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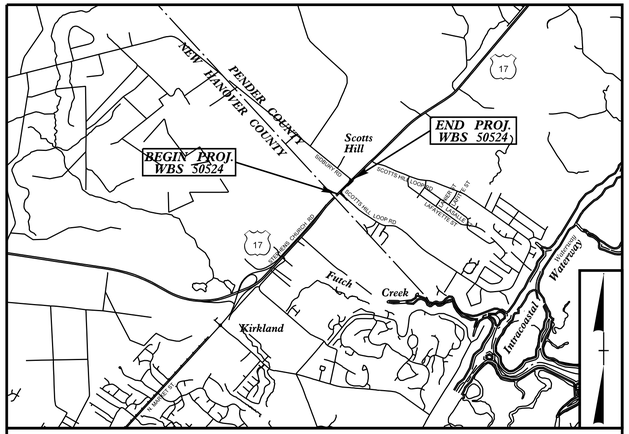
09/08/99

PROJECT: WBS 50524

CONTRACT: DC00504

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

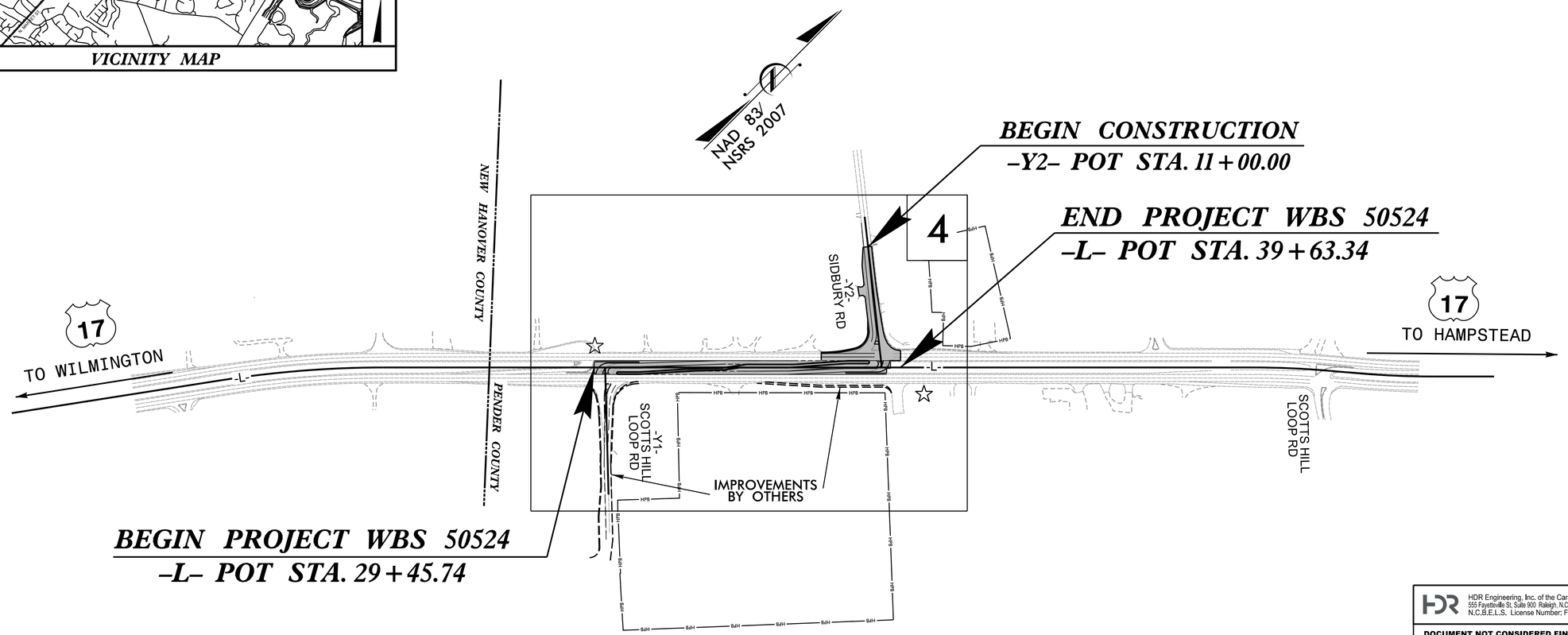
PENDER COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 50524	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
WBS 48864	N/A	PE/ROW/CONSTR.
WBS 50524	N/A	PE/ROW/CONSTR.

LOCATION: US 17 FROM SCOTTS HILL LOOP RD TO SIDBURY RD

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND SIGNALS.



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☆ MODIFIED SIGNAL

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2020 = 39,500
ADT =
K =
D =
T =
V = 60 MPH
* TTST =
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT WBS 50524 = 0.193 miles
TOTAL LENGTH PROJECT WBS 50524 = 0.193 miles

Prepared for the Office of:
HIGHWAY DIVIVSION 3
5501 Barbados Blvd., Castle Hayne NC, 28429

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: MAY 21, 2026

CASEY HARRIS, P.E.
PROJECT ENGINEER

HUNTER FREDERICK
PROJECT DESIGN ENGINEER

BRIAN HARDING, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042094 ENGINEER Joshua J. Massey

SIGNATURE: P.E. 4/13/2026

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

SIGNATURE: P.E. 4/13/2026

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

4/16/2026

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INDEX OF SHEETS

2024 ROADWAY STANDARD DRAWINGS

EFF. 08-11-2025
REV.

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
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
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction - with Curb and Gutter

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 MODIFIED METHOD III.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

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 AT&T, DUKE ENERGY, MCNC,

BRIGHTSPEED, CHARTER, PNG, SEGRA, METRONET, PLURIS, PENDER COUNTY, AND

CAPE FEAR PUBLIC UTILITY AUTHORITY.

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

REVISIONS

8/17/99

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9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	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)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- 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
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement — 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
- Proposed Slope Stakes Fill
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

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PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	5" MONOLITHIC CONCRETE ISLAND (KEYED IN).
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	2'-6" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	4" CONCRETE ISLAND COVER.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E2	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
J1	PROP. VAR. DEPTH AGGREGATE BASE COURSE.	V1	1.5" DEPTH ASPHALT MILLING

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

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PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	2A–1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038824 ENGINEER SHIHAI ZHANG

2/18/2026

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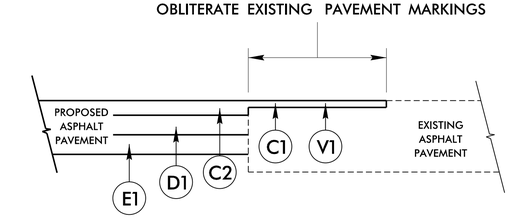
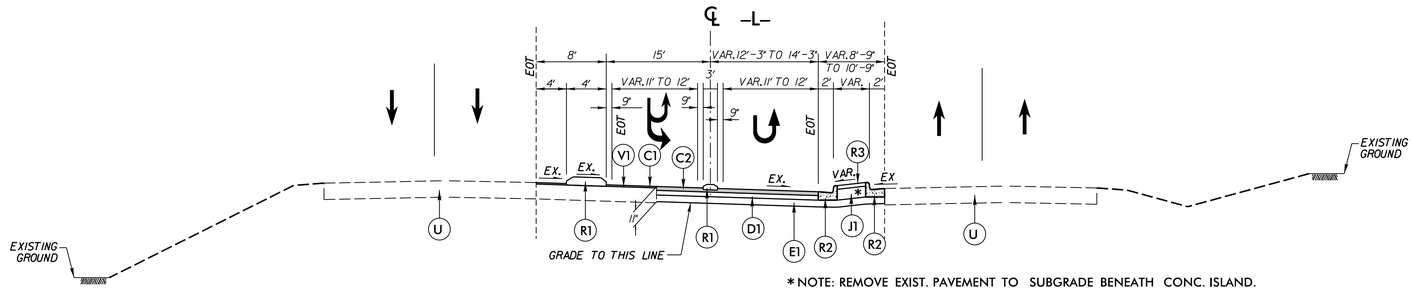
BENCH DETAIL FOR PAVEMENT WIDENING

TO BE APPLIED WHERE PROPOSED ASPHALT PAVEMENT IS INSTALLED ADJACENT TO EXISTING ASPHALT PAVEMENT





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WBS 50524	2A–2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038812 ENGINEER SHIHAI ZHANG

2/18/2026

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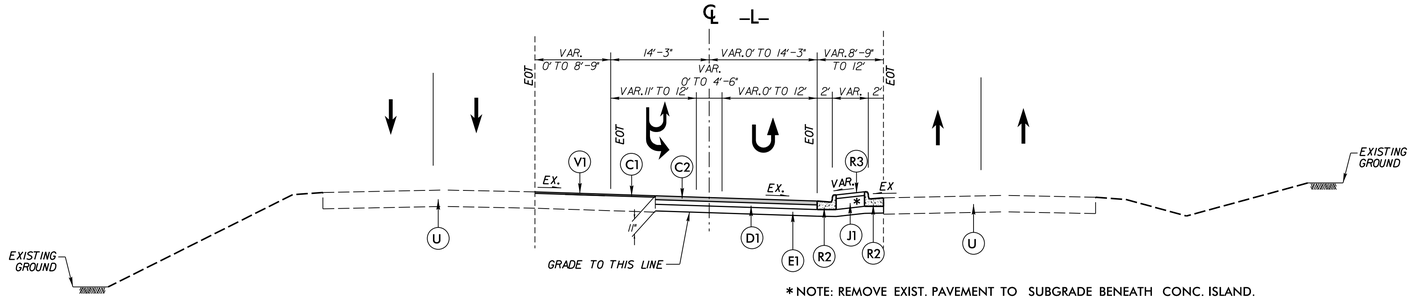
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5C
C2	3" S9.5C
D1	4" I19.0C
E1	4" B25.0C
E2	5.5" B25.0C
J1	VAR. DEPTH ABC
R1	5" MONO. CONC. ISLAND
R2	2'-6" CURB & GUTTER
R3	4" CONC. COVER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" DEPTH ASPHALT MILLING



*NOTE: REMOVE EXIST. PAVEMENT TO SUBGRADE BENEATH CONC. ISLAND.

TYPICAL SECTION NO. 2

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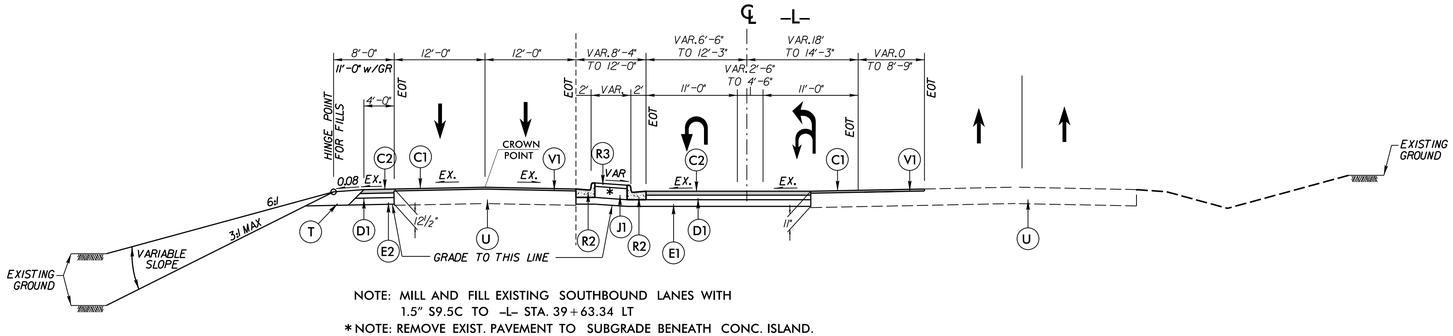
–L–	34+00.00	37+00.00 (REVERSE TYPICAL)



NOTE: MILL AND FILL EXISTING SOUTHBOUND LANES WITH 1.5" S9.5C TO –L– STA. 39+63.34 LT

*NOTE: REMOVE EXIST. PAVEMENT TO SUBGRADE BENEATH CONC. ISLAND.

TYPICAL SECTION NO. 3

LINE	FROM STATION	TO STATION
–L–	37+00.00	37+93.00

REVISIONS

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WBS 50524	2A–3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038812 ENGINEER SHIHAI ZHANG

2/18/2026

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PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	1.5" S9.5C
C2	3" S9.5C
D1	4" I19.0C
E1	4" B25.0C
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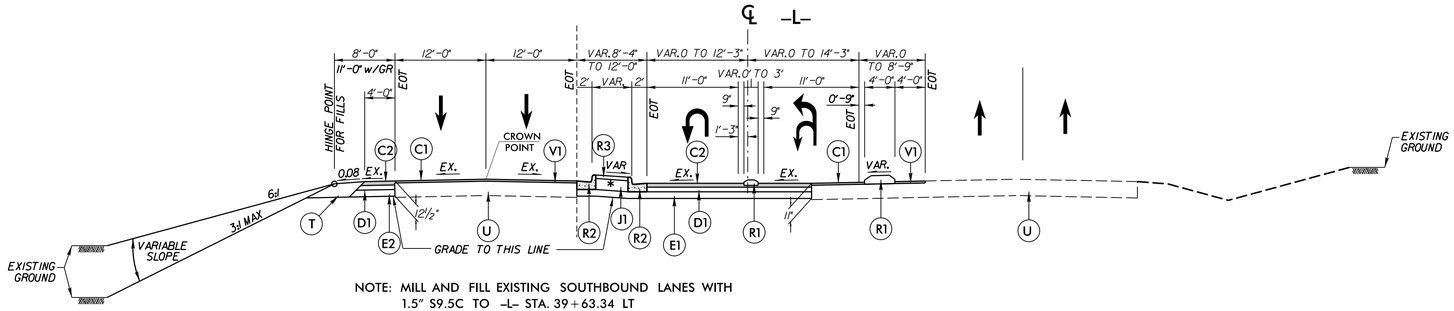
R1	5" MONO. CONC. ISLAND
R2	2'-6" CURB & GUTTER
R3	4" CONC. COVER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" DEPTH ASPHALT MILLING



NOTE: MILL AND FILL EXISTING SOUTHBOUND LANES WITH 1.5" S9.5C TO –L– STA. 39+63.34 LT

* NOTE: REMOVE EXIST. PAVEMENT TO SUBGRADE BENEATH CONC. ISLAND.

TYPICAL SECTION NO. 3

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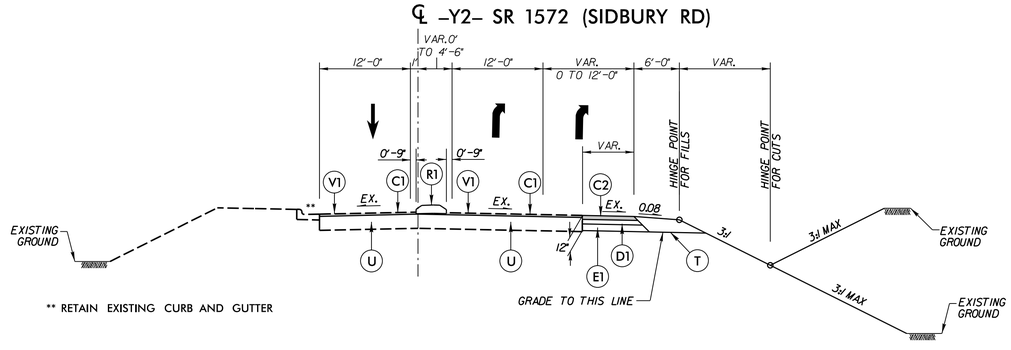
–L–	37+93.00	39+63.34



** RETAIN EXISTING CURB AND GUTTER

TYPICAL SECTION NO. 4

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REVISIONS

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R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

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N.C.B.E.L.S. License Number: F-0116

NAD 83/NSRS 2007

30+00

35+00

40+00

–L– POT
Sta. 39+01.09=
–Y2– POT
Sta. 15+03.75

–L– POT Sta. 29+81.78=
–Y1– POT Sta. 10+00.00
AHD BRG N 45° 12' 08.3" E

S 51° 17' 36.7" E

–Y2–

–L–

–Y1–

S 45° 28' 22.7" E

IMPROVEMENTS BY OTHERS

IMPROVEMENTS BY OTHERS

INTERSECTION DETAIL:
–L– US 17 w/
–Y1– SR 1571 (SCOTTS HILL LOOP) &
–Y2– SR 1572 (SIDBURY RD)

DRAWING NOT TO SCALE

☆ PROPOSED SIGNAL
PAVED SHOULDER
MONOLITHIC CONCRETE
CONCRETE COVER

REVISIONS

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FILE: \

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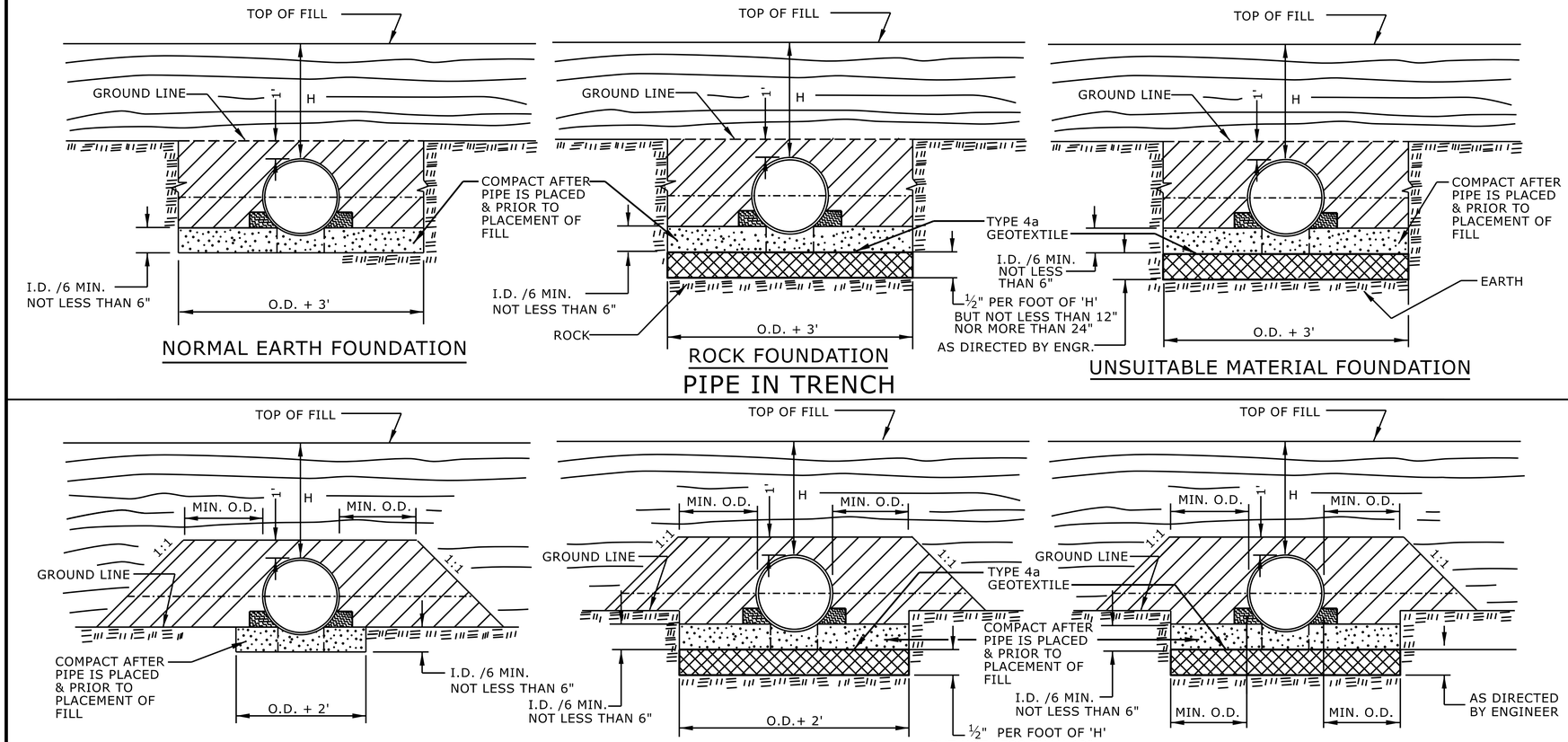
PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	2C-1



GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

NORTH CAROLINA PROFESSIONAL SEAL 032144 ENGINEER NICOLE M. HACKER

2/18/2026

SHEET 1 OF 2

300.01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

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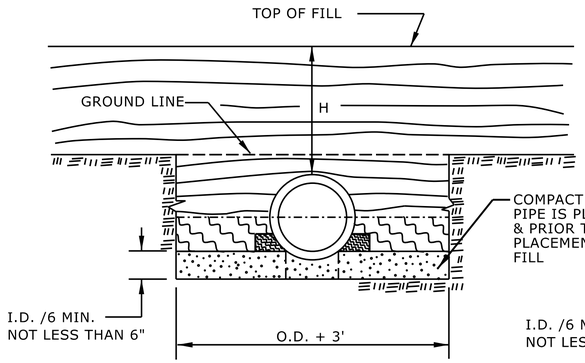
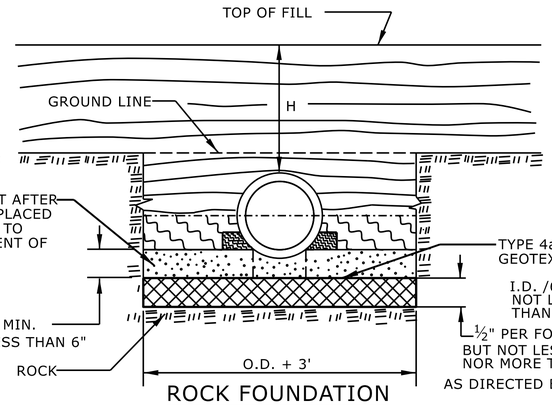
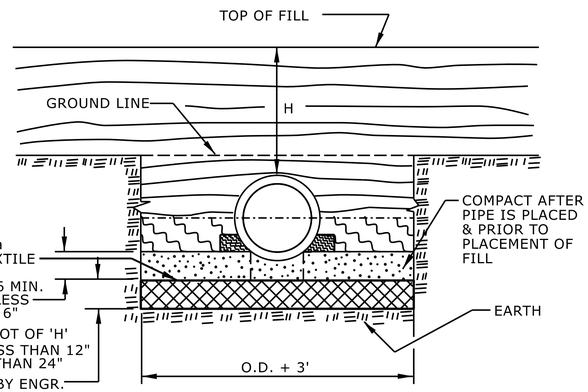


NORMAL EARTH FOUNDATION

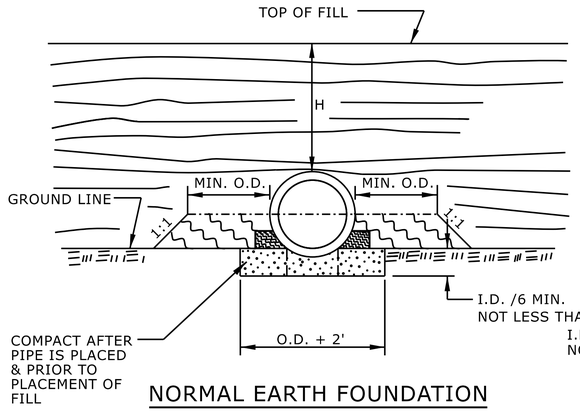


ROCK FOUNDATION

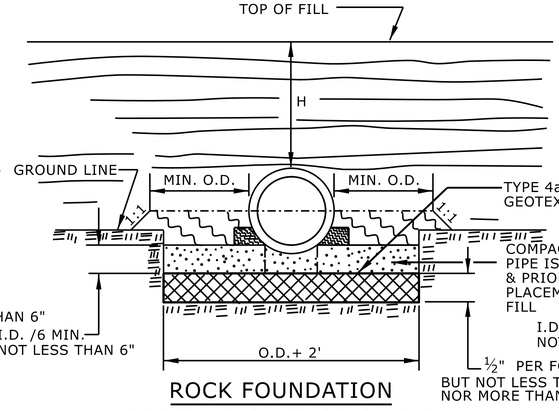


UNSUITABLE MATERIAL FOUNDATION

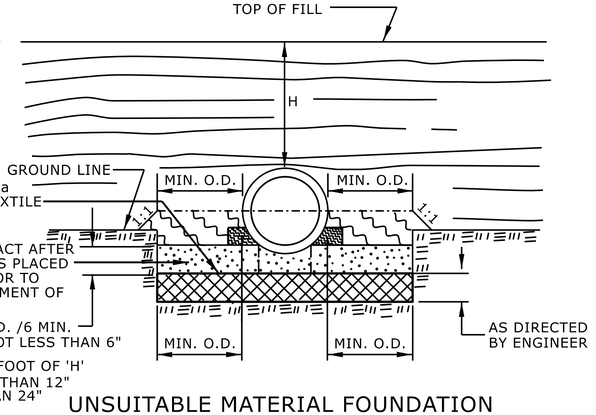
PIPE IN TRENCH



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

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SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

2/18/2026

SHEET 2 OF 2

300.01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

COMPUTED BY: _CH_____________ DATE: __7/10/25__
CHECKED BY: ________________ DATE: __________

PROJECT NO.	SHEET NO.
WBS 50524	3B-1

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
L	30+09	38+58	CL	798.23			
L	37+00	38+46	LT	87.56			
		TOTAL:		885.79			
		SAY:		890			

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
L Sta. 30+00	L Sta. 38+50	620	40		580
Y2 Sta. 11+00	Y2 Sta. 14+50	83	3		80
SUBTOTALS:		703	43	0	660
TOTALS:		703	43	0	660
Material for Shoulder Construction :					
Waste In Lieu of Borrow :					
PROJECT TOTALS:		703	43	0	660
Est. 5% To Replace Top Soil on Borrow Pit					
GRAND TOTALS:		703	43	0	660
SAY:		800			

Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

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

SHOULDER BORROW = 70 CY
EST. UNDERCUT = 100 CY
EST. SELECT GRANULAR MATERIAL = 100 CY
EST. GEOTEXTILE FOR SOIL STABILIZATION = 100 SY

5TYFPT3

COMPUTED BY:	JJM	**DATE:**	07/30/2025
CHECKED BY:	DWL	**DATE:**	07/31/2025

PROJECT NO.	SHEET NO.
WBS-50524	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".**

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	(RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
L 30+07	0 CL	0401		41.0																																	
		0401	EX		30.8	29.8																															
L 30+20	16 RT	0402		39.9																																	
		0402	0401		32.0	30.8																										28				
L 30+30	21 RT	0403		40.6																																	
		0403	0402		32.1	32.0																										12				
L 32+31	19 RT	0404		41.2																																	
		0404	0403		33.1	32.1																										192				
L 34+76	1 LT	0406		40.5																																	
		0406	0404		34.3	33.1																										244				
L 35+00	1 LT	0408		40.3																																	
		0408	0406		34.9	34.8																									24					
L 36+00	9 LT	0409		41.6																																	
		0409	0408		35.4	34.9																									100					
L 37+00	8 LT	0410		39.8																																	
		0410	0409		35.9	35.4																									100					
L 37+93	14 LT	0411		39.9																																	
		0411	0410		36.4	35.9																									92					
L 37+93	1 RT	0412		40.6																																	
		0412	0411		37.3	36.7																								12						
L 37+93	18 RT	0413		41.4																																	
		0413	0412		38.1	37.3																								16						
Y2 12+50	38 RT	0414			38.3	38.1																									64					
SHEET TOTALS																														28	380	476				
PROJECT TOTALS																														28	380	476				

QUANTITIES FOR DRAINAGE STRUCTURES — NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)

LINE & STATION	STRUCTURE NUMBER FROM	TO	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	0' THRU 5' EACH (A)	5' THRU 10' LIN. FT. (B)	10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	DRIVEWAY D.I. STD. 840.30	FRAME W/ GRATE FOR DRIVEWAY STD. 840.30	J.B. STD. 840.31 OR STD. 840.32	ANGLED VANE GRATES AND FRAMES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	PIPE CLEANOUT EA	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 30+07	0401					1	5.0	0.3					1				1	1																										
	0401	EX																																										Existing 24" Tie
L 30+20	0402					1	2.4		1		1			1																													73	
	0402	0401																																										
L 30+30	0403					1	3.4		1			1		1																													161	
	0403	0402																																										
L 32+31	0404					1	3.2		1			1		1																														
	0404	0403																																										
L 34+76	0406					1	1.2		1			1		1																														
	0406	0404																																										
L 35+00	0408					1	0.4		1	1				1																														
	0408	0406																																									242	
L 36+00	0409					1	1.2		1	1				1																														
	0409	0408																																										
L 37+00	0410					1			1	1				1																														
	0410	0409																																										
L 37+93	0411					1			1	1				1																														
	0411	0410																																										
L 37+93	0412					1							1				1	1																										
	0412	0411																																										
L 37+93	0413					1							1				1	1																										
	0413	0412																																										
Y2 12+50	0414																																										41	
SHEET TOTALS						11	16.8	0.3	8	4	1	3	3	8			3	3																									517	
PROJECT TOTALS						11	17.1		8	4	1	3	3	8			3	3																									517	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

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COMPUTED BY: Tyler C. Bottoms DATE: 1/13/25
CHECKED BY: Jinyoung Park DATE: 1/14/25

(2-3-23)

PROJECT NO.	SHEET NO.
WBS 50524	3G-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	50
				TOTAL LF:	50

*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

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PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040286 CASEY E. HARRIS 2/18/2026	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042094 JOSHUA J. MASSROCK 2/18/2026

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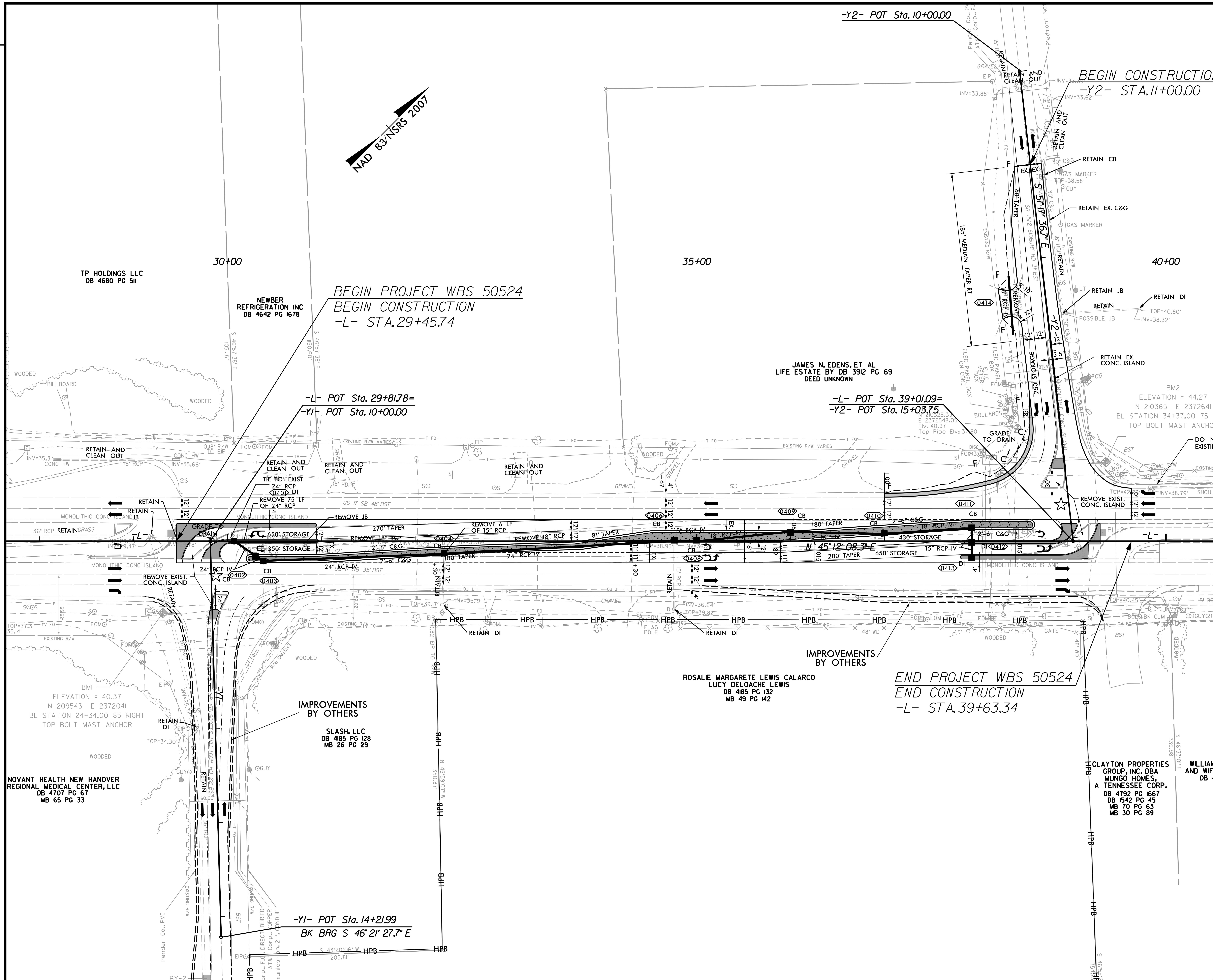
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116


