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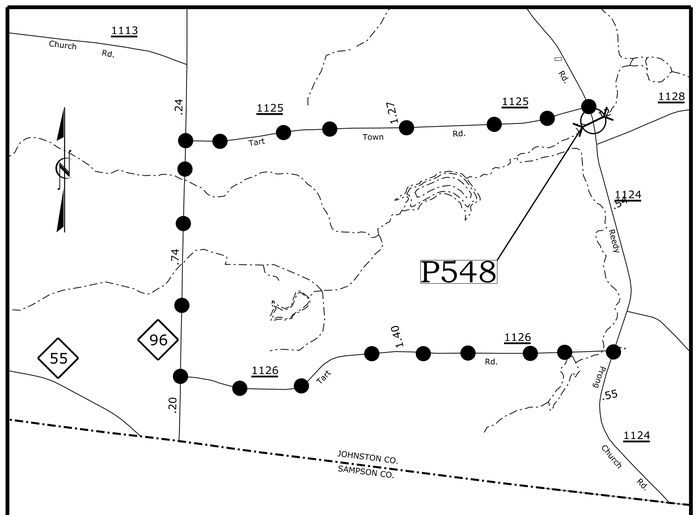
09/08/09

PROJECT: BP4.R028

CONTRACT: DD00449

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



VICINITY MAP

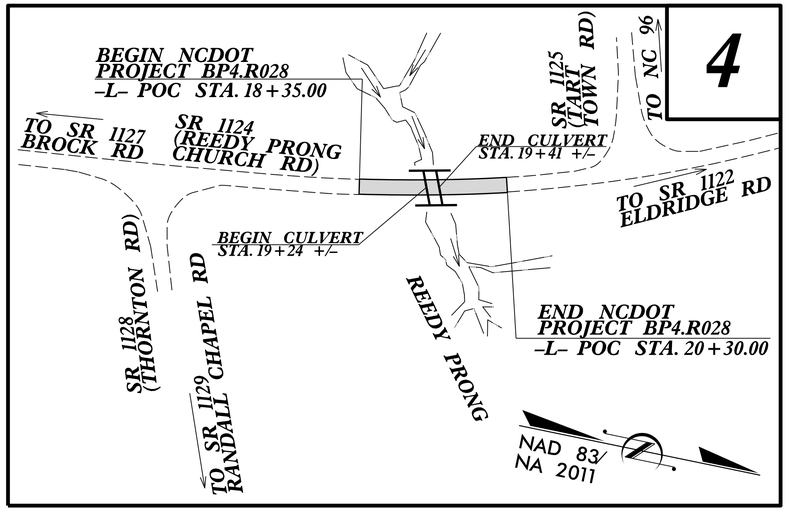
OFF–SITE DETOUR ——●——●——●——●——

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: PIPE NO. 500548 OVER REEDY PRONG ON SR 1124 (REEDY PRONG CHURCH RD.)

TYPE OF WORK: GRADING, DRAINAGE, & PAVING



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R028	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP4.R028.1		PE
BP4.R028.2		ROW, UTIL.
BP4.R028.3		CONST.

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

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

PIPE NO. 500548

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 30 15 0 30 60
PROFILE (HORIZONTAL): 30 15 0 30 60
PROFILE (VERTICAL): 6 3 0 6 12

DESIGN DATA

ADT 2019 = 200

T = 6 % *
V = 55 MPH

* (TTST = 3% + DUAL = 3%)

FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP4.R028 = 0.037 MILES

TOTAL LENGTH PROJECT BP4.R028 = 0.037 MILES

NCDOT CONTACT: RACHEL C. EVANS, PE
DIVISION 4 PROJECT ENGINEER

Prepared for:
DIVISION OF HIGHWAYS
DIVISION FOUR
509 Ward Boulevard, Wilson NC, 27895

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 31, 2022

LETTING DATE: FEBRUARY 27, 2024

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

GREG S. PURVIS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 15833 ENGINEER JERRY L. LINDSEY
DocuSigned by: Jerry L. Lindsey P.E. 1/2/2024
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 022999 ENGINEER GREG S. PURVIS
DocuSigned by: Greg S. Purvis P.E. 1/2/2024
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

1/2/2024
...\Proj\BP4.R028_RDY_TSH_1.dgn
USER:JRosado

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
11/14/2023
NORTH CAROLINA PROFESSIONAL SEAL 022999 ENGINEER GREG S PURVIS
DocuSigned by: Greg S. Purvis
DF5927C256E1403...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GENERAL NOTES

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

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

CenturyLink (Telephone/Fiber Optic), Johnston County Public Utilities (Water/Sewer),

South River Electrical Membership Corporation (Power), Piedmont Natural Gas (Gas)

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

2024 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2024
REV.

2024 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.01	Guide for Grading Subgrade - Interstate and Freeway
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

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS, PAVEMENT SCHEDULE, & MISCELLANEOUS DETAILS
2D-1	DRAINAGE DETAILS
3B-1	EARTHWORK SUMMARY AND PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
RW01 THRU RW04	RIGHT OF WAY SHEETS, SURVEY CONTROL SHEETS, PROPOSED ALIGNMENT CONTROL SHEET AND PROPOSED EASEMENT CONTROL SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLAN
EC-1 THRU EC-6	EROSION CONTROL PLANS
X-1	CROSS SECTION SUMMARY SHEET
X-2 THRU X-4	CROSS SECTIONS

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
BP4.R0128	1B

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) — EIP
- Computed Property Corner
- Existing Concrete Monument (ECM) — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- 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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — 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 — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

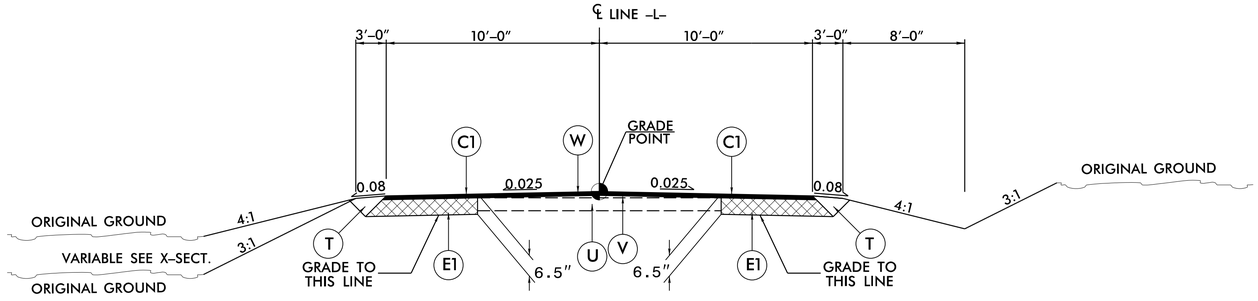
MISCELLANEOUS:

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

PAVEMENT SCHEDULE

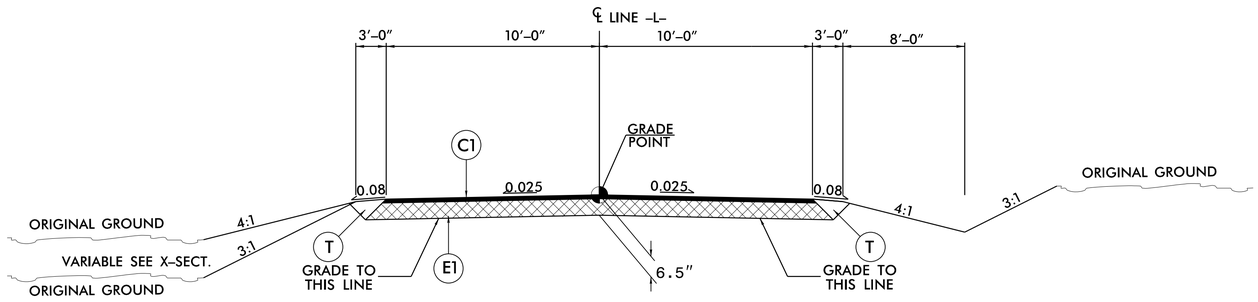
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.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

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



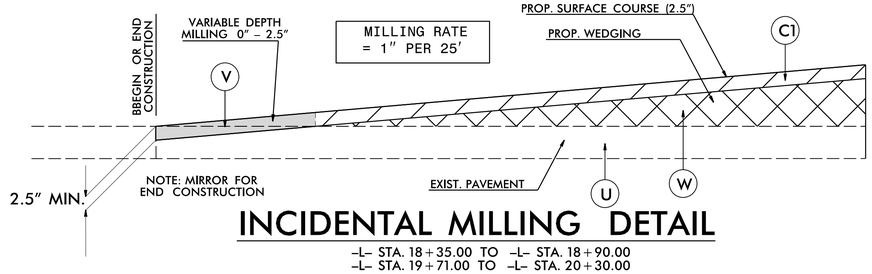
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
–L– STA. 18+35.00 TO –L– STA. 18+90.00
–L– STA. 19+71.00 TO –L– STA. 20+30.00



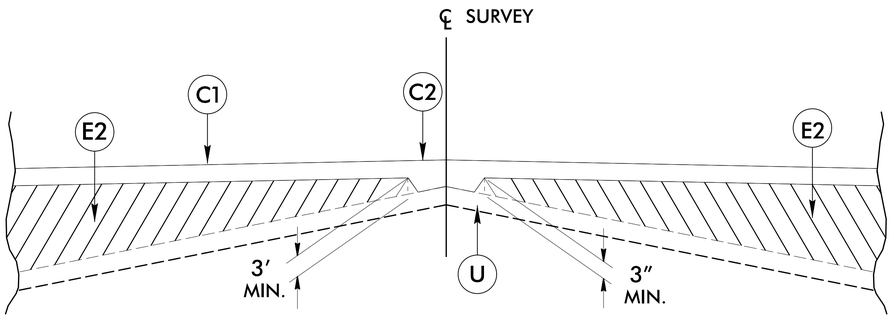
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
–L– STA. 18+90.00 TO –L– STA. 19+71.00



INCIDENTAL MILLING DETAIL

–L– STA. 18+35.00 TO –L– STA. 18+90.00
–L– STA. 19+71.00 TO –L– STA. 20+30.00



W: Detail Showing Method of Wedging

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	2A-1

ROADWAY DESIGN ENGINEER
11/14/2023
NORTH CAROLINA PROFESSIONAL SEAL 022999 ENGINEER GREG S. PURVIS
DocuSigned by: Greg S. Purvis

PAVEMENT DESIGN ENGINEER
11/14/2023
NORTH CAROLINA PROFESSIONAL SEAL 037392 ENGINEER RACHEL C. EVANS
DocuSigned by: Rachel C. Evans

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

12/06/07

COMPUTED BY: JAR DATE: 11/04/2022
CHECKED BY: GSP DATE: 11/11/2022

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PIPE #500548

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	3B-1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- STA. 18+35.00	-L- STA. 20+30.00	35	250	215	
SUBTOTALS:		35	250	215	
PROJECT SUBTOTALS:		35	250	215	
LOSS DUE TO CLEARING & GRUBBING				11	
GRAND TOTALS:		35	250	225	
SAY:		75		250	

Note: Approximate quantities only.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	18+90	19+71	CL	165.19
			TOTAL:	165.19
			SAY:	170

11/14/2023
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USER:Rwade

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	2D-1

HYDRAULIC DESIGN ENGINEER
11/15/2023

NORTH CAROLINA PROFESSIONAL SEAL 15833 ENGINEER JERRY L. LINDSEY

Docusigned by: Jerry L. Lindsey
4A5171D9929644A...

ETHERILL 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
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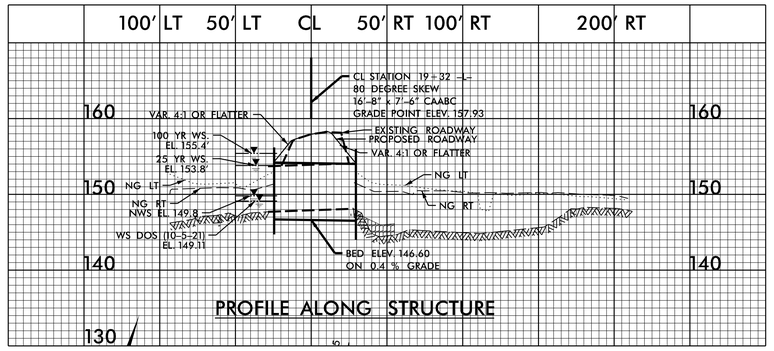
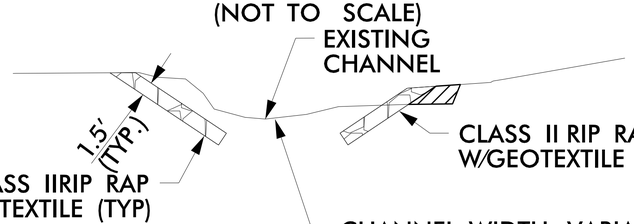
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CULVERT DETAILS



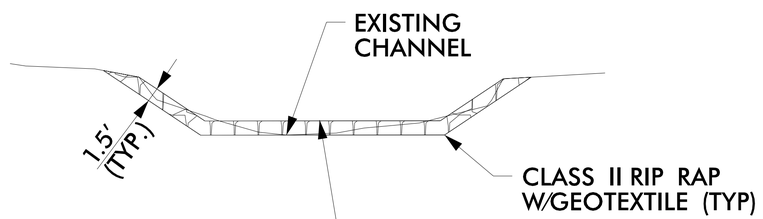
PROFILE ALONG STRUCTURE

INLET TYPICAL
LT. TO RT. LOOKING DOWNSTREAM
(NOT TO SCALE)



CLASS II RIP RAP
EST. 42 TONS
EST. 42 SY GEOTEXTILE

OUTLET TYPICAL
LT. TO RT. LOOKING DOWNSTREAM
(NOT TO SCALE)



