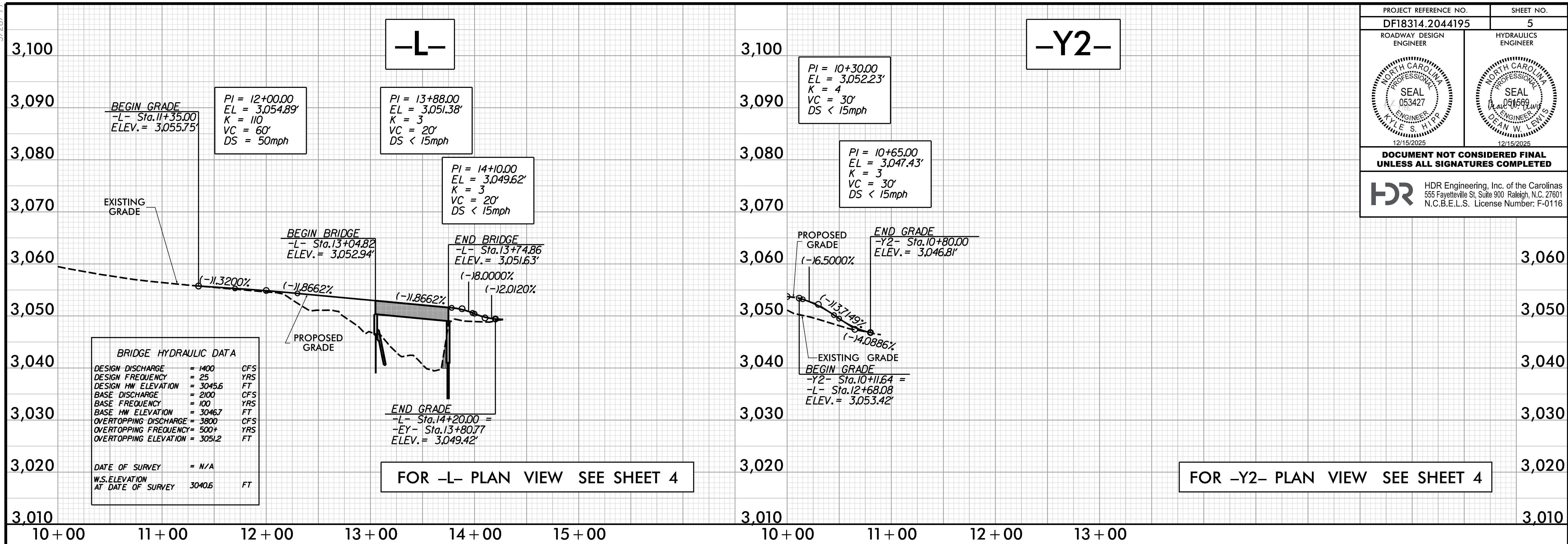
FOR -L-, -EY- AND -Y2- PROFILES SEE SHEET 5  
FOR STRUCTURE PLANS SEE SHEETS S-01 THRU S-17

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USER: KHIPP  
FILE:  
PENTABLE: NCDOT\_color\_eng\_50.plt  
DATE: 4/2/2026  
TIME: 4:21:06 PM

REVISIONS

5/28/2025

PROJECT REFERENCE NO. <b>DF18314.2044195</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	



12/9/2025 8:14:10 AM P14.P024.RDY\_PFL\_05.dgn

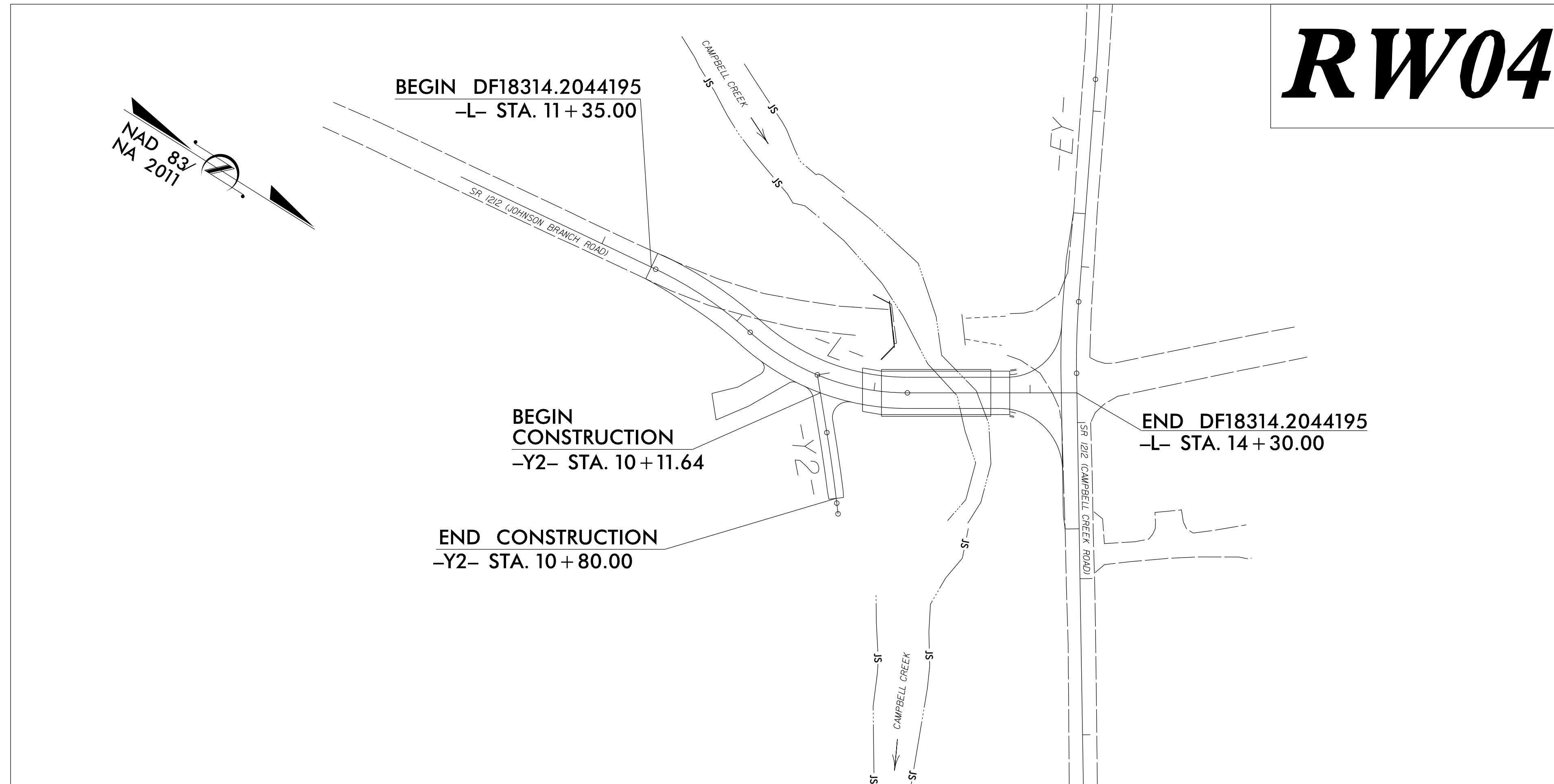
TIP PROJECT: DF18314.2044195

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2044195	RW01	5

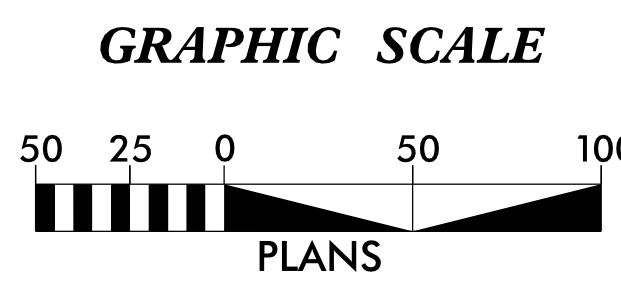
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 SURVEY CONTROL, EXISTING CENTERLINES,  
 RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

# HAYWOOD COUNTY

LOCATION: SR 1212 (JOHNSON BRANCH RD) OVER CAMPBELL CREEK  
 TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS 102" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 667,145.9630(ft) EASTING: 780,084.8237(ft) ELEVATION: 3,055.42(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989010 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS 102" TO -L- STATION 11+35.00 IS S 57° 50' 48.5" E 301.83(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

LOCATION AND SURVEYS, DIVISION 14  
 122 BONNIE LANE  
 SYLVA, NC 28779

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
**SEPTEMBER 10, 2025**

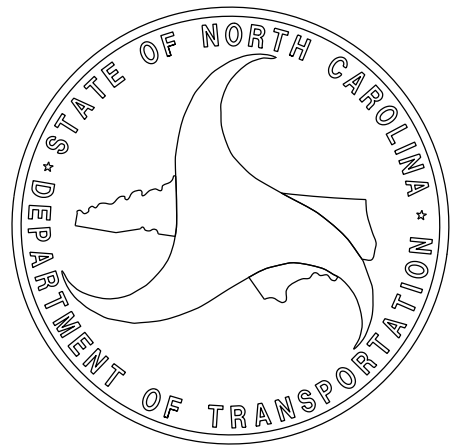
LETTING DATE:  
**JANUARY 27, 2026**

PROFESSIONAL LAND SURVEYOR




DocuSigned by:  
 Brian Barnatt  
 SIGNATURE:

12/10/2025  
 Date:



# SURVEY CONTROL SHEET

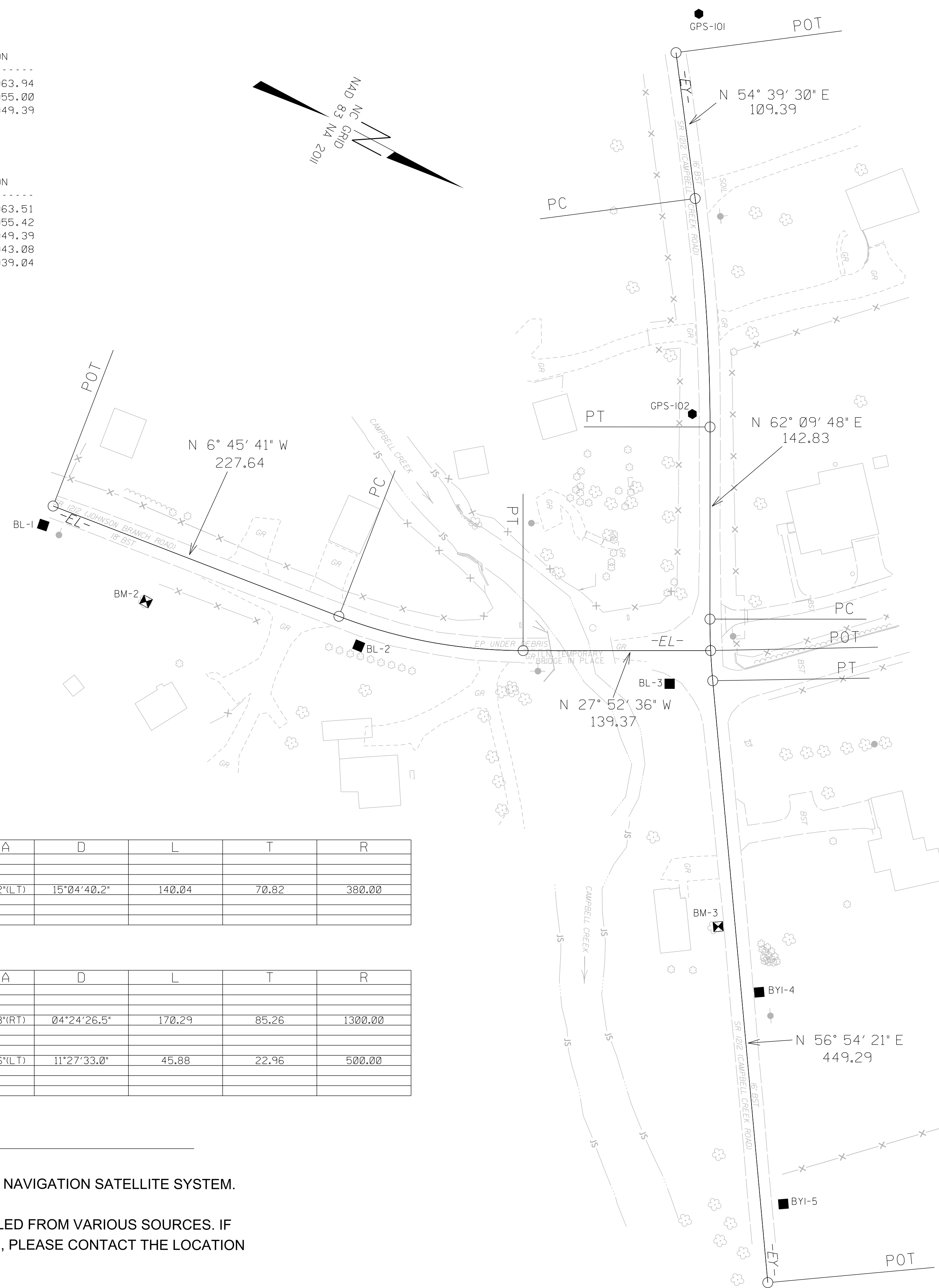
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO. DF18314.20440195	SHEET NO. RW02C-1
<b>Location and Surveys</b>	
LOCATION AND SURVEYS, DIVISION 14 122 BONNIE LANE SYLVA, NC 28779	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1	BL1		666758.0830	780383.2370	3063.94
2	BL2		667007.3290	780353.0370	3055.00
3	BL3		667224.7160	780269.9810	3049.39

BY1	POINT	DESC.	NORTH	EAST	ELEVATION
101	GPS101		667011.2002	779819.5775	3063.51
102	GPS102-HOLD		667145.9630	780084.8237	3055.42
Y1	BL3		667224.7160	780269.9810	3049.39
4	BY1-4		667390.7880	780441.5310	3043.08
5	BY1-5		667480.2710	780572.2840	3039.04

.....  
 BM1 ELEVATION = 3059.40  
 N 666852 E 780398  
 BM1 IS RR SPIKE SET IN BASE OF 12" WALNUT  
 .....  
 BM2 ELEVATION = 3067.65  
 N 666920 E 779724  
 BM2 IS RR SPIKE SET IN BASE OF 15" MAPLE  
 .....  
 BM3 ELEVATION = 3046.30  
 N 667341 E 780413  
 BM3 IS RR SPIKE SET IN BASE OF 30" STUMP  
 .....



EL	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		666758.000	780367.312							
LINE				N 06°45'40.8" W	227.64					
PC		666984.054	780340.511							
CURVE				N 17°19'08.4" W	139.25	21°06'55.2"(LT)	15°04'40.2"	140.04	70.82	380.00
PT		667116.992	780299.057							
LINE				N 27°52'36.0" W	139.37					
POT		667240.186	780233.894							

EY	POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT		667009.682	779852.999							
LINE				N 54°39'30.0" E	109.39					
PC		667072.957	779942.227							
CURVE				N 58°24'39.1" E	170.16	07°30'18.3"(RT)	04°24'26.5"	170.29	85.26	1300.00
PT		667162.092	780087.177							
LINE				N 62°09'48.3" E	142.83					
PC		667228.785	780213.475							
CURVE				N 59°32'04.5" E	45.87	05°15'27.6"(LT)	11°27'33.0"	45.88	22.96	500.00
PT		667252.040	780253.009							
LINE				N 56°54'20.7" E	449.29					
POT		667497.363	780629.416							

**NOTES:**

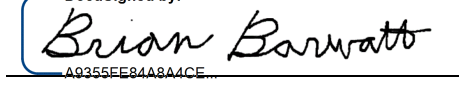
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

I, Brian Barwatt, PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: AA  
 Type of GPS field procedure: VRS  
 Dates of survey: January 2018 - February 2025  
 Datum/Epoch: NAD 83/NA 2011  
 Published/Fixed-control use: N/A  
 Localized around: GPS 102  
 Northing: 667145.963  
 Easting: 780084.824  
 Combined grid factor: 0.99989010  
 Geoid model: 12  
 Units: U.S. Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed during January 2018, and then again after Hurricane Helene from November 2024 - February 2025 and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

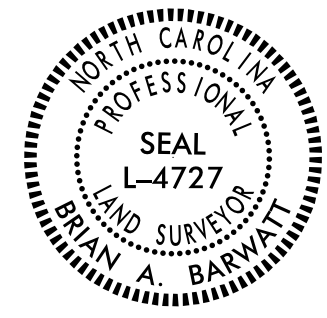
This 8th day of December, 2025.

DocuSigned by:  
  
 Professional Land Surveyor L-4727

REVISIONS

08-DEC-2025 14:24 C:\Sylvia\Bridges\bp14\_r024 RW Sheets\DF18314.20440195\_1s-rw02c-1.dgn bobbarwatt AT LS-330173L

# PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. DF18314.20440195	SHEET NO. RW02D-1
<b>Location and Surveys</b>	
LOCATION AND SURVEYS, DIVISION 14 122 BONNIE LANE SYLVA, NC 28779	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Brian Barwatt, 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 8th day of December, 2025.

DocuSigned by:  
*Brian Barwatt*  
Professional Land Surveyor L-4727

REVISIONS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	666851.2739	780356.2534
PC	11+38.11	666988.4225	780339.9933
PRC	12+11.15	667061.1707	780342.0355
PT	13+21.44	667166.9804	780321.3005
POT	14+30.00	667258.8946	780263.5260


Y2

TYPE	STATION	NORTH	EAST
POT	10+00.00	667112.0846	780342.2178
PC	10+37.42	667136.8666	780370.2558
PT	10+83.08	667166.3147	780405.1469
POT	10+90.00	667170.6552	780410.5345

**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.

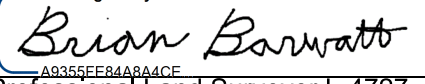
# RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. RW03E-1
Location and Surveys	
LOCATION AND SURVEYS, DIVISION 14 122 BONNIE LANE SYLVA, NC 28779	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

### ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+65.71	20.00	667016.1042	780358.2612
L	12+11.15	20.00	667057.7055	780361.7330
L	12+47.00	20.00	667098.1838	780363.9460
L	12+88.00	25.00	667145.2275	780359.3883
L	13+21.44	25.00	667180.2847	780342.4664
L	13+39.44	25.00	667195.5258	780332.8863
L	13+41.93	58.41	667215.4101	780359.8460
L	14+08.93	-63.02	667207.5159	780221.3819

I, Brian Barwatt, 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 on December 9th, 2025, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 10th day of December, 2025.  
 Digitally signed by:  
  
 Brian A. Barwatt  
 Professional Land Surveyor L-4727

PT. NOT SET ( IN WATER )  
 PT. NOT SET ( IN WATER )

### ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+42.18	22.39	666994.7426	780361.8194
L	12+76.00	65.00	667142.0644	780402.1746

### ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
EY	14+40.00	65.00	667236.6912	780348.5024
EY	14+68.00	16.00	667293.0306	780345.2052
EY	12+66.00	22.50	667182.5076	780174.0227
EY	12+66.00	16.00	667188.2554	780170.9875
EY	14+68.00	65.00	667251.9797	780371.9600

PT. NOT SET ( IN WATER )  
 8" SPIKE SET

**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 ON DECEMBER 9TH, 2025.

REVISIONS

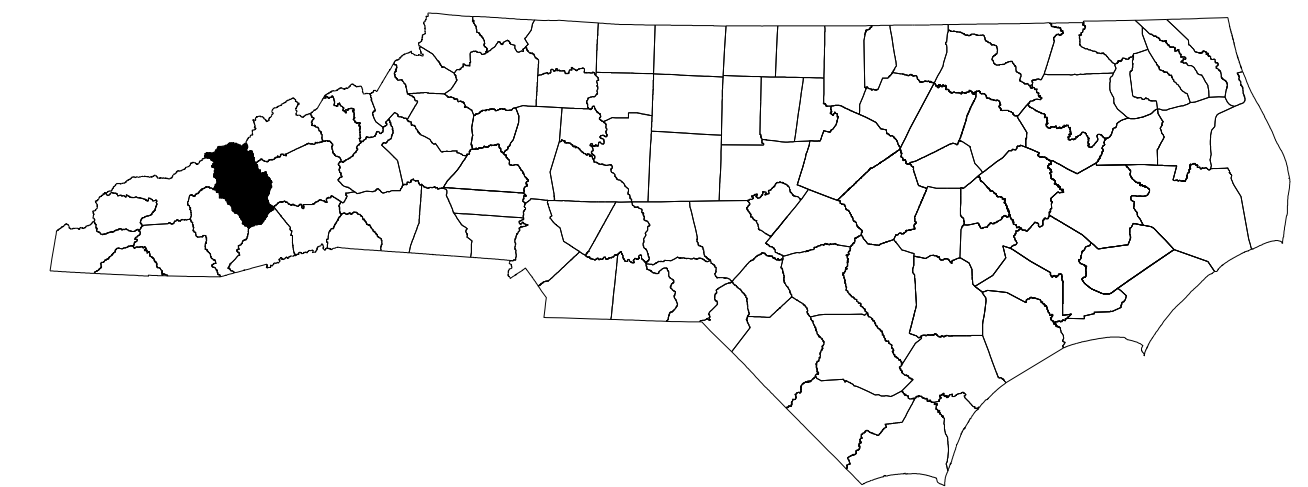
I:\DEC-2025 08:37  
 C:\Users\barwatt\OneDrive\Documents\18314\14-024 RW Sheets\DF18314.2044195.LS.RW03E-1.dgn  
 Brian Barwatt  
 PL L-4727



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

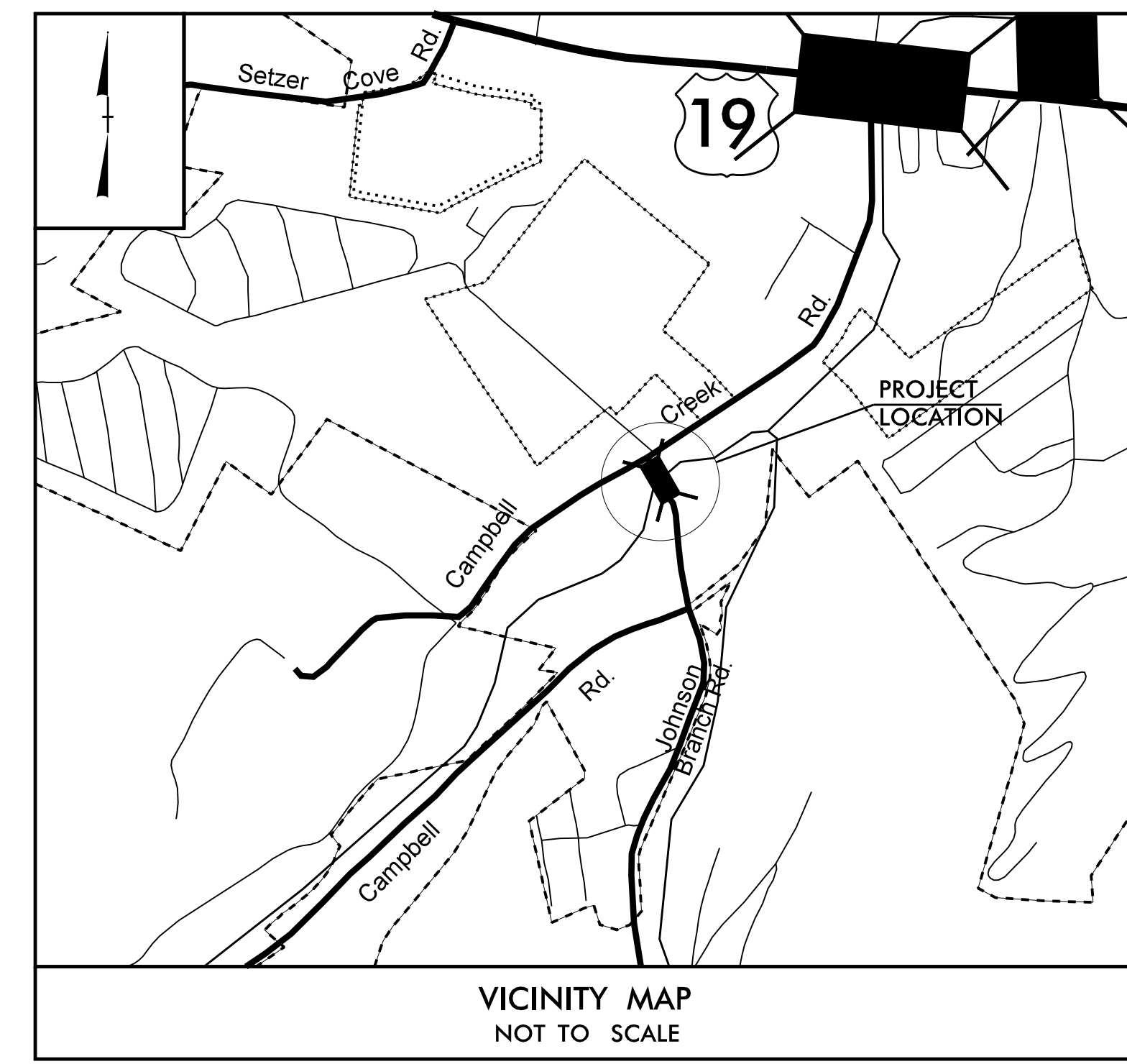
**TRANSPORTATION MANAGEMENT PLAN**

**HAYWOOD COUNTY**



**LOCATION: SR 1212 (JOHNSON BRANCH RD) OVER CAMPBELL CREEK**

**TYPE OF WORK: TEMPORARY TRAFFIC CONTROL, PAVEMENT MARKING, & DELINEATION FOR GRADING, DRAINAGE, PAVING, AND STRUCTURE**