NAD 83/NSRS 2007
-Y2- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y2- STA.11+00.00
BEGIN PROJECT WBS 50524
BEGIN CONSTRUCTION
-L- STA.29+45.74
30+00
35+00
40+00
TP HOLDINGS LLC
DB 4680 PG 511
NEWBER REFRIGERATION INC
DB 4642 PG 1678
JAMES N. EDENS, ET AL
LIFE ESTATE BY DB 3912 PG 69
DEED UNKNOWN
WESLEYAN CHAPEL UNITED METHODIST CHURCH
DB 4498 PG 240
MB 57 PG 1
-L- POT Sta. 29+81.78=
-Y1- POT Sta. 10+00.00
-L- POT Sta. 39+01.09=
-Y2- POT Sta. 15+03.75
BM2
ELEVATION = 44.27
N 210365 E 2372641
BL STATION 34+37.00 75 LEFT
TOP BOLT MAST ANCHOR
NO STAGING OF EQUIPMENT OR VEHICLE PARKING WITHIN HISTORIC BOUNDARY
DO NOT DISTURB EXISTING GUARDRAIL
185' MEDIAN TAPER RT
60' TAPER
250' STORAGE
S 51°17' 36.7" E
650' STORAGE
350' STORAGE
270' TAPER
180' TAPER
81' TAPER
430' STORAGE
200' TAPER
N 45°12' 08.3" E
REMOVE EXIST. CONC. ISLAND
IMPROVEMENTS BY OTHERS
ROSALIE MARGARETE LEWIS CALARCO
LUCY DELOACHE LEWIS
DB 4185 PG 132
MB 49 PG 142
END PROJECT WBS 50524
END CONSTRUCTION
-L- STA.39+63.34
BM1
ELEVATION = 40.37
N 209543 E 2372041
BL STATION 24+34.00 85 RIGHT
TOP BOLT MAST ANCHOR
NOVANT HEALTH NEW HANOVER REGIONAL MEDICAL CENTER, LLC
DB 4707 PG 67
MB 65 PG 33
SLASH, LLC
DB 4185 PG 128
MB 26 PG 29
-Y1- POT Sta. 14+21.99
BK BRG S 46°21' 27.7" E
PEANUT ROAD PROPERTIES LLC
DB 4540 PG 72
CLAYTON PROPERTIES GROUP, INC. DBA MUNGO HOMES, A TENNESSEE CORP.
DB 4792 PG 1667
DB 1542 PG 45
MB 70 PG 63
MB 30 PG 89
WILLIAM H SIMMONS II AND WIFE, GAIL SIMMONS
DB 4675 PG 834
PROPOSED SIGNAL
PAVED SHOULDER
MONOLITHIC CONCRETE
CONCRETE COVER
SEE SHEET NO. 5 FOR -L- PROFILE
SEE SHEET 2B-1 FOR DETAILED DIMENSIONS

REVISIONS

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FILE: \

Docusign Envelope ID: 1C09ECB9-54AB-40EE-840E-330EDE3A66ED

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

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042286 ENGINEER KASEY E HARRIS

2/18/2026

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042096 ENGINEER JOSHUA J MASSRON

2/18/2026

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REVISIONS

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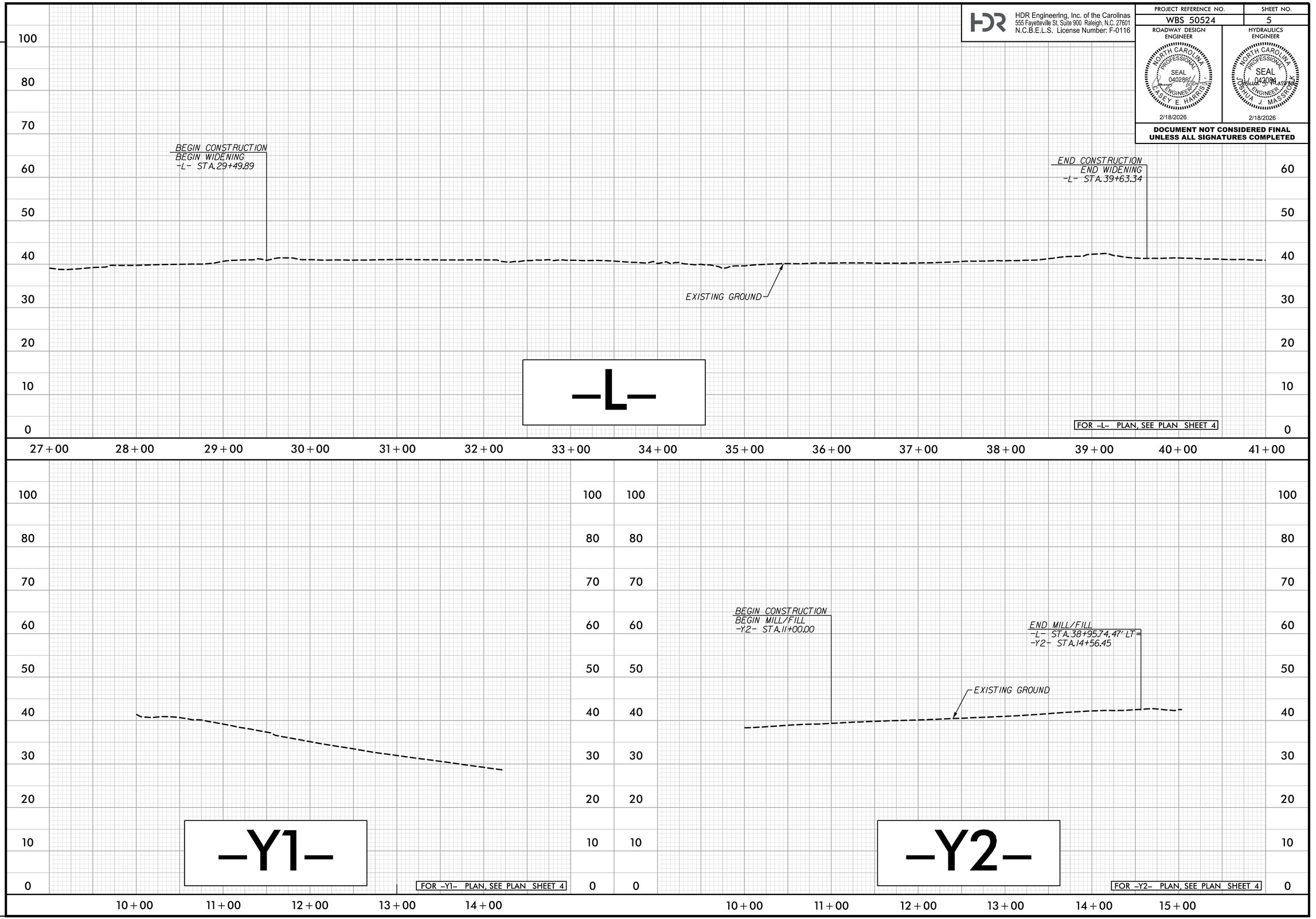


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 50524	RW01	02

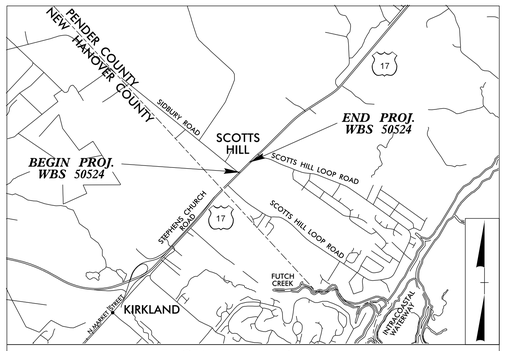
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL & EXISTING CENTERLINES,

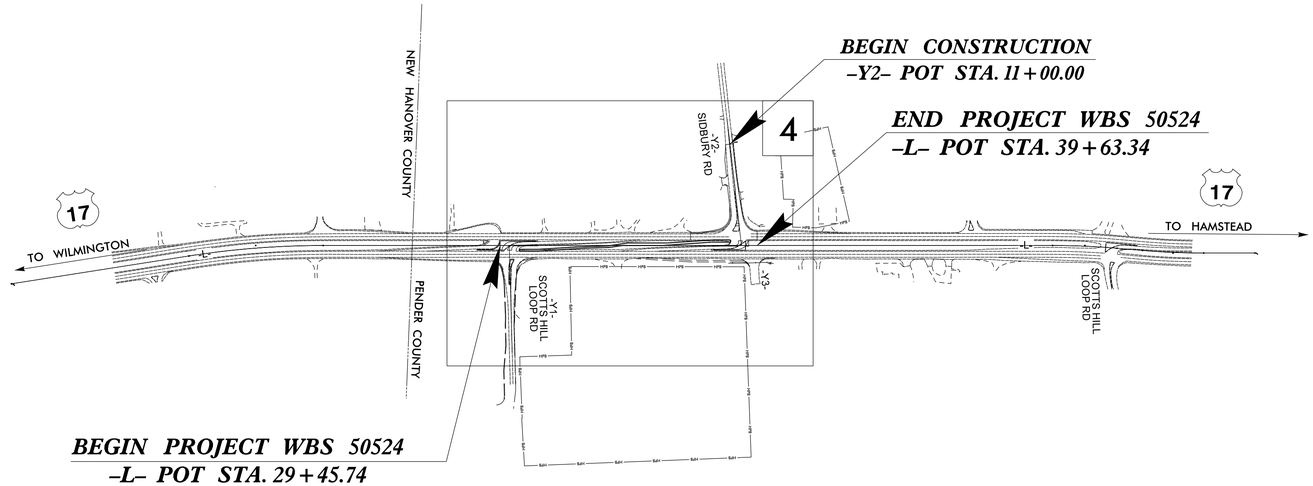
PENDER COUNTY

US 17 FROM SCOTTS HILL LOOP ROAD TO SIDBURY RD

(NO RIGHT OF WAY OR EASEMENTS ACQUIRED ON THIS PROJECT)



VICINITY MAP



GRAPHIC SCALE
SHEETS NOT
TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "P-122" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 205424.53(ft) EASTING: 2360493.54(ft) ELEVATION: 48.644(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000012368 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "P-122" TO -L- STATION 10+00.00 IS N 75-09'44.7" E 10590.91(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD, SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
N/A	*MAY 21, 2026*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DocuSigned by: Christopher Sawyer 9700CB2E1D21467...
04/17/2026

SIGNATURE: ***Date:***

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

PROJECT: WBS 50524

09/08/99

16-APR-2026 07:27
M:\Misc\Pender\US 17 at Scotts Hill\Working\ControlSheets\26046 revised RW01\48864_ls_rw01.dgn
mjduval AT LS-328725L

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	RW02C-1
Location and Surveys	

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

NC GRID NAD 83/NSRS 2007

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	208115.934	2370759.515							
LINE			N 36°17'16.3" E	711.00					
PC	208689.035	2371180.313							
CURVE			N 40°44'42.3" E	527.97	08°54'52.0"(RT)	01°41'12.2"	528.51	264.79	3396.87
PT	209089.039	2371524.919							
LINE			N 45°12'08.3" E	2888.70					
PC	211124.431	2373574.736							
CURVE			N 48°06'45.8" E	299.16	05°49'15.0"(RT)	01°56'41.6"	299.29	149.77	2945.97
PCC	211324.171	2373797.449							
CURVE			N 48°06'23.3" E	291.54	05°50'00.0"(LT)	02°00'00.0"	291.67	145.96	2864.79
PT	211518.846	2374014.468							
LINE			N 45°11'23.3" E	211.56					
POT	211667.945	2374164.558							

EY1

POINT	N	E	BEARING	DIST
POT	209610.161	2372049.734		
LINE			S 46°01'54.7" E	316.19
POT	209390.647	2372277.301		

EY2

POINT	N	E	BEARING	DIST
POT	210595.814	2372282.346		
LINE			S 51°17'36.7" E	538.98
POT	210258.774	2372702.943		

EY3

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	211278.902	2373742.858							
LINE			S 40°21'21.7" E	13.13					
PC	211268.894	2373751.362							
CURVE			S 59°07'21.2" E	263.87	37°31'59.0"(LT)	13°58'15.7"	268.65	139.34	410.10
PT	211133.475	2373977.834							

I, Christopher J. Sawyer, 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: RTN
Dates of survey: December 13, 2021
Datum/Epoch: NAD 83/ NSRS 2007
Published/Fixed-control use: N/A RTN
Localized around: P-122
Northing: 205424.53
Easting: 2360493.54
Combined grid factor: 1.000012368
Geoid model: G09NC
Units: Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed during December 2021 and all coordinates are based on NAD 83/2007 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 27th day of October, 2022.

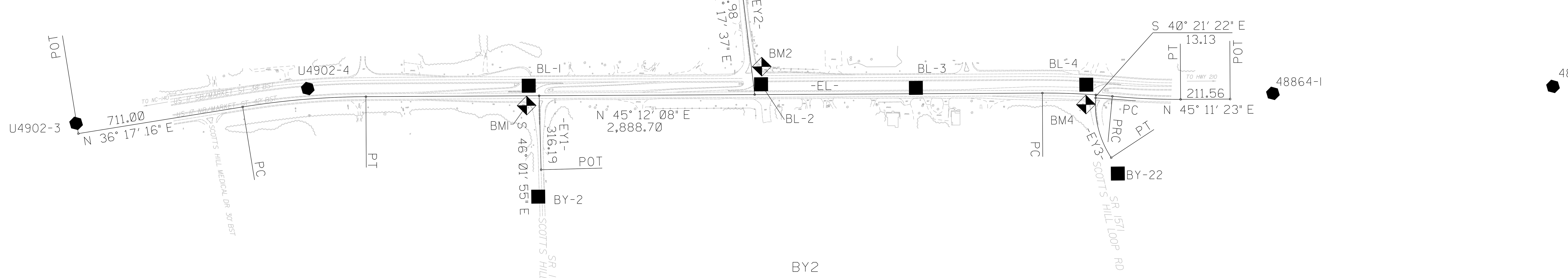
DocuSigned by:

Professional Land Surveyor L-4526

BM1 ELEVATION = 40.37
N 209543 E 2372041
TOP BOLT MAST ANCHOR

BM2 ELEVATION = 44.27
N 210365 E 2372641
TOP BOLT MAST ANCHOR

BM4 ELEVATION = 37.70
N 211220 E 2373742
TOP BOLT MAST ANCHOR



BL

POINT	DESC.	NORTH	EAST	ELEVATION
U4902-3	GPS CAP & REBAR	208140.3760	2370722.0540	47.94
U4902-4	GPS CAP & REBAR	208939.6100	2371323.4290	39.41
BL-1	TRV PK & WASHER	209609.5870	2371987.6560	41.23
BL-2	TRV CAP & REBAR	210309.3060	2372691.1710	41.59
BL-3	TRV CAP & REBAR	210761.6150	2373173.5050	38.25
BL-4	TRV CAP & REBAR	211281.2170	2373683.0040	36.46
48864-1	GPS CAP & REBAR	211813.2165	2374277.7239	27.92
48864-2	GPS CAP & REBAR	212672.6927	2375110.1244	39.47

BY1

POINT	DESC.	NORTH	EAST	ELEVATION
BL-1	TRV PK & WASHER	209609.5870	2371987.6560	41.23
BY-2	TRV CAP & REBAR	209299.9940	2372348.8430	26.36

BY2

POINT	DESC.	NORTH	EAST	ELEVATION
BY-11	TRV CAP & REBAR	210679.7240	2372150.2830	37.32
BL-2	TRV CAP & REBAR	210309.3060	2372691.1710	41.59

BY3

POINT	DESC.	NORTH	EAST	ELEVATION
BL-4	TRV CAP & REBAR	211281.2170	2373683.0040	36.46
BY-22	TRV CAP & REBAR	211104.8460	2374045.1190	27.96

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. THIS PROJECT SURVEYED AS 48864.

6/2/99

REVISIONS

02-NOV-2022 17:14
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cjsawyer AT LS-32869L

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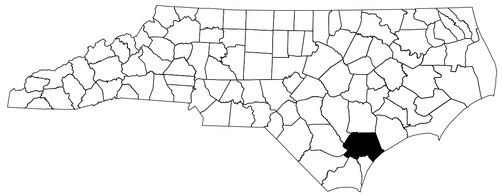
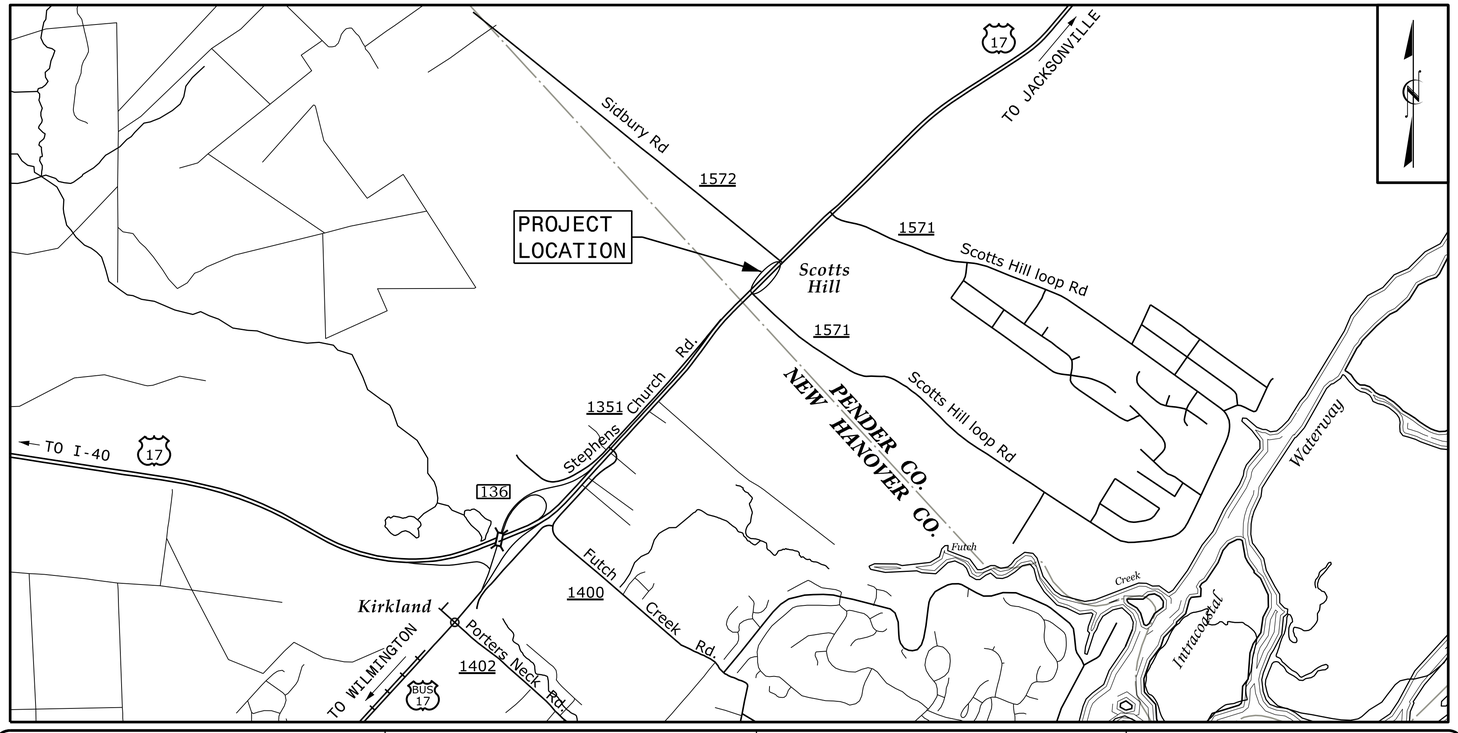
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

PENDER COUNTY



LOCATION: US 17 FROM SIDBURY RD TO SCOTTS HILL LOOP RD



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

PLANS PREPARED BY:

MIKE RZEPKA, P.E.
TRAFFIC CONTROL PROJECT ENGINEER

CHRIS HARNDEN
TRAFFIC CONTROL DESIGN ENGINEER

NCDOT CONTACTS:

BRIAN HARDING, P.E.
DIV. 3 PROJ. DEVELOPMENT UNIT

KARMEN MILLER, P.E.
EASTERN WZTC ENGINEER

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

INDEX OF SHEETS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: Michael T. Rzepka

DATE: 2/19/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15876 ENGINEER MICHAEL T. RZEPKA

SHEET NO.
TMP-1

WBS 50524

PROJECT NO.:

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ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
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
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY-DRUMS
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
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.15	PAVEMENT MARKINGS - SUPERSTREETS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	TMP-1A

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

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- WEDGING

SIGNALS

- EXISTING
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

APPROVED: Michael T. Rzepka

DATE: 2/19/2026

NORTH CAROLINA PROFESSIONAL SEAL 015876 ENGINEER MICHAEL T. RZEPKA

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	TMP-2

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

MANAGEMENT STRATEGIES

ALL WORK WILL BE COMPLETED USING LANE CLOSURES DURING ALLOWABLE TIME PERIODS.

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 RESTRICTIONS
-L- US 17	MONDAY TO SUNDAY 6:00 AM TO 8:00 PM

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

ROAD NAME

ALL ROADS

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 6:00 AM DECEMBER 31st TO 8:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 8:00 PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 8:00 PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 8:00 PM THE DAY AFTER INDEPENDENCE DAY.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) 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.

D) 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.

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

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON AN DIVIDED FACILITY,, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) 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.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

H) DO NOT INSTALL MORE THAN 1 MILE OF LANE CLOSURE ON -L- (US 17) MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON -L- (US 17).

J) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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.

L) 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) 500' IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

N) 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.

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

P) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) [LENGTH] 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.

S) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
-L- (US 17)	PAINT	NONE
-Y2- (SR 1572, SIDBURY RD)	PAINT	NONE

U) 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.

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

W) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

X) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATIONS. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS.

MISCELLANEOUS

Y) LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

APPROVED: Michael T. Rzepka

DATE: 5/13/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 015876 ENGINEER MICHAEL T RZEPKA

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

TRANSPORTATION OPERATIONS PLAN

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	TMP-3

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

NOTES:

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES. FIELD VERIFY LOCATIONS WITH THE RESIDENT ENGINEER PRIOR TO INSTALLATION.

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

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT NO PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE.

WHEN USING LANE CLOSURES (RSD 1101.02), RETURN TRAFFIC TO EXISTING AND/OR TEMPORARY TRAFFIC PATTERN UPON ACTIVITIES COMPLETION, UNLESS OTHERWISE NOTED IN THE PHASING PLANS.

WHEN PHASING STATES TO USE LANE CLOSURES, REFER TO THE FOLLOWING FOR ALL EXISTING AND PROPOSED ROADS:

-ALL TWO-LANE/TWO-WAY FACILITIES SEE RSD 1101.02 SHEET 1 OF 19

-ALL MULTI-LANE FACILITIES POSTED < 60 MPH SEE RSD 1101.02 SHEET 3 OF 19

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

PHASE 1

(STEPS 1 AND 2 CAN BE COMPLETED IN ANY ORDER)

STEP 1

USING LEFT LANE CLOSURES, COMPLETE CONSTRUCTION OF THE FOLLOWING.
IF CLOSING MEDIAN TURN LANES, DETOUR TRAFFIC TO NEXT MEDIAN TURNAROUND.
(TURN LANES MAY REMAIN CLOSED UNTIL SUFFICIENT CONCRETE CURING)

- TEMPORARY SIGNAL (03-0988T) AND ACTIVATE
- PROPOSED DRAINAGE
- MEDIAN WIDENING FROM -L- STA. 29+45± TO STA. 39+63±, INCLUDING CONCRETE MONOLITHIC ISLANDS.

STEP 2

USING RIGHT LANE CLOSURE ON US 17 NB OR SB (NOT SHOWN) AND/OR FLAGGERS ON -Y1- OR -Y2-, COMPLETE CONSTRUCTION OF THE FOLLOWING:

- TEMPORARY SIGNAL (03-0988T) AND ACTIVATE
- -Y2- STA. 11+00± RIGHT TO -L- STA. 37+00± LEFT, INCLUDING MONOLITHIC ISLAND
- MONOLITHIC ISLAND ON -Y1-

STEP 3

USING LANE CLOSURES, PERFORM THE FOLLOWING:

A) INSTALL FINAL SIGNALS (SEE SIGNAL PLANS) AT -L-/-Y1- AND -L-/-Y2- (MAY USE RSD 1101.03 SHEET 9 OF 9 FOR SIGNAL INSTALLATION)
B) PLACE TEMPORARY MARKINGS IN FINAL PATTERN AND SHIFT TRAFFIC TO FINAL PATTERN (SEE FINAL PAVEMENT MARKING PLAN). ACTIVATE FINAL SIGNALS.
C) MILL AND PLACE FINAL LAYER OF SURFACE COURSE.
D) PLACE THE FINAL PAVEMENT MARKINGS AND MARKERS ACCORDING TO THE FINAL PAVEMENT MARKING PLAN.

STEP 4

REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

APPROVED: Michael T. Rzepka
DATE: 5/13/2026
SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 015876 MICHAEL T RZEPKA

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

TEMPORARY TRAFFIC CONTROL PHASING

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	TMP-4

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

LEFT TURN LANES TO SR 1571 AND SR 1572 MAY REMAIN CLOSED UNTIL SUFFICIENT CONCRETE CURING

30+00 35+00 40+00

R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE
Ⓐ
REMOVE BARRICADE WHEN TURN LANE IS OPEN

R11-2
48" x 30"
ROAD CLOSED
W1-6R
48" x 24"
TYPE III BARRICADE
Ⓑ
REMOVE BARRICADE WHEN TURN LANE IS OPEN

-Y2- STA. 11+00+/-
BEGIN CONSTRUCTION

SR 1572 (SIDBURY RD)
-Y2-

STEP 2:
USING A RIGHT LANE CLOSURE (NOT SHOWN) ON US 17 SB AND/OR FLAGGERS ON -Y2-, COMPLETE CONSTRUCTION AND ANY SIGNAL WORK.

-L- STA. 39+63 +/-
END CONSTRUCTION

-L- STA. 29+45+/-
BEGIN CONSTRUCTION

TRAFFIC DRUMS
@ 55' SPACING

-L-
US 17

150'± OPENING
(MATCH EXISTING)
IF TURN LANE OPEN DURING LEFT LANE CLOSURE

TRAFFIC DRUMS
@ 10' SPACING

TRAFFIC DRUMS
@ 10' SPACING

135'± OPENING
(MATCH EXISTING)
IF TURN LANE OPEN DURING LEFT LANE CLOSURE

TRAFFIC DRUMS
@ 55' SPACING

INSTALL TEMPORARY SIGNAL 03-0988T

03-0987

03-0988T

-Y3-
ABBEY NAT. PRE.

STEP 1:
CLOSE THE LEFT LANE OF NB US 17 SOUTH OF THE -Y1- (SR 1571 - SCOTTS HILL LOOP RD) INTERSECTION, LEAVING A GAP IN THE DRUMS EQUAL TO THE EXISTING LEFT TURN TAPER TO RETAIN THE LEFT TURN FOR THE U-TURN MOVEMENT. COMPLETE THE MEDIAN WIDENING AND ANY SIGNAL WORK.

SR 1571 (SCOTTS HILL LOOP RD)
-Y1-

WHEN SHIFTING TRAFFIC TO FINAL PATTERN, PLACE TEMPORARY MARKINGS (PAINT) IN FINAL PATTERN (SEE FINAL PAVEMENT MARKING PLANS)

STEP 1:
CLOSE THE LEFT LANE OF SB US 17 NORTH OF THE LEFT TURN INTO ABBEY NAT. PRESERVE, LEAVING A GAP IN THE DRUMS EQUAL TO THE EXISTING LEFT TURN TAPER TO RETAIN THE LEFT TURN INTO ABBEY NAT. PRESERVE. COMPLETE THE MEDIAN WIDENING AND ANY SIGNAL WORK.

APPROVED: Michael T. Rzepka
DATE: 5/13/2026
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 015876 MICHAEL T. RZEPKA
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

PHASE 1

REVISIONS

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PROJECT: WBS 50524

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

PENDER COUNTY

LOCATION: US 17 FROM SCOTTS HILL LOOP RD TO SIDBURY RD

PROJECT NO.	SHEET NO.
WBS 50524	PMP-1

APPROVED: Casey Harris

DATE: 2/18/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01 (SHEETS 1 AND 3 ONLY. SEE PMP-1A FOR REVISED SHEET 2)	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
ALL ROADS	THERMOPLASTIC	POLYCARBONATE H-SHAPED SNOWPLOWABLE

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

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

D) 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.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	5,398	L.F.
4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	1,628	L.F.
4700000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (12", 90 MILS)	110	L.F.
4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	201	L.F.
4720000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTERS (90 MILS)	24	EA.
4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)	17	EA.
4895000000-N	SP	POLYCARBONATE H-SHAPED SNOWPLOWABLE MARKERS	109	EA.
4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	150	EA.