CLASS II RIP RAP
EST. 135 TONS
EST. 136 SY GEOTEXTILE

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	2D-2

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
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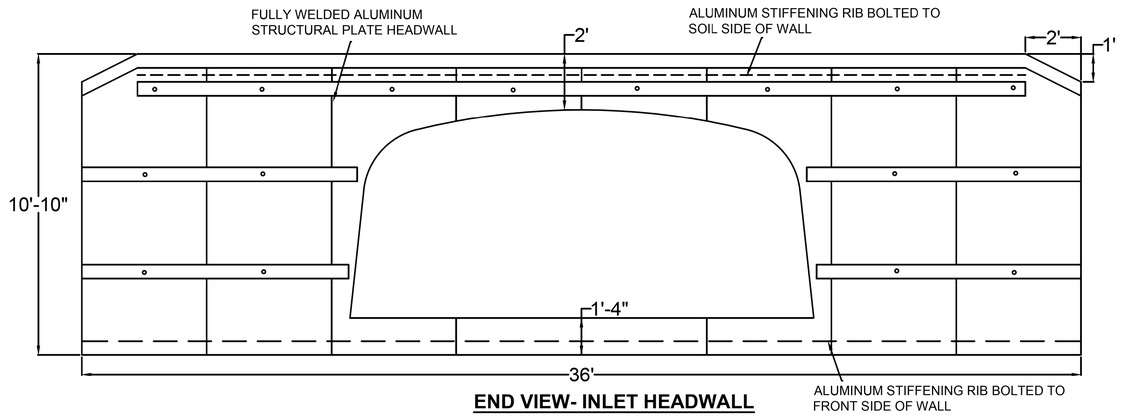
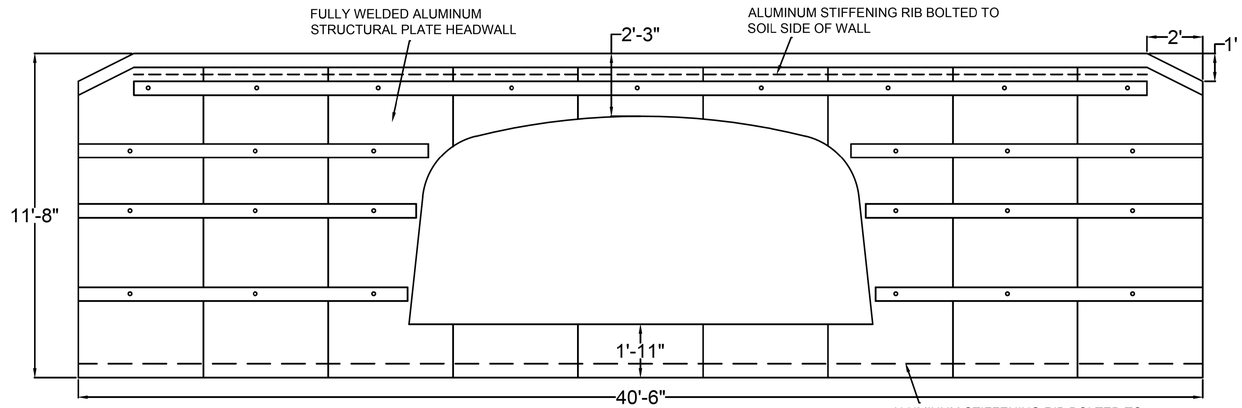
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CULVERT HEADWALL DETAILS



END VIEW- INLET HEADWALL



END VIEW- OUTLET HEADWALL

PIPE NO. 500548

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — 11/14/2023 — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022999 — GREG S. PURVIS

HYDRAULICS ENGINEER — 11/15/2023 — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15833 — JERRY L. LINDSEY

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
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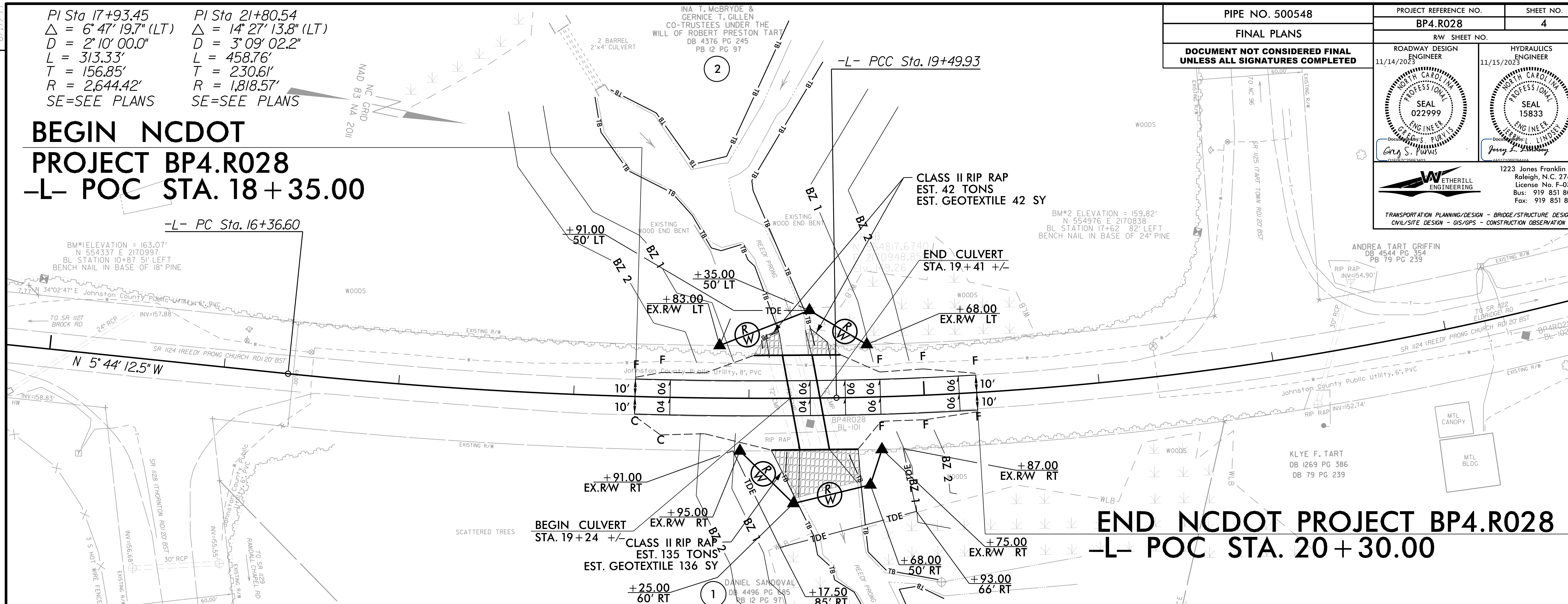
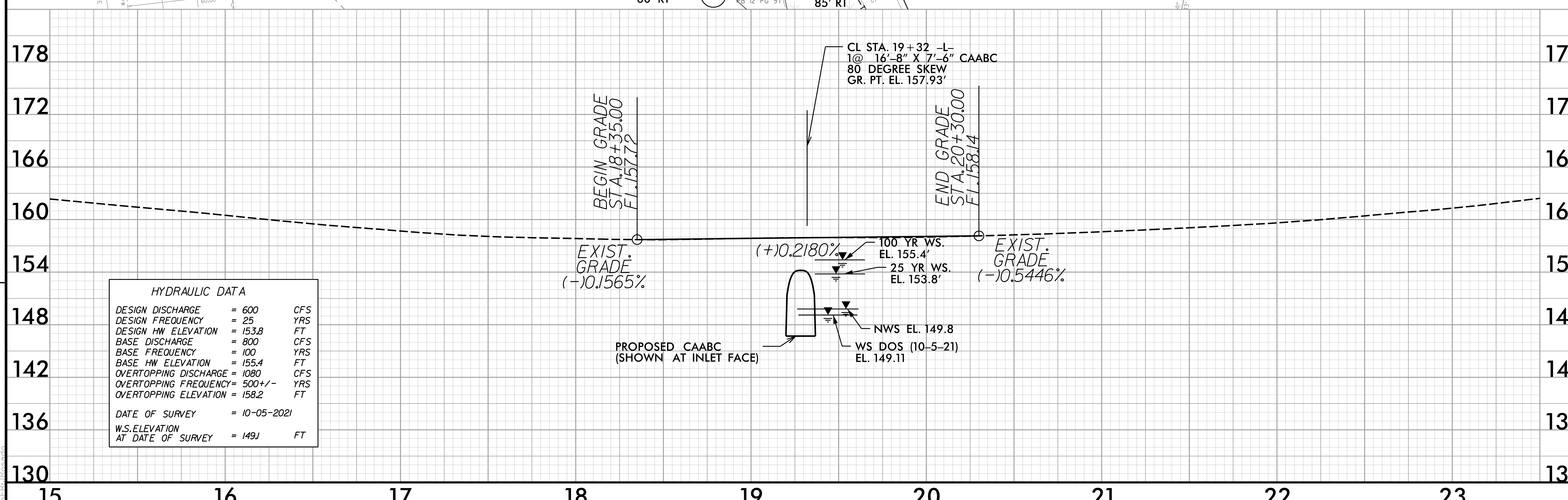
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

REVISIONS


PI Sta 17+93.45
△ = 6° 47' 19.7" (LT)
D = 2° 10' 00.0"
L = 313.33'
T = 156.85'
R = 2,644.42'
SE=SEE PLANS
PI Sta 21+80.54
△ = 14° 27' 13.8" (LT)
D = 3° 09' 02.2"
L = 458.76'
T = 230.61'
R = 1,818.57'
SE=SEE PLANS
NC GRID NAD 83 NA 2011
BEGIN NCDOT PROJECT BP4.R028
-L- POC STA. 18+35.00
-L- PC Sta. 16+36.60
-L- PCC Sta. 19+49.93
INA T. McBRYDE & GERNICE T. GILLEN CO-TRUSTEES UNDER THE WILL OF ROBERT PRESTON TART
DB 4376 PG 245
PB 12 PG 97
2 BARREL 2'x4' CULVERT
BM*1 ELEVATION = 163.07'
N 554337 E 2170997
BL STATION 10+87 51' LEFT
BENCH NAIL IN BASE OF 18" PINE
BM*2 ELEVATION = 159.82'
N 554976 E 2170838
BL STATION 17+62 82' LEFT
BENCH NAIL IN BASE OF 24" PINE
CLASS II RIP RAP
EST. 42 TONS
EST. GEOTEXTILE 42 SY
END CULVERT
STA. 19+41 +/-
+91.00 50' LT
+35.00 50' LT
+83.00 EX.R/W LT
+68.00 EX.R/W LT
N 5° 44' 12.5" W
SR 1124 (REEDY PRONG CHURCH RD) 20' BST
Johnston County Public Utility, 6" PVC
TO SR 1127 BROCK RD
WOODS
ANDREA TART GRIFFIN
DB 4544 PG 354
PB 79 PG 239
TO SR 1122 ELDRIDGE RD
BP4R028 BL-102
BP4R028 BL-101
KLYE F. TART
DB 1269 PG 386
DB 79 PG 239
MTL CANOPY
MTL BLDG
SR 1125 (TART TOWN RD) 20' BST
TO NC 96
+91.00 EX.R/W RT
+95.00 EX.R/W RT
+87.00 EX.R/W RT
+75.00 EX.R/W RT
BEGIN CULVERT
STA. 19+24 +/-
CLASS II RIP RAP
EST. 135 TONS
EST. GEOTEXTILE 136 SY
END NCDOT PROJECT BP4.R028
-L- POC STA. 20+30.00
+68.00 50' RT
+93.00 66' RT
+25.00 60' RT
+17.50 85' RT
DANIEL SANDOVAL
DB 4496 PG 685
PB 12 PG 97
SR 1128 (THORNTON RD) 20' BST
TO SR 1129 RANDALL CHAPEL RD
SCATTERED TREES
30" RCP
24" RCP
REEDY PRONG


CL STA. 19+32 -L-
1@ 16'-8" X 7'-6" CAABC
80 DEGREE SKEW
GR. PT. EL. 157.93'
BEGIN GRADE
STA. 18+35.00
EL. 157.72
END GRADE
STA. 20+30.00
EL. 158.14
EXIST. GRADE (-)0.1565%
(+)0.2180%
EXIST. GRADE (-)0.5446%
100 YR WS. EL. 155.4'
25 YR WS. EL. 153.8'
NWS EL. 149.8
WS DOS (10-5-21) EL. 149.11
PROPOSED CAABC (SHOWN AT INLET FACE)
178
172
166
160
154
148
142
136
130
15
16
17
18
19
20
21
22
23

HYDRAULIC DATA

DESIGN DISCHARGE	= 600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 153.8	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 155.4	FT
OVERTOPPING DISCHARGE	= 1080	CFS
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING ELEVATION	= 158.2	FT
DATE OF SURVEY	= 10-05-2021	
W.S. ELEVATION AT DATE OF SURVEY	= 149.1	FT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R028.1	RW01	4

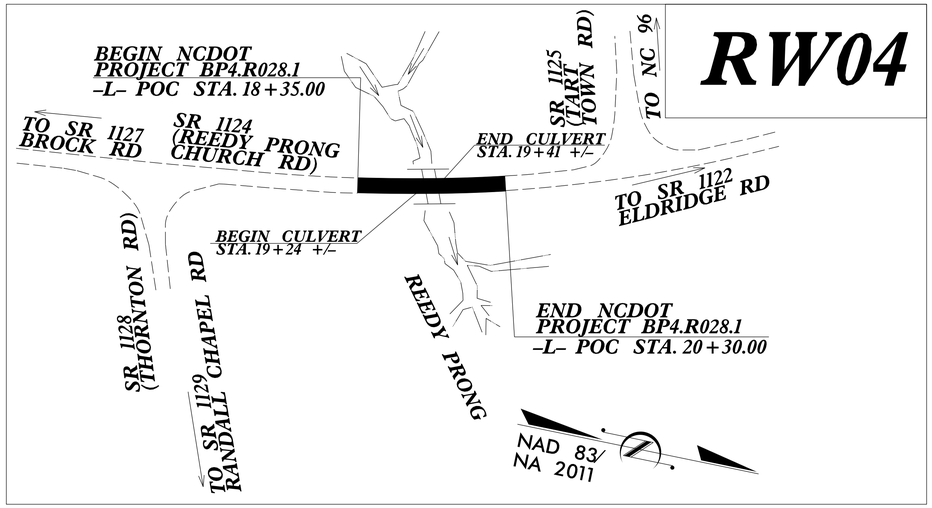
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

JOHNSTON COUNTY

TIP PROJECT: BP4.R028

09/08/99



GRAPHIC SCALE

30 15 0 30 60

PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "BP4-R028-2"
WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 554,304.637(ft) EASTING: 2,171,053.693(ft)
ELEVATION: 162.73(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99987023
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"BP4-R028-2" TO -L- STATION 10+00.00 IS
S 08-14'31.6" E 453.16(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

WETHERILL ENGINEERING

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

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
03/31/2022	*03/14/2023*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4372 LAND SURVEYOR ANTHONY K. ALFORD

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

5/24/2022

SIGNATURE: *Date:*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP4–R028	RW02C–1

Location and Surveys

GEL Engineering of NC, Inc. DBA

GEL SOLUTIONS

an Affiliate of THE GEL GROUP, INC.

