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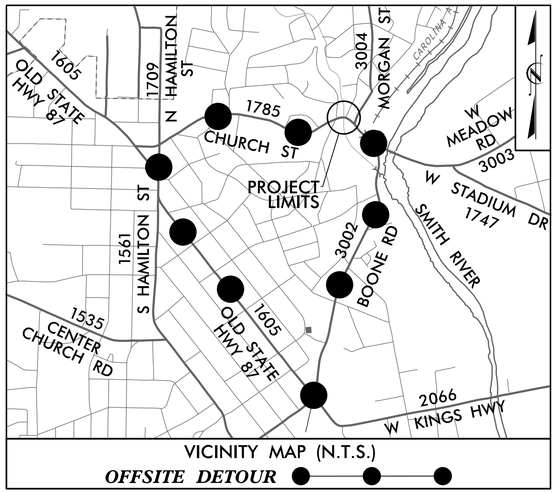
09/08/99

WBS PROJECT: BP7.C001

CONTRACT: DF00663

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



VICINITY MAP (N.T.S.)

OFFSITE DETOUR

FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

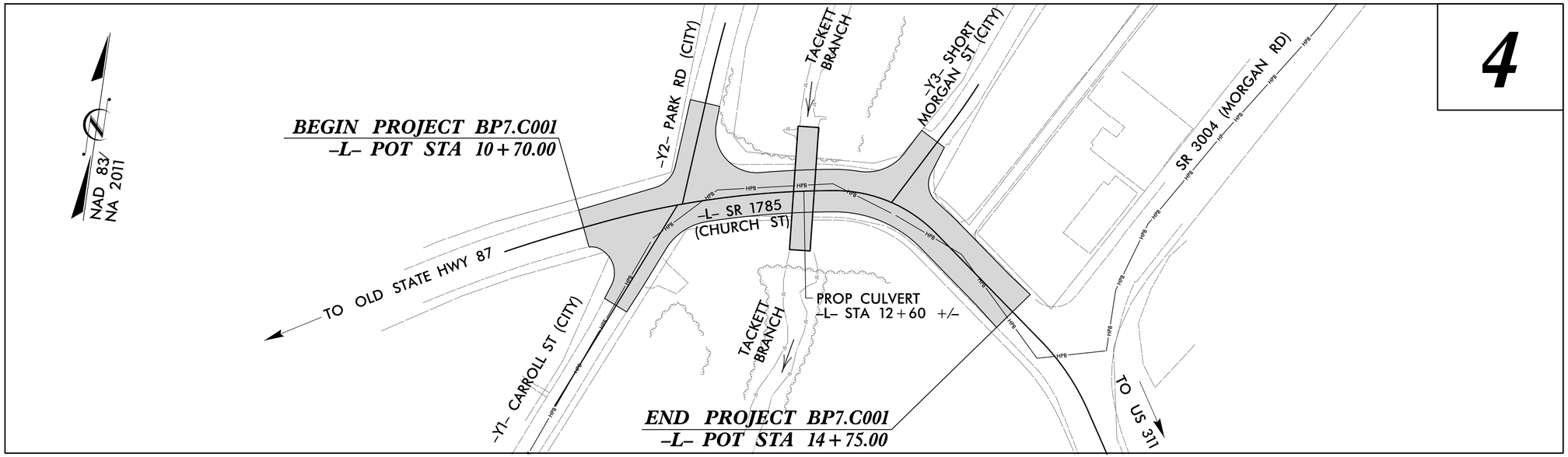
ROCKINGHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP7.C001	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP7.C001.1		PE
BP7.C001.2		ROW & UTIL
BP7.C001.3		CONST

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

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



4

* A DESIGN EXCEPTION HAS BEEN APPROVED FOR DESIGN SPEED.

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GRAPHIC SCALES

30 15 0 30 60
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2025 = 7,250
ADT 2045 = 10,800

V = 15 MPH*

FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

TOTAL LENGTH OF PROJECT BP7.C001 = 0.077 MI

Prepared In the Office of:

HNTB

HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 1, 2023

LETTING DATE:
JUNE 19, 2025

BRIAN P. BLACKWELL, PE
PROJECT ENGINEER

DANIEL R. DAGENHART
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER GAREN CAIL

DocuSigned by: Galen Cail
P.E. 3/26/2025
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043122 ENGINEER BRIAN P. BLACKWELL

DocuSigned by: Brian Blackwell
P.E. 3/25/2025
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

8/17/99

INDEX OF SHEETS

HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 043122 ENGINEER BRIAN P. BLACKWELL

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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.

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.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

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

TEMPORARY SHORING:

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

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

WATER – CITY OF EDEN

SANITARY SEWER – CITY OF EDEN

GAS (DISTRIBUTION) – PNG

COMMUNICATION – BRIGHTSPEED

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

RIGHT–OF–WAY MARKERS:

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

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
225.02	Guide for Grading Subgrade – Secondary and Local
225.04	Method of Obtaining Superelevation – Two Lane Pavement
275.01	Rock Plating
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 – INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin – 12" thru 54" Pipe
840.02	Concrete Catch Basin – 12" thru 54" Pipe
840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
840.17	Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.26	Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
848.02	Driveway Turnout – Radius Type
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation

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HNTB

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	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 — Vlneyard

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.

HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043122

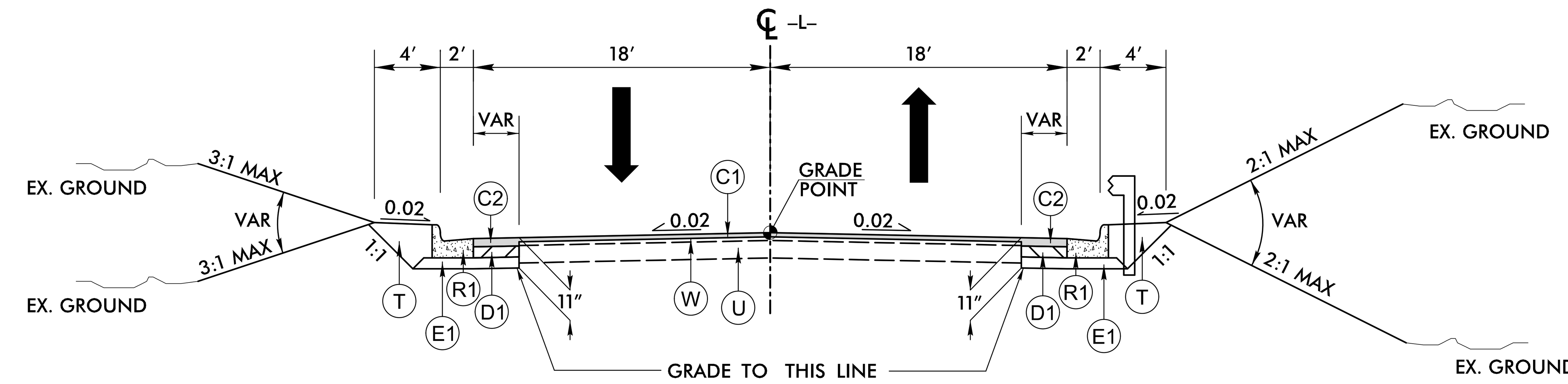
3/18/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YARD IN EACH OF TWO LAYERS.
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
D2	PROP. VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER INCH. DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J	8" AGGREGATE BASE COURSE
R1	2'-6" CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
W	WEDGING

ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

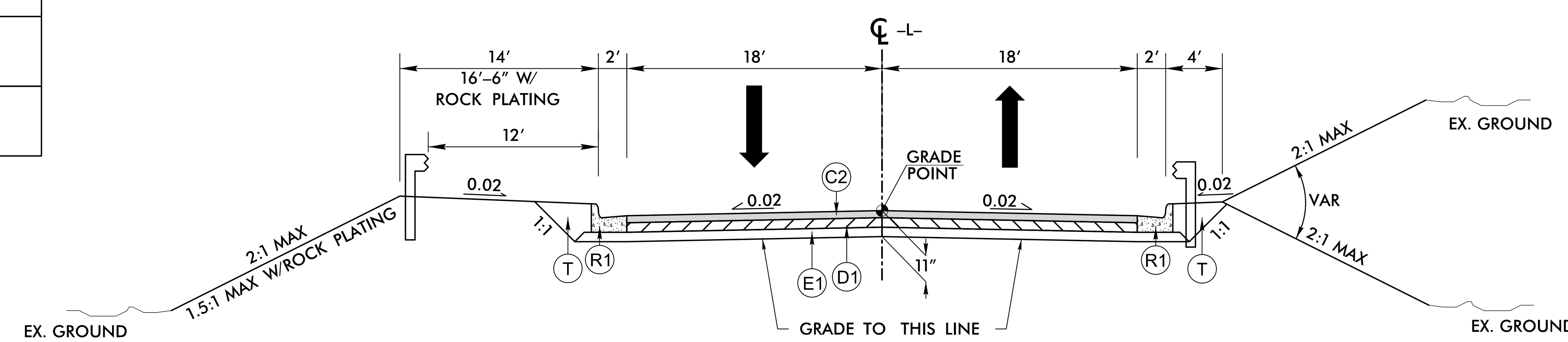


TYPICAL SECTION NO. 1

-L- SR 1785 (CHURCH ST)

USE TYPICAL SECTION NO. 1

-L- STA. 10+70.00 TO STA. 11+90.00
-L- STA. 13+30.00 TO STA. 14+75.00

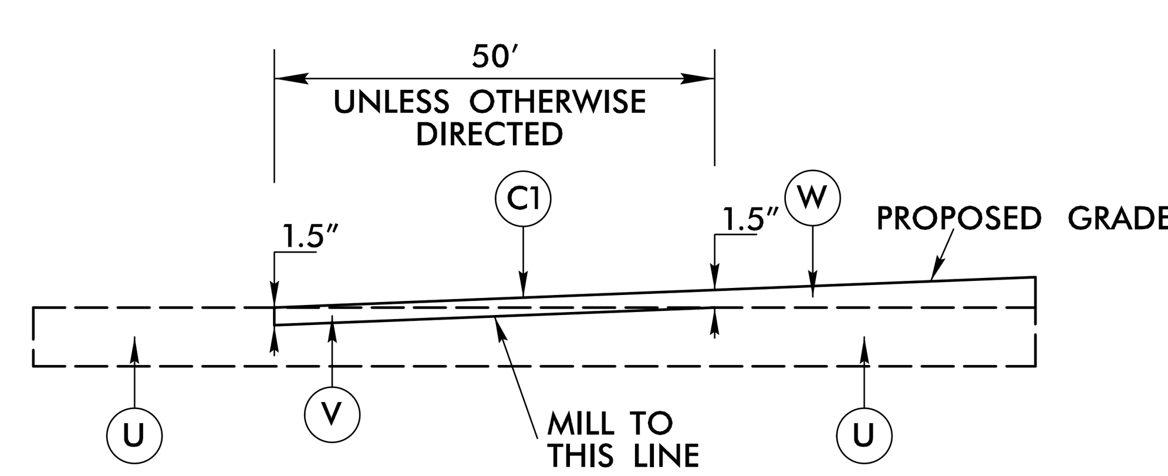


TYPICAL SECTION NO. 2

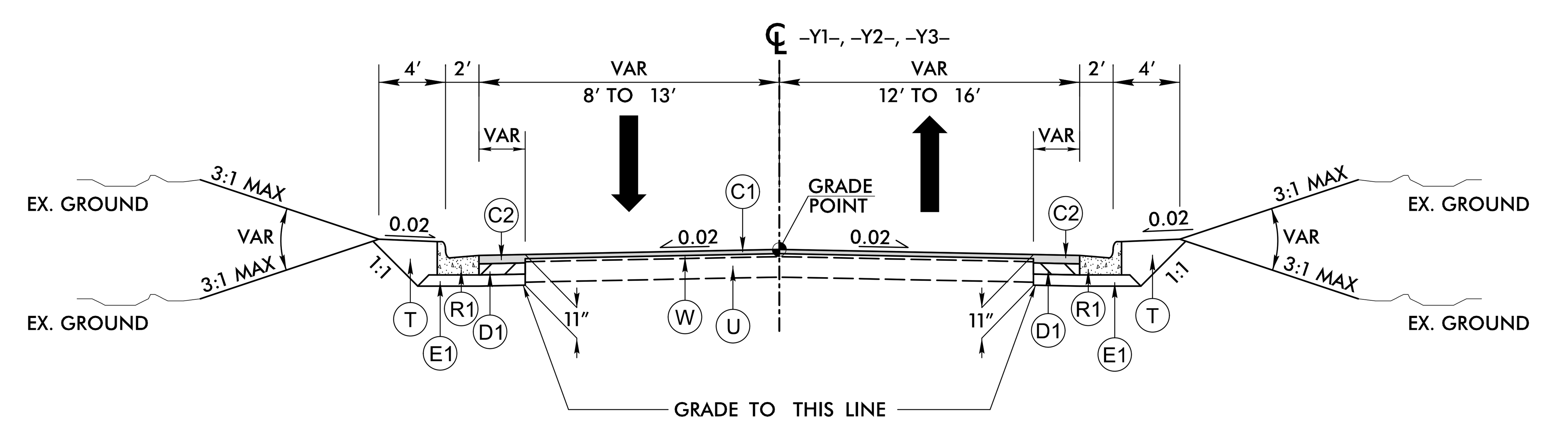
-L- SR 1785 (CHURCH ST)

USE TYPICAL SECTION NO. 2

-L- STA. 11+90.00 TO STA. 13+30.00



DETAIL FOR INCIDENTAL MILLING

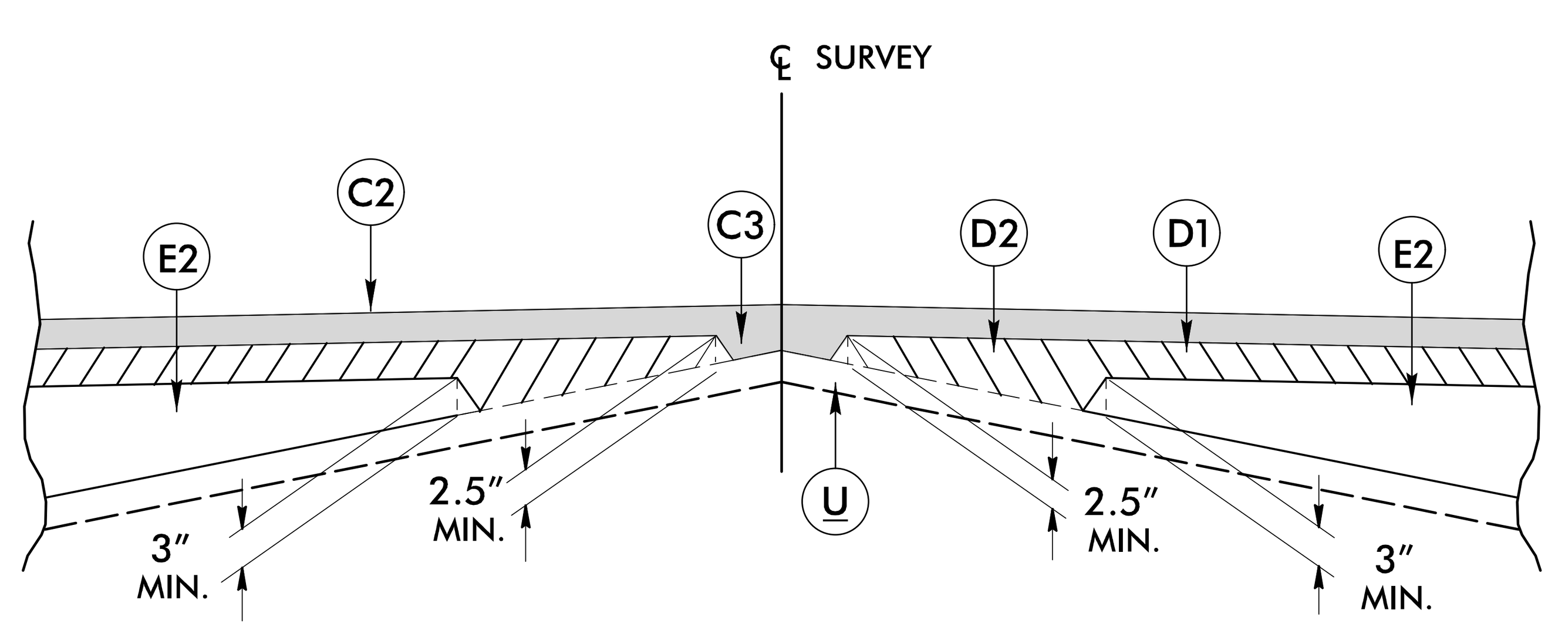


TYPICAL SECTION NO. 3

-Y1- CARROLL ST
-Y2- PARK RD
-Y3- SHORT MORGAN ST

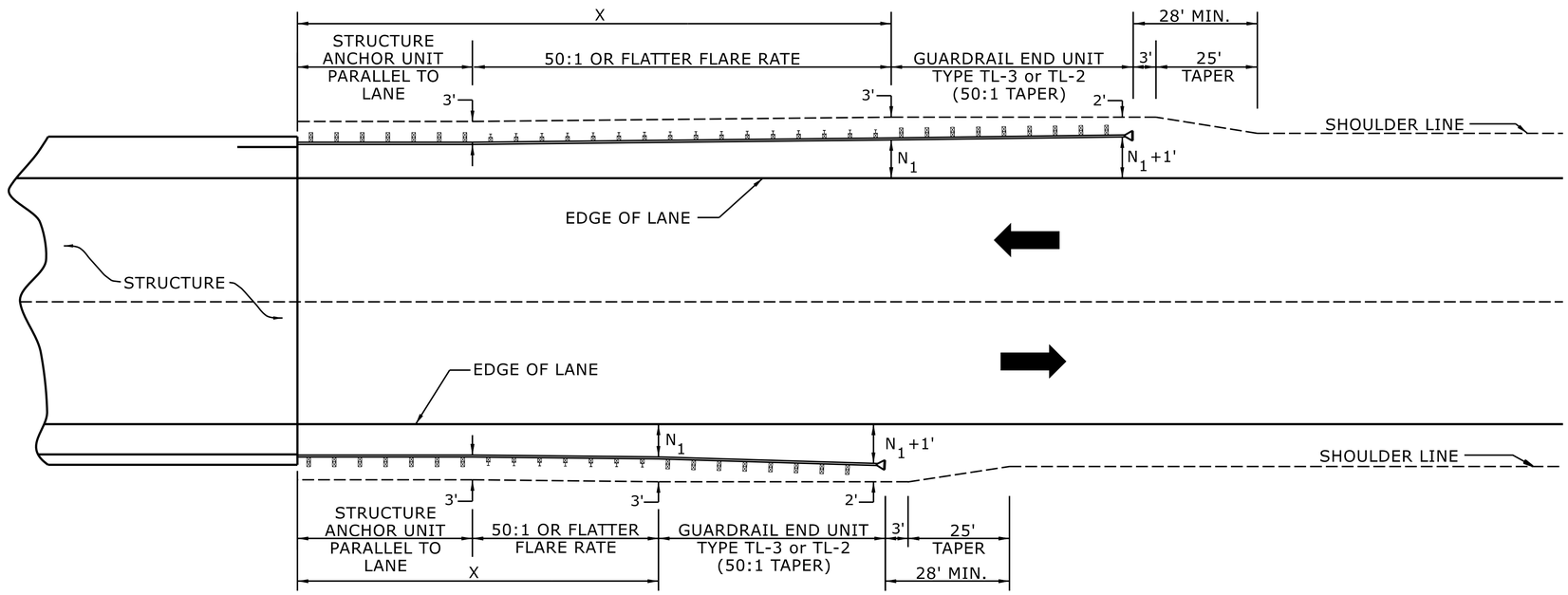
USE TYPICAL SECTION NO. 3

-Y1- STA. 10+24.42 TO STA. 11+00.00
-Y2- STA. 10+70.00 TO STA. 11+38.50
-Y3- STA. 10+60.00 TO STA 11+05.88



Detail Showing Method of Wedging

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	2C-1



USE FLARE RATE AS THE CONTROL IF THE "N_1" DISTANCE IS NOT OBTAINED.
("N_1" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15

862D01

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER
Signature
Nicole M. Hackler
3/18/2025

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

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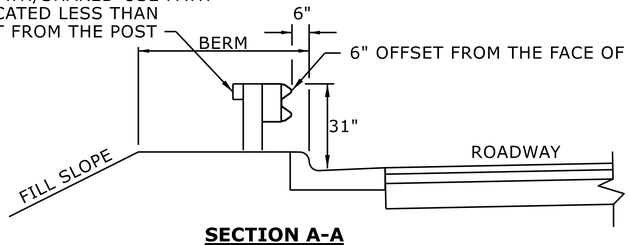
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

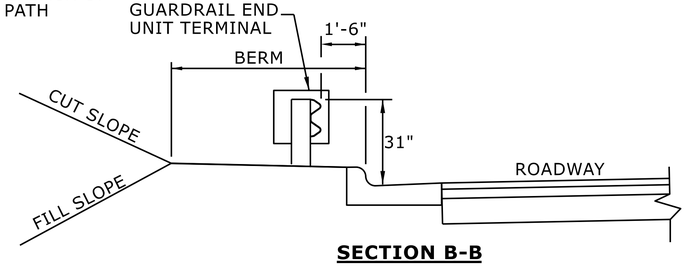
PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	2C-2

PLACE APPROVED BICYCLE FRIENDLY RAILINGS, FENCE, OR RUB RAILS IF SIDEPATH/SHARED-USE PATH IS LOCATED LESS THAN 4 FEET FROM THE POST

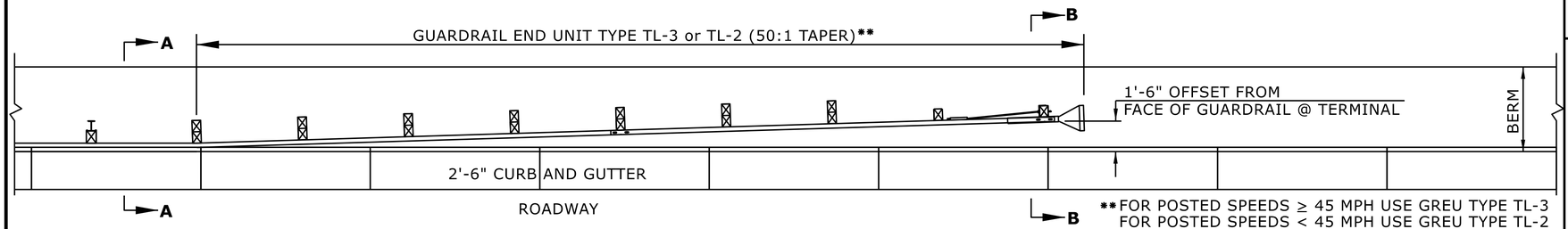
SEE THE ROADWAY DESIGN MANUAL (PART I CHAPTER 4 SECTION 4.14) FOR OFFSET DISTANCES FROM FACE OF GUARDRAIL AND BACK OF GUARDRAIL TO SIDEWALK OR SIDEPATH/SHARED-USE PATH



SECTION A-A



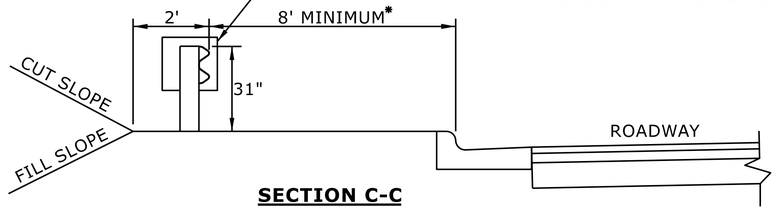
SECTION B-B



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

BICYCLE FRIENDLY RAILINGS, FENCE OR RUB RAIL SHOULD NOT BE PLACED WITHIN THE LIMITS OF THE STRUCTURAL ANCHOR OR END UNITS

GUARDRAIL 6" FROM THE FACE OF CURB



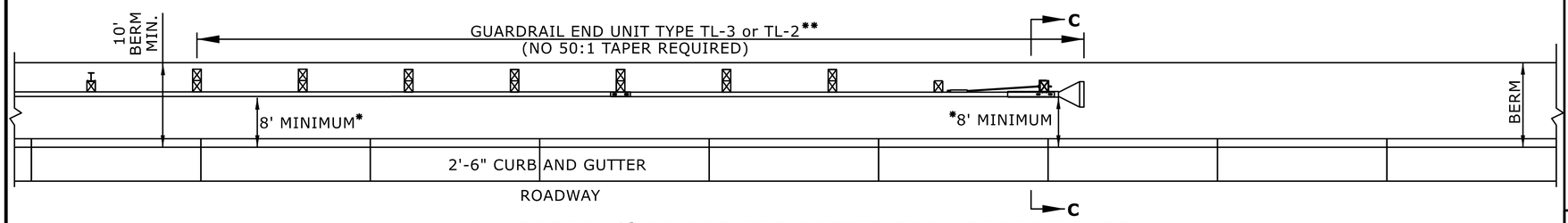
SECTION C-C

*FOR POSTED SPEED ≥ 40 MPH USE 13' MINIMUM OFFSET

SEE THE ROADWAY DESIGN MANUAL (PART I CHAPTER 4 SECTION 4.14) FOR OFFSET DISTANCES FROM FACE OF GUARDRAIL AND BACK OF GUARDRAIL TO SIDEWALK OR SIDEPATH/SHARED-USE PATH

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

BICYCLE FRIENDLY RAILINGS, FENCE OR RUB RAIL SHOULD NOT BE PLACED WITHIN THE LIMITS OF THE STRUCTURAL ANCHOR OR END UNITS



GUARDRAIL 8' OR GREATER OFFSET FROM FACE OF CURB

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

ROADWAY DETAIL DRAWING FOR

GUARDRAIL PLACEMENT

GUARDRAIL TREATMENT AT CURB AND GUTTER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 033144 NICOLE M. HACKLER

Signature: Nicole M. Hackler
5884323034164C5...
3/18/2025

SHEET 12 OF 15

862D01

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

12/06/07

COMPUTED BY: TAR DATE: 4/24/2023
CHECKED BY: JMP DATE: 4/25/2023

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HNTB
HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	3B-1

SUMMARY OF EARTHWORK (IN CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- STA 10+70.00	-L- STA 14+75.00	99	723	624	
-Y1- STA 10+50.00	-Y1- STA 11+00.00	13	7		6
-Y2- STA 10+70.00	-Y2- STA 11+00.00	7	6		1
-Y3- STA 10+60.00	-Y3- STA 11+00.00	11	8		3
TOTALS:		130	744	624	10
WASTE IN LIEU OF BORROW:				-10	-10
PROJECT TOTALS:		130	744	614	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				30	
GRAND TOTALS:		130	744	644	
SAY:		150		650	

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

Earthwork quantities are calculated by the roadway designer.