PLAN SUBMITTED TO: N.C.D.O.T. SIGNING AND DELINEATION UNIT

JESSI LEONARD, P.E. — DIVISION 3 TRAFFIC ENGINEER

MITCH EATON, P.E. — SIGNING & DELINEATION REGIONAL ENGINEER

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

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

CASEY HARRIS, P.E. — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

CHRIS HARNDEN — SIGNING & DELINEATION PROJECT DESIGN TECHNICIAN

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

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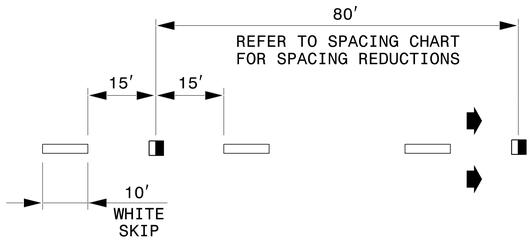
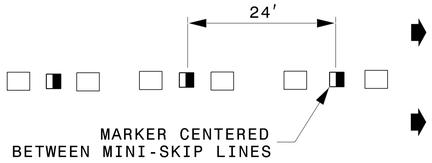
PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	PMP-1A

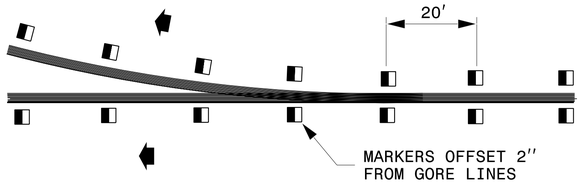
10′-30′/SP SKIP LINE



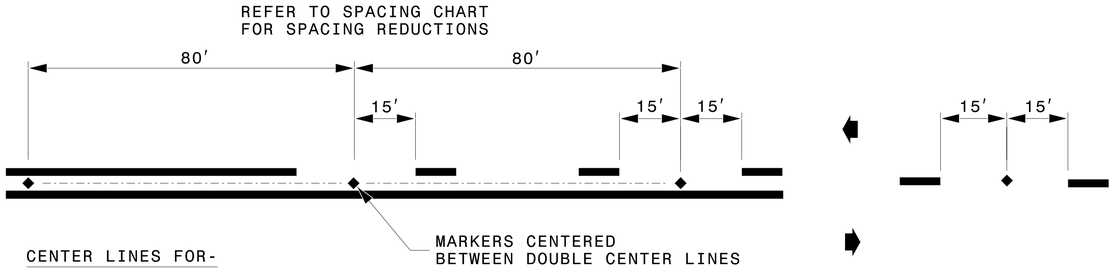
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

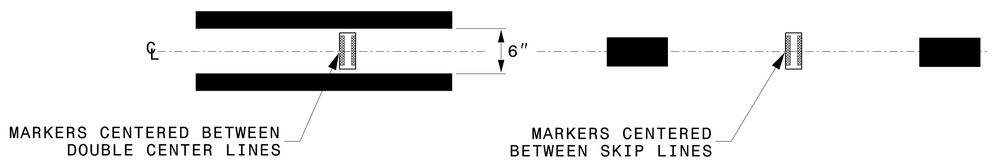


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY DETAIL DRAWING FOR

RAISED PAVEMENT MARKERS

INSTALLATION SPACING

SHEET 2 OF 3

1250D01

NORTH CAROLINA PROFESSIONAL SEAL 042546 ENGINEER MATTHEW V. SPRINGER

2/18/2026

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

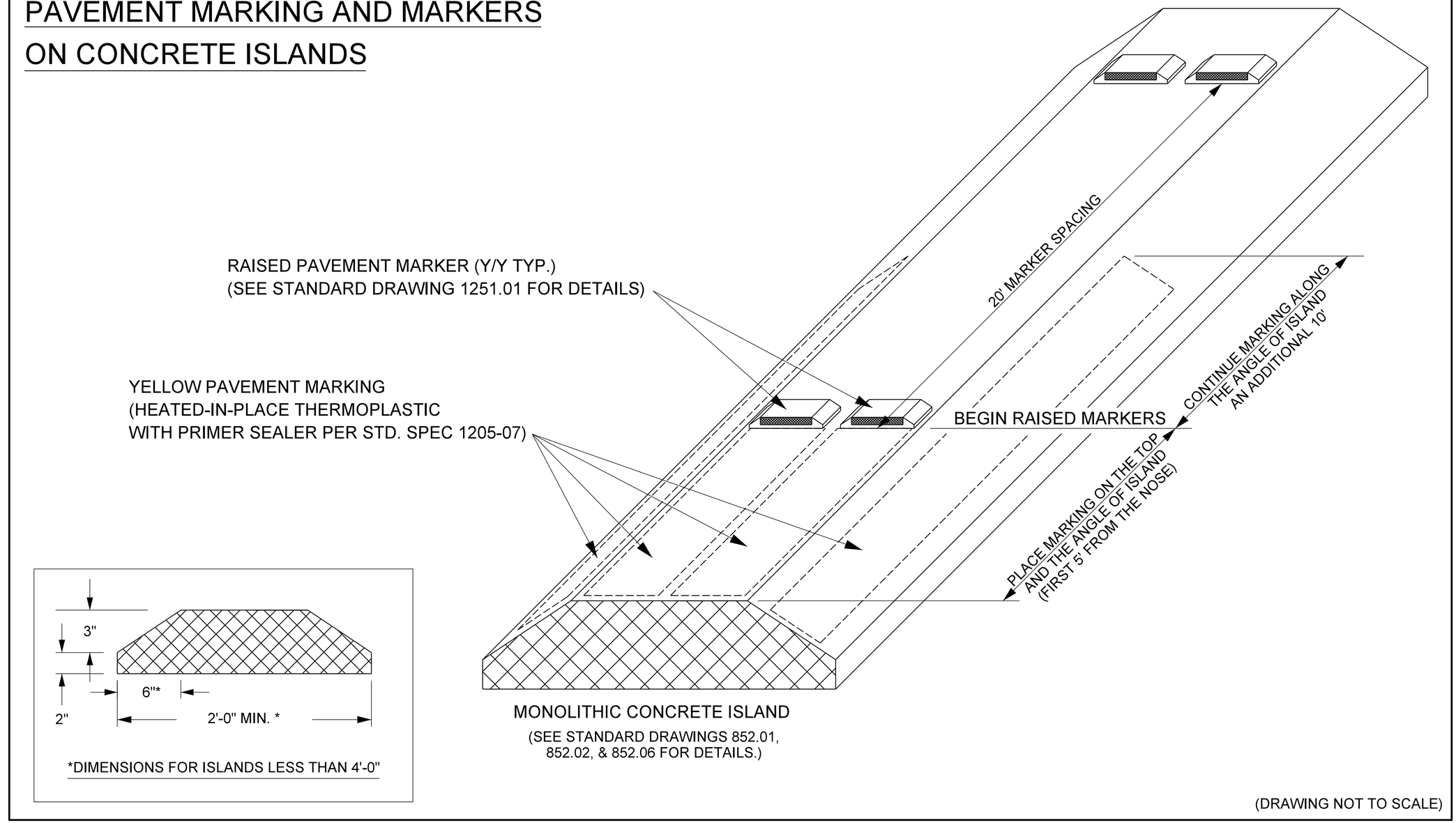
ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

Docusign Envelope ID: 21ABF2E2-EB55-430B-820E-0A5E1065E851

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	PMP-1B

PAVEMENT MARKING DETAIL

PAVEMENT MARKING AND MARKERS ON CONCRETE ISLANDS



MONOLITHIC CONCRETE ISLAND

(SEE STANDARD DRAWINGS 852.01, 852.02, & 852.06 FOR DETAILS.)

(DRAWING NOT TO SCALE)

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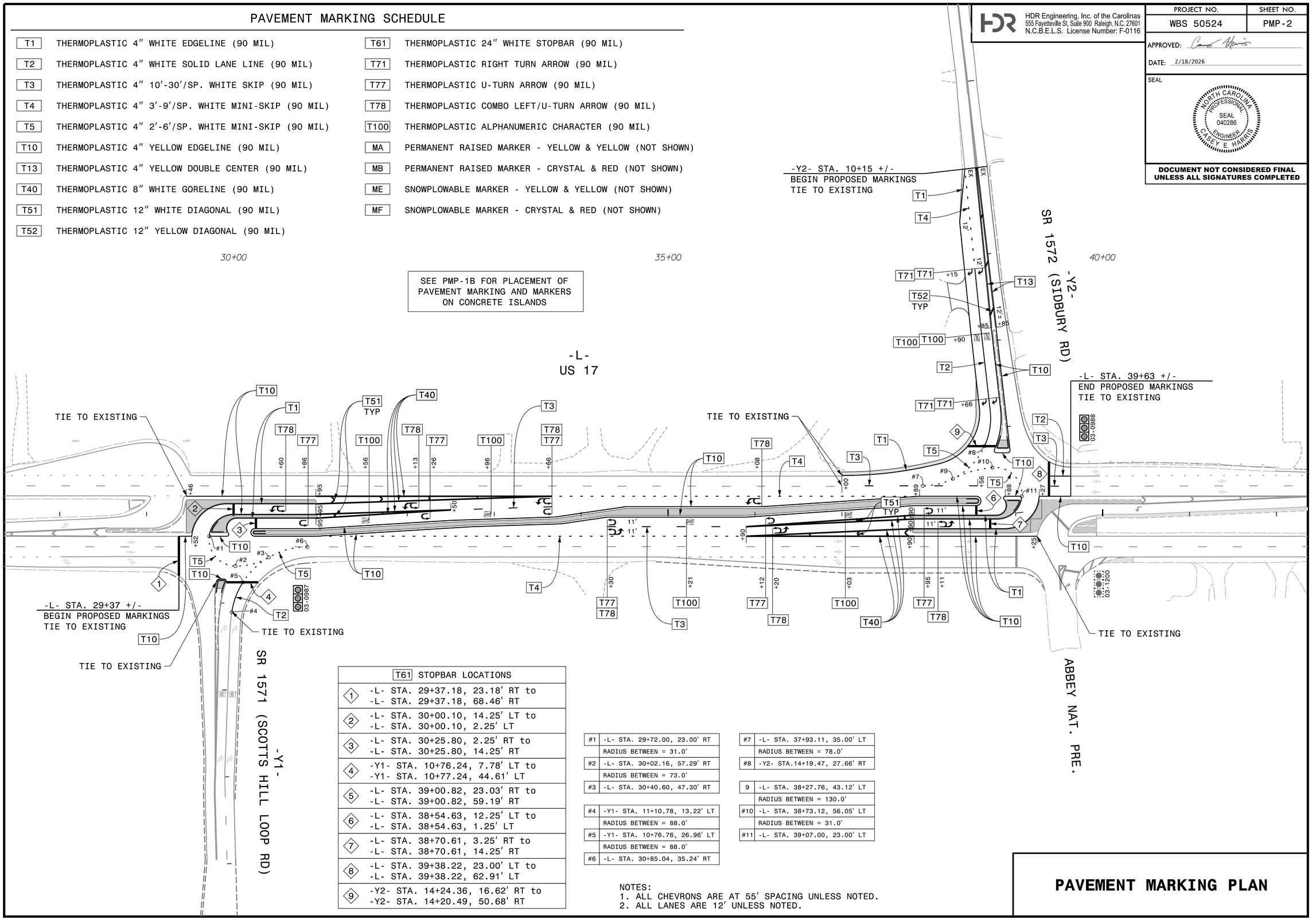
PAVEMENT MARKING SCHEDULE

T1	THERMOPLASTIC 4″ WHITE EDGELINE (90 MIL)
T2	THERMOPLASTIC 4″ WHITE SOLID LANE LINE (90 MIL)
T3	THERMOPLASTIC 4″ 10′-30′/SP. WHITE SKIP (90 MIL)
T4	THERMOPLASTIC 4″ 3′-9′/SP. WHITE MINI-SKIP (90 MIL)
T5	THERMOPLASTIC 4″ 2′-6′/SP. WHITE MINI-SKIP (90 MIL)
T10	THERMOPLASTIC 4″ YELLOW EDGELINE (90 MIL)
T13	THERMOPLASTIC 4″ YELLOW DOUBLE CENTER (90 MIL)
T40	THERMOPLASTIC 8″ WHITE GORELINE (90 MIL)
T51	THERMOPLASTIC 12″ WHITE DIAGONAL (90 MIL)
T52	THERMOPLASTIC 12″ YELLOW DIAGONAL (90 MIL)
T61	THERMOPLASTIC 24″ WHITE STOPBAR (90 MIL)
T71	THERMOPLASTIC RIGHT TURN ARROW (90 MIL)
T77	THERMOPLASTIC U-TURN ARROW (90 MIL)
T78	THERMOPLASTIC COMBO LEFT/U-TURN ARROW (90 MIL)
T100	THERMOPLASTIC ALPHANUMERIC CHARACTER (90 MIL)
MA	PERMANENT RAISED MARKER - YELLOW & YELLOW (NOT SHOWN)
MB	PERMANENT RAISED MARKER - CRYSTAL & RED (NOT SHOWN)
ME	SNOWPLOWABLE MARKER - YELLOW & YELLOW (NOT SHOWN)
MF	PERMANENT RAISED MARKER - CRYSTAL & RED (NOT SHOWN)

SEE PMP-1B FOR PLACEMENT OF PAVEMENT MARKING AND MARKERS ON CONCRETE ISLANDS



T61 STOPBAR LOCATIONS	
1	-L- STA. 29+37.18, 23.18′ RT to -L- STA. 29+37.18, 68.46′ RT
2	-L- STA. 30+00.10, 14.25′ LT to -L- STA. 30+00.10, 2.25′ LT
3	-L- STA. 30+25.80, 2.25′ RT to -L- STA. 30+25.80, 14.25′ RT
4	-Y1- STA. 10+76.24, 7.78′ LT to -Y1- STA. 10+77.24, 44.61′ LT
5	-L- STA. 39+00.82, 23.03′ RT to -L- STA. 39+00.82, 59.19′ RT
6	-L- STA. 38+54.63, 12.25′ LT to -L- STA. 38+54.63, 1.25′ LT
7	-L- STA. 38+70.61, 3.25′ RT to -L- STA. 38+70.61, 14.25′ RT
8	-L- STA. 39+38.22, 23.00′ LT to -L- STA. 39+38.22, 62.91′ LT
9	-Y2- STA. 14+24.36, 16.62′ RT to -Y2- STA. 14+20.49, 50.68′ RT

#1	-L- STA. 29+72.00, 23.00′ RT
	RADIUS BETWEEN = 31.0′
#2	-L- STA. 30+02.16, 57.29′ RT
	RADIUS BETWEEN = 73.0′
#3	-L- STA. 30+40.60, 47.30′ RT
#4	-Y1- STA. 11+10.78, 13.22′ LT
	RADIUS BETWEEN = 88.0′
#5	-Y1- STA. 10+76.76, 26.96′ LT
	RADIUS BETWEEN = 88.0′
#6	-L- STA. 30+85.04, 35.24′ RT

#7	-L- STA. 37+93.11, 35.00′ LT
	RADIUS BETWEEN = 78.0′
#8	-Y2- STA.14+19.47, 27.66′ RT
9	-L- STA. 38+27.76, 43.12′ LT
	RADIUS BETWEEN = 130.0′
#10	-L- STA. 38+73.12, 56.05′ LT
	RADIUS BETWEEN = 31.0′
#11	-L- STA. 39+07.00, 23.00′ LT

NOTES:
1. ALL CHEVRONS ARE AT 55′ SPACING UNLESS NOTED.
2. ALL LANES ARE 12′ UNLESS NOTED.

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

PROJECT NO.	SHEET NO.
WBS 50524	PMP-2

APPROVED:

DATE: 2/18/2026

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT MARKING PLAN

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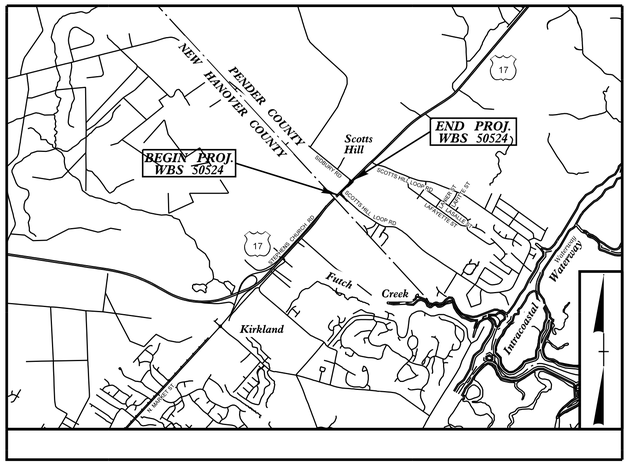
09/08/99

PROJECT: WBS 50524

CONTRACT: DC00504



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

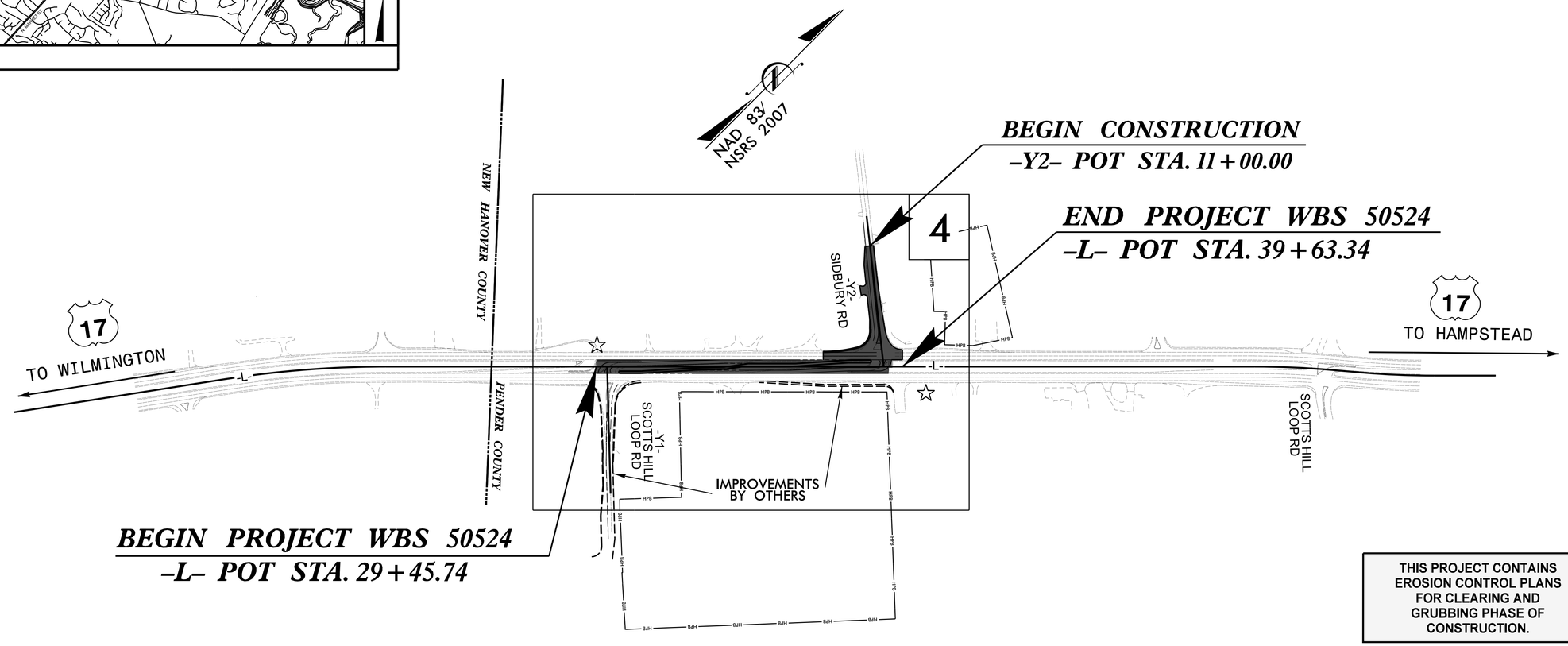
PENDER COUNTY

LOCATION: US 17 FROM SIDBURY RD
TO SCOTTS HILL LOOP RD

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND SIGNALS.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 50524	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
WBS 50524		PE



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

☆ MODIFIED SIGNAL

THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARY OF SCOTTS HILL.

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

GRAPHIC SCALE

50 25 0 50 100

PLANS

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

Prepared in the Office of:

HDR Engineering, Inc. of the Carolinas

555 Fayetteville St, Suite 900
Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F–0116

2024 STANDARD SPECIFICATIONS

Designed by:

Pushpal Regmi — ***4633***

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.

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PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

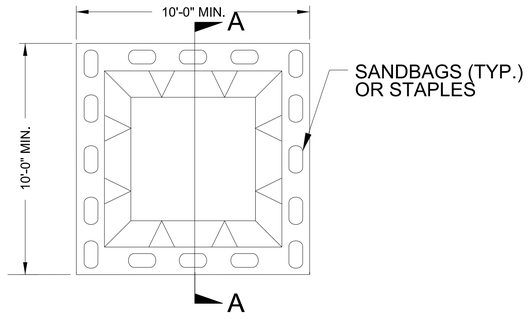
EROSION & SEDIMENT CONTROL LEGEND

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

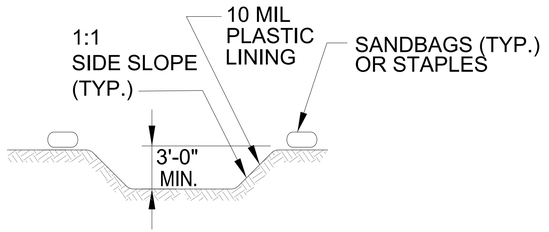
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet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

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-02A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

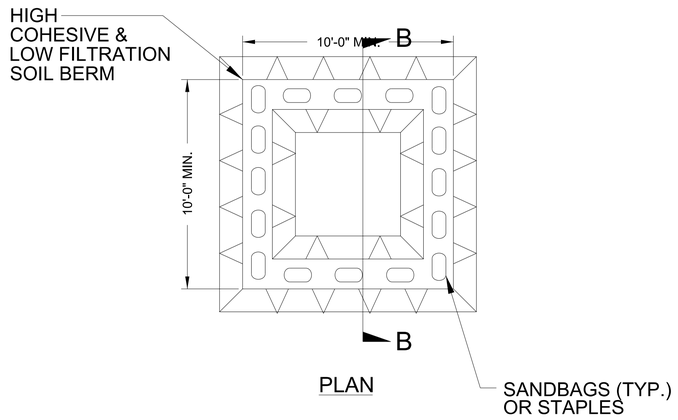
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

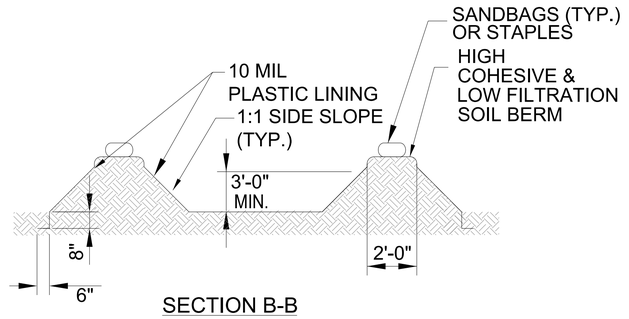
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



SECTION B-B

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

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

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING IN DITCHES – STRAW

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-Y2-	12+00	13+00	RT	80
	MATTING FOR DITCHES - STRAW SUBTOTAL				80
	MATTING SUBTOTAL FOR DITCHES				80
	MISC. MATTING TO BE INSTALLED				7,500
	TOTAL MATTING				7,580
				SAY	7,600

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

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

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-3A

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

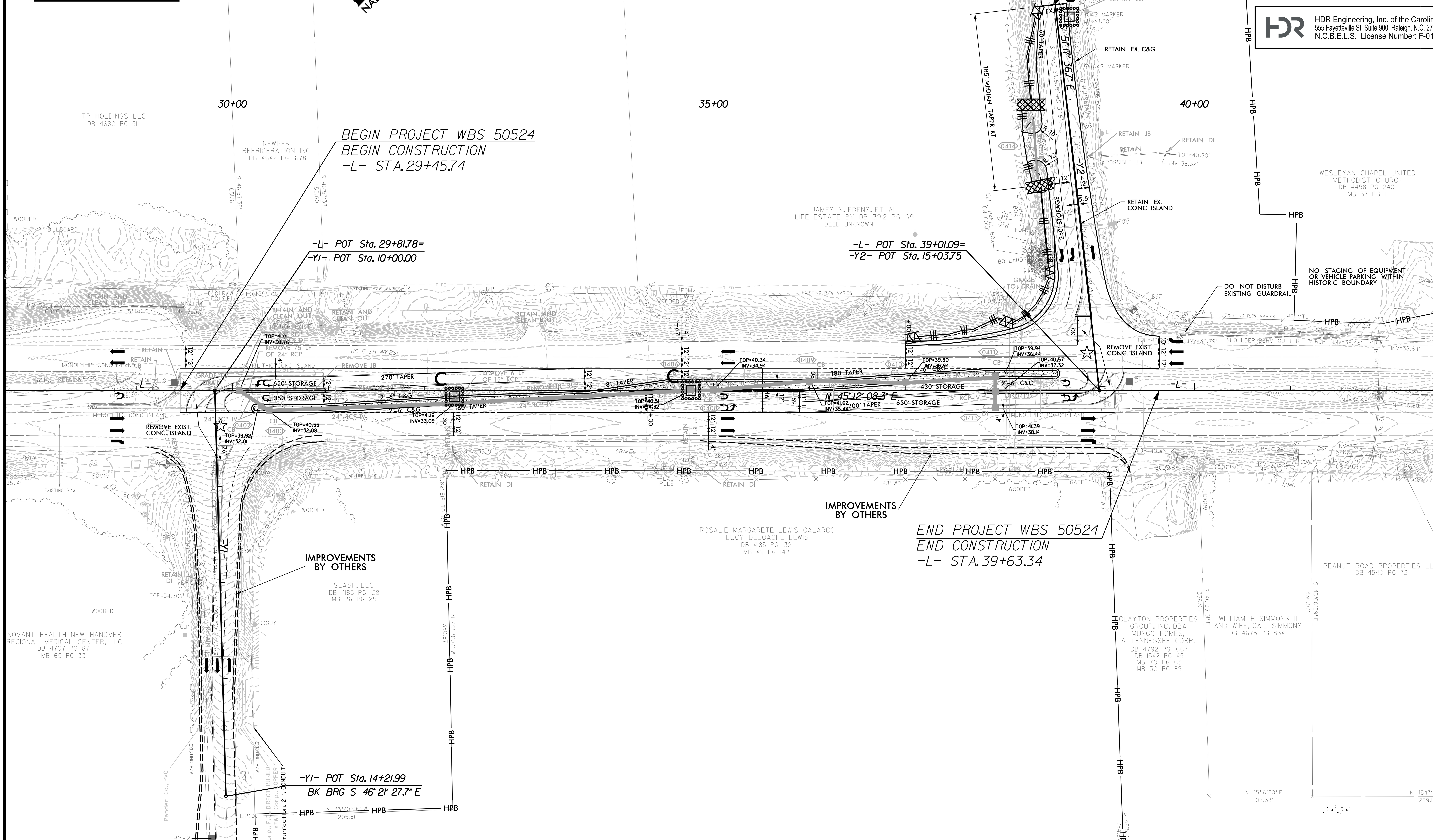
PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS DIRECTED BY ENGINEER



NAD 83/NSRS 2007
30+00
35+00
40+00
BEGIN PROJECT WBS 50524
BEGIN CONSTRUCTION
-L- STA.29+45.74
-Y2- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y2- STA.11+00.00
-L- POT Sta. 29+81.78=
-Y1- POT Sta. 10+00.00
-L- POT Sta. 39+01.09=
-Y2- POT Sta. 15+03.75
END PROJECT WBS 50524
END CONSTRUCTION
-L- STA.39+63.34
-Y1- POT Sta. 14+21.99
BK BRG S 46° 21' 27.7" E
N 45° 12' 08.3" E
S 51° 17' 36.7" E
IMPROVEMENTS BY OTHERS
IMPROVEMENTS BY OTHERS
REMOVE EXIST. CONC. ISLAND
REMOVE EXIST. CONC. ISLAND
DO NOT DISTURB EXISTING GUARDRAIL
NO STAGING OF EQUIPMENT OR VEHICLE PARKING WITHIN HISTORIC BOUNDARY
RETAIN EX. C&G
RETAIN EX. CONC. ISLAND
RETAIN CB
RETAIN JB
RETAIN DI
185' MEDIAN TAPER RT
60' TAPER
250' STORAGE
650' STORAGE
350' STORAGE
270' TAPER
180' TAPER
81' TAPER
430' STORAGE
200' TAPER
TP HOLDINGS LLC
DB 4680 PG 511
NEWBER REFRIGERATION INC
DB 4642 PG 1678
JAMES N. EDENS, ET AL
LIFE ESTATE BY DB 3912 PG 69
DEED UNKNOWN
WESLEYAN CHAPEL UNITED METHODIST CHURCH
DB 4498 PG 240
MB 57 PG 1
ROSALIE MARGARETE LEWIS CALARCO
LUCY DELOACHE LEWIS
DB 4185 PG 132
MB 49 PG 142
SLASH, LLC
DB 4185 PG 128
MB 26 PG 29
NOVANT HEALTH NEW HANOVER REGIONAL MEDICAL CENTER, LLC
DB 4707 PG 67
MB 65 PG 33
CLAYTON PROPERTIES GROUP, INC. DBA MUNGO HOMES, A TENNESSEE CORP.
DB 4792 PG 1667
DB 1542 PG 45
MB 70 PG 63
MB 30 PG 89
WILLIAM H SIMMONS II AND WIFE, GAIL SIMMONS
DB 4675 PG 834
PEANUT ROAD PROPERTIES LLC
DB 4540 PG 72
HPB

REVISIONS

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DATE: 1/26/2026
TIME: 1:20:22 PM

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	EC-05/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS DIRECTED BY ENGINEER

NAD 83/NSRS 2007

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y2- STA. 11+00.00

30+00

35+00

40+00

BEGIN PROJECT WBS 50524
BEGIN CONSTRUCTION
-L- STA. 29+45.74

-L- POT Sta. 29+81.78=
-Y1- POT Sta. 10+00.00

-L- POT Sta. 39+01.09=
-Y2- POT Sta. 15+03.75

-Y1- POT Sta. 14+21.99
BK BRG S 46° 21' 27.7" E

N 45°12'08.3" E

S 51° 17' 36.7" E

185' MEDIAN TAPER RT

650' STORAGE

350' STORAGE

270' TAPER

180' TAPER

200' TAPER

430' STORAGE

81' TAPER

60' TAPER

REMOVE EXIST. CONC. ISLAND

REMOVE JB

REMOVE 75 LF OF 24" RCP

REMOVE 5 LF OF 15" RCP

REMOVE 118' RCP

RETAIN CB

RETAIN EX. C&G

RETAIN JB

RETAIN DI

RETAIN EX. CONC. ISLAND

IMPROVEMENTS BY OTHERS

IMPROVEMENTS BY OTHERS

DO NOT DISTURB EXISTING GUARDRAIL

NO STAGING OF EQUIPMENT OR VEHICLE PARKING WITHIN HISTORIC BOUNDARY

END PROJECT WBS 50524
END CONSTRUCTION
-L- STA. 39+63.34

TP HOLDINGS LLC
DB 4680 PG 511

NEWBER REFRIGERATION INC
DB 4642 PG 1678

JAMES N. EDENS, ET AL
LIFE ESTATE BY DB 3912 PG 69
DEED UNKNOWN

WESLEYAN CHAPEL UNITED METHODIST CHURCH
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MB 49 PG 142

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DB 4707 PG 67
MB 65 PG 33

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DB 4540 PG 72

CLAYTON PROPERTIES GROUP, INC. DBA MUNGO HOMES, A TENNESSEE CORP.
DB 4792 PG 1667
DB 1542 PG 45
MB 70 PG 63
MB 30 PG 89

WILLIAM H SIMMONS II AND WIFE, GAIL SIMMONS
DB 4675 PG 834

REVISIONS

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
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DATE: 1/26/2026
TIME: 1:20:28 PM

Docusign Envelope ID: A8E160EC-8813-4F95-8165-DEEE688E5FCE

PROJECT: WBS 50524

CONTRACT: DC00504

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SHEET NO.
WBS 50524	SIGN-1

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY K. E. HARRIS

2/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGNING PLAN
PENDER COUNTY
LOCATION: US 17 FROM SIDBURY RD TO SCOTTS HILL LOOP RD

ROADWAY STANDARD DRAWING

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

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

GENERAL NOTES

- SIGNS FURNISHED BY STATE.
- CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER.
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E & F SIGNS SHALL BE TYPE 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	347	L.F.
4102000000	904	SIGN ERECTION, TYPE E	23	EA.
4108000000	904	SIGN ERECTION, TYPE F	2	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	7	EA.