2700 SUMNER BLVD.
SUITE 106
RALEIGH,NC 27616
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

NORTH CAROLINA GEL ENGINEERING OF NC, INC. NO. C-1938 CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA PROFESSIONAL SEAL L-3996 LAND SURVEYOR PARKS H. ICENHOUR JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

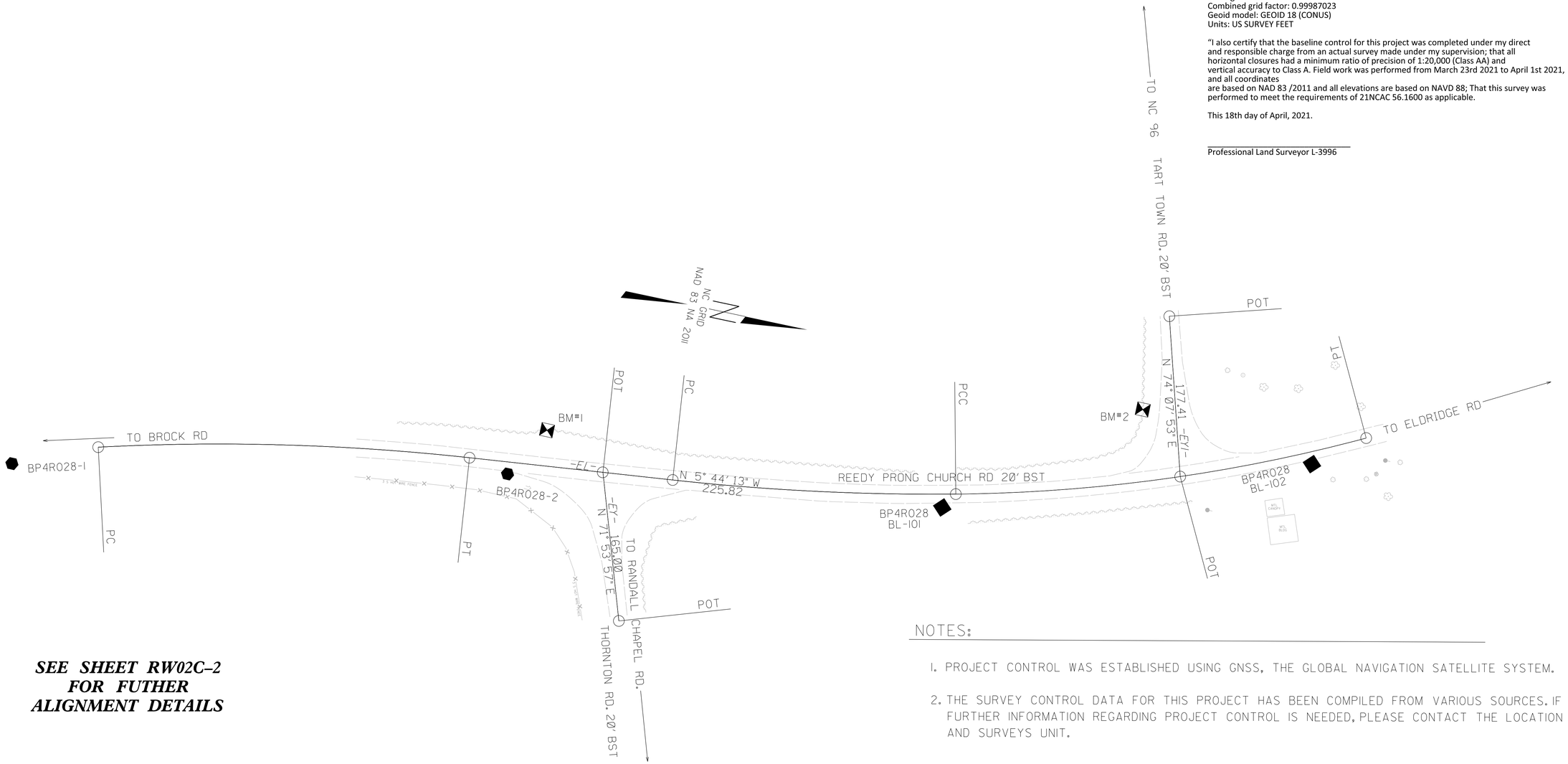
I, PARKS H. ICENHOUR JR., PLS, certify that the Project Control was (performed/verified) under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: AA
Type of GPS field procedure: (RTN)
Dates of survey:March 23rd 2021
Datum/Epoch: NAD 1983/2011 (CONUS)
Published/Fixed-control used: (Control Utilized)
Localized around: BP4R028-2
Northing: 554304.6370
Easting: 2171053.6930
Combined grid factor: 0.99987023
Geoid model: GEOID 18 (CONUS)
Units: US 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 from March 23rd 2021 to April 1st 2021, 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 18th day of April, 2021.

_____
Professional Land Surveyor L-3996



SEE SHEET RW02C–2 FOR FUTHER ALIGNMENT DETAILS

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.

18-APR-2021 11:15
C:\GEL\projects\bp4_r028\fieldwork\final\revised control sheets\bp4_r028_ls_rw02c-1_210415.dgn
Jason Prevotte AT DESKTOP-EPRVSVF

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP4–R028	RW02C–2

Location and Surveys

GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
2700 SUMNER BLVD.
SUITE 106
RALEIGH,NC 27616
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BL

POINT	DESC.	NORTH	EAST	ELEVATION
1	BP4R028-1	553766.6945	2171156.1897	172.00
2	BP4R028-2	554304.6370	2171053.6930	162.73
101	BP4R028 BL 101	554782.0420	2170990.0870	158.11
102	BP4R028 BL 102	555171.6430	2170858.4980	162.09

BM1 ELEVATION = 163.07
N 554337 E 2170997
BL STATION 10+87.00 51 LEFT
BENCH NAIL SET IN BASE OF 18" PINE

BM2 ELEVATION = 159.82
N 554976 E 2170838
BL STATION 17+62.00 82 LEFT
BENCH NAIL SET IN BASE OF 24" PINE

I, PARKS H. ICENHOUR JR., PLS, certify that the Project Control was (performed/verified) 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: (RTN)
Dates of survey:March 23rd 2021
Datum/Epoch: NAD 1983/2011 (CONUS)
Published/Fixed-control used: (Control Utilized)
Localized around: BP4R028-2
Northing: 554304.6370
Easting: 2171053.6930
Combined grid factor: 0.99987023
Geoid model: GEOID 18 (CONUS)
Units: US 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 from March 23rd 2021 to April 1st 2021, 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 18th day of April, 2021.

Professional Land Surveyor L-3996

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	553856.158	2171118.656							
CURVE			N 10°21'29.0" W	410.33	09°14'33.0"(RT)	02°15'00.0"	410.78	205.84	2546.48
PT	554259.803	2171044.879							
LINE			N 05°44'12.5" W	225.82					
PC	554484.495	2171022.306							
CURVE			N 09°07'52.4" W	313.15	06°47'19.7"(LT)	02°10'00.0"	313.33	156.85	2644.42
PCC	554793.674	2170972.611							
CURVE			N 19°45'09.1" W	457.55	14°27'13.8"(LT)	03°09'02.2"	458.76	230.61	1818.57
PT	555224.300	2170817.978							

EY

POINT	N	E	BEARING	DIST
POT	554407.366	2171030.054		
LINE			N 71°53'56.8" E	165.00
POT	554458.631	2171186.890		

EY1

POINT	N	E	BEARING	DIST
POT	554983.668	2170731.555		
LINE			N 74°07'53.2" E	177.41
POT	555032.178	2170902.206		

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.

18-APR-2021 11:13
C:\GEL\projects\bp4_r028\fieldwork\final\revised control sheets\bp4_r028_ls_rw02c-2_210415.dgn
Jason Prevatte AT DESKTOP-EPRVSVF

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	RW02D-1

Location and Surveys

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

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

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4372 LAND SURVEYOR ANTHONY K. ALFORD

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 24th day of May, 2022.

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

Professional Land Surveyor L-4372

L

TYPE	STATION	NORTH	EAST
PC	10+00.00	553856.1580	2171118.6564
PT	14+10.78	554259.8032	2171044.8790
PC	16+36.60	554484.4953	2171022.3059
PCC	19+49.93	554793.6736	2170972.6108
PT	24+08.69	555224.3004	2170817.9784

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

6/2/99

24-MAY-2022 09:17
C:\Users\amoore.AT_RAL-WS094\Location and Surveys\Div 4 3-Bridge RW Staking.April2022\80-Drawings\BP4.R028\FOR REVIEW\bp4_r028_1s_rw02d-1.dgn

6/2/99

REVISIONS

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	RW03E-1

Location and Surveys

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

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

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-4372 ANTHONY K. ALFORD

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 05/23/2022 to 05/23/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2022.

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

Professional Land Surveyor L-4372

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	18+83.00	-30.00	554722.3963	2170956.8568
L	18+95.00	30.00	554745.8272	2171013.3809
L	19+25.00	60.00	554781.7712	2171036.5948
L	19+35.00	-50.00	554768.5213	2170926.9373
L	19+68.00	-30.00	554804.4963	2170939.3845
L	19+68.00	50.00	554822.6215	2171017.3042
L	19+75.00	30.00	554825.0176	2170996.1988

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 05/23/2022 TO 05/23/2022 .

24-MAY-2022 09:18
R:\Location and Surveys\Div 4 3-Bridge RW Staking April2022\80-Drawings\BP4.R028\FOR REVIEW\bp4.r028.ls.rw03e-1.dgn
amoore AT RAL-WS094

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	RW04

Location and Surveys

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

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

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 05/23/2022 to 05/23/2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2022.

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

Professional Land Surveyor L-4372

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4372 LAND SURVEYOR ANTHONY K. ALFORD

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

6/2/99

NAD 83 NC GRID NA 2011

BEGIN NCDOT PROJECT BP4.R028.1 –L– POC STA. 18+35.00

–L– PC Sta. 16+36.60

–L– PCC Sta. 19+49.93

INA T. McBRYDE & GERNICE T. GILLEN CO-TRUSTEES UNDER THE WILL OF ROBERT PRESTON TART
DB 4376 PG 245
PB 12 PG 97
2

ANDREA TART GRIFFIN
DB 4544 PG 354
PB 79 PG 239

KLYE F. TART
DB 1269 PG 386
DB 79 PG 239

1 DANIEL SANDOVAL
DB 4496 PG 685
PB 12 PG 97

N 34°02'47" E 7.77'

N 5°44'12.5" W 600.00'

+91.00 50' LT
+35.00 50' LT
+83.00 EX.R/W LT
+68.00 EX.R/W LT
+91.00 EX.R/W RT
+95.00 EX.R/W RT
+87.00 EX.R/W RT
+75.00 EX.R/W RT
+68.00 50' RT
+93.00 66' RT
+25.00 60' RT
+17.50 85' RT

TDE

EXISTING R/W

60.00'

WOODS

SCATTERED TREES

EXISTING WOOD END BENT

REEDY PRONG

TO SR 1127 BROCK RD

SR 1124 (REEDY PRONG CHURCH RD) 20' BST

SR 1128 (THORNTON RD) 20' BST

TO SR 1129 RANDOLPH CHAPEL RD

TO NC 96

SR 1125 (TART TOWN RD) 20' BST

TO SR 1122 ELDRIDGE RD

END NCDOT PROJECT BP4.R028.1 –L– POC STA. 20+30.00

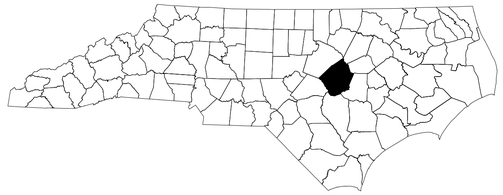
NOTES:

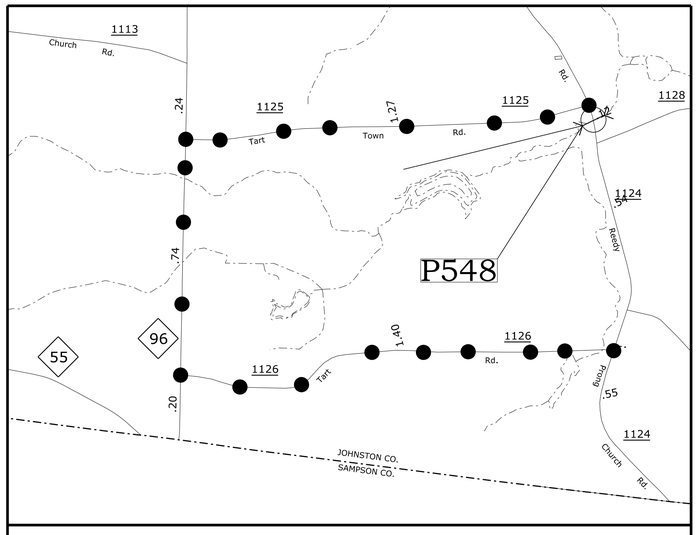
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 05/23/2022 TO 05/23/2022 .

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JOHNSTON COUNTY





VICINITY MAP

OFF–SITE DETOUR

LOCATION: PIPE NO. 500548 OVER REEDY PRONG ON SR 1124 (REEDY PRONG CHURCH RD.)

TYPE OF WORK: GRADING, DRAINAGE, & PAVING

INDEX OF SHEETS

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

SHEET NO.
TMP–01

BP4.R028

TIP PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

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

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE NO. 500548

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

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...

DATE: 10/3/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	TMP-01A

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.03	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

PIPE NO. 500548

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

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

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...