PAVEMENT REMOVAL SUMMARY (IN SQUARE YARDS)

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	11+90.00	13+30.00	CL	711
			TOTAL:	711
			SAY:	725

ROW AREA DATA SUMMARY

PARCEL NO.	PROPERTY OWNERS NAMES	PROP. R/W	PERM. UTILITY EASE.	PERM. DRAIN. UTILITY EASE.	PERM. DRAIN. EASE.	CONST. EASE.
1	JOEY CLARK					276.47 SF
2	SANDRA ALVAREZ					1816.08 SF
3	MAYNARD WAYNE RIESON ESTATE			0.14 AC		2128.13 SF
4	ROGER N PIERCE, JR					960.26 SF
5	CHANCE E LAWRENCE					869.24 SF
6	MYRTLE CLARK	244.71 SF				216.61 SF
7	EDEN PRESERVATION SOCIETY			0.14 AC		0.21 AC

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TL-3
NG = NON-GATING IMPACT ATTENUATOR TL-3

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			WTR SECTIONS	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	STRAIGHT THRIE BEAM	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	TYPE III	GREU TL-2	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-L-	12+04.92	13+22.26	LT	125.00'			12+86.91		14'											1			1							
-L-	12+15.78	13+88.21	RT			175.00'	12+29.94		2'		25'		0.5'				1			1							2			3' 1.5" POST SPACE WITH NESTED GUARDRAIL
		SUBTOTAL:		125.00'		175.00'											1			2			1							
		GREU TL-2: 1@25'				-25'																								
		CAT-1: 2@6.25'		-6.25'		-6.25'																								
		AT-1: 1@6.25'		-6.25'																										
			TOTAL:	112.50'		143.75'											1			2			1				2			
			SAY:	125'		150'											1			2			1							
			5 ADDITIONAL POST																											

17-MAR-2025 17:35
\Roadway\Proj\BP7C0011_RDY_SUM.dgn
HNTB

COMPUTED BY: jlj DATE 1/12/2024

CHECKED BY: wgc DATE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
BP7.C001.1	3D-1

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

STATION	LOCATION (LT, RT, OR CL)'	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) SIZE	12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
								THICKNESS OR GAUGE												
14+72 -L-	LT	426		549.0	546.0												1			
	LT	426	425		546.0	543.7														
14+43 -L-	LT	425		546.7	543.7												1			
	LT	425	424		543.7	541.2														
14+11-L	LT	424		544.2	541.2												1			
	LT	424	423		541.2	537.5														
13+71-L	RT	423		540.5	537.5												1			
	RT	423	422		537.5	535.9														
13+36-L	RT	422		538.9	535.6												1			
	RT	422	416		535.6	534.8														
13+01-L	RT	416		538.1	534.3												1			
		416	415		534.3	534.1														
12+76-L	RT	415		537.9	534.1												1			
	RT	415	414		534.1	530														
12+17-L	RT	414		539.3	530												1			
	RT	414	420		530	522.5						44					X			
12+10-L	RT	420		534.5	522.5												1			
	RT	420	421		522.5	522.4								16						
10+72 -Y2-	LT	410		536.7	524.7												1			
		410	411		524.7	520.7										32				
10+70 -Y2-	LT	411		527.0	520.7												1			
		411	412		520.7	520.5										32				
10+75 -Y1-	RT	427		545.5	541.9												1			
		427	428		541.9	541.9														
10+48 -Y1-	RT	428																		
10+96 -Y1-	LT	429		544.2	540.5												1			
10+90 -Y1-	LT	430																		
		429	430		540.6	540.6														
10+86 -Y3-	LT	431		527.0	536.6												1			
13+05 -L-	RT																			
SHEET TOTALS												**44**		**16**	**64**					
PROJECT TOTALS												**44**		**16**	**64**					

STATION	C.S. PIPE SIZE	12"	15"	18"	24"	30"	36"	42"	48"
	THICKNESS OR GAUGE		.064	.064	.064	.079	.079	.109	.109
14+72 -L-									
14+43 -L-									
14+11-L									
13+71-L									
13+36-L									
13+01-L									
12+76-L									
12+17-L									
12+10-L									
10+72 -Y2-									
10+70 -Y2-									
10+75 -Y1-									
10+48 -Y1-									
10+96 -Y1-									
10+90 -Y1-									
10+86 -Y3-									
13+05 -L-									
SHEET TOTALS									
PROJECT TOTALS									

STATION	R.C. PIPE CLASS III SIZE	12"	15"	18"	24"	30"	36"	42"	48"
14+72 -L-									
14+43 -L-									
14+11-L									
13+71-L									
13+36-L									
13+01-L									
12+76-L									
12+17-L									
12+10-L									
10+72 -Y2-									
10+70 -Y2-									
10+75 -Y1-									
10+48 -Y1-									
10+96 -Y1-									
10+90 -Y1-									
10+86 -Y3-									
13+05 -L-									
SHEET TOTALS									
PROJECT TOTALS									

STATION	R.C. PIPE CLASS IV SIZE	12"	15"	18"	24"	30"	36"	42"	48"
14+72 -L-									
			24						
14+43 -L-									
			28						
14+11-L									
			56						
13+71-L									
			28						
13+36-L									
				28					
13+01-L									
					20				
12+76-L									
					56				
12+17-L									
12+10-L									
10+72 -Y2-									
10+70 -Y2-									
10+75 -Y1-									
				4					
10+48 -Y1-									
10+96 -Y1-									
10+90 -Y1-									
				8					
10+86 -Y3-									
13+05 -L-									
SHEET TOTALS									
PROJECT TOTALS									

STATION	** " R.C. PIPE (CLASS V)	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	**** RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS C.S.P.
14+72 -L-							
14+43 -L-							
14+11-L							
13+71-L							
13+36-L							
13+01-L							
12+76-L							
12+17-L							
12+10-L							
10+72 -Y2-							
10+70 -Y2-							
10+75 -Y1-							
10+48 -Y1-							
10+96 -Y1-							
10+90 -Y1-							
10+86 -Y3-							
13+05 -L-							
SHEET TOTALS							
PROJECT TOTALS							

STATION	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE
14+72 -L-	1		
14+43 -L-	1		
14+11-L	1		
13+71-L	1		
13+36-L	1		
13+01-L	1		
12+76-L	1		
12+17-L	1	4.3	
12+10-L	1	5	2
10+72 -Y2-	1	5	2
10+70 -Y2-	1	1.3	
10+75 -Y1-	1		
10+48 -Y1-			
10+96 -Y1-	1		
10+90 -Y1-			
10+86 -Y3-	1		
13+05 -L-			
SHEET TOTALS	**14**	**15.6**	**4**
PROJECT TOTALS	**14**	**20.8**	

STATION	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	TYPE OF GRATE F	TYPE OF GRATE G
14+72 -L-	1		1	
14+43 -L-	1		1	
14+11-L	1		1	
13+71-L	1			1
13+36-L	1			1
13+01-L	1			1
12+76-L				
	1	1		
12+17-L	1		1	
12+10-L				
10+72 -Y2-	1	1		
10+70 -Y2-				
10+75 -Y1-	1	1		
10+48 -Y1-				
10+96 -Y1-	1		1	
10+90 -Y1-				
10+86 -Y3-	1	1		
13+05 -L-				
SHEET TOTALS	**12**	**4**	**5**	**3**
PROJECT TOTALS	**12**	**4**	**5**	**3**

STATION	CONCRETE TRANSITIONAL SECTION DROP INLET	CONCRETE TRANSITIONAL SECTION CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME W/ TWO GRATES STD. 840.16	J.B. STD. 840.31 OR 840.32	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24
14+72 -L-										
14+43 -L-										
14+11-L										
13+71-L										
13+36-L										
13+01-L										
12+76-L										
12+17-L										
12+10-L							1			1
10+72 -Y2-										
10+70 -Y2-							1			1
10+75 -Y1-										
10+48 -Y1-										
10+96 -Y1-										
10+90 -Y1-										
10+86 -Y3-										
13+05 -L-										
SHEET TOTALS						**2**				**2**
PROJECT TOTALS						**2**				**2**

STATION	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	TB J.B. STD. 840.34 OR STD. 840.46	G.D.I. FRAME (N.S. FLAT) W/2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	ADJUST CB	CONVERT 2 GI TO JB w/ MH COVER	SIDE DRAIN PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
14+72 -L-											
14+43 -L-											
14+11-L											
13+71-L											
13+36-L											
13+01-L											
										32	24" RCP in Slope
12+76-L											
										28	24" CMP in Slope
12+17-L											
12+10-L	1										
										12	
10+72 -Y2-											
										8	
10+70 -Y2-	1										
										54	6" & 8" CMP Removal in Slope
10+75 -Y1-											
										4	
10+48 -Y1-										0.45	
10+96 -Y1-											
10+90 -Y1-											
										0.45	
										4	
10+86 -Y3-											
13+05 -L-								0.116			Plug Existing Pipe
SHEET TOTALS	**2**							**0.116**		**142**	
PROJECT TOTALS	**2**							**0.116**	**0.9**	**142**	

ABBREVIATIONS

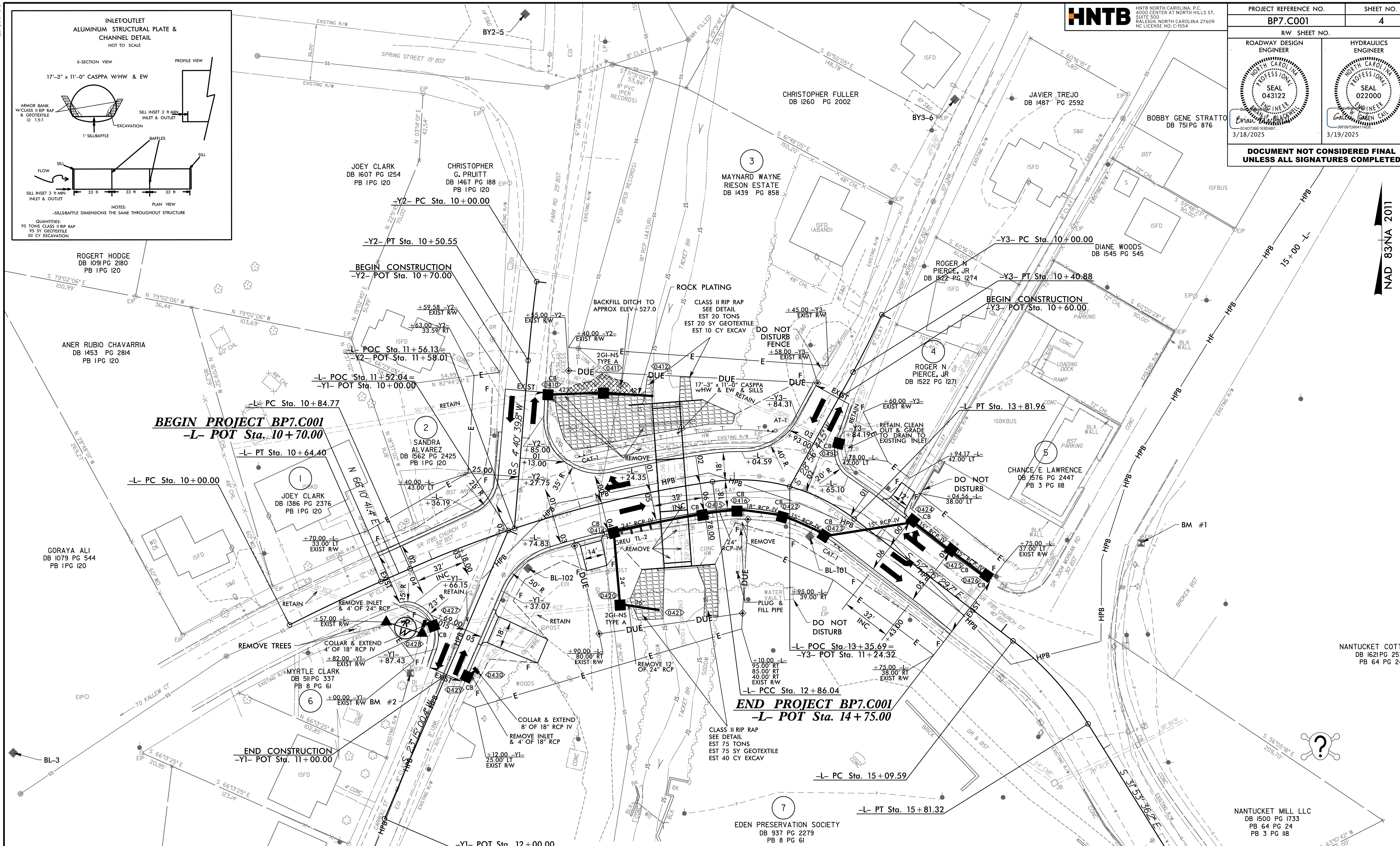
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043122 ENGINEER BRIAN P. BLACKWELL — DocuSigned by: Brian Blackwell 0C4D73BE1E8D4B7... 3/18/2025	NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL — DocuSigned by: Galen Cail 06F097D904114D5... 3/19/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-				-Y2-	-Y3-
PI Sta 10+32.21	PI Sta 11+86.03	PI Sta 13+36.73	PI Sta 15+45.84	PI Sta 10+25.28	PI Sta 10+20.45
Δ = 3° 09′ 13.4″ (RT)	Δ = 15° 35′ 01.4″ (RT)	Δ = 45° 47′ 47.5″ (RT)	Δ = 20° 32′ 53.5″ (RT)	Δ = 2° 53′ 45.9″ (LT)	Δ = 4° 41′ 02.3″ (RT)
D = 4° 53′ 49.5″	D = 7° 44′ 33.6″	D = 47° 44′ 47.3″	D = 28° 38′ 52.4″	D = 5° 43′ 46.5″	D = 11° 27′ 33.0″
L = 64.40′	L = 201.27′	L = 95.92′	L = 71.73′	L = 50.55′	L = 40.88′
T = 32.21′	T = 101.26′	T = 50.69′	T = 36.25′	T = 25.28′	T = 20.45′
R = 1,170.00′	R = 740.00′	R = 120.00′	R = 200.00′	R = 1,000.00′	R = 500.00′
SE = EXIST	SE = 6%	SE = 6%	SE = EXIST	SE = EXIST	SE = EXIST
	R0 = 192′	R0 = 192′			
	V = 15 MPH	V = 15 MPH			

FOR -L-, -Y1-, -Y2-, & -Y3- PROFILES, SEE SHEET 5.

8/17/99

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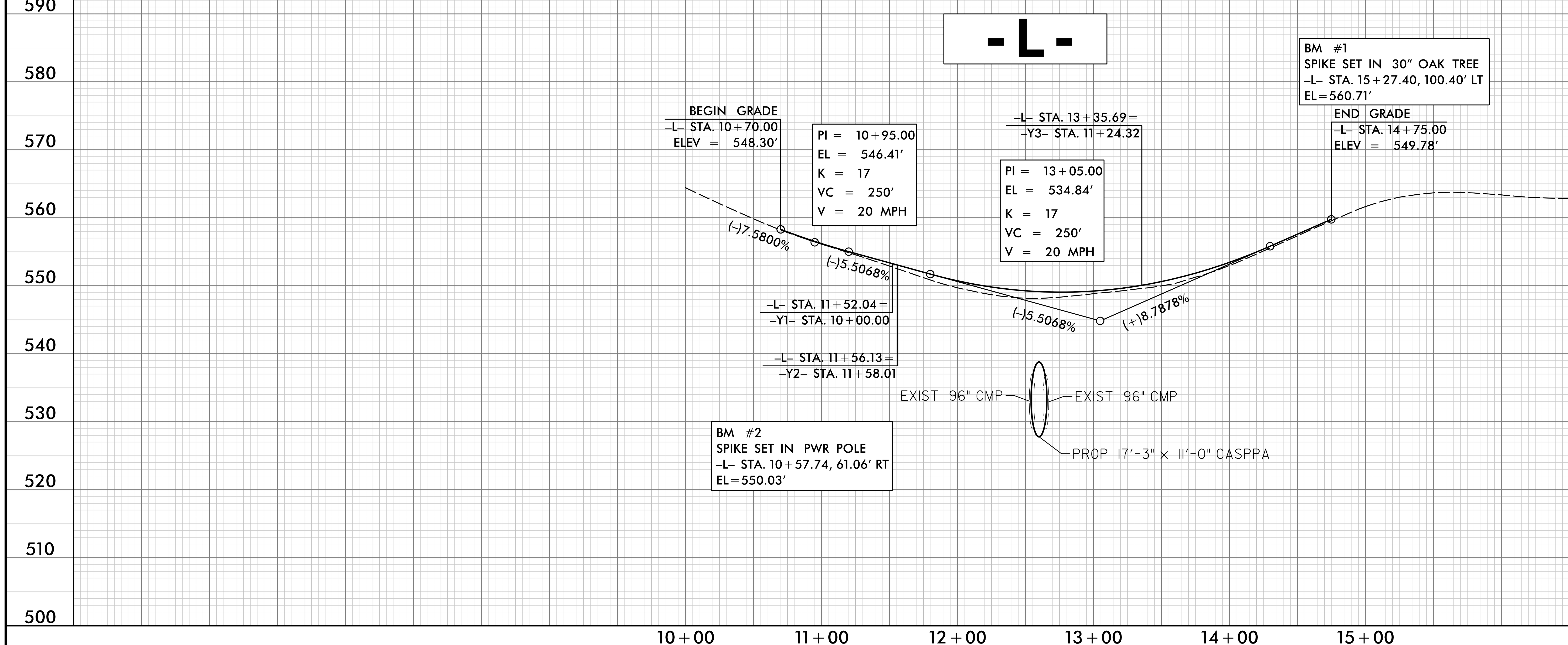
HNTB
HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	5

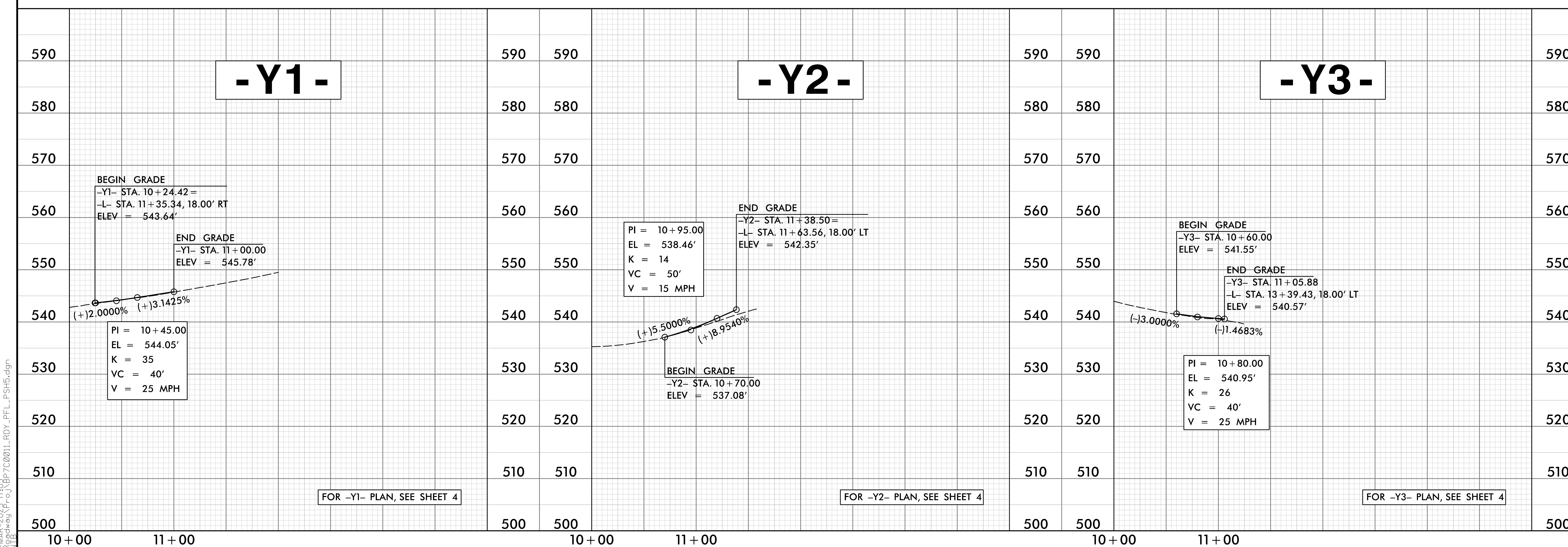
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 043122 ENGINEER BRIAN P. BLACKWELL	NORTH CAROLINA PROFESSIONAL SEAL 022000 ENGINEER W. GALEN CAIL
DocuSigned by: Brian Blackwell 0C4D73BE1E8D4B7...	DocuSigned by: Galen Cail 06F097D904114D5...
3/18/2025	3/19/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


-L-
590
580
570
560
550
540
530
520
510
500
BEGIN GRADE
-L- STA. 10+70.00
ELEV = 548.30'
PI = 10+95.00
EL = 546.41'
K = 17
VC = 250'
V = 20 MPH
(-)7.5800%
(-)5.5068%
-L- STA. 11+52.04 =
-Y1- STA. 10+00.00
-L- STA. 11+56.13 =
-Y2- STA. 11+58.01
-L- STA. 13+35.69 =
-Y3- STA. 11+24.32
PI = 13+05.00
EL = 534.84'
K = 17
VC = 250'
V = 20 MPH
(-)5.5068%
(+)8.7878%
BM #1
SPIKE SET IN 30" OAK TREE
-L- STA. 15+27.40, 100.40' LT
EL=560.71'
END GRADE
-L- STA. 14+75.00
ELEV = 549.78'
EXIST 96" CMP
EXIST 96" CMP
PROP 17'-3" x 11'-0" CASPPA
BM #2
SPIKE SET IN PWR POLE
-L- STA. 10+57.74, 61.06' RT
EL=550.03'
FOR -L- PLAN, SEE SHEET 4
10+00
11+00
12+00
13+00
14+00
15+00

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1350	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 530.0	FT
BASE DISCHARGE	= 1500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 530.8	FT
OVERTOPPING DISCHARGE	= >500	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 539.0	FT
DATE OF SURVEY	= NOV 2016 / JUNE 2023	
W.S.ELEVATION AT DATE OF SURVEY	= 521.0	FT


-Y1-
BEGIN GRADE
-Y1- STA. 10+24.42 =
-L- STA. 11+35.34, 18.00' RT
ELEV = 543.64'
END GRADE
-Y1- STA. 11+00.00
ELEV = 545.78'
(+)2.0000%
(+)3.1425%
PI = 10+45.00
EL = 544.05'
K = 35
VC = 40'
V = 25 MPH
FOR -Y1- PLAN, SEE SHEET 4
-Y2-
PI = 10+95.00
EL = 538.46'
K = 14
VC = 50'
V = 15 MPH
END GRADE
-Y2- STA. 11+38.50 =
-L- STA. 11+63.56, 18.00' LT
ELEV = 542.35'
(+)5.5000%
(+)8.9540%
BEGIN GRADE
-Y2- STA. 10+70.00
ELEV = 537.08'
FOR -Y2- PLAN, SEE SHEET 4
-Y3-
BEGIN GRADE
-Y3- STA. 10+60.00
ELEV = 541.55'
END GRADE
-Y3- STA. 11+05.88
-L- STA. 13+39.43, 18.00' LT
ELEV = 540.57'
(-)3.0000%
(-)1.4683%
PI = 10+80.00
EL = 540.95'
K = 26
VC = 40'
V = 25 MPH
FOR -Y3- PLAN, SEE SHEET 4
590
580
570
560
550
540
530
520
510
500
10+00
11+00

09/08/99

TIP PROJECT: BP7–C001

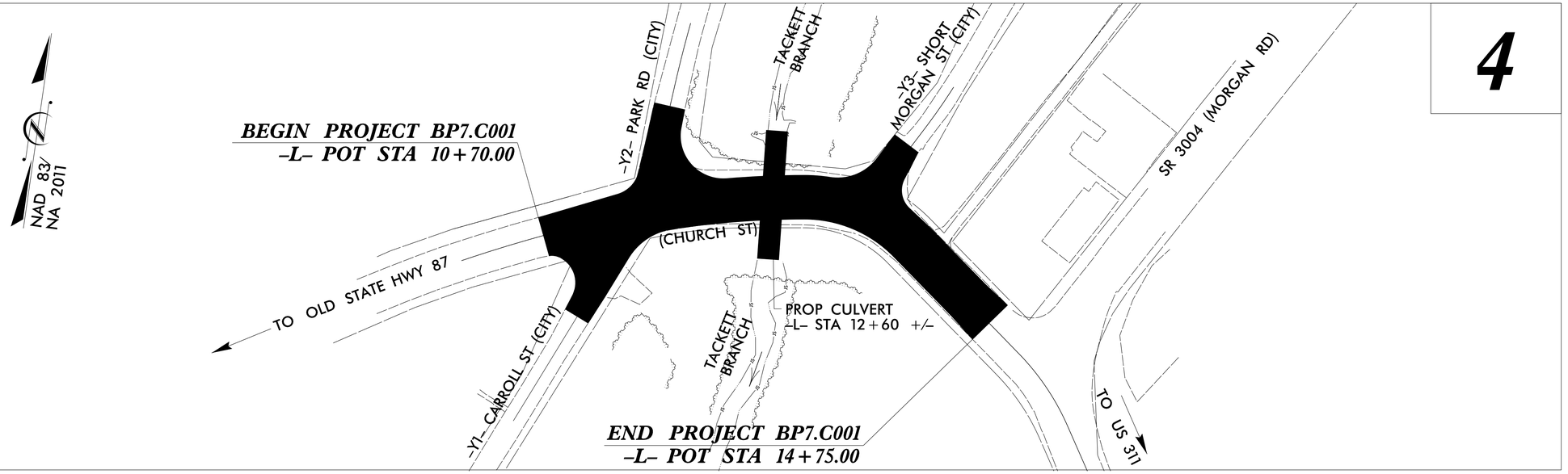
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP7.C001	RW01	07

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

ROCKINGHAM COUNTY

4



GRAPHIC SCALE

50 25 0 50 100

PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-101" WITH NAD 83/NA2011 STATE PLANE GRID COORDINATES OF NORTHING: 1,003,903.2648(ft) EASTING: 1,776,392.6803(ft) ELEVATION: 539.020(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000091649
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-101" TO -L- STATION 10+70.000 IS S 84°22'22.5" W 269.65(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

GEL Engineering of NC, Inc. DBA
GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
111 CREEK RIDGE ROAD
SUITE C
GREENSBORO,NC 27406
(336) 516-9840
WWW.GEL-SOLUTIONS.COM

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
12/01/2023	*10/1/2025*

PROFESSIONAL LAND SURVEYOR

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

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

Digitally signed by Parks H. Icenhour, Jr.
Date: 2024.03.20 15:04:24 -04'00'

SIGNATURE: *Date:*

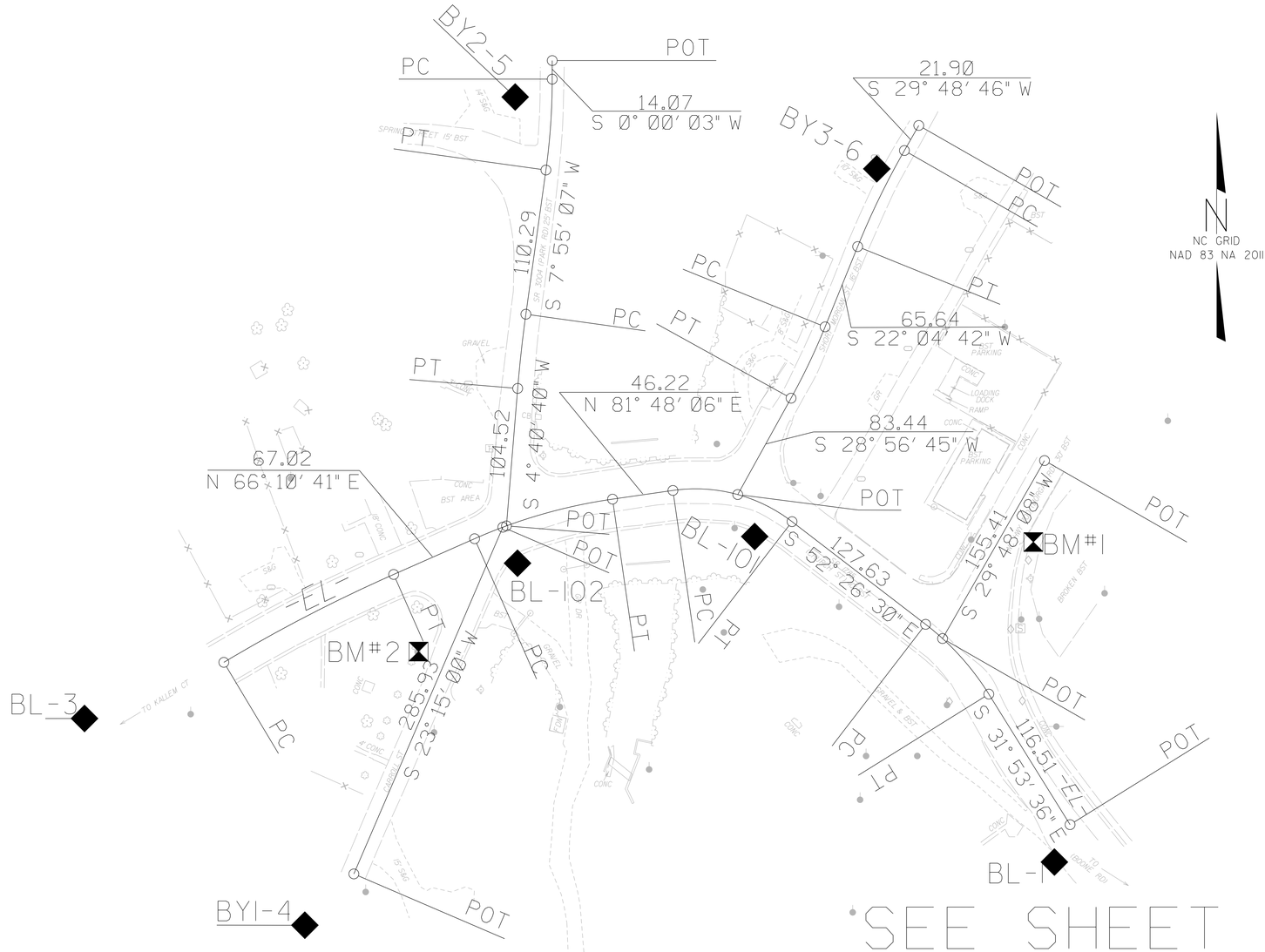
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

20-MAR-2024 13:35
C:\DP7C001\RW-STAKE_01324\RWSHEETS\BP7C001_LS_RW01.dgn
Andy.Smith AT ANDYSMITH

6/2/99

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



*SEE SHEET RW2C-3 FOR FURTHER ALIGNMENT DETAILS

PROJECT REFERENCE NO.	SHEET NO.
BP7-C001	RW02C-1

Location and Surveys

GEL SOLUTIONS

111-C CREEKRIDGE ROAD
GREENSBORO, NC 27406

PROJECT SURVEYOR

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Parks H Icenhour Jr, 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:
Dates of survey: Unknown
Datum/Epoch:NAD83/NA2011
Published/Fixed-control use: N/A
Localized around: BL-101
Northing:1003903.2648
Easting:1776392.6803
Combined grid factor:1.000091649
Geoid model:12BNC
Units: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 5-5-22 to 5-18-2022 , 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 20th day of May, 2022.