INDEX

PLAN SUBMITTED TO: N.C.D.O.T. SIGNING AND DELINEATION UNIT

JESSI LEONARD, P.E. — DIVISION 3 TRAFFIC ENGINEER

MITCH EATON, P.E. — SIGNING & DELINEATION PROJECT REGIONAL ENGINEER

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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

CASEY HARRIS, P.E. — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

RICHARD DRAYTON — SIGNING & DELINEATION PROJECT DESIGN TECHNICIAN

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

Docusign Envelope ID: A8E160EC-8813-4F95-8165-DEEE688E5FCE

TIP NO.	SHEET NO.
WBS 50524	SIGN-2

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY K. HARRIS

2/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

(402) QUANTITY REQ'D 2

36 X 36
R5-1

ONE "U" POST PER SIGN

(403) QUANTITY REQ'D 2

48 X 18
R6-1 (R)

TWO "U" POSTS PER SIGN

(404) QUANTITY REQ'D 2

48 X 18
R6-1 (L)

TWO "U" POSTS PER SIGN

(405) QUANTITY REQ'D 1

30 X 36
R5-1

ONE "U" POST PER SIGN

(406) QUANTITY REQ'D 4

12 X 36
OM3-C

ONE "U" POST PER SIGN

(408) QUANTITY REQ'D 4

ONE "U" POST

30 X 15
(SEE SIGN-3 FOR SIGN DESIGN)

MOUNTED ABOVE SIGN 410
IN 4 APPLICATIONS

(409) QUANTITY REQ'D 4

30 X 15
(SEE SIGN-3 FOR SIGN DESIGN)

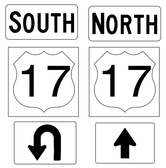
MOUNTED ABOVE SIGN 408
IN 4 APPLICATIONS

(410) QUANTITY REQ'D 4

36 X 36
R3-4

ONE "U" POST PER SIGN

(501)



2-24" X 12"
2-24" X 24"
1-21" X 21"
1-21" X 15"

TWO "U" POSTS

(502)

1-24" X 12"
1-24" X 24"
1-21" X 15"

ONE "U" POST

TYPE "E" & "F" SIGNS

Docusign Envelope ID: A8E160EC-8813-4F95-8165-DEEE688E5FCE

TIP NO.	SHEET NO.
WBS 50524	SIGN-3

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY K. HARRIS

2/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGN NUMR: 502
TYPE: F Ground
QUANTITY: 1

SIGN WIDTH: 1'-9"
HEIGHT: 1'-9"
TOTAL AREA: 3.1 Sq.Ft.

MAT'L: 0.063" ALUMINUM

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

NO. Z BARS:
LENGTH:

BACKG. COLOR: White
COPY COLOR: Black

DESIGN BY:
PROJECT ID: WBS 50524

CHK BY:
DIV: 3

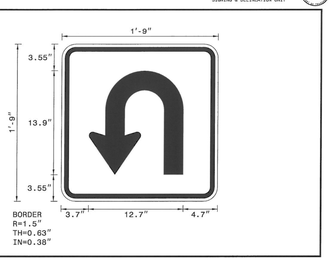
STD #:
DATE:

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY & SAFETY
SIGNING & DELINEATION UNIT

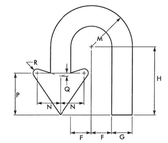
SYMBOL	X	Y	WID	HT
u arrow	3.7	3.5	12.7	13.9

NOTES:

1. Legend and border shall be direct applied Non-reflective sheeting.
2. Background shall be Grade C reflective sheeting.



Arrow Details



ARROW DIMENSIONS (INCHES)	F	G	H	M	N	P	Q	R
	2.625	2.625	8.659	5.25	3	5.25	0.375	0.5

Spacing Factor is 1 unless specified otherwise

FILENAME: OSENG

SIGN NUMBER: 408
TYPE: E
QUANTITY: SEE SIGN-2

SIGN WIDTH: 2'-6"
HEIGHT: 1'-3"
TOTAL AREA: 3.1 Sq.Ft.

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

NO. Z BARS:
LENGTH:

BACKG COLOR: White
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

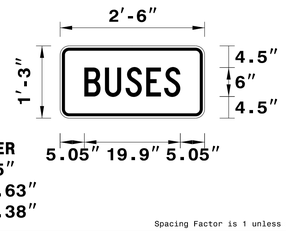
USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: R DRAYTON
PROJECT ID: WBS 50524

CHECKED BY: C HARRIS

Sep 02, 2025
DIV: 3



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

	B	U	S	E	S		Series/Size Text Length
							C 2000
5	4.3	4.3	4.3	3.7	3.4	5	19.9

FILENAME: Guidsign_English_8-2-13

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: 409
TYPE: E
QUANTITY: SEE SIGN-2

SIGN WIDTH: 2'-6"
HEIGHT: 1'-3"
TOTAL AREA: 3.1 Sq.Ft.

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

NO. Z BARS:
LENGTH:

BACKG COLOR: White
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

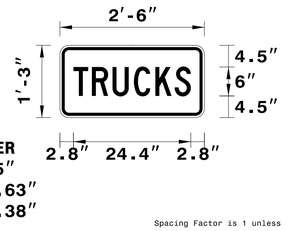
USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: R DRAYTON
PROJECT ID: WBS 50524

CHECKED BY: C HARRIS

Sep 02, 2025
DIV: 3



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

	T	R	U	C	K	S		Series/Size Text Length
								C 2000
2.8	3.8	4.3	4.4	4.4	4	3.4	2.8	24.4

FILENAME: Guidsign_English_8-2-13

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGNS

Docusign Envelope ID: A8E160EC-8813-4F95-8165-DEEE688E5FCE

PROJECT NO.	SHEET NO.
WBS 50524	SIGN-4

APPROVED: _____

DATE: _____

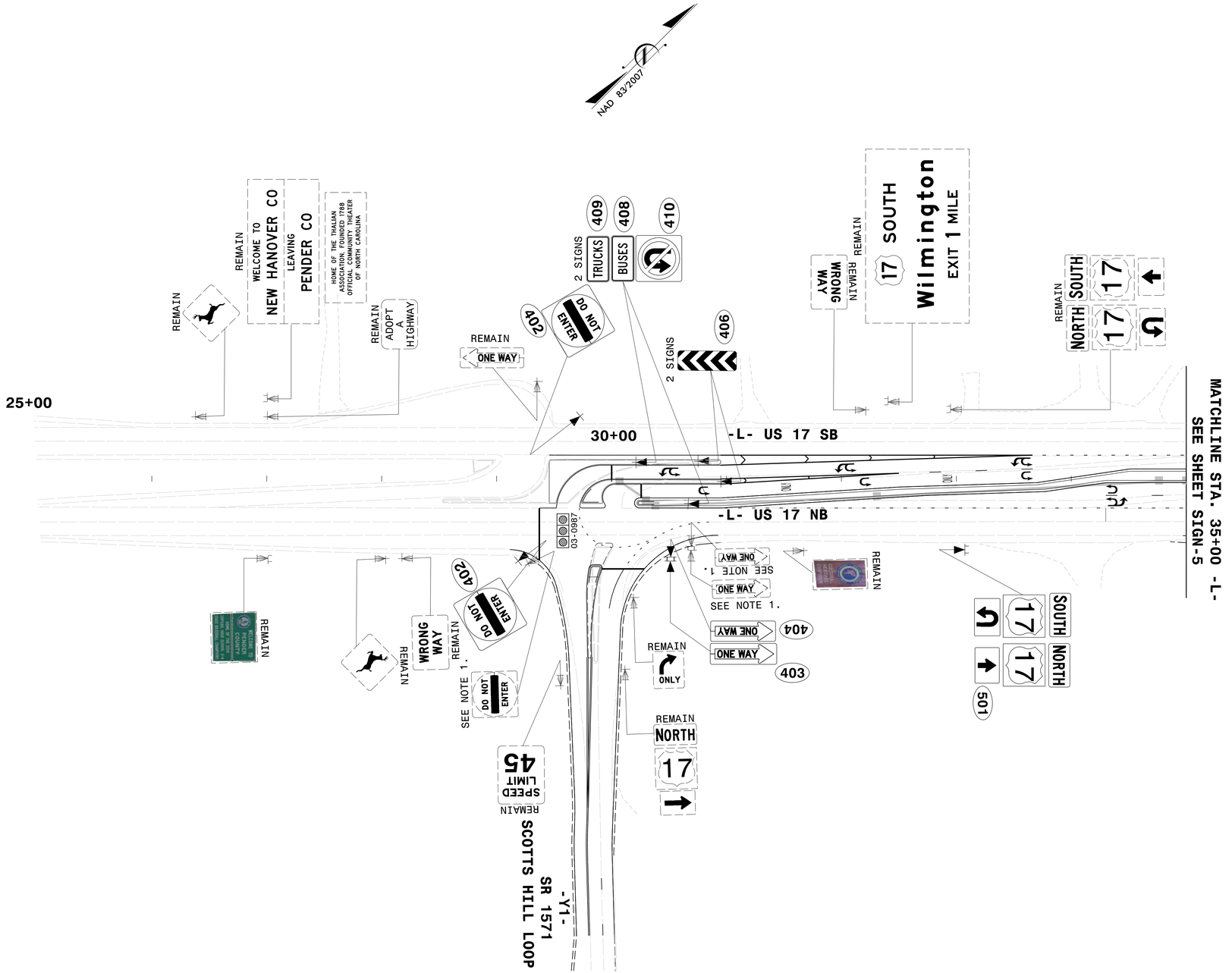
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



NOTES:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL

EXISTING & PROPOSED SIGNING DETAIL

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PROJECT NO.	SHEET NO.
WBS 50524	SIGN-5

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 040286 ENGINEER CASEY E. HARRIS

2/18/2026

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555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
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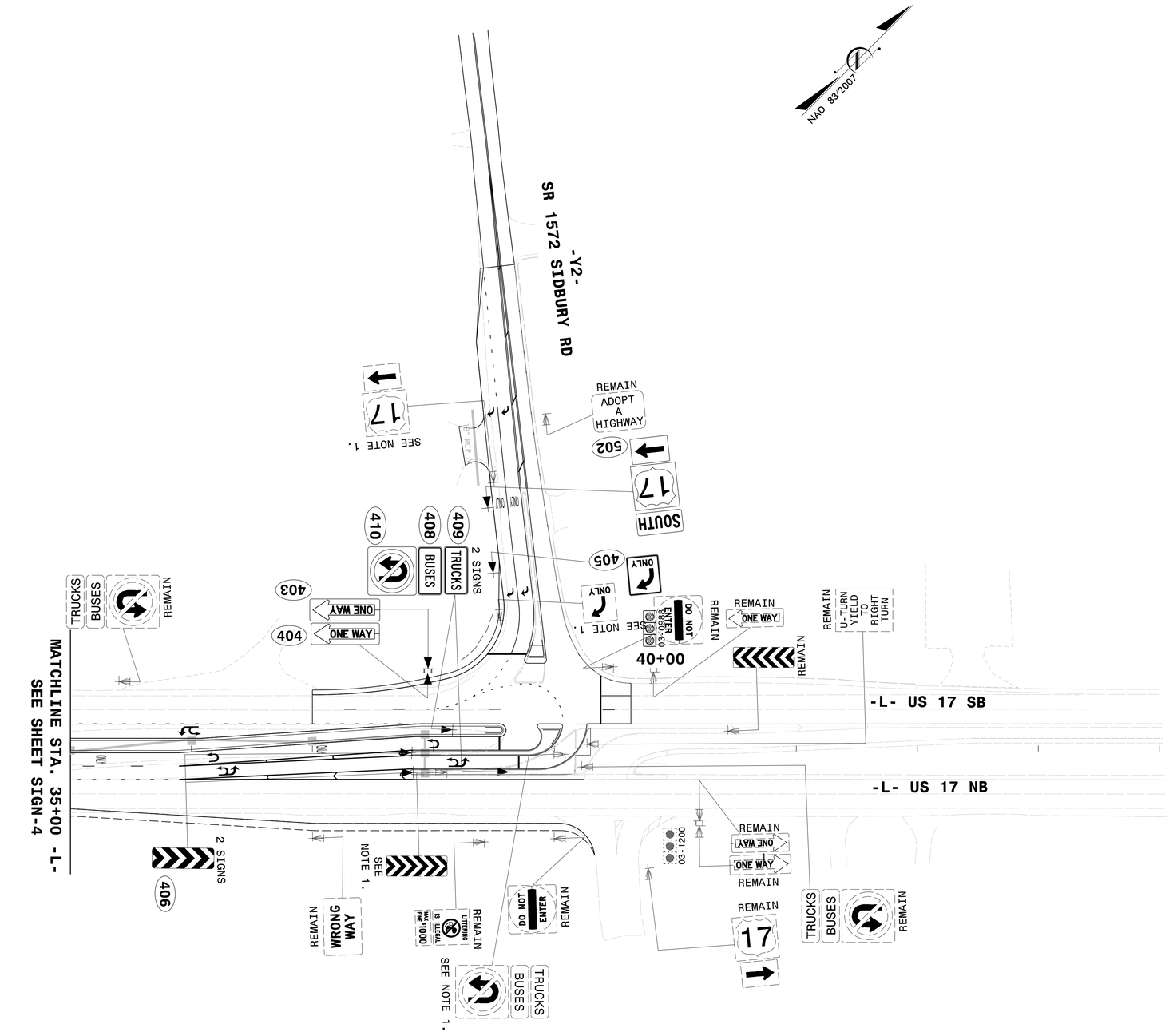


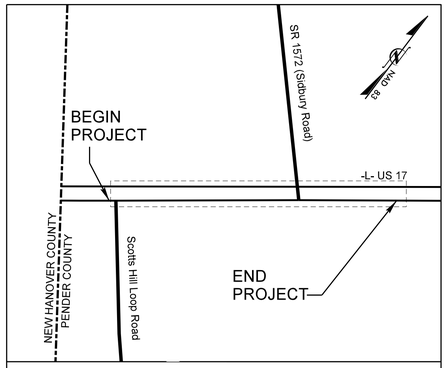
NOTES:

1. DISPOSAL OF SIGN SYSTEM, U-CHANNEL

EXISTING & PROPOSED SIGNING DETAIL

TIP PROJECT: WBS 50524

CONTRACT NO: DC00504



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PENDER COUNTY

LOCATION: US 17 FROM SIDBURY RD TO SCOTTS HILL LOOP RD

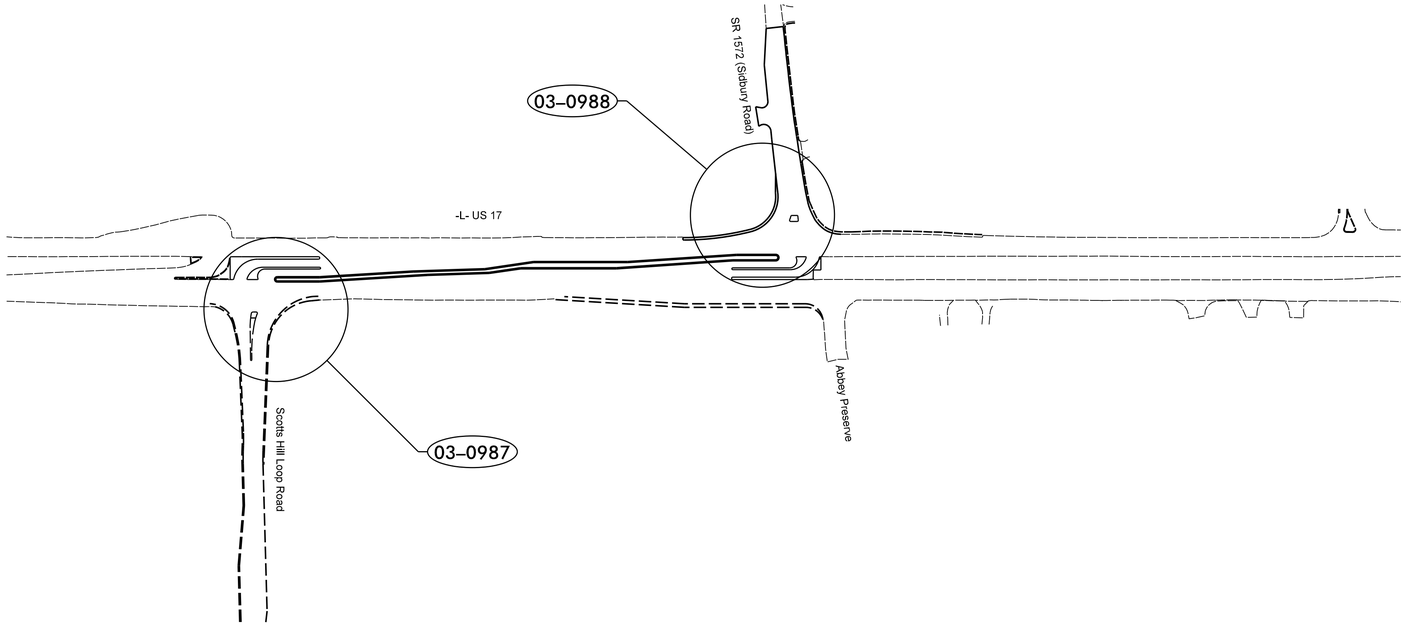
TYPE OF WORK: TRAFFIC SIGNALS AND SIGNAL COMMUNICATIONS

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-1.0

APPROVED: Zachary M. Esposito
DATE: 04/16/2026

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.

DRMP

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260

NC LICENSE NO. F-1524
www.drmp.com

PLANS PREPARED BY:

Zachary M. Esposito, P.E., TCDS – Project Manager

Erin E. Downing, E.I. – Project Engineer

Andrew W. Poole, E.I. – Project Engineer

INDEX OF PLANS

Sheet Number	SIN	Location/ Description
Sig. 1.0	–	Project Title Sheet
Sig. 2.0–2.5	03–0988	US 17 at SR 1572 (Sidbury Road)
Sig. 3.0–3.2	03–0987	US 17 at SR 1571 (Scotts Hill Loop Road)
SCP–1–5	–	Communication and Conduit Routing Plan

LEGEND

XX–XXXX *TRAFFIC SIGNAL*

TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS

Contacts:

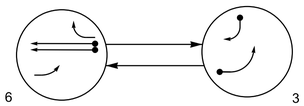
Zachary Little, P.E. – Eastern Region Signals Engineer

D. Todd Joyce, P.E. – Signal Equipment Design Review Engineer

Ryan W. Hough, P.E. – State ITS Engineer

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-2.0

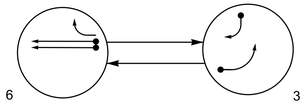
DEFAULT PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

ALTERNATE PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION			
SIGNAL FACE	PHASE 6	PHASE 3	FLASH
31,32	R	→	R
33,34	F Y	←	R
61,62	G	R	R
63	F Y	R	R

ALTERNATE PHASING TABLE OF OPERATION			
SIGNAL FACE	PHASE 6	PHASE 3	FLASH
31,32	R	→	R
33,34	R	←	R
61,62	G	R	R
63	F Y	R	R

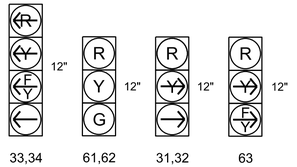
MAXTIME DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING						
LOOP / ZONE(S)	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
3A	@	0	@	@	3	-	-	X	-	X	-	@
3B	@	0	@	@	3	15.0*	-	X	-	X	-	@

★ Disable Delay During Alternate Phasing Operation
@ Microwave Detection Zone

SIGNAL FACE I.D.

All Heads L.E.D.



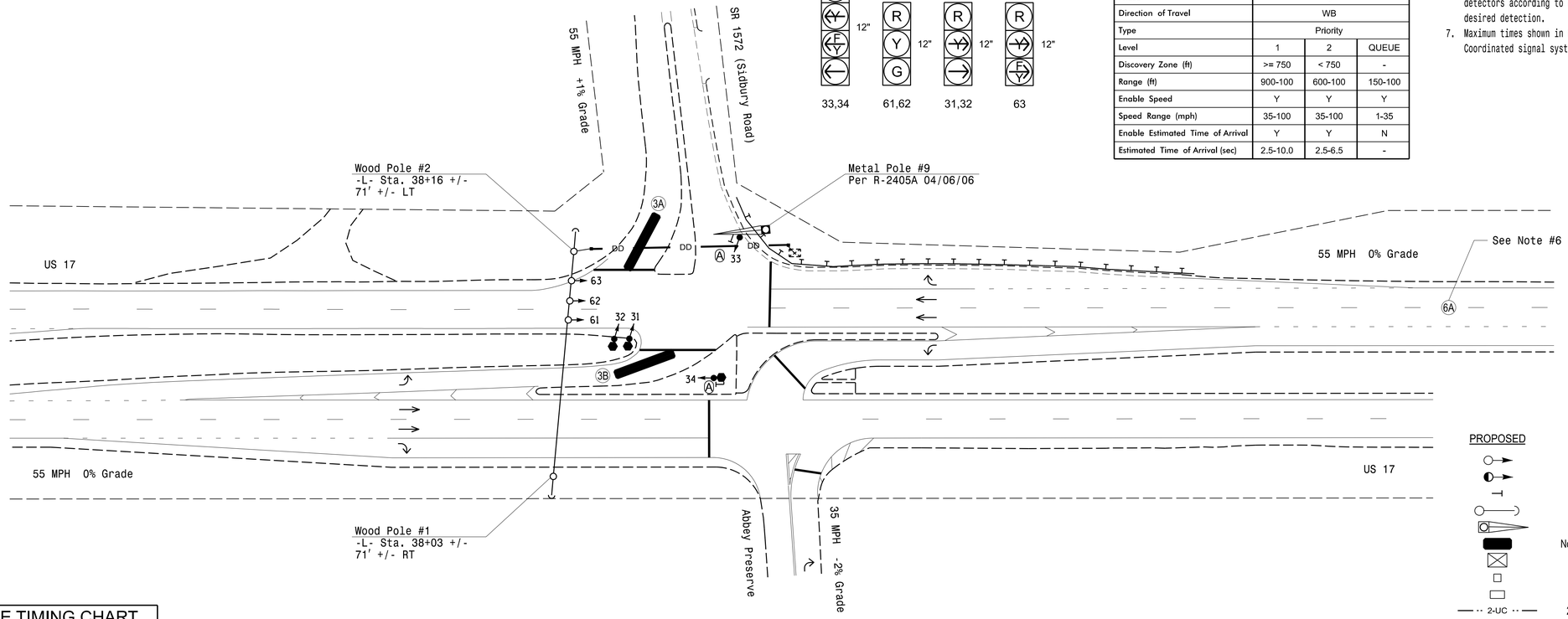
Microwave Detection

	6A		
FUNCTION	Sensor 1		
Channel	1		
Phase	6		
Direction of Travel	WB		
Type	Priority		
Level	1	2	QUEUE
Discovery Zone (ft)	>= 750	< 750	-
Range (ft)	900-100	600-100	150-100
Enable Speed	Y	Y	Y
Speed Range (mph)	35-100	35-100	1-35
Enable Estimated Time of Arrival	Y	Y	N
Estimated Time of Arrival (sec)	2.5-10.0	2.5-6.5	-

2 Phase
Fully Actuated
Signal System: D03-13_Scotts Hill

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Pavement markings are existing.
5. The Division Traffic Engineer will determine the hours of use for each phasing plan.
6. This intersection uses multi-zone microwave detection. Install detectors according to the manufacurer's instructions to achieve the desired detection.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
○——●	Signal Pole with Guy	●——●
○◁	Metal Pole with Mastarm	●◁
▬	Non-Intrusive Detection Zone	▬
⊠	Controller & Cabinet	⊡
□	Junction Box	■
▭	Oversized Junction Box	▬
—·· 2-UC ··—	2-in Underground Conduit	—·· UC ··—
—— 2-DD ——	2-in Directional Drill	—— DD ——
N/A	Right of Way	— — — —
N/A	Guardrail	⊥——⊥
——→	Directional Arrow	——→
⬡	Type II Signal Pedestal	⬢
Ⓐ	"U-TURN YILED TO RIGHT TURN" Sign (R10-16)	Ⓐ

MAXTIME TIMING CHART

FEATURE	PHASE 3	PHASE 6
Walk *	-	-
Ped Clear	-	-
Min Green *	7	14
Passage *	2.0	2.0
Max 1 *	30	90
Yellow Change	3.0	5.2
Red Clear	2.9	1.5
Added Initial *	-	-
Maximum Initial *	-	-
Time Before Reduction *	-	-
Time To Reduce *	-	-
Minimum Gap	-	-
Advance Walk	-	-
Non Lock Detector	X	-
Vehicle Recall	-	MIN RECALL
Dual Entry	-	-

* These values may be field adjusted. Do not adjust Min Green and Passage times for phase 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Signal Upgrade - Temporary Design

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Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE
0 40
1" = 40'

US 17
at
SR 1572 (Sidbury Road)

Division 3 | Pender County | N of Wilmington

PLAN DATE:	April 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	AW Poole	DRMP PROJ NO:	22182 (040)

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

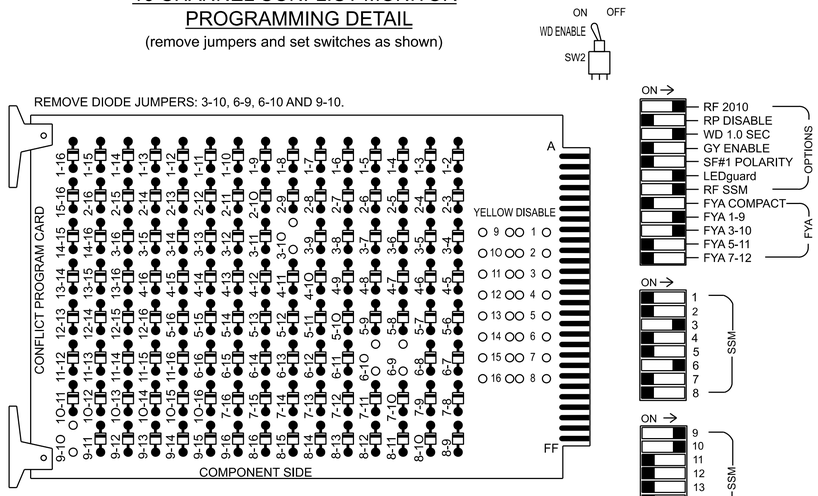
Signed by: Zachary M. Esposito 04/16/2026
054155 SIGNATURE DATE

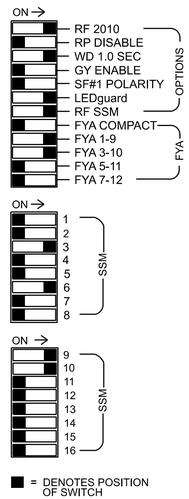
SIG. INVENTORY NO. 03-0988T

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-2.1

16 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)





REMOVE JUMPERS AS SHOWN

NOTES:
1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program controller to start up in phase 2 Phase Not On and phase 6 Green No Walk.
3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
4. The cabinet and controller are part of the D03-13_Scotts Hill Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Q-Free MAXTIME
Cabinet Mount.....Base
Output File Positions.....16 With Aux. Output File
Load Switches Used.....S3, S6, S9, S10
Phases Used.....3, 6
Overlap "1".....*
Overlap "2".....*
Overlap "3".....NOT USED
Overlap "4".....NOT USED

*See Sheet 2 for overlap programming.

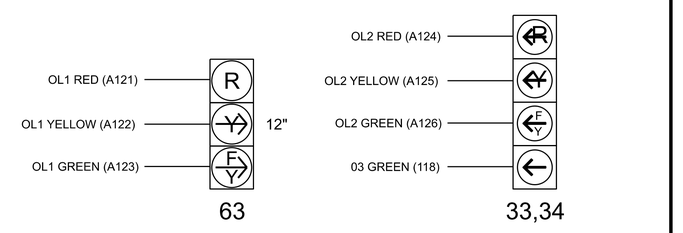
SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3		S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3		4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	NU	NU	31,32	33,34 ★	NU	NU	NU	61,62	NU	NU	NU	NU	63 ★	33,34 ★	NU	NU	NU	NU
RED				116					134					A121					
YELLOW									135										
GREEN									136										
RED ARROW															A124				
YELLOW ARROW				117										A122	A125				
FLASHING YELLOW ARROW														A123	A126				
GREEN ARROW				118	118														

NU = Not Used
★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(remove signal heads as shown)



INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	NOT USED	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	FS DC ISOLATOR
	L						Ø 3 3B*								ST DC ISOLATOR
FILE "J"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L														

EX. : 1A, 2A, ETC. = LOOP NO.'S
* Microwave Detector
FS = FLASH SENSE
ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
*3B	TB4-11,12	I6L	45	7	9	3	15.0		X		X	

* Microwave Detector

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Start Up Parameters

Startup Clearance Hold
6

Unit Flash Parameters

All Red Flash Exit Time
6

SPECIAL DETECTOR NOTE

For all loops, install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0988T
DESIGNED: Apr 2026
SEALED: 04/16/2026
REVISED: N/A

Electrical Detail - Sheet 1 of 2
Temporary Design

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SUITE 220
CHARLOTTE, NC 28262
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ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 17
at
SR 1572 (Sidbury Road)

Division 3 Pender County N of Wilmington

PLAN DATE: April 2026
PREPARED BY: AW Poole
REVIEWED BY: ZM Esposito
DRMP PROJ. NO: 22182 (040)

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO
Signed by: Zachary M. Esposito 04/16/2026
SIGNATURE DATE

SIG. INVENTORY NO. 03-0988T

750 N. Greenfield Pkwy, Garner, NC 27529

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-2.2

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2
Type	FYA 4 - Section	FYA 4 - Section
Included Phases	6	6
Modifier Phases	-	3
Modifier Overlap	-	-
Trail Green	0	0
Trail Yellow	0.0	0.0
Trail Red	0.0	0.0

MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	2	
Type	FYA 4 - Section	FYA 4 - Section	
Included Phases	6	-	← NOTICE INCLUDED PHASE
Modifier Phases	-	3	
Modifier Overlaps	-	-	
Trail Green	0	0	
Trail Yellow	0.0	0.0	
Trail Red	0.0	0.0	

MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2.
A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	2	2

ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 33 and 34 to run protected turns only.

VEH DET PLAN 2: Reduce delay time for phase 3 call on loop 3B to 0 seconds.

MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Coordination >Patterns

Web Interface
Home >Controller >Coordination >Patterns

Pattern Parameters

Pattern	Veh Det Plan	Overlap Plan
*	2	2

* The Pattern number(s) are to be determined by the Division and/or City Traffic Engineer.

MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel
Main Menu >Controller >Detector >Veh Det Plans

Web Interface
Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

Plan 2

3B

Detector	Call Phase	Delay
9	3	0

SEQUENCE DETAIL

Front Panel
Main Menu >Controller >Sequence & Phs Config>Sequences

Web Interface
Home >Controller >Sequence

Sequence 1

Ring	Sequence Data
1	6,a,3,b

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THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0988T
DESIGNED: Apr 2026
SEALED: 04/16/2026
REVISED: N/A

Electrical Detail - Sheet 2 of 2
Temporary Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 17
at
SR 1572 (Sidbury Road)

Division 3 Pender County N of Wilmington

PLAN DATE: April 2026	REVIEWED BY: ZM Esposito
PREPARED BY: AW Poole	DRMP PROJ. NO: 22182 (040)

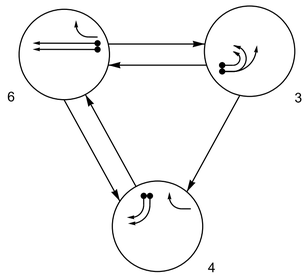
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO
Signed by: Zachary M. Esposito 04/16/2026
SIGNATURE DATE
SIG. INVENTORY NO. 03-0988T

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-2.3

PHASING DIAGRAM



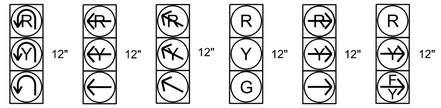
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE 6	3	4	FLASH
31	R	↶	R	R
32	↑	—	↑	↑
33	↗	\	↗	↗
41,42	↑	↑	—	↑
61,62	G	R	R	R
63	↑ Y	R	↑ Y	R

SIGNAL FACE I.D.

All Heads L.E.D.

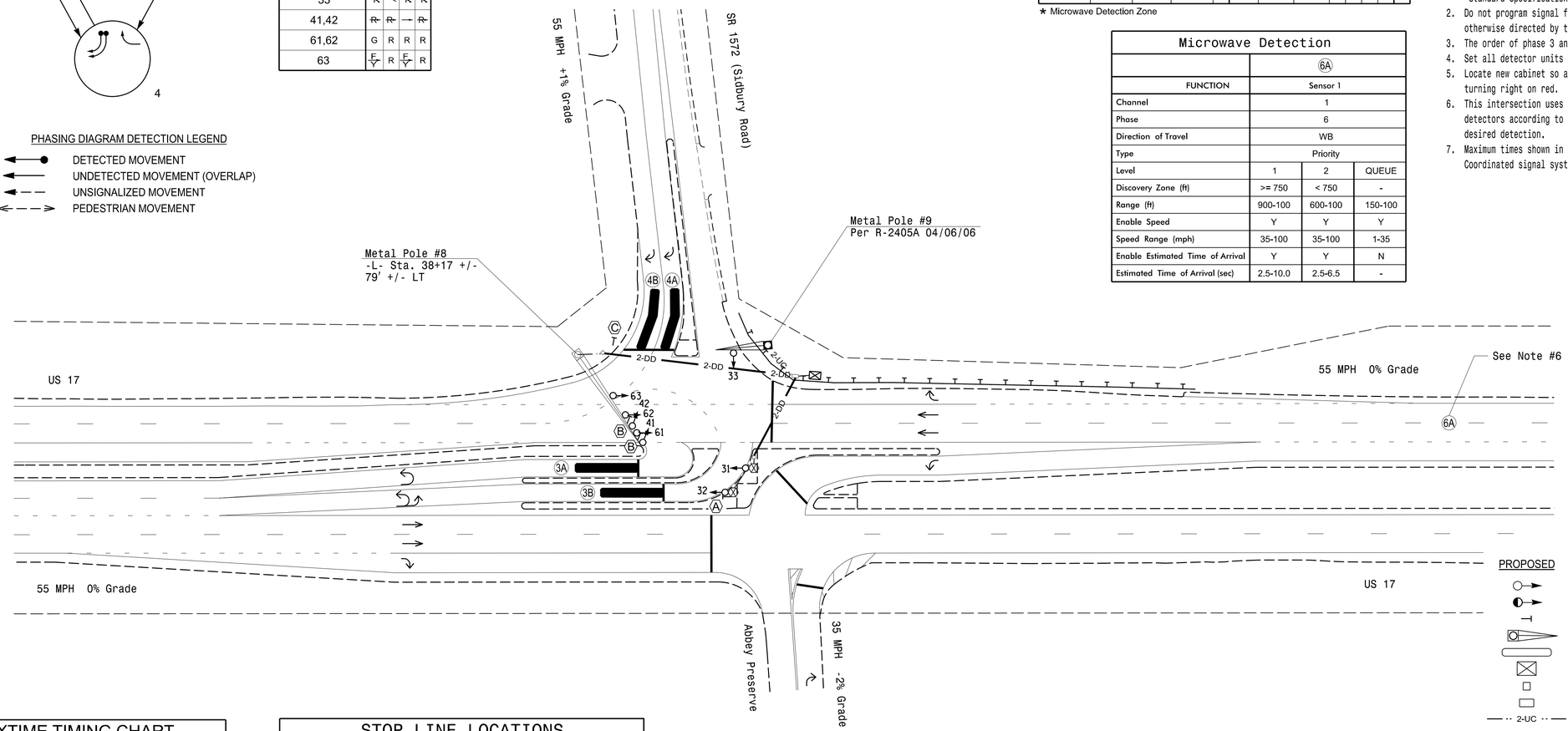


MAXTIME DETECTOR INSTALLATION CHART

DETECTOR					PROGRAMMING							
ZONE(S)	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW ZONE	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
3A	*	0	*	X	3	-	-	X	-	X	-	*
3B	*	0	*	X	3	-	-	X	-	X	-	*
4A	*	0	*	X	4	-	-	X	-	X	-	*
4B	*	0	*	X	4	-	-	X	-	X	-	*

* Microwave Detection Zone

Microwave Detection	
	6A
FUNCTION	Sensor 1
Channel	1
Phase	6
Direction of Travel	WB
Type	Priority
Level	1 / 2 / QUEUE
Discovery Zone (ft)	>= 750 / < 750 / -
Range (ft)	900-100 / 600-100 / 150-100
Enable Speed	Y / Y / Y
Speed Range (mph)	35-100 / 35-100 / 1-35
Enable Estimated Time of Arrival	Y / Y / N
Estimated Time of Arrival (sec)	2.5-10.0 / 2.5-6.5 / -



LEGEND

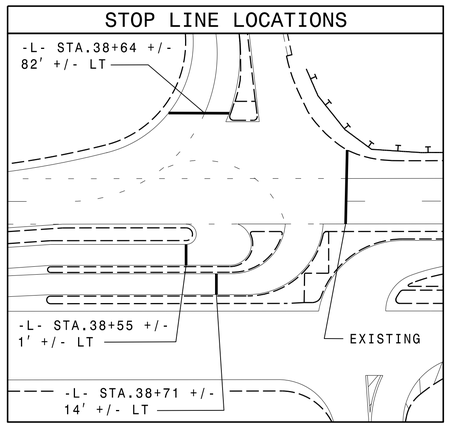
PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
○▭	Metal Pole with Mastarm	○▭
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⛶
□	Junction Box	■
▭	Oversized Junction Box	■
2-UC	2-in Underground Conduit	UC
2-DD	2-in Directional Drill	N/A
N/A	Right of Way	
N/A	Guardrail	
→	Directional Arrow	→
⧖	Type III Signal Pedestal	⧖
▬	Non-Intrusive Detection Zone	▬
Ⓐ	U and Left Turn Sign (R3-6a)	Ⓐ
Ⓑ	"NO TURN ON RED" Sign (R10-11a)	Ⓑ
Ⓒ	"STOP HERE ON RED" Sign (R10-6)	Ⓒ

MAXTIME TIMING CHART

FEATURE	PHASE 3	4	6
Walk *	-	-	-
Ped Clear	-	-	-
Min Green *	7	7	14
Passage *	2.0	2.0	2.0
Max 1 *	30	30	90
Yellow Change	3.0	3.0	5.2
Red Clear	6.4	2.6	1.6
Added Initial *	-	-	-
Maximum Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Advance Walk	-	-	-
Non Lock Detector	X	X	-
Vehicle Recall	-	-	MIN RECALL
Dual Entry	-	-	-

* These values may be field adjusted. Do not adjust Min Green and Passage times for phase 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

STOP LINE LOCATIONS



3 Phase
Fully Actuated
Signal System: D03-13_Scotts Hill

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. The order of phase 3 and phase 4 may be reversed.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

Signal Upgrade - Final Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

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SCALE 0 40 1" = 40'

US 17
at
SR 1572 (Sidbury Road)

Division 3 | Pender County | N of Wilmington

PLAN DATE: April 2026 | REVIEWED BY: ZM Esposito
PREPARED BY: EE Downing | DRMP PROJ NO: 22182 (040)

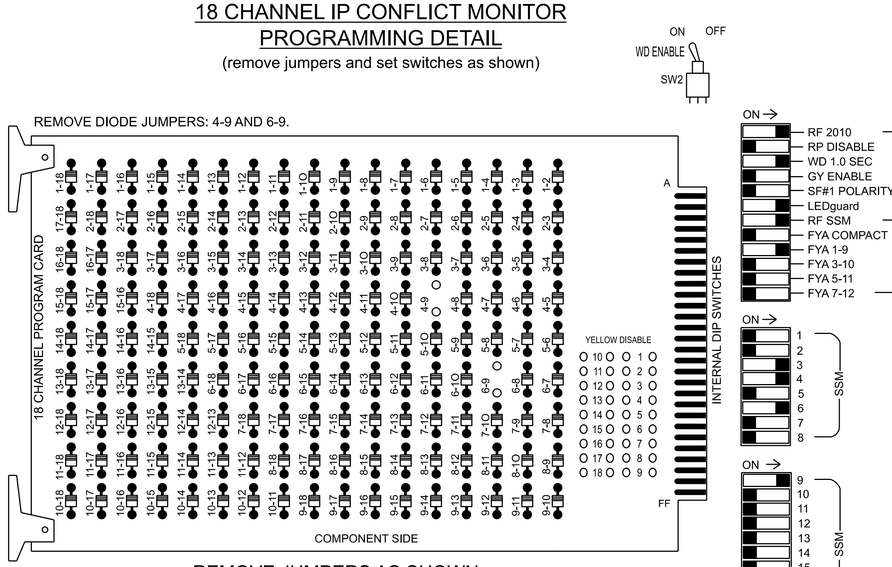
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO
Signed by Zachary M. Esposito
DocuSigned by
SIGNATURE 04/16/2026 DATE
SIG. INVENTORY NO. 03-0988

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-2.4

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



■ = DENOTES POSITION OF SWITCH

REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program controller to start up in phase 2 Phase Not On and phase 6 Green No Walk.
3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
4. The cabinet and controller are part of the D03-13_Scotts Hill Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Q-Free MAXTIME
Cabinet Mount.....Base
Output File Positions.....16 With Aux. Output File
Load Switches Used.....S4, S5, S8, AUX S1
Phases Used.....3, 4, 6
Overlap "1".....*
Overlap "2".....NOT USED
Overlap "3".....NOT USED
Overlap "4".....NOT USED

*See this Sheet for overlap programming.

SPECIAL DETECTOR NOTE

For all loops, install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	NU	NU	31,32, 33	41,42	NU	NU	61,62	NU	NU	NU	NU	63 ★	NU	NU	NU	NU	NU
RED								134					A121					
YELLOW								135										
GREEN								136										
RED ARROW				116	101													
YELLOW ARROW				117	102								A122					
FLASHING YELLOW ARROW													A123					
GREEN ARROW				118	103													

NU = Not Used
★ See pictorial of head wiring in detail this sheet.

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

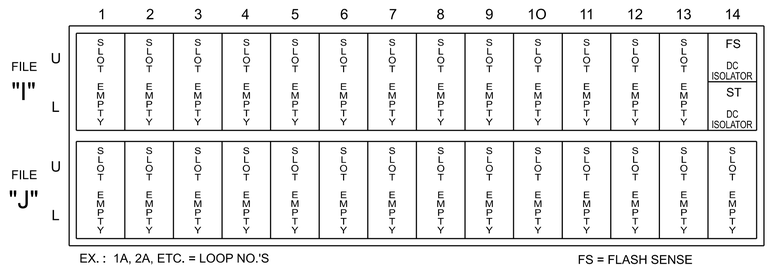
Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

INPUT FILE POSITION LAYOUT

(front view)



EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1
Type	FYA 4 - Section
Included Phases	4,6
Modifier Phases	-
Modifier Overlap	-
Trail Green	0
Trail Yellow	0.0
Trail Red	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Start Up Parameters	Unit Flash Parameters
Startup Clearance Hold	All Red Flash Exit Time
6	6

SEQUENCE DETAIL

Front Panel
Main Menu >Controller >Sequence & Phs Config>Sequences

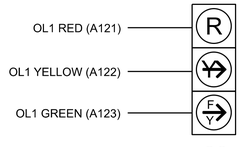
Web Interface
Home >Controller >Sequence

Sequence 1

Ring	Sequence Data
1	6,a,3,4,b

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0988
DESIGNED: Apr 2026
SEALED: 04/16/2026
REVISED: N/A

Electrical Detail - Final Design

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR. SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260
NC LICENSE NO. F-1524
www.drmp.com

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Transportation Mobility and Safety Division
Traffic Engineering Branch
Traffic & Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

US 17
at
SR 1572 (Sidbury Road)

Division 3 Pender County N of Wilmington

PLAN DATE: April 2026	REVIEWED BY: ZM Esposito
PREPARED BY: EE Downing	DRMP PROJ. NO: 22182 (040)

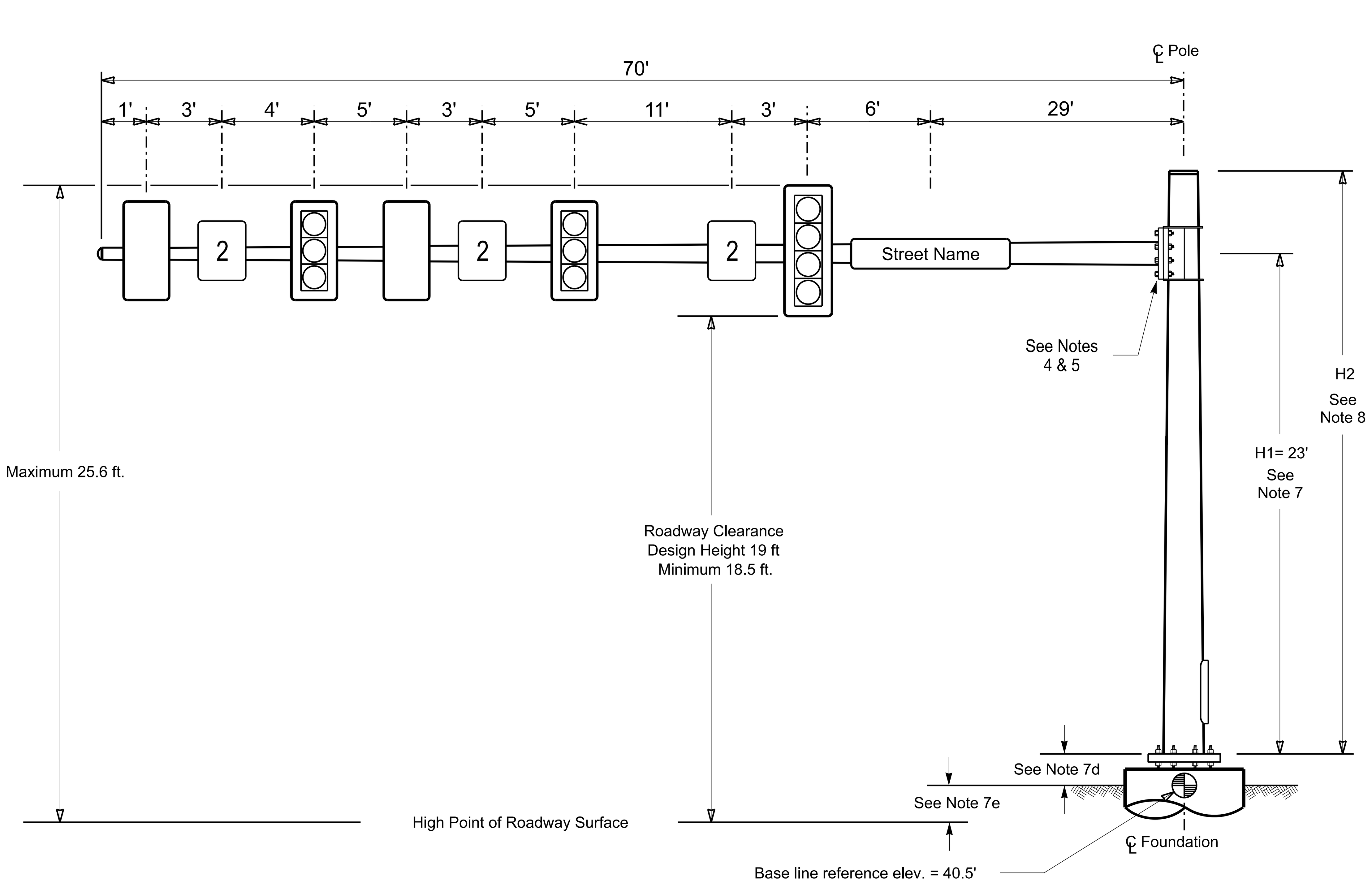
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

Signed by: Zachary M Esposito
SIGNATURE 04/16/2026 DATE

SIG. INVENTORY NO. 03-0988

Design Loading for METAL POLE NO. 8



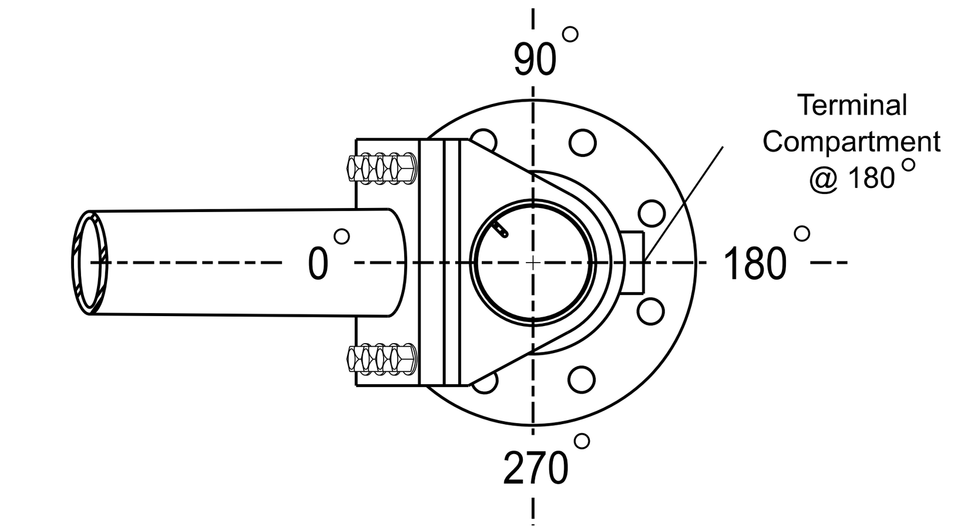
Elevation View

SPECIAL NOTE

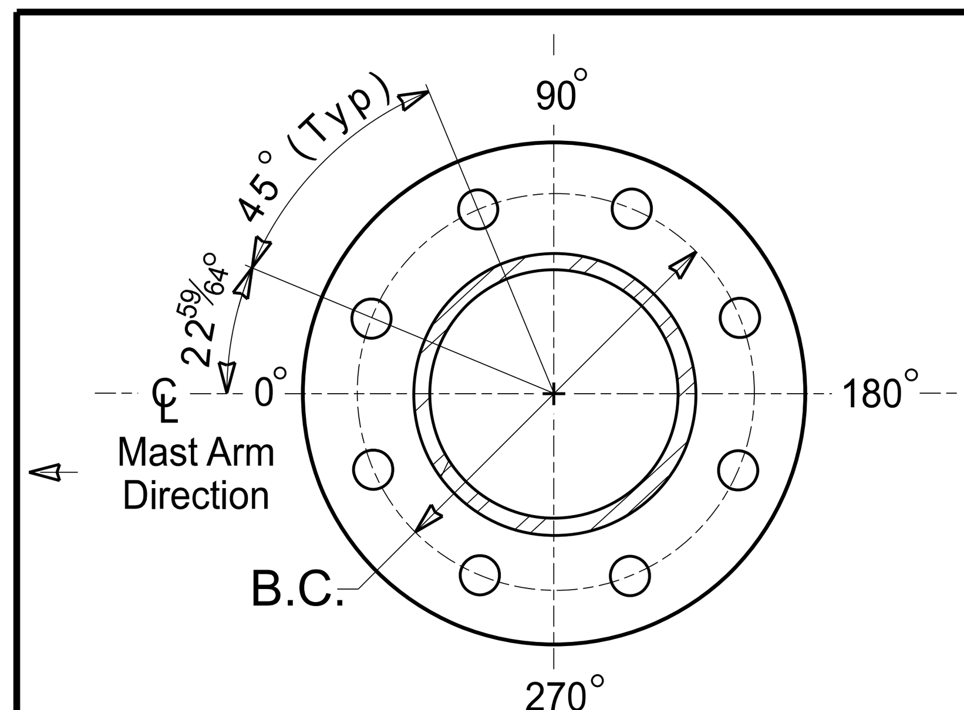
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 8	
Baseline reference point at ℄ Foundation @ ground level	40.5 ft.	
Elevation difference at High point of roadway surface	+2.0 ft.	
Elevation difference at Edge of travelway or face of curb	+1.5 ft.	

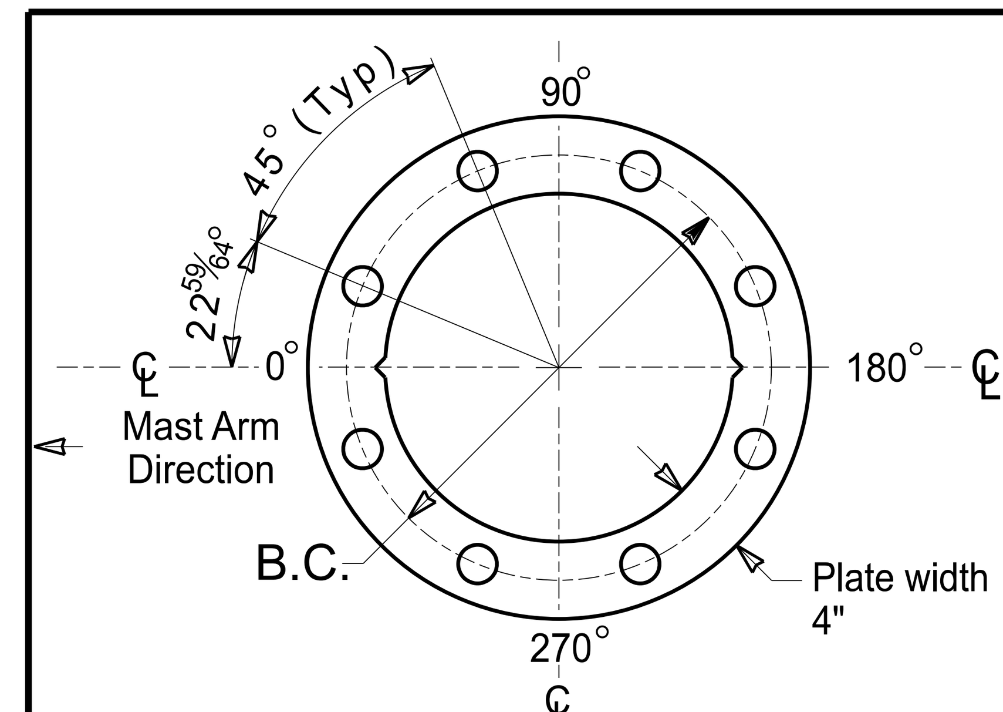


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL

For 8 Bolt Base Plate

METAL POLE No. 8

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig - 2.5

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS
Street Name	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
   - The 2024 NCDOT Roadway Standard Drawings.
   - The traffic signal project plans and special provisions.
   - The NCDOT "Metal Pole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/TSMO-Design-Resources.aspx

DESIGN REQUIREMENTS

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. Design all signal supports using force ratios that do not exceed 0.9.
4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The mast arm attachment height (H1) shown is based on the following design assumptions:
   a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
   b. Signal heads are rigidly mounted and vertically centered on the mast arm.
   c. The roadway clearance height for design is as shown in the elevation views.
   d. The top of the pole base plate is 0.75 feet above the ground elevation.
   e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
8. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
   - Mast arm attachment height (H1) plus 2 feet, or
   - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

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www.drmp.com

NCDOT Wind Zone 1 (150 mph)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 17
at
SR 1572 (Sidbury Road)

Division 3 Pender County N of Wilmington

PLAN DATE:	April 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	EE Downing	REVIEWED BY:	22182 (040)

SCALE: N/A

REVISIONS | INIT. | DATE

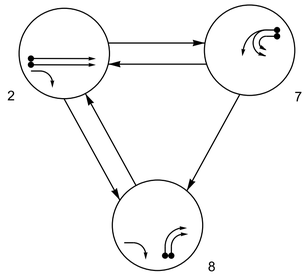
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

Signed by: Zachary M. Esposito
SIGNATURE 04/16/2026 DATE

SIG. INVENTORY NO. 03-0988

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-3.0

PHASING DIAGRAM



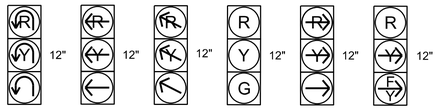
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION				
SIGNAL FACE	PHASE 2	7	8	FLASH
21,22	G	R	R	R
23	FY	R	FY	R
71	R	∩	R	R
72	R	—	R	R
73	R	\	R	R
81,82	R	R	—	R

SIGNAL FACE I.D.

All Heads L.E.D.



MAXTIME DETECTOR INSTALLATION CHART											
DETECTOR					PROGRAMMING						
ZONE(S)	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW ZONE	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN	NEW CARD
7A	*	0	*	X	7	-	-	X	-	X	-	*
7B	*	0	*	X	7	-	-	X	-	X	-	*
8A	*	0	*	X	8	15.0	-	X	-	X	-	*
8B	*	0	*	X	8	15.0	-	X	-	X	-	*

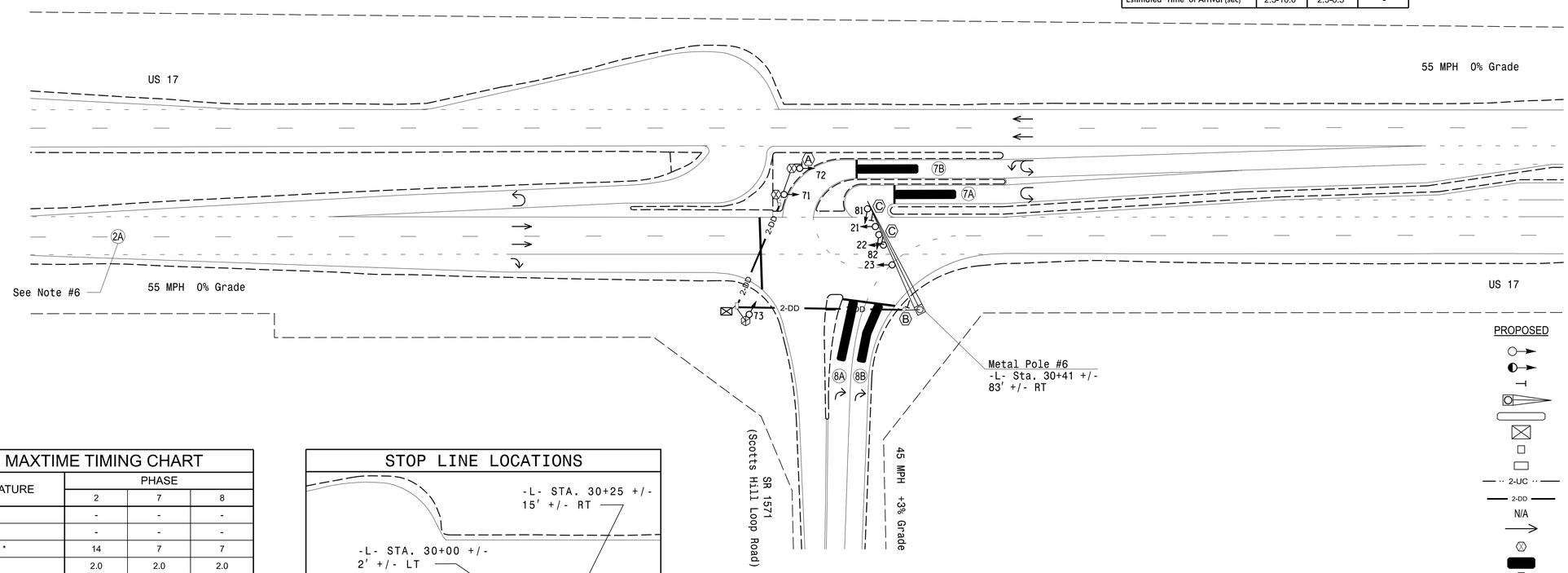
* Microwave Detection Zone

Microwave Detection			
	2A		
FUNCTION	Sensor 1		
Channel	1		
Phase	2		
Direction of Travel	EB		
Type	Prlority		
Level	1	2	QUEUE
Discovery Zone (ft)	>= 750	< 750	-
Range (ft)	900-100	600-100	150-100
Enable Speed	Y	Y	Y
Speed Range (mph)	35-100	35-100	1-35
Enable Estimated Time of Arrival	Y	Y	N
Estimated Time of Arrival (sec)	2.5-10.0	2.5-6.5	-

3 Phase
Fully Actuated
Signal System: D03-13_Scotts Hill

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. The order of phase 7 and phase 8 may be reversed.
4. Set all detector units to presence mode.
5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
6. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



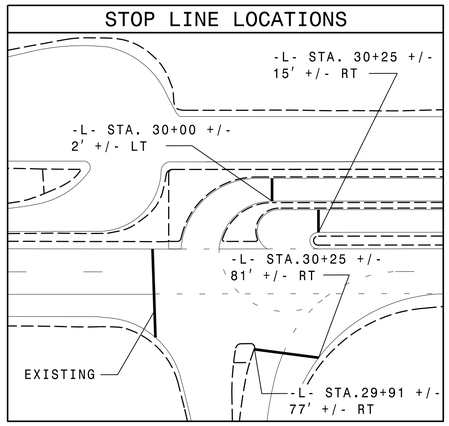
LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Metal Pole with Mastarm	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	Oversized Junction Box	
2-UC	2-in Underground Conduit	UC
2-DD	2-in Directional Drill	DD
N/A	Right of Way	
	Directional Arrow	
	Type III Signal Pedestal	
	Non-Intrusive Detection Zone	
A	U and Left Turn Sign (R3-6a)	A
B	"STOP HERE ON RED" Sign (R10-6)	B
C	"NO TURN ON RED" Sign (R10-11a)	C

MAXTIME TIMING CHART			
FEATURE	PHASE 2	7	8
Walk *	-	-	-
Ped Clear	-	-	-
Min Green *	14	7	7
Passage *	2.0	2.0	2.0
Max 1 *	90	30	30
Yellow Change	5.2	3.0	3.0
Red Clear	1.4	5.8	2.3
Added Initial *	-	-	-
Maximum Initial *	-	-	-
Time Before Reduction *	-	-	-
Time To Reduce *	-	-	-
Minimum Gap	-	-	-
Advance Walk	-	-	-
Non Lock Detector	-	X	X
Vehicle Recall	MIN RECALL	-	-
Dual Entry	-	-	-

* These values may be field adjusted. Do not adjust Min Green and Passage times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

STOP LINE LOCATIONS



Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

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US 17
at
SR 1571 (Scotts Hill Loop Road)

Division 3 | Pender County | N of Wilmington

PLAN DATE:	April 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	EE Downing	DRMP PROJ. NO:	22182 (040)

SCALE 0 40 1"=40'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

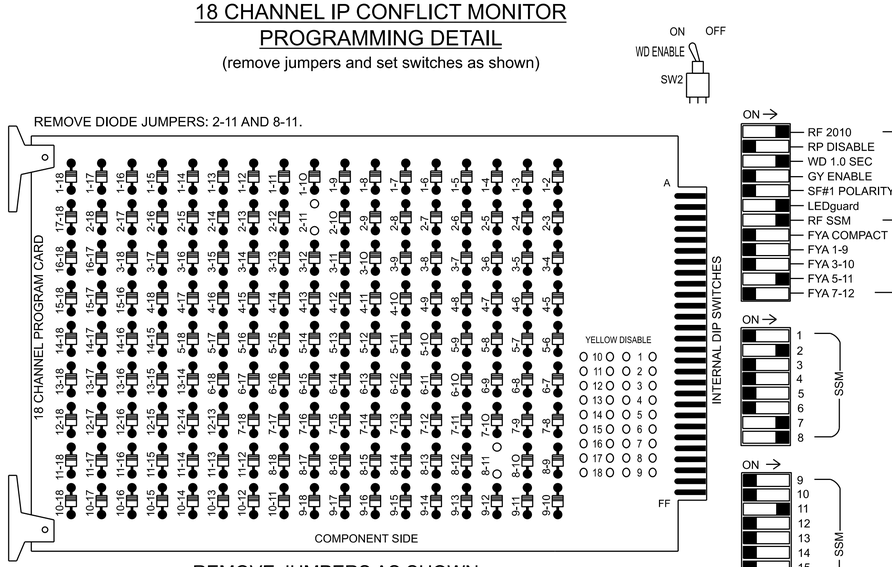
Signed by: Zachary M. Esposito 04/15/2026
SIGNATURE DATE

SIG. INVENTORY NO. 03-0987

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig-3.1

18 CHANNEL IP CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program controller to start up in phase 2 Green No Walk and phase 6 Phase Not On.
3. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
4. The cabinet and controller are part of the D03-13_Scotts Hill Signal System.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Q-Free MAXTIME
Cabinet Mount.....Base
Output File Positions.....16 With Aux. Output File
Load Switches Used.....S2, S10, S11, AUX S4
Phases Used.....2, 7, 8
Overlap "1".....NOT USED
Overlap "2".....NOT USED
Overlap "3".....*
Overlap "4".....NOT USED

*See Sheet 2 for overlap programming.