VICINITY MAP  
NOT TO SCALE

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-2	TEMPORARY TRAFFIC CONTROL STEP 1 DETAIL TEMPORARY TRAFFIC CONTROL PHASING TRANSPORTATION OPERATIONS PLAN: GENERAL NOTES
TMP-3	TEMPORARY TRAFFIC CONTROL STEP 2 DETAIL

**LEGEND**

- DIRECTION OF TRAFFIC FLOW
- BARRICADE (TYPE III)
- DRUM
- STATIONARY SIGN
- WORK AREA
- REMOVAL

HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900, Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

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

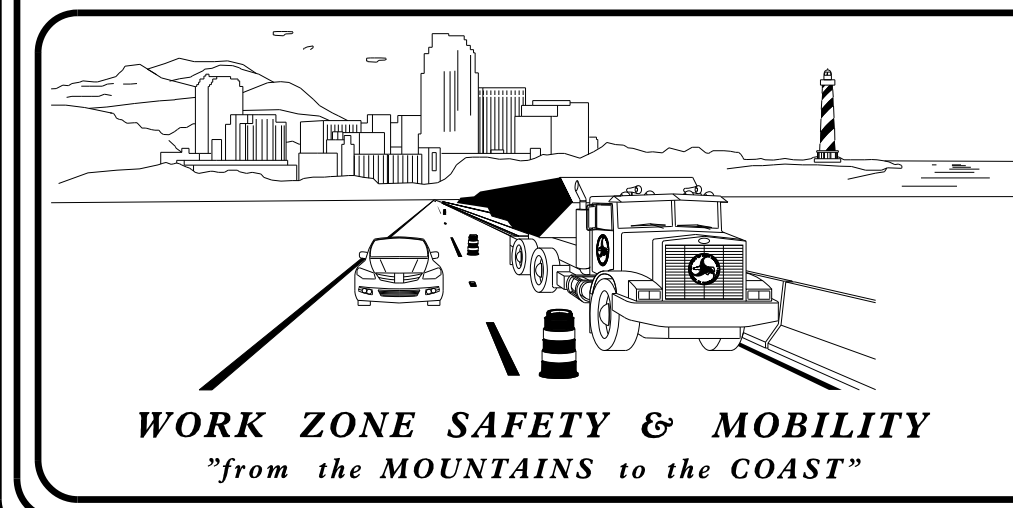
APPROVED: *Ben Schoenbauer*

DATE: 12/15/2025

SEAL



12/10/2025  
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PLANS PREPARED BY:

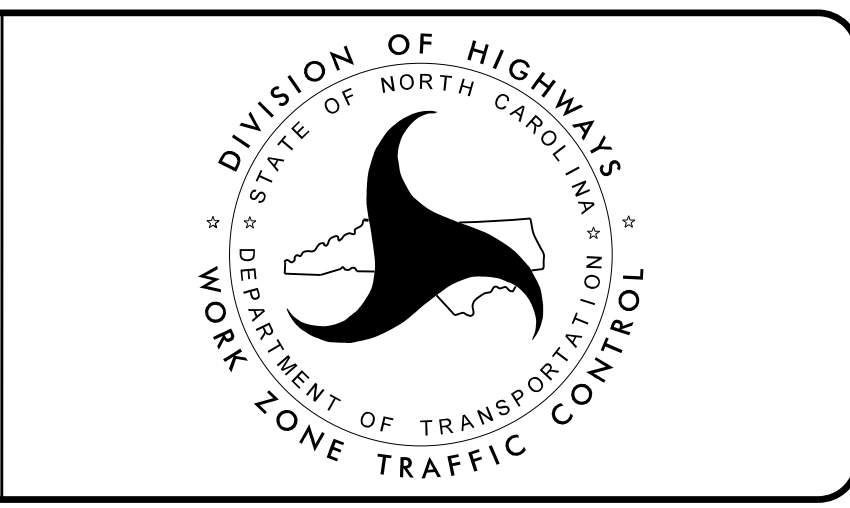
BEN SCHOENBAUER, P.E.  
TRAFFIC CONTROL PROJECT ENGINEER

CAROLINE VENIGALLA, P.E.  
TRAFFIC CONTROL DESIGN ENGINEER

NCDOT CONTACTS:

ZACH SHULER, P.E.  
PROJECT ENGINEER

PROJECT DESIGN ENGINEER



**TIP PROJECT: DF18314.2044195**





PLOT DRIVER: NCDOT\_color\_eng\_50.pht  
PENTABLE: NCDOT\_PMP.tbl  
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DATE: 3/11/2026  
TIME: 9:52:26 AM  
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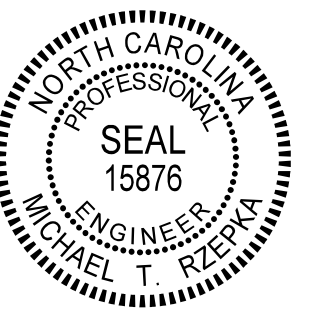
DF18314.2044195

CONTRACT: DN01137

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN  
HAYWOOD COUNTY

LOCATION: SR 1212 (JOHNSON BRANCH RD) OVER CAMPBELL CREEK

PROJECT NO.	SHEET NO.
DF18314.2044195	PMP - 1
APPROVED: <i>Michael T. Rzepka</i>	
DATE: 3/11/2026	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE, GENERAL NOTES, ROADWAY STANDARD DRAWINGS, AND INDEX
PMP-2	PAVEMENT MARKING PLAN

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
ALL ROADS	THERMOPLASTIC	MATCH EXISTING

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

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

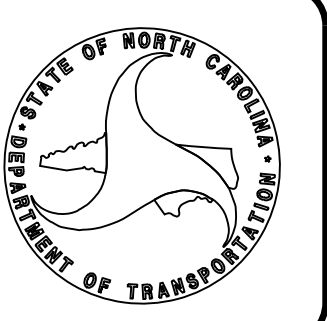
D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

ROADWAY STANDARD DRAWING

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

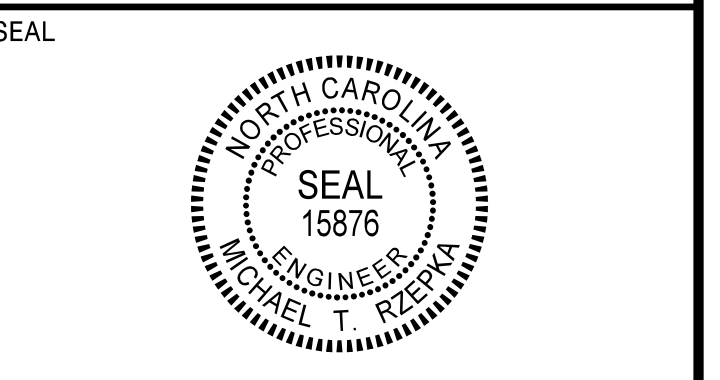
STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

<b>PLAN SUBMITTED TO: N.C.D.O.T. HIGHWAY DIVISION 14</b>	
ZACH SHULER, P.E.	HIGHWAY DIVISION 14 BRIDGE PROGRAM MANAGER



<b>PLAN PREPARED BY: HDR ENGINEERING, INC. OF THE CAROLINAS</b>	
MIKE RZEPKA, P.E.	SIGNING & DELINEATION PROJECT DESIGN ENGINEER
CHRIS HARNDEN	SIGNING & DELINEATION PROJECT DESIGN TECHNICIAN

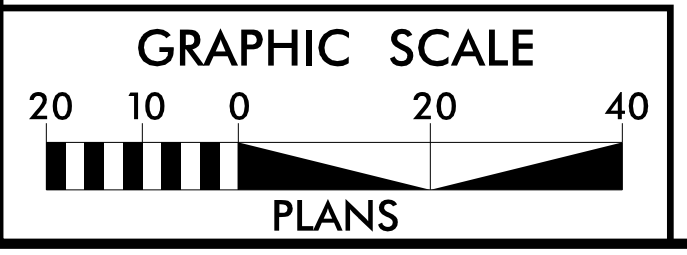
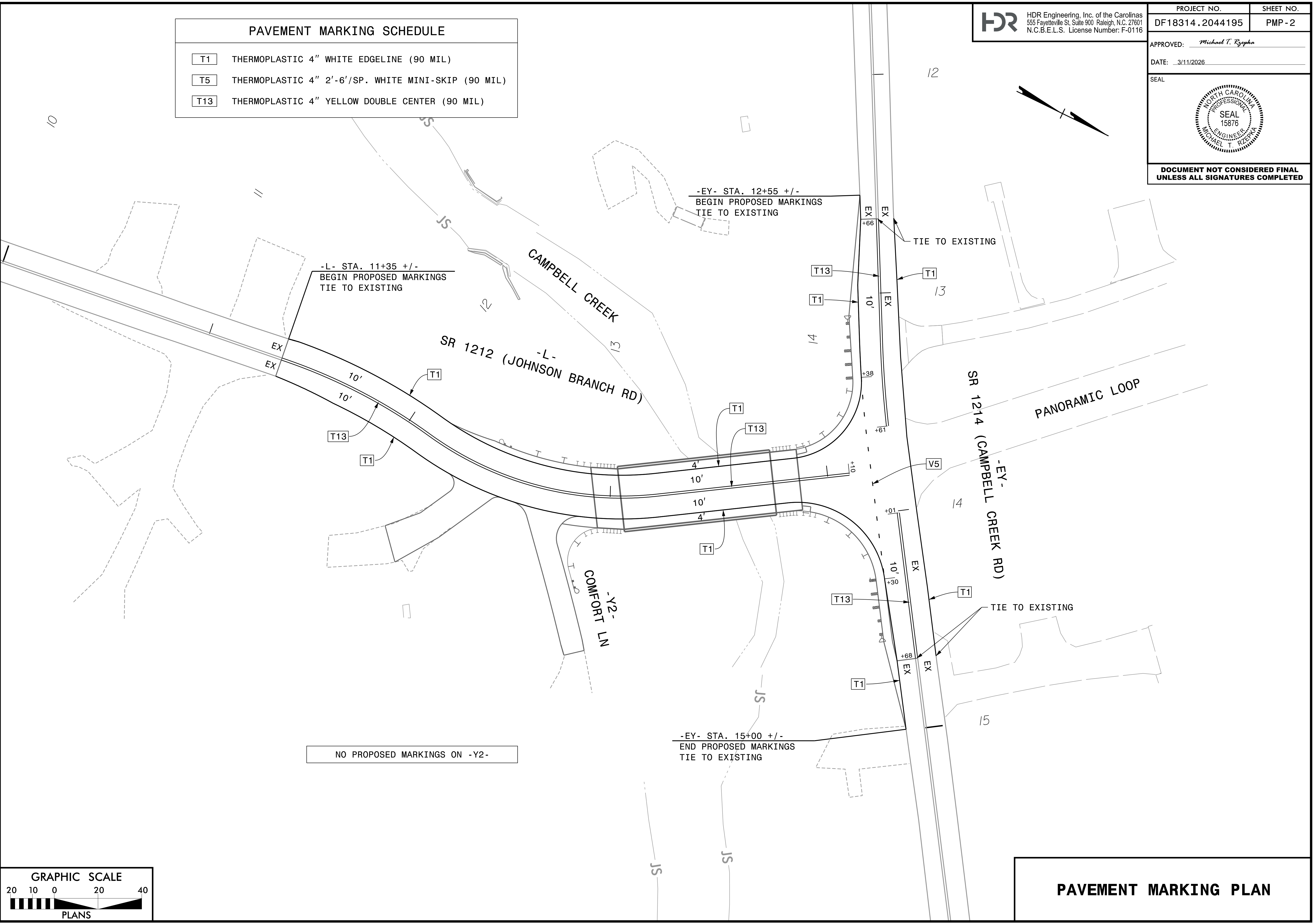
	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
---	---



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

PAVEMENT MARKING SCHEDULE	
T1	THERMOPLASTIC 4" WHITE EDGELINE (90 MIL)
T5	THERMOPLASTIC 4" 2'-6"/SP. WHITE MINI-SKIP (90 MIL)
T13	THERMOPLASTIC 4" YELLOW DOUBLE CENTER (90 MIL)

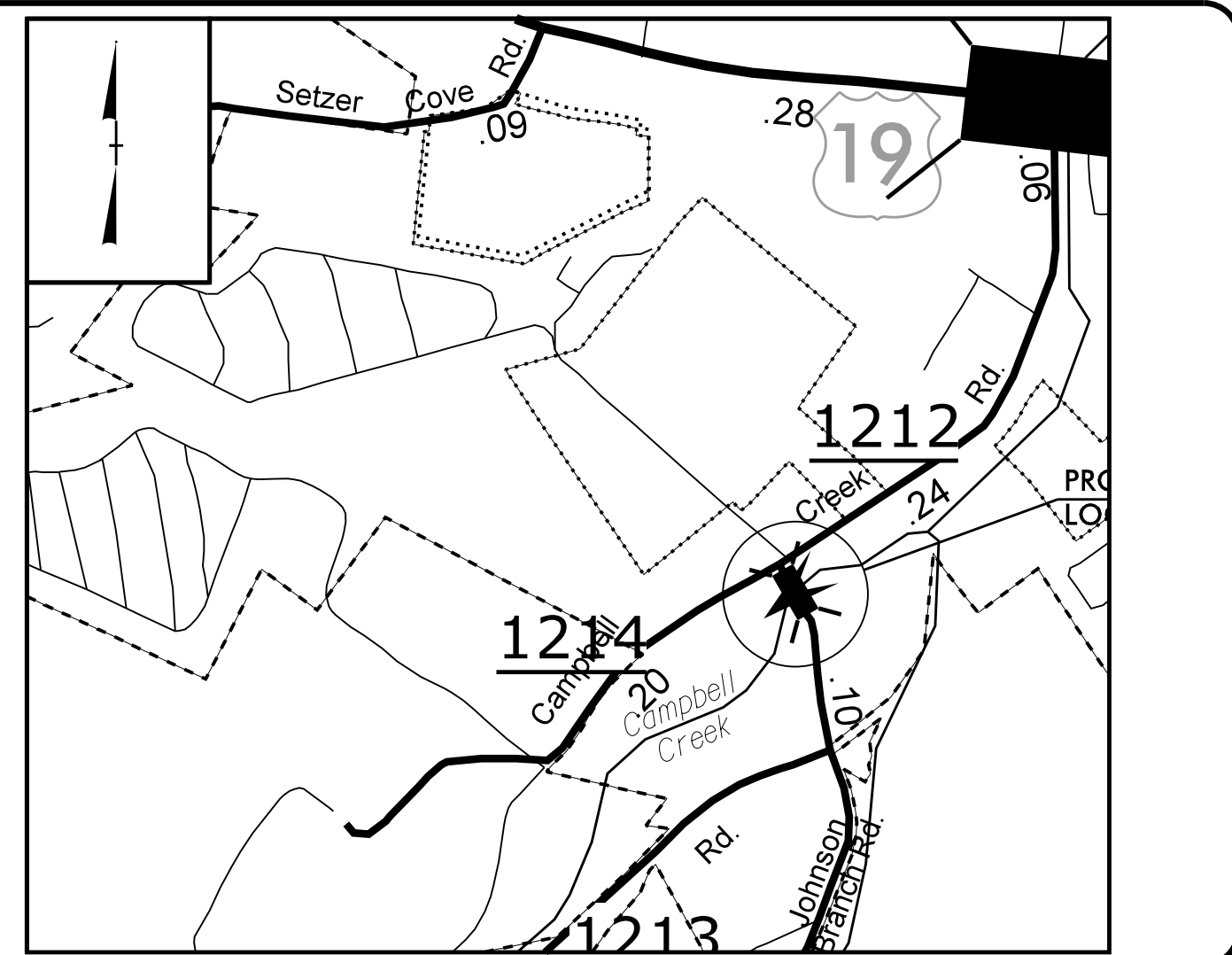
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NO PROPOSED MARKINGS ON -Y2-

**PAVEMENT MARKING PLAN**

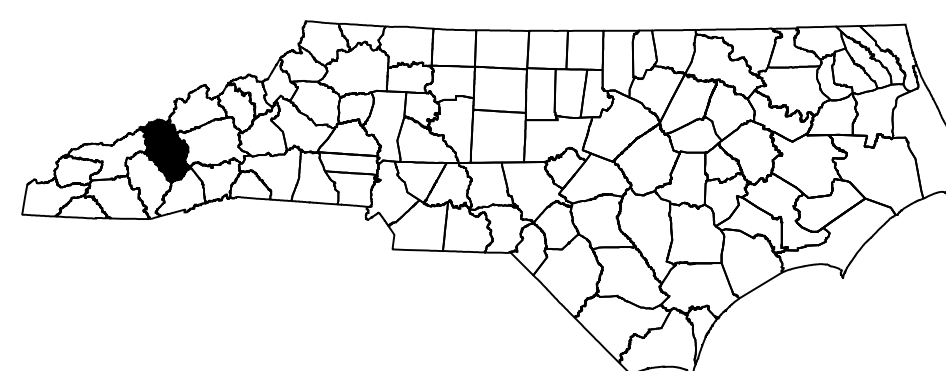
**TIP PROJECT: DF18314.2044195**



**VICINITY MAP**  
NOT TO SCALE

# HAYWOOD COUNTY

**LOCATION: BRIDGE NO. 430266 ON SR 1212 (JOHNSON BRANCH RD)  
OVER CAMPBELL CREEK**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**



HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. _____ Begin
to Sta. _____ End

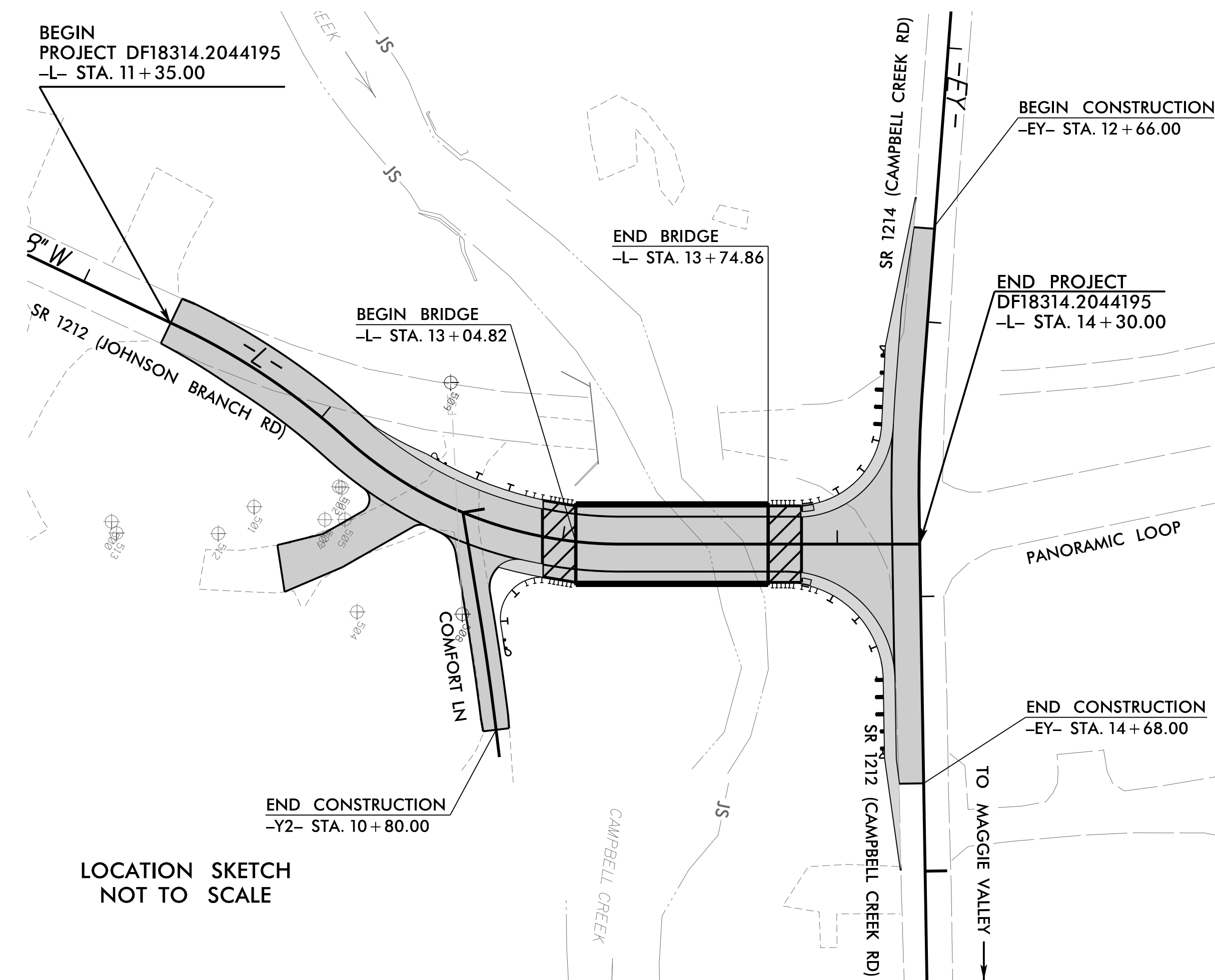
Refer To E. C. Special Provisions for Special Considerations.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

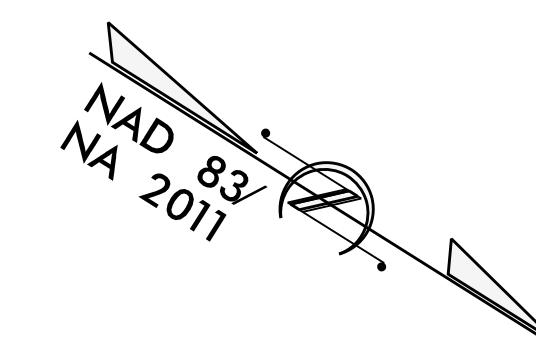
Refer To E. C. Special Provisions for Special Considerations.

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



LOCATION SKETCH  
NOT TO SCALE

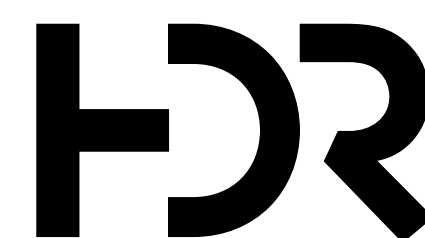
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2044195	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
DF18314.2044195		P.E.	



### GRAPHIC SCALE



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



Prepared In the Office of:  
**HDR Engineering, Inc. of the Carolinas**  
555 Fayetteville St, Suite 900  
Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116  
**2024 STANDARD SPECIFICATIONS**

Designed by:  
**David R. Wagner II, PE** 4286  
NAME LEVEL III CERTIFICATION NO.