Date: 2022.05.20 11:56:33 -04'00'

Professional Land Surveyor L-3996

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.

20-MAY-2022 10:42
C:\bp7c001\bp7c001_LS_RW02C-1.dgn
Andy Smith AT ANDYSMITH-GEC

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP7-C001	RW02-2

Location and Surveys

GEL SOLUTIONS
111-C CREEKRIDGE ROAD
GREENSBORO, NC 27406

PROJECT SURVEYOR

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BL

POINT	DESC.	NORTH	EAST	ELEVATION
3	BL-3	1003765.3850	1775884.9350	571.79
102	BL-102	1003883.0345	1776212.9851	542.20
101	BL-101	1003903.2648	1776392.6803	539.02
1	B3509 BL-1	1003656.6040	1776619.7380	552.32

BY1

POINT	DESC.	NORTH	EAST	ELEVATION
A102	BL-102	1003883.0345	1776212.9851	542.20
4	BY1-4	1003608.7520	1776051.8510	557.49

BY2

POINT	DESC.	NORTH	EAST	ELEVATION
5	BY2-5	1004236.3040	1776211.2180	539.85
B102	BL-102	1003883.0345	1776212.9851	542.20

BY3

POINT	DESC.	NORTH	EAST	ELEVATION
6	BY3-6	1004181.8690	1776485.1700	555.05
A101	BL-101	1003903.2648	1776392.6803	539.02

****
BM1 ELEVATION = 560.71
N 1003899 E 1776604
BL STATION 11+75.00 153 LEFT
SPIKE SET IN 30" OAK TREE
****

****
BM2 ELEVATION = 550.03
N 1003816 E 1776138
BL STATION 7+55.00 38 RIGHT
SPIKE SET IN POWER POLE
****

I, Parks H Icenhour Jr, 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:
Dates of survey: Unknown
Datum/Epoch:NAD83/NA2011
Published/Fixed-control use: N/A
Localized around: BL-101
Northing:1003903.2648
Easting:1776392.6803
Combined grid factor:1.000091649
Geoid model:12BNC
Units: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 5-5-22 to 5-18-2022 , 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 20th day of May, 2022.

Professional Land Surveyor L-3996

Date: 2022.05.20 14:57:13 -04'00'

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.

20-MAY-2022 10:45
C:\bp7c001\bp7c001_LS_rw02c-2.dgn
Andy Smith AT ANDYSMITH-GEG

6/2/99

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP7-C001	RW02-3

Location and Surveys

GEL SOLUTIONS

111-C CREEKRIDGE ROAD
GREENSBORO, NC 27406

PROJECT SURVEYOR

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	1003807.953	1775990.548							
CURVE			N 62°37'42.4" E	144.88	07°05'58.1"(RT)	04°53'49.5"	144.97	72.58	1170.00
PT	1003874.563	1776119.209							
LINE			N 66°10'41.4" E	67.02					
PC	1003901.631	1776180.516							
CURVE			N 73°59'23.7" E	108.73	15°37'24.5"(RT)	14°19'26.2"	109.07	54.88	400.00
PT	1003931.620	1776285.033							
LINE			N 81°48'05.9" E	46.22					
PC	1003938.211	1776330.776							
CURVE			S 75°19'11.9" E	93.31	45°45'24.3"(RT)	47°44'47.3"	95.83	50.64	120.00
PT	1003914.565	1776421.037							
LINE			S 52°26'29.7" E	127.63					
PC	1003836.764	1776522.216							
CURVE			S 42°10'03.0" E	71.34	20°32'53.5"(RT)	28°38'52.4"	71.73	36.25	200.00
PT	1003783.885	1776570.108							
LINE			S 31°53'36.2" E	116.51					
POT	1003684.968	1776631.663							

EY1

POINT	N	E	BEARING	DIST
POT	1003910.351	1776201.920		
LINE			S 23°15'00.4" W	285.93
POT	1003647.641	1776089.051		

EY2

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	1004263.932	1776239.342							
LINE			S 00°00'03.3" W	14.07					
PC	1004249.859	1776239.342							
CURVE			S 03°57'35.3" W	69.04	07°55'04.0"(RT)	11°27'33.0"	69.10	34.60	500.00
PT	1004180.983	1776234.574							
LINE			S 07°55'07.3" W	110.29					
PC	1004071.746	1776219.379							
CURVE			S 06°17'53.6" W	56.56	03°14'27.6"(LT)	05°43'46.5"	56.57	28.29	1000.00
PT	1004015.529	1776213.175							
LINE			S 04°40'39.8" W	104.52					
POT	1003911.361	1776204.651							

EY3

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	1004214.768	1776517.046							
LINE			S 29°48'45.9" W	21.90					
PC	1004195.765	1776506.157							
CURVE			S 25°56'43.9" W	80.93	07°44'03.9"(LT)	09°32'57.5"	80.99	40.56	600.00
PT	1004122.989	1776470.747							
LINE			S 22°04'42.0" W	65.64					
PC	1004062.164	1776446.076							
CURVE			S 25°30'43.3" W	59.89	06°52'02.5"(RT)	11°27'33.0"	59.93	30.00	500.00
PT	1004008.110	1776420.280							
LINE			S 28°56'44.5" W	83.44					
POT	1003935.090	1776379.894							

EY4

POINT	N	E	BEARING	DIST
POT	1003960.848	1776612.305		
LINE			S 29°48'08.5" W	155.41
POT	1003825.995	1776535.067		

I, Parks H Icenhour Jr, 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:
Dates of survey: Unknown
Datum/Epoch:NAD83/NA2011
Published/Fixed-control use: N/A
Localized around: BL-101
Northing:1003903.2648
Easting:1776392.6803
Combined grid factor:1.000091649
Geoid model:12BNC
Units: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 5-5-22 to 5-18-2022 , 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 20th day of May, 2022.

Date: 2022.05.20 11:57:51 -04'00'

Professional Land Surveyor L-3996

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.

20-MAY-2022 10:47
C:\bp7_c001\bp7c001\bp7c001-LS-rw02c-3.dgn
Andy Smith AT ANDYSMITH-GEO

6/2/99

REVISIONS

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP7-C001	RW02D-1

Location and Surveys

GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
111 CREEK RIDGE ROAD
SUITE C
GREENSBORO,NC 27406
(336) 516-9840
WWW.GEL-SOLUTIONS.COM

PROJECT SURVEYOR

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

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

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

L

TYPE	STATION	NORTH	EAST
PC	10+00.00	1003846.9445	1776061.0408
PT	10+64.40	1003874.5631	1776119.2090
PC	10+84.77	1003882.7911	1776137.8452
PCC	12+86.04	1003938.1988	1776330.6940
PT	13+81.96	1003914.5650	1776421.0369
PC	15+09.59	1003836.7637	1776522.2157
PT	15+81.32	1003783.8853	1776570.1083
POT	16+97.82	1003684.9680	1776631.6631

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	1003907.1294	1776200.5363
POT	12+00.00	1003723.3713	1776121.5871

Y2

TYPE	STATION	NORTH	EAST
PC	10+00.00	1004065.7810	1776218.5681
PT	10+50.55	1004015.5287	1776213.1748
POT	11+58.01	1003908.4225	1776204.4110

Y3

TYPE	STATION	NORTH	EAST
PC	10+00.00	1004044.6478	1776438.5792
PT	10+40.88	1004008.1102	1776420.2796
POT	11+24.32	1003935.0901	1776379.8943

I, Parks H Icenhour Jr, 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 20th day of March, 2024.

Digitally signed by Parks H. Icenhour, Jr.
Date: 2024.03.20 15:03:53 -04'00'

Professional Land Surveyor L-3996

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.

20-MAR-2024 11:33
C:\bp7c001\RW-STAKE_013024\RWSHHETS\BP7C001_LS_rw02d-1.dgn
AndySmith AT ANDYSMITH

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP7-C001	RW03E-1

Location and Surveys

GEL Engineering of NC, Inc. DBA
GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
111 CREEK RIDGE ROAD
SUITE C
GREENSBORO,NC 27406
(336) 516-9840
WWW.GEL-SOLUTIONS.COM

PROJECT SURVEYOR

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+57.00	24.98	1003848.7679	1776122.6813

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	10+82.00	24.73	1003841.5524	1776145.4413

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+90.00	21.83	1003897.3013	1776242.6981
L	11+90.00	80.00	1003841.2912	1776258.4147
L	13+10.00	85.00	1003854.3825	1776349.8428
L	13+10.00	25.00	1003914.2889	1776353.1929

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	10+55.00	-26.23	1004008.9506	1776238.9555

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	10+58.00	16.43	1004001.0756	1776397.6161

I , Parks H Icenhour Jr , 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 2-22-24 to 3-12-24, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 20th day of March, 2024.

Digitally signed by Parks H. Icenhour, Jr.
Date: 2024.03.20 15:05:07 -04'00'

Professional Land Surveyor L-3996

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 2-22-24 TO 3-12-24 .

REVISIONS

6/2/99

20-MAR-2024 11:19
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AndySmith AT ANDYSMITH

PROJECT REFERENCE NO.	SHEET NO.
BP7–C001	RW04

Location and Surveys

GEL Engineering of NC, Inc. DBA
GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
111 CREEK RIDGE ROAD
SUITE C
GREENSBORO,NC 27406
(336) 516-9840
WWW.GEL-SOLUTIONS.COM

PROJECT SURVEYOR

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

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

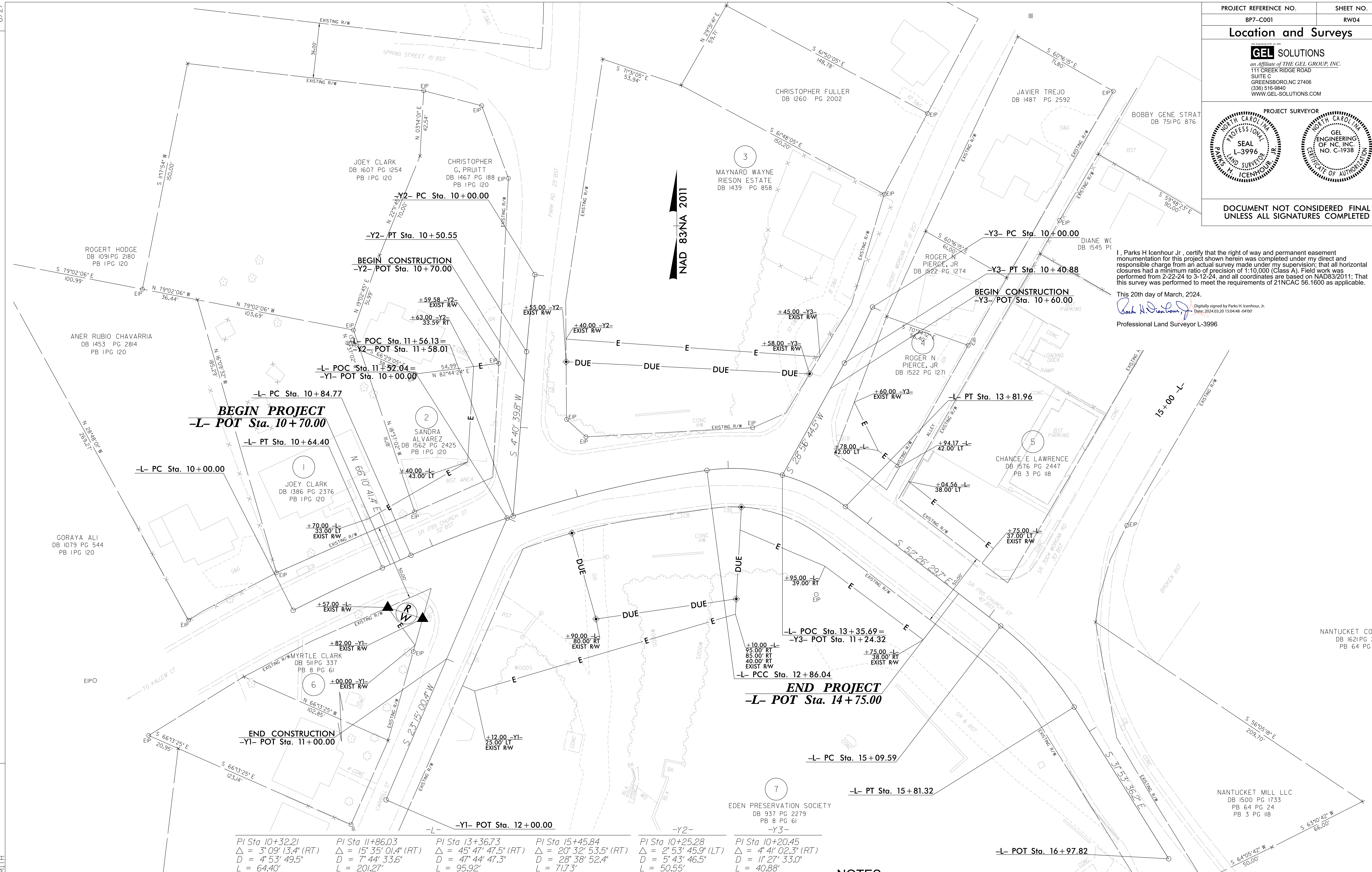
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Parks H Icenhour Jr , 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 2-22-24 to 3-12-24, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 20th day of March, 2024.

Digitally signed by Parks H. Icenhour, Jr.
Date: 2024.03.20 15:04:48 -04'00'

Professional Land Surveyor L-3996



–L–				–Y2–	–Y3–
PI Sta 10+32.21	PI Sta 11+86.03	PI Sta 13+36.73	PI Sta 15+45.84	PI Sta 10+25.28	PI Sta 10+20.45
Δ = 3° 09' 13.4" (RT)	Δ = 15° 35' 01.4" (RT)	Δ = 45° 47' 47.5" (RT)	Δ = 20° 32' 53.5" (RT)	Δ = 2° 53' 45.9" (LT)	Δ = 4° 41' 02.3" (RT)
D = 4° 53' 49.5"	D = 7° 44' 33.6"	D = 47° 44' 47.3"	D = 28° 38' 52.4"	D = 5° 43' 46.5"	D = 11° 27' 33.0"
L = 64.40'	L = 201.27'	L = 95.92'	L = 71.73'	L = 50.55'	L = 40.88'
T = 32.21'	T = 101.26'	T = 50.69'	T = 36.25'	T = 25.28'	T = 20.45'
R = 1,170.00'	R = 740.00'	R = 120.00'	R = 200.00'	R = 1,000.00'	R = 500.00'
SE = EXIST	SE = 6%	SE = 6%	SE = EXIST	SE = EXIST	SE = EXIST
	RO = 192'	RO = 192'			
	V = 15 MPH	V = 15 MPH			

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 _____ TO _____ .

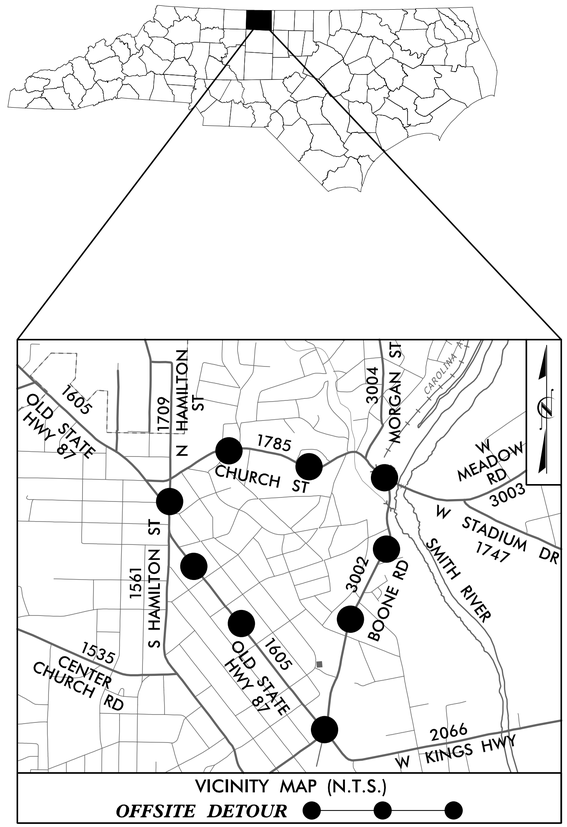
REVISIONS

6/2/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ROCKINGHAM COUNTY



VICINITY MAP (N.T.S.)
OFFSITE DETOUR

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

PLANS PREPARED BY: HNTB	*NCDOT CONTACTS:*	
H. SHYU, P.E. *PROJECT ENGINEER*	DAWN MCPHERSON *DIVISION TRAFFIC ENGINEER*	
G. RODRIGUEZ, E.I. *PROJECT DESIGN ENGINEER*		

INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills Street
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED: DocuSigned by: Helen Shyu 0F15975A95E44EF...

DATE: 3/10/2025

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042517 HELEN SHYU

SHEET NO.
TMP-1

BP7.C001

TIP PROJECT:

9:16:01 PM
...\BP7.C001_tc_TCP_01_title.dgn
HNTB

PROJ. REFERENCE NO.	SHEET NO.
BP7.C001	TMP-1A

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTICTIONS
-L- SR 1785 (CHURCH STREET)	MONDAY THRU SUNDAY 7:00 AM-9:00AM AND 4:00 PM-6:00 PM

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

ROAD NAME

ANY ROAD

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31ST TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

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

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

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

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

M) PROVIDE SIGNING REQUIRED FOR THE OFFSITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

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

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

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

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

TRAFFIC CONTROL DEVICES

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

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
-L- SR 1785 (CHURCH ST)	PAINT	TEMPORARY RAISED

Z) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

AA) TIE PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

MISCELLANEOUS

BB) IN THE EVENT OF LOOP REPLACEMENT, REFER TO THE CURRENT ITS AND SIGNALS DESIGN MANUAL AND SUBMIT A PLAN OF RECORD TO THE SIGNAL DESIGN SECTION.

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills Street
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED: Docusigned by: Helen Shyu DF15975A95E44EF...

DATE: 3/10/2025

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042517 ENGINEER HELEN SHYU

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
BP7.C001	TMP-2

① CHURCH STREET — SP–1 36″ X 30″
DETOUR — M4–8 24″ X 12″
M6–1 L 21″ X 15″

② CHURCH STREET — SP–1 36″ X 30″
DETOUR — M4–8 24″ X 12″
M6–1 21″ X 15″

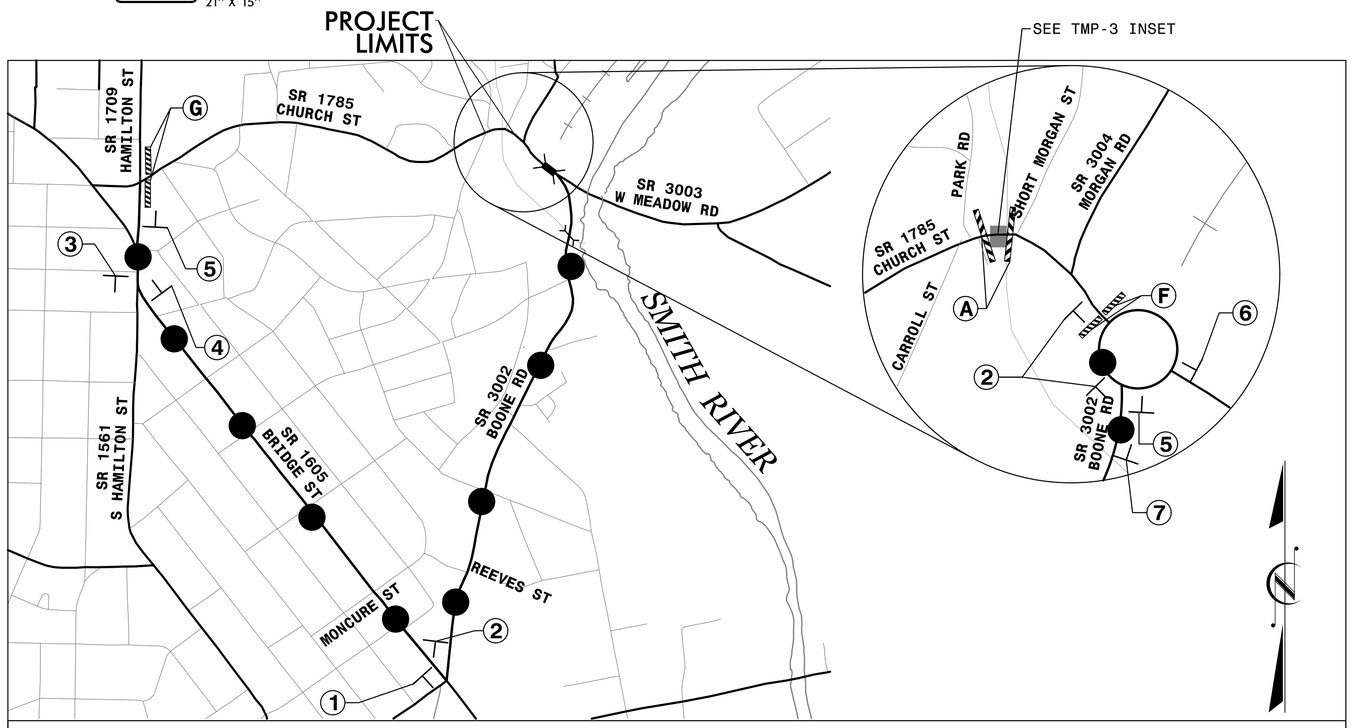
③ CHURCH STREET — SP–1 36″ X 30″
DETOUR — M4–8 24″ X 12″
M6–2 L 21″ X 15″

④ CHURCH STREET — SP–1 36″ X 30″
DETOUR — M4–8 24″ X 12″
M6–2 21″ X 15″

⑤ END DETOUR — M4–8 A 24″ X 18″

⑥ ROAD CLOSED AHEAD — W20–3 48″ X 48″
NEXT RIGHT — SP–4R 42″ X 12″

⑦ ROAD CLOSED AHEAD — W20–3 48″ X 48″
SECOND RIGHT — SP–2 42″ X 12″



DETOUR ROUTE

SEE TMP-3 AND RSD 1101.03 (SHEET 1 OF 9) FOR ADDITIONAL TRAFFIC CONTROL DEVICES

LEGEND

GENERAL

NORTH ARROW

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

TEMPORARY SIGNING

STATIONARY SIGN

Ⓐ R11-2 48″ x 30″ — ROAD CLOSED
TYPE III BARRICADE

Ⓕ R11-3 60″ x 30″ — ROAD CLOSED 0.1 MILE AHEAD LOCAL TRAFFIC ONLY — DETOUR — M4-10L 48″ x 18″
TYPE III BARRICADE

Ⓖ R11-3 60″ x 30″ — ROAD CLOSED 0.7 MILE AHEAD LOCAL TRAFFIC ONLY — DETOUR — M4-10R 48″ x 18″
TYPE III BARRICADE

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DATE: 3/10/2025
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 042517 ENGINEER HELEN SHYU

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

TRANSPORTATION MANAGEMENT PLAN

OFFSITE DETOUR AND LEGEND

9:17:04 PM
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3/10/2025

PROJ. REFERENCE NO.	SHEET NO.
BP7.C001	TMP-2A

SIGN NUMBER: SP-1
TYPE: D
QUANTITY: 6

SIGN WIDTH: 3'-0"
HEIGHT: 2'-6"
TOTAL AREA: 7.5 Sq.Ft.

BORDER TYPE: RECESSED
RECESS: 0.38"
WIDTH: 0.38"
RADII: 1.5"

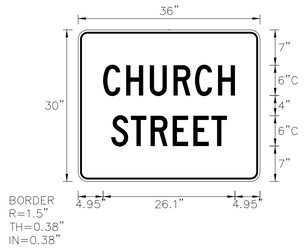
NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" ALUMINUM

DESIGN BY: TRT
PROJECT ID: BP7.C001
CHECKED BY: ADK
DIV: 07
DATE: October 2022



NOTES:

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be Grade B, fluorescent orange, reflective sheeting.
3. To be mounted with Detour signing.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter																												Series/Size Text Length
		C	H	U	R	C	H																					C 2000
	5	4.6	4.7	4.7	4.3	4.6	3.4	5																				26.1
		S	T	R	E	E	T																					C 2000
	6.5	3.9	3.9	4.4	4.1	3.6	3.1	6.5																				22.9

SIGN NUMBER: SP-2
TYPE: D
QUANTITY: 1

SIGN WIDTH: 3'-6"
HEIGHT: 1'-0"
TOTAL AREA: 3.5 Sq.Ft.

BORDER TYPE: RECESSED
RECESS: 0.38"
WIDTH: 0.63"
RADII: 1.5"

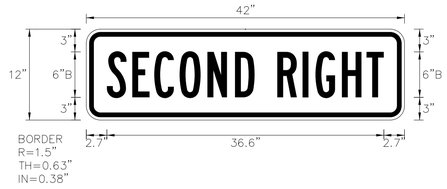
NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" ALUMINUM

DESIGN BY: TRT
PROJECT ID: BP7.C001
CHECKED BY: ADK
DIV: 07
DATE: March 2024



NOTES:

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be Grade B, fluorescent orange, reflective sheeting.
3. To be mounted with Detour signing.

Spacing Factor is 0.8 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter																												Series/Size Text Length
		S	E	C	O	N	D		R	I	G	H	T															B 2000
	2.7	3.3	2.9	3.3	3.7	3.6	2.6	3	3.3	1.7	3.5	3.3	2.3	2.7														36.6

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DATE: 3/10/2025
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042517 ENGINEER HELEN SHYU

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

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4000 Center at North Hills Street
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

TRANSPORTATION MANAGEMENT PLAN

TEMPORARY SIGN DESIGN

9:17:50 PM
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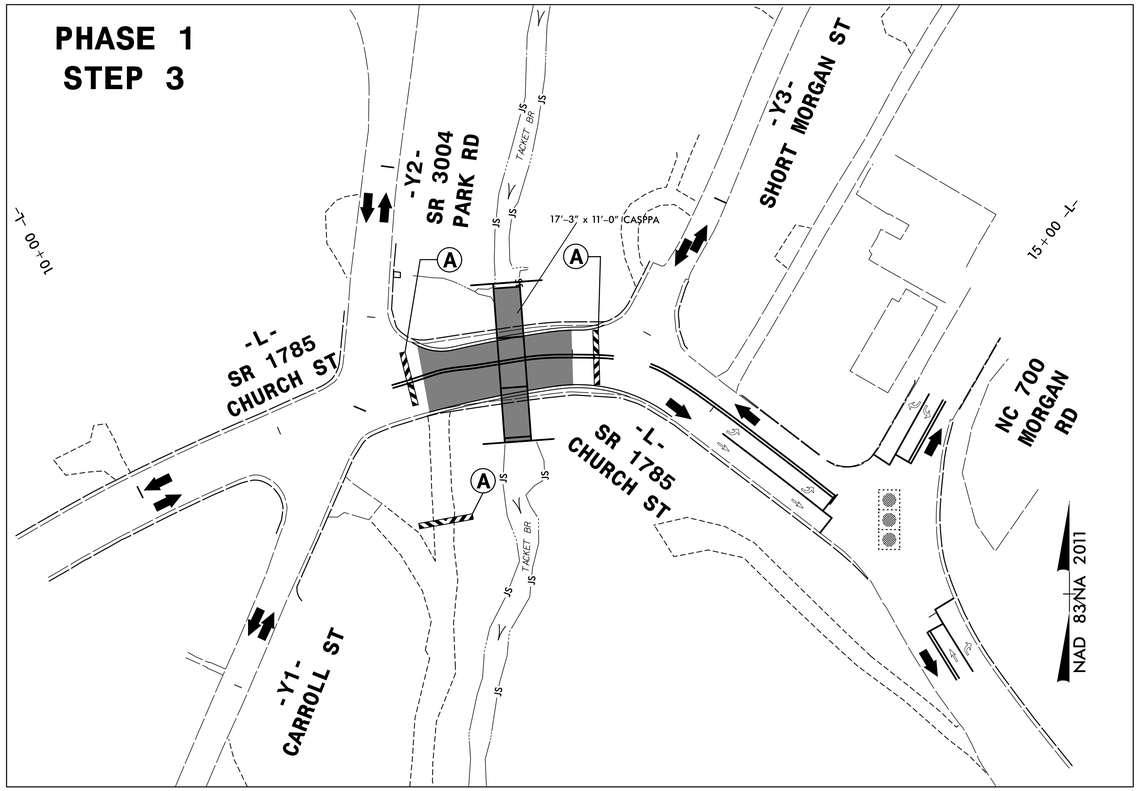
3/10/2025

PROJ. REFERENCE NO.	SHEET NO.
BP7.C001	TMP-3



SEE TMP-2 AND RSD 1101.03 (SHEET 1 OF 9) FOR ADDITIONAL TRAFFIC CONTROL DEVICES

Ⓐ R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE

EXIST. PVMT.
NORTH ARROW
PROPOSED PVMT.