SPECIAL DETECTOR NOTE

For all loops, install a multi-zone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	NU	21,22	NU	NU	NU	NU	NU	NU	NU	71,72 73	81,82	NU	NU	NU	NU	23 ★	NU	NU
RED		128														A114		
YELLOW		129																
GREEN		130																
RED ARROW										122	107							
YELLOW ARROW										123	108					A115		
FLASHING YELLOW ARROW																A116		
GREEN ARROW										124	109							

NU = Not Used
★ See pictorial of head wiring in detail this sheet.

OUTPUT CHANNEL CONFIGURATION

Front Panel
Main Menu >Controller >More>Channels>Channels Config

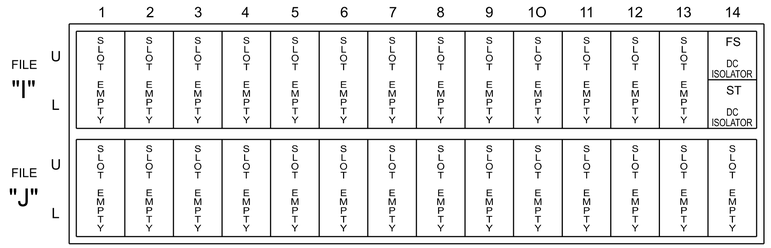
Web Interface
Home >Controller >Advanced IO>Channels>Channels Configuration

Channel Configuration

Channel	Control Type	Control Source	Flash Yellow	Flash Red	Flash Alt	MMU Channel
1	Phase Vehicle	1		X	X	1
2	Phase Vehicle	2		X		2
3	Phase Vehicle	3		X	X	3
4	Phase Vehicle	4		X		4
5	Phase Vehicle	5		X		5
6	Phase Vehicle	6		X	X	6
7	Phase Vehicle	7		X		7
8	Phase Vehicle	8		X	X	8
9	Overlap	1		X	X	9
10	Overlap	2		X	X	10
11	Overlap	3		X		11
12	Overlap	4		X		12
13	Phase Ped	2				13
14	Phase Ped	4				14
15	Phase Ped	6				15
16	Phase Ped	8				16
17	Overlap	5		X	X	17
18	Overlap	6		X		18

INPUT FILE POSITION LAYOUT

(front view)



EX. : 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	3
Type	FYA 4 - Section
Included Phases	2,8
Modifier Phases	-
Modifier Overlap	-
Trail Green	0
Trail Yellow	0.0
Trail Red	0.0

MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Unit

Web Interface
Home >Controller >Unit

Start Up Parameters	Unit Flash Parameters
Startup Clearance Hold	All Red Flash Exit Time
6	6

SEQUENCE DETAIL

Front Panel
Main Menu >Controller >Sequence & Phs Config>Sequences

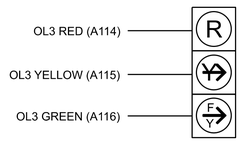
Web Interface
Home >Controller >Sequence

Sequence 1

Ring	Sequence Data
1	2,a,7,8,b

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



23

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0987
DESIGNED: Apr 2026
SEALED: 04/16/2026
REVISED: N/A

Electrical Detail

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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ELECTRICAL AND PROGRAMMING DETAILS FOR:

750 N. Greenfield Pkwy, Garner, NC 27529

US 17
at
SR 1571 (Scotts Hill Loop Road)

Division 3 Pender County N of Wilmington

PLAN DATE: April 2026 REVIEWED BY: ZM Esposito
PREPARED BY: EE Downing DRMP PROJ. NO: 22182 (040)

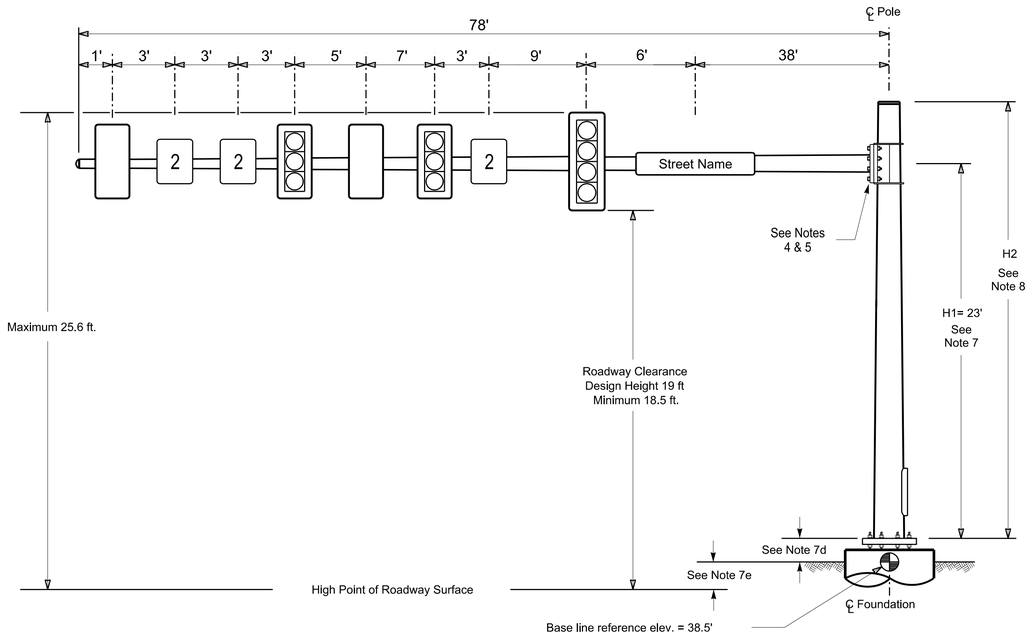
REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

Signed by: Zachary M Esposito 04/16/2026
SIGNATURE DATE

SIG. INVENTORY NO. 03-0987

Design Loading for METAL POLE NO. 6



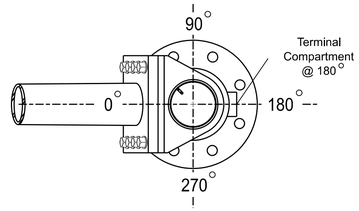
Elevation View

SPECIAL NOTE

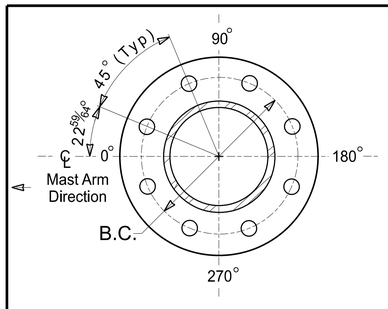
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 6	
Baseline reference point at ⊕ ℄ Foundation @ ground level	38.5 ft.	
Elevation difference at High point of roadway surface	+2.0 ft.	
Elevation difference at Edge of travelway or face of curb	+2.0 ft.	

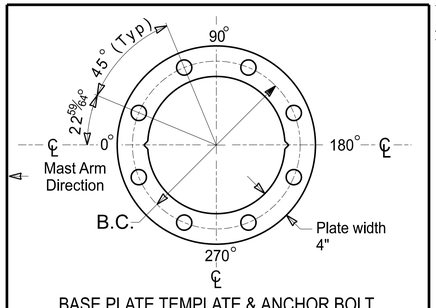


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL

For 8 Bolt Base Plate

METAL POLE No. 6

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	Sig - 3.2

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
2	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS
Street Name	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS

NOTES

DESIGN REFERENCE MATERIAL

1. Design the traffic signal structure and foundation in accordance with:
   - The 1st Edition 2015 AASHTO LRFD "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
   - The 2024 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
   - The 2024 NCDOT Roadway Standard Drawings.
   - The traffic signal project plans and special provisions.
   - The NCDOT "Metal Pole Standards" located at the following NCDOT website: https://connect.ncdot.gov/resources/safety/Pages/TSMO-Design-Resources.aspx

DESIGN REQUIREMENTS

2. Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
3. Design all signal supports using force ratios that do not exceed 0.9.
4. The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
5. A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
6. Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
7. The mast arm attachment height (H1) shown is based on the following design assumptions:
   a. Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
   b. Signal heads are rigidly mounted and vertically centered on the mast arm.
   c. The roadway clearance height for design is as shown in the elevation views.
   d. The top of the pole base plate is 0.75 feet above the ground elevation.
   e. Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
8. The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
   - Mast arm attachment height (H1) plus 2 feet, or
   - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
9. If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
10. The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
11. The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

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CHARLOTTE, NC 28262
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NCDOT Wind Zone 1 (150 mph)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared For:

Transportation Mobility and Safety Division
Signal Design Section
750 N. Greenfield Pkwy, Garner, NC 27529

US 17
at
SR 1571 (Scotts Hill Loop Road)

Division 3 | Pender County | N of Wilmington

PLAN DATE:	April 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	EE Downing	DRMP PROJ. NO:	22182 (040)

SCALE: N/A

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

Signed by: Zachary M Esposito 04/16/2026
SIGNATURE DATE

SIG. INVENTORY NO. 03-0987

1. INSTALL COAX CABLE
2. INSTALL ETHERNET CABLE
3. EXISTING ETHERNET (OR COAX) CABLE
4. INSTALL SMFO CABLE
5. EXISTING SMFO CABLE
6. INSTALL FIBER OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. TRENCH
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
13. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
14. INSTALL POLYETHYLENE CONDUIT
15. DIRECTIONAL DRILL CONDUIT
16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
19. INSTALL CABLE(S) IN EXISTING RISER
20. INSTALL CABLE(S) IN NEW RISER
21. INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS
22. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
26. RELOCATED ETHERNET EDGE SWITCH
27. INSTALL NEW FIBER OPTIC TRANSCEIVER
28. RELOCATED INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. MODIFY EXISTING INTERCONNECT CENTER / SPLICE ENCLOSURE
32. INSTALL POLE MOUNTED SPLICE CABINET
33. INSTALL BASE MOUNTED SPLICE CABINET

34	INSTALL CABINET FOUNDATION
35	INSTALL CCTV CAMERA POLE MOUNTED CABINET
36	INSTALL CCTV CAMERA ASSEMBLY
37	INSTALL CCTV CAMERA WOOD POLE
38	INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
39	INSTALL JUNCTION BOX
40A	INSTALL OVERSIZED JUNCTION BOX
40B	INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")
41	REMOVE EXISTING JUNCTION BOX
42	INSTALL WOOD POLE
43	REMOVE EXISTING WOOD POLE
44	INSTALL AERIAL GUY ASSEMBLY
45	INSTALL STANDARD GUY ASSEMBLY
46	INSTALL SIDEWALK GUY ASSEMBLY
47	INSTALL MESSENGER CABLE
48A	REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
48B	REMOVE EXISTING COMMUNICATIONS CABLE
49	BACK PULL EXISTING COMMUNICATIONS CABLE
50	INSTALL CELL MODEM AND ANTENNA
51	INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
52A	INSTALL DELINEATOR MARKER
52B	INSTALL JUNCTION BOX MARKER
53A	STORE 20 FEET OF COMMUNICATIONS CABLE
53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE
54	LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE
55	LASH CABLE(S) TO EXISTING MESSENGER CABLE
56	LASH CABLE(S) TO NEW MESSENGER CABLE
57	MODIFY EXISTING ELECTRICAL SERVICE
58	INSTALL NEW ELECTRICAL SERVICE
59	INSTALL NEW EQUIPMENT CABINET DISCONNECT
60	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
61	DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
62	BOND RISER AND MESSENGER CABLE TO POLE GROUND
63	BOND RISER TO POLE GROUND
64	BOND MESSENGER CABLE TO POLE GROUND
65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
66	INSTALL MOLDABLE DUCT SEAL
67	SLACK SPAN

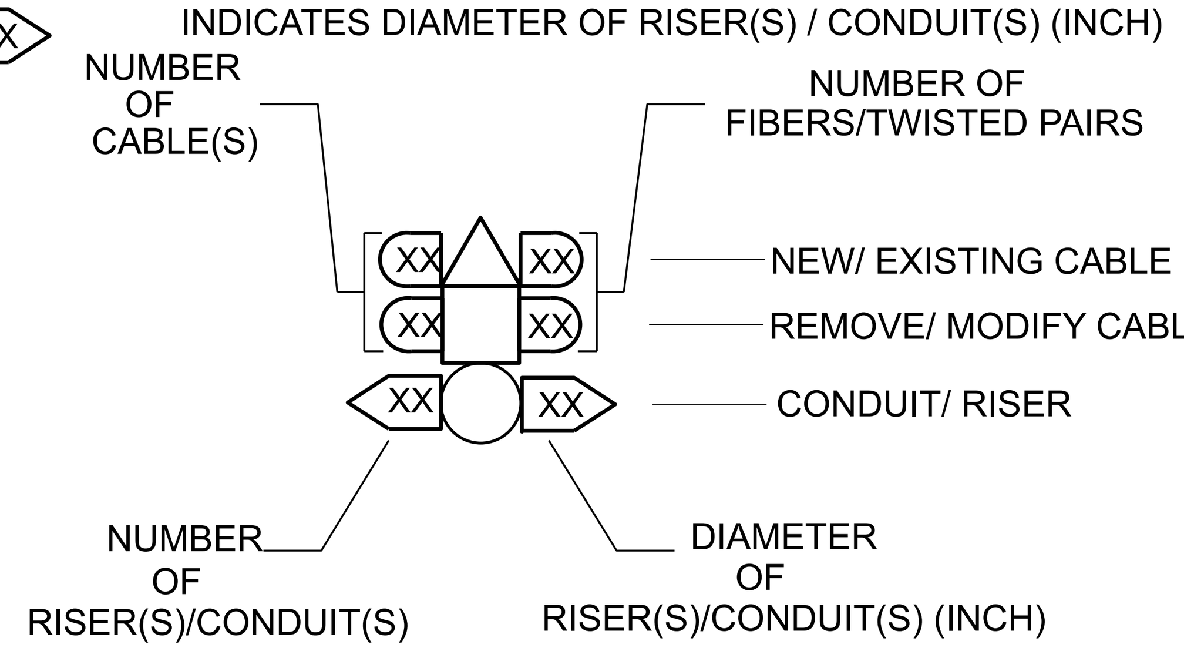
LEGEND

Line	Description
FO	NEW FIBER OPTIC COMMUNICATIONS CABLE
EXI	EXISTING COMMUNICATIONS CABLE
REM	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
	NEW AERIAL GUY ASSEMBLY
	NEW CONDUIT
	EXISTING CONDUIT
DD	NEW DIRECTIONAL DRILLED CONDUIT

NEW		EXISTING
	OVERSIZED JUNCTION BOX	
	WOOD POLE	
S	AERIAL SPLICE ENCLOSURE	S
S	UNDERGROUND SPLICE ENCLOSURE	S
	METAL POLE	
	CCTV ASSEMBLY	
	STANDARD GUY ASSEMBLY	
	SIDEWALK GUY ASSEMBLY	
	CABLE STORAGE RACKS (SNOW SHOES)	
	SIGNAL/EQUIPMENT CABINET	
S	SPLICE CABINET	S
	FLAT PANEL ANTENNA (SINGLE)	
	YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION	
	YAGI ANTENNA (SINGLE)	
	OMNI ANTENNA	
SP	SIGNAL POLE	SP
XX-XXXX	SIGNAL INVENTORY NUMBER	XX-XXXX

CONSTRUCTION NOTE SYMBOLOGY KEY

- XX — INDICATES NUMBER OF CABLES, LOOPS, ETC.
- XX — INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- XX — INDICATES NUMBER OF RISER(S) / CONDUIT(S)
- XX — INDICATES DIAMETER OF RISER(S) / CONDUIT(S) (INCH)



ATTACHMENT POINT:

- XX"/SS / YYY — DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
- YYY / XX"/SS — REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

"SS" REFERENCE LOCATION
FS = FRONT SIDE OF POLE
BS = BACK SIDE OF POLE

NC Dept of Transportation
Division of Highways
Final Drawing Date: ____________
TSMO Unit

DRMP
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260
NC LICENSE NO. F-1524
www.drmp.com

Prepared For:
ITS & Signals Management Section, Transportation Mobility and Safety Division, State of North Carolina Department of Transportation
750 N. Greenfield Pkwy, Garner, NC 27529

D03-13_Scotts Hill Construction Notes

Division 3 — Pender County — N of Wilmington

PLAN DATE:	February 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	AW Poole	DRMP PROJ NO:	22182 (040)

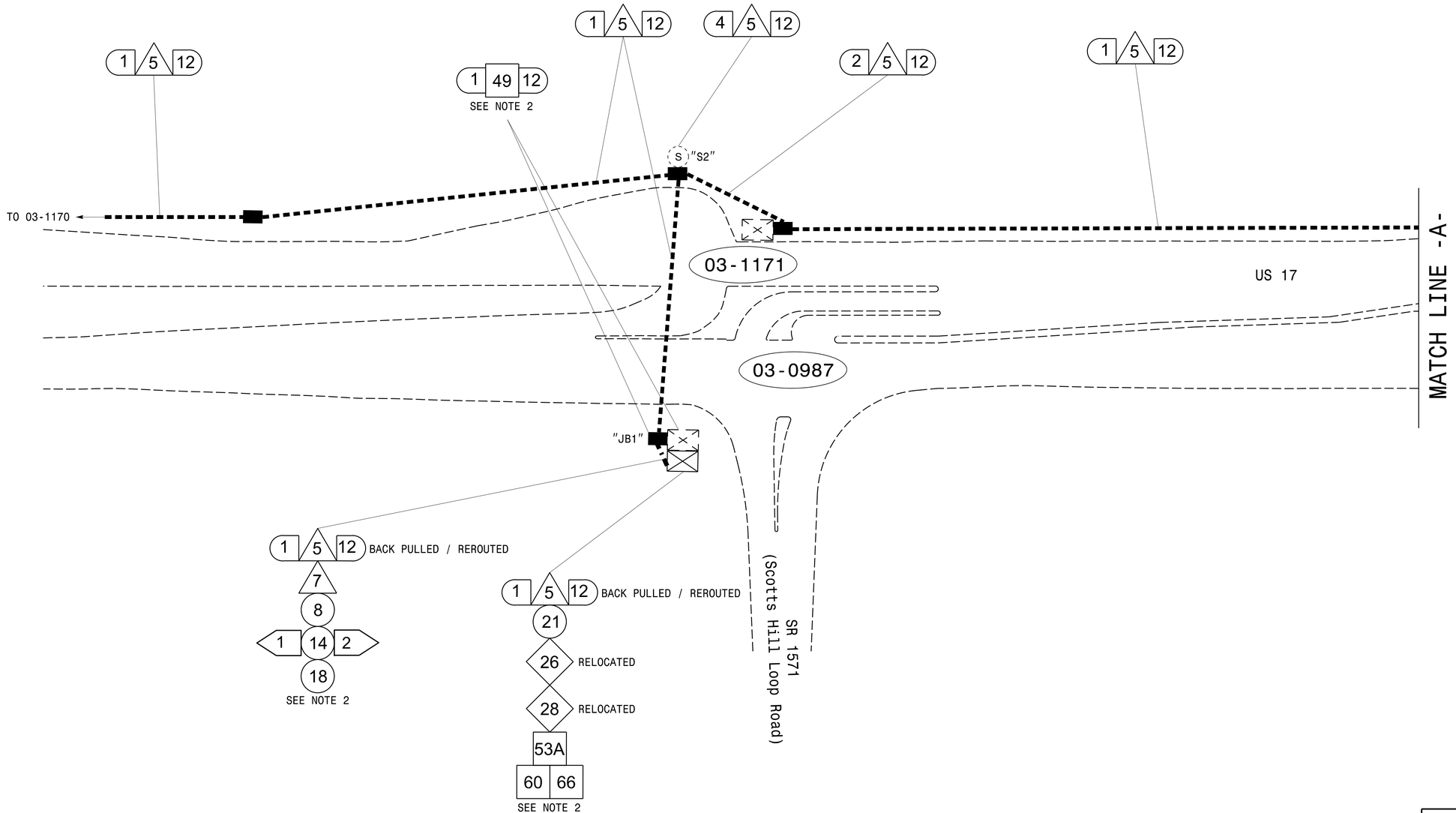
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

Signed by: Zachary M. Esposito
5647DD76D48945B...
SIGNATURE — DATE 02/26/2026

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	SCP-2



GENERAL NOTES

1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE FIBER OPTIC CABLE RELATED TO THE DIVISON 3 TRAFFIC SIGNAL SYSTEM, NOTIFY THE DEPUTY DIVISION TRAFFIC ENGINEER AT (910) 341–2200. NOTIFY THE DEPUTY DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.

2) CONTRACTOR TO TRENCH AND LAY CONDUIT IN PREPARATION FOR DISCONNECTING AND BACKPULLING EXISTING 12–FIBER DROP CABLE FROM EXISTING 03–0987 CABINET. ONCE CONDUIT IS PREPARED, CONTRACTOR TO THEN DISCONNECT AND BACKPULL EXISITNG 12–FIBER DROP CABLE FROM EXISTING 03–0987 CABINET TO JUNCTION BOX "JB1" . AFTERWARDS, CONTRACTOR TO RUN THE BACKPULLED 12–FIBER DROP VIA NEW CONDUIT TO THE NEW 03–0987 CABINET. LEAVE ALL AVAILABLE AMOUNT OF SLACK IN THE NEW CABINET. BEFORE REMOVING OLD SIGNAL CABINET, CONTRACTOR TO TRANSFER SWITCH AND INTERCONNECT CENTER FROM OLD SIGNAL CABINET TO NEW SIGNAL CABINET.

DRMP

DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-548-4200

NC LICENSE NO. F-1524
www.drmp.com

Prepared For:

NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Traffic & Signals Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 N/A

Communication and Conduit Routing Plan: D03-13_Scotts Hill

Division 3 | Pender County | N of Wilmington

PLAN DATE:	February 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	AW Poole	DRMP PROJ NO:	22182 (040)

REVISIONS	INIT.	DATE

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

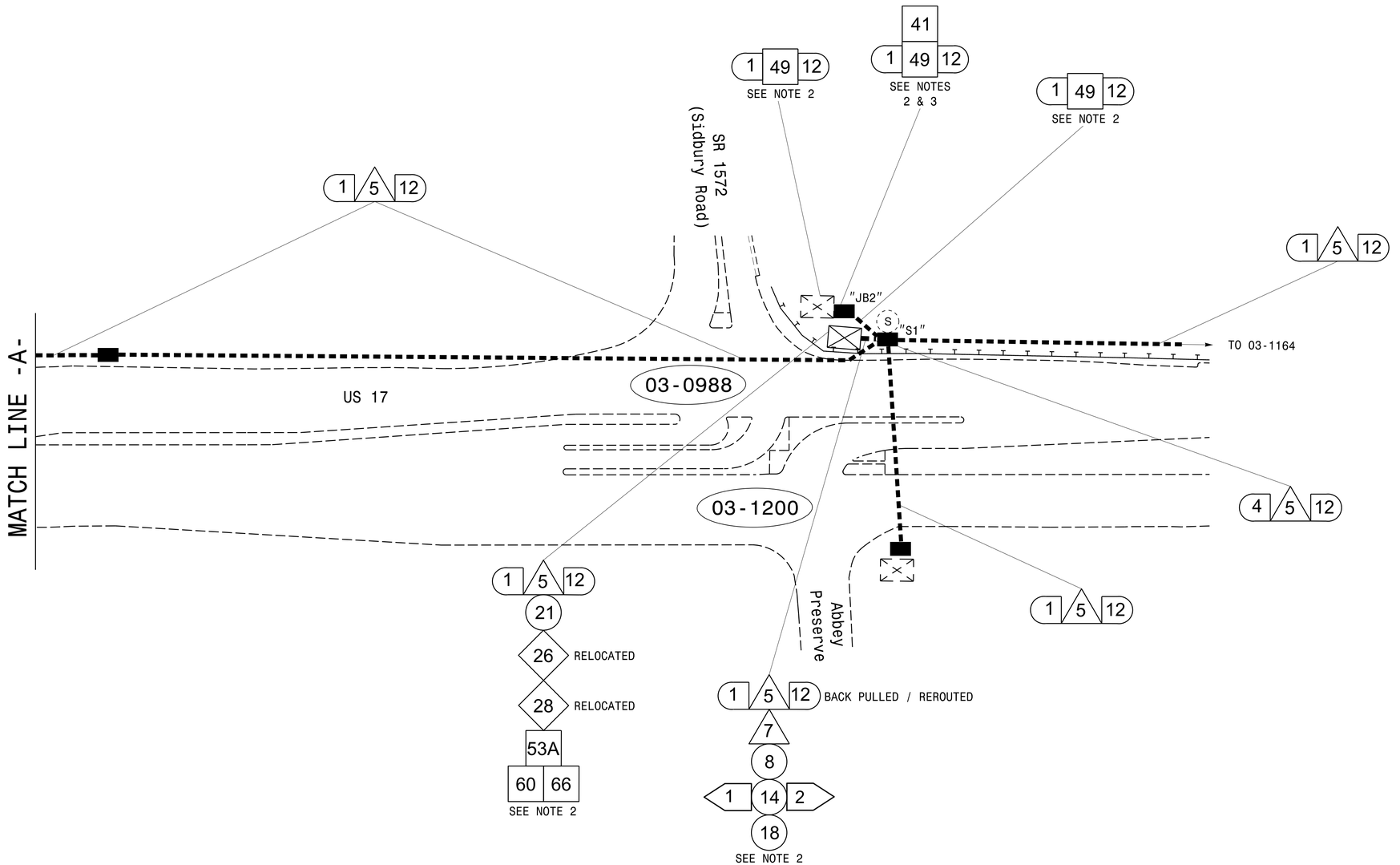
Signed by: Zachary M. Esposito

SIGNATURE

02/26/2026

DATE

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	SCP-3



GENERAL NOTES

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2) CONTRACTOR TO TRENCH AND LAY CONDUIT IN PREPARATION FOR DISCONNECTING AND BACKPULLING EXISTING 12-FIBER DROP CABLE FROM EXISTING 03-0988 CABINET. ONCE CONDUIT IS PREPARED, CONTRACTOR TO THEN DISCONNECT AND BACKPULL EXISITNG 12-FIBER DROP CABLE FROM EXISTING 03-0988 CABINET THROUGH JUNCTION BOX "JB2" TO EXISTING SPLICE BOX "S1". AFTERWARDS, CONTRACTOR TO RUN THE BACKPULLED 12-FIBER DROP VIA NEW CONDUIT TO THE NEW 03-0988 CABINET. LEAVE ALL AVAILABLE AMOUNT OF SLACK IN "S1" AND/OR THE NEW CABINET. BEFORE REMOVING OLD SIGNAL CABINET, CONTRACTOR TO TRANSFER SWITCH AND INTERCONNECT CENTER FROM OLD SIGNAL CABINET TO NEW SIGNAL CABINET.

3) CONTRACTOR TO CUT CONDUITS AT 30" BELOW GRADE AND ABANDON IN PLACE AND REMOVE JUNCTION BOX "JB2". REMOVED JUNCTION BOXES SHALL BE BACKFILLED WITH APPROVED MATERIAL.

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DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-549-4260

NC LICENSE NO. F-1524
www.drmp.com

Prepared For:

NC DEPARTMENT OF TRANSPORTATION
Traffic Engineering Branch
Traffic Signal Management Section

750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 N/A

Communication and Conduit Routing Plan: D03-13_Scotts Hill

Division 3 | Pender County | N of Wilmington

PLAN DATE:	February 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	AW Poole	DRMP PROJ NO:	22182 (040)

REVISIONS	INIT.	DATE

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SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 054155 ENGINEER
ZACHARY M. ESPOSITO

Signed by: Zachary M. Esposito 02/26/2026
SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	SCP-4

EXISTING UNDERGROUND SPLICE ENCLOSURE "S2"
NEAR US 17 (MARKET STREET) AT
SCOTTS HILL LOOP ROAD
SIGNAL INVENTORY # 03–1171

Notes:
Unused fibers left coiled and stored in splice tray.
Unused Buffer Tubes left coiled and stored in splice tray.