### Roadway Standard Drawings

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

# DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

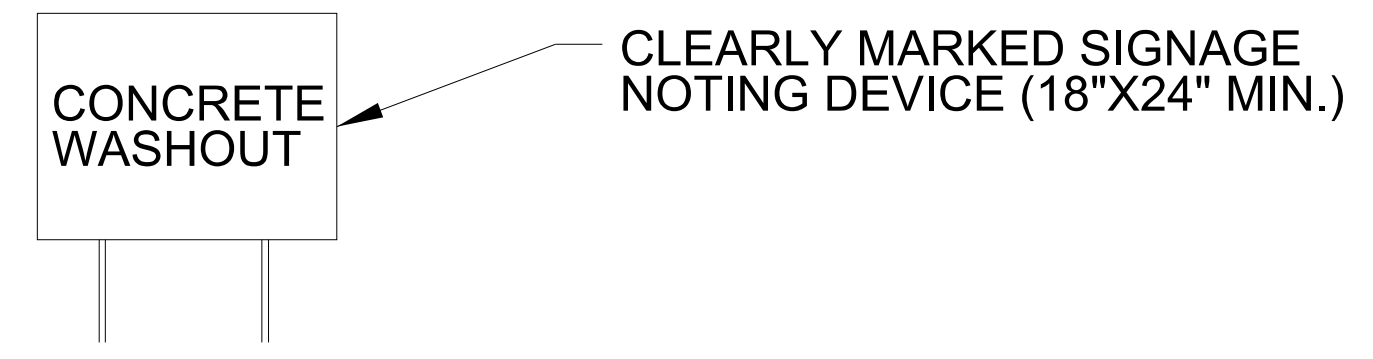
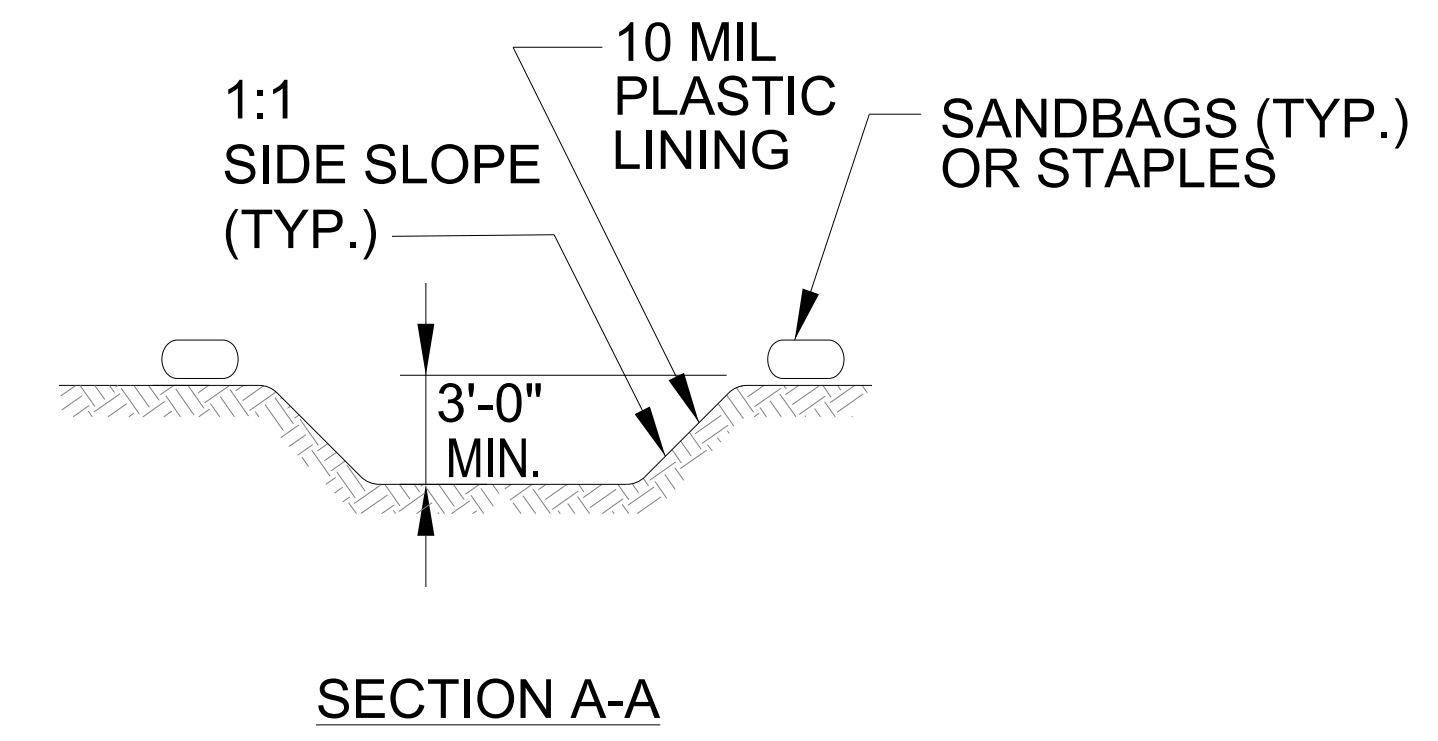
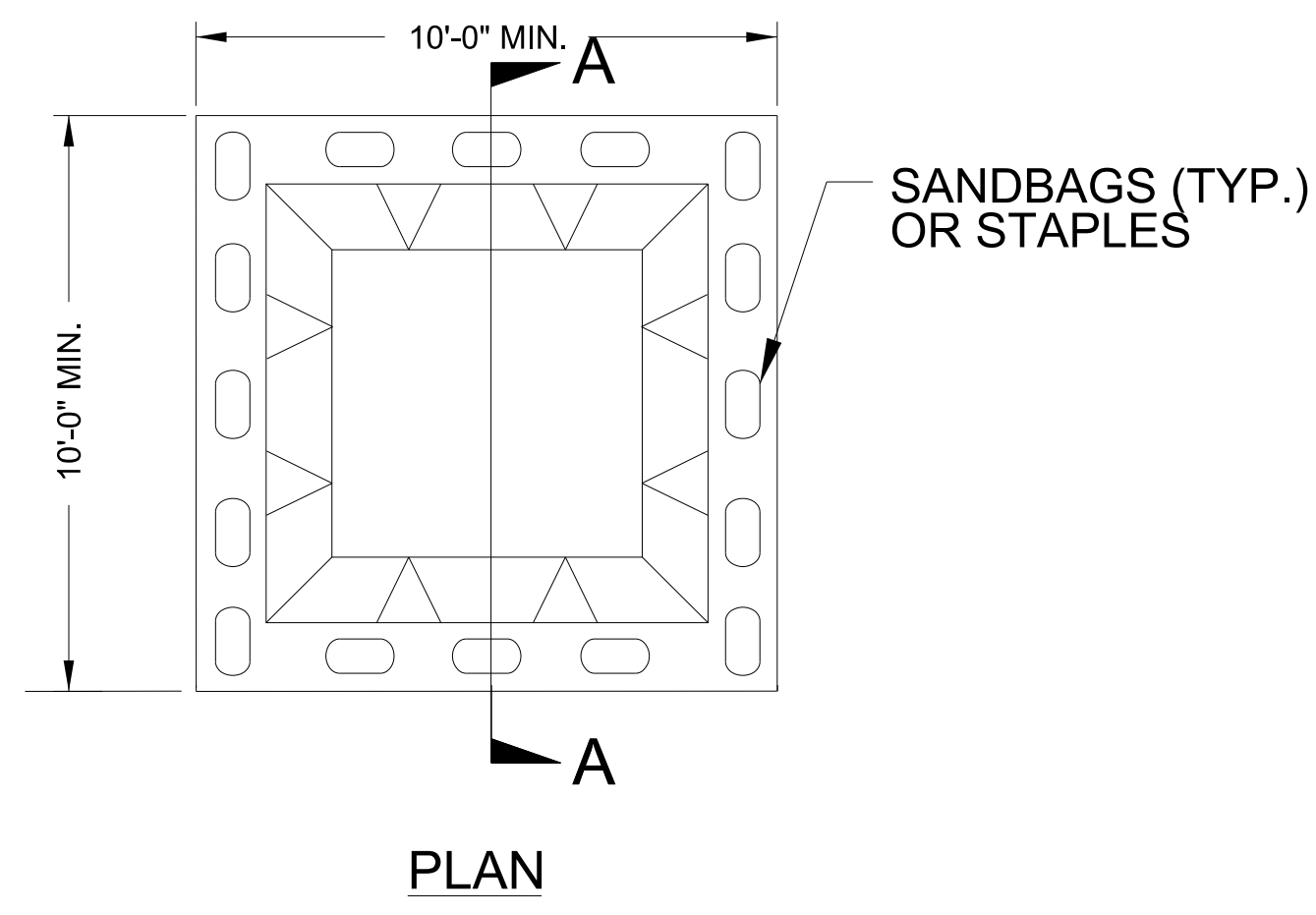
PROJECT REFERENCE NO.	SHEET NO.
DF18314.2044195	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## EROSION & SEDIMENT CONTROL LEGEND

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

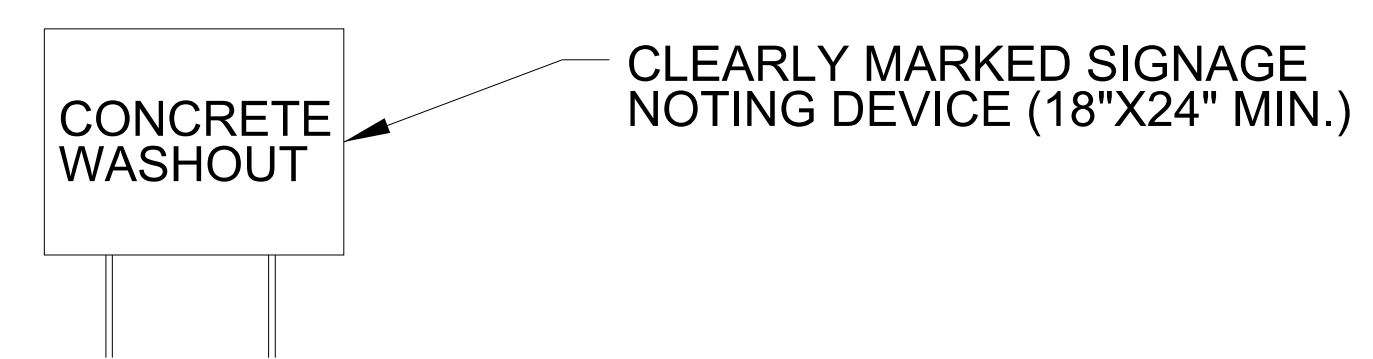
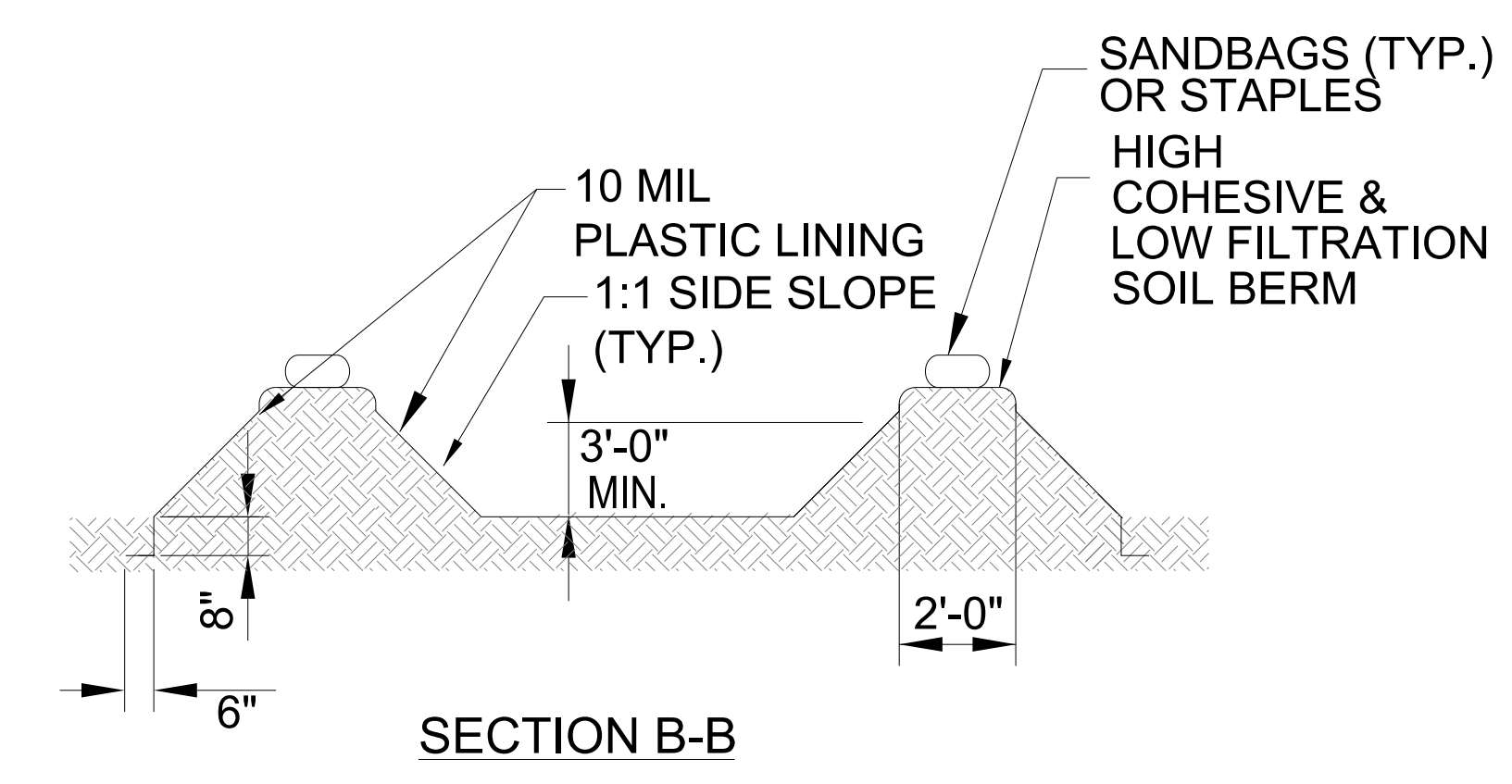
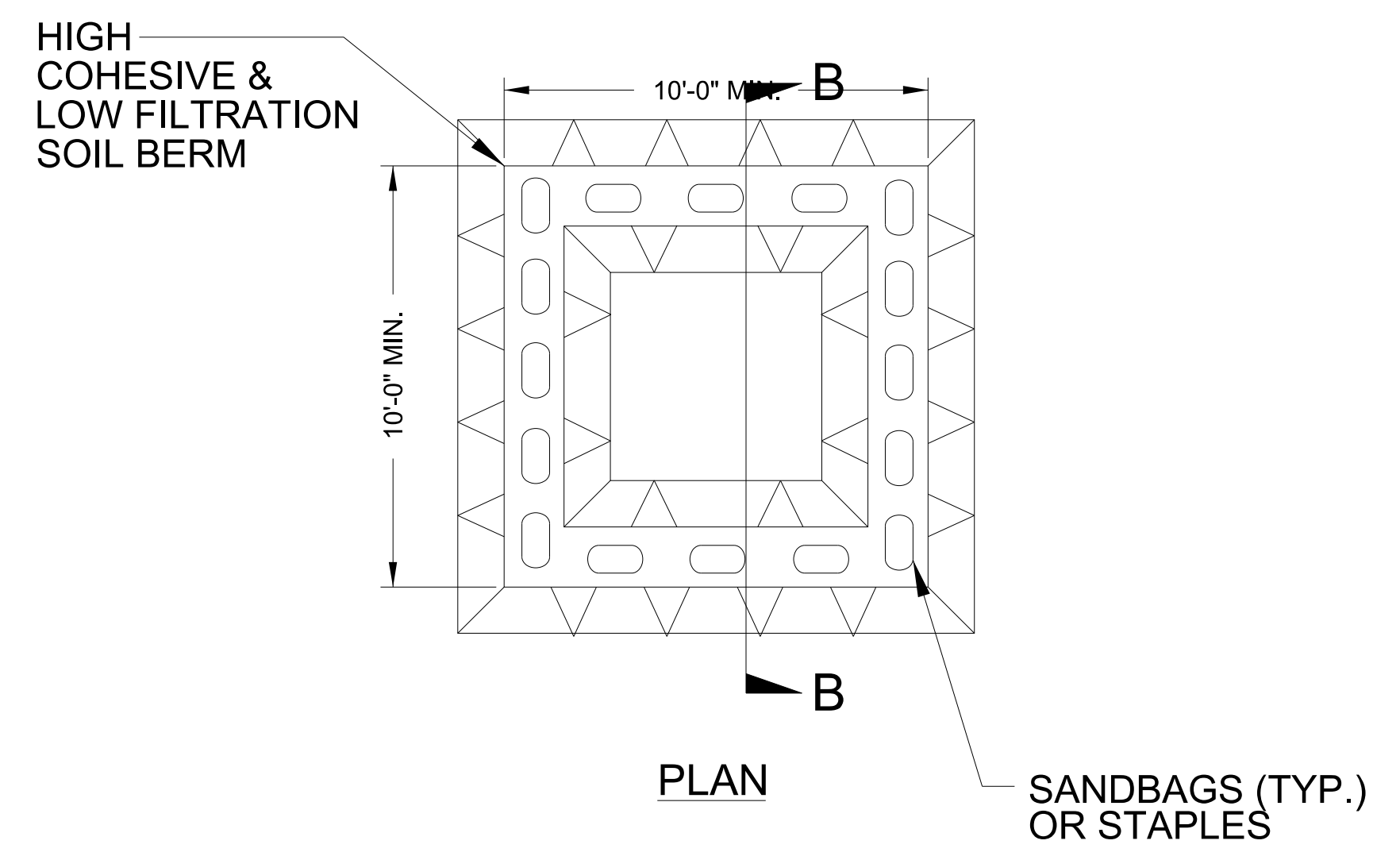
# ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. EC-02A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**BELOW GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



**ABOVE GRADE WASHOUT STRUCTURE**  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

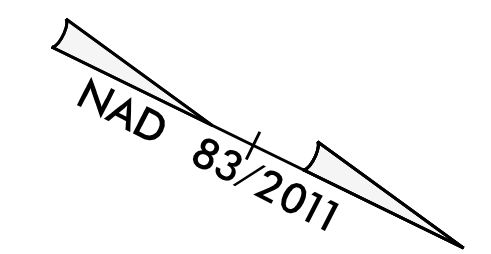
***SOIL STABILIZATION TIMEFRAMES***

<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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

VICTORIA VAIL NARDOZZI TRUST  
DB 894 PG 854  
DB 894 PG 851

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2044195	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

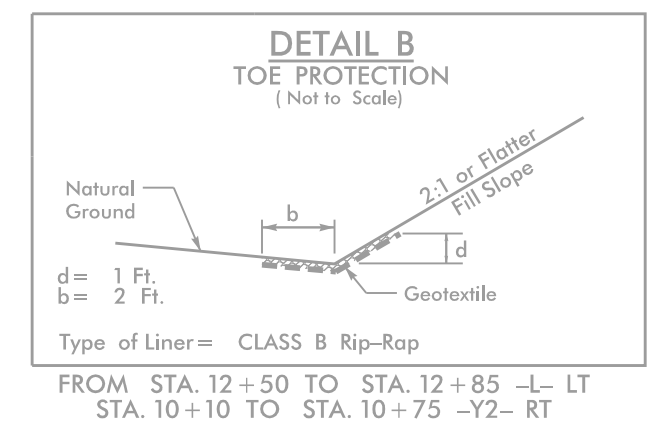
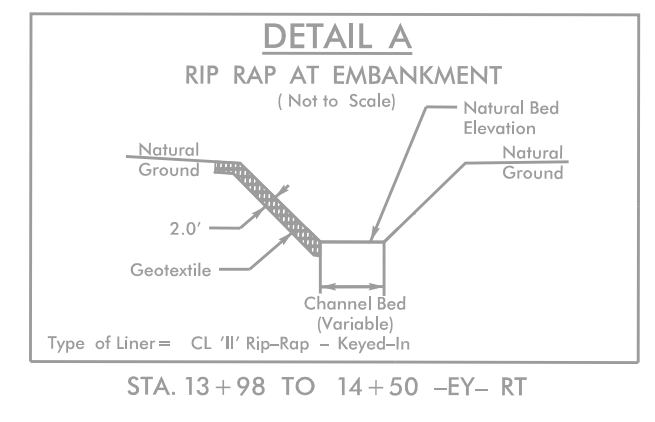
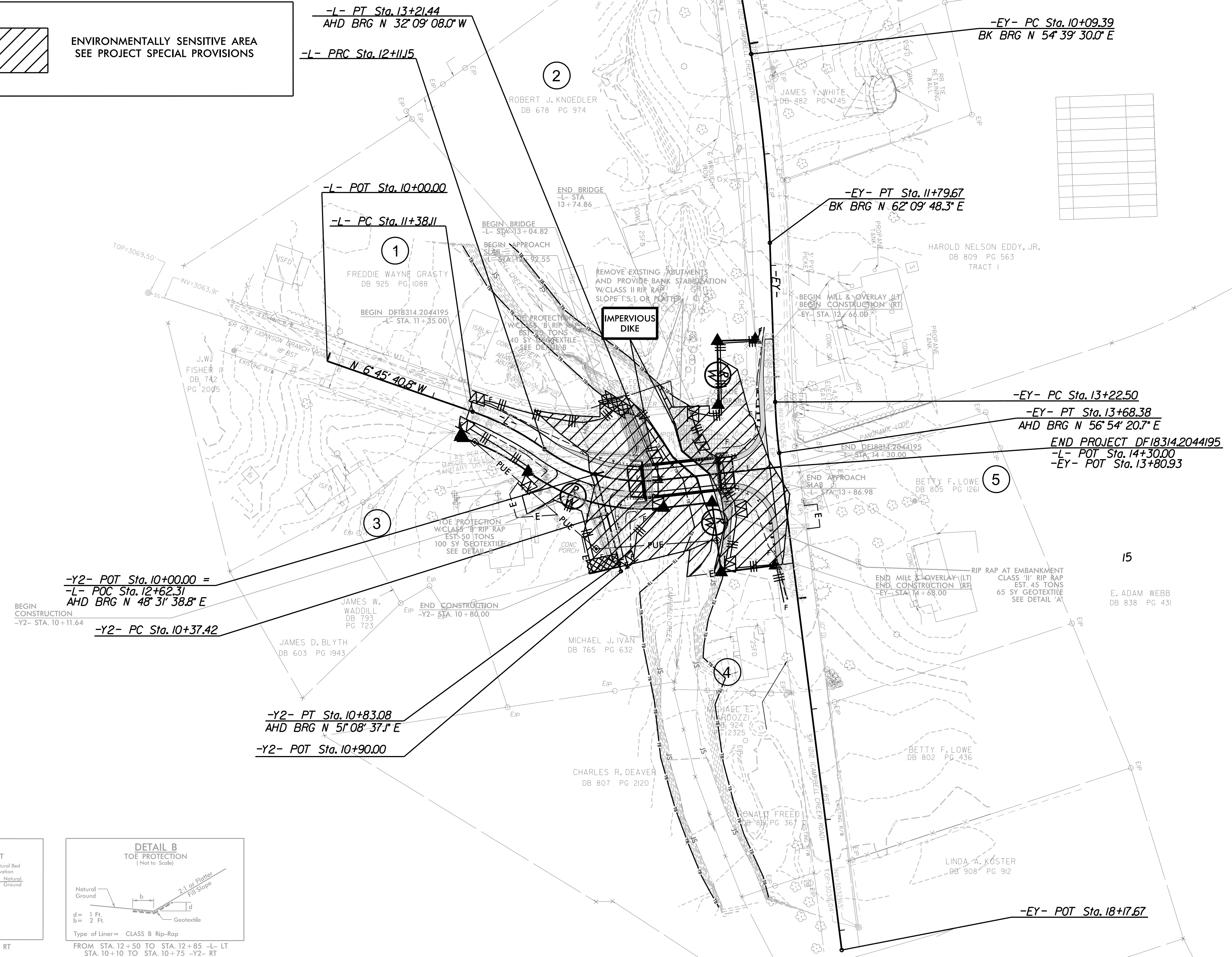
**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

 ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS



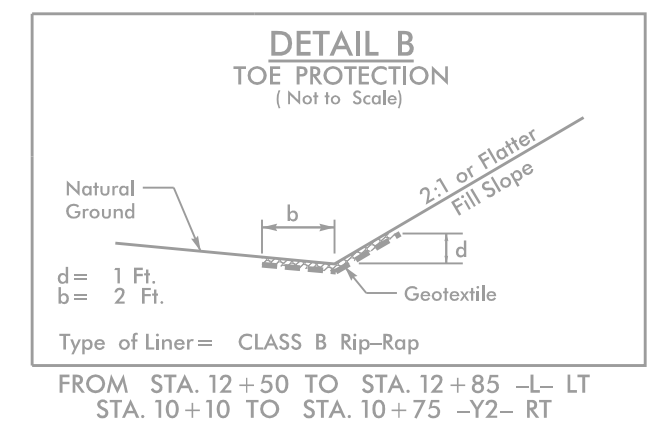
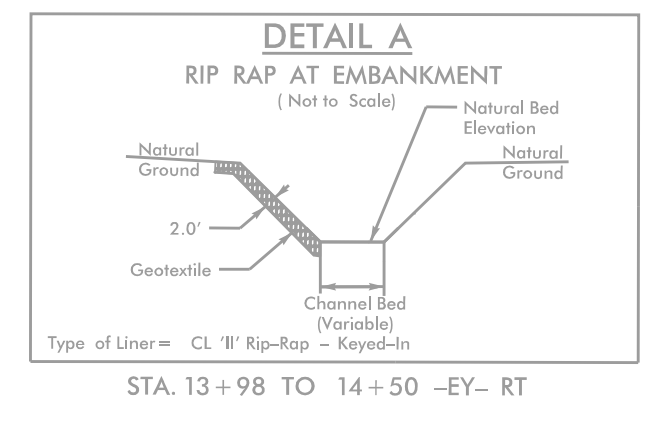
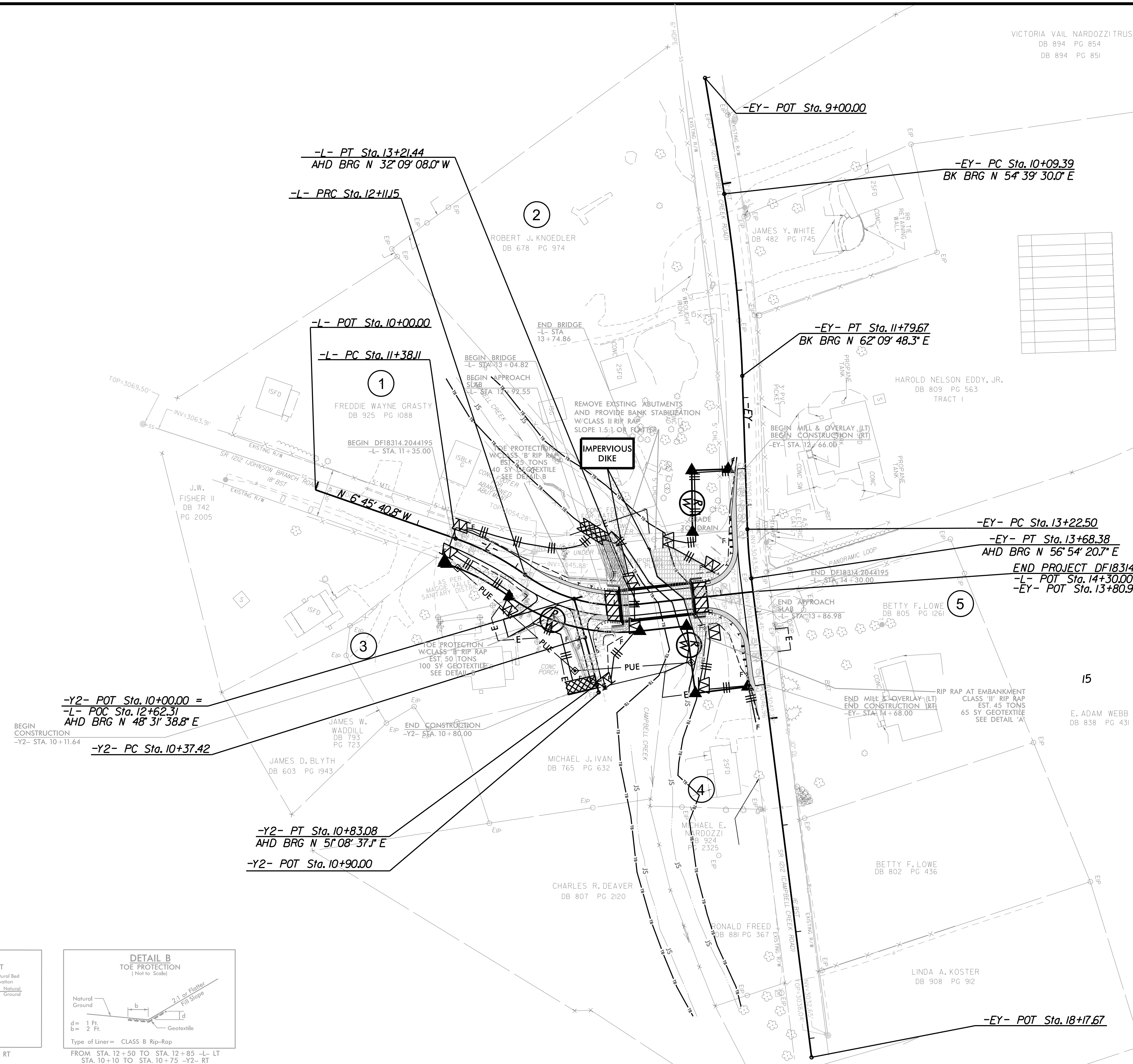
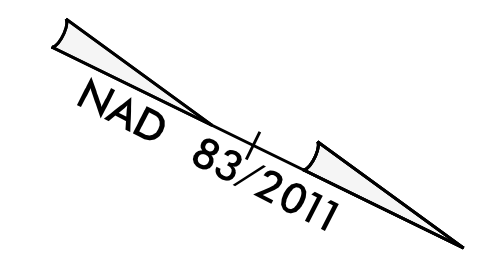
FOR -L-, -EY- AND -Y2- PROFILES SEE SHEET 5  
FOR STRUCTURE PLANS SEE SHEETS S-01 THRU S-17

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
DF18314.2044195	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**HDR** HDR Engineering, Inc. of the Carolinas  
 555 Fayetteville St. Suite 900 Raleigh, N.C. 27601  
 N.C.B.E.L.S. License Number: F-0116



REVISIONS

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FOR -L-, -EY- AND -Y2- PROFILES SEE SHEET 5  
 FOR STRUCTURE PLANS SEE SHEETS S-01 THRU S-17

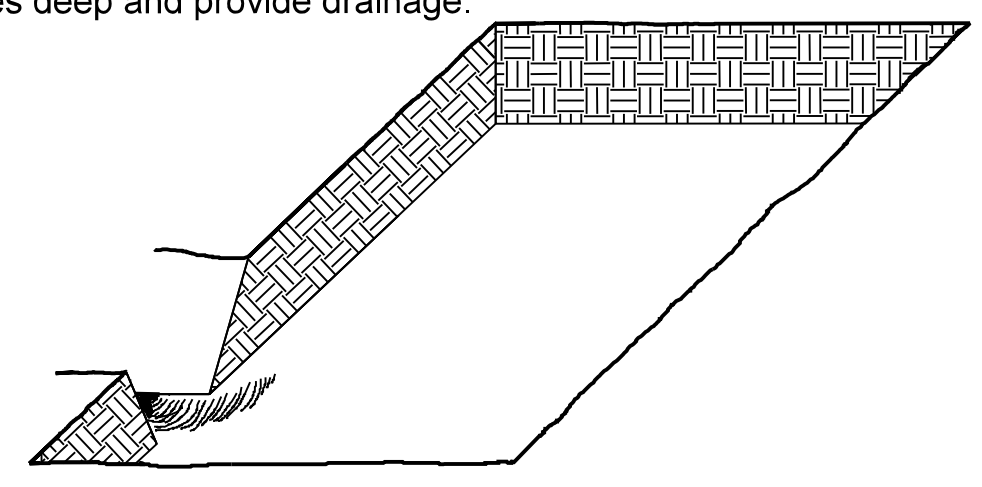
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.2044195	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

# PLANTING DETAILS

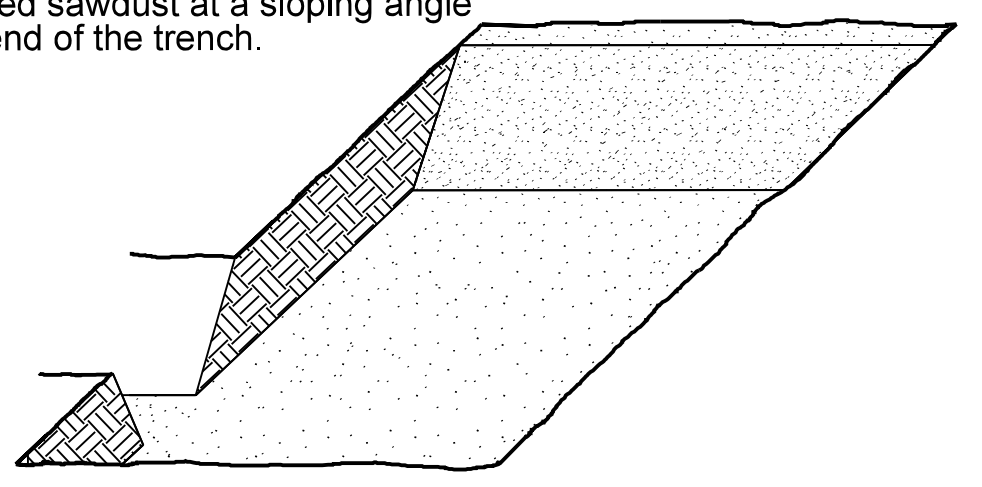
## SEEDLING / LINER BAREROOT PLANTING DETAIL

### HEALING IN

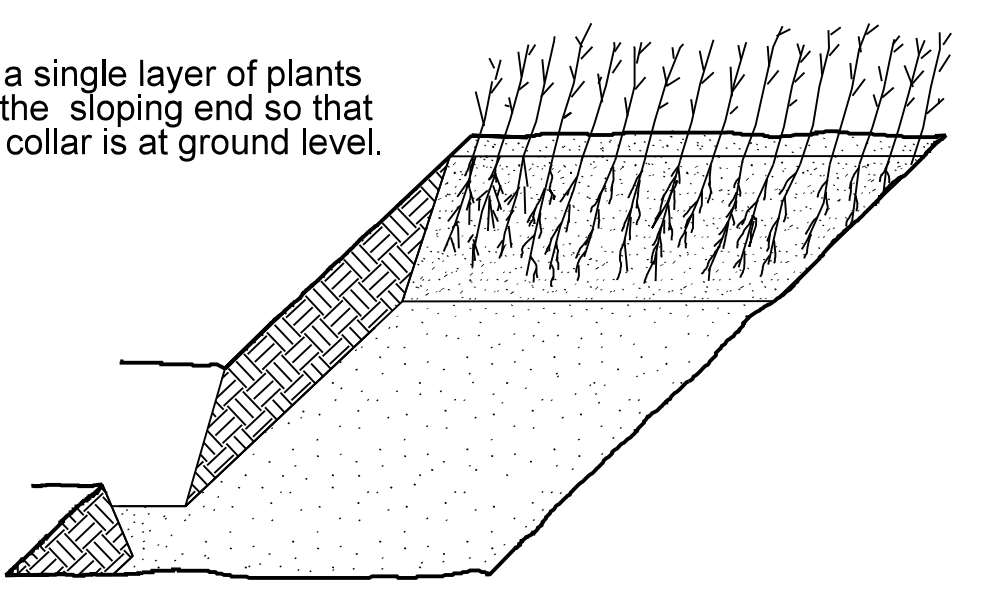
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



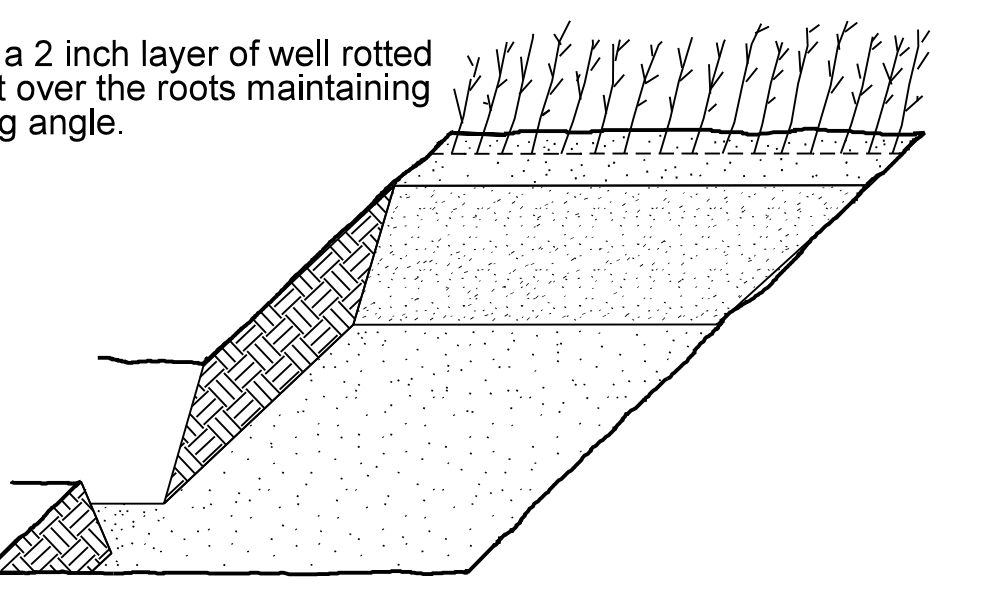
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

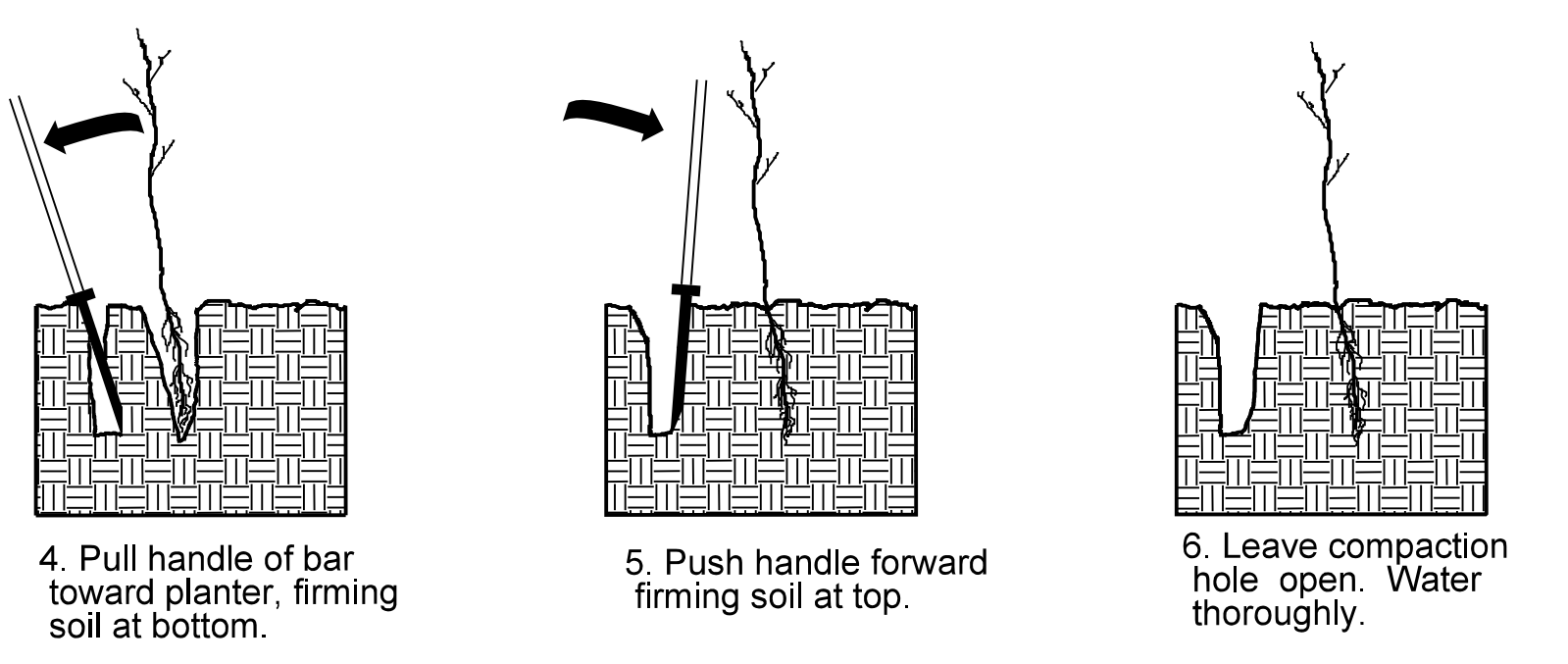
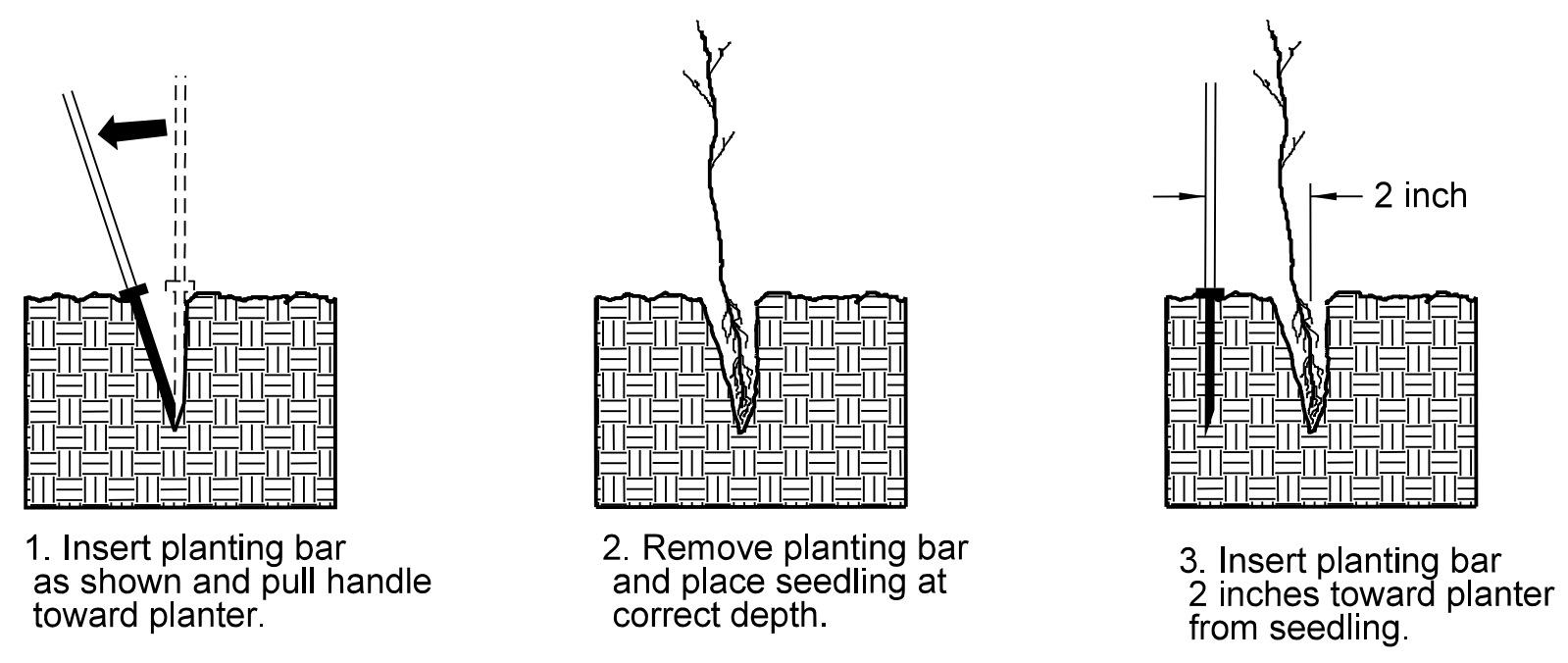


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



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

### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR

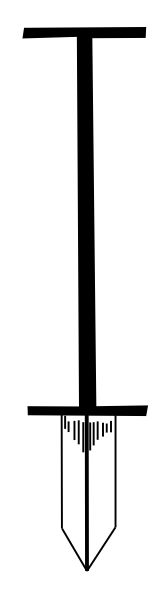


### PLANTING NOTES:

**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

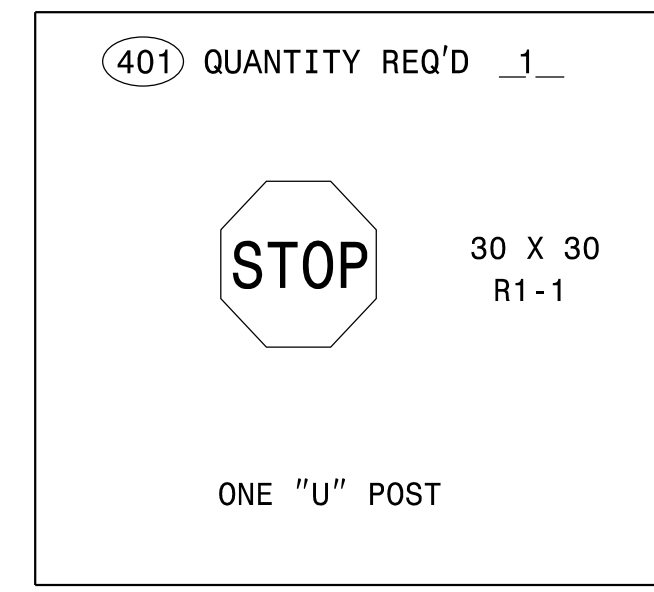
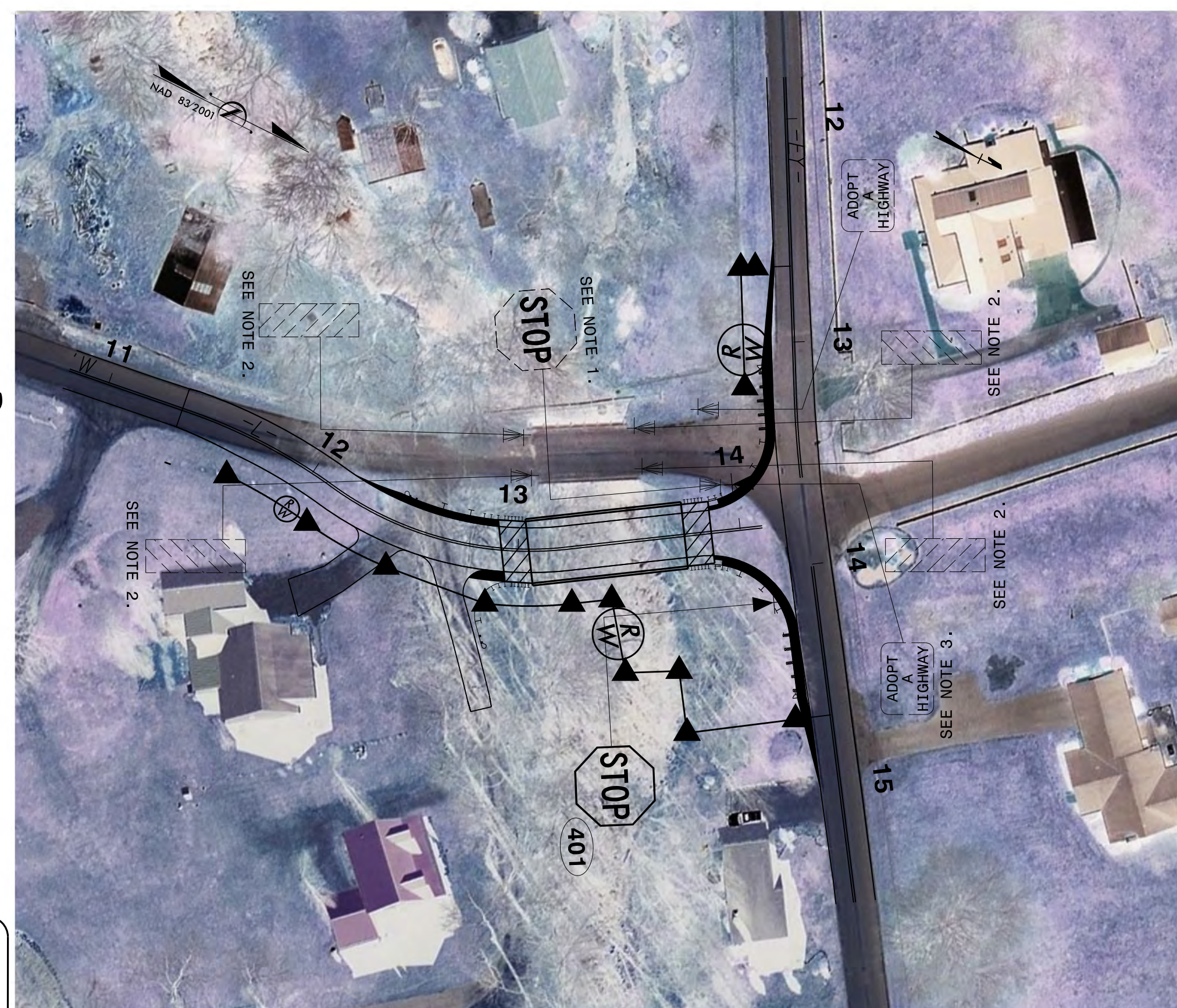
PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. SIGN-1
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION**

**SIGNING PLAN  
HAYWOOD COUNTY**

**LOCATION: SR 1212 (JOHNSON BRANCH RD) OVER CAMPBELL CREEK**

SR 1212  
(CAMPBELL  
CREEK ROAD)



**ROADWAY STANDARD DRAWING**

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

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

**SUMMARY OF QUANTITIES**

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4072000000	SUPPORTS, 3 LB STEEL U-CHANNEL	13	L.F.
4102000000	SIGN ERECTION, TYPE E	1	EA.
4116100000	SIGN ERECTION, RELOCATE SIGN TYPE E	1	EA.
4155000000	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	1	EA.
4192000000	DISPOSAL OF SUPPORT, U-CHANNEL	1	EA.
4238000000	DISPOSAL OF SIGN, D, E OR F	4	EA.