DATE: 11/16/2023

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

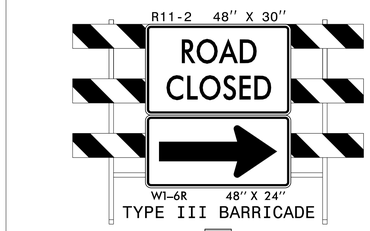
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

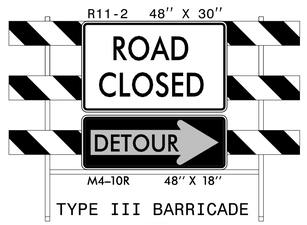
LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

11/6/2023
P:\2021\21118.01_BP4,R028\Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP4,R028_TMP_01A Legend.dgn
User:AHayes

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	TMP-01B



A



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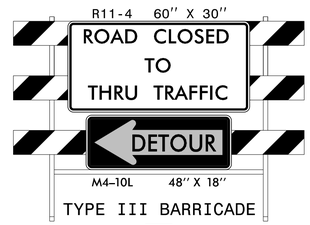

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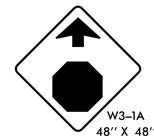
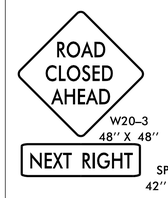


B

C

D

E



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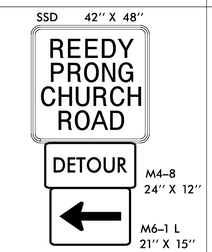

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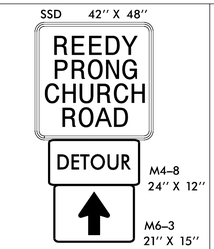

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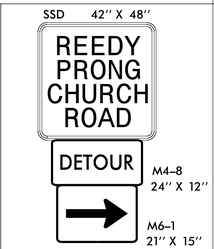

J

K

X BARRICADES
-WITH MOUNTED SIGNING

X SIGNING
-STATIONARY MOUNTED

PIPE NO. 500548

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

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...

DATE: 10/3/2022

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SIGN AND DEVICE LEGEND

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	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 BUSSES, 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 "I" EVERY 0.90 MILES ON SR 1125 (TART TOWN RD) AND SR 1126 (TART 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 1124), 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 TRANSPORATION MANAGEMENT DEVICES.
[SEE SHEET TMP-04 FOR SIGN LOCATIONS]

PIPE NO. 500548

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

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...

DATE: 10/12/2022

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	TMP-03

SIGN NUMBER: name
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 3′-6″
HEIGHT: 4′-0″
TOTAL AREA: 14.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS: 2
LENGTH: 34.0

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

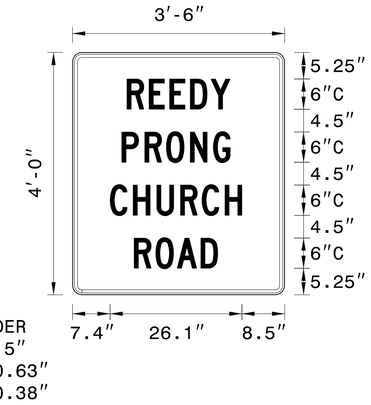
SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

DESIGN BY: DAH
PROJECT ID: BP4.R028
CHECKED BY: WEI
LOCATION: OFFSITE DETOUR
Sep 22, 2022
DIV: 4



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																									Series/Size Text Length
	R	E	E	D	Y																				C 2000
	10.8	15.2	19.2	23.3	27.4																				20.5
	P	R	O	N	G																				C 2000
	9.8	14.3	18.6	23.3	27.9																				21.5
	C	H	U	R	C	H																			C 2000
	7.4	12	16.7	21.4	25.6	30.2																			26.1
	R	O	A	D																					C 2000
	12.2	16.5	20.7	25.4																					16.6

FILENAME: BP4.R028_REF_BSSD

NORTH CAROLINA D.O.T. SIGN DETAIL

PIPE NO. 500548

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C2568E3403...
DATE: 10/3/2022

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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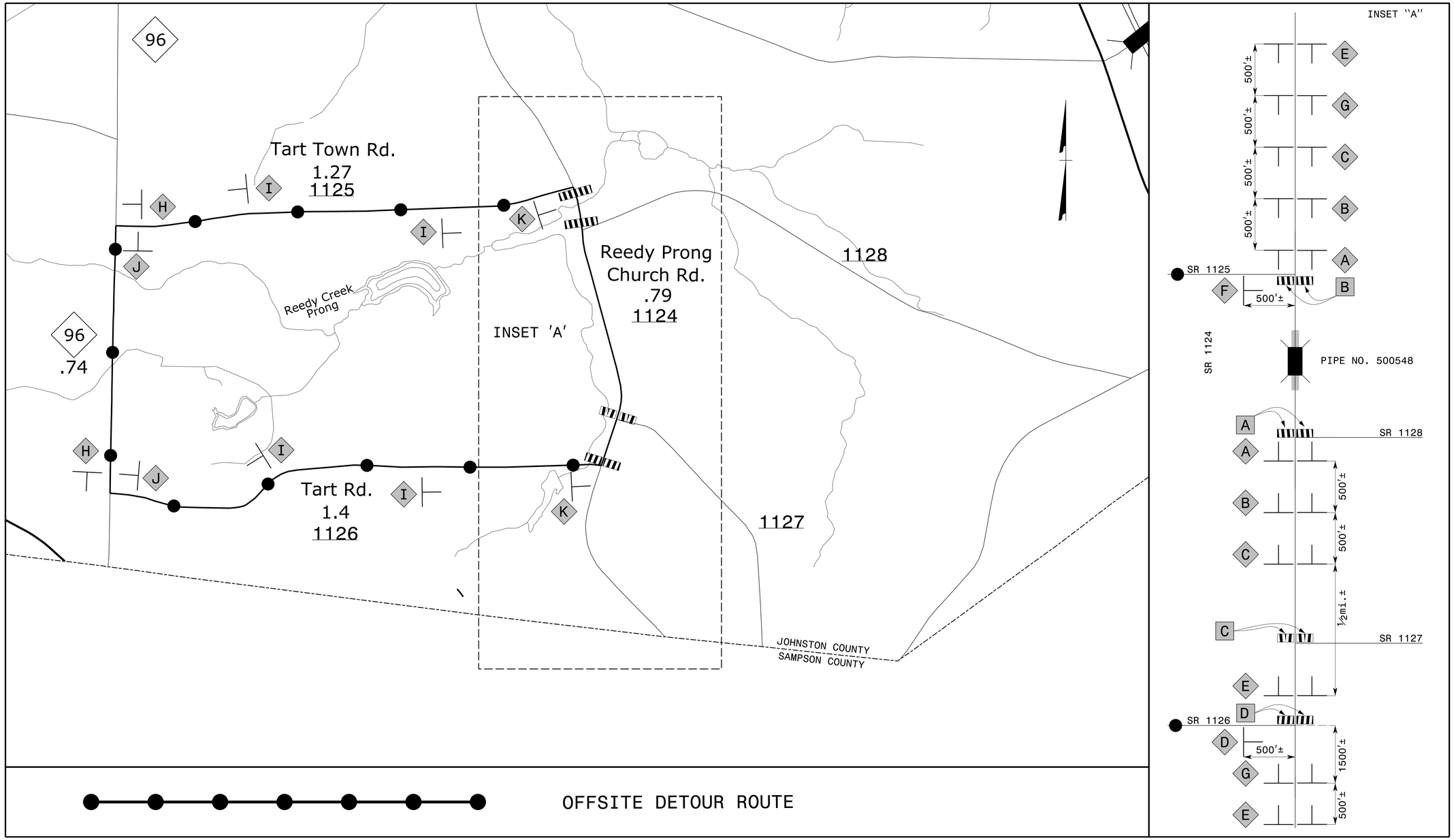
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	TMP-04



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. 500548

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

OFFSITE DETOUR

T.I.P.: BP4.R028

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
JOHNSTON COUNTY

TIP NO.	SHEET NO.
BP4.R028	PMP-01

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403... DATE: 1/5/2024

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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INDEX

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

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 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 MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

FINAL PAVEMENT MARKING SCHEDULE

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

GENERAL NOTES

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

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1928	THERMOPLASTIC	NONE

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

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

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

E) ALL STATIONS ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

PLAN SUBMITTED TO:

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

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

PLAN PREPARED BY: Wetherill Engineering, Inc.

GREG PURVIS, P.E. PROJECT MANAGER

D. ALLEN HAYES, E.I. TRAFFIC DESIGN ENGINEER

PIPE NO. 500548

WETHERILL ENGINEERING

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1/5/2024
P:\2012\2012118.01_BP4,R028\Traffic\Traffic Design\Pre-Let\Plan\Pavement Markings\BP4,R028_PMP_01 Title.dgn
User:AHayes

TIP NO.	SHEET NO.
BP4.R028	PMP-02

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...

DATE: 10/3/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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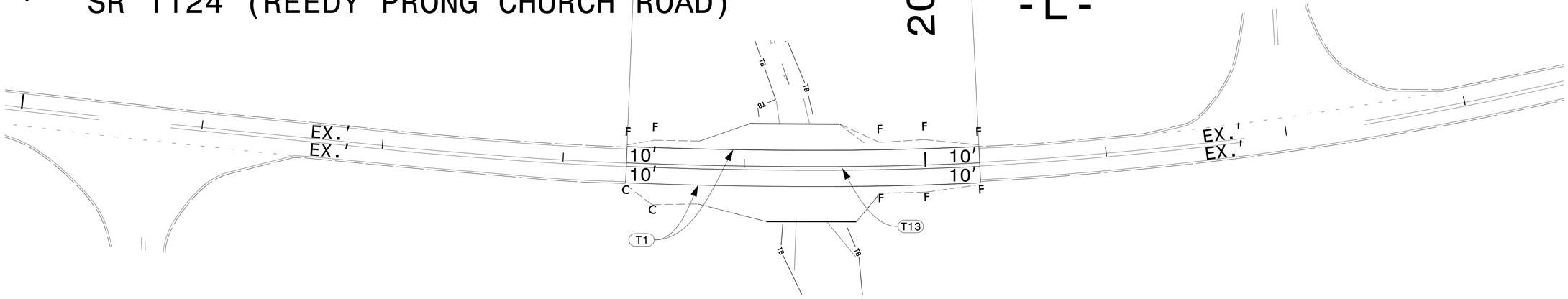
PIPE NO. 500548

BEGIN FINAL PAVEMENT MARKINGS
-
TIE TO EXISTING

END FINAL PAVEMENT MARKINGS
-
TIE TO EXISTING



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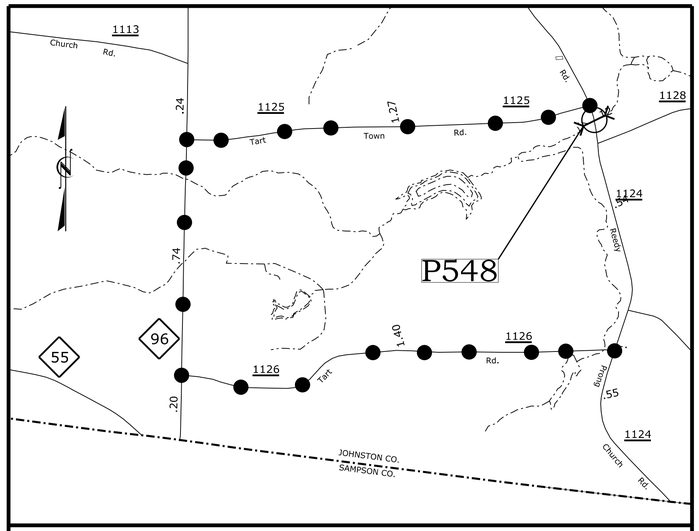
PAVEMENT MARKING DETAIL

PROJECT: BP4.R028

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



VICINITY MAP

OFF–SITE DETOUR ●—●—●—●—●

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

PIPE NO. 500548 OVER REEDY PRONG
ON SR 1124 (REEDY PRONG CHURCH RD.)

PIPE NO. 500548

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R028	EC-1	

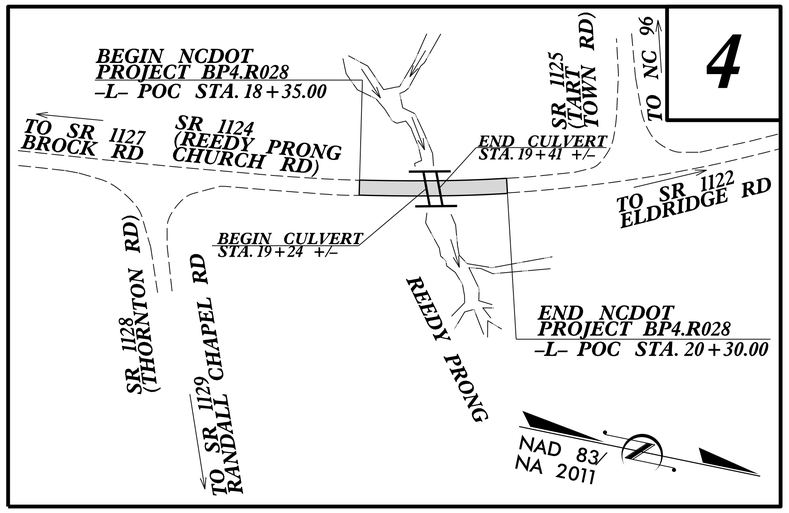
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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



GRAPHIC SCALE

50 25 0 50 100
PLANS

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.

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Prepared in the Office of:
WETHERILL ENGINEERING, INC.
1223 JONES FRANKLIN ROAD
RALEIGH, NC 27606

Designed by:
Matthew Harvey — *3487*
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.