LEGEND

COLOR CODE
TIA/EIA 598–C

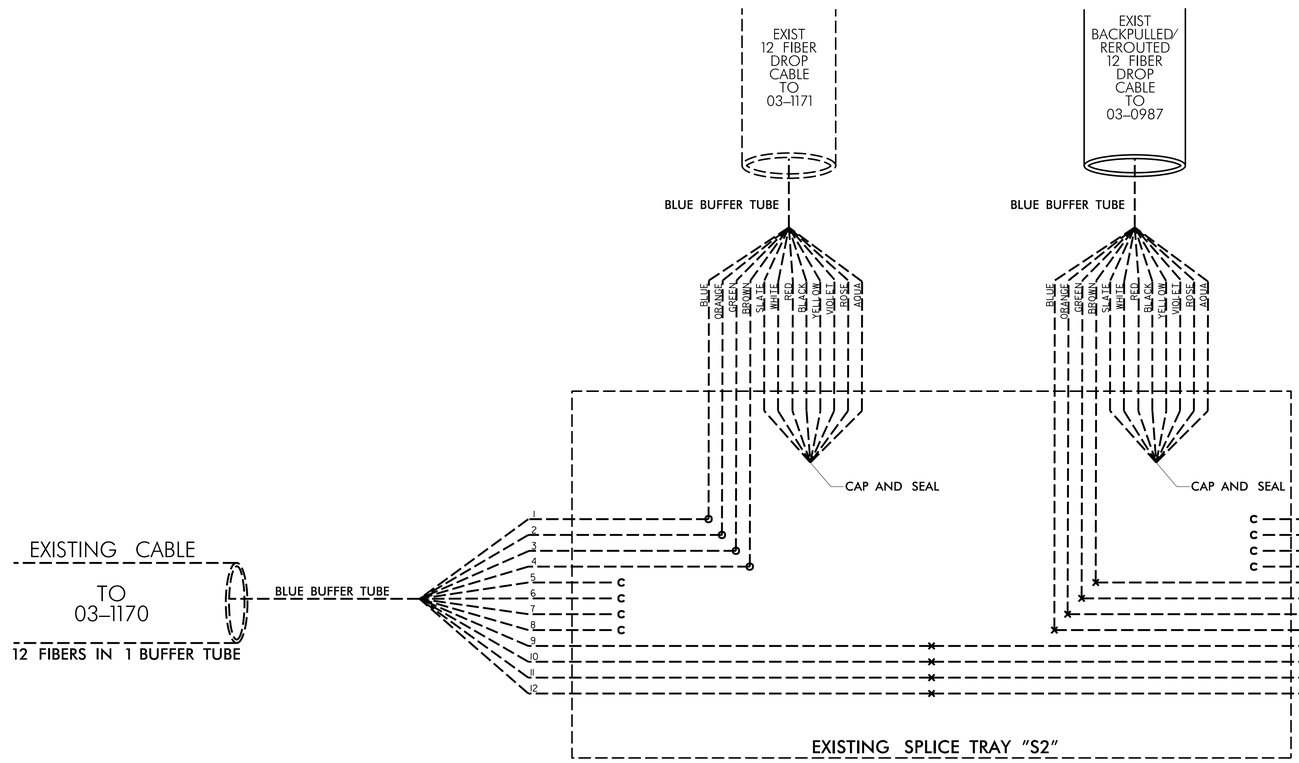
(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA

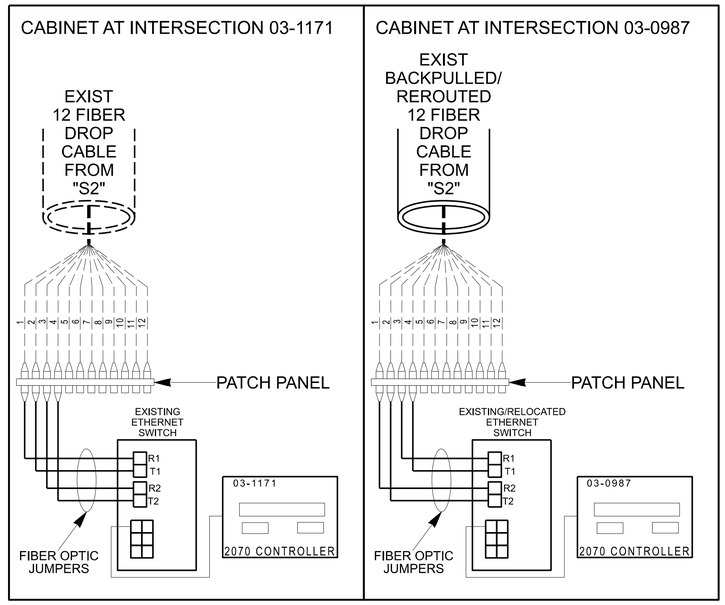
X = FUSION SPLICE INDIVIDUAL FIBER
C = CAP IN TRAY
O = EXISTING SPLICE

EXPRESS — EXPRESS ENTIRE BUFFER TUBE /FIBERS THROUGH WITHOUT CUTTING

BUFFER SPLICE — SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

EXISTING — EXISTING BUFFER TUBE /FIBERS. DO NOT MODIFY EXISTING SPLICES OR EXPRESSED FIBERS.





NOTES:

1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, NOTIFY THE DEPUTY DIVISION 3 TRAFFIC ENGINEER AT (910) 341-2200. NOTIFY THE DEPUTY DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.

2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.

3) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS.

4) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

   1) SPLICE LOCATION
   2) DATE
   3) COMPANY NAME
   4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

DRMP
DRMP, INC.
8210 UNIVERSITY EXECUTIVE PARK DR.
SUITE 220
CHARLOTTE, NC 28262
PHONE: 704-548-4260
NC LICENSE NO. F-1524
www.drmp.com

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Prepared For:
NC Department of Transportation — Transportation Mobility and Safety Division — Traffic Engineering Branch — Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE
0 N/A

Splice Detail:
D03-13_Scott's Hill

Division 3 | Pender County | N of Wilmington

PLAN DATE:	February 2026	REVIEWED BY:	ZM Esposito
PREPARED BY:	AW Poole	DRMP PROJ NO:	22182 (040)

REVISIONS	INIT.	DATE
0		

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO
Signed by: Zachary M Esposito 02/26/2026
SIGNATURE DATE

EXISTING UNDERGROUND SPLICE ENCLOSURE "S1"
NEAR US 17 (MARKET STREET) AT SIDBURY ROAD
SIGNAL INVENTORY # 03–0988

Notes:

Unused fibers left coiled and stored in splice tray.

Unused Buffer Tubes left coiled and stored in splice tray.

LEGEND

COLOR CODE TIA/EIA 598–C

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
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X = FUSION SPLICE INDIVIDUAL FIBER

C = CAP IN TRAY

O = EXISTING SPLICE

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BUFFER SPLICE — SPLICE ALL FIBERS IN BUFFER TUBE COLOR TO COLOR

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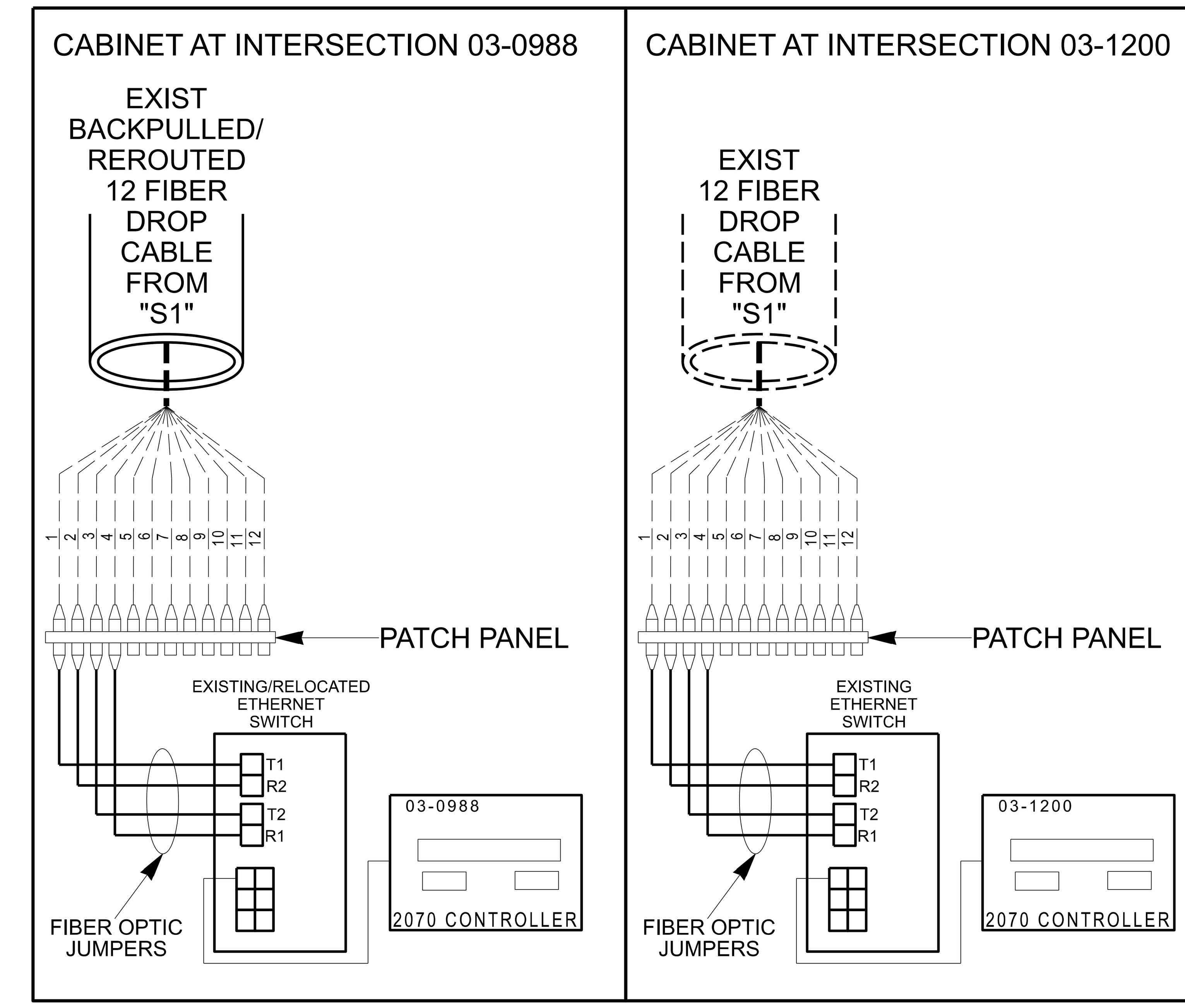

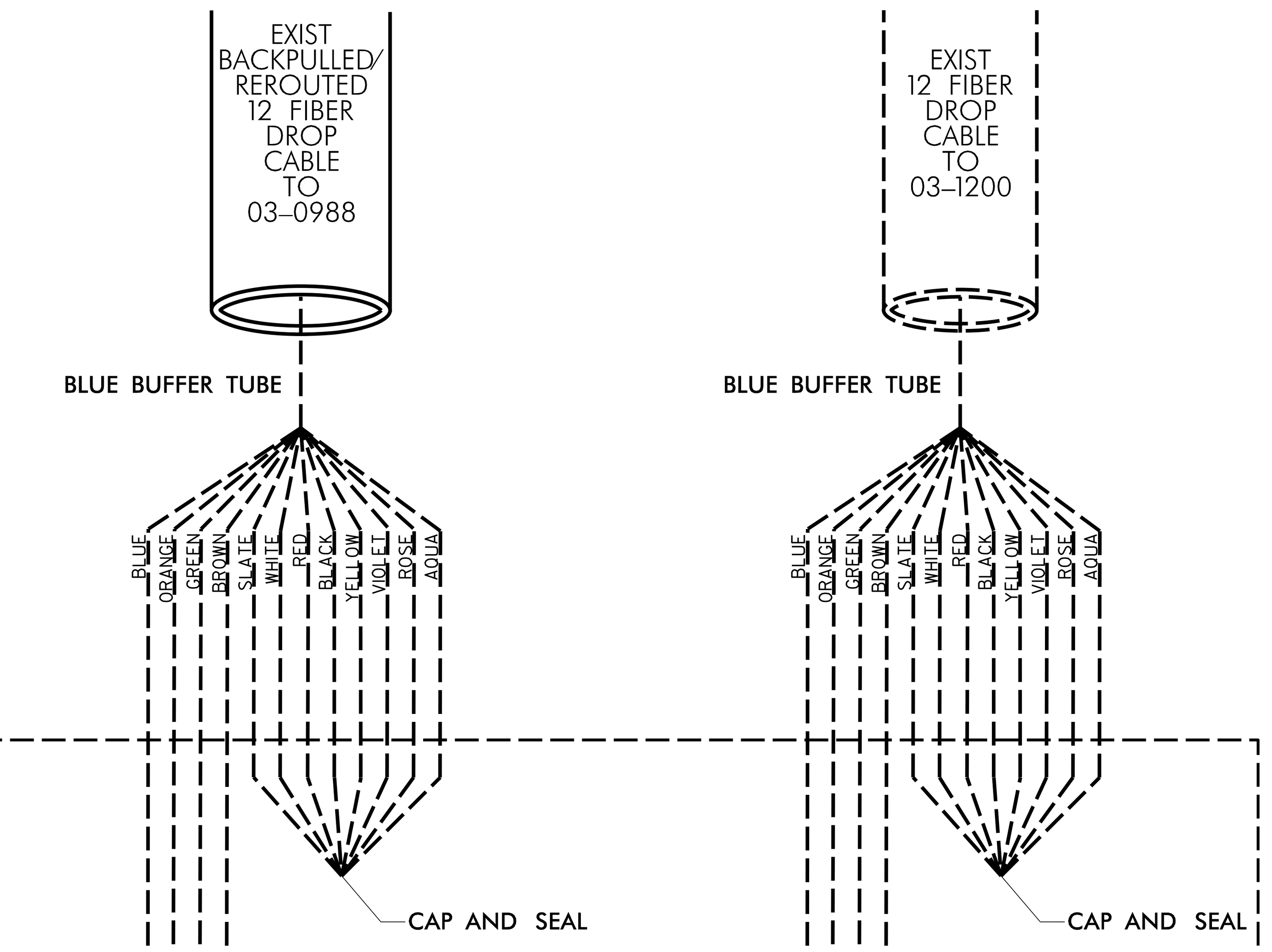

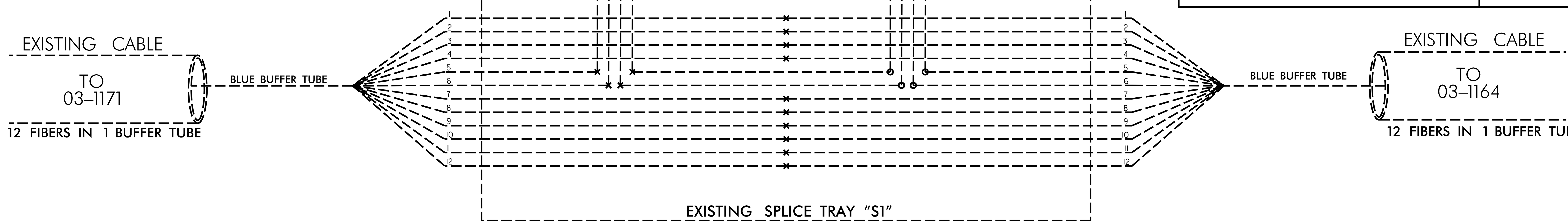

NOTES:

1) FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, NOTIFY THE DEPUTY DIVISION 3 TRAFFIC ENGINEER AT (910) 341-2200. NOTIFY THE DEPUTY DIVISION TRAFFIC ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.

2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.

3) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING \ ENSURING PROPER TERMINATIONS.

4) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING: REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

   1) SPLICE LOCATION
   2) DATE
   3) COMPANY NAME
   4) NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.

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www.drmp.com

Prepared For:
Transportation Mobility and Safety Division — ITS & Signals Management Section
750 N. Greenfield Pkwy, Garner, NC 27529

SCALE 0 N/A

Splice Detail:
D03-13_Scott's Hill

Division 3	Pender County	N of Wilmington
PLAN DATE: February 2026	REVIEWED BY: ZM Esposito	
PREPARED BY: AW Poole	DRMP PROJ NO: 22182 (040)	
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 054155 ENGINEER ZACHARY M. ESPOSITO

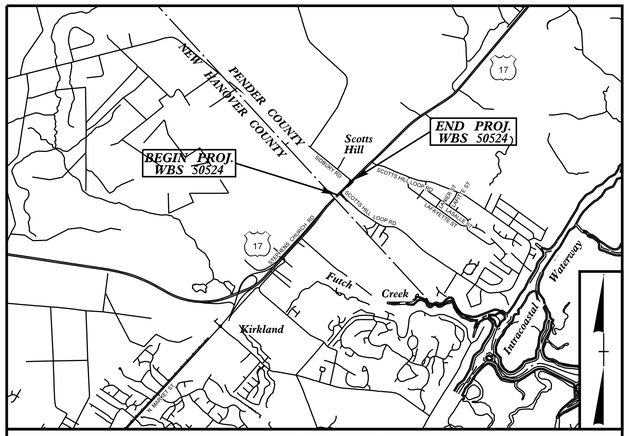
Signed by: Zachary M. Esposito 02/26/2026
SIGNATURE DATE

09/08/99

PROJECT: WBS 50524

CONTRACT: DC00504

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



VICINITY MAP

FIELD INSPECTION PLAN SET

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

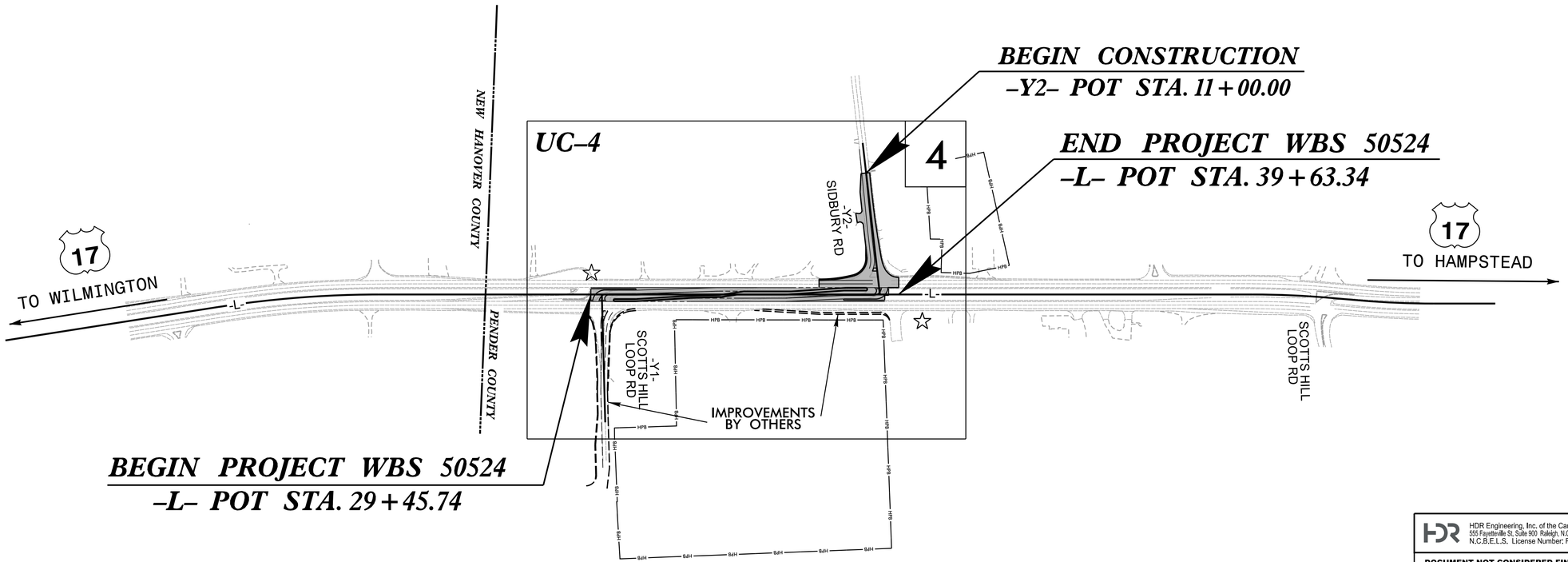
T.I.P. NO.	SHEET NO.
WBS 50524	UC–1

UTILITY CONSTRUCTION PLANS
PENDER COUNTY

LOCATION: US 17 FROM SCOTTS HILL LOOP RD TO SIDBURY RD

TYPE OF WORK: WATER SERVICE LINE RELOCATION

NAD 83/
NSRS 2007



BEGIN CONSTRUCTION
–Y2– POT STA. 11+00.00

END PROJECT WBS 50524
–L– POT STA. 39+63.34

BEGIN PROJECT WBS 50524
–L– POT STA. 29+45.74

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

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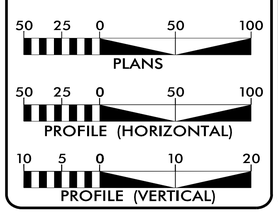
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

GRAPHIC SCALES



INDEX OF SHEETS

WATER AND SEWER OWNERS ON PROJECT

(A) WATER – PENDER COUNTY UTILITIES

PREPARED IN THE OFFICE OF

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

MATTHEW WATT, PE	*CONSULTANT CONTACT #1*
JOE LANGSTON, PE	*CONSULTANT CONTACT #2*
KATIE ROUGEOT	*CONSULTANT CONTACT #3*

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037518 2/19/2026 ENGINEER MATTHEW W WATT

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

TIMOTHY GODWIN	*DIVISION UTILITY ENGINEER*
THOMAS SCRUGGS	*ASSISTANT DIVISION UTILITY ENGINEER*
DONALD LANGLEY	*DIVISION UTILITY COORDINATOR*

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_pshpfl_UTL-UC_MODIFIED.tbl
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FILE: \

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	UC-2

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

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

NORTH CAROLINA PROFESSIONAL SEAL 037518 2/19/2026 ENGINEER MATTHEW W. WATT

UTILITY CONSTRUCTION PLANS ONLY

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY SYMBOLOGY

PROPOSED WATER SYMBOLS

- Water Line (Sized as Shown) — 12" WL
- 11¼ Degree Bend
- 22½ Degree Bend
- 45 Degree Bend
- 90 Degree Bend
- Plug
- Tee
- Cross
- Reducer
- Gate Valve — GV
- Butterfly Valve — BV
- Tapping Valve — TGV
- Line Stop — LS
- Line Stop with Bypass — LS/BP
- Blow Off — BO
- Fire Hydrant — PFH
- Relocate Fire Hydrant — 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

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

PROPOSED MISCELLANOUS UTILITIES SYMBOLS

- Power Pole
- Telephone Pole
- Joint Use Pole
- Telephone Pedestal — TEL PED
- Utility Line by Others (Type as Shown) — PROP 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

- 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 — T FO
- *Underground Fiber Optics Telephone Cable — T FO
- *Underground TV Cable — TV
- *Underground Fiber Optics TV Cable — T 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
- Utility Line Drawn from Record (Type as Shown)
- Designated Utility Line (Type as Shown)

8/17/99

2/19/2026 ...\48864_UT_UC_UC02.dgn 11:35:41 AM

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151
UTILITY CONSTRUCTION PLANS ONLY
NORTH CAROLINA PROFESSIONAL SEAL 037518 ENGINEER MATTHEW W. WATT 2/19/2026

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY NOTES

GENERAL:

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 UTILITIES BELONG TO PENDER COUNTY WATER. THE CONTACT IS KATIE LEUBNER, KLEUBNER@PENDERCOUNTYNC.GOV, 910-612-9176.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS.

8. 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.

9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SAFETY ASSOCIATED WITH THE WORK UNDER THIS PROJECT AND FOR COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY LAWS, CODES, REGULATIONS, AND ORDINANCES INCLUDING BUT NOT LIMITED TO THOSE CURRENTLY MANDATED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

PROJECT SPECIFIC:

1. WATER LINE AND SEWER LINE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE OWNERS STANDARD DETAILS WHICH ARE SHOWN ON THE DETAIL SHEETS AND THE PROJECT SPECIAL PROVISIONS.

2. PRIOR TO FINAL ACCEPTANCE OF THE WATER AND SEWER LINE WORK THE CONTRACTOR SHALL PROVIDE SURVEYED AS-BUILT RECORD DRAWINGS.

3. ANY PROPOSED CHANGES TO WATER OR SEWER LINE WORK SHALL BE APPROVED IN ADVACE IN WRITTING BY THE ENGINEER.

4. TESTING OF WATER OR SANITARY PIPING AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS.

5. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

6. BORE PITS, TRENCHES AND ALL OTHER EXCAVATIONS WHERE SLOPE IS 1:1 OR STEEPER FROM EDGE OF ROADWAY MUST INCLUDE POSITIVE SHORING MEETING NCDOT AND OSHA REQUIREMENTS. ALL SHORING SYSTEMS MUST BE DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA.

7.REMOVE AND RESET FENCES AS NOTED ON THE PLANS AND/OR AS DIRECTED BY THE INSPECTOR/NCDOT.

8. PRIOR TO CONSTRUCTION, NOTIFY ALL UTILITY OWNERS WHOSE FACILITIES MAY BE AFFECTED TO DETERMINE UTILITY LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE CAUSED BY HIS OPERATIONS OR THOSE OF HIS AGENTS. THE CONTRACTOR SHALL HOLD PENDER COUNTY UTILITIES HARMLESS FOR ANY THIRD-PARTY INCONVENIENCE CREATED BY WORK OF HIS OWN FORCES OR THAT OF HIS AGENTS.

9. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR'S OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.

10. CONTRACTOR SHALL COORDINATE CONNECTIONS AND ANY WATER SERVICE. SHUT DOWNS AND PROVIDE 24 HOURS OF NOTICE TO PENDER COUNTY UTILITIES.

11. MAINTAIN SANITARY SEWER SERVICE AT ALL TIMES. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEEDED BY A 24 HOUR ADVANCE NOTICE TO PENDER COUNTY UTILITIES.

12. PLUG ALL PIPE OPENINGS AND FILL ANY EXPOSED TRENCHES AT THE END OF EACH WORK DAY.

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	UC-3A

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

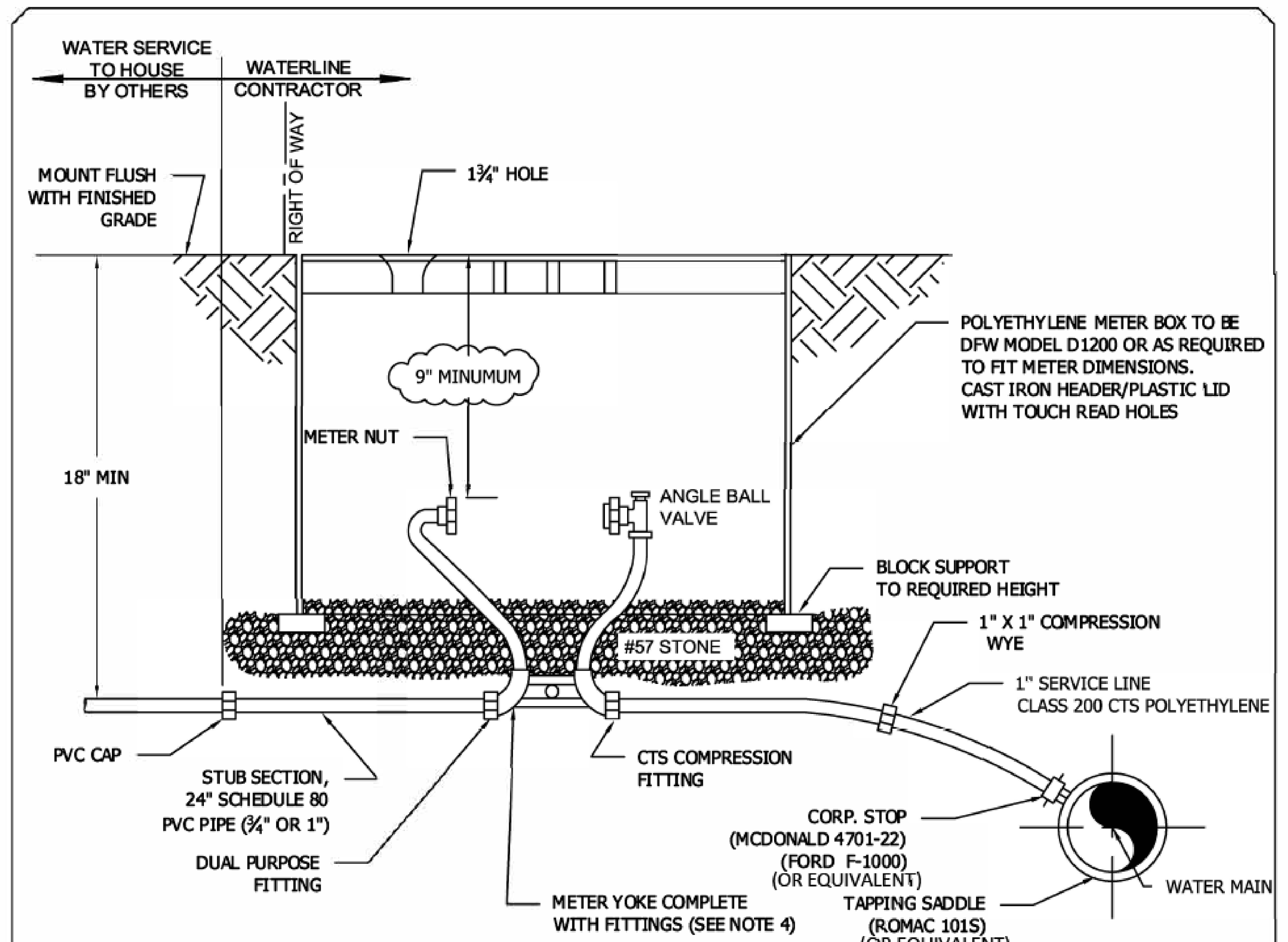
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

NORTH CAROLINA PROFESSIONAL SEAL 037518 2/19/2026 ENGINEER MATTHEW W. WATT

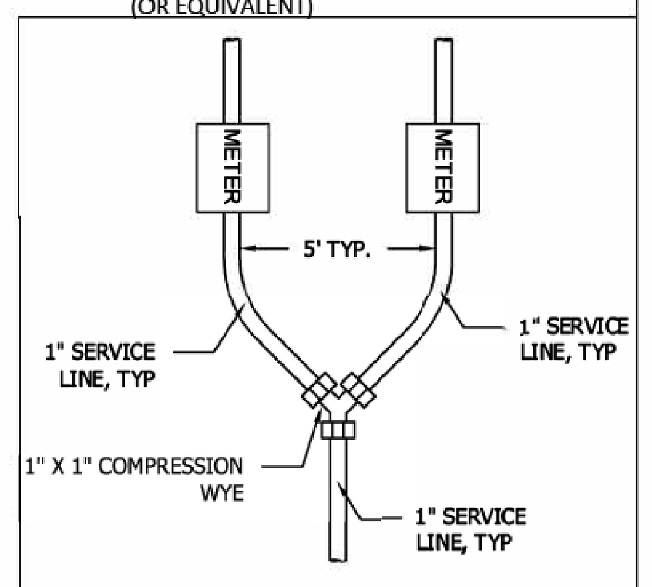
UTILITY CONSTRUCTION PLANS ONLY

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. CONTRACTOR SHALL PLACE METER BOX IN NON-TRAFFIC AREA ONLY.
2. ALL TAPS TO BE MADE ON THE TOP QUARTER OF THE WATER MAIN.
3. CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
4. (¾") MCDONALD 26-702WX2D 33, FORD FVB727W4143NL , OR EQUIVALENT.
(1") MCDONALD 26-410WX2D 44, FORD FVB7410W4144NL , OR EQUIVALENT.
5. BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10, PRO READ REGISTER, R900 MIU , OR EQUIVALENT).
6. METER TO BE SET BY COUNTY UPON RECEIPT OF WATER SERVICE FEES, AND SATISFACTORY INSPECTION OF WATER SERVICE TO HOUSE.
7. TAPS ON WATER MAINS LARGER THAN 16" SHALL BE MADE WITH DUAL WIDE BAND, STAINLESS STEEL TAPPING SADDLES (ROMAC 202S OR EQUIVALENT).
8. 1½" METERS REQUIRE 2" TAP AND 2" SQUARE NUT GATE VALVE PER 2" METER DETAIL. REDUCE TO 1½" SERVICE
9. INSTALL WYE TO PROVIDE A DOMESTIC METER SETTER AND IRRIGATION METER SETTER PER SPLIT SERVICE INSET.