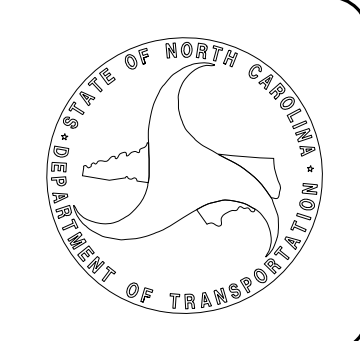
- GENERAL NOTES**
- . SIGNS FURNISHED BY STATE
  - . CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
  - . IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
  - . WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
  - . ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
  - . WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.
  - . THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.
  - . SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

- PROJECT NOTES**
- 1.) DISPOSAL OF SIGN SYSTEM, U-CHANNEL
  - 2.) DISPOSAL OF SIGN, D, E OR F
  - 3.) RELOCATE SIGN, TYPE E

REVISIONS

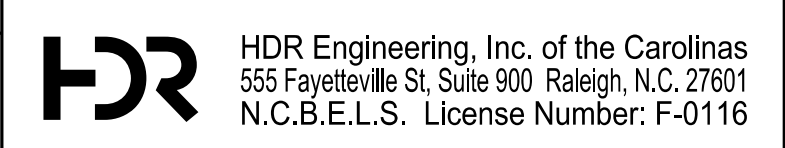
**PLAN SUBMITTED TO: N.C.D.O.T. HIGHWAY DIVISION 14**

ZACH SHULER, P.E. HIGHWAY DIVISION 14 BRIDGE PROGRAM MANAGER



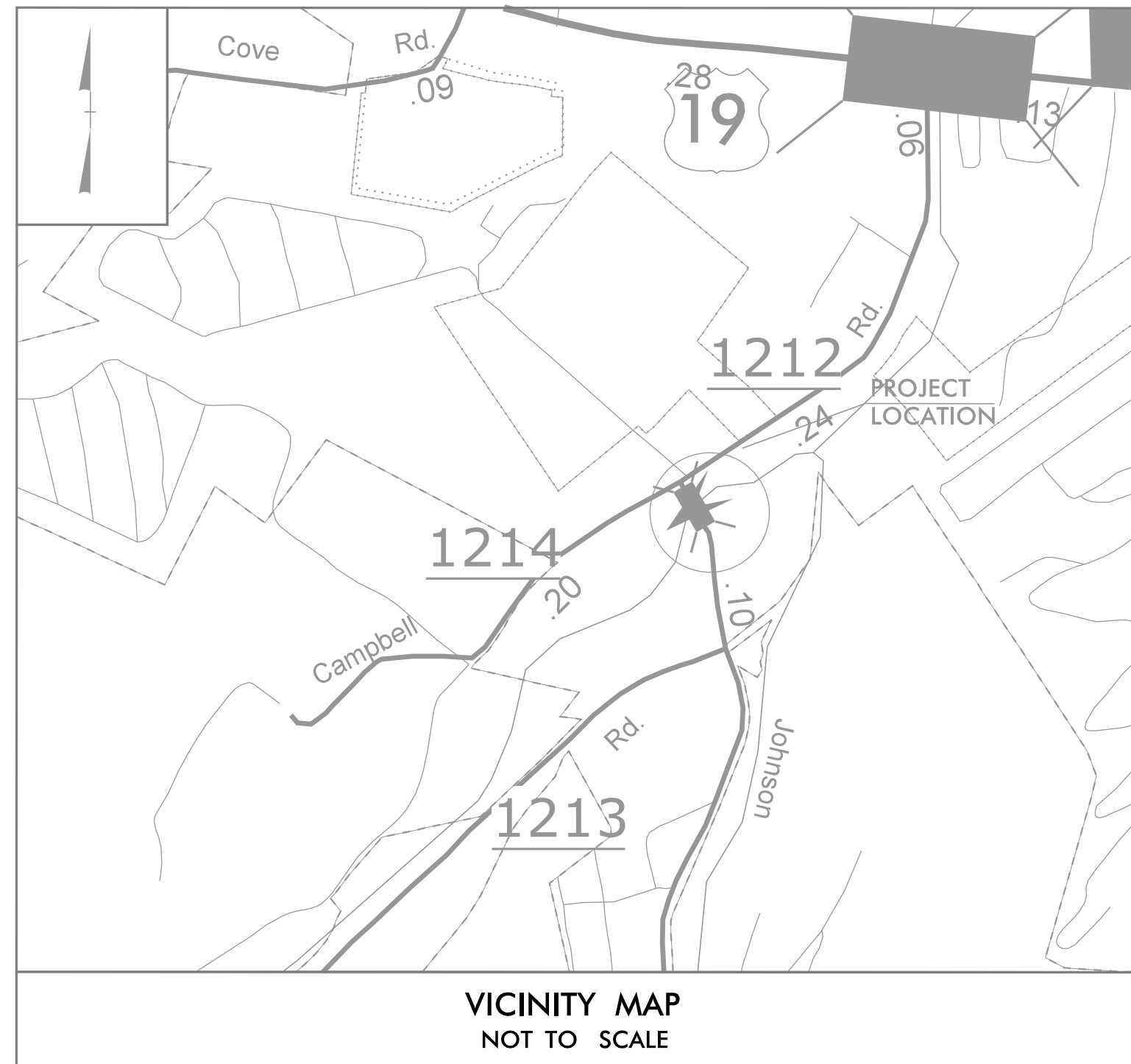
**PLAN PREPARED BY: HDR ENGINEERING, INC. OF THE CAROLINAS**

MIKE RZEPKA, P.E. SIGNING & DELINEATION PROJECT DESIGN ENGINEER  
RICHARD DRAYTON SIGNING & DELINEATION PROJECT DESIGN TECHNICIAN



09/08/24

STATE PROJECT: DF18314.2044195

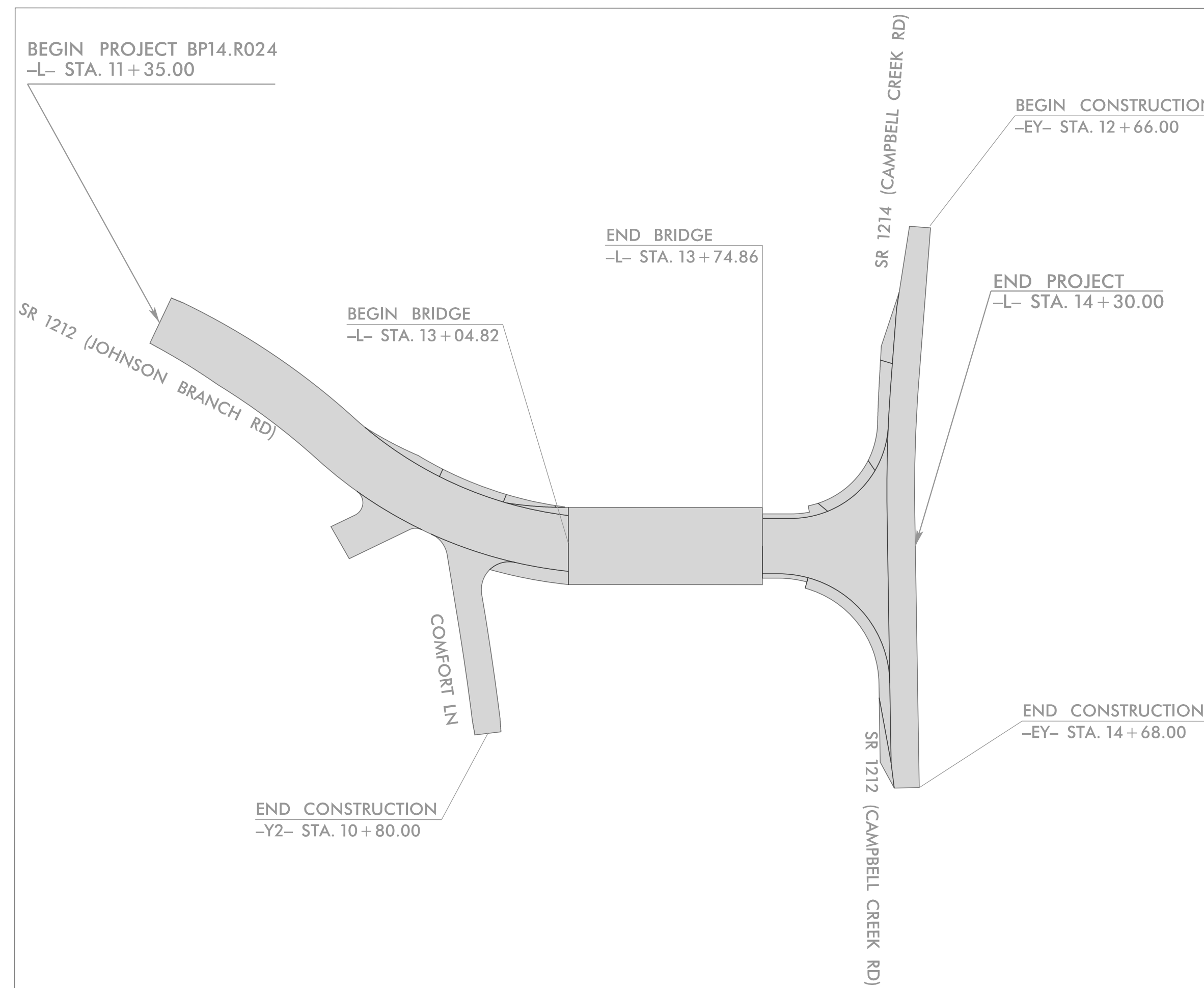
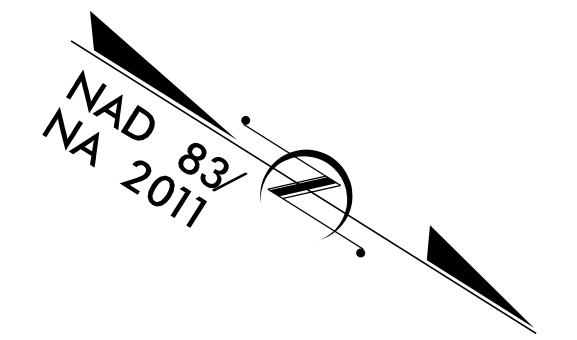
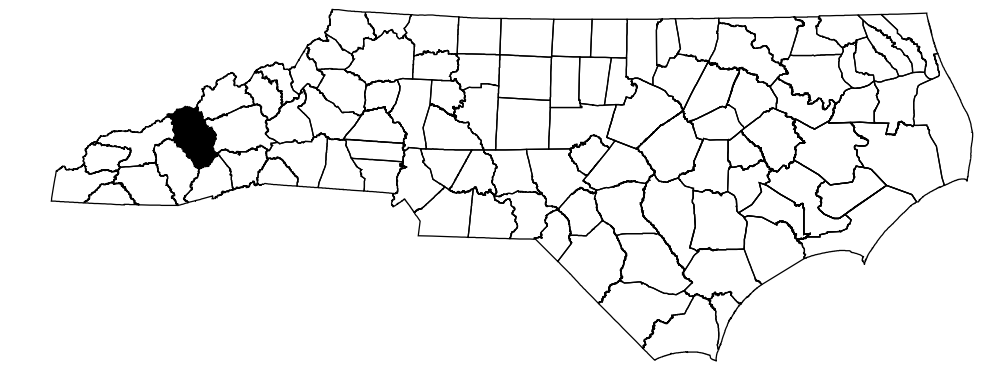


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# HAYWOOD COUNTY

**LOCATION: SR 1212 (JOHNSON BRANCH RD) OVER CAMPBELL CREEK**  
**TYPE OF WORK: WATER AND SEWER LINE RELOCATION**

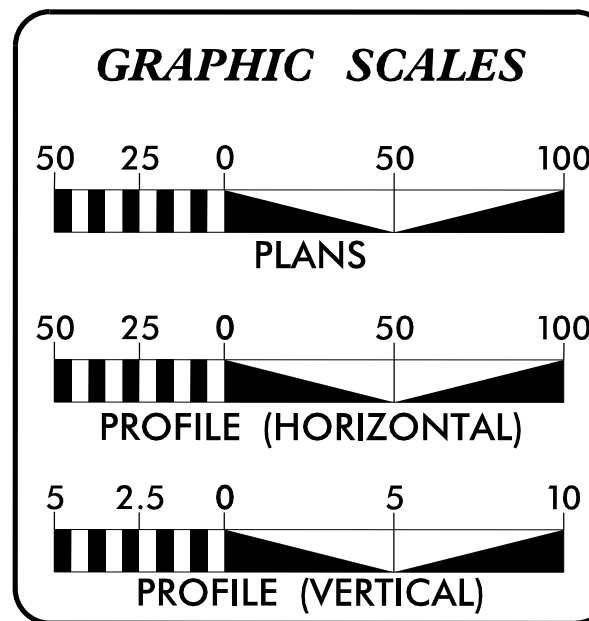
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>DF18314.2044195</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



THIS PROJECT IS WITHIN THE MAGGIE VALLEY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A THRU UC-3C	DETAILS
UC-4 THRU UC-4B	UTILITY PLAN /PROFILE SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(A) WATER - MAGGIE VALLEY  
(B) SEWER - MAGGIE VALLEY

PREPARED IN THE OFFICE OF

40 COLONIAL SQUARE  
SYLVA, NC 28779  
(828) 477-4993

Jamie Noe, PE PROJECT UTILITY ENGINEER  
Emily Morris, EIT UTILITY DESIGN ENGINEER  
Shane Waidner UTILITY DESIGN ENGINEER

SEAL

12/20/2025 | 5:20:01 PM EST

**DIVISION OF HIGHWAYS UTILITIES DIVISION 14**  
253 WEBSTER ROAD  
SYLVA, NC 28779  
PHONE (828) 331-5200  
FAX (828) 331-5201

Wesley T. Grindstaff DIVISION UTILITY ENGINEER  
Bob Golding SENIOR DIVISION 14 UTILITY COORDINATOR

9/3/2025 3:05:31PM  
...Design\BP14.R024\_UTL\_UC1.dgn  
User: T Rahe

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES PLAN SHEET SYMBOLS**

**PROPOSED WATER SYMBOLS**

Water Line (Sized as Shown)	6" WL
11¼ Degree Bend	+
22½ Degree Bend	+
45 Degree Bend	+
90 Degree Bend	+
Plug	+
Tee	+
Cross	+
Reducer	▶
Gate Valve	GV
Butterfly Valve	BV
Tapping Valve	TGV
Line Stop	LS
Line Stop with Bypass	LS/BP
Blow Off	BO
Fire Hydrant	PH
Relocate Fire Hydrant	PH
Remove Fire Hydrant	REM FH
Water Meter	WM
Relocate Water Meter	WM
Remove Water Meter	REM WM
Water Pump Station	PST(W)
RPZ Backflow Preventer	RPZ
DCV Backflow Preventer	PBFP
Relocate RPZ Backflow Preventer	RPZ
Relocate DCV Backflow Preventer	PBFP

**PROPOSED SEWER SYMBOLS**

Gravity Sewer Line (Sized as Shown)	6" SS
Force Main Sewer Line (Sized as Shown)	12" FSS
Manhole (Sized per Note)	•
Sewer Pump Station	PST(SS)

**PROPOSED MISCELLANOUS UTILITIES SYMBOLS**

Power Pole	o
Telephone Pole	o
Joint Use Pole	o
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
Trenchless Installation	6" TL INSTALL
Encasement by Open Cut	10" ENCAS BY OC
Encasement	10" ENCAS

Thrust Block	
Air Release Valve	AR
Utility Vault	UV
Concrete Pier	CP
Steel Pier	SP
Plan Note	NOTE
Pay Item Note	PAY ITEM

**EXISTING UTILITIES SYMBOLS**

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

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

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. UC-3
DESIGNED BY: TMR	
DRAWN BY: TMR	
CHECKED BY: JDN	
APPROVED BY: JDN	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 2/20/2025, 11:53:01 PM EST UTILITY CONSTRUCTION PLANS ONLY	
DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE 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 2024
2. THE EXISTING SEWER UTILITIES BELONG TO THE TOWN OF MAGGIE VALLEY. THE EXISTING WATER UTILITIES BELONG TO MAGGIE VALLEY SANITARY DISTRICT. PLEASE CONTACT SETH BOYD, TOWN OF MAGGIE VALLEY PUBLIC WORKS, TOWN OF MAGGIE VALLEY / 3987 SOCO ROAD, MAGGIE VALLEY, NC 28751 / (828) 926-0866 JASON HERBERT, SANITARY DISTRICT MANAGER, 122 RICH COVE ROAD, MAGGIE VALLEY, NC 28751, (828) 926-0145 EXT 103
3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. 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.

**UTILITY CONSTRUCTION**

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. NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

**PROJECT SPECIFIC NOTES:**

1. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT USING GRIP RINGS. NO GLUE OR PUSH-ON FITTINGS ARE ALLOWED. THRUST BLOCKING IS REQUIRED.
2. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107 AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE SHALL BE ALLOWED TO RIVER, WETLANDS OR BUFFER ZONES.
3. SANITARY SEWER LATERALS AND WATER METER LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO RELOCATION DUE TO FIELD LOCATIONS. UNDER NO CIRCUMSTANCE WILL CLEANOUTS AND METERS BE LOCATED IN DRIVEWAYS, SIDEWALKS OR UNDER PAVEMENT OF ANY TYPE.
4. CONTRACTOR IS FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE PARTIES ASSURING THAT UTILITIES ARE LOCATED PRIOR TO COMMENCEMENT OF CONSTRUCTION. CALL NORTH CAROLINA 811(1-800-632-4949) FOR UTILITY LOCATING SERVICES AS REQUIRED BY LAW PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
5. WATER AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH NCDEQ, NCDOT, ALONG WITH THE PROJECT SPECIAL PROVISIONS.
6. CONTRACTOR SHALL COORDINATE ALL WORK WITH UTILITY OWNER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, OR AS OTHERWISE SPECIFIED HEREIN.
7. ALL NCDEQ AND LOCAL TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING THE NEW CONSTRUCTION TO THE EXISTING WATER LINES.
8. MAGGIE VALLEY SANITARY DISTRICT SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF WATER WORK.
9. MAGGIE VALLEY SANITARY DISTRICT MAY HAVE A REPRESENTATIVE ON SITE DURING ALL WATER LINE CONSTRUCTION ACTIVITIES.
10. WATER AND SEWER SERVICE INTERRUPTION SHALL NOT EXCEED 2 HOURS.



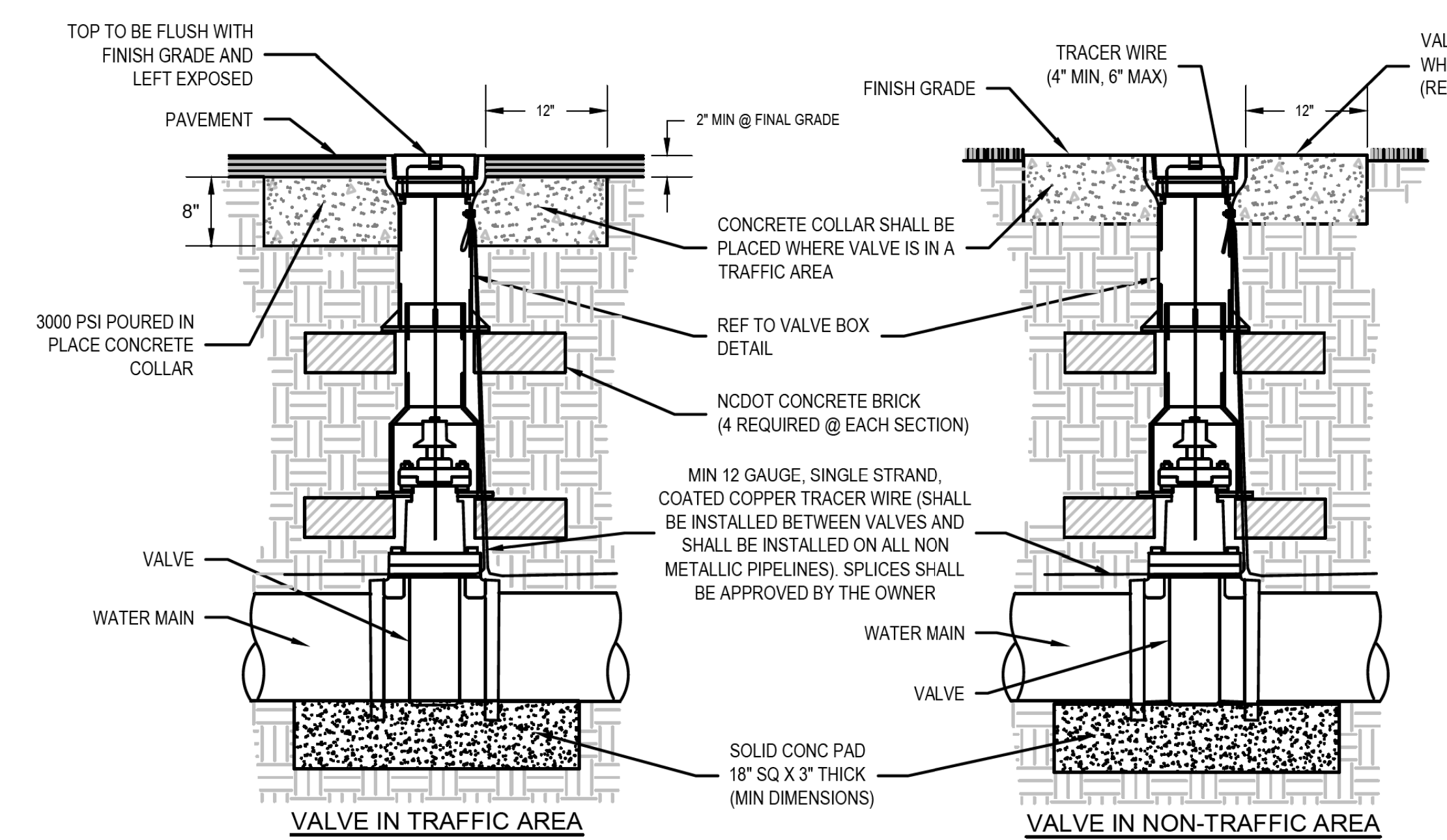
5/14/99

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. UC-3A
DESIGNED BY: TMR	
DRAWN BY: TMR	
CHECKED BY: JDN	
APPROVED BY: JDN	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 UTILITY CONSTRUCTION PLANS ONLY	

# PROJECT TYPICAL DETAILS

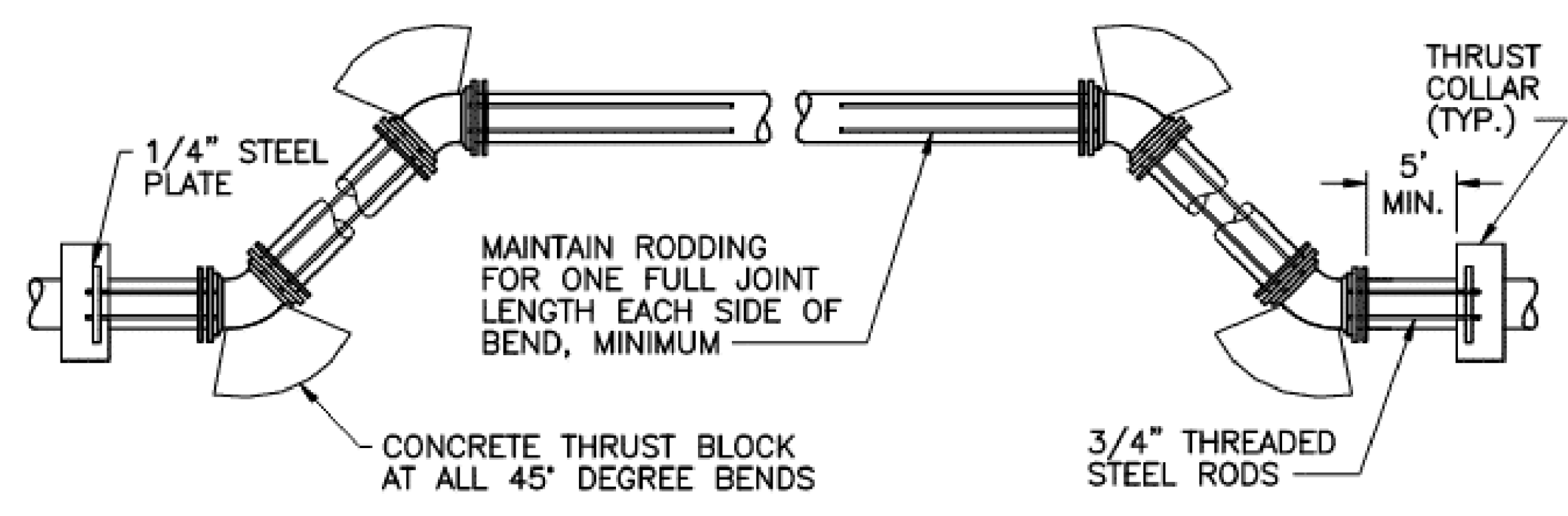
## UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



- NOTES:
- ALL MATERIALS SHALL BE IN ACCORDANCE WITH OWNER STANDARDS.
  - RESILIENT WEDGE GATE VALVE SHALL BE AS MANUFACTURED BY MUELLER CORP, AMERICAN DARLING OR CLOW CORP.
  - ALL VALVES SHALL HAVE 2" SQUARE OPERATING NUT AND SHALL OPEN COUNTERCLOCKWISE.
  - VALVE BODY, BONNET AND GATE SHALL BE IN ACCORDANCE WITH AWWA C-509/C-515 AND NSF61.
  - VALVE BODY AND BONNET SHALL BE COATED ON ALL INTERIOR AND EXTERIOR SURFACES WITH A FUSION BONDED EPOXY IN ACCORDANCE WITH AWWA C-550-90.
  - ALL VALVES 24" AND SMALLER SHALL HAVE A SAFE WORKING PRESSURE OF 250 PSI.
  - REF TO VALVE BOX DETAIL FOR ADDITIONAL INFORMATION.
  - REF TO VALVE BOX PROTECTOR RING DETAIL FOR ADDITIONAL INFORMATION.
  - VALVE BOX SECTIONS ARE REQUIRED. THE USE OF PIPE IN LIEU OF VALVE BOX SECTIONS SHALL NOT BE PERMITTED.
  - THE SOLID CONCRETE PAD UNDER VALVE MAY BE PROVIDED BY A PRECAST MANUFACTURER OR CAST-IN-PLACE IN THE FIELD. THE PADS MAY NOT BE CAST-IN-PLACE IN THE PIPE TRENCH. CONNECTION TO PIPE SHALL BE SUCH THAT THERE SHALL BE NO STRESS AT THE JOINT CAUSED BY MISALIGNMENT OR INADEQUATE SUPPORT OF PIPE OR VALVE.