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

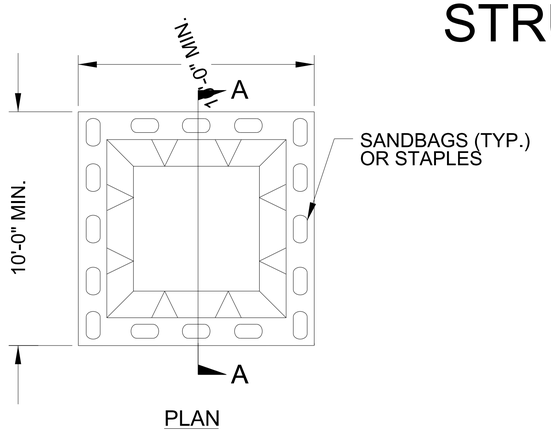
EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

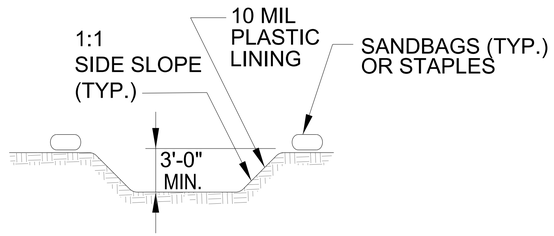
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	—EW—EW—EW—
1636.03	Coir Fiber Wattle Barrier	—CFW—CFW—CFW—

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

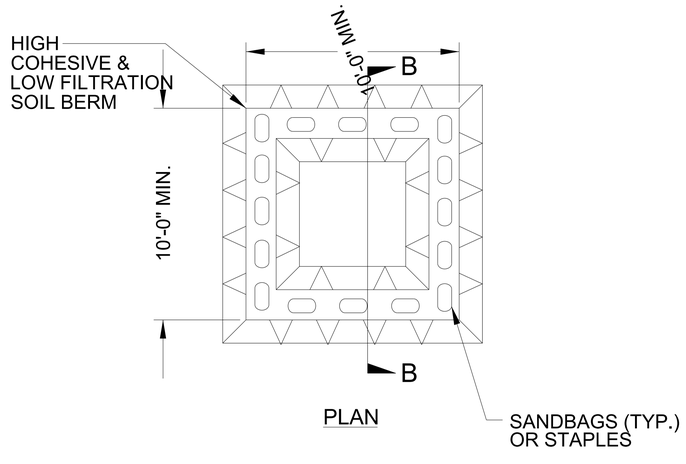
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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.

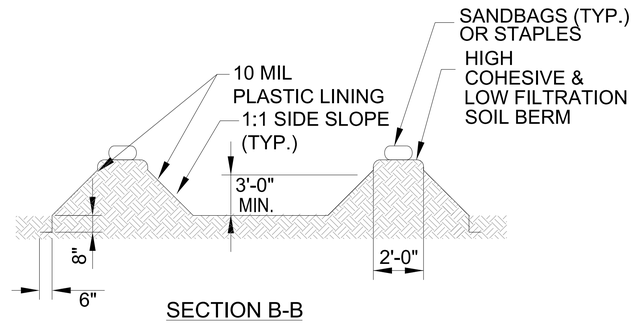
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

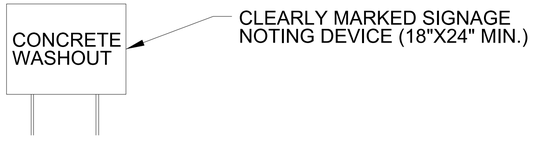
NOT TO SCALE



PLAN



SECTION B-B



NOTES:
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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 CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	EC-03

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 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.

8/17/99

REVISIONS

PI Sta 17+93.45
△ = 6° 47' 19.7" (LT)
D = 2° 10' 00.0"
L = 313.33'
T = 156.85'
R = 2,644.42'
SE=SEE PLANS

PI Sta 21+80.54
△ = 14° 27' 13.8" (LT)
D = 3° 09' 02.2"
L = 458.76'
T = 230.61'
R = 1,818.57'
SE=SEE PLANS

NAD 83 NC GRD NA 2011

BEGIN NCDOT PROJECT BP4.R028 –L– POC STA. 18+35.00

–L– PC Sta. 16+36.60

BM#1 ELEVATION = 163.07'
N 554337 E 2170997
BL STATION 10+87 51' LEFT
BENCH NAIL IN BASE OF 18" PINE

7.72' N 34°02'47" E

N 5°44'12.5" W

TO SR 1127 BROCK RD

24" RCP INV=157.88

SR 1124 (REEDY PRONG CHURCH RD) 20' BST

Johnston County Public Utility, 6" PVC

INV=158.83' HW

SR 1128 (THORNTON RD) 20' BST

30" RCP INV=155.55'

INV=156.68'

3 S HOT WIRE FENCE

TO SR 1129 RANDALL CHAPEL RD

INA T. McBRYDE & GERNICE T. GILLEN CO-TRUSTEES UNDER THE WILL OF ROBERT PRESTON TART
DB 4376 PG 245
PB 12 PG 97

2 BARREL 2'x4' CULVERT

EXISTING WOOD END BENT

REEDY PRONG

–L– PCC Sta. 19+49.93

CLASS II RIP RAP
EST. 42 TONS
EST. GEOTEXTILE 42 SY

BM#2 ELEVATION = 159.82'
N 554976 E 2170838
BL STATION 17+62 82' LEFT
BENCH NAIL IN BASE OF 24" PINE

END CULVERT
STA. 19+41 +/–

+91.00 50' LT
+35.00 50' LT
+83.00 EX.R/W LT
+68.00 EX.R/W LT
+91.00 EX.R/W RT
+95.00 EX.R/W RT
+87.00 EX.R/W RT
+75.00 EX.R/W RT
+68.00 50' RT
+93.00 66' RT
+25.00 60' RT
+17.50 85' RT

BZ 1 BZ 2

BEGIN CULVERT
STA. 19+24 +/–

CLASS II RIP RAP
EST. 135 TONS
EST. GEOTEXTILE 136 SY

DANIEL SANDOVAL
DB 4496 PG 685
PB 12 PG 97

ANDREA TART GRIFFIN
DB 4544 PG 354
PB 79 PG 239

RIP RAP INV=154.90'

TO SR 1122 ELDRIDGE RD

30" RCP

RIP RAP INV=152.74'

KLYE F. TART
DB 1269 PG 386
DB 79 PG 239

MTL CANOPY

MTL BLDG

WOODS

SCATTERED TREES

EXISTING R/W

WLB

BTM

TDE

DP4R028 BL-102

END NCDOT PROJECT BP4.R028 –L– POC STA. 20+30.00

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

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

PIPE NO. 500548

FINAL PLANS

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	EC-04/CONST.04
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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

CL STA. 19+32 –L–
1@ 16'-8" X 7'-6" CAABC
80 DEGREE SKEW
GR. PT. EL. 157.93'

BEGIN GRADE
STA.18+35.00
EL.157.72

END GRADE
STA.20+30.00
EL.158.14

EXIST. GRADE (–)0.1565%

(+)0.2180%

EXIST. GRADE (–)0.5446%

100 YR WS. EL. 155.4'
25 YR WS. EL. 153.8'
NWS EL. 149.8
WS DOS (10-5-21) EL. 149.11

PROPOSED CAABC (SHOWN AT INLET FACE)

HYDRAULIC DATA

DESIGN DISCHARGE	= 600	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 153.8	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 155.4	FT
OVERTOPPING DISCHARGE	= 1080	CFS
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING ELEVATION	= 158.2	FT
DATE OF SURVEY	= 10-05-2021	
W.S.ELEVATION AT DATE OF SURVEY	= 149.1	FT

178 172 166 160 154 148 142 136 130

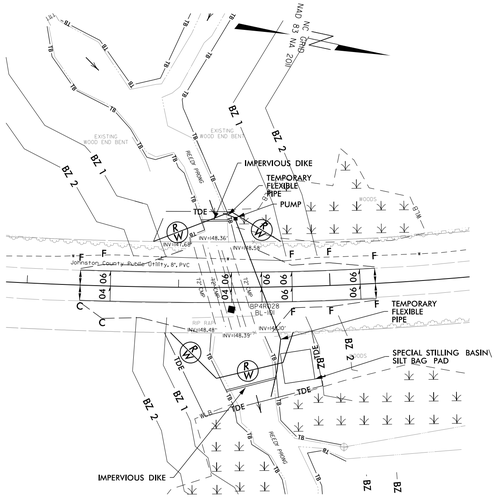
15 16 17 18 19 20 21 22 23

11/18/2023
I:\BP4R028_EC_PSH_4.dgn
USER:kholland

CULVERT CONSTRUCTION SEQUENCE

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PHASE I

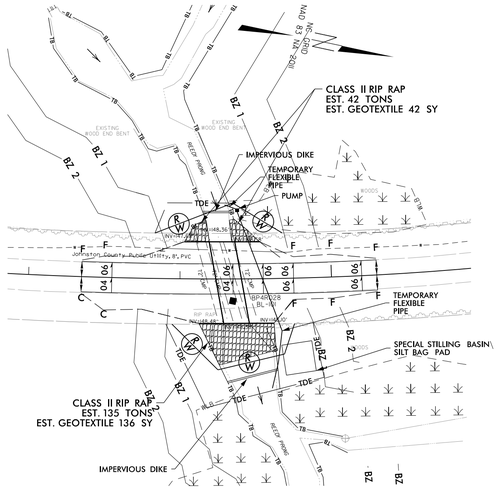


INSTALL EROSION CONTROL MEASURES FOR THIS SITE PRIOR TO COMMENCING CULVERT WORK. (NOT SHOWN FOR CLARITY).

1. INSTALL SPECIAL STILLING BASINS AS NEEDED FOR DEWATERING OF THE PROJECT SITE THROUGHOUT CONSTRUCTION SEQUENCING.

2. INSTALL IMPERVIOUS DIKE UPSTREAM AND DOWNSTREAM AND UTILIZE A PUMP AROUND TO MAINTAIN THE FLOW OF WATER.

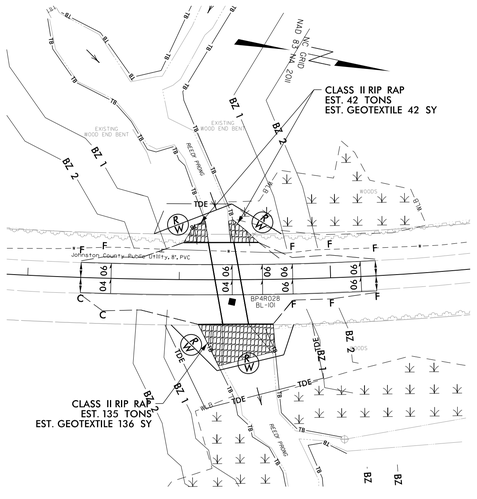
PHASE II



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

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

PHASE III



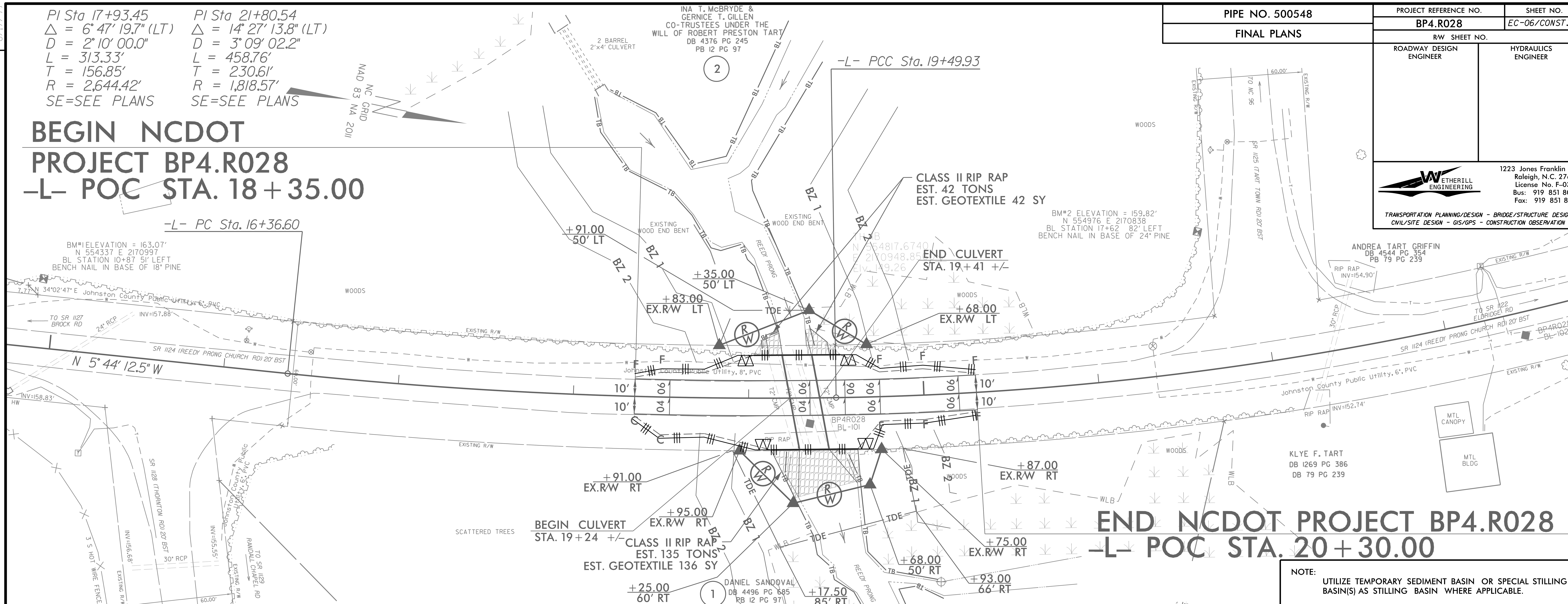
1. REMOVE IMPERVIOUS DIKES TO ALLOW NORMAL STREAM FLOW.