PHASING

NOTES:

REPLACE MARKING AND RETURN TO THE CURRENT TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

COMPLETE ANY PROPOSED WIDENING IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANE. THIS MAY REQUIRE A COMBINATION OF INSTALLATION OF PROPOSED PIPES, TEMPORARY PIPES, STEEL PLATES, TEMPORARY MEDIAN, AND OUTSIDE DITCHES.

PAVE PROPOSED CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, IN ALL PHASES UNTIL STATED TO INSTALL FINAL LAYER IN PHASING.

THE TERM RSD REFERS TO ROADWAY STANDARD DRAWINGS.

PHASE I

STEP 1: USING RSD 1101.01 (SHEET 3 OF 3), INSTALL ADVANCE WARNING SIGNS ON -L- (CHURCH STREET). 2 WEEKS BEFORE ROAD CLOSURE, INSTALL CMS ON EACH DIRECTION OF -L- IN THE PROJECT LIMITS WITH ADVANCED WARNING MESSAGE OF "ROAD WILL BE CLOSED XX/XX/XX THRU XX/XX/XX".

STEP 2: INSTALL AND COVER DETOUR SIGNS AS SHOWN ON THIS SHEET AND IN ACCORDANCE WITH RSD 1101.03 (SHEETS 1 OF 9).

STEP 3: UNCOVER DETOUR SIGNS, CLOSE -L- (CHURCH STREET) TO TRAFFIC AND CONSTRUCT PROPOSED CULVERT. KEEP ADJACENT Y-LINES OPEN: -Y1- CARROLL STREET, -Y2- PARK ROAD, AND -Y3- MORGAN STREET. USE BARRICADE TO CLOSE DRIVEWAY ADJACENT TO CULVERT, AND ONLY ALLOW ACCESS TO PROPERTY FROM CARROLL STREET.

PHASE II

STEP 1: UPON COMPLETION OF CULVERT, REPAIR PAVEMENT EXCEPT FOR THE FINAL LAYER OF SURFACE COURSE. INSTALL PROPOSED GUARDRAILS. PLACE TEMPORARY PAVEMENT MARKINGS AND OPEN -L- (CHURCH STREET) TO TRAFFIC.

STEP 2: USING RSD 1101.02 (SHEET 1 OF 19), CONSTRUCT -L- AND ADJACENT -Y- LINES.

PHASE III

STEP 1: USING RSD 1101.02 (SHEET 1 OF 19) AS NEEDED, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS AND MARKERS AS SHOWN ON PMP.

STEP 2: REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN -L- (CHURCH STREET) TO FINAL PATTERN.

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DATE: 3/10/2025
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 042517 ENGINEER HELEN SHYU

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

TRANSPORTATION MANAGEMENT PLAN

DETAIL AND PHASING

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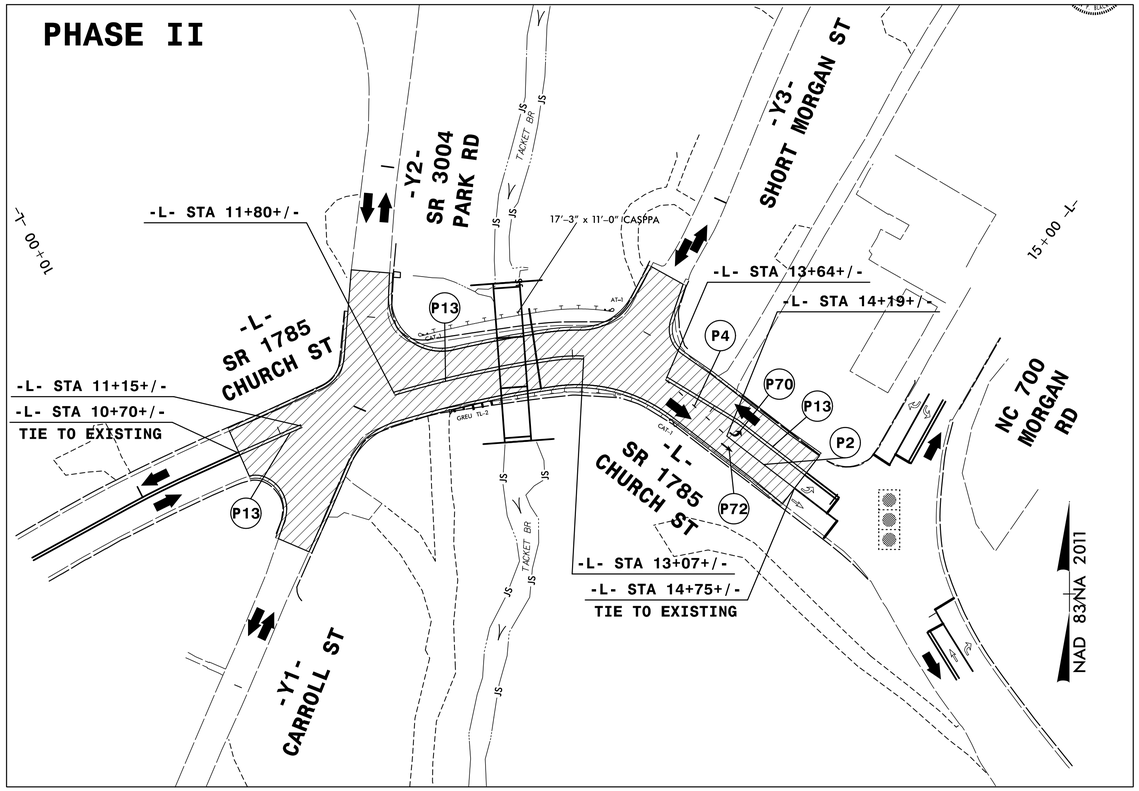
BMOD 2025

PROJ. REFERENCE NO.	SHEET NO.
BP7.C001	TMP-4



EXIST. PVMT.
NORTH ARROW
PROPOSED PVMT.

LEGEND

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION	PAY ITEM
	PAVEMENT MARKING LINES	
		PAINT (4")
P2	WHITE LANE LINE	
P4	3 FT.- 9FT./SP WHITE MINISKIP	
P13	YELLOW DOUBLE CENTER LINE	
	PAVEMENT MARKING SYMBOLS & CHARACTERS	
P70	LEFT TURN ARROW	
P72	STRAIGHT ARROW	

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, REFER TO GENERAL NOTES FOR NUMBER OF APPLICATIONS.

PAVEMENT MARKERS

YELLOW & YELLOW	TEMPORARY RAISED MARKERS
CRYSTAL & RED	TEMPORARY RAISED MARKERS

PAVEMENT MARKINGS

———EXISTING LINES
———TEMPORARY LINES

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

EXISTING MARKING SYMBOLS

SIGNALS

EXISTING
PROPOSED
TEMP TEMPORARY

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APPROVED: Docusigned by: Helen Shyu DF15975A95E44EF...
DATE: 3/10/2025
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042517 ENGINEER HELEN SHYU

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

TRANSPORTATION MANAGEMENT PLAN

TEMPORARY PAVEMENT MARKINGS

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3/10/2025

T.I.P.: BP7.C001

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	PMP-1

APPROVED: Andrew D. Klinksiek
DATE: 3/14/2025

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 40311 ANDREW D. KLINKSIEK

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
ROCKINGHAM COUNTY
LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - CONTRACT STANDARDS AND DEVELOPMENT 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 MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

THERMOPLASTIC (4", 90 MILS)

T2	WHITE SOLID LANE LINE
T4	3 FT. - 9 FT./SP WHITE MINISKIP
T13	YELLOW DOUBLE CENTER

THERMOPLASTIC (24", 90 MILS)

T61	WHITE STOPBAR

THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)

T70	LEFT TURN ARROW
T72	STRAIGHT ARROW

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	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) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

F) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS AND DIAGONALS. IF HEATED-IN-PLACE IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

PAVEMENT MARKING SYMBOLS

↰ T70

↑ T72

INDEX

PLAN PREPARED BY: HNTB NORTH CAROLINA, P.C.

A.D. Klinksiek, PE, PTOE — PROJECT ENGINEER
J.A. Wagner, PE — DESIGN ENGINEER

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SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554
(919) 546-8997

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	PMP-2

APPROVED: DocuSigned by: Andrew D. Klinksiek E3D78FB4596E44B...

DATE: 3/14/2025

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 40311 ENGINEER ANDREW D. KLINKSIEK

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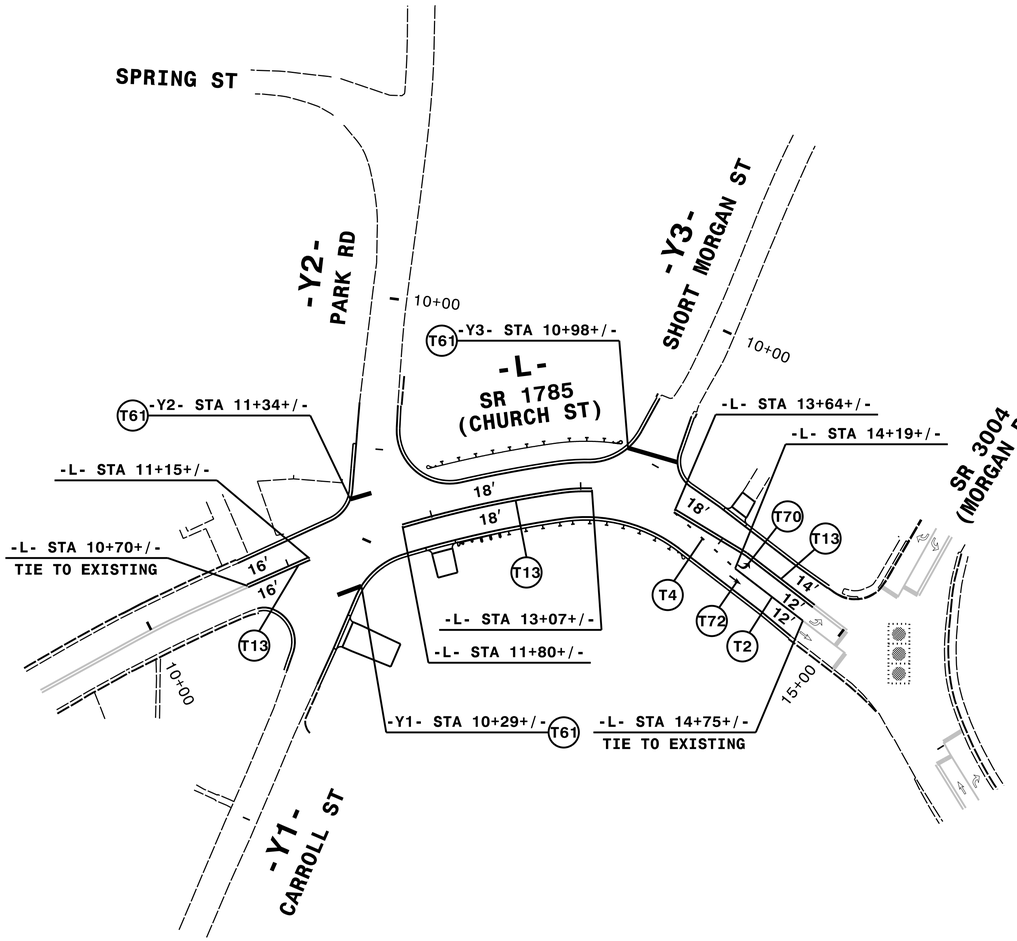


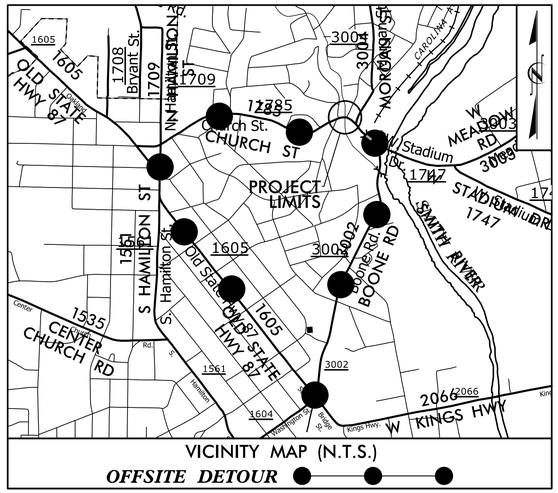
ENGINEER TO APPROVE LOCATION OF ALL UNSIGNALIZED STOPBARS.

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

HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554
(919) 546-8997

PAVEMENT MARKING DETAIL

TIP PROJECT: BP7.C001



VICINITY MAP (N.T.S.)

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

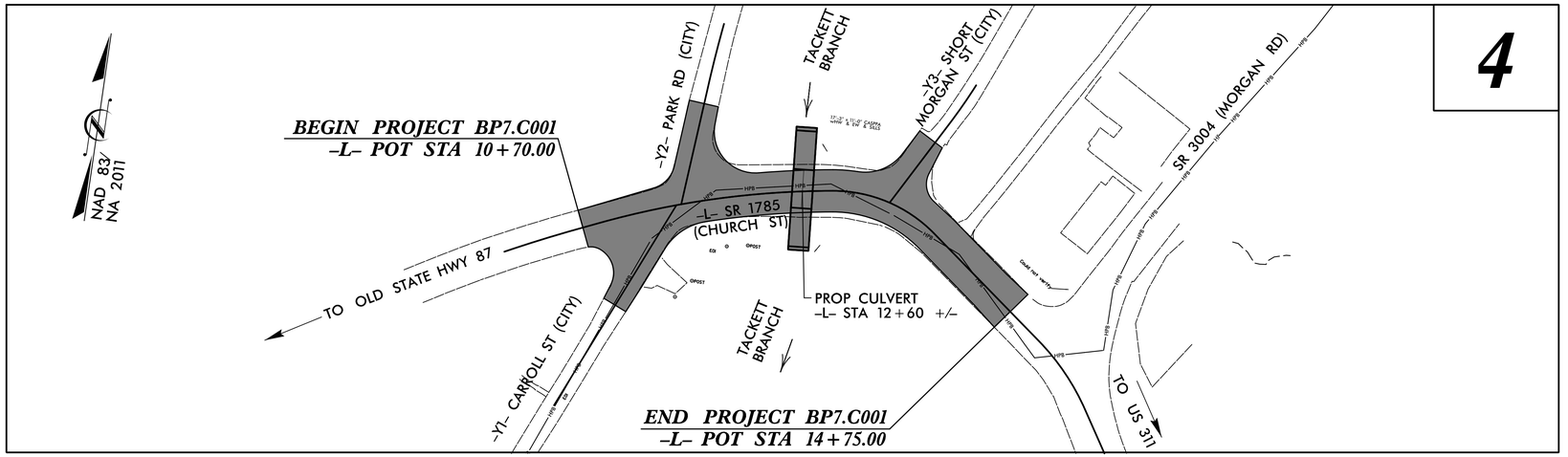
ROCKINGHAM COUNTY

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP7.C001	EC-1	

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



4

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

GRAPHIC SCALE

50 25 0 50 100

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.

HNTB

Prepared In the Office of:

HNTB HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

Designed by:

NATALIE CHAN, P.E. *3444*

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 revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	EC-2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

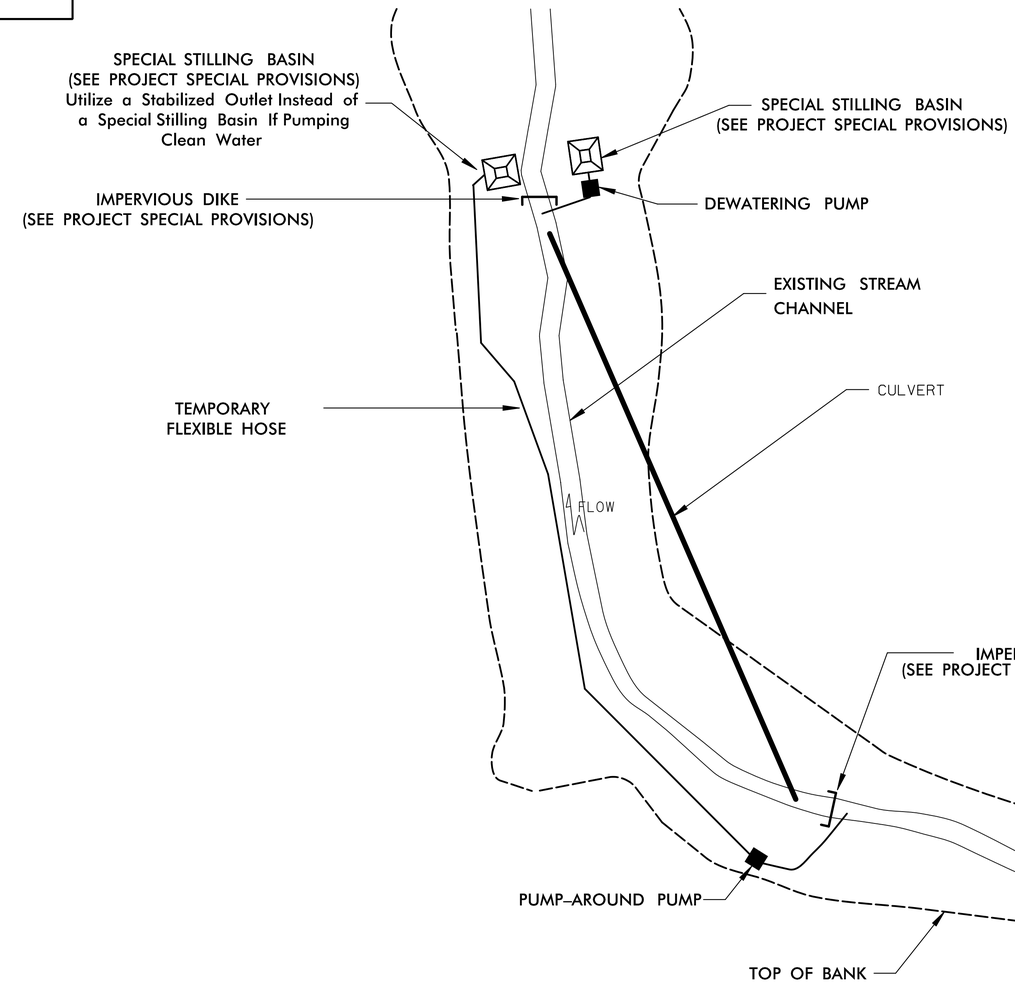
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer 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.
BP7.C001	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EXAMPLE OF PUMP–AROUND OPERATION

NOTES:
1) All excavation shall be performed in only dry or isolated areas of the work zone.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
4) Pumps and hoses shall be of sufficient size to dewater the work area.



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

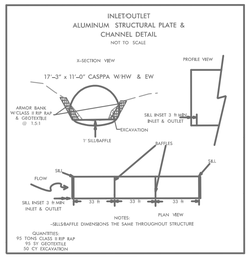
SOIL STABILIZATION TIMEFRAMES

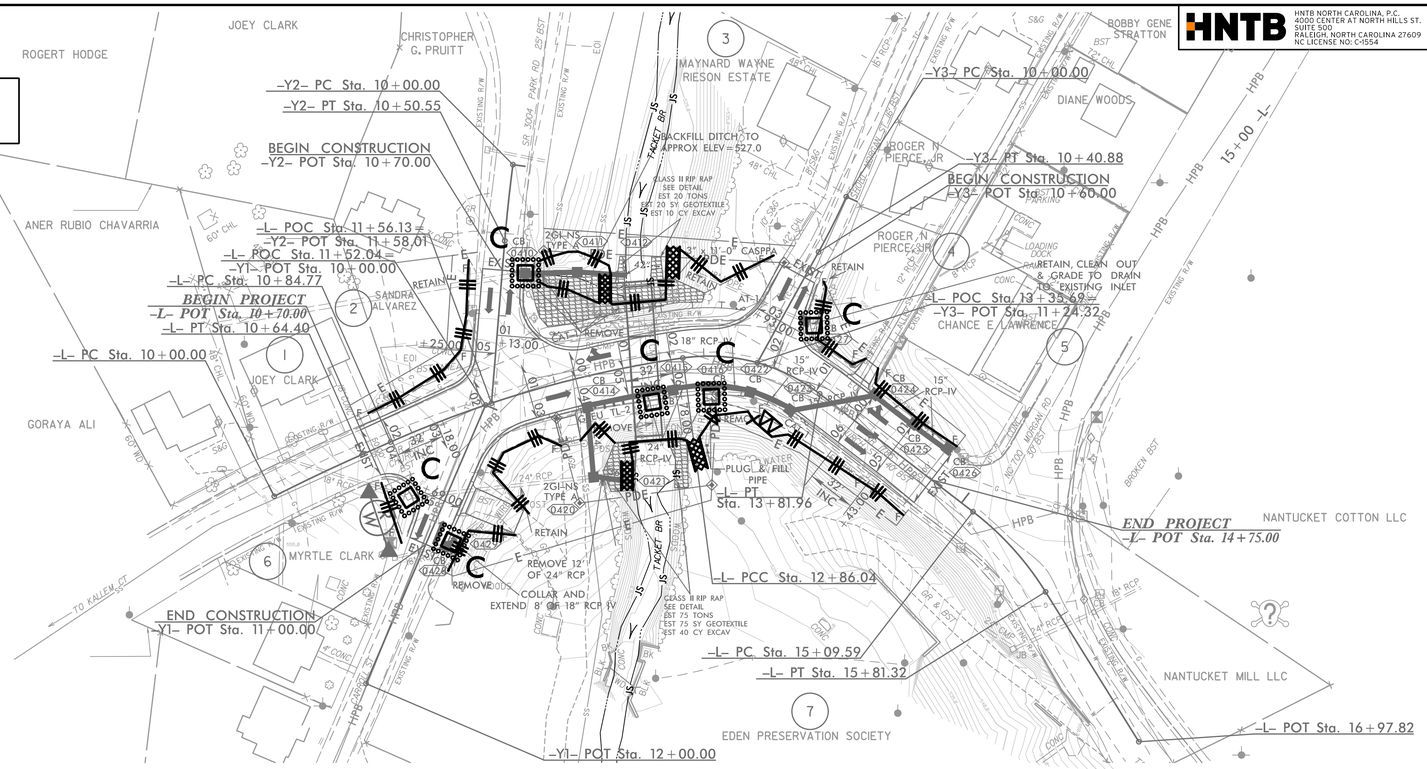
SITE DESCRIPTION	*STABILIZATION TIME*	*TIMEFRAME EXCEPTIONS*
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

8/17/99

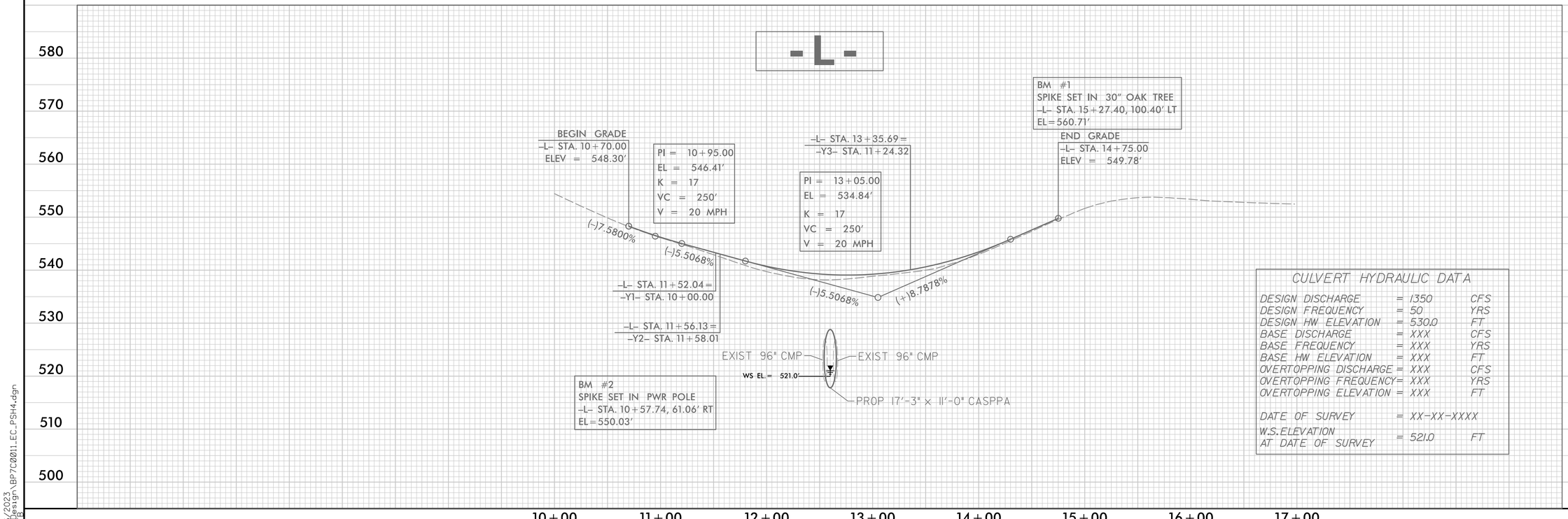
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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





FOR –Y1–, –Y2–, & –Y3– PROFILES, SEE SHEET 5.



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PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

6/6/2023
HNTB
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CULVERT CONSTRUCTION SEQUENCE STA. 12 + 32 –L–

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	EC-4A/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

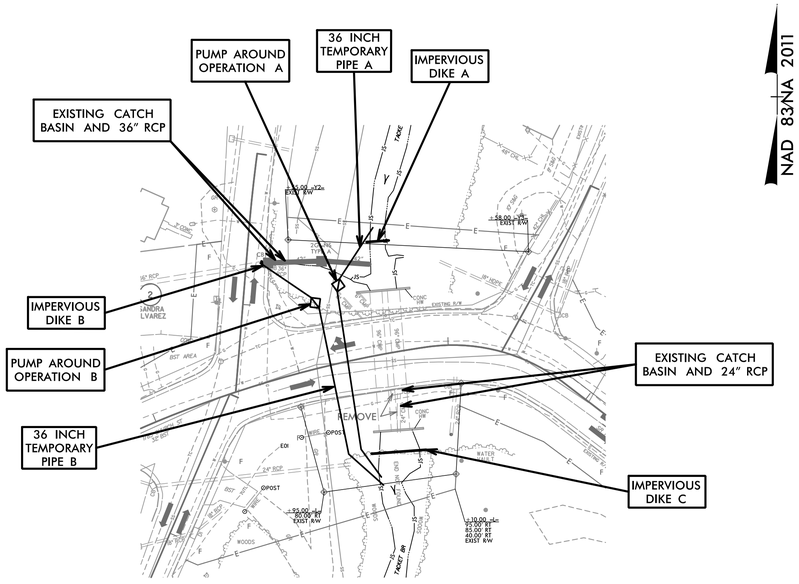
PHASE I

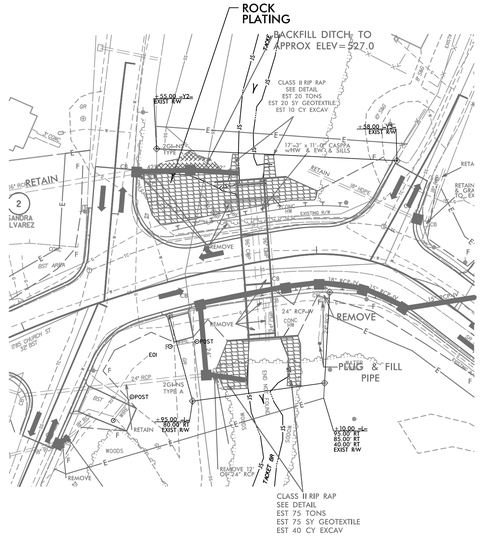
1. UTILIZE SPECIAL STILLING BASIN(S) THROUGH OUT CULVERT CONSTRUCTION.
2. CLOSE SR 1785 CHURCH STREET AND SET UP DETOUR ACCORDING TO TRAFFIC CONTROL PLAN.
3. INSTALL IMPERVIOUS DIKES A, B, AND C.
4. INSTALL 36" TEMPORARY PIPES A AND B AND PUMP AROUND OPERATIONS A AND B
5. DEWATER WORK AREA(S) WITH SPECIAL STILLING BASIN(S).
6. REMOVE EXISTING CATCH BASIN AND 24" CMP AS SHOWN BELOW.
7. REMOVE THE TWO EXISTING 96" CMP.
8. REMOVE EXISTING CATCH BASIN AND 36" RCP AS SHOWN BELOW.
9. INSTALL PROPOSED 42" PIPES, CB, AND 2GI–NS TYPE A.