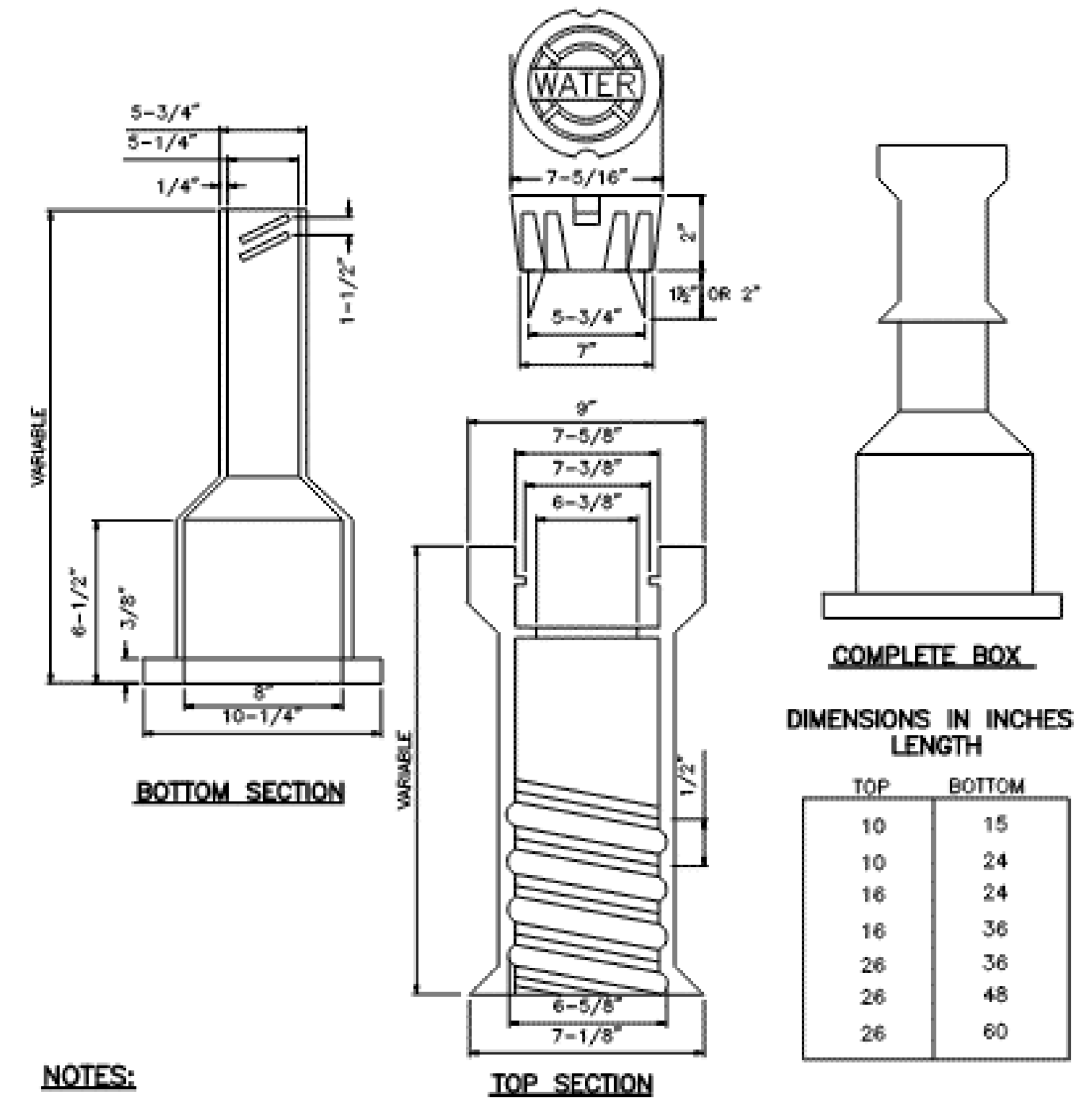
1 GATE VALVE DETAIL (TYP)  
N.T.S.



STATIC THRUST SIZE OF 45° BEND	NUMBER OF IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	4
20"	48,091	6
24"	69,252	8

- NOTES:
- ONCE INSTALLED AND TIGHT, THE STEEL RODS AND BOLTS SHALL RECEIVE 2 COATS OF BITUMINOUS MATERIAL OR SHALL BE GALVANIZED.
  - CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.

VERTICAL BENDS  
N.T.S.



- NOTES:
- VALVE BOX SHALL HAVE RAISED LETTERS "WATER" CAST INTO COVER.
  - VALVE BOX ACCOMMODATES 4" THRU 12" VALVES.
  - VALVE BOX SHALL HAVE 3/8" HOLE DRILLED IN TOP SECTION THRU WHICH A 1/2" X 1 1/2" GALVANIZED BOLT SHALL BE USED TO SECURE A 12GA. THIN TRACER WIRE FOR NON-FERROUS PIPE. A 1/2" WASHER SHALL BE USED BETWEEN NUT AND INSIDE OF BOX. TIGHTEN HAND TIGHT.
  - SCREW TYPE VALVE BOXES ARE REQUIRED.
  - DIMENSIONS SHOWN MAY VARY DEPENDING UPON THE MANUFACTURER.

VALVE BOX DETAIL  
N.T.S.

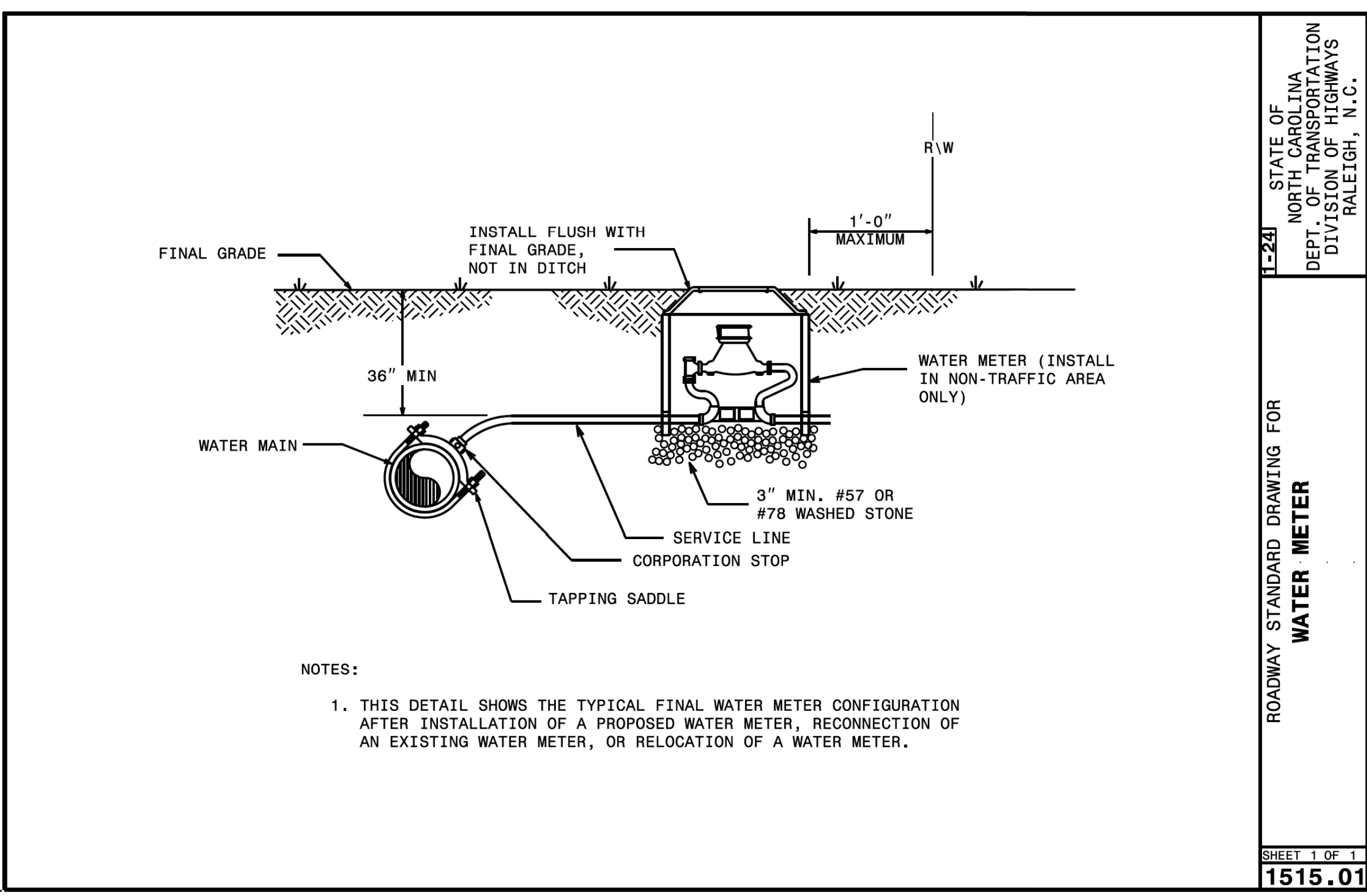
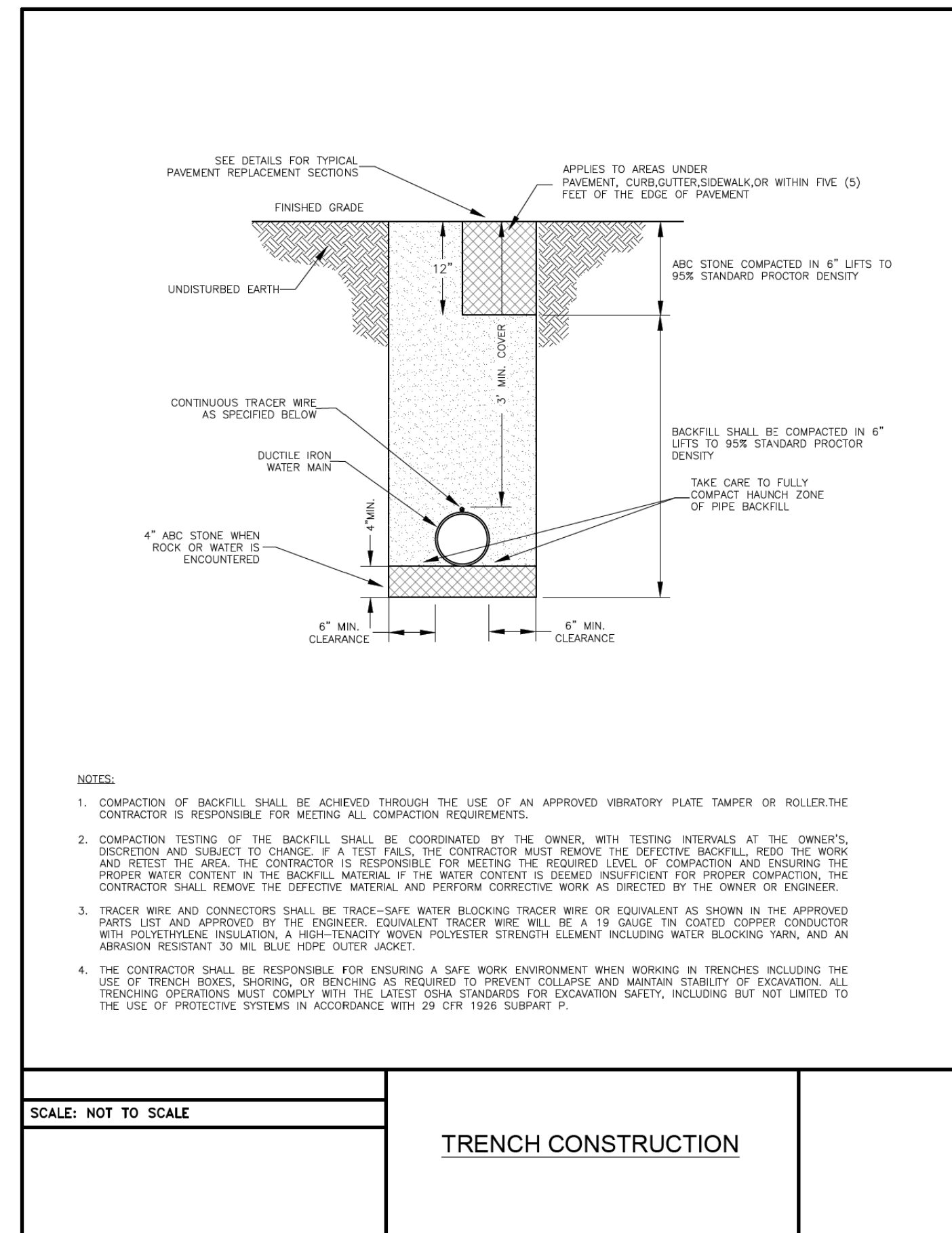
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5/14/99

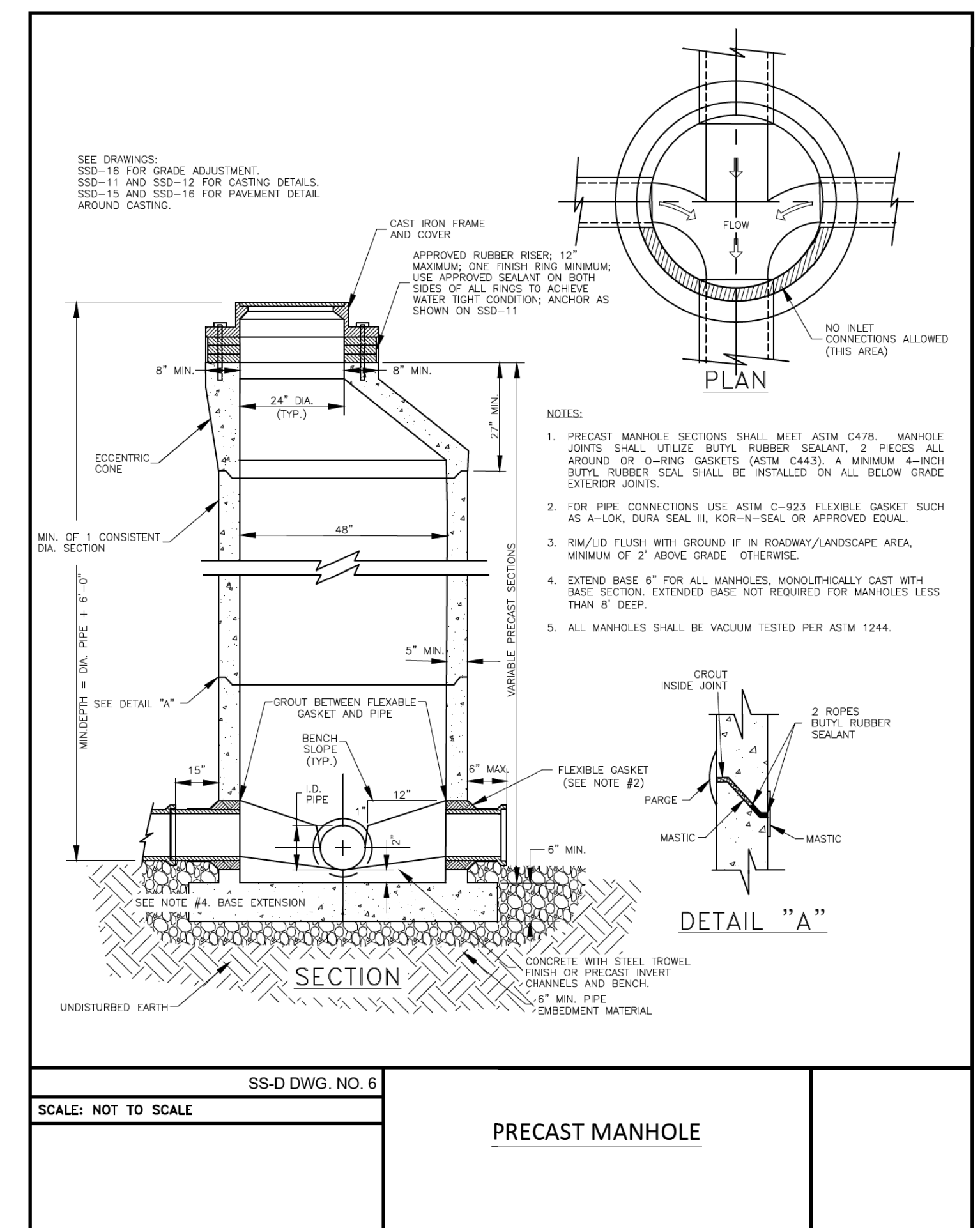
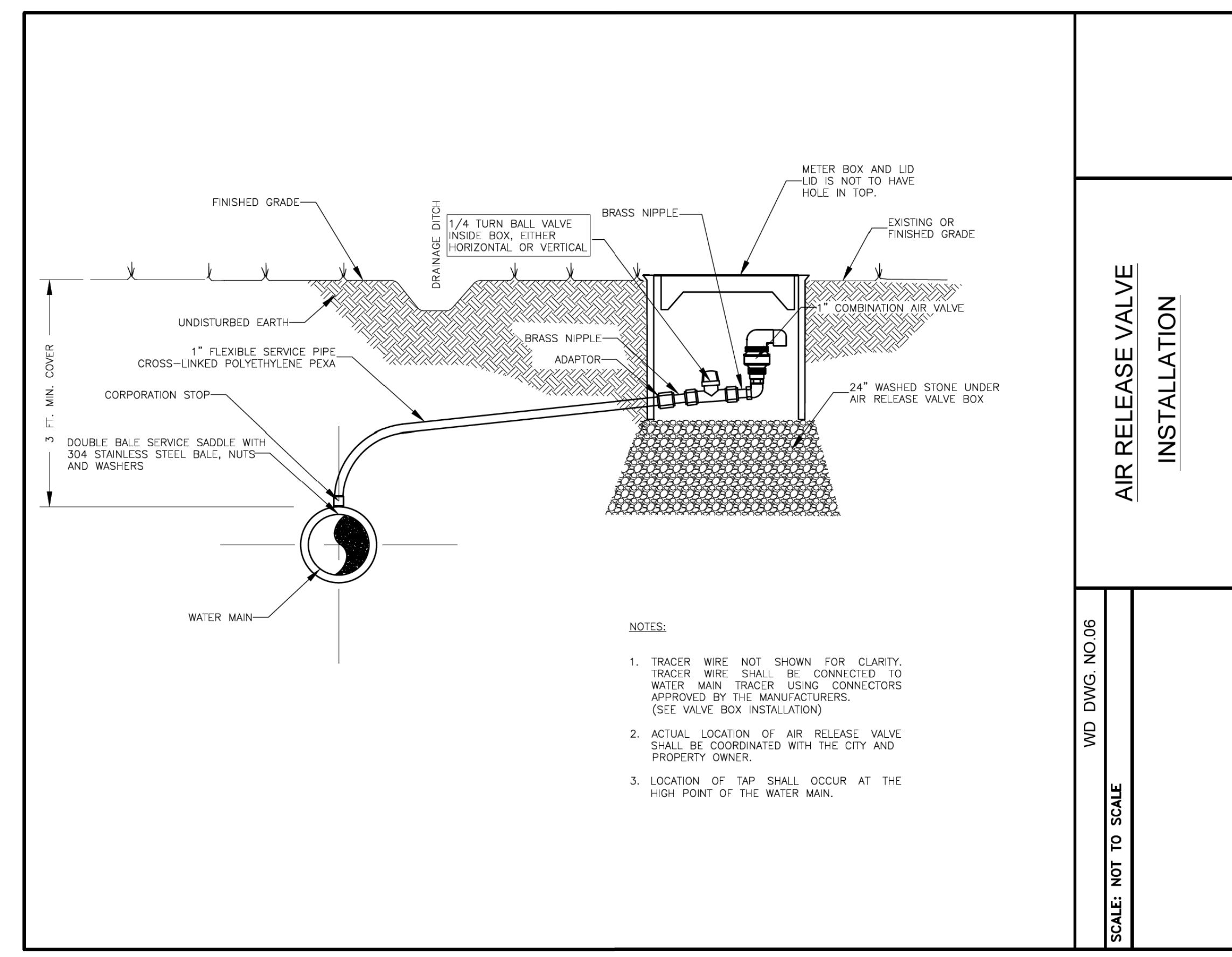
PROJECT REFERENCE NO. <b>DF18314.2044195</b>	SHEET NO. <b>UC-3B</b>
DESIGNED BY: <b>TMR</b>	
DRAWN BY: <b>TMR</b>	
CHECKED BY: <b>JDN</b>	
APPROVED BY: <b>JDN</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

# PROJECT TYPICAL DETAILS



UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



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5/14/99

# PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. UC-3C
DESIGNED BY: TMR	
DRAWN BY: TMR	
CHECKED BY: JDN	
APPROVED BY: JDN	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY 12/20/2025, 11:20:01 PM EST	

## UTILITY CONSTRUCTION

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UNLESS ALL SIGNATURES COMPLETED

SECTION PIPE ABANDONMENT

**NOTE:**

- PIPE PLUGS SHALL BE INSTALLED TO THE SATISFACTION OF THE ENGINEER.
- ABANDONED PIPES, 12" AND LARGER, SHALL BE BROKEN INTO EVERY 50' AND SHALL BE FILLED COMPLETELY WITH SAND SLURRY.