2. REMOVE PUMP, TEMPORARY FLEXIBLE PIPE, AND SPECIAL STILLING BASIN\SILT BAG.

3. CONSTRUCT ROADWAY.

PIPE NO. 500548	PROJECT REFERENCE NO.	SHEET NO.
FINAL PLANS	BP4.R028	EC-06/CONST.04
	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PI Sta 17+93.45
△ = 6° 47' 19.7" (LT)
D = 2° 10' 00.0"
L = 313.33'
T = 156.85'
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SE=SEE PLANS
PI Sta 21+80.54
△ = 14° 27' 13.8" (LT)
D = 3° 09' 02.2"
L = 458.76'
T = 230.61'
R = 1,818.57'
SE=SEE PLANS
NC GRID NAD 83 NA 2011
BEGIN NCDOT PROJECT BP4.R028
-L- POC STA. 18+35.00
-L- PC Sta. 16+36.60
-L- PCC Sta. 19+49.93
INA T. McBRYDE & GERNICE T. GILLEN CO-TRUSTEES UNDER THE WILL OF ROBERT PRESTON TART
DB 4376 PG 245
PB 12 PG 97
2 BARREL 2'x4' CULVERT
BM#1 ELEVATION = 163.07'
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BL STATION 10+87 51' LEFT
BENCH NAIL IN BASE OF 18" PINE
BM#2 ELEVATION = 159.82'
N 554976 E 2170838
BL STATION 17+62 82' LEFT
BENCH NAIL IN BASE OF 24" PINE
CLASS II RIP RAP
EST. 42 TONS
EST. GEOTEXTILE 42 SY
END CULVERT
STA. 19+41 +/-
BEGIN CULVERT
STA. 19+24 +/-
CLASS II RIP RAP
EST. 135 TONS
EST. GEOTEXTILE 136 SY
+91.00 50' LT
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+83.00 EX.R/W LT
+68.00 EX.R/W LT
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+95.00 EX.R/W RT
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+75.00 EX.R/W RT
+68.00 50' RT
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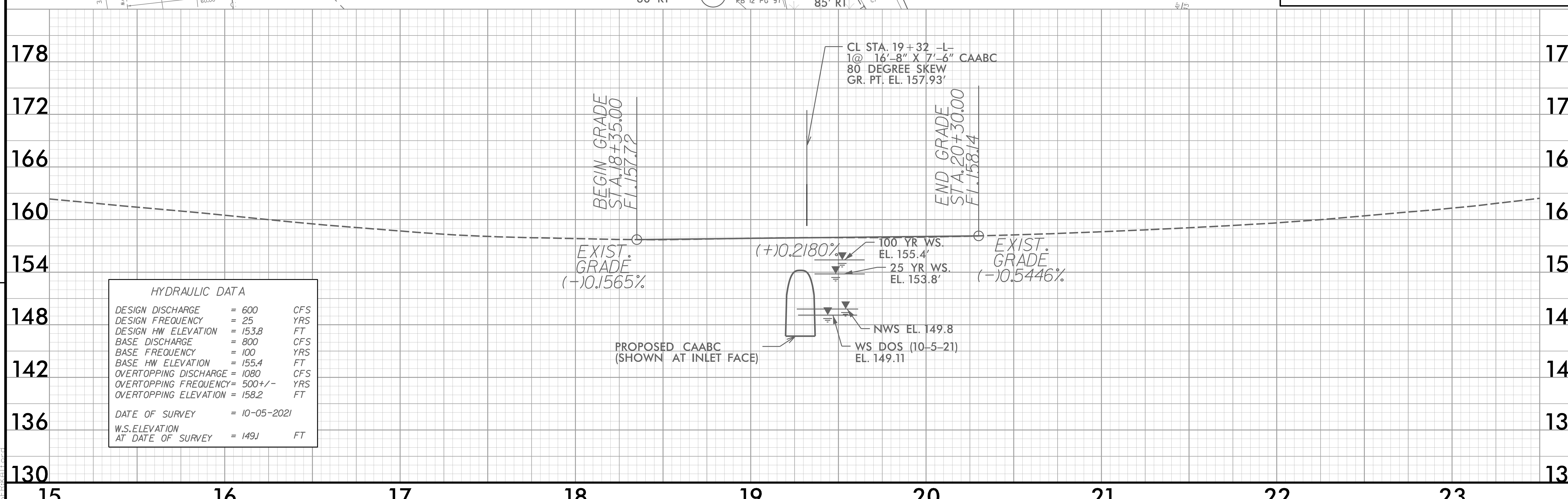
+25.00 60' RT
+17.50 85' RT
N 5° 44' 12.5" W
SR 1124 (REEDY PRONG CHURCH RD) 20' BST
SR 1128 (THORNTON RD) 20' BST
SR 1125 (TART TOWN RD) 20' BST
TO SR 1127 BROCK RD
TO SR 1122 ELDRIDGE RD
TO SR 1129 RANDALL CHAPEL RD
Johnston County Public Utility, 6" PVC
Johnston County Public Utility, 8" PVC
EXISTING R/W
EXISTING WOOD END BENT
REEDY PRONG
WOODS
SCATTERED TREES
ANDREA TART GRIFFIN
DB 4544 PG 354
PB 79 PG 239
KLYE F. TART
DB 1269 PG 386
DB 79 PG 239
DANIEL SANDOVAL
DB 4496 PG 685
PB 12 PG 97
MTL CANOPY
MTL BLDG
BP4R028 BL-101
BP4R028 BL-102
RIP RAP INV=154.90'
RIP RAP INV=152.74'
INV=157.88'
INV=158.83'
24" RCP
30" RCP
3 S HOT WIRE FENCE
10'
END NCDOT PROJECT BP4.R028
-L- POC STA. 20+30.00

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



178
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CL STA. 19+32 -L-
1@ 16'-8" X 7'-6" CAABC
80 DEGREE SKEW
GR. PT. EL. 157.93'
BEGIN GRADE STA. 18+35.00 EL. 157.72
END GRADE STA. 20+30.00 EL. 158.14
EXIST. GRADE (-)0.1565%
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EXIST. GRADE (-)0.5446%
100 YR WS. EL. 155.4'
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NWS EL. 149.8
WS DOS (10-5-21) EL. 149.11
PROPOSED CAABC (SHOWN AT INLET FACE)

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DESIGN DISCHARGE	=	600	CFS
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DESIGN HW ELEVATION	=	153.8	FT
BASE DISCHARGE	=	800	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	155.4	FT
OVERTOPPING DISCHARGE	=	1080	CFS
OVERTOPPING FREQUENCY	=	500+/-	YRS
OVERTOPPING ELEVATION	=	158.2	FT
DATE OF SURVEY	=	10-05-2021	
W.S. ELEVATION AT DATE OF SURVEY	=	149.1	FT

REVISIONS

8/17/99

11/18/2023 BP4.R028_EC_PSH_6.dgn

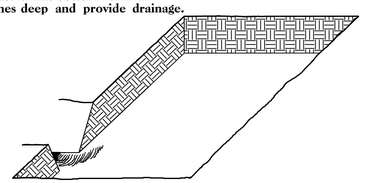
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R028	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

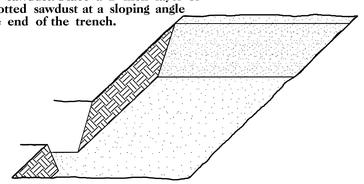
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

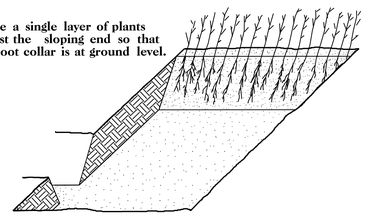
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



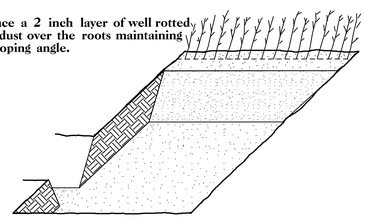
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

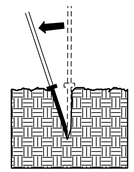


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

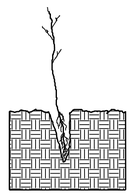


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

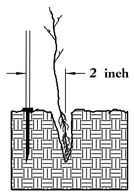
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



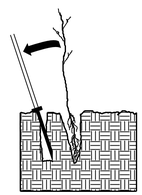
1. Insert planting bar as shown and pull handle toward planter.



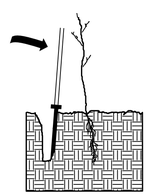
2. Remove planting bar and place seedling at correct depth.



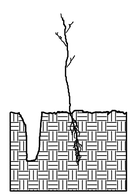
3. Insert planting bar 2 inches toward planter from seedling.



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



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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

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

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

REFORESTATION

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

REFORESTATION

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

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

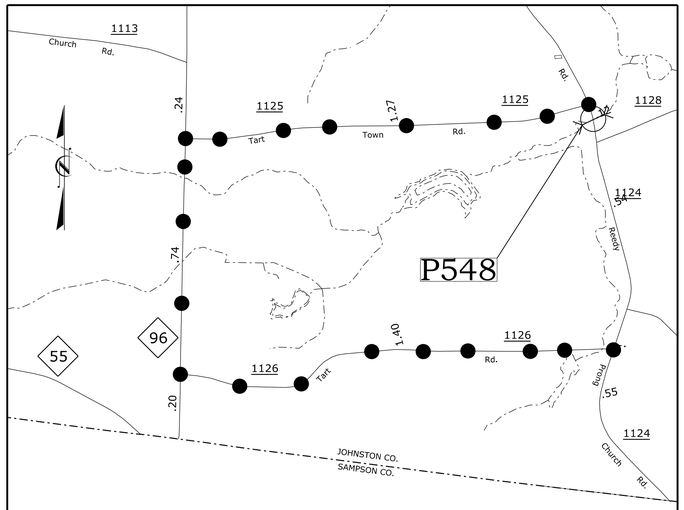
REFORESTATION DETAIL SHEET

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

09/08/99

PROJECT: BP4.R028

See Sheet UC-2 For Conventional Symbols



VICINITY MAP

OFF–SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS

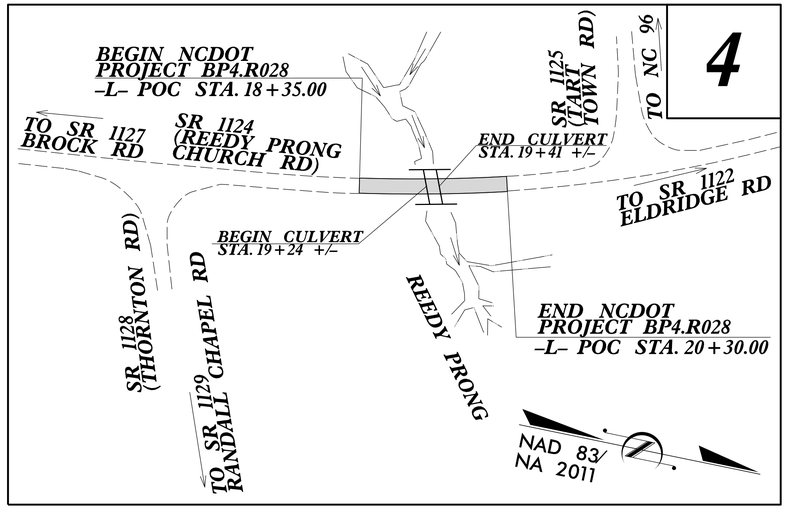
T.I.P. NO.	SHEET NO.
BP4.R028	UC–1

RELEASE FOR CONSTRUCTION
DATE: 11/15/2023

LOCATION: PIPE NO. 500548 OVER REEDY PRONG ON SR 1124 (REEDY PRONG CHURCH RD.)

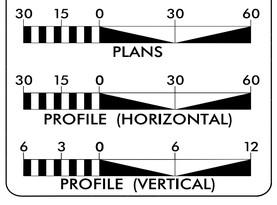
TYPE OF WORK: WATER RELOCATION

RFC PLANS



DOCUMENT NOT CONSIDERED FINAL UNTIL ALL SIGNATURES ARE COMPLETED

GRAPHIC SCALES



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 OWNER ON PROJECT

(A) WATER – JOHNSTON COUNTY

PREPARED IN THE OFFICE OF

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

PANKIL K. PATEL — *UTILITY PROJECT MANAGER*
JOHN D. SCHRINER, PLS — *UTILITY COORDINATOR*

SEAL
11/15/2023

NORTH CAROLINA PROFESSIONAL SEAL 10773 ENGINEER EDWARD G. WETHERILL

DocuSigned by:
Edward G. Wetherill
6BD753EEBC0147D...

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

ANDY BROWN, PE — *ACTING DEPUTY DIVISION ENGINEER NCDOT DIVISION 4*

KYLE PLEASANT — *DIVISION UTILITY ENGINEER*

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

5/14/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WETHERILL ENGINEERING
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 - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	UC-2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

UTILITIES PLAN SHEET SYMBOLS

RELEASE FOR CONSTRUCTION
DATE: 11/15/2023

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" 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 — PFH
- Relocate Fire Hydrant — REH
- Remove Fire Hydrant — REM FH
- Water Meter — PWM
- Relocate Water Meter — RWM
- Remove Water Meter — REM WM
- Water Pump Station — PS(W)
- RPZ Backflow Preventer — PRPZ
- DCV Backflow Preventer — PBFP
- Relocate RPZ Backflow Preventer — RRPZ
- Relocate DCV Backflow Preventer — RBFP

PROPOSED SEWER SYMBOLS

- Gravity Sewer Line (Sized as Shown) — 12" SS
- Force Main Sewer Line (Sized as Shown) — 12" FSS
- Manhole (Sized per Note)
- Sewer Pump Station — PS(SS)

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP U/G POW CABLES
- Trenchless Installation — 12" TL INSTALL
- Encasement by Open Cut — 24" ENCAS BY OC
- Encasement — 24" ENCASEMENT
- Thrust Block
- Air Release Valve — AR
- Utility Vault — UV
- Concrete Pier — CP
- Steel Pier — SP
- Remove Pole — REM
- Plan Note — NOTE
- Pay Item Note — PAY ITEM

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 — W
- Power Manhole — P
- Telephone Manhole — T
- Sanitary Sewer Manhole — S
- Hand Hole for Cable — HH
- Power Transformer
- Telephone Pedestal — T
- CATV Pedestal — C
- Gas Valve
- Gas Meter
- Located Miscellaneous Utility Object
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

- *Underground Power Line — P
- *Underground Telephone Cable — T
- *Underground Telephone Conduit — TC
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — TV FO
- *Underground Gas Pipeline — G
- Aboveground Gas Pipeline — A/G Gas
- *Underground Water Line — W
- Aboveground Water Line — A/G Water
- *Underground Gravity Sanitary Sewer Line — SS
- Aboveground Gravity Sanitary Sewer Line — A/G Sanitary Sewer
- *Underground SS Forced Main Line — FSS
- 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) — P
- Designated Utility Line (Type as Shown) — P

REV: 2/1/2012

5/14/99

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

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	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

11/15/2023
NORTH CAROLINA PROFESSIONAL SEAL 10773 ENGINEER EDWARD G. WETHERILL
Edward G. Wetherill

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

RELEASE FOR CONSTRUCTION
DATE: 11/15/2023

UTILITY CONSTRUCTION

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATIONS "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

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 SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY 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.

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.