PHASE II

1. MAINTAIN TEMPORARY PIPES A AND B AND PUMP AROUND OPERATIONS A AND B.
2. INSTALL PROPOSED 17'–3" X 11'–0" CASPPA.
3. INSTALL UPSTREAM AND DOWNSTREAM RIP RAP AND ROCK PLATING AS SHOWN ON PLAN.
4. BACKFILL EXISTING DITCH ACCORDING TO NOTE SHOWN BELOW.
5. REMOVE ALL IMPERVIOUS DIKES, TEMPORARY PIPES AND PUMP AROUND OPERATIONS.
6. REMOVE ANY REMAINING SPECIAL STILLING BASIN(S).
7. COMPLETE ROADWAY.

NOTE: REPOSITION PUMP AND HOSE LOCATIONS AS NEEDED FOR THE BANK STABILIZAATION AND ROCK PLATING INSTALLATION.





8/17/99

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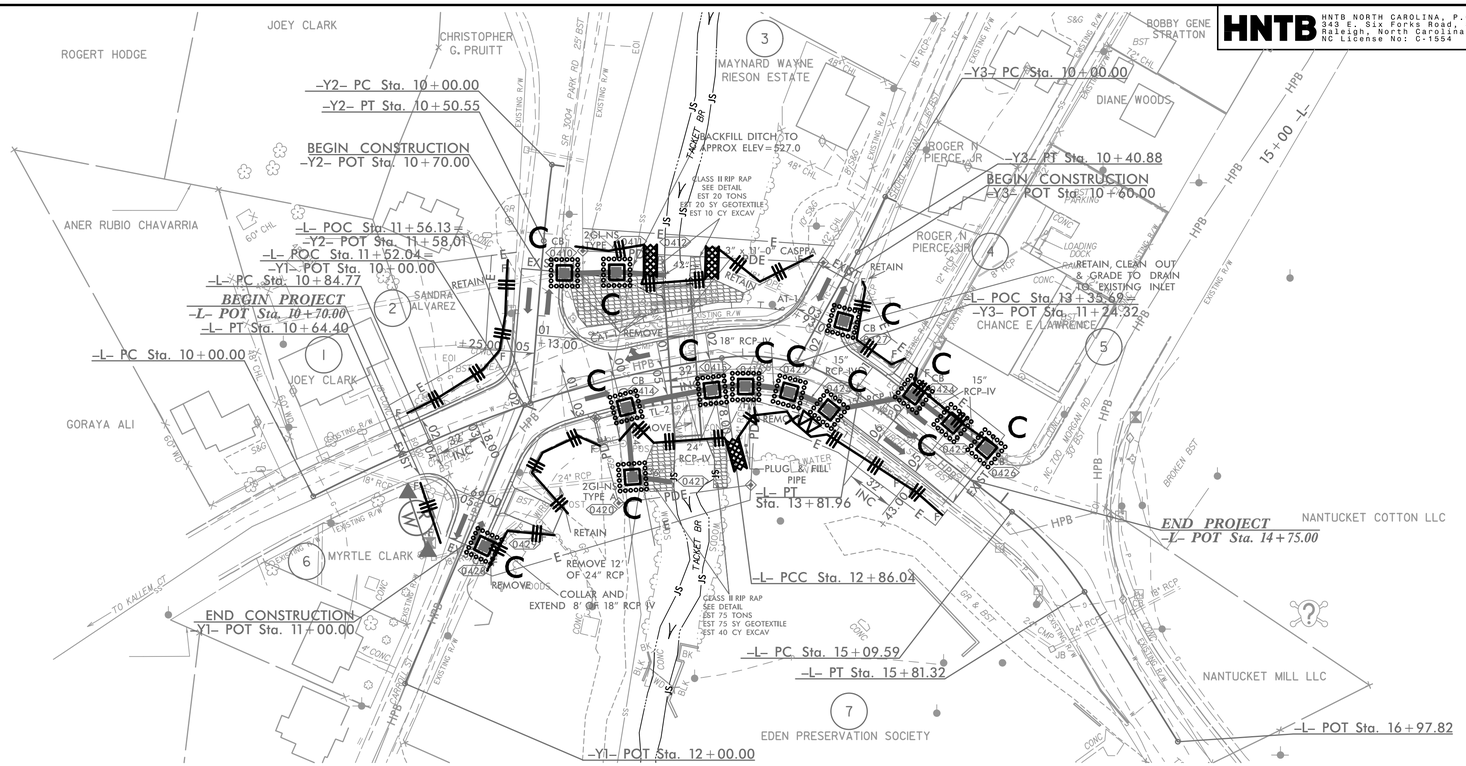
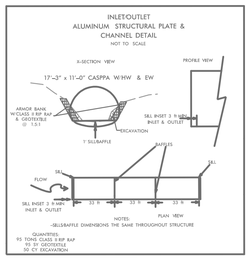
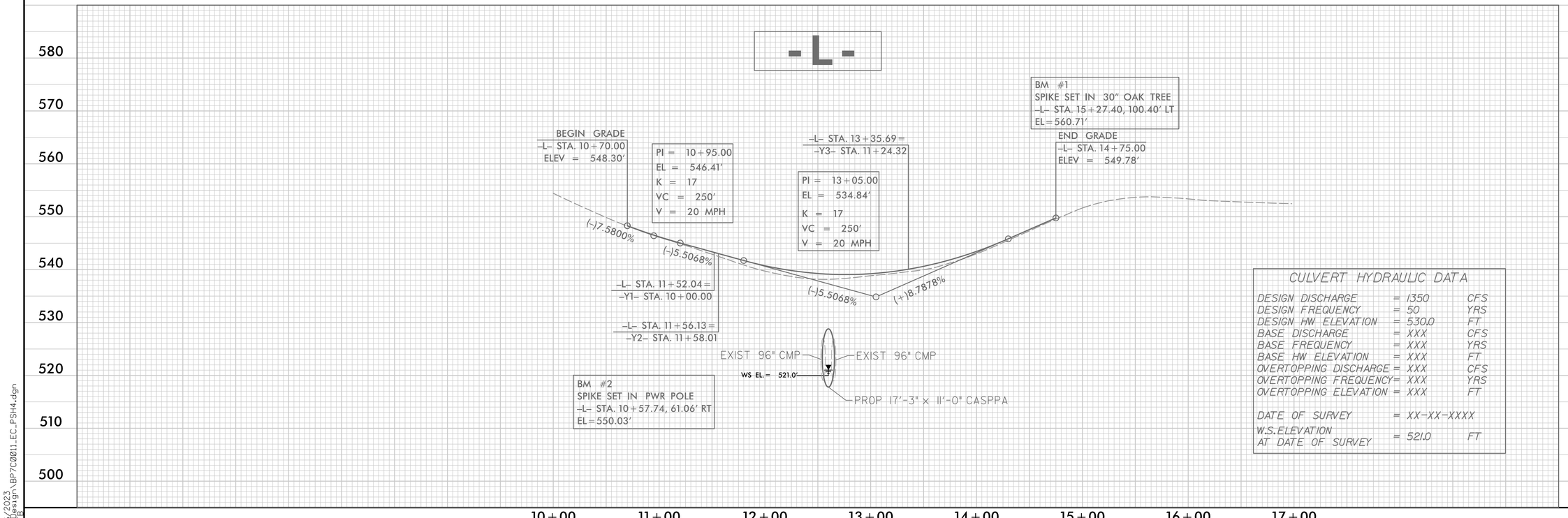
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NA 2011







6/6/2023
HNTB
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T.I.P.: BP7.C001

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
ROCKINGHAM COUNTY

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	SIGN-1

APPROVED: DocuSigned by: Andrew D. Klinksiek E3D78FB4596E449...

DATE: 3/14/2025

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - CONTRACT STANDARDS AND DEVELOPMENT 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
901.40	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL SUPPORTS

PAY ITEM NOTES

1 SIGN ERECTION, TYPE D, E OR F
2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL

GENERAL NOTES

. SIGNS FURNISHED BY STATE.

. ALL PROPOSED SIGNS SEE PAY ITEM NOTE 1 UNLESS OTHERWISE NOTED.

. 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 TYPE E SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.

. ALL EXISTING SIGNS ON U-CHANNEL SUPPORT(S) WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

. THE BACKGROUND FOR TYPE E SIGNS SHALL BE GRADE C REFLECTIVE SHEETING.

. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4072000000	903	SUPPORTS, 3-LB STEEL U-CHANNEL	79	LF
4102000000	904	SIGN ERECTION, TYPE E	8	EA
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6	EA

PLANS PREPARED BY: HNTB NORTH CAROLINA, P.C.

A.D. KLINKSIEK, PE, PTOE SIGNING PROJECT MANAGER
J.A. WAGNER, PE SIGNING PROJECT ENGINEER
G.D. BERRY SIGNING DESIGN TECHNICIAN

HNTB
HNTB NORTH CAROLINA, P.C.
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SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554
(919) 546-8997

INDEX

401 QUANTITY REQ'D 3

36" X 36"
R1-1

ONE "U" POST PER SIGN

402 QUANTITY REQ'D 3

30" X 30"
R5-1

ONE "U" POST PER SIGN
MOUNTED BACK TO BACK WITH SIGN 401
IN 1 INSTALLATION

403 QUANTITY REQ'D 1

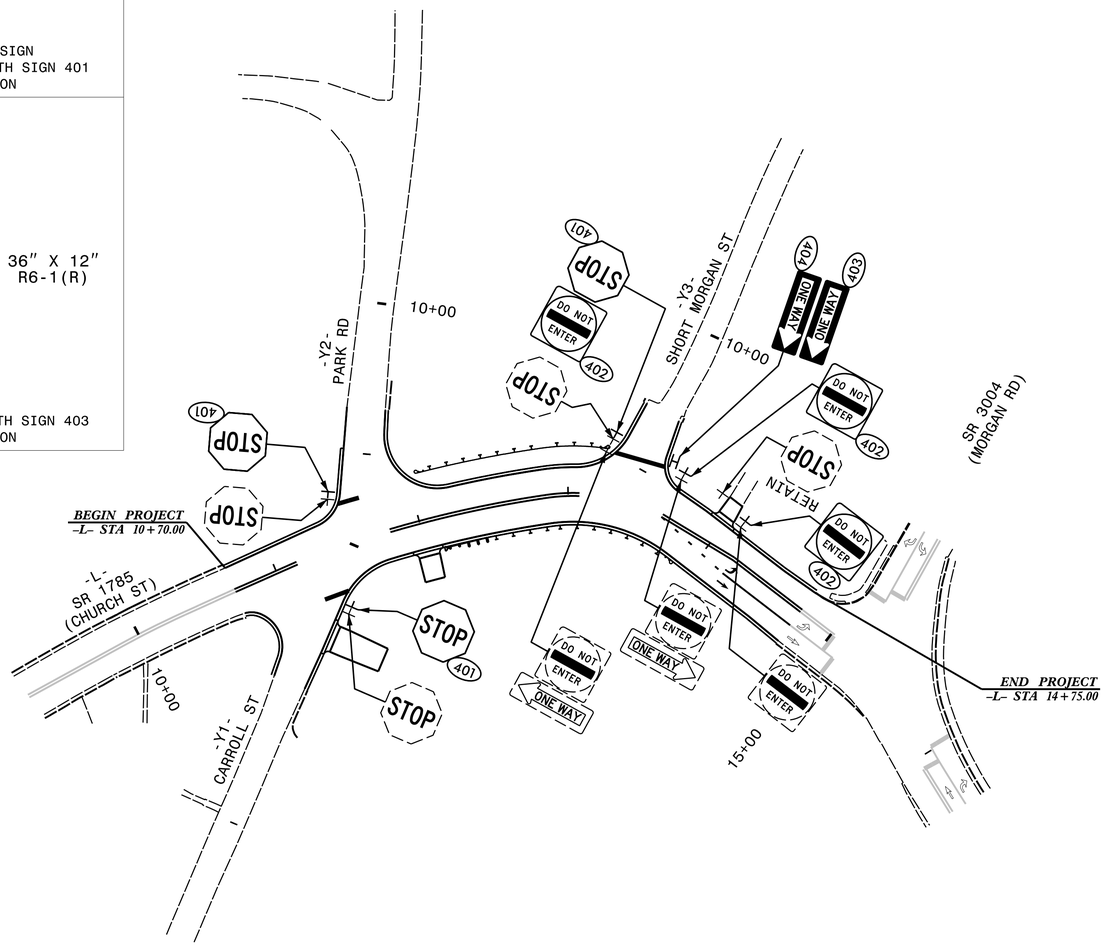
36" X 12"
R6-1(L)

ONE "U" POST PER SIGN

404 QUANTITY REQ'D 1

36" X 12"
R6-1(R)

MOUNTED BACK TO BACK WITH SIGN 403
IN 1 INSTALLATION



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PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	SIGN-2

APPROVED: DocuSigned by: Andrew D. Klinksiek E3D78FB4596E44B...

DATE: 3/14/2025

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 40311 ENGINEER ANDREW D. KLINKSIEK

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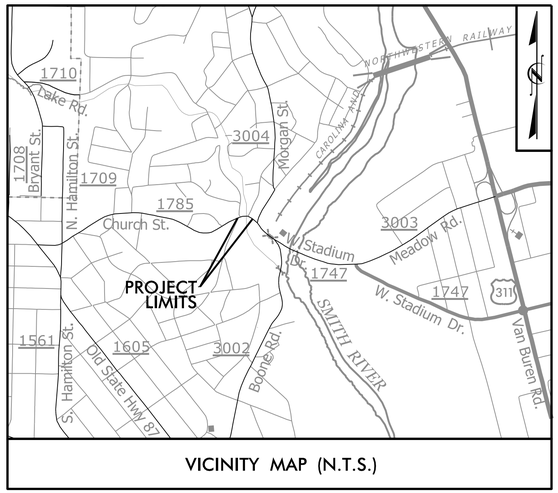
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554
(919) 546-8997

EXISTING & PROPOSED SIGNING

WBS PROJECT: BP7.C001

CONTRACT: DG00663



VICINITY MAP (N.T.S.)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
BP7.C001	UC–01

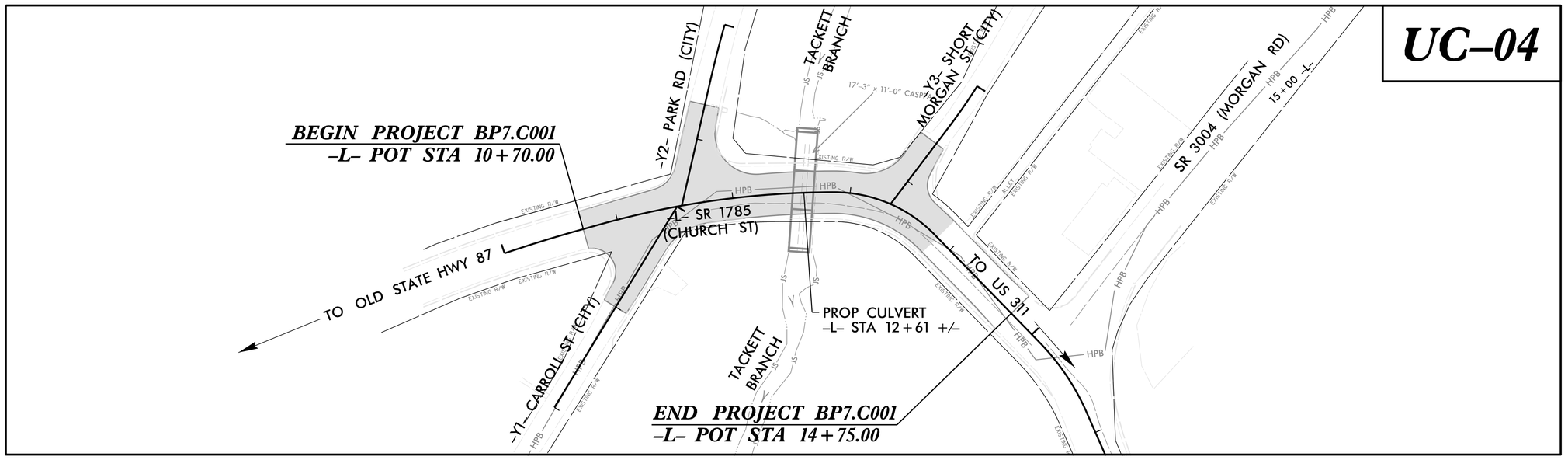
UTILITY CONSTRUCTION PLANS ROCKINGHAM COUNTY

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

TYPE OF WORK: WATER LINE AND SANITARY SEWER RELOCATION

NAD 83/
NA 2011

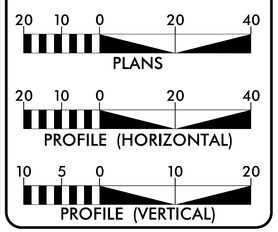
UC–04



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF EDEN.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UC–01	*TITLE SHEET*
UC–02	*UTILITY SYMBOLOGY*
UC–03	*UTILITY NOTES*
UC–03A TO UC–03D	*DETAIL SHEETS*
UC–04 TO UC–04A	*PLAN SHEETS*
UC–05 TO UC–06	*PROFILE SHEETS*

WATER AND SEWER OWNERS ON PROJECT

(A) WATER LINE – CITY OF EDEN
(B) SANITARY SEWER – CITY OF EDEN

PREPARED IN THE OFFICE OF
Weston & Sampson
WSE of North Carolina, PC
2052 Energy Drive
Apex, NC 27502
Phone: 919.297.0220
NC License: C-4647

FOR
HNTB
HNTB NORTH CAROLINA, P.C.
4000 CENTER AT NORTH HILLS ST.
SUITE 500
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

KEVIN S. HUTCHENS, PE — *SENIOR PROJECT ENGINEER*
KATERINA DOMINGUEZ — *PROJECT DESIGN ENGINEER*
_____ — *PROJECT DESIGN ENGINEER*

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 39283 ENGINEER KEVIN S. HUTCHENS
3/18/2025

DIVISION OF HIGHWAYS
HIGHWAY DIVISION 7
P.O. BOX 14996
1584 YANCEYVILLE STREET
GREENSBORO NC 27415-4996
PHONE (336) 487-0000
FAX (336) 334-3637

DANIEL R. DAGENHART — *DIVISION BRIDGE PROGRAM MANAGER*
WRIGHT R. ARCHER, III, PE — *DIVISION ENGINEER*
BOJAN CVIJETIC, PE — *DIVISION CONST. ENGINEER*
N/A — *DIVISION UTILITY COORDINATOR*

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UC-02

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Item	Symbol
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	RFH
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

Item	Symbol
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

Item	Symbol
Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	TEL PED
Utility Line by Others (Type as Shown)	PROP O/H POW LINES
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
Plan Note	NOTE
Pay Item Note	PAY ITEM

EXISTING UTILITIES SYMBOLS

Item	Symbol
Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	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	?UTL
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities

Item	Symbol
Utility Line Drawn from Record (Type as Shown)	
Designated Utility Line (Type as Shown)	

5/14/99

Weston & Sampson℠
WSE of North Carolina, PC
2052 Energy Drive
Phone: 919.297.0220
NC License: C-4647
Apex, NC 27502
westonandsampson.com

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UC-03

DESIGNED BY:	KCZ
DRAWN BY:	KCZ
CHECKED BY:	KSH
APPROVED BY:	KSH
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 39283 ENGINEER KEVIN S. HUTCHENS
Signed by:
3/18/2025

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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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 WATER LINE AND SANITARY SEWER UTILITIES BELONG TO THE CITY OF EDEN.

   CONTACT: BEVERLY O'DELL
   PHONE: 336-612-8035

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 ENVIRONMENTAL 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.

PROJECT QUANTITIES

ITEM NUMBER	DESCRIPTION	QUANTITY	
0318000000-E	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	49	TON
0320000000-E	FOUNDATION CONDITIONING GEOTEXTILE	155	SY
2830000000-N	ADJUSTMENT OF MANHOLES	2	EA
5326200000-E	12" WATER LINE	90	LF
5329000000-E	DUCTILE IRON WATER PIPE FITTINGS	390	LBS
5558000000-E	12" VALVE	1	EA
5691300000-E	8" SANITARY GRAVITY SEWER	273	LF
5691600000-E	16" SANITARY GRAVITY SEWER	102	LF
5769000000-E	DUCTILE IRON SEWER PIPE FITTINGS	65	LBS
5775000000-E	4' DIA. UTILITY MANHOLE	1	EA
5776000000-E	5' DIA. UTILITY MANHOLE	2	EA
5781000000-E	UTILITY MANHOLE WALL, 4' DIA.	2.1	LF
5782000000-E	UTILITY MANHOLE WALL, 5' DIA.	31.7	LF
5802000000-E	ABANDON 8" UTILITY PIPE	273	LF
5804000000-E	ABANDON 12" UTILITY PIPE	90	LF
5810000000-E	ABANDON 16" UTILITY PIPE	110	LF
5816000000-E	ABANDON UTILITY MANHOLE	1	EA
5828000000-E	REMOVE UTILITY MANHOLE	2	EA

PROJECT SPECIFIC NOTES:

1. THERE ARE NO KNOWN WATER SERVICE LINES OR SEWER SERVICE LINES WITHIN THE DISTURBED AREA OF THE PROJECT LIMITS WHERE THE PROPOSED EXCAVATION IS TO OCCUR FOR INSTALLATION OF THE PROPOSED CULVERT CROSSING CHURCH STREET.

2. IN THE EVENT THAT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED DURING PIPE CONSTRUCTION, THE CONTRACTOR SHALL EMPLOY ALL METHODS NECESSARY TO KEEP THE TRENCHES DRY AS DIRECTED BY THE RESIDENT ENGINEER.

3. PROPOSED WATER LINE SHALL BE 12" DUCTILE IRON PIPE, CLASS 350, RESTRAINED JOINT PIPE.

4. ALL WATER LINE FITTINGS, 4-INCHES THROUGH 24-INCHES IN DIAMETER, SHALL BE DUCTILE IRON PRESSURE CLASS 350.

5. ALL PROPOSED FITTINGS (BENDS, TEES, CROSSES, REDUCERS, PLUGS, ETC.) SHALL BE RESTRAINED BY THE USE OF RESTRAINED JOINT CONSTRUCTION, OR CAST IN PLACE CONCRETE THRUST RESTRAINTS AS DETAILED ON THESE DRAWINGS, OR AS DIRECTED BY THE ENGINEER.

6. FINAL CONNECTIONS TO THE EXISTING FACILITIES SHALL BE WITNESSED BY THE UTILITY OWNER'S REPRESENTATIVE.

7. ANY HYDRANTS TAKEN OUT OF SERVICE DUE TO THIS CONSTRUCTION WORK SHALL BE BAGGED UNTIL SERVICE IS RESTORED.

8. ALL WATER LINE AND SANITARY SEWER LINE REMOVED AS PART OF THIS WORK SHALL BECOME CONTRACTOR'S PROPERTY AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE REQUIREMENTS. REMOVED PIPE SHALL NOT BE USED AS PIPE FOR NEW CONSTRUCTION.

9. PROPOSED GRAVITY SEWER PIPE SHALL BE OF NOMINAL SIZE NOTED ON THE PLANS AND BE EITHER: DUCTILE IRON PIPE CLASS 350 WITH A CERAMIC EPOXY LINING (SUCH AS PROTECTO 401) APPLIED AT THE FACTORY BY THE MANUFACTURER; OR PVC C900 DR-18; OR PVC SDR-35.

10. THE EXISTING WATER LINE IN CONFLICT WITH THE PROPOSED CULVERT WORK SHALL BE REMOVED. CONTRACTOR SHALL FIRST COORDINATE WITH THE UTILITY OWNER TO CLOSE THE NECESSARY VALVES BEFORE EXCAVATING AND REMOVING THE WATER LINE. WATER LINE REMOVAL SHALL BE TO THE CLOSEST JOINTS TO THE LIMITS SHOWN ON THE PLANS AS NOTED BY THE PROPOSED PLUGS. ONCE THE WATER LINE HAS BEEN REMOVED THE CONTRACTOR SHALL INSTALL A TEMPORARY PLUG INTO THE END OF EACH PIPE TO REMAIN FOR THE DURATION OF THE CULVERT WORK. WATER LINE SHALL BE BACKFILLED AS NEEDED. VALVES SHALL REMAIN CLOSED FOR THE DURATION OF THE CULVERT CONSTRUCTION. ONCE THE CULVERT CONSTRUCTION IS COMPLETED AND BACKFILL REACHES THE APPROPRIATE GRADE, AS DETERMINED BY THE ENGINEER, THEN THE ENDS OF THE EXISTING WATER LINE CAN BE EXCAVATED AND REMOVE THE TEMPORARY PLUGS. THE NEW WATER LINE SHALL THEN BE CONSTRUCTED, BACKFILLED, AND TESTED. UPON SUCCESSFUL TESTING AND APPROVAL BY THE UTILITY OWNER, THE WATER LINE SHALL BE PLACED BACK INTO SERVICE BY OPENING THE VALVES, AS COORDINATED WITH THE UTILITY OWNER.

11. THE EXISTING GRAVITY SEWER LINE IN CONFLICT WITH THE PROPOSED CULVERT WORK SHALL BE REMOVED. CONTRACTOR SHALL FIRST PLUG ALL PIPES AT THE NECESSARY MANHOLES BEFORE EXCAVATING AND REMOVING THE GRAVITY SEWER LINE. GRAVITY SEWER REMOVAL SHALL BE FROM MANHOLE TO MANHOLE. ONCE THE SEWER PIPE HAS BEEN REMOVED THE CONTRACTOR SHALL PLUG / PATCH THE MANHOLE WALLS AND EMPLOY A PUMP AND HAUL OPERATION FOR THE DURATION OF THE CULVERT WORK. ONCE THE CULVERT CONSTRUCTION IS COMPLETED AND BACKFILL REACHES THE APPROPRIATE GRADE, AS DETERMINED BY THE ENGINEER, THEN THE NEW GRAVITY SEWER AND MANHOLES SHALL BE CONSTRUCTED, BACKFILLED, AND TESTED. UPON SUCCESSFUL TESTING AND APPROVAL BY THE UTILITY OWNER, THE GRAVITY SEWER SYSTEM SHALL BE PLACED BACK INTO SERVICE.