SS-D DWG. NO. 24	PIPE ABANDONMENT	
SCALE: NOT TO SCALE		

**PAVEMENT REPAIRS ON ROADS TO BE RESURFACED  
(PIPE IS PLACED UNDER EXISTING PAVEMENT)**

D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
18"	1'-10"	7'-10"
24"	2'-6"	8'-6"
30"	3'-1"	9'-1"
36"	3'-8"	9'-8"
42"	4'-5"	10'-5"
48"	5'-0"	11'-0"

**PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED  
(PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)**

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

ROADWAY STANDARD DRAWING FOR  
**PAVEMENT REPAIRS**  
FOR SUPERPAVE MIX TYPES

SHEET 1 OF 1  
**654.01**

**SECTION Y-Y  
CORED PIPE TYPE**

**SECTION Y-Y  
HORSESHOE TYPE**

**SECTION X-X**

**GENERAL NOTES:**

- THIS STANDARD DETAIL DESCRIBES THE USE OF HORSESHOE TYPE and CORED MANHOLES WITH A CAST-IN-PLACE BOTTOM.
- USE HORSESHOE TYPE MANHOLE ONLY WITH THE PERMISSION OF THE ENGINEER.
- FOR HORSESHOE TYPE MANHOLES, WRAP THE PIPE WITH BUTYL RUBBER GASKET, AND SEAL WITH NONSHRINKING GROUT.

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

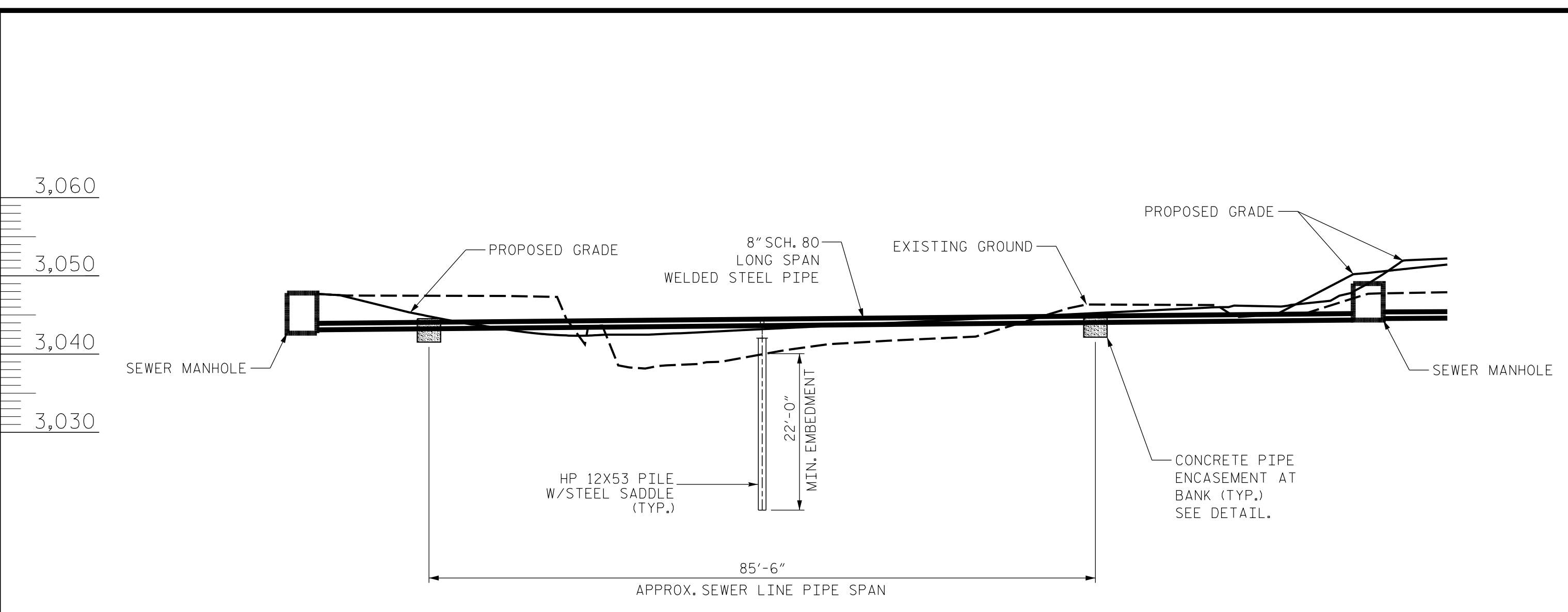
ROADWAY STANDARD DRAWING FOR  
**PRECAST CONCRETE  
SANITARY SEWER MANHOLE  
WITH CAST-IN-PLACE BOTTOM**

SHEET 1 OF 2  
**1525.06**

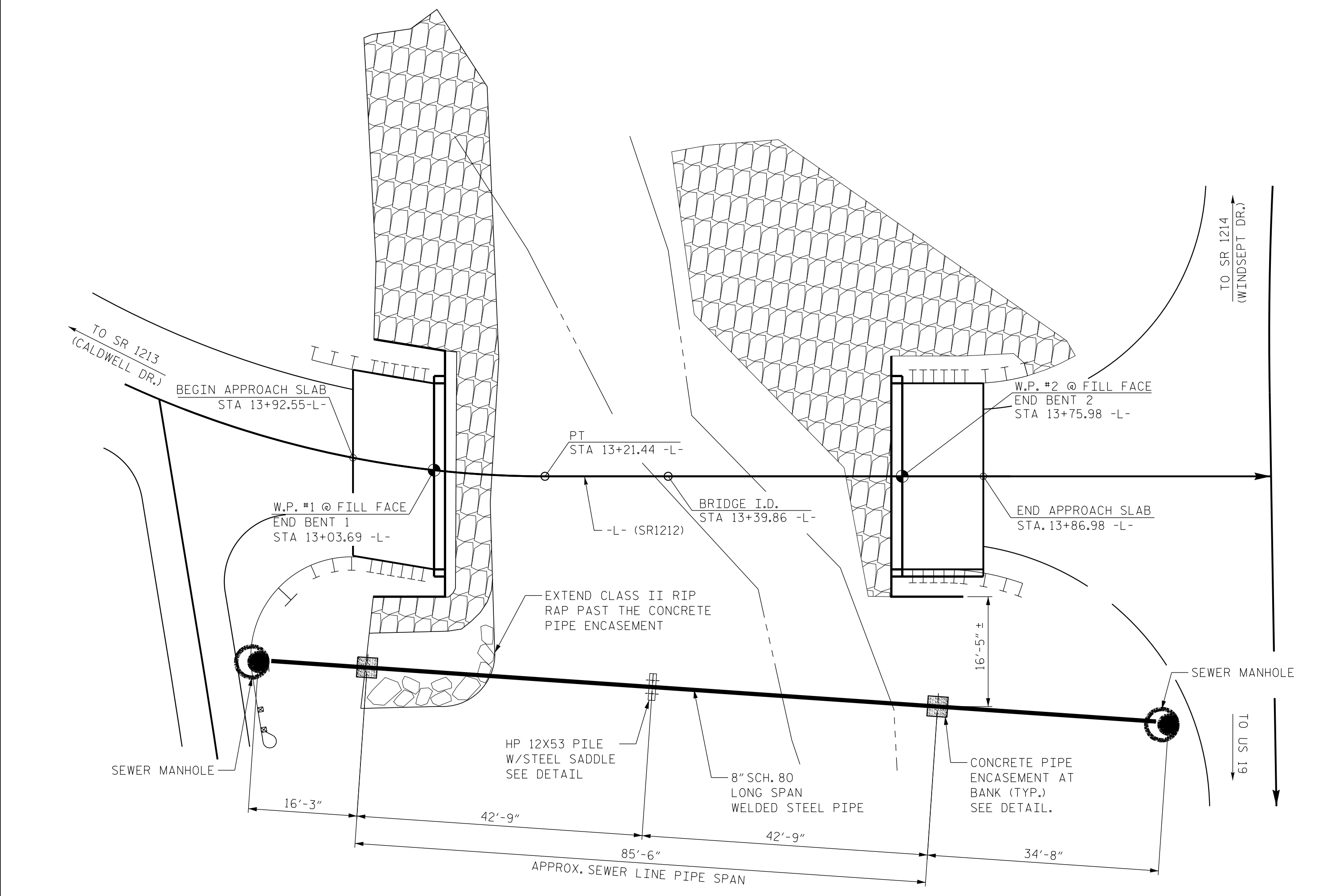
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ELEVATION VIEW

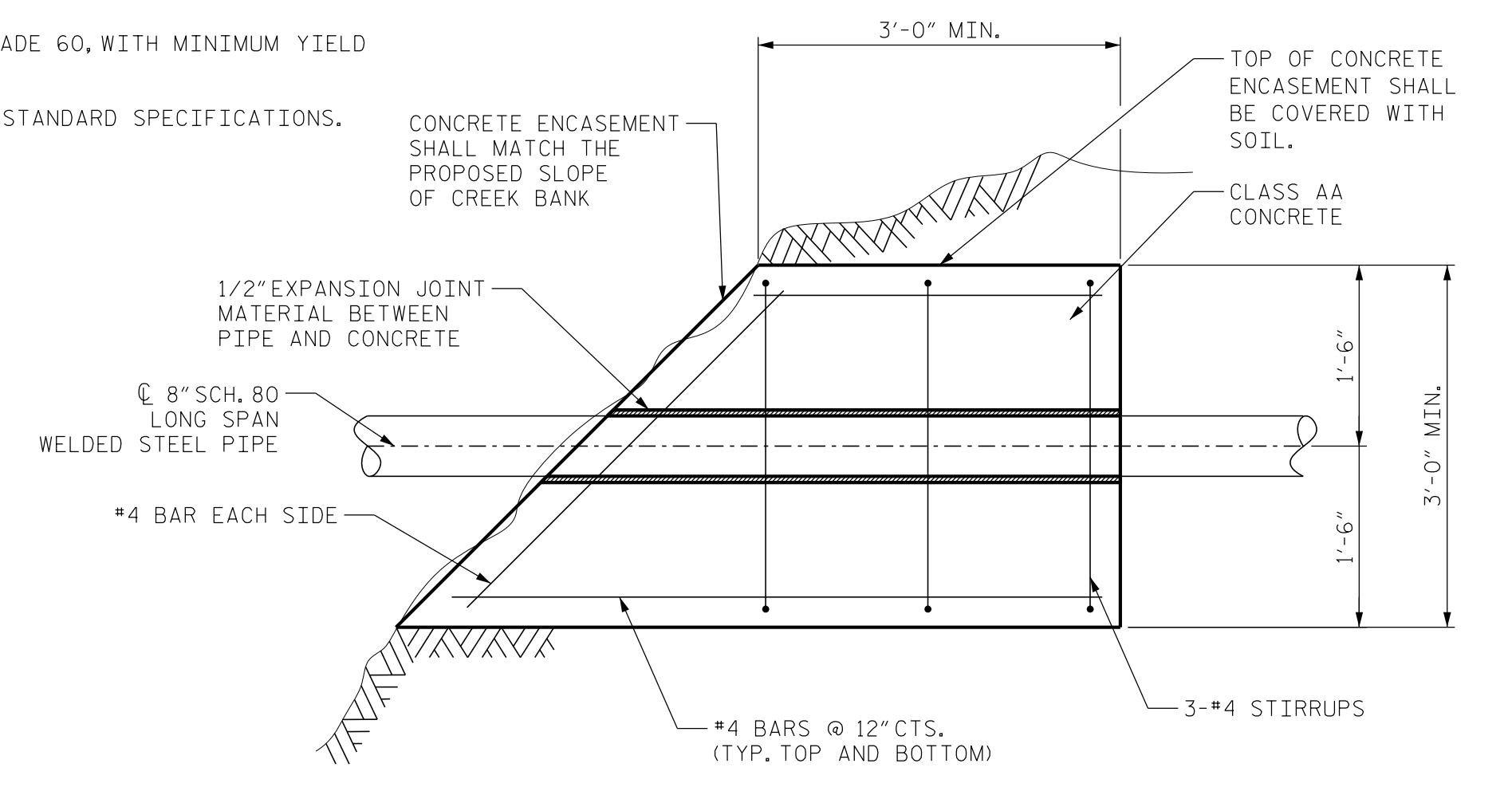


PLAN VIEW

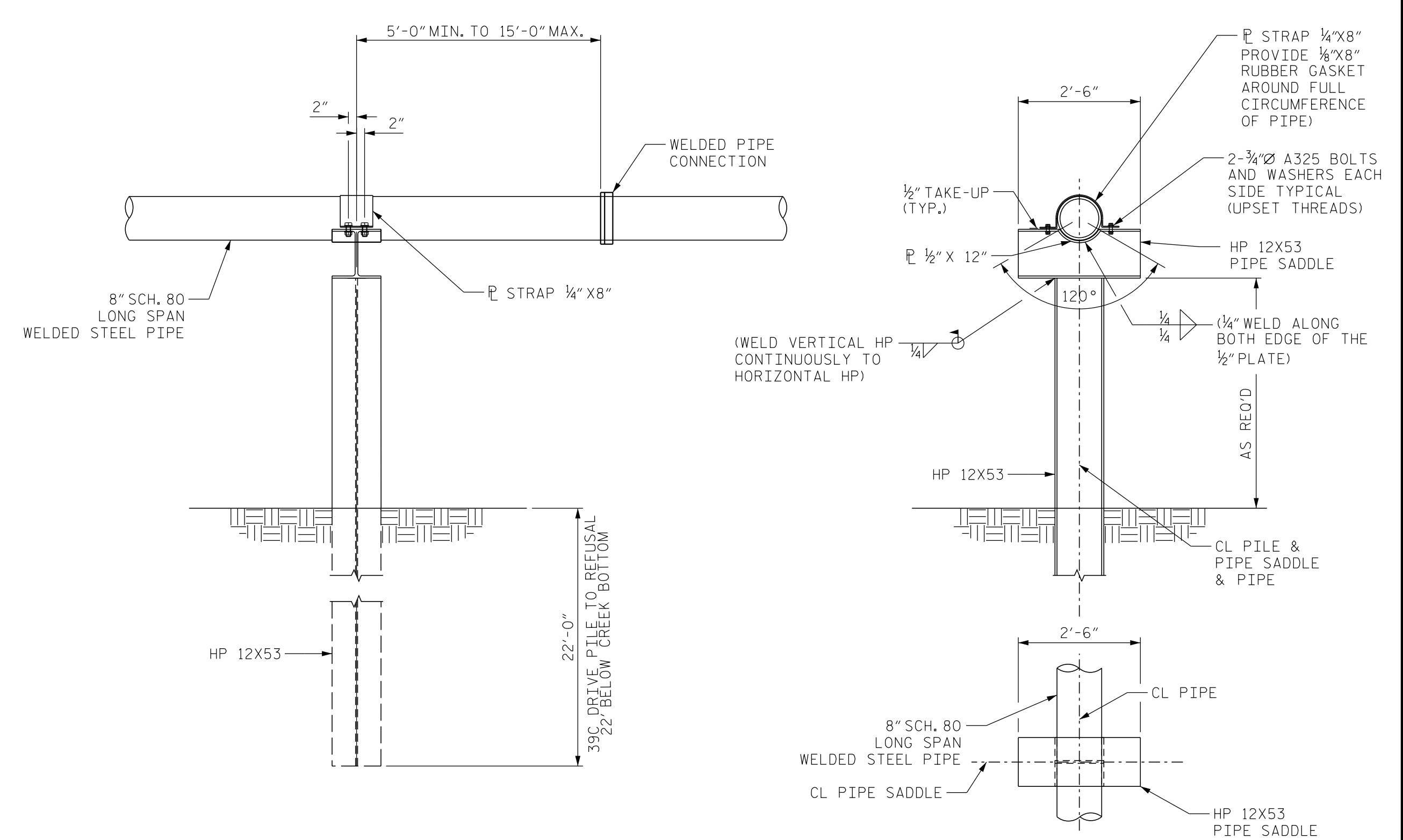
NOTES:  
8" SCH 80 LONG SPAN WELDED STEEL PIPE SHALL BE A MINIMUM OF ASTM A53 GRADE B PIPE, AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 35 KSI.  
ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50, WITH A MINIMUM OF YIELD STRENGTH OF 50 KSI.  
ALL STEEL TO BE HOT DIPPED GALVANIZED, IN ACCORDANCE WITH STANDARD SPECIFICATIONS.  
REPAIR ANY GALVANIZED SURFACES, IN ACCORDANCE WITH STANDARD SPECIFICATIONS.  
BOLTS, NUTS AND WASHERS, SHALL BE GALVANIZED, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
CONCRETE PIPE ENCASEMENT SHALL BE CLASS AA CONCRETE WITH F'c = 4000 PSI.  
WELDS SHALL BE SMAW; 70 KSI ELECTRODES. ALL WELDS SHALL BE DONE IN ACCORDANCE WITH STANDARD SPECIFICATIONS  
ALL PIPE CONNECTIONS SHALL BE WELDED, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
REINFORCING STEEL SHALL BE GRADE 60, WITH MINIMUM YIELD STRENGTH OF 60 KSI.  
FOR PILES, SEE SECTION 450 OF STANDARD SPECIFICATIONS.

PROJECT REFERENCE NO. <b>DF18314.2044195</b>		SHEET NO. <b>UC-3D</b>
DESIGNED BY: <b>WMG</b>		
DRAWN BY: <b>HL</b>		
CHECKED BY: <b>RTS</b>		
APPROVED BY: <b>RTS</b>		
REVISER:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		STRUCTURAL ENGINEER UTILITY DESIGN ENGINEER

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



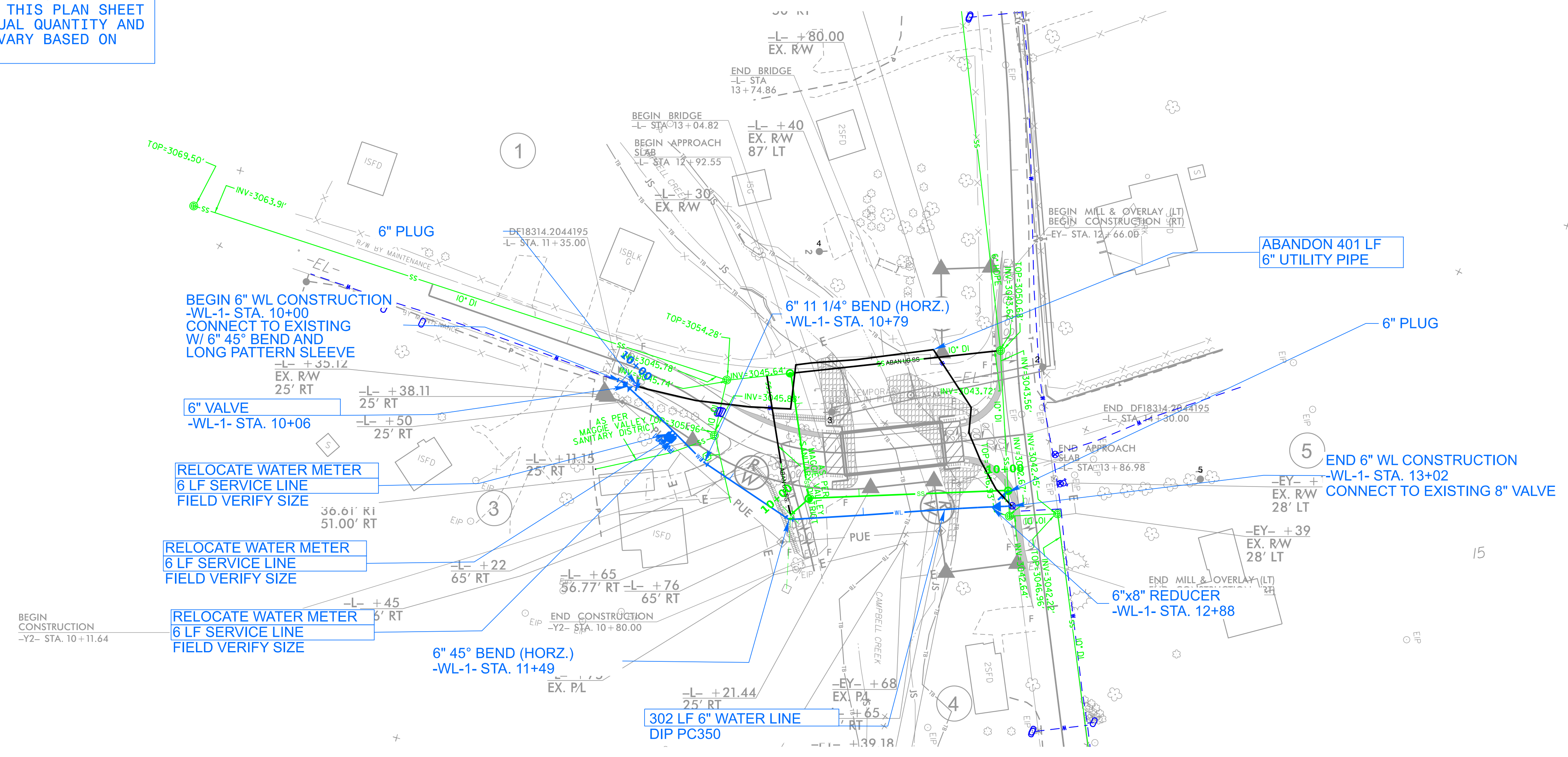
PIPE ENCASEMENT AT CREEK BANK DETAIL



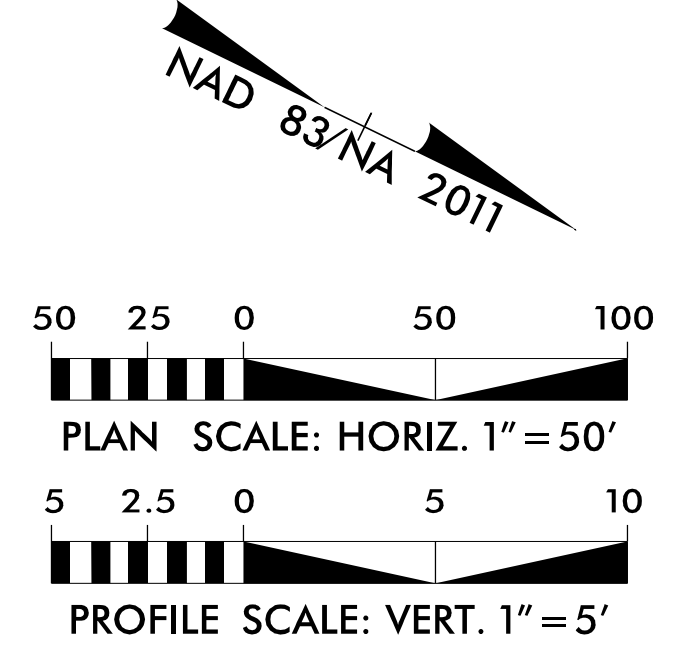
AERIAL PIPE SUPPORTS DETAIL

DOCUMENT NOT CONSIDERED FINAL  
UNTIL ALL SIGNATURES ARE COMPLETED  
UTILITY CONSTRUCTION

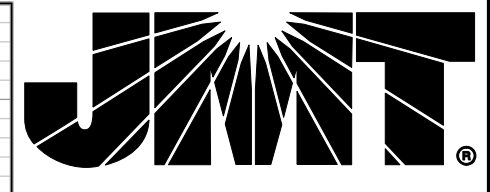
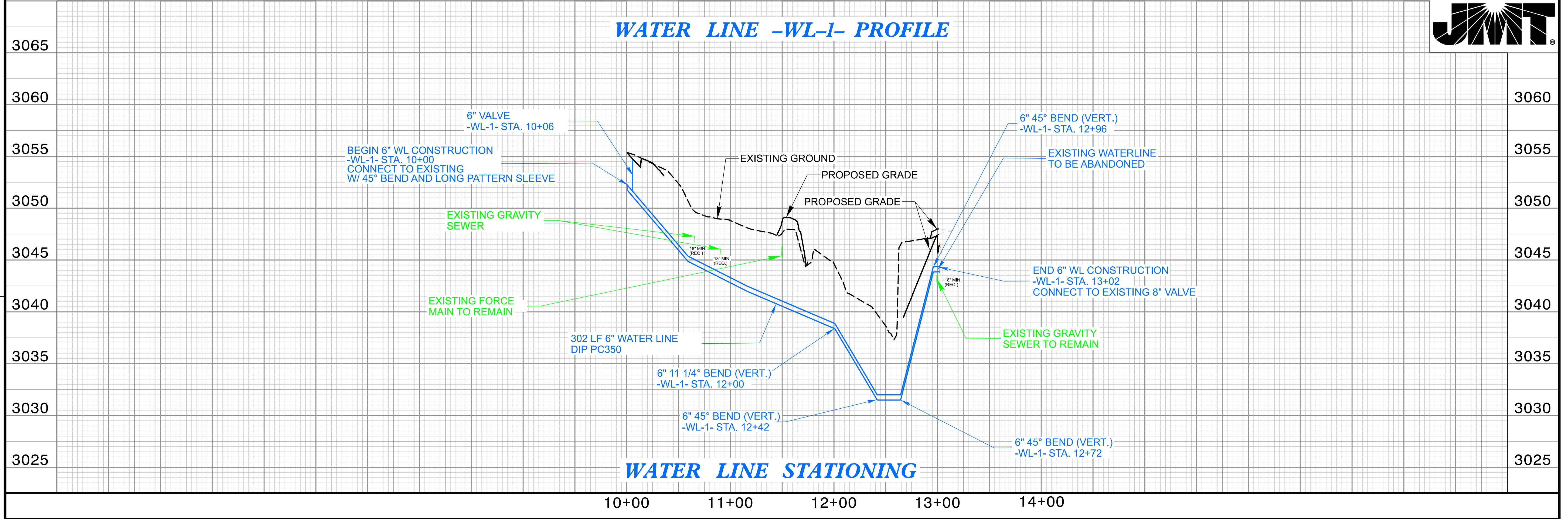
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 735 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