PROJECT SPECIFIC 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 WORK OR TEST PERFORMED WITHOUT NOTIFICATION AND CONTACT WITH TOWN OF CANTON FIELD INSPECTORS SHALL BE PERFORMED AT THE CONTRACTOR'S RISK. TESTING SHALL BE PERFORMED IN THE PRESENCE OF COUNTY PERSONNEL.
4. OPERATION OF EXISTING GATE VALVES SHALL BE DONE BY COUNTY OPERATIONS STAFF.
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 COUNTY.
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. STATION 10+00± TO STATION 10+34± SHALL BE 8" PVC SDR21, INSTALLED BY OPEN CUT METHOD.
2. STATION 10+34± TO STATION 13+34± SHALL BE 8" FUSIBLE PVC C900, INSTALLED BY DIRECTIONAL DRILL.
3. STATION 13+34± TO STATION 13+55± SHALL BE 8" PVC SDR21, INSTALLED BY OPEN CUT METHOD.

11/15/2023
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USER:pkpeiper

5/14/99

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

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	UC-3A

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

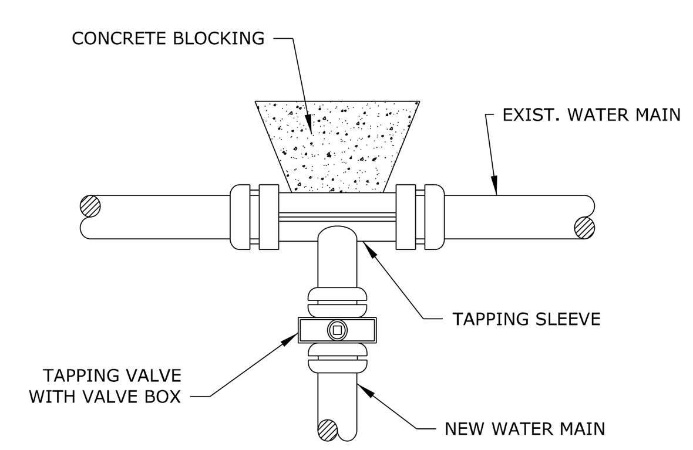
UTILITY CONSTRUCTION PLANS ONLY

11/15/2023
NORTH CAROLINA PROFESSIONAL SEAL 10773 ENGINEER EDWARD G. WETHERILL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

RELEASE FOR CONSTRUCTION
DATE: 11/15/2023

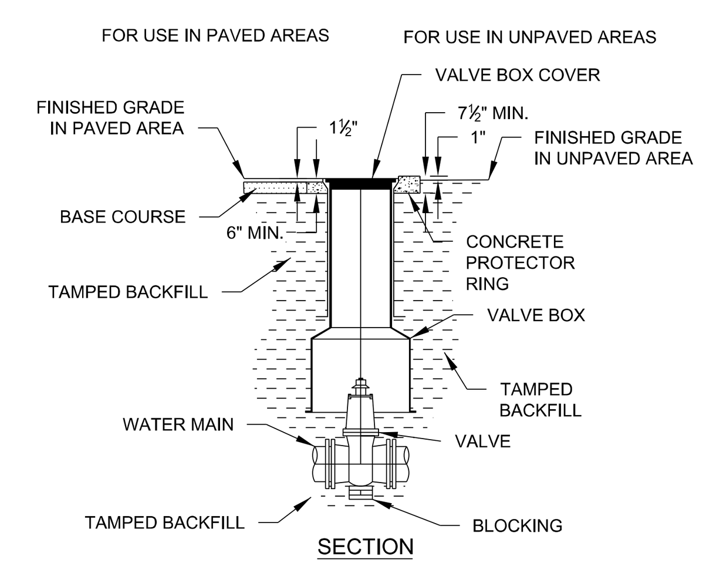


TAPPING SLEEVE & VALVE ASSEMBLY

NOT TO SCALE

NOTES:
1. TAPPING SLEEVE SHALL BE FABRICATED OF TYPE 304 OR 316 S.S. AND PROVIDE A 360° SEAL AROUND EXISTING PIPE WITH FULL CIRCUMFERENTIAL GASKET.
2. TAPPING SLEEVE SHALL BE JCM 432, MUELLER H-304, FORD FTSS, ROMAC ST III OR APPROVED EQUAL.
3. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

Name	Date				
Drawn By:		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.					

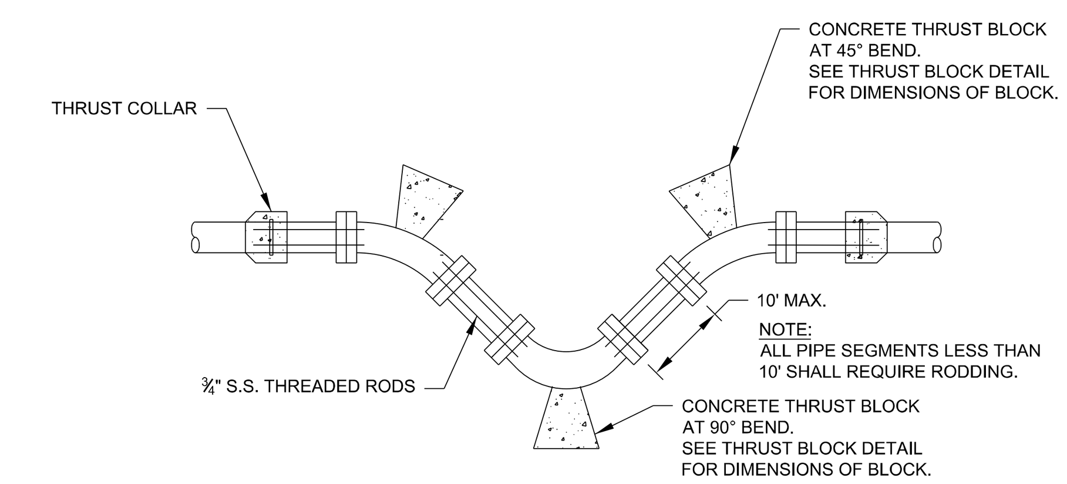


NOTES:
1. D.I.P. MAY BE USED FOR VALVE BOX EXTENSIONS.
2. VALVE BOX SHOULD NOT CONTACT WATER MAIN OR VALVE.
3. CONCRETE PROTECTOR RING SHALL BE USED IN ALL UNPAVED AREAS.
4. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

VALVE AND VALVE BOX INSTALLATION

NOT TO SCALE

Name	Date				
Drawn By:		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.					



ROD REQUIREMENTS

SIZE OF 45° BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	6
20"	48,091	8
24"	69,252	10

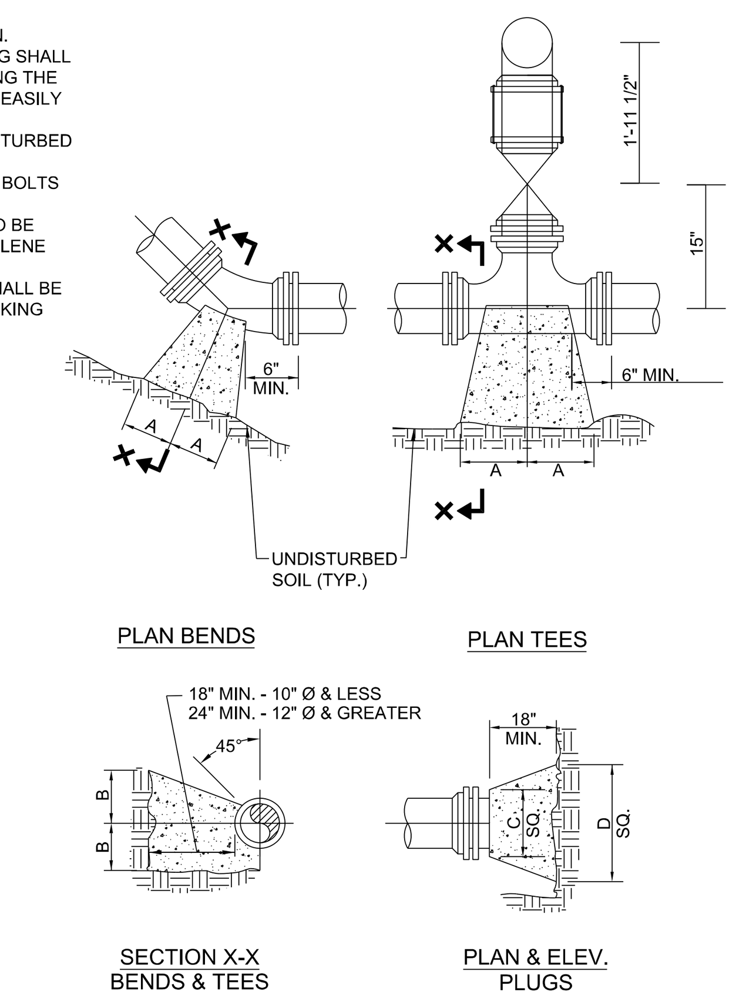
GENERAL NOTES
1. RODS AND NUTS SHALL BE OF TYPE 304 OR TYPE 316 STAINLESS STEEL.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.

VERTICAL BEND RODDING AND BLOCKING DETAIL

NOT TO SCALE

Name	Date				
Drawn By:		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.					

NOTES:
1. CONCRETE SHALL BE 3,000 PSI MIN.
2. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.
3. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.
4. ALL FITTING AND ACCESSORIES TO BE WRAPPED WITH 10 MIL POLYETHYLENE PRIOR TO POURING BLOCKING.
5. VOLUME OF THRUST BLOCKING SHALL BE AS SHOWN ON THE THRUST BLOCKING SCHEDULE.

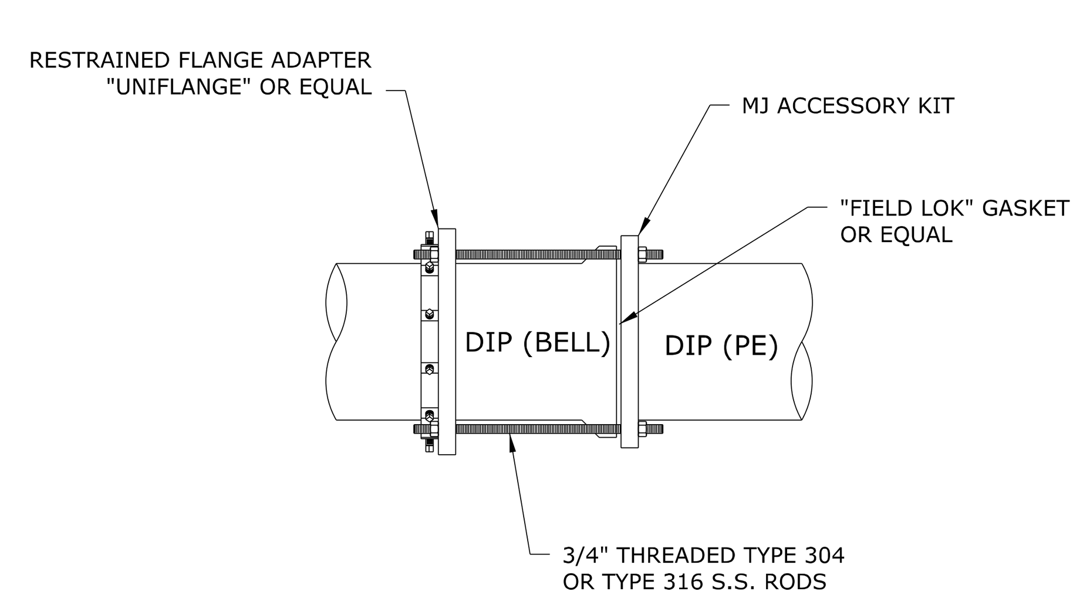


PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"
20"	36"	26"	24"	18"	18"	13"	12"	9"	19"	18"	24"	48"
24"	48"	33"	30"	21"	18"	18"	15"	11"	21"	21"	28"	56"

THRUST BLOCK DETAIL

NOT TO SCALE

Name	Date				
Drawn By:		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.					

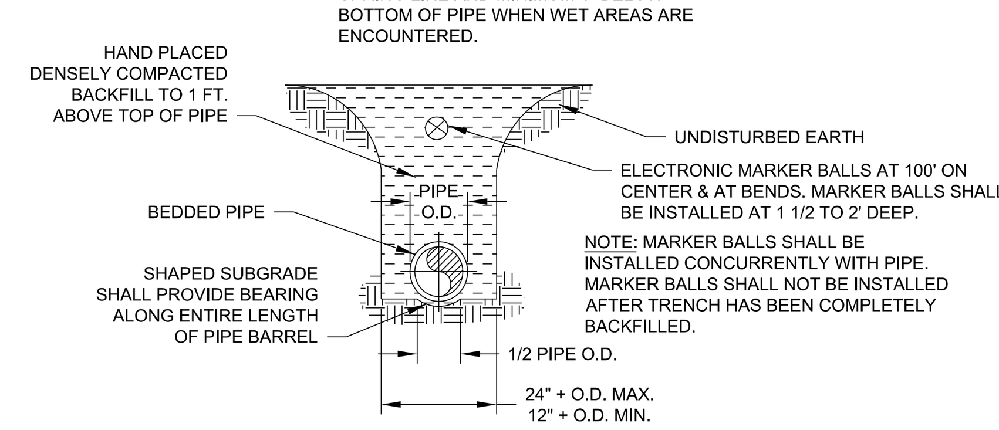


HARNESS RESTRAINT DETAIL

NOT TO SCALE

Name	Date				
Drawn By:		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.					

NOTE: PIPE SHALL BE BEDDED UP TO SPRING LINE AND MINIMUM 4" BELOW BOTTOM OF PIPE WHEN WET AREAS ARE ENCOUNTERED.