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BP7.C001	UC-03A

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UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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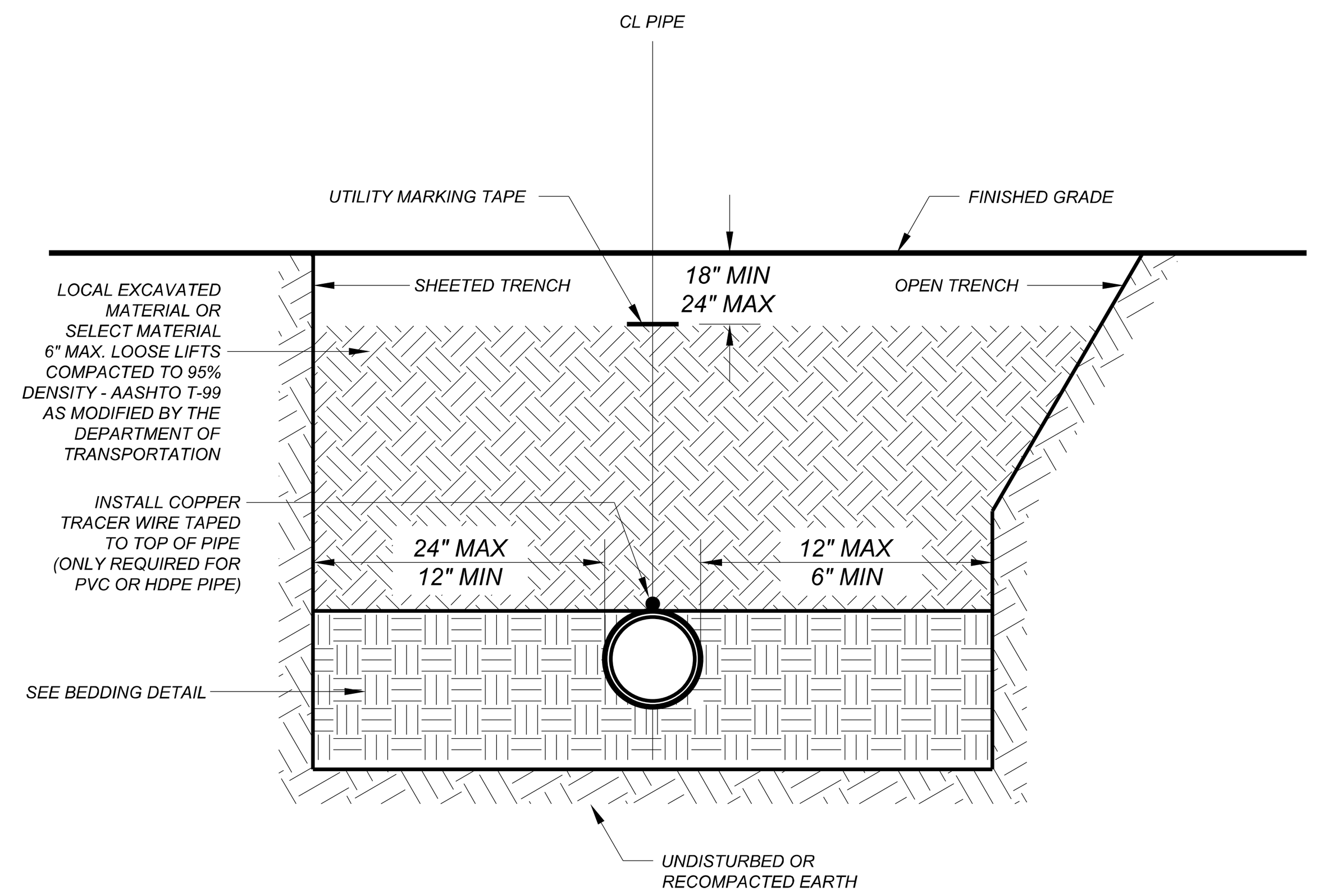
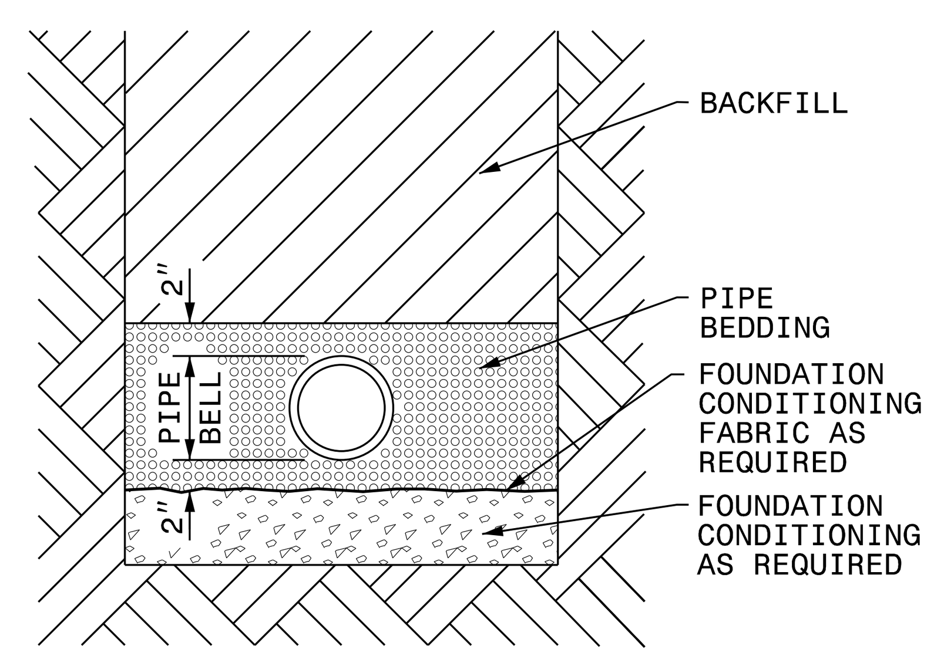


NOTES:
1. ALL SHORING & TRENCHING SHALL COMPLY WITH OSHA SAFETY STANDARDS FOR THE CONSTRUCTION INDUSTRY.
2. BELL HOLES NOT SHOWN.
3. ALL BACKFILL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.

GENERAL TRENCH DETAIL

NOT TO SCALE



NOTES:
1. PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER.
2. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III.
3. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL.
4. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
5. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TRENCH / BEDDING DETAIL

NOT TO SCALE

RESTRAINED JOINT DESIGN TABLE FOR DUCTILE IRON PIPE

FITTING	REQUIRED RESTRAINED LENGTH (FT) OF D.I. PIPE BY DEPTH OF COVER							
HORIZONTAL BENDS	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
6 INCH - 11.25 DEG	3	2	2	2	2	1	1	1
6 INCH - 22.5 DEG	5	4	3	3	3	2	2	2
6 INCH - 45 DEG	10	8	6	6	5	4	4	4
6 INCH - PLUG	31	28	25	23	21	20	19	17
HORIZONTAL BENDS	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
8 INCH - 11.25 DEG	3	3	2	2	2	2	2	2
8 INCH - 22.5 DEG	5	5	4	4	4	3	3	3
8 INCH - 45 DEG	11	9	8	8	7	6	6	5
8 INCH - PLUG	41	37	33	31	28	26	25	23
HORIZONTAL BENDS	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
10 INCH - 11.25 DEG	3	3	3	3	2	2	2	2
10 INCH - 22.5 DEG	6	6	5	5	4	4	4	3
10 INCH - 45 DEG	13	11	10	9	8	8	7	6
10 INCH - PLUG	49	44	40	37	34	32	30	28
HORIZONTAL BENDS	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
12 INCH - 11.25 DEG	4	4	3	3	3	2	2	2
12 INCH - 22.5 DEG	8	7	6	5	5	5	4	4
12 INCH - 45 DEG	15	13	12	11	10	9	8	8
12 INCH - PLUG	59	53	48	44	41	38	35	33
HORIZONTAL BENDS	3FT	4FT	5FT	6FT	7FT	8FT	9FT	10FT
14 INCH - 11.25 DEG	4	4	4	3	3	3	3	2
14 INCH - 22.5 DEG	9	7	7	6	6	5	5	4
14 INCH - 45 DEG	17	15	13	12	11	10	9	9
14 INCH - PLUG	67	61	55	50	47	43	40	38

ASSUMPTIONS:
SAFETY FACTOR = 1.5
DESIGN PRESSURE = 200 PSI (TEST PRESSURE)
LAYING CONDITION = TYPE 4
SOIL DESIGNATION: CL (BROWN CLAY)

NOTES:
1. RESTRAINED LENGTH IS MEASURED FROM THE CENTER OF THE BEND AS FOLLOWS:
   A. HORIZONTAL AND VERTICAL BENDS: ALONG EACH SIDE OF THE BEND.
   B. HORIZONTAL AND VERTICAL BENDS - OFFSET OR COMBINED: ALONG THE OUTER SIDE OF EACH BEND. ALL PIPE BETWEEN THE TWO BENDS SHALL BE RESTRAINED JOINT WHEN:
      1) THE DISTANCE BETWEEN THEM IS EQUAL THE REQUIRED LENGTH
      2) THE DISTANCE BETWEEN THEM LESS THAN THE REQUIRED LENGTH
      3) AS NOTED ON THE PLANS
      4) AS DIRECTED BY THE ENGINEER

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UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

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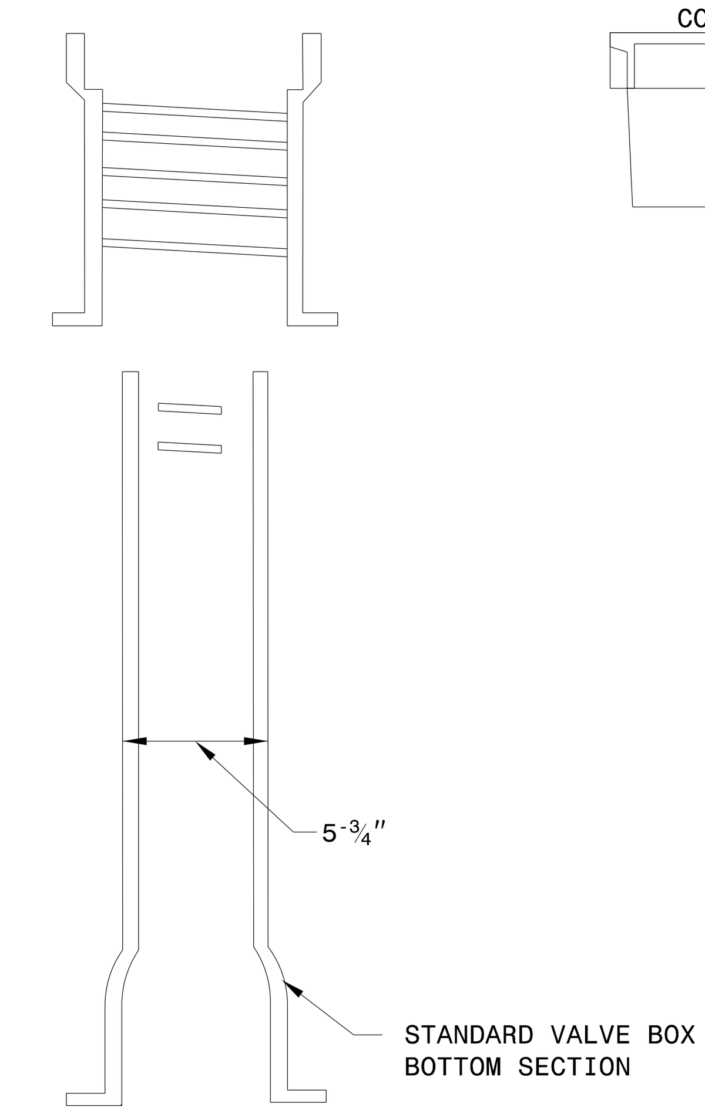
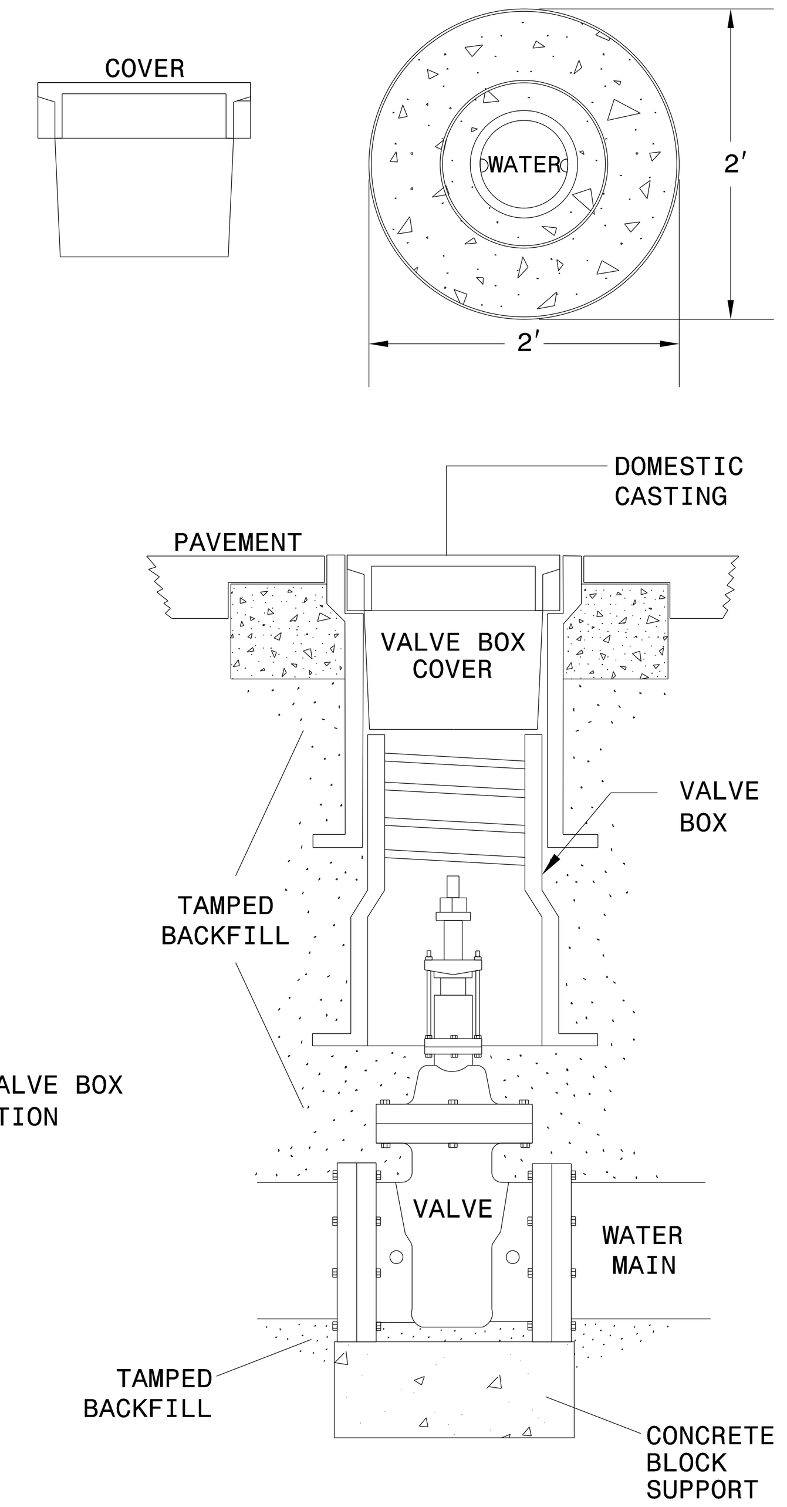
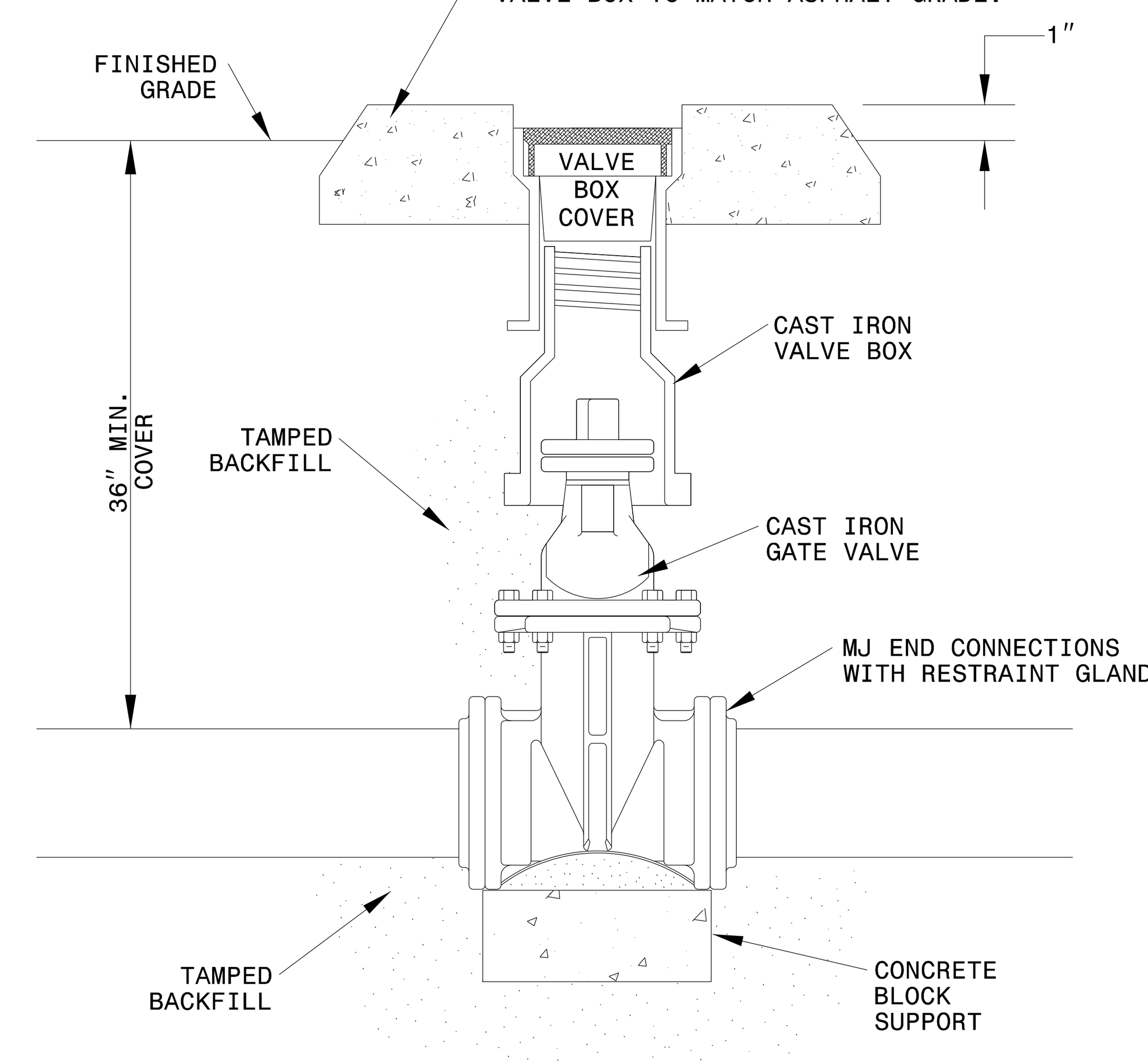




NOTES:
1. VALVE BOX SHALL BE PER ONWASA'S SPECIFICATIONS
2. CONCRETE VALVE COLLAR REQUIRED ON ALL VALVES.

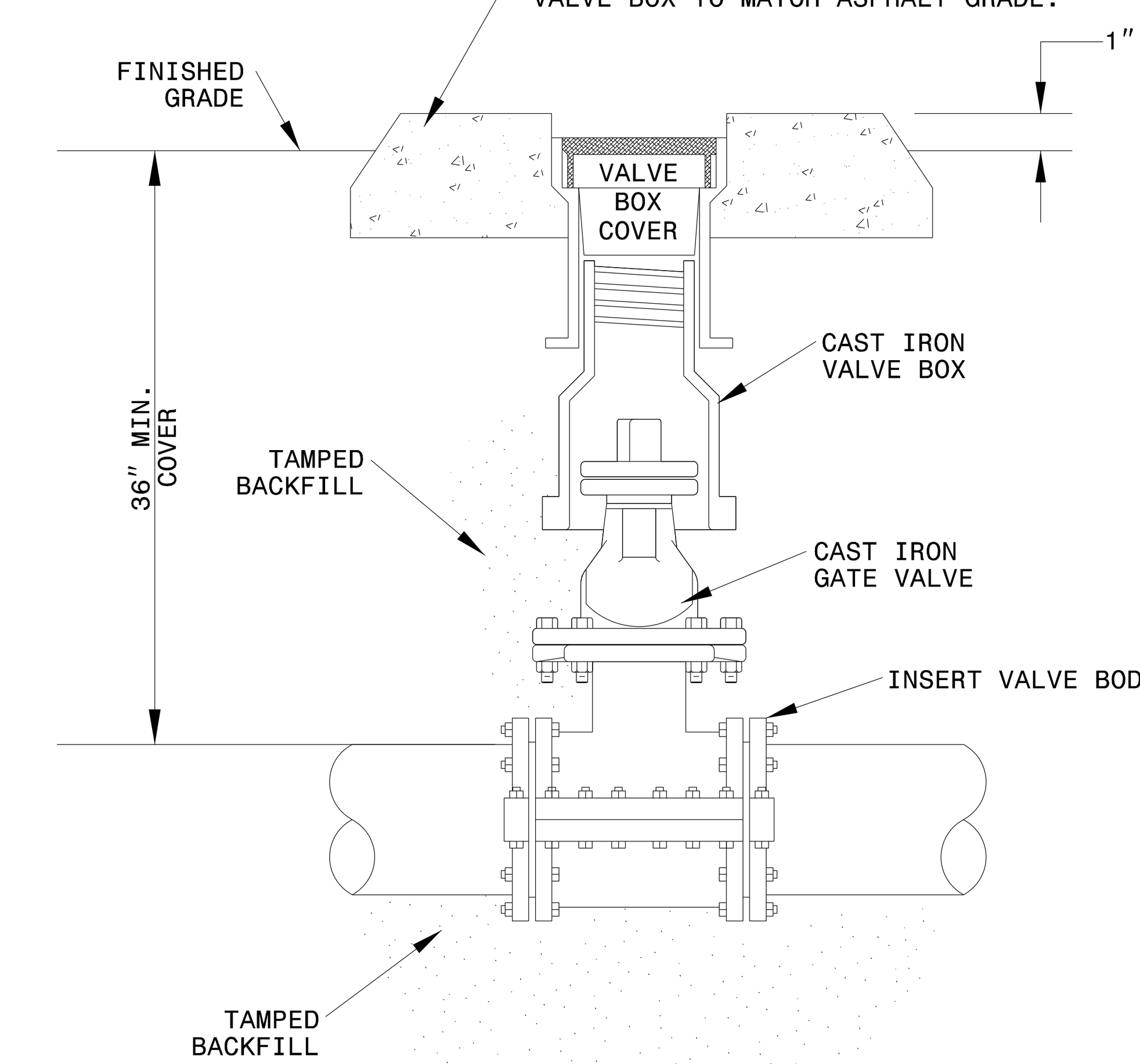
VALVE BOX INSTALLATION AND EXTENSION DETAIL

NOT TO SCALE



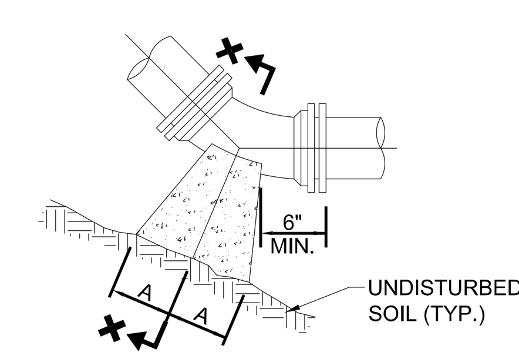
TYPICAL VALVE DETAIL

NOT TO SCALE

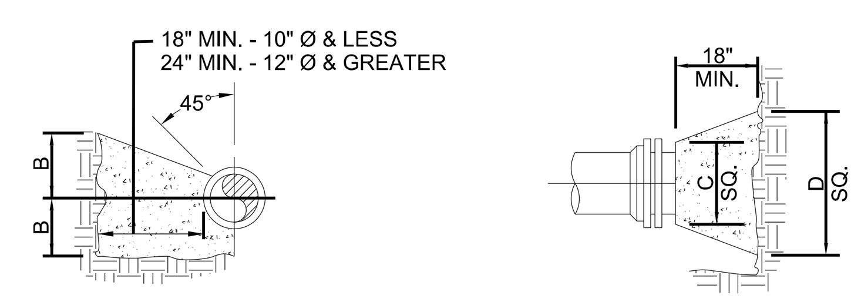


INSERTION VALVE DETAIL

NOT TO SCALE



PLAN BENDS



SECTION X-X
BENDS & TEES

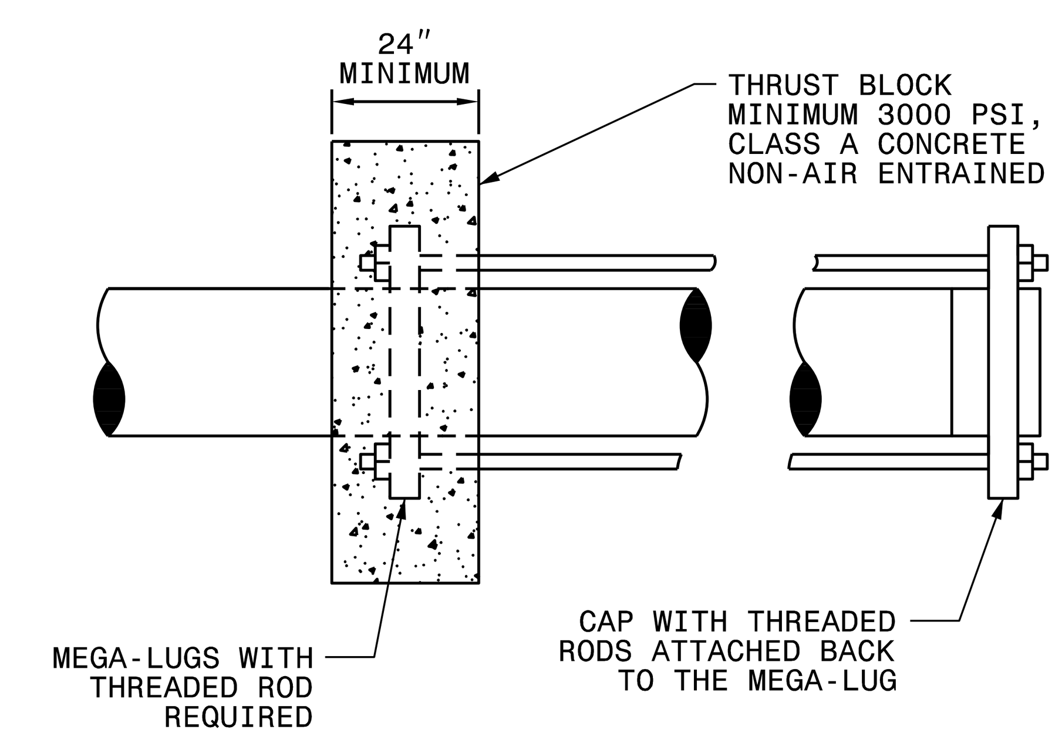
PLAN & ELEV.
PLUGS

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		PLUG	
	A	B	A	B	A	B	A	B	C	D
6"	10"	12"	8"	10"	8"	8"	8"	8"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	14"	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	18"	34"

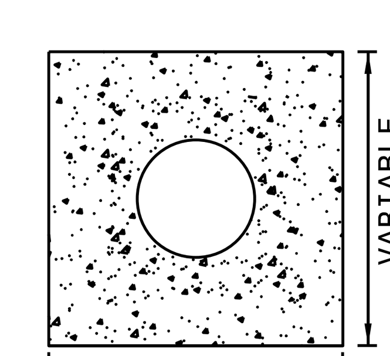
NOTES:
1. READY-MIX CONCRETE SHALL BE 3,000 PSI MINIMUM.
2. SAKRETE SHALL NOT BE USED FOR CONCRETE THRUST BLOCKS.
3. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.
4. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.
5. ALL FITTING AND ACCESSORIES TO BE WRAPPED WITH 10 MIL POLYETHYLENE PRIOR TO POURING BLOCKING.