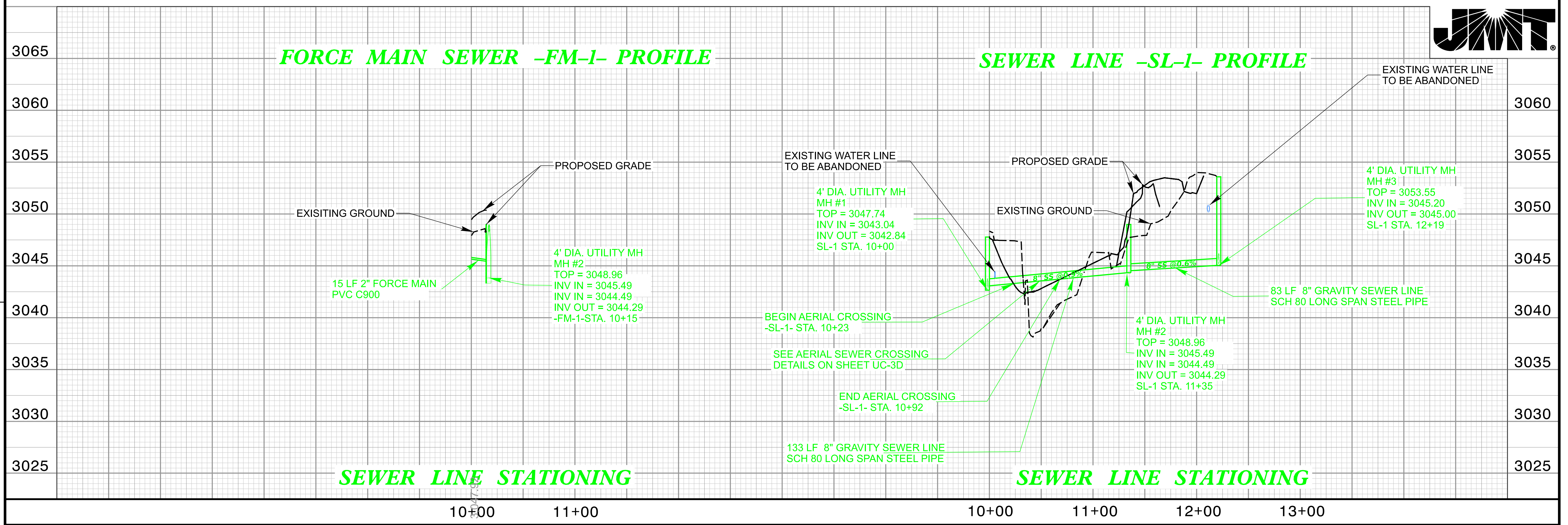
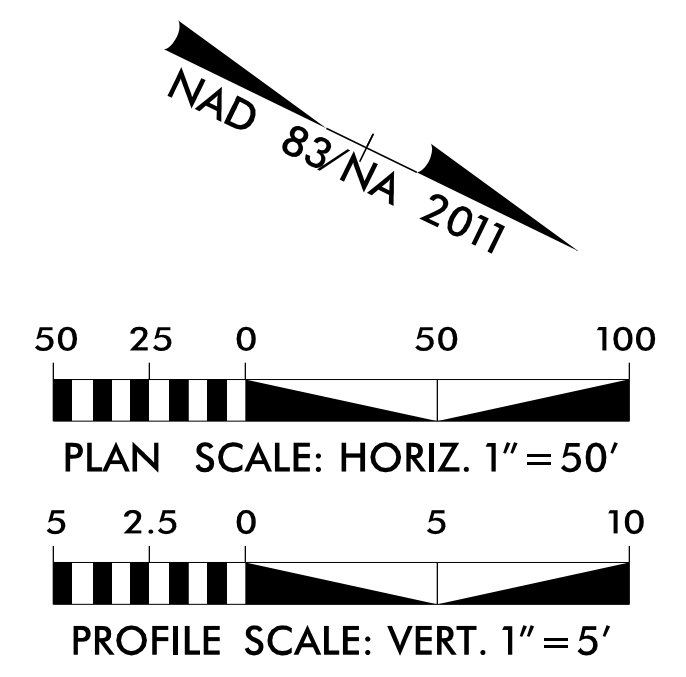
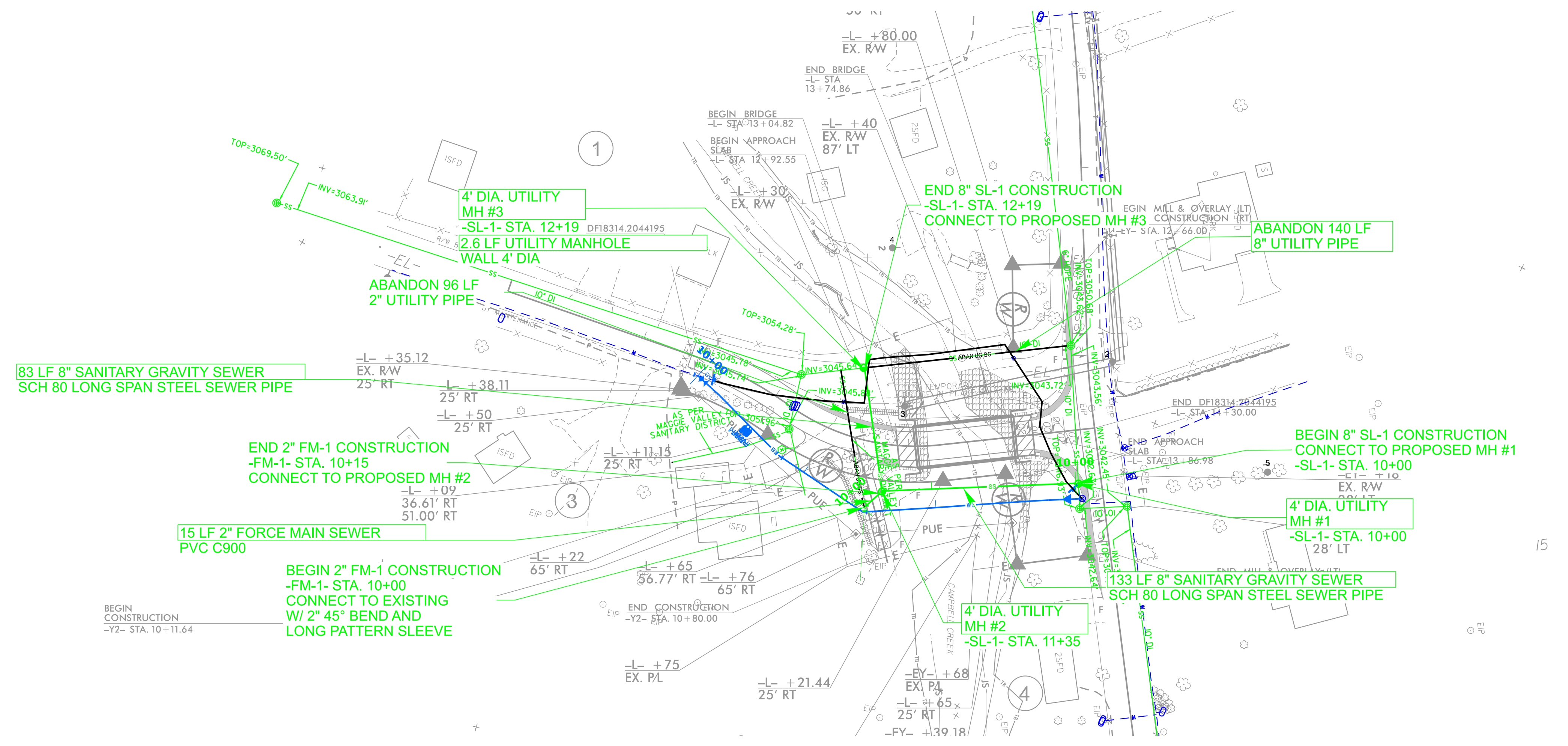
REVISIONS



**WATER LINE -WL-1- PROFILE**



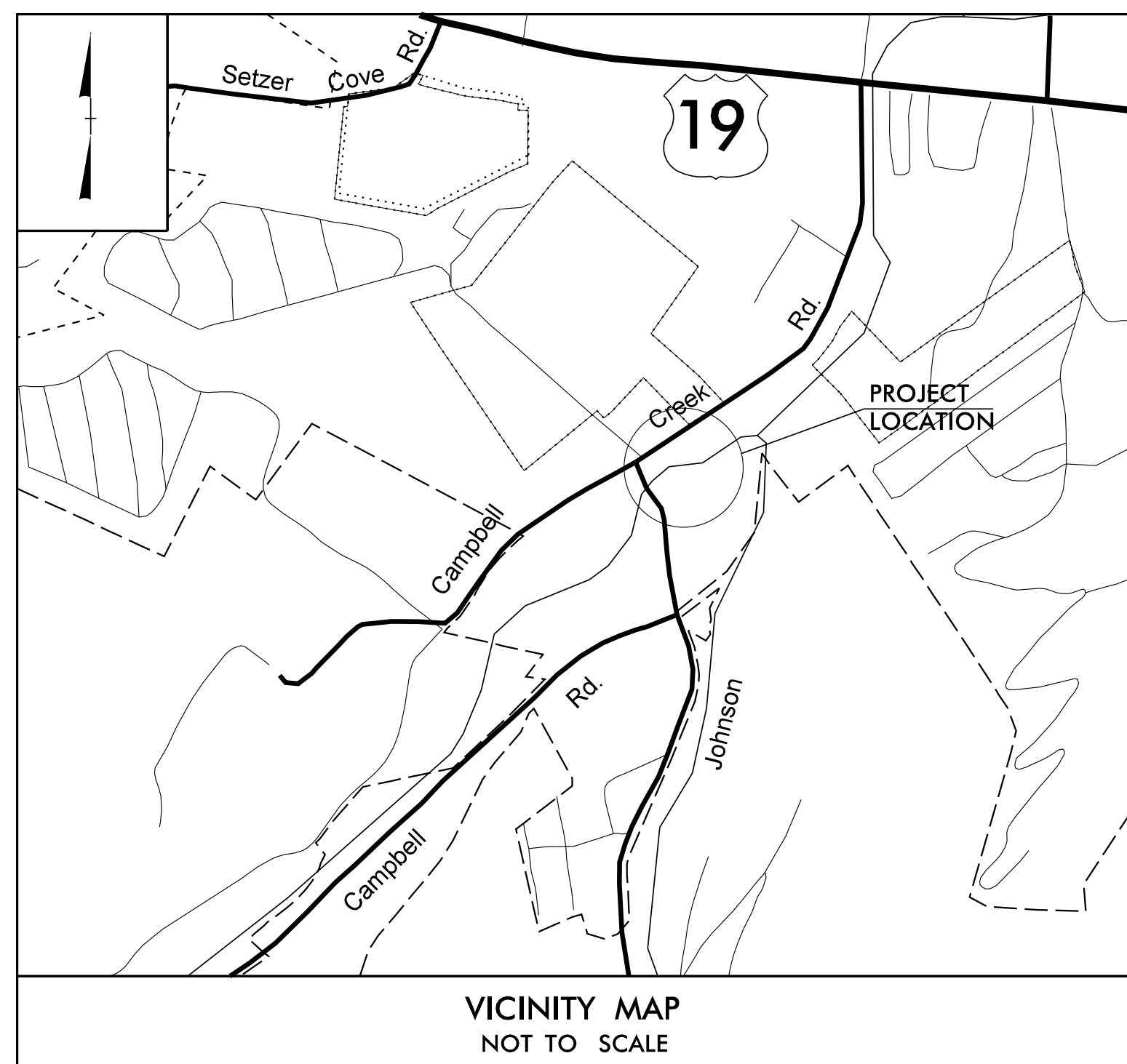
PROJECT REFERENCE NO. DF18314.2044195	SHEET NO. UC-4A
DESIGNED BY: JDN	
DRAWN BY: TMR	
CHECKED BY: JDN	
APPROVED BY: JDN	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151 1/8/2026   1:56:18 PM EST UTILITY CONSTRUCTION PLANS ONLY	
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REVISIONS

8/17/99

**TIP PROJECT: DF18314.2044195**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

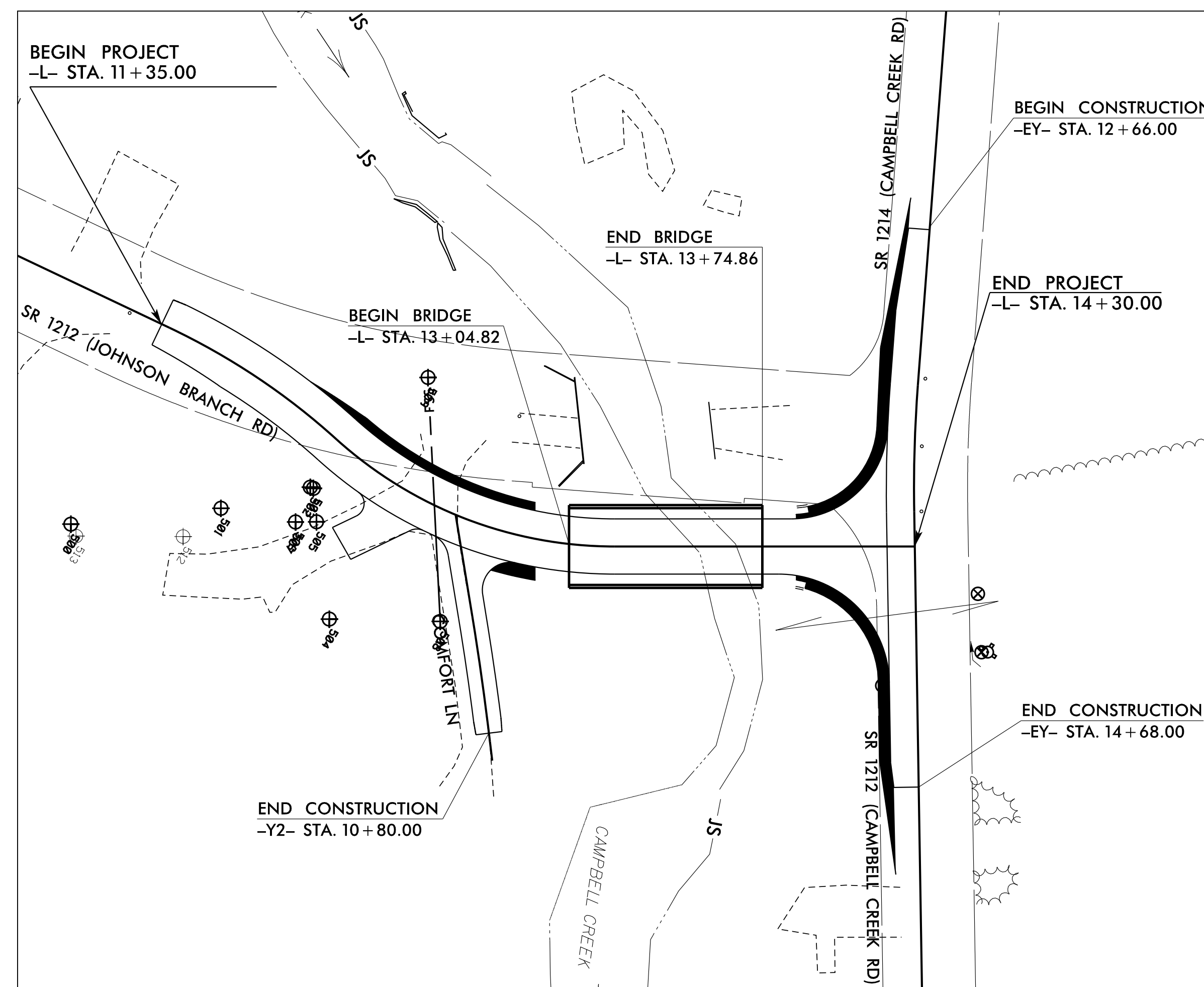
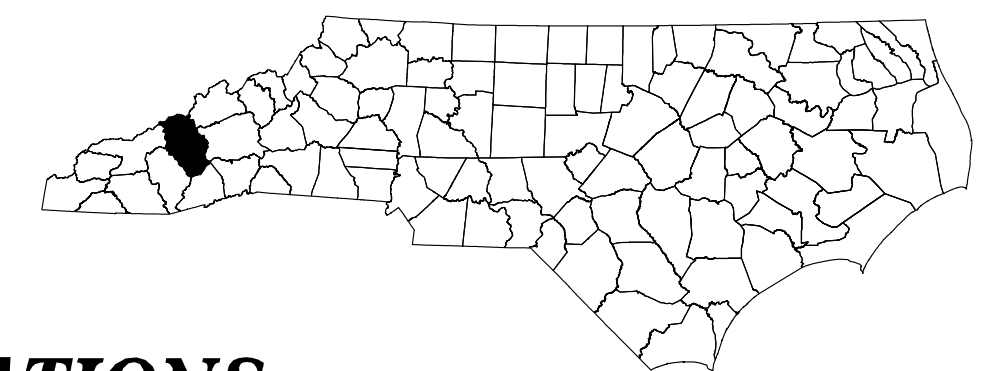
**UTILITIES BY OTHERS PLANS  
HAYWOOD COUNTY**

**LOCATION: SR 1212 (JOHNSON BRANCH RD.)  
OVER CAMPBELL CREEK**

**TYPE OF WORK: AERIAL AND UNDERGROUND COMMUNICATIONS**

T.I.P. NO.	SHEET NO.
DF18314.2044195	UO-1

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



**GRAPHIC SCALES**



**INDEX OF SHEETS**

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	SYMBOLGY SHEET
UO-3	OMITTED
UO-4	UBO PLAN SHEET

**UTILITY OWNERS WITH CONFLICTS**

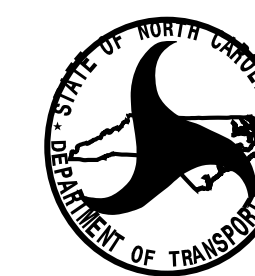
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|---------------|----------------|
| (A) AT&T-     | COMMUNICATIONS |
| (B) SPECTRUM- | COMMUNICATIONS |

PREPARED IN THE OFFICE OF:



Prepared in the Office of:  
**JOHNSON, MIRMIRAN, & THOMPSON, INC.**  
3508 Trent Road  
New Bern, NC 28562

**NICK ASARO** UTILITY PROJECT MANAGER  
**JAMES MONTGOMERY** PROJECT UTILITY COORDINATOR



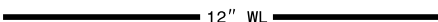

























**DIVISION OF HIGHWAYS  
UTILITIES UNIT**  
1555 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1555  
PHONE (919) 707-6690  
FAX (919) 250-4151

**Robert C. Golding** UTILITIES ENGINEER  
**Robert Wilcox** UTILITIES COORDINATOR




# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## UTILITIES PLAN SHEET SYMBOLS









### PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ 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	
Plan Note	
Pay Item Note	

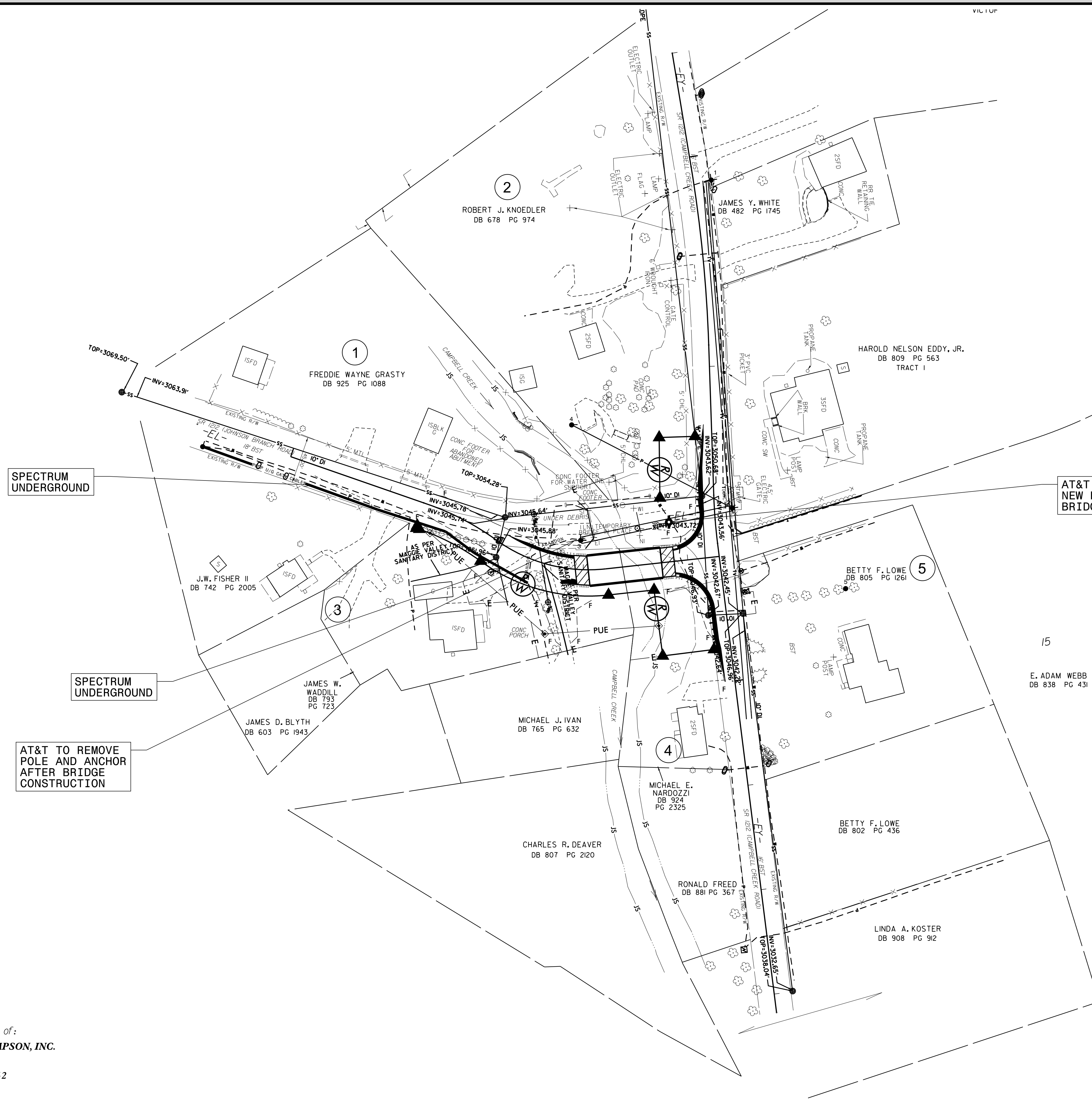
### EXISTING UTILITIES SYMBOLS

Power Pole		*Underground Power Line	
Telephone Pole		*Underground Telephone Cable	
Joint Use Pole		*Underground Telephone Conduit	
Utility Pole		*Underground Fiber Optics Telephone Cable	
Utility Pole with Base		*Underground TV Cable	
H-Frame Pole		*Underground Fiber Optics TV Cable	
Power Transmission Line Tower		*Underground Gas Pipeline	
Water Manhole		Aboveground Gas Pipeline	
Power Manhole		*Underground Water Line	
Telephone Manhole		Aboveground Water Line	
Sanitary Sewer Manhole		*Underground Gravity Sanitary Sewer Line	
Hand Hole for Cable		Aboveground Gravity Sanitary Sewer Line	
Power Transformer		*Underground SS Forced Main Line	
Telephone Pedestal		Underground Unknown Utility Line	
CATV Pedestal		SUE Test Hole	
Gas Valve		Water Meter	
Gas Meter		Water Valve	
Located Miscellaneous Utility Object		Fire Hydrant	
Abandoned According to Utility Records		Sanitary Sewer Cleanout	
End of Information			

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

### UTILITIES BY OTHERS

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



Prepared in the Office of:  
**JOHNSON, MIRMIRAN, & THOMPSON, INC.**  
 3508 Trent Road  
 New Bern, NC 28562

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