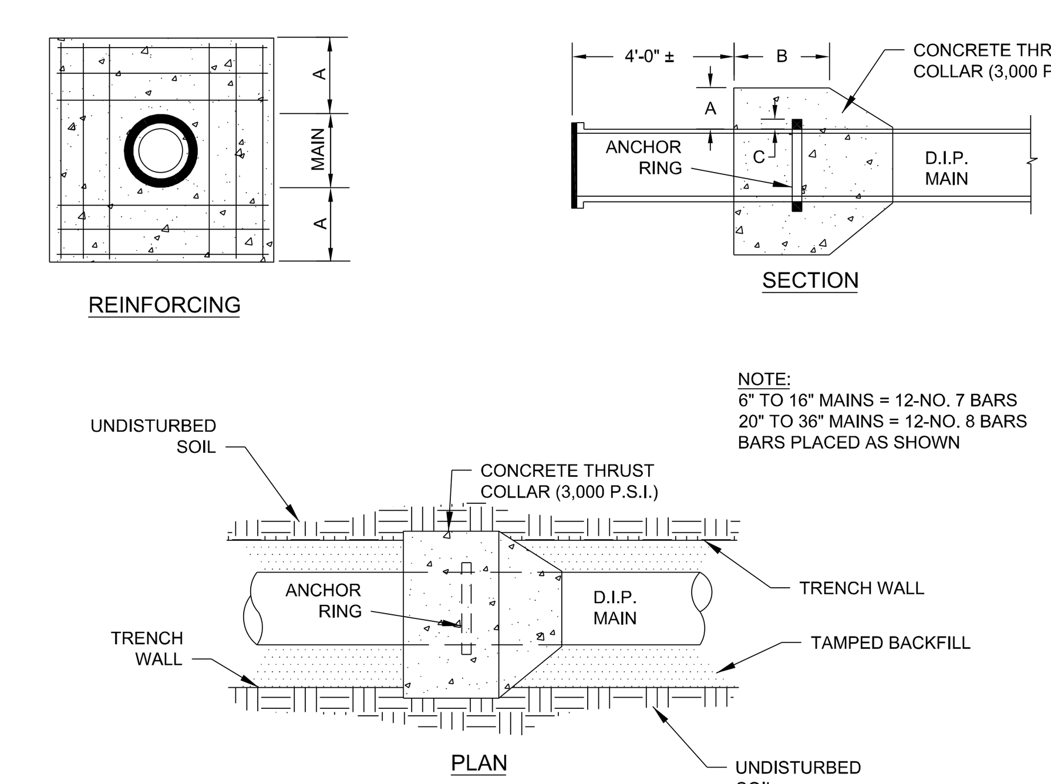


NOTE:
WATER MAINS 8"Ø AND SMALLER SHALL HAVE MINIMUM OF 3' COVER. WATER MAINS LARGER THAN 8"Ø SHALL HAVE A MINIMUM OF 3'-6" COVER.

PIPE LAYING CONDITION

NOT TO SCALE

Name	Date				
Drawn By:		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.					



NOTE:
6" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS
BARS PLACED AS SHOWN

SCHEDULE

PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR COLLAR	RINGS REQUIRED
	A	B	C	
6",8",12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO

THRUST COLLAR INSTALLATION

NOT TO SCALE

Name	Date				
Drawn By:		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.					

8/17/99

REVISIONS

ABANDON 319 LF 8″ UTILITY LINE

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

10′x10′ BORE PIT

34 LF 8″ WATER LINE
PVC C900 DR25

TIE IN TO EXISTING 8″ WATER LINE WITH LONG PATTERN SLEEVE AND CONCRETE THRUST COLLAR

8″ VALVE

RELEASE FOR CONSTRUCTION
DATE: 11/15/2023

NAD 83 NC GRID 2011

WETHERILL ENGINEERING
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 - SURVEY/SUE - UTILITIES - CONSTRUCTION OBSERVATION

PROJECT REFERENCE NO.	SHEET NO.
BP4.R028	UC-4
DESIGNED BY: PKP	11/15/2023
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

NORTH CAROLINA PROFESSIONAL SEAL 10773 ENGINEER EDWARD G. WETHERILL

Edward G. Wetherill

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

2 BARREL 2′x4′ CULVERT

EXISTING WOOD END BENT

REEDY PRONG

BZ 1 BZ 2

TB

TDE

±8′ UNDER WING WALL BASED ON PROFILE

EXISTING AND PROPOSED CULVERT

10′x10′ BORE PIT

TO NC 96

SR 1125 (TART TOWN RD)

TO SR 1122 ELDRIDGE RD

RIP RAP INV=154.90′

RIP RAP INV=152.74′

30″ RCP

EXISTING R/W

Johnston County Public Utility, 6″ PVC

Johnston County Public Utility, 8″ PVC

TO SR 1127 BROCK RD

24″ RCP INV=157.88′

INV=158.83′

SR 1124 (REEDY PRONG CHURCH RD)

SR 1128 (THORNTON RD)

TO SR 1129 RANDALL CHAPEL RD

Johnston County Public Utility, 8″ PVC

3 S HOT WIRE FENCE

INV=156.68′

INV=155.55′

30″ RCP

60.00′

10+00

BEGIN NCDOT PROJECT BP4.R028.1
–L– POC STA. 18+35.00

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 780 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

TIE IN TO EXISTING 8″ WATER LINE WITH LONG PATTERN SLEEVE AND CONCRETE THRUST COLLAR

8″ VALVE

21 LF 8″ WATER LINE
PVC C900 DR25

END NCDOT PROJECT BP4.R028.1
–L– POC STA. 20+30.00

SCALE 1″ = 30′

MTL CANOPY

MTL BLDG

WLB

BTM

GV

1

2

FUSIBLE PVC C900 (8″ WATER LINE)

10′x10′ BORE PIT

EXISTING GRADE

3′ MINIMUM BELOW GRADE (TYP)

TIE IN TO EXISTING 8″ WATER LINE WITH LONG PATTERN SLEEVE AND CONCRETE THRUST COLLAR

34 LF 8″ WATER LINE
PVC C900 DR25

15′ MINIMUM BELOW CREEK (TYP)

10′x10′ BORE PIT

TIE IN TO EXISTING 8″ WATER LINE WITH LONG PATTERN SLEEVE AND CONCRETE THRUST COLLAR

21 LF 8″ WATER LINE
PVC C900 DR25

VERTICAL BENDS AS REQUIRED (TYP)

APPROXIMATE LIMITS OF CULVERT AND END WALLS BOTTOM ELEVATION ±83.63′

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

178 172 166 160 154 148 142 136 130

10 11 12 13

30 15 0 30 60
PROFILE (HORIZONTAL)

6 3 0 6 12
PROFILE (VERTICAL)

11/15/2023
11:27:23
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USER:jschinker

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	X-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

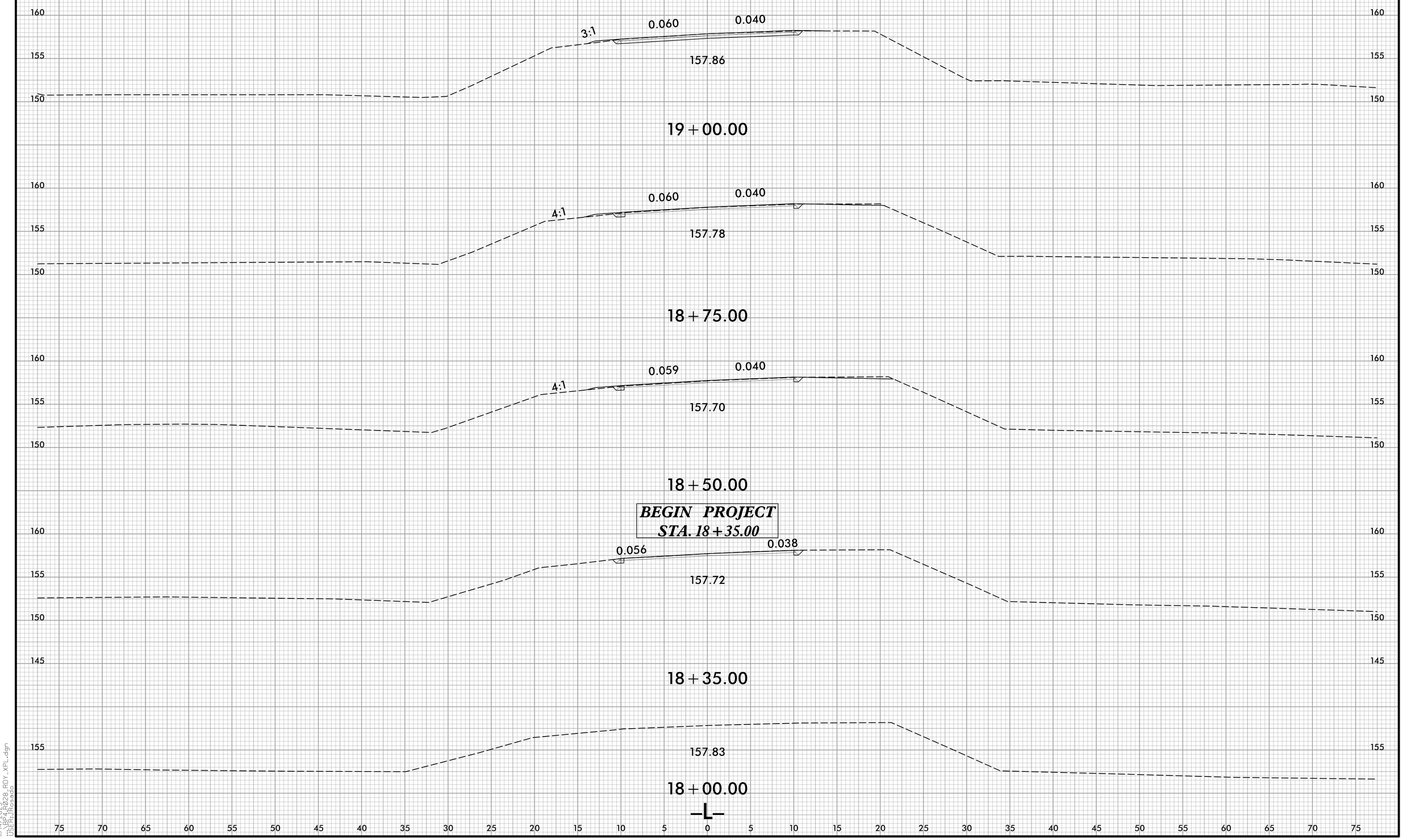
NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
18+35.00	0	0
18+50.00	1	0
18+75.00	2	0
19+00.00	6	0
19+25.00	5	77
19+35.00	0	62
19+50.00	7	51
19+75.00	12	8
20+00.00	1	1
20+30.00	1	1

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".

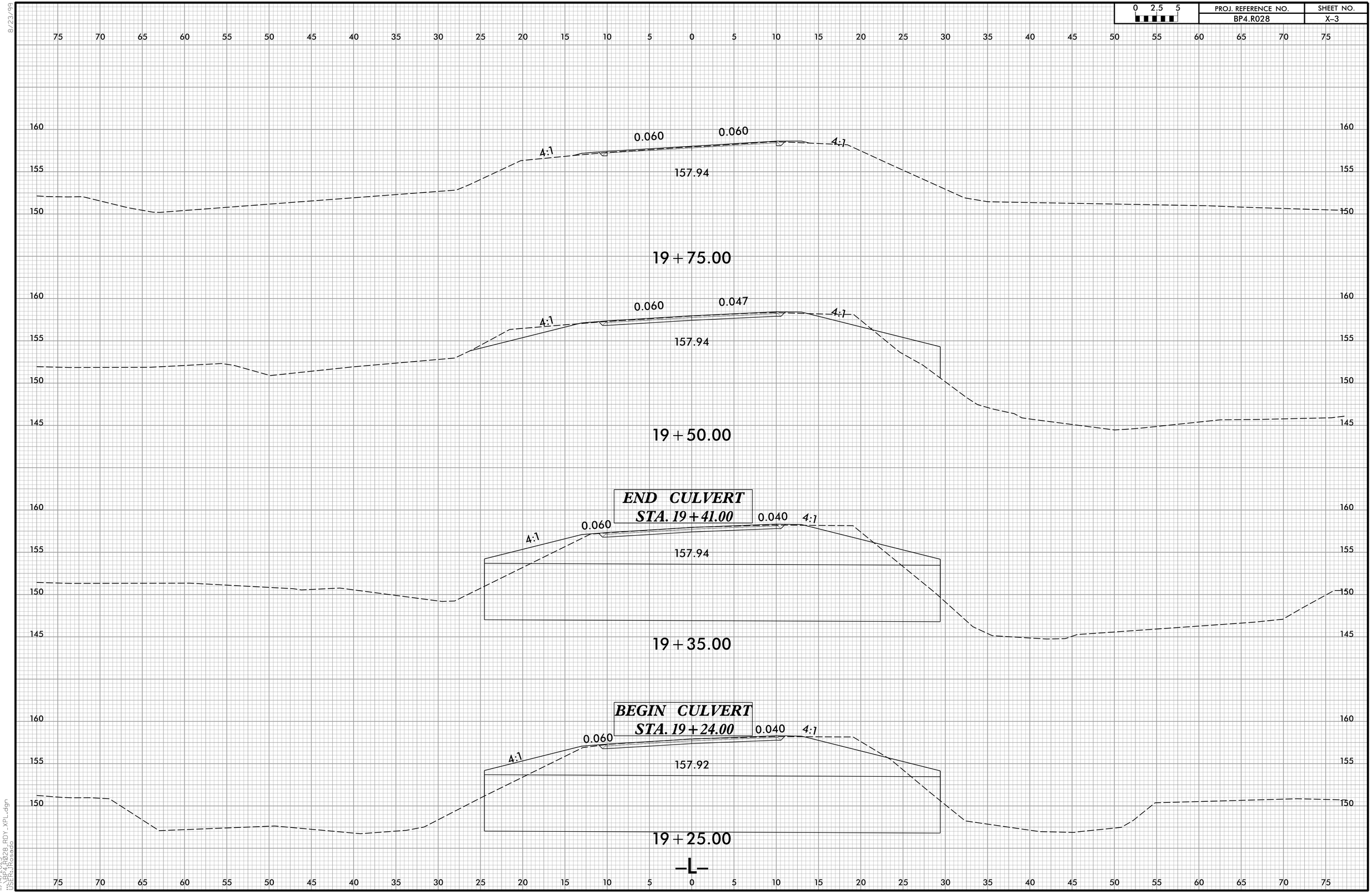
CROSS SECTION INDEX

SHEET	LINE	BEGIN STATION	END STATION
X-1	-L-	18+35	19+00
X-2	-L-	19+25	19+75
X-3	-L-	20+00	20+50



0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
BP4.R028	X–3



11/14/2023
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USER:JRosado

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R028	X–4

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

155
150

158.25

20+50.00

END PROJECT
STA. 20+30.00

160
155
150

0.061
0.059

158.14

20+30.00

160
155
150

4:1
0.060
0.060
4:1

158.00

20+00.00

–L–

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

11/14/2023
...\BP4.R028_RDY_XPL.dgn
USER:JRosado