THRUST BLOCK DETAIL

NOT TO SCALE



PLAN VIEW



FRONT VIEW

MINIMUM CUBIC YARDS OF CONCRETE	
PIPE DIAMETER	CUBIC YARDS
6"	1
8"	2
10"	3
12"	5
14"	7.25

END OF LINE DEADMAN DETAIL

NOT TO SCALE

WATER DETAILS

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UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 39269 KEVIN S. HUTCHENS 9/18/2025

UTILITY CONSTRUCTION

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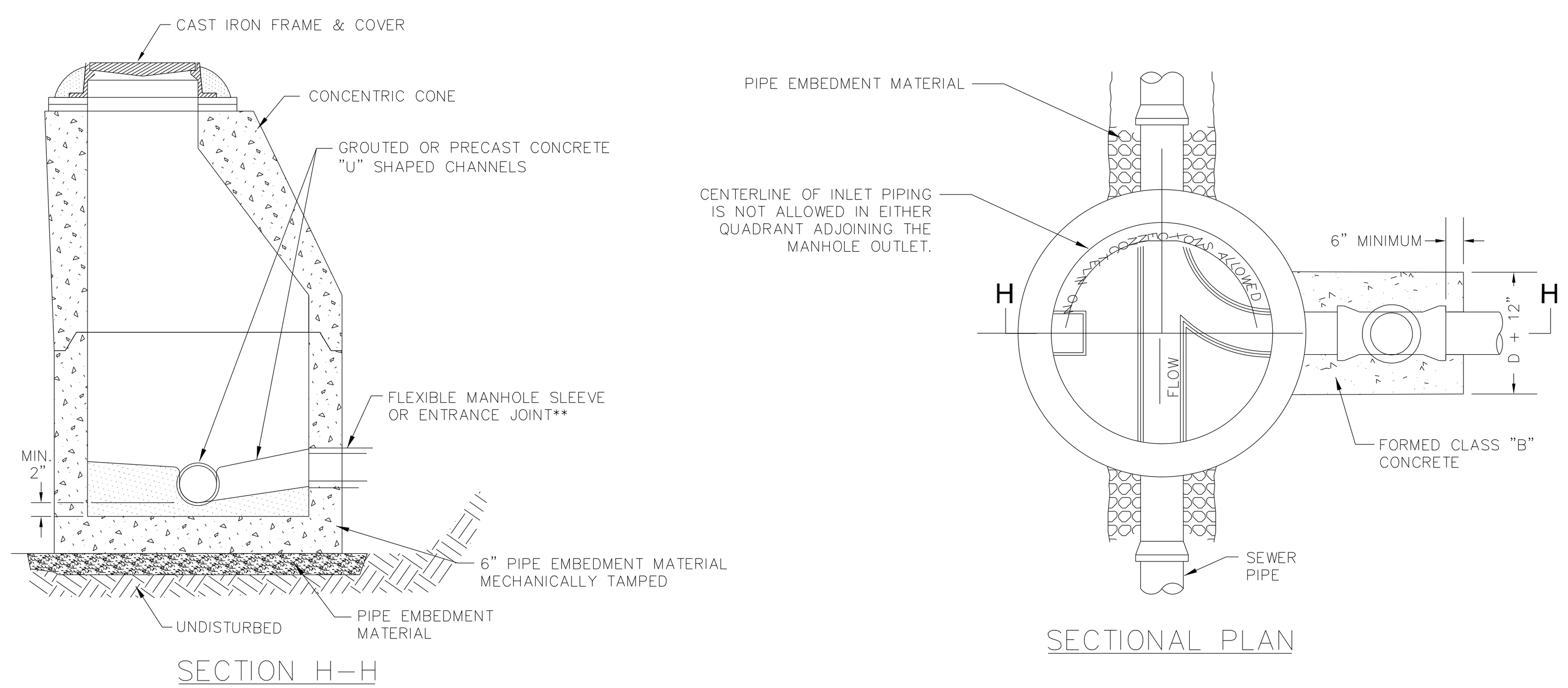
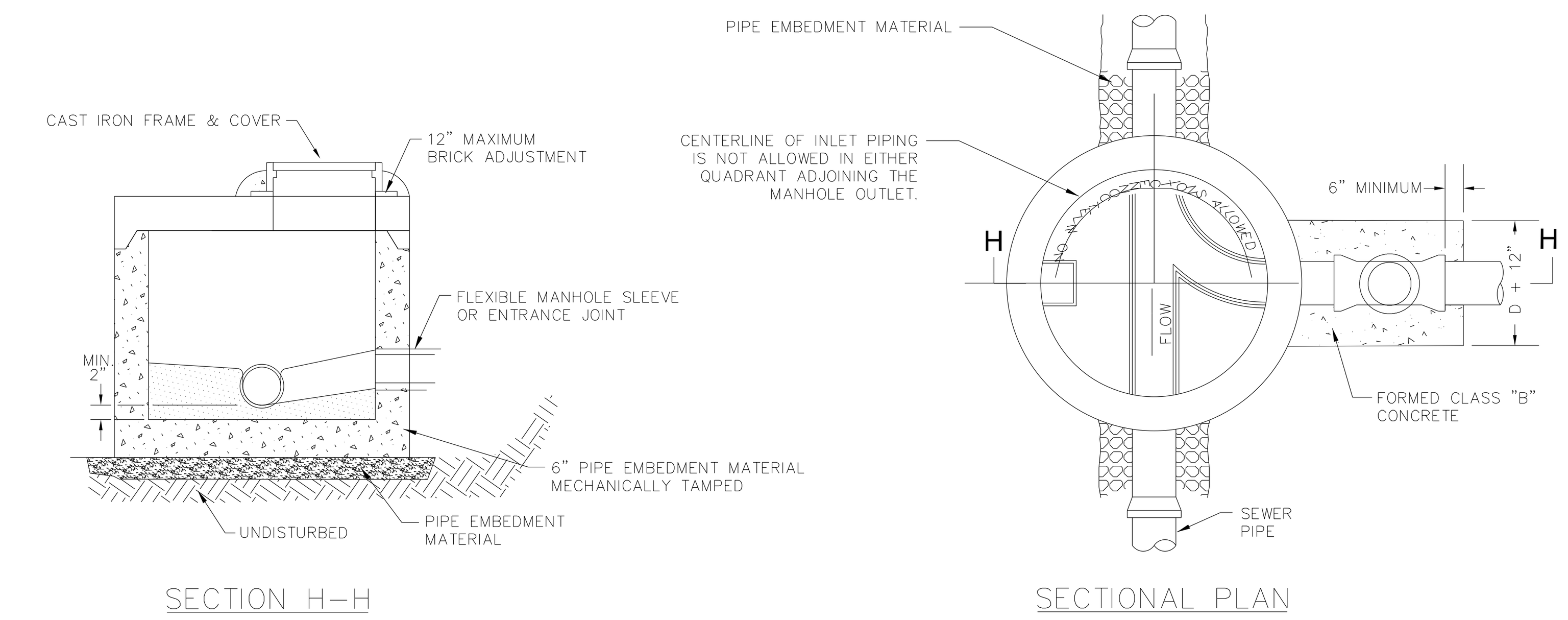


** SIZE OF BASE MAY NOT PERMIT BOOT IN WHICH CASE NON-SHRINK GROUT SHALL BE USED TO MAKE CONNECTION - REFER TO NOTE BELOW

NOTE:
WHEN NON-FLEXIBLE CONNECTION IS APPROVED, FIRST PIPE JOINT SHALL BE NO MORE THAN 12" FROM MANHOLE WALL.

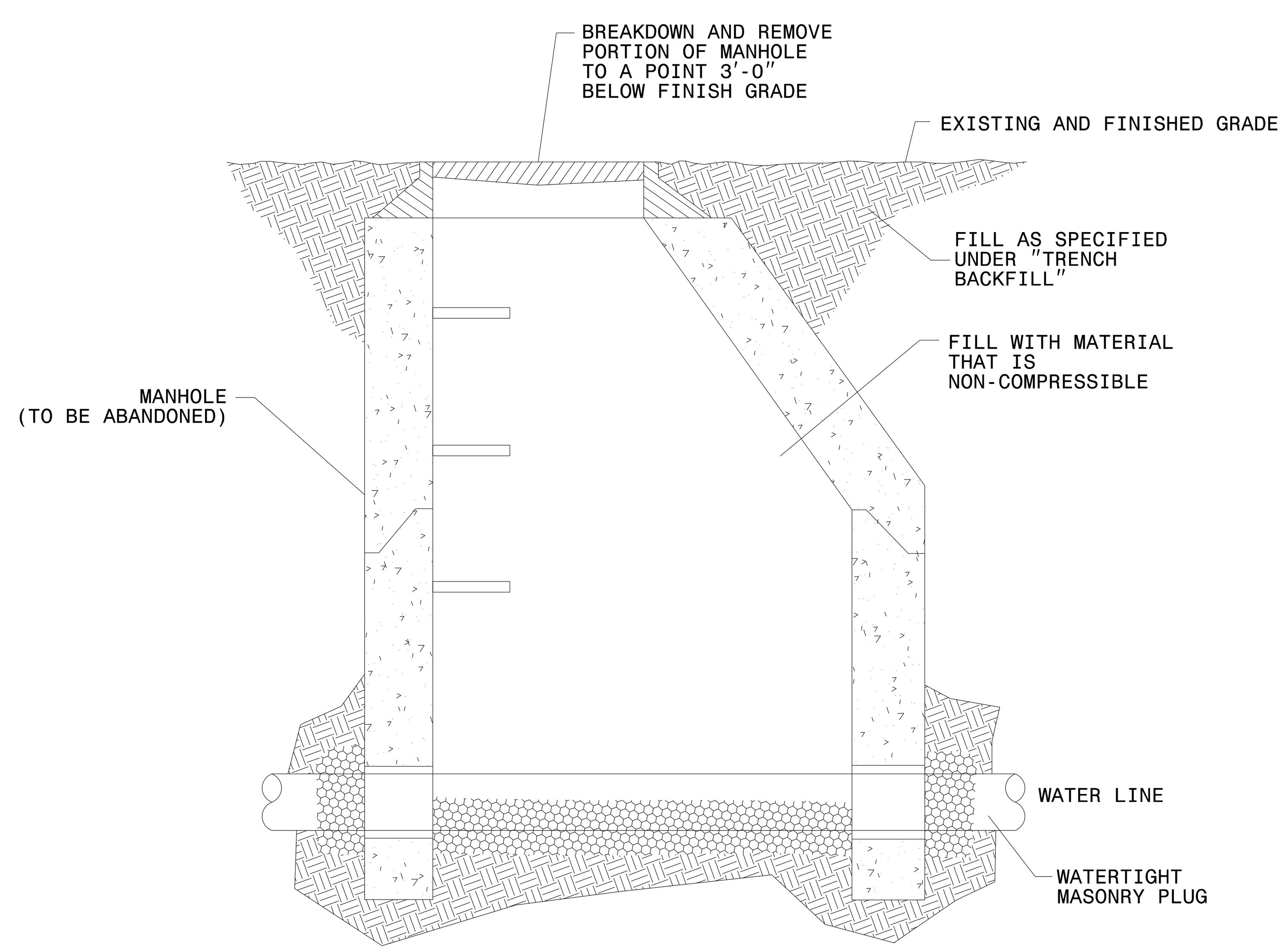
SHALLOW MANHOLE TYPE 1

NOT TO SCALE



SHALLOW MANHOLE TYPE 2

NOT TO SCALE

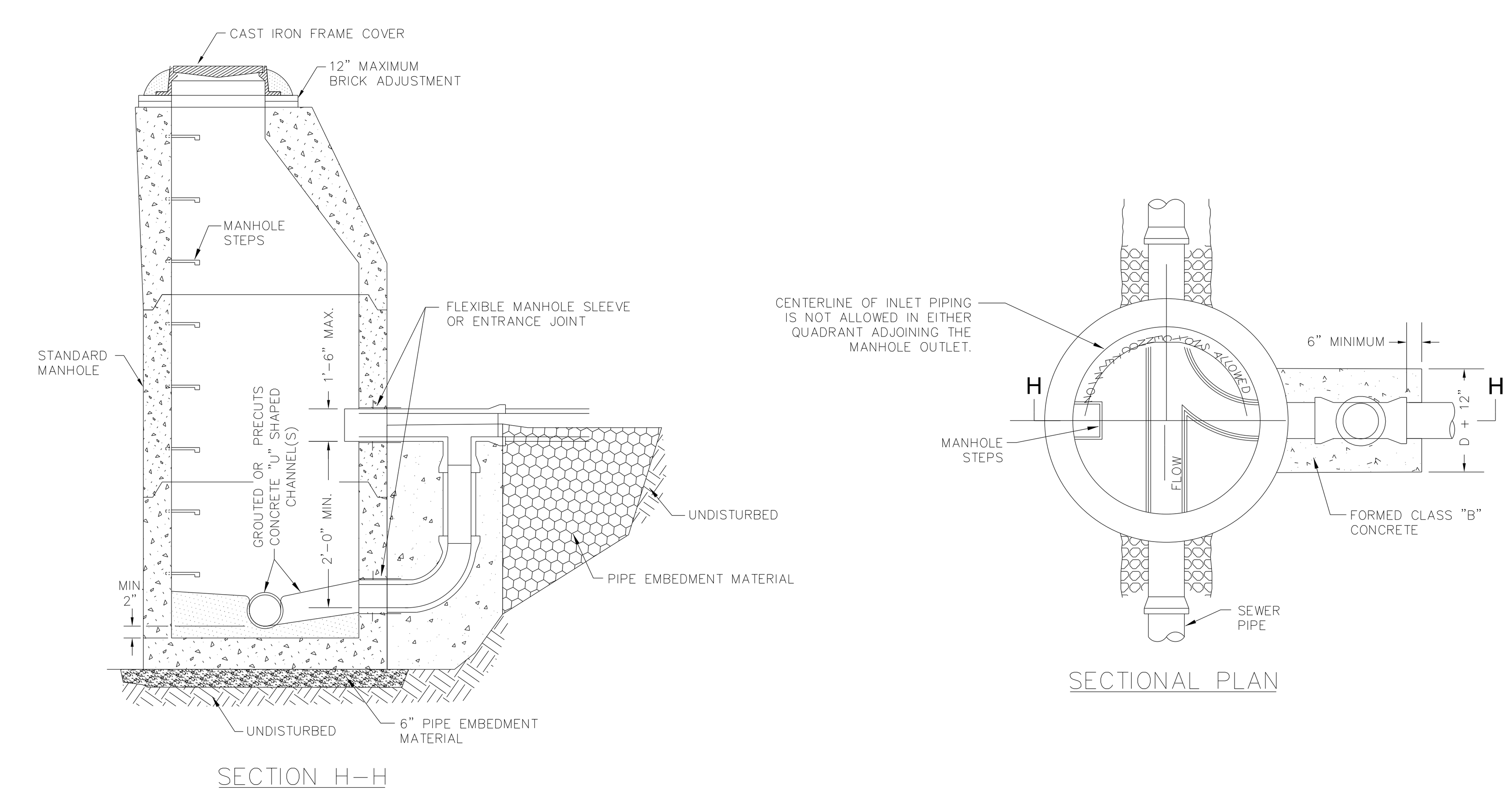


MANHOLE ABANDONMENT PROCEDURE

MANHOLES WHICH ARE TO BE ABANDONED WILL FIRST HAVE BOTH INFLUENT AND BOTH INFLUENT AND EFFLUENT LINES PLUGGED INSIDE THE MANHOLE WITH WATERTIGHT MASONRY. THE MINIMUM LENGTH OF WATERTIGHT MASONRY PLUGS WILL BE THE DIAMETER OF THE ABANDONED PIPE PLUS ONE FOOT. THE MANHOLE WILL THEN BE FILLED WITH INCOMPRESSIBLE MATERIAL (CRUSHED STONE OR AS APPROVED), TO A POINT THREE FEET (3'-0") BELOW THE FINISH GRADE. THE REMAINDER OF THE MANHOLE SHALL BE BROKEN DOWN AND REMOVED. THEN THE EXCAVATION SHALL BE BACKFILLED TO FINISH GRADE AS SPECIFIED UNDER TRENCH BACKFILL.

MANHOLE ABANDONMENT

NOT TO SCALE



NOTES:
1. MANHOLE STEPS TO BE VERTICALLY IN LINE WITH "INVERT OUT" FOR PIPE 18" AND LESS. OVER 18" TO BE LOCATED IN LINE WITH BENCH.
2. FOR MANHOLES LARGER THAN 4FT. DIA., MAINTAIN FULL MANHOLE DIA. TO 6FT. ABOVE INVERT BENCH.
3. FOR 5FT. AND 6FT. DIA. MANHOLES, USE A TRANSITION CONE TO REDUCE TO 4FT. DIA.
4. FOR 7FT. TO 10FT. DIA. MANHOLES, USE A TRANSITION TOP TO REDUCE TO 4FT. DIA.
5. INSTALL MASTIC ON MANHOLE LID WITHIN GROUT ON THE INSIDE AND OUTSIDE TO SEAL MANHOLES.

STANDARD MANHOLE

NOT TO SCALE

SANITARY SEWER DETAILS

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3/18/2025

UTILITY CONSTRUCTION PLANS ONLY

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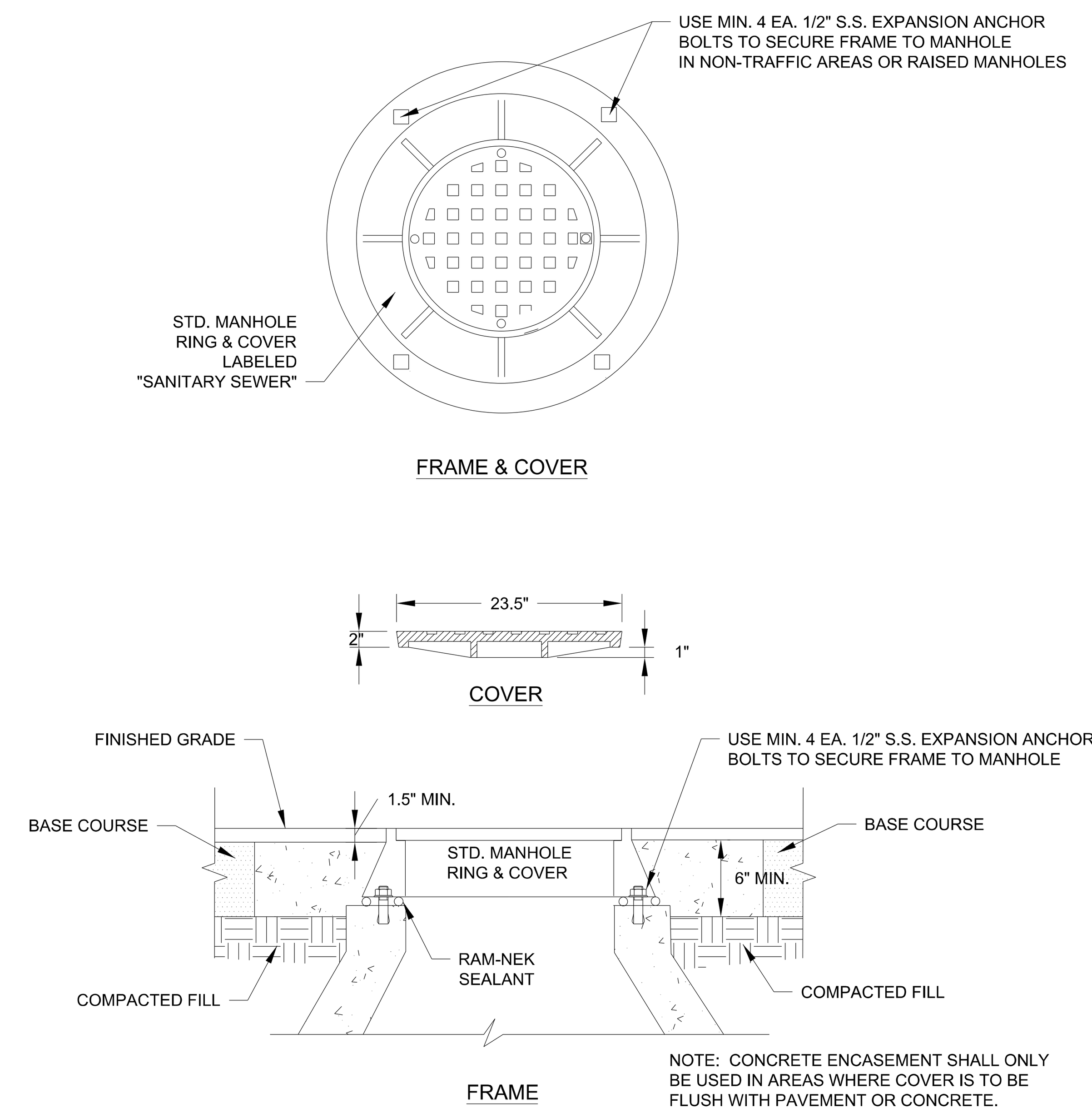
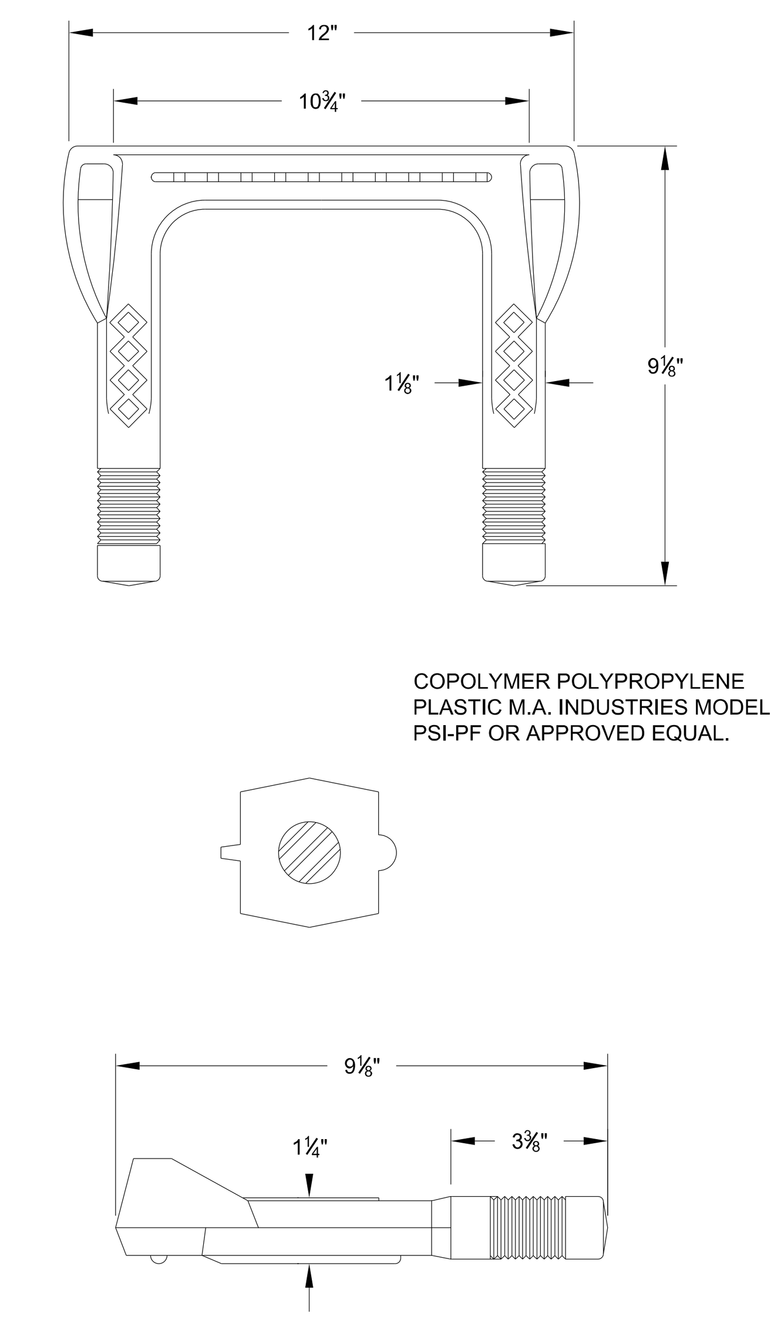


NOTE: CONCRETE ENCASEMENT SHALL ONLY BE USED IN AREAS WHERE COVER IS TO BE FLUSH WITH PAVEMENT OR CONCRETE. CONCRETE ENCASEMENT SHALL NOT BE USED IN NON-TRAFFIC AREAS AND ABOVE GRADE INSTALLATIONS. MANHOLES IN STREETS TO HAVE NO HOLE LIDS.

STANDARD MANHOLE FRAME & COVER

NOT TO SCALE



POLYPROPYLENE PLASTIC STEP

NOT TO SCALE

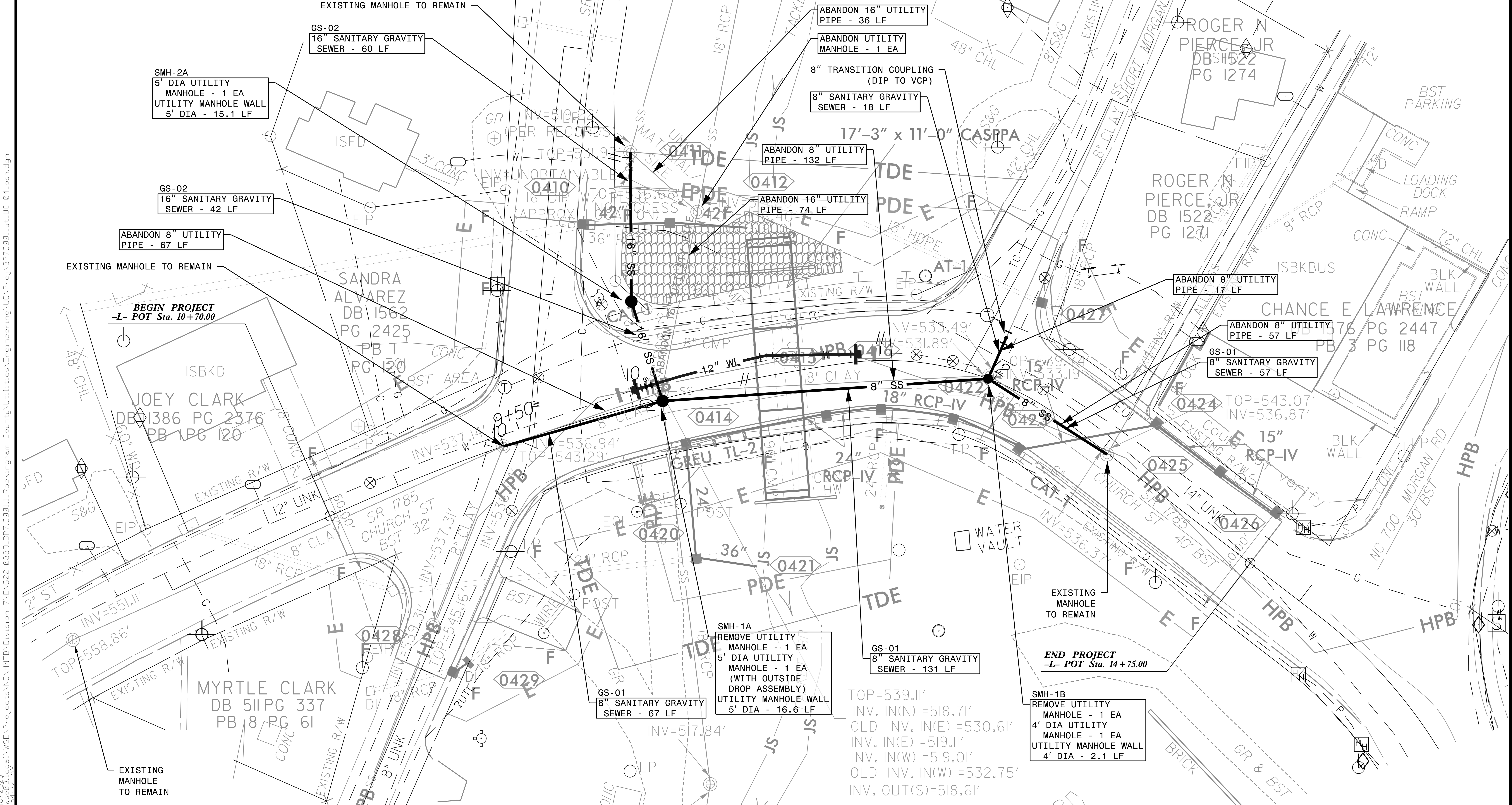
SANITARY SEWER DETAILS

GENERAL NOTES:

1. THIS SHEET ONLY PERTAINS TO SANITARY SEWER ITEMS. REFER TO SHEET UC-4A FOR WATER LINE RELATED ITEMS.
2. CONTRACTOR SHALL PERFORM PUMP AND HAUL OPERATIONS OR PUMPING OPERATIONS BETWEEN THE SANITARY MANHOLES ON EITHER SIDE OF THE CONSTRUCTION LIMITS FOR THE INSTALLATION OF THE PROPOSED CASPPA PIPE AS SHOWN ON THIS SHEET. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMIT.
3. AFTER THE INSTALLATION OF THE CASSPA PIPE, THE CONTRACTOR SHALL INSTALL THE 8" SANITARY GRAVITY SEWER IN CHURCH STREET TO RECONNECT THE SANITARY SEWER SYSTEM. REMOVE THE TEMPORARY PIPE PLUGS, TEMPORARY PIPING, AND PUMPS AS NEEDED TO PUT THE GRAVITY SEWER BACK INTO SERVICE.
4. AFTER THE GRAVITY SEWER RELOCATIONS HAVE BEEN COMPLETED, THEN THE WATER LINE IN CHURCH STREET SHALL BE CONSTRUCTED, TESTED, AND PLACED INTO SERVICE.
5. ACCORDING TO AS-BUILTS PROVIDED BY THE CITY OF EDEN, THE EXISTING 18" RCP GRAVITY SEWER NORTH OF CHURCH STREET IS ACTUALLY A 16" DIP, AND THE EXISTING 18" RCP GRAVITY SEWER SOUTH OF CHURCH STREET IS ACTUALLY AN 18" VCP.