WYE PLAN VIEW FOR WATER/IRRIGATION SPLIT SERVICE

STANDARD WATER SERVICE DETAIL

NOT TO SCALE

WATER SERVICE (3/4" TO 1")

PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	UC-4

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

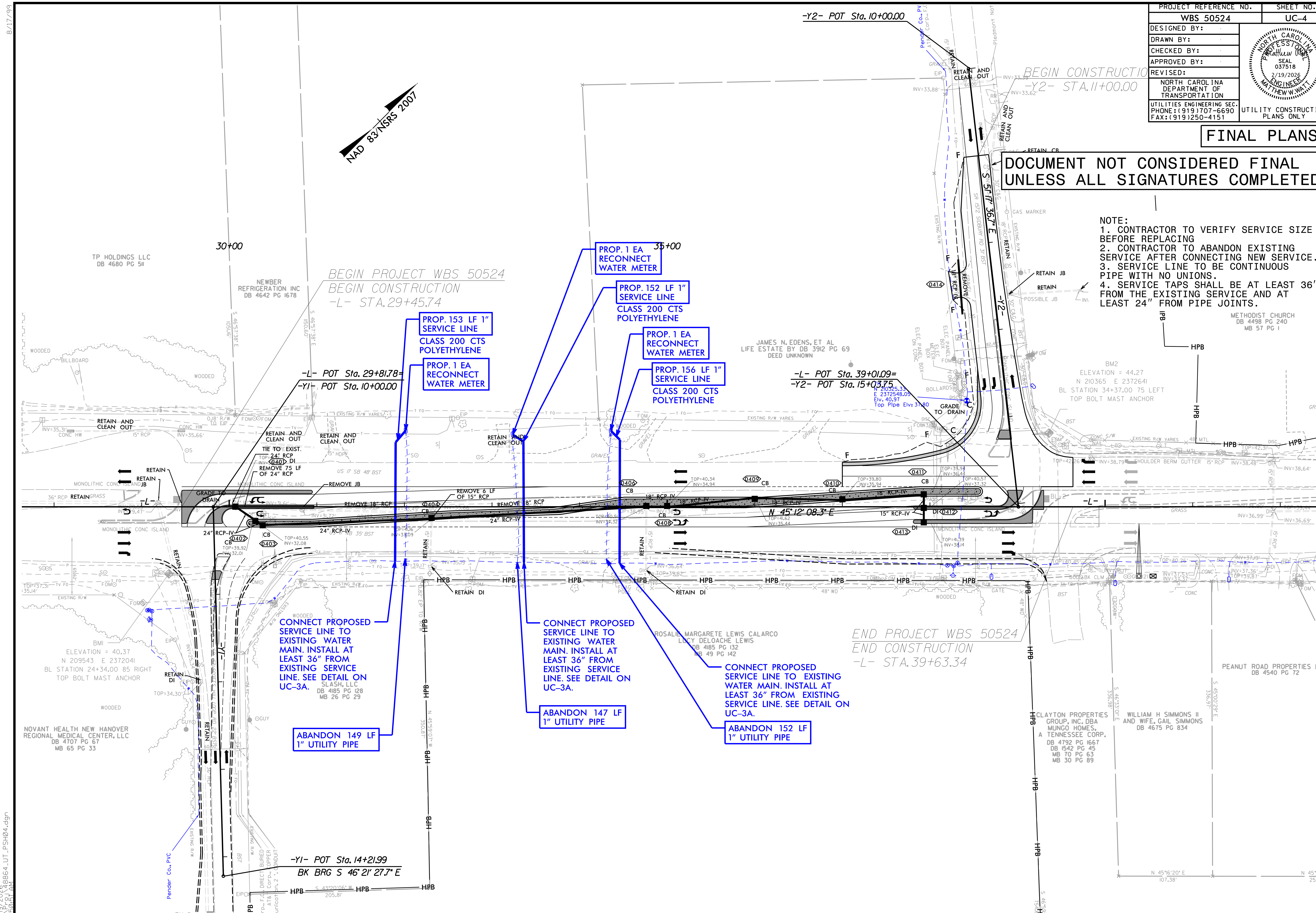
UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 037518 2/19/2026 MATTHEW W. WATT

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE:
1. CONTRACTOR TO VERIFY SERVICE SIZE BEFORE REPLACING
2. CONTRACTOR TO ABANDON EXISTING SERVICE AFTER CONNECTING NEW SERVICE.
3. SERVICE LINE TO BE CONTINUOUS PIPE WITH NO UNIONS.
4. SERVICE TAPS SHALL BE AT LEAST 36" FROM THE EXISTING SERVICE AND AT LEAST 24" FROM PIPE JOINTS.



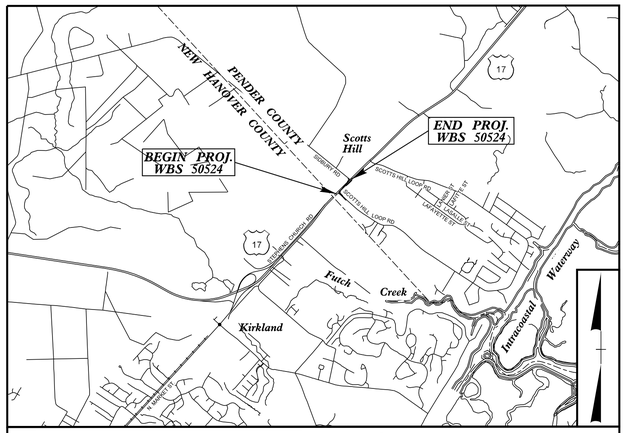
NAD 83/NSRS 2007
BEGIN PROJECT WBS 50524
BEGIN CONSTRUCTION
-L- STA.29+45.74
-L- POT Sta. 29+81.78=
-Y1- POT Sta. 10+00.00
-Y2- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y2- STA.11+00.00
-L- POT Sta. 39+01.09=
-Y2- POT Sta. 15+03.75
END PROJECT WBS 50524
END CONSTRUCTION
-L- STA.39+63.34
-Y1- POT Sta. 14+21.99
BK BRG S 46° 21' 27.7" E
N 45° 12' 08.3" E
S 51° 17' 36.7" E
30+00
35+00
PROP. 153 LF 1" SERVICE LINE
CLASS 200 CTS POLYETHYLENE
PROP. 1 EA RECONNECT WATER METER
PROP. 1 EA RECONNECT WATER METER
PROP. 152 LF 1" SERVICE LINE
CLASS 200 CTS POLYETHYLENE
PROP. 1 EA RECONNECT WATER METER
PROP. 156 LF 1" SERVICE LINE
CLASS 200 CTS POLYETHYLENE
CONNECT PROPOSED SERVICE LINE TO EXISTING WATER MAIN. INSTALL AT LEAST 36" FROM EXISTING SERVICE LINE. SEE DETAIL ON UC-3A.
CONNECT PROPOSED SERVICE LINE TO EXISTING WATER MAIN. INSTALL AT LEAST 36" FROM EXISTING SERVICE LINE. SEE DETAIL ON UC-3A.
CONNECT PROPOSED SERVICE LINE TO EXISTING WATER MAIN. INSTALL AT LEAST 36" FROM EXISTING SERVICE LINE. SEE DETAIL ON UC-3A.
ABANDON 149 LF 1" UTILITY PIPE
ABANDON 147 LF 1" UTILITY PIPE
ABANDON 152 LF 1" UTILITY PIPE
TP HOLDINGS LLC
DB 4680 PG 511
NEWBER REFRIGERATION INC
DB 4642 PG 1678
JAMES N. EDENS, ET AL
LIFE ESTATE BY DB 3912 PG 69
DEED UNKNOWN
METHODIST CHURCH
DB 4498 PG 240
MB 57 PG 1
BM2
ELEVATION = 44.27
N 210365 E 2372641
BL STATION 34+37.00 75 LEFT
TOP BOLT MAST ANCHOR
BM1
ELEVATION = 40.37
N 209543 E 2372041
BL STATION 24+34.00 85 RIGHT
TOP BOLT MAST ANCHOR
NOVANT HEALTH NEW HANOVER REGIONAL MEDICAL CENTER, LLC
DB 4707 PG 67
MB 65 PG 33
SLASH, LLC
DB 4185 PG 128
MB 26 PG 29
ROSALIE MARGARETE LEWIS CALARCO
LUCY DELOACHE LEWIS
DB 4185 PG 132
MB 49 PG 142
CLAYTON PROPERTIES GROUP, INC. DBA MUNGO HOMES, A TENNESSEE CORP.
DB 4792 PG 1667
DB 1542 PG 45
MB 70 PG 63
MB 30 PG 89
WILLIAM H SIMMONS II AND WIFE, GAIL SIMMONS
DB 4675 PG 834
PEANUT ROAD PROPERTIES LLC
DB 4540 PG 72
RETAIN AND CLEAN OUT
TIE TO EXIST. 24" RCP
REMOVE 75 LF OF 24" RCP
REMOVE JB
REMOVE 18" RCP
REMOVE 6 LF OF 15" RCP
REMOVE 18" RCP
GRADE TO DRAIN
RETAIN JB
RETAIN CB
GAS MARKER
WOODED
BILLBOARD
HPB

8/17/99
2/19/2026

09/08/99

TIP PROJECT: WBS 50524

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

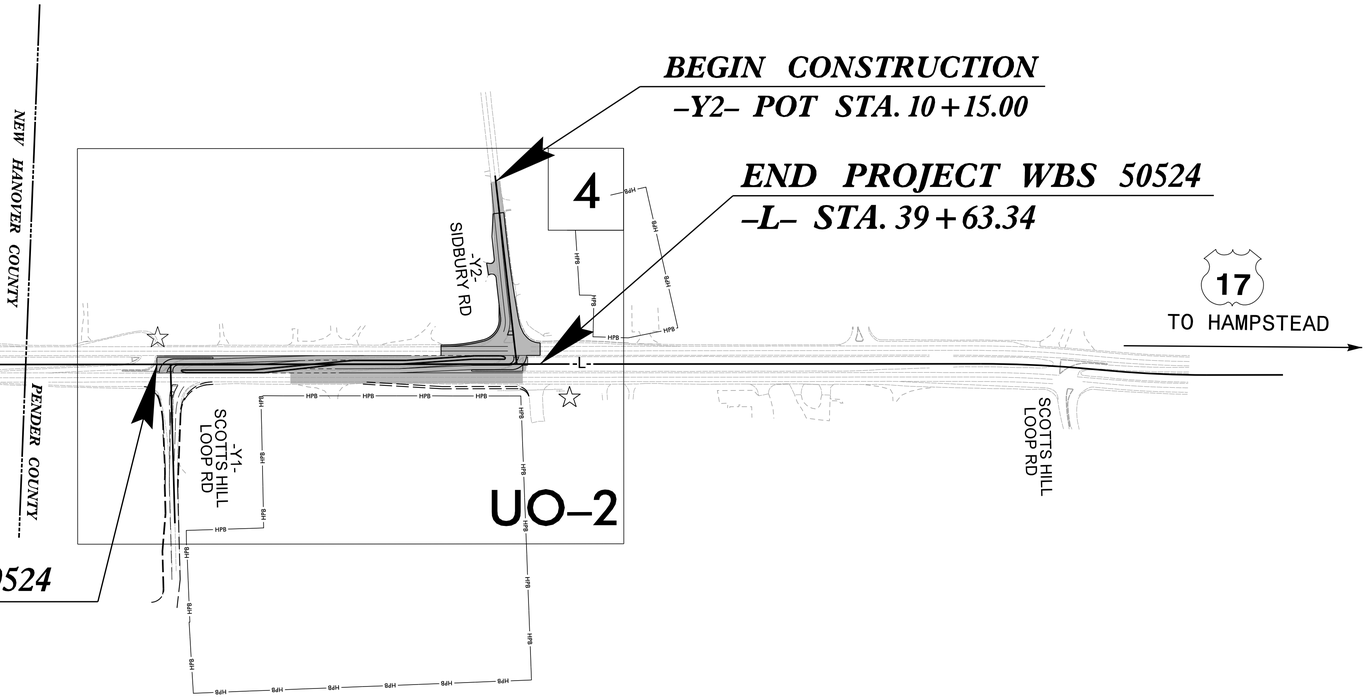
T.I.P. NO.	SHEET NO.
WBS 50524	UO–1

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.

UTILITIES BY OTHERS PLANS
PENDER COUNTY

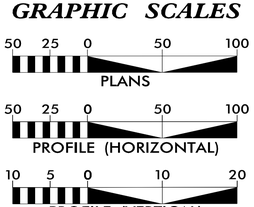
LOCATION: US 17 FROM SIDBURY RD. TO SCOTTS HILL LOOP RD.

TYPE OF WORK: UTILITY RELOCATION, COMMUNICATIONS



NOTES:
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.:	*DESCRIPTION:*
UO–1	*TITLE SHEET*
UO–2	*UBO PLAN SHEET*

UTILITY OWNERS WITH CONFLICTS

(A) COMMUNICATIONS – METRONET

PREPARED IN THE OFFICE OF:

SAM™
2641 SUMNER BOULEVARD
SUITE 116
RALEIGH, NC 27616
(919) 878–7466

TODD BUTNER — *UTILITY PROJECT MANAGER*
MATTHEW WARD — *PROJECT UTILITY COORDINATOR*

DIVISION OF HIGHWAYS
DIVISION 3
5501 Barbados Blvd., Castle Hayne NC, 28429

BRIAN HARDING, PE — *DIVISION DESIGN ENGINEER*
TIM GODWIN — *DIVISION UTILITY ENGINEER*

1/21/2026
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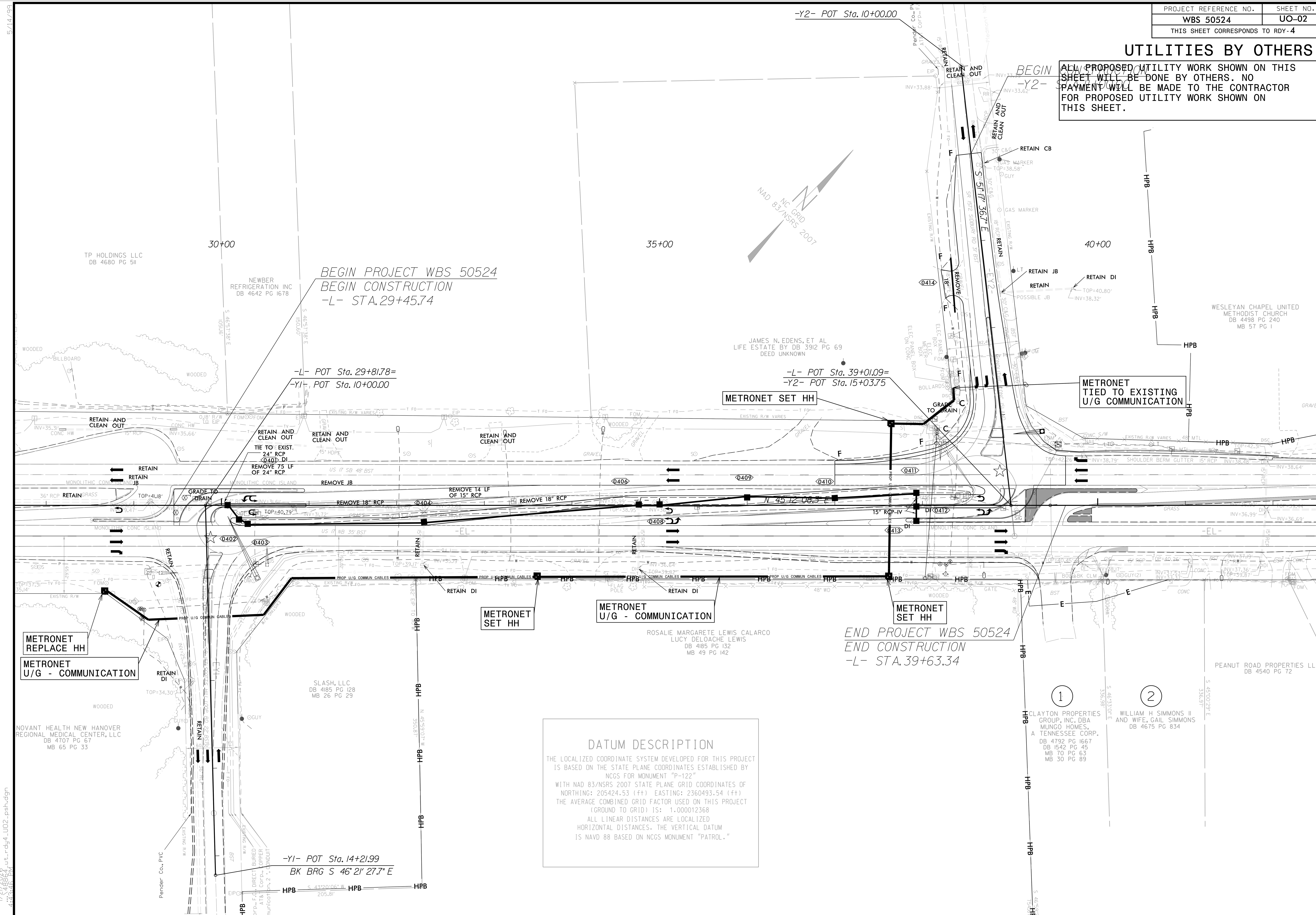
PROJECT REFERENCE NO.	SHEET NO.
WBS 50524	UO-02
THIS SHEET CORRESPONDS TO RDY-4	

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.



-Y2- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y2-
S 51°17' 36.7" E
NC GRID NAD 83/NSRS 2007
30+00
35+00
40+00
TP HOLDINGS LLC DB 4680 PG 511
NEWBER REFRIGERATION INC DB 4642 PG 1678
BEGIN PROJECT WBS 50524
BEGIN CONSTRUCTION
-L- STA.29+45.74
-L- POT Sta. 29+81.78=
-Y1- POT Sta. 10+00.00
JAMES N. EDENS, ET AL LIFE ESTATE BY DB 3912 PG 69 DEED UNKNOWN
WESLEYAN CHAPEL UNITED METHODIST CHURCH DB 4498 PG 240 MB 57 PG 1
-L- POT Sta. 39+01.09=
-Y2- POT Sta. 15+03.75
METRONET SET HH
METRONET TIED TO EXISTING U/G COMMUNICATION
RETAIN AND CLEAN OUT
RETAIN CB
RETAIN JB
RETAIN DI
REMOVE JB
REMOVE 18" RCP
REMOVE 14 LF OF 15" RCP
REMOVE 75 LF OF 24" RCP
TIE TO EXIST. 24" RCP
GRADE TO DRAIN
N 45°12' 08.3" E
-EL-
METRONET REPLACE HH
METRONET U/G - COMMUNICATION
METRONET SET HH
METRONET U/G - COMMUNICATION
METRONET SET HH
PROP U/G COMMUN CABLES
HPB
END PROJECT WBS 50524
END CONSTRUCTION
-L- STA.39+63.34
ROSALIE MARGARETE LEWIS CALARCO LUCY DELOACHE LEWIS DB 4185 PG 132 MB 49 PG 142
SLASH, LLC DB 4185 PG 128 MB 26 PG 29
NOVANT HEALTH NEW HANOVER REGIONAL MEDICAL CENTER, LLC DB 4707 PG 67 MB 65 PG 33
PEANUT ROAD PROPERTIES LLC DB 4540 PG 72
1 CLAYTON PROPERTIES GROUP, INC. DBA MUNGO HOMES, A TENNESSEE CORP. DB 4792 PG 1667 DB 1542 PG 45 MB 70 PG 63 MB 30 PG 89
2 WILLIAM H SIMMONS II AND WIFE, GAIL SIMMONS DB 4675 PG 834
-Y1- POT Sta. 14+21.99
BK BRG S 46°21' 27.7" E

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "P-122"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 205424.53 (ft) EASTING: 2360493.54 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000012368
ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES. THE VERTICAL DATUM IS NAVD 88 BASED ON NCGS MONUMENT "PATROL."

5/14/99

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PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	X-0

CROSS SECTION INDEX

ALIGNMENT		SHEET NUMBER
-L-	.....	X-1 TO X-5
-Y2-	.....	X-6 TO X-7

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt PENTABLE: NCDOT_pshpfl.tbl
USER: CHARRIS DATE: 4/15/2026 TIME: 9:23:12 AM
FILE: ...\XSC\48864_RDY_XPL_INDEX.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	X-0A

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

CROSS-SECTION SUMMARY

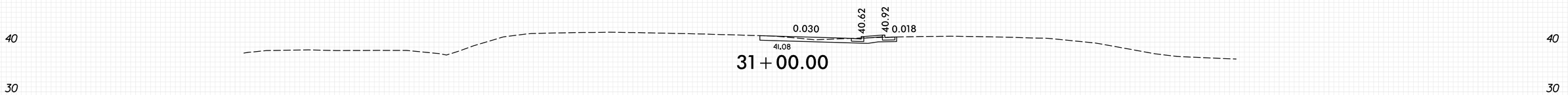
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
30+00.00	0	0
30+50.00	40	0
31+00.00	46	0
31+50.00	36	0
32+00.00	33	0
32+50.00	32	0
33+00.00	30	1
33+50.00	30	1
34+00.00	28	5
34+50.00	31	4
35+00.00	31	4
35+50.00	28	5
36+00.00	26	4
36+50.00	25	3
37+00.00	31	1
37+50.00	49	0
38+00.00	66	2
38+50.00	58	2

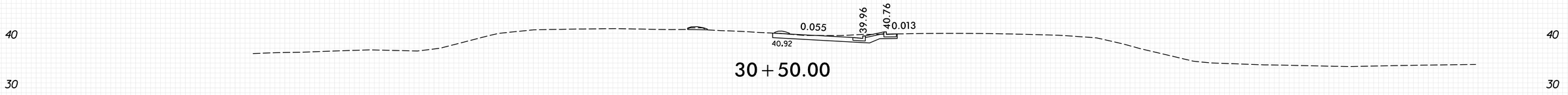
Station Y2	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+00.00	0	0
11+50.00	6	1
12+00.00	10	1
12+50.00	19	0
13+00.00	19	0
13+50.00	12	0
14+00.00	17	0

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	WBS 50524	X-1

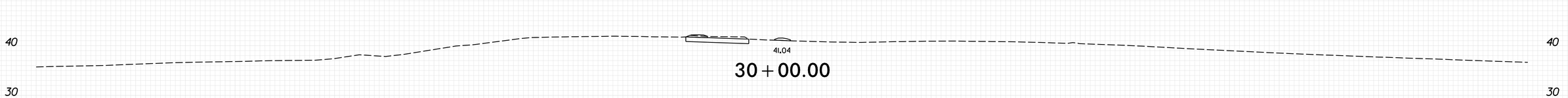
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



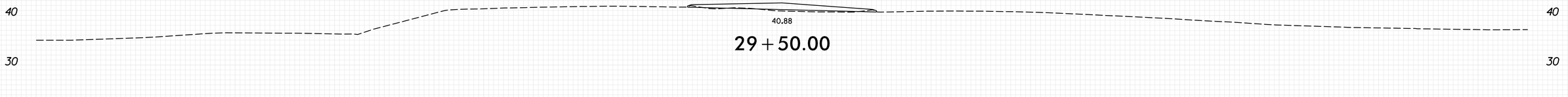
31+00.00



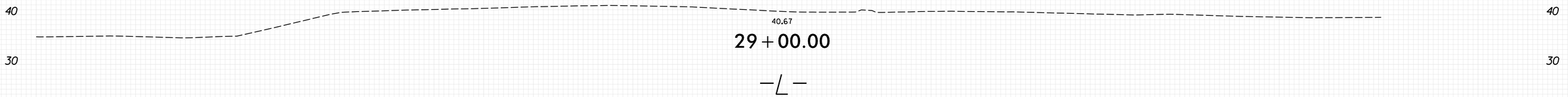
30+50.00



30+00.00



29+50.00



29+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

8/23/99

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USER: CHARRIS
FILE: \

PENTABLE: xpl_en_v8.tbl
DATE: 2/18/2026
TIME: 8:19:18 AM

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
WBS 50524	X-2

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30

0.024 41.29 41.54 0.021
40.71

33+50.00

40
30

0.029 41.12 41.61 0.019
40.90

33+00.00

40
30

0.028 41.05 41.41 0.020
40.84

32+50.00

40
30

0.029 40.91 41.24 0.021
40.99

32+00.00

40
30

0.030 40.77 41.07 0.024
40.97

31+50.00

40
30

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: CHARRIS
FILE: \
PENTABLE: xpl_en_v8.tbl
DATE: 2/18/2026
TIME: 8:19:19 AM

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30

0.019 41.79 40.85 0.013
40.25
36+00.00

0.018 41.80 40.65 0.033
40.14
35+50.00

0.015 41.79 40.51 0.041
39.62
35+00.00

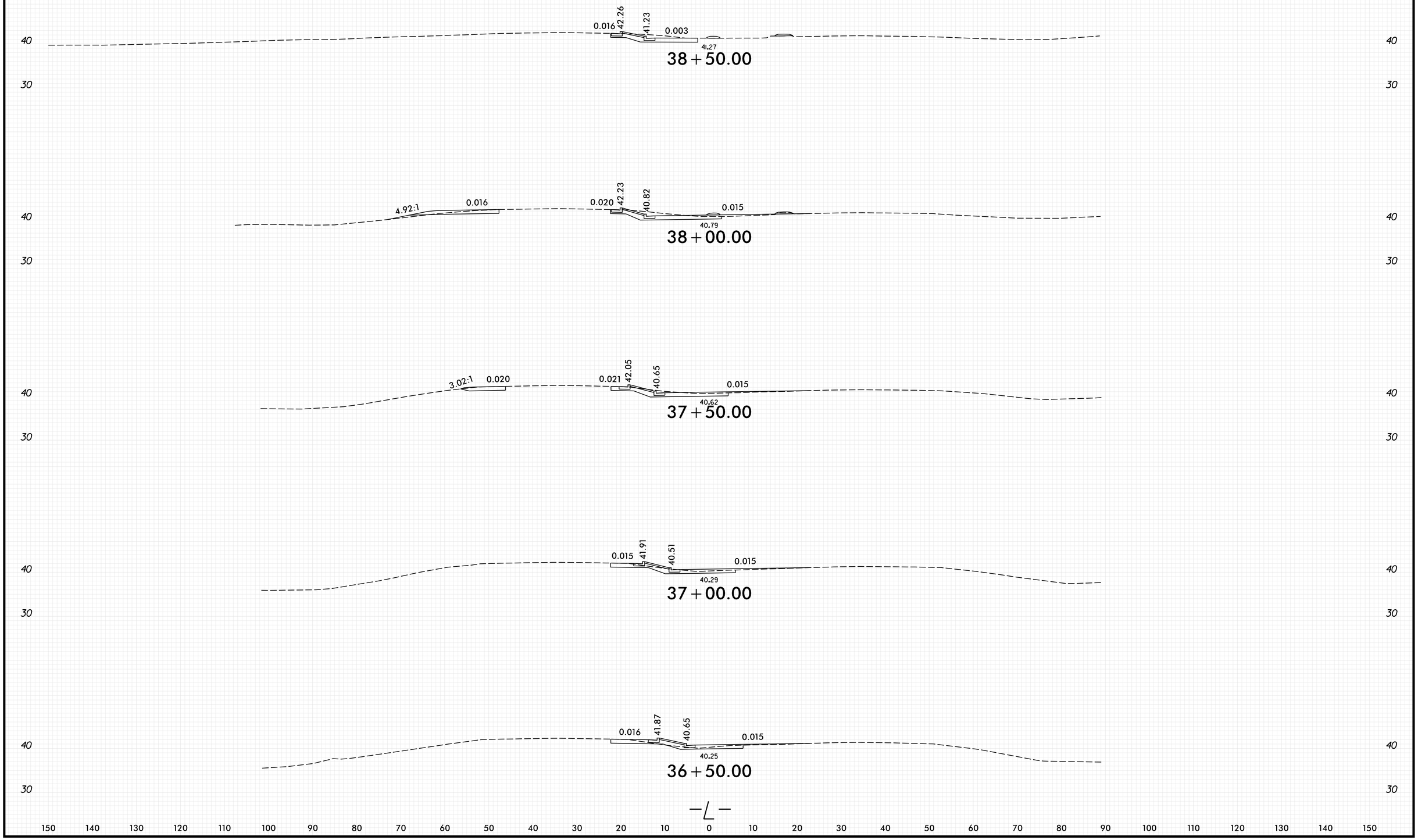
0.015 41.81 40.84 0.030
39.99
34+50.00

0.023 41.48 41.32 0.021
40.15
34+00.00

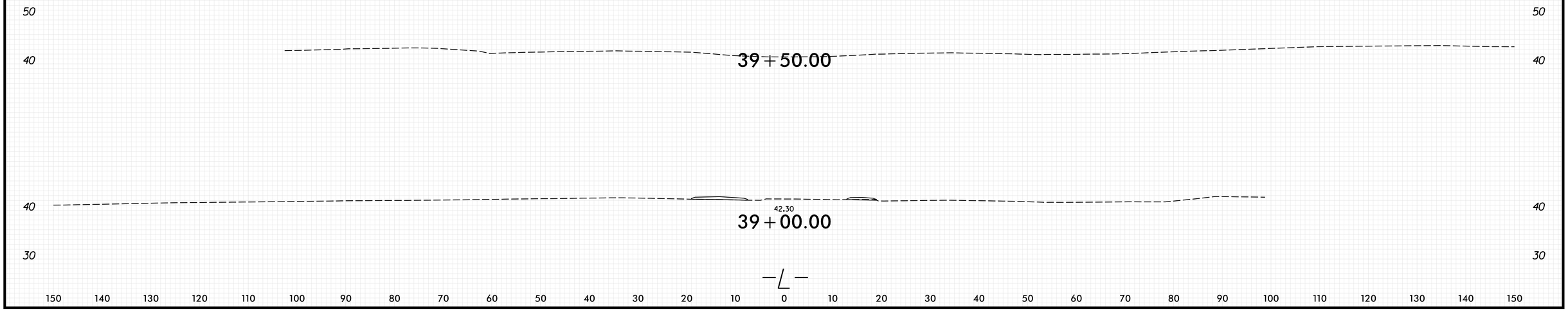
8/23/99
PENTABLE: xpl_en_v8.tbl
TIME: 8:19:20 AM
PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
DATE: 2/18/2026
USER: CHARRIS
FILE: \

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	WBS 50524	X-4

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



8/23/99
PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: CHARRIS
FILE: \
PENTABLE: xpl_en_v8.tbl
DATE: 2/18/2026
TIME: 8:19:22 AM

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30

EX. R/W
0.026
3:1
39.94
12+00.00

40
30

EX. R/W
0.032
3:1
39.61
11+50.00

40
30

EX. R/W
0.027
4:1
39.15
11+00.00

40
30

EX. R/W
38.71
10+50.00

40
30

38.13
10+00.00

-Y2-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

8/23/99
PLOT DRIVER: NCDOT.pdf.color_eng.50.plt
USER: CHARRIS
FILE: \
PENTABLE: xpl.en.v8.tbl
DATE: 2/18/2026
TIME: 8:19:29 AM

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	WBS 50524	X-7

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30

42.31
14+50.00

40
30

0.045 12.5:1
42.01
40.12
14+00.00

40
30

0.031 3:1 EX. R/W
41.39
13+50.00

40
30

0.040 3:1 EX. R/W
40.76
13+00.00

40
30

0.025 DRIVEWAY EX. R/W
40.33
12+50.00

40
30

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

-Y2-

8/23/99

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: CHARRIS
FILE: \
PENTABLE: xpl_en_v8.tbl
DATE: 2/18/2026
TIME: 8:19:30 AM