THE ESTIMATED QUANTITY OF DUCTILE IRON SEWER PIPE FITTINGS ON THIS PLAN SHEET IS 65 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
CITY OF EDEN
EXISTING UTILITIES:
SEWER LINE: 8", 16"
WATER LINE: 6", 8", 10", 12"
CONTACT: BEVERLY O'DELL
PHONE: (336) 612-8035



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5/14/99
3/18/2025
\\wse03.local\WSE\Projects\NC\NCDOT\Division 7\ENG22-0889_BP7.C001_Rockingham County\Utilities\Engineering\UC\Proj\BP7C001_ut_UC-04_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UC-04A

DESIGNED BY: KCZ
DRAWN BY: KCZ
CHECKED BY: KSH
APPROVED BY: KSH
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Weston & Sampson
WSE of North Carolina, PC
2052 Energy Drive
Apex, NC 27502
Phone: 919.297.0220
westonandsampson.com
NC License: C-4647

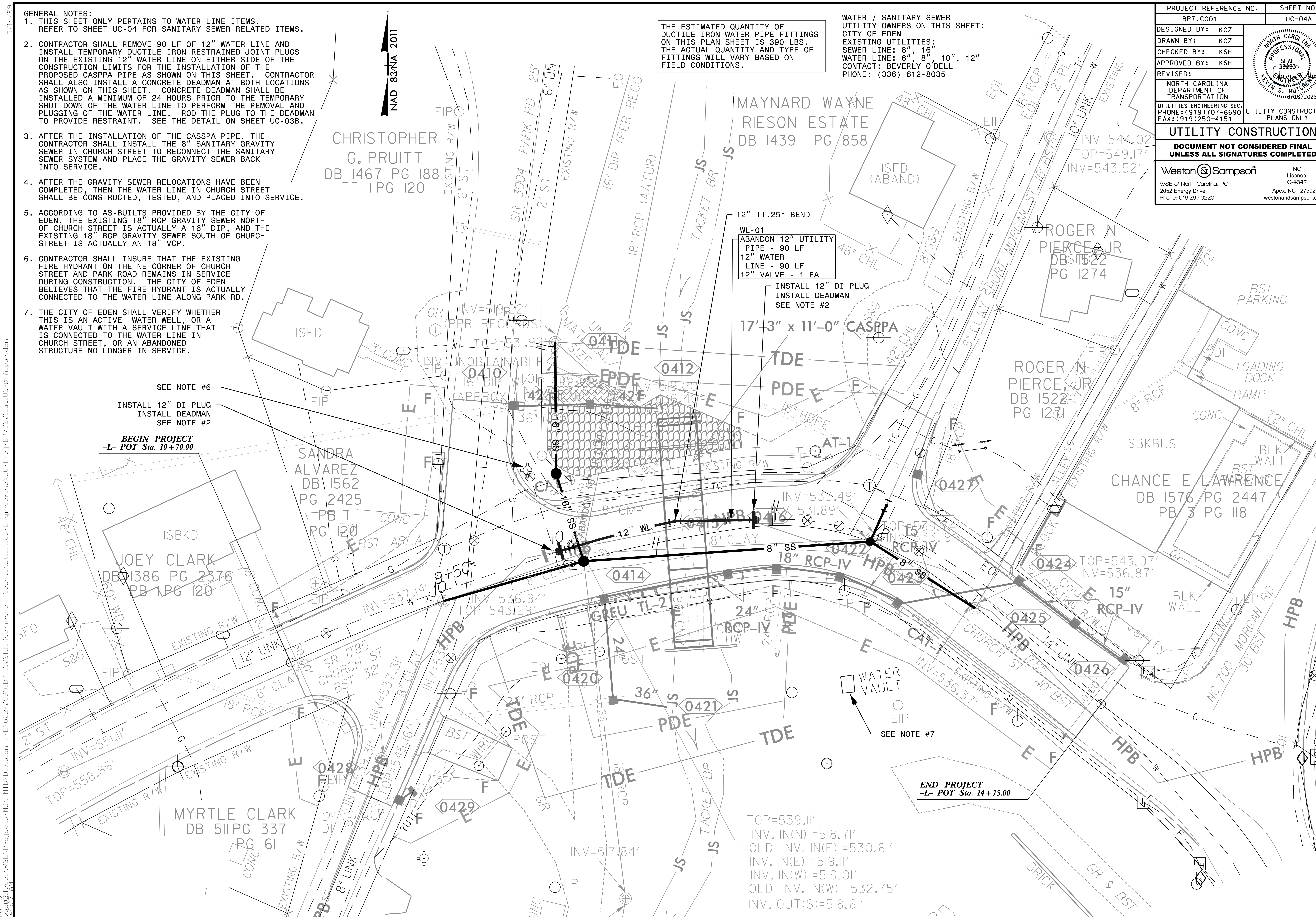
NORTH CAROLINA PROFESSIONAL SEAL 39285 ENGINEER KEVIN S. HUTCHENS 3/18/2025

GENERAL NOTES:

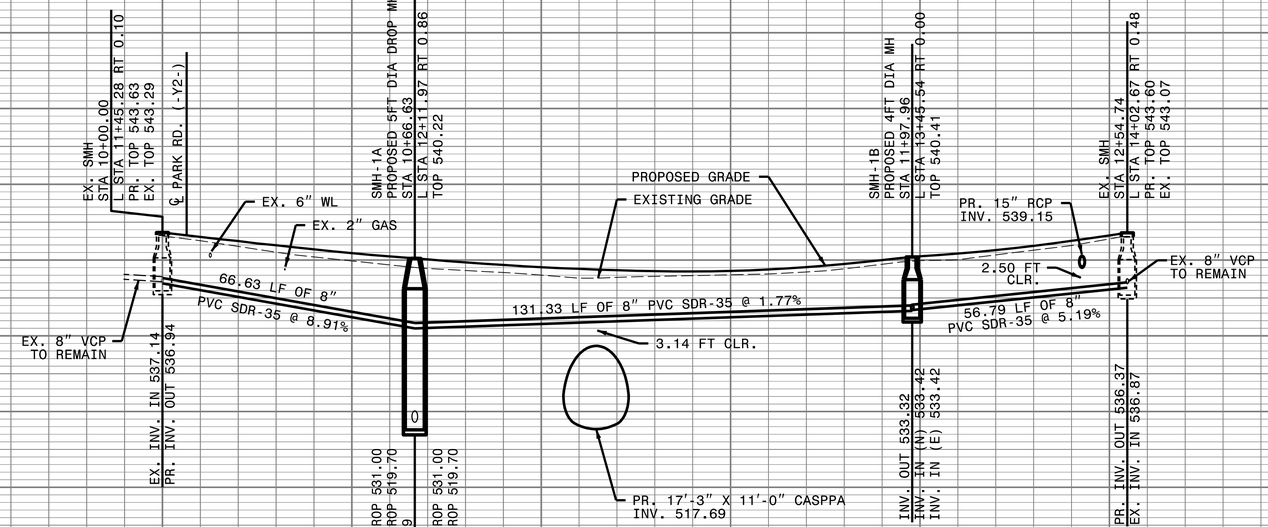
1. THIS SHEET ONLY PERTAINS TO WATER LINE ITEMS. REFER TO SHEET UC-04 FOR SANITARY SEWER RELATED ITEMS.
2. CONTRACTOR SHALL REMOVE 90 LF OF 12" WATER LINE AND INSTALL TEMPORARY DUCTILE IRON RESTRAINED JOINT PLUGS ON THE EXISTING 12" WATER LINE ON EITHER SIDE OF THE CONSTRUCTION LIMITS FOR THE INSTALLATION OF THE PROPOSED CASPPA PIPE AS SHOWN ON THIS SHEET. CONTRACTOR SHALL ALSO INSTALL A CONCRETE DEADMAN AT BOTH LOCATIONS AS SHOWN ON THIS SHEET. CONCRETE DEADMAN SHALL BE INSTALLED A MINIMUM OF 24 HOURS PRIOR TO THE TEMPORARY SHUT DOWN OF THE WATER LINE TO PERFORM THE REMOVAL AND PLUGGING OF THE WATER LINE. ROD THE PLUG TO THE DEADMAN TO PROVIDE RESTRAINT. SEE THE DETAIL ON SHEET UC-03B.
3. AFTER THE INSTALLATION OF THE CASSPA PIPE, THE CONTRACTOR SHALL INSTALL THE 8" SANITARY GRAVITY SEWER IN CHURCH STREET TO RECONNECT THE SANITARY SEWER SYSTEM AND PLACE THE GRAVITY SEWER BACK INTO SERVICE.
4. AFTER THE GRAVITY SEWER RELOCATIONS HAVE BEEN COMPLETED, THEN THE WATER LINE IN CHURCH STREET SHALL BE CONSTRUCTED, TESTED, AND PLACED INTO SERVICE.
5. ACCORDING TO AS-BUILTS PROVIDED BY THE CITY OF EDEN, THE EXISTING 18" RCP GRAVITY SEWER NORTH OF CHURCH STREET IS ACTUALLY A 16" DIP, AND THE EXISTING 18" RCP GRAVITY SEWER SOUTH OF CHURCH STREET IS ACTUALLY AN 18" VCP.
6. CONTRACTOR SHALL INSURE THAT THE EXISTING FIRE HYDRANT ON THE NE CORNER OF CHURCH STREET AND PARK ROAD REMAINS IN SERVICE DURING CONSTRUCTION. THE CITY OF EDEN BELIEVES THAT THE FIRE HYDRANT IS ACTUALLY CONNECTED TO THE WATER LINE ALONG PARK RD.
7. THE CITY OF EDEN SHALL VERIFY WHETHER THIS IS AN ACTIVE WATER WELL, OR A WATER VAULT WITH A SERVICE LINE THAT IS CONNECTED TO THE WATER LINE IN CHURCH STREET, OR AN ABANDONED STRUCTURE NO LONGER IN SERVICE.

THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 390 LBS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.

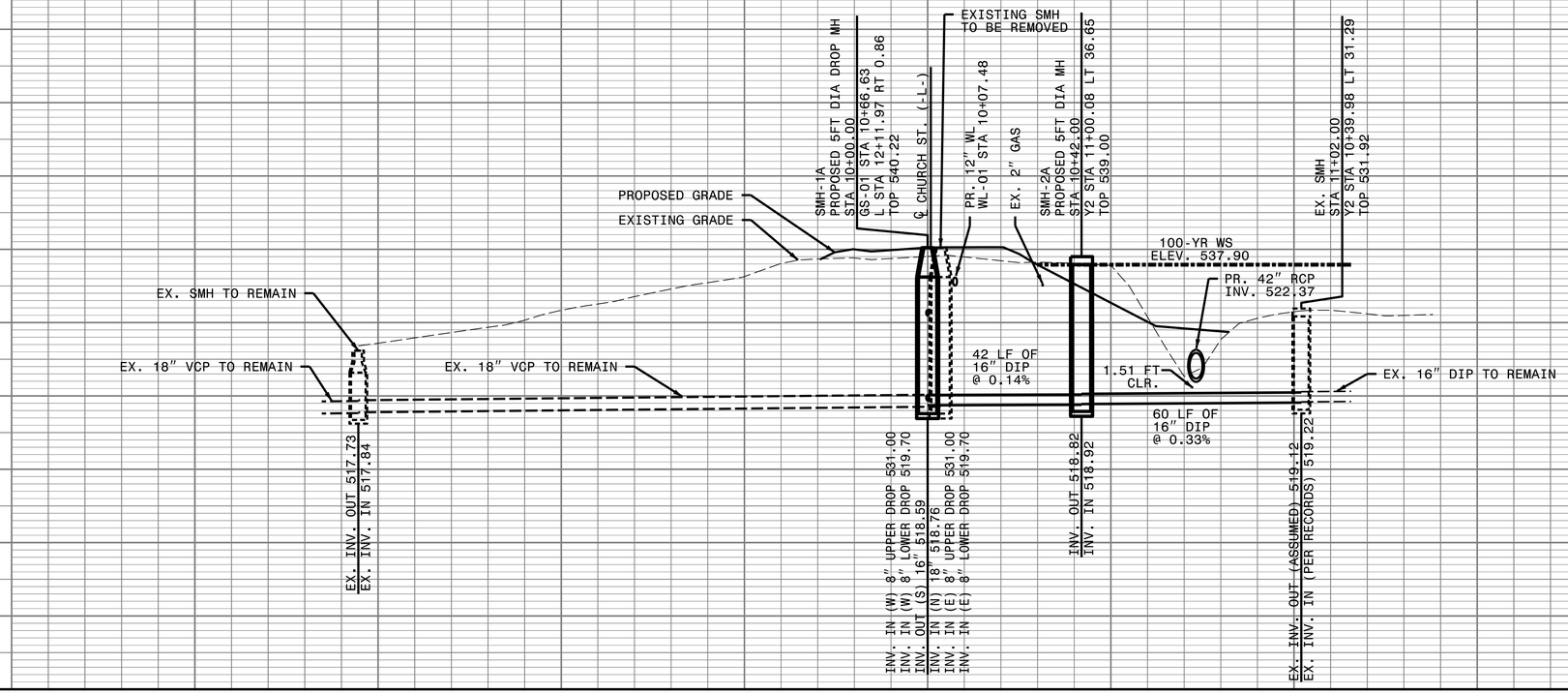
WATER / SANITARY SEWER UTILITY OWNERS ON THIS SHEET:
CITY OF EDEN
EXISTING UTILITIES:
SEWER LINE: 8", 16"
WATER LINE: 6", 8", 10", 12"
CONTACT: BEVERLY O'DELL
PHONE: (336) 612-8035



GRAVITY SEWER GS-01



GRAVITY SEWER GS-02



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PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UC-05
DESIGNED BY: KCZ	
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NORTH CAROLINA PROFESSIONAL SEAL 39263 ENGINEER KEVIN S. HUTCHENS
3/18/2025

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

20 10 0 20 40
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

NOTES:
1. PROPOSED SMH-1A SHALL HAVE TWO (2) OUTSIDE DROPS INSTALLED. ONE (1) OUTSIDE DROP FOR EACH OF THE 8" GRAVITY SEWERS ENTERING THE MANHOLE FROM THE WEST AND FROM THE EAST. REFER TO STANDARD MANHOLE DETAIL ON SHEET UC-03C.

5/28/99

WATER LINE WL-01

Weston & Sampson
WSE of North Carolina, PC
2052 Energy Drive
Apex, NC 27502
Phone: 919.287.0220
westonandsampson.com
NC License: C-4647

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UC-06

DESIGNED BY: KCZ
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FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 39283 KEVIN S. HUTCHENS 1/28/2025

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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PROFILE (HORIZONTAL)

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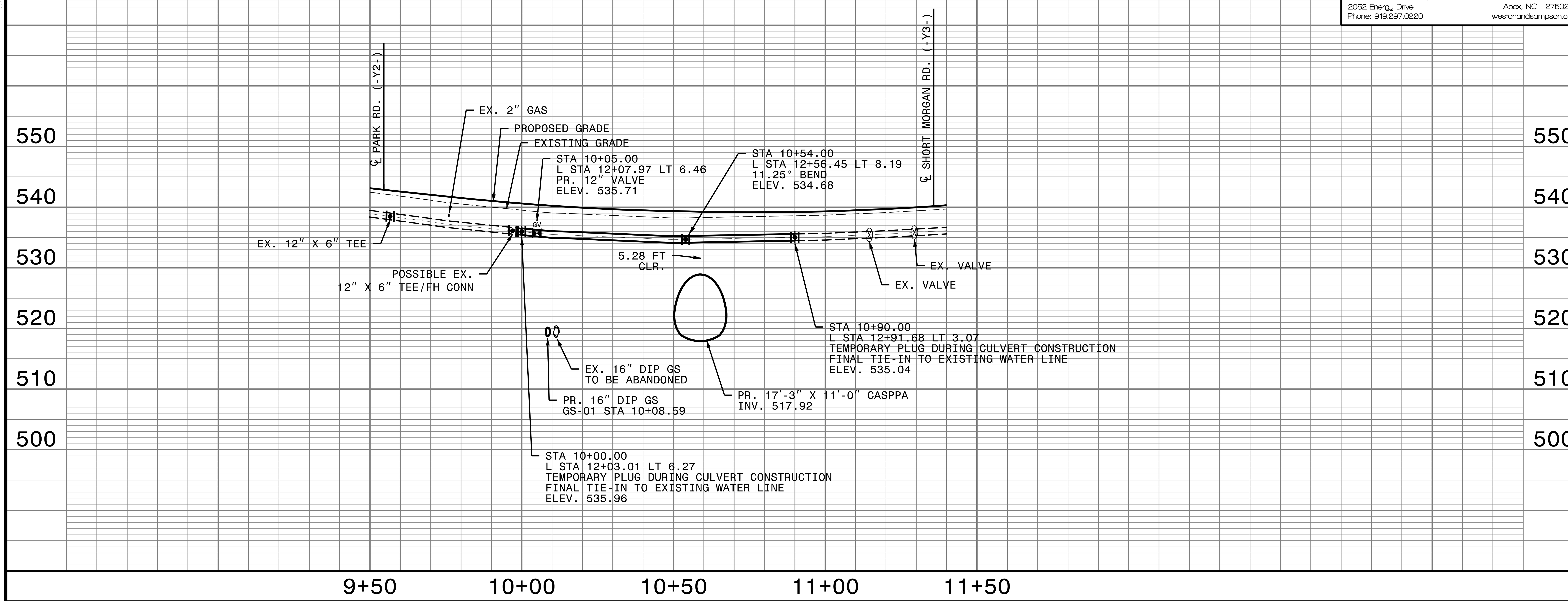
PROFILE (VERTICAL)



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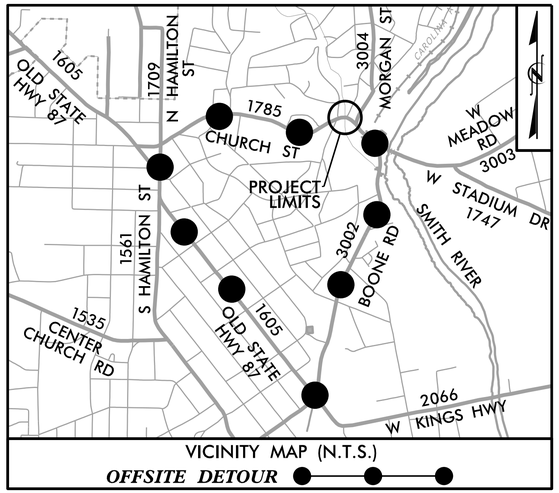
WBS PROJECT: BP7.C001



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

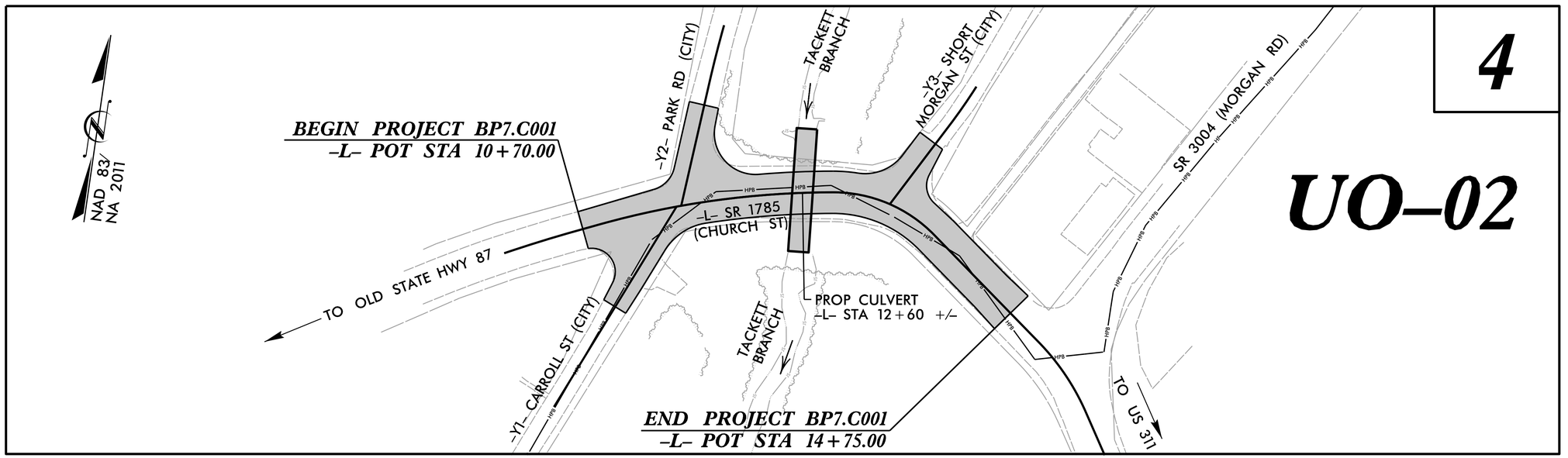
UTILITIES BY OTHERS PLANS ROCKINGHAM COUNTY

T.I.P. NO.	SHEET NO.
BP7.C001	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.

LOCATION: REPLACE EXISTING CULVERT ON SR 1785 (CHURCH ST)

TYPE OF WORK: COMMUNICATIONS AND GAS DISTRIBUTION



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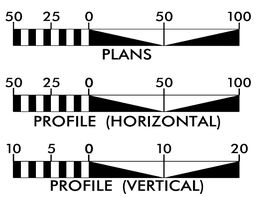
UO–02

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO–1	TITLE SHEET
UO–02	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) COMMUNICATIONS – BRIGHTSPEED
(B) GAS (DISTRIBUTION) – PNG

PREPARED IN THE OFFICE OF:

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Matthew Ward — PROJECT UTILITY COORDINATOR

DIVISION OF HIGHWAYS
DIVISION 7
DIV ADDRESS
1584 Yanceyville St
Greensboro, 27405

DANIEL R. DAGENHART — DIV BRIDGE PROGRAM MANAGER
WRIGHT P. ARCHER, III, PE — DIVISION ENGINEER
KELVIN S. MARTIN — DIV UTILITY ENGINEER

11/12/2024
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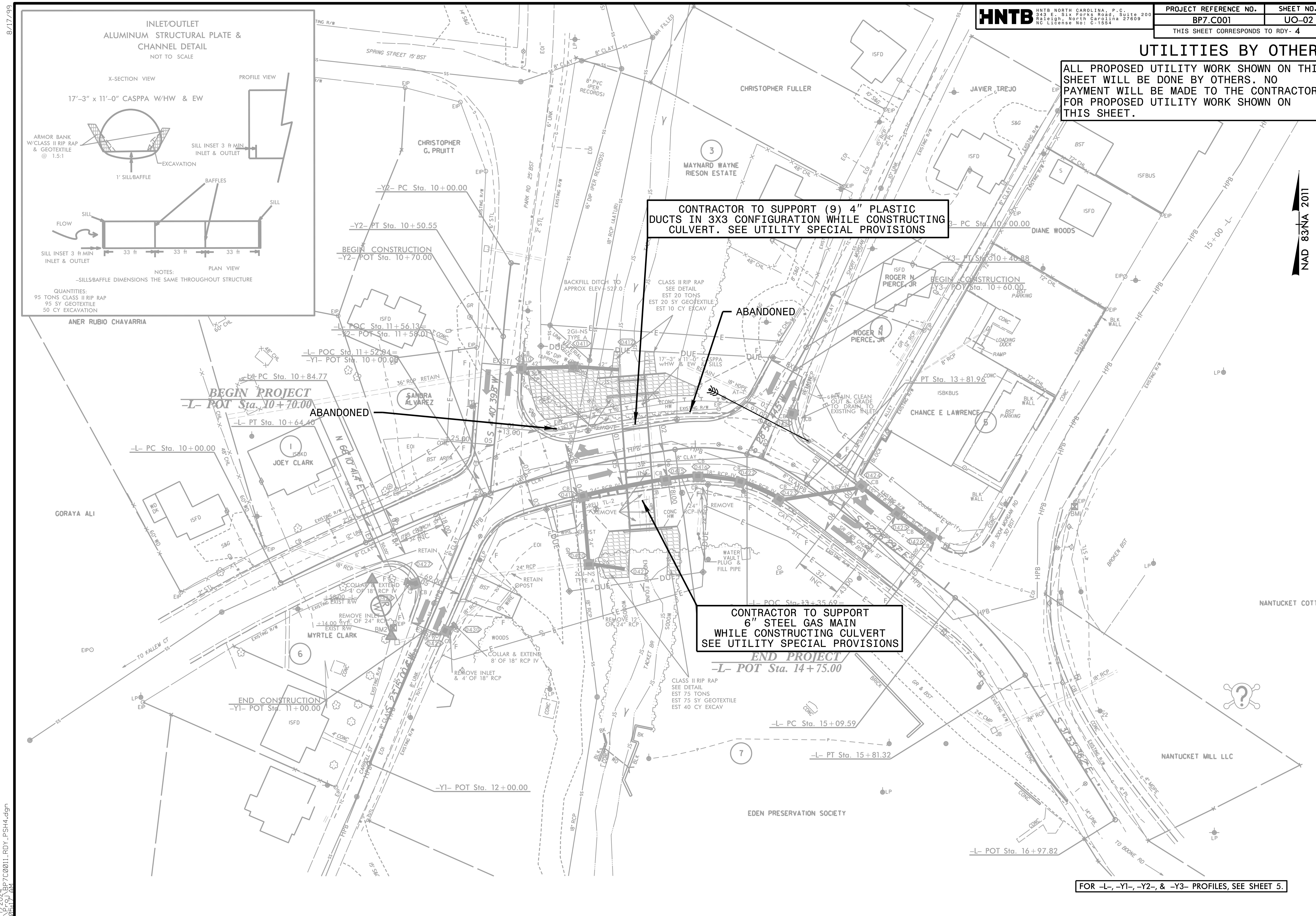
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
BP7.C001	UO-02

THIS SHEET CORRESPONDS TO RDY- 4

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.



INLET/OUTLET
ALUMINUM STRUCTURAL PLATE & CHANNEL DETAIL
NOT TO SCALE
X-SECTION VIEW
PROFILE VIEW
17'-3" x 11'-0" CASPPA W/HW & EW
ARMOR BANK W/CLASS II RIP RAP & GEOTEXTILE @ 1.5:1
EXCAVATION
1' SILL/BAFFLE
SILL INSET 3 ft MIN INLET & OUTLET
BAFFLES
SILL
FLOW
PLAN VIEW
NOTES:
-SILLS/BAFFLE DIMENSIONS THE SAME THROUGHOUT STRUCTURE
QUANTITIES:
95 TONS CLASS II RIP RAP
95 SY GEOTEXTILE
50 CY EXCAVATION
CONTRACTOR TO SUPPORT (9) 4" PLASTIC DUCTS IN 3X3 CONFIGURATION WHILE CONSTRUCTING CULVERT. SEE UTILITY SPECIAL PROVISIONS
ABANDONED
ABANDONED
CONTRACTOR TO SUPPORT 6" STEEL GAS MAIN WHILE CONSTRUCTING CULVERT SEE UTILITY SPECIAL PROVISIONS
BEGIN PROJECT -L- POT Sta. 10+70.00
END PROJECT -L- POT Sta. 14+75.00
BEGIN CONSTRUCTION -Y2- POT Sta. 10+70.00
BEGIN CONSTRUCTION -Y3- POT Sta. 10+60.00
END CONSTRUCTION -Y1- POT Sta. 11+00.00
CHRISTOPHER FULLER
JAVIER TREJO
CHRISTOPHER G. PRUITT
MAYNARD WAYNE RIESON ESTATE
DIANE WOODS
ROGER N PIERCE, JR
CHANCE E LAWRENCE
ANER RUBIO CHAVARRIA
SANDRA ALVAREZ
JOEY CLARK
GORAYA ALI
MYRTLE CLARK
NANTUCKET COTTON
NANTUCKET MILL LLC
EDEN PRESERVATION SOCIETY
NAD 83/NA 2011

FOR -L-, -Y1-, -Y2-, & -Y3- PROFILES, SEE SHEET 5.

8/17/99
2/7/2024
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