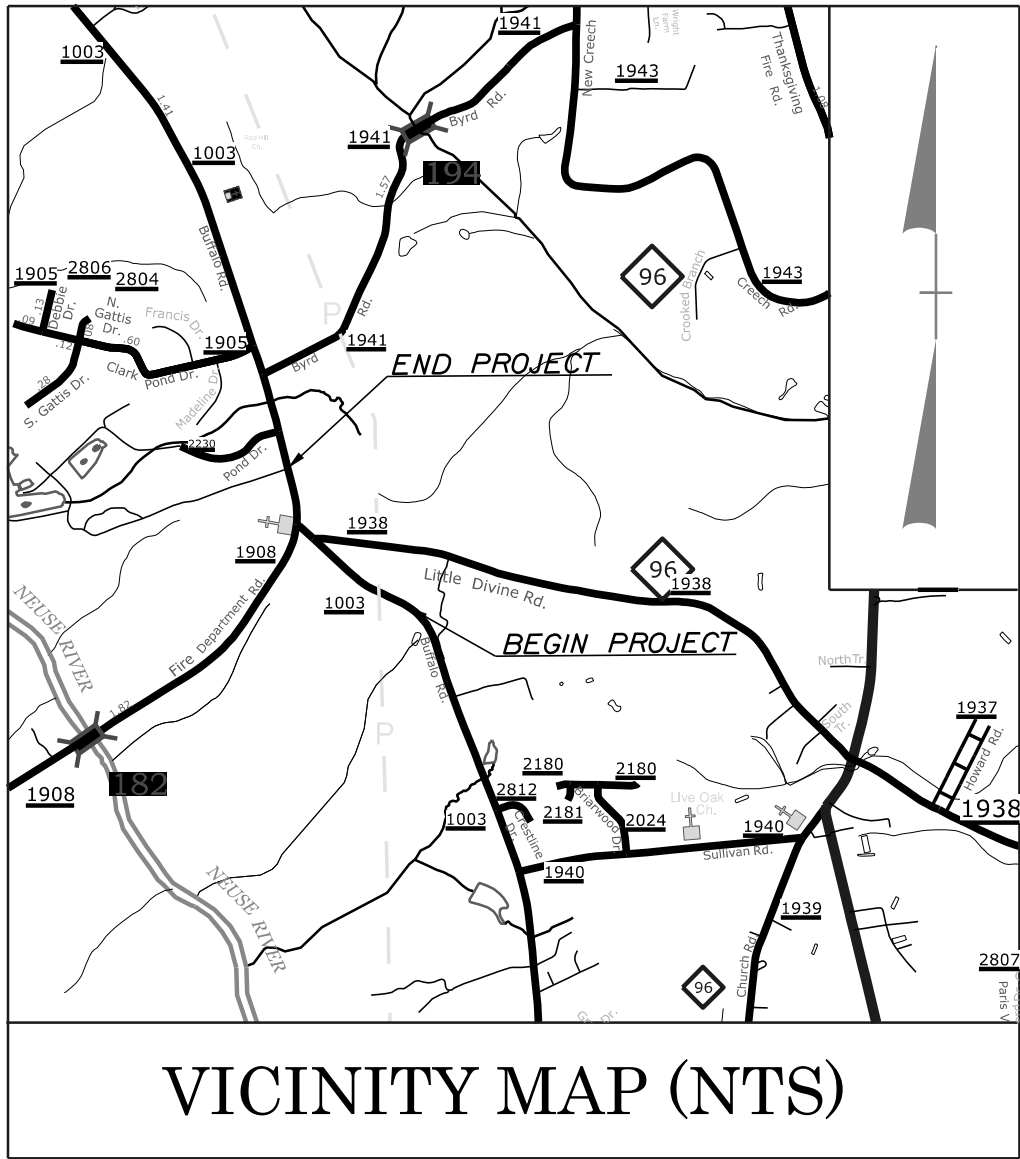


TIP PROJECT: HN-0040

CONTRACT: C205204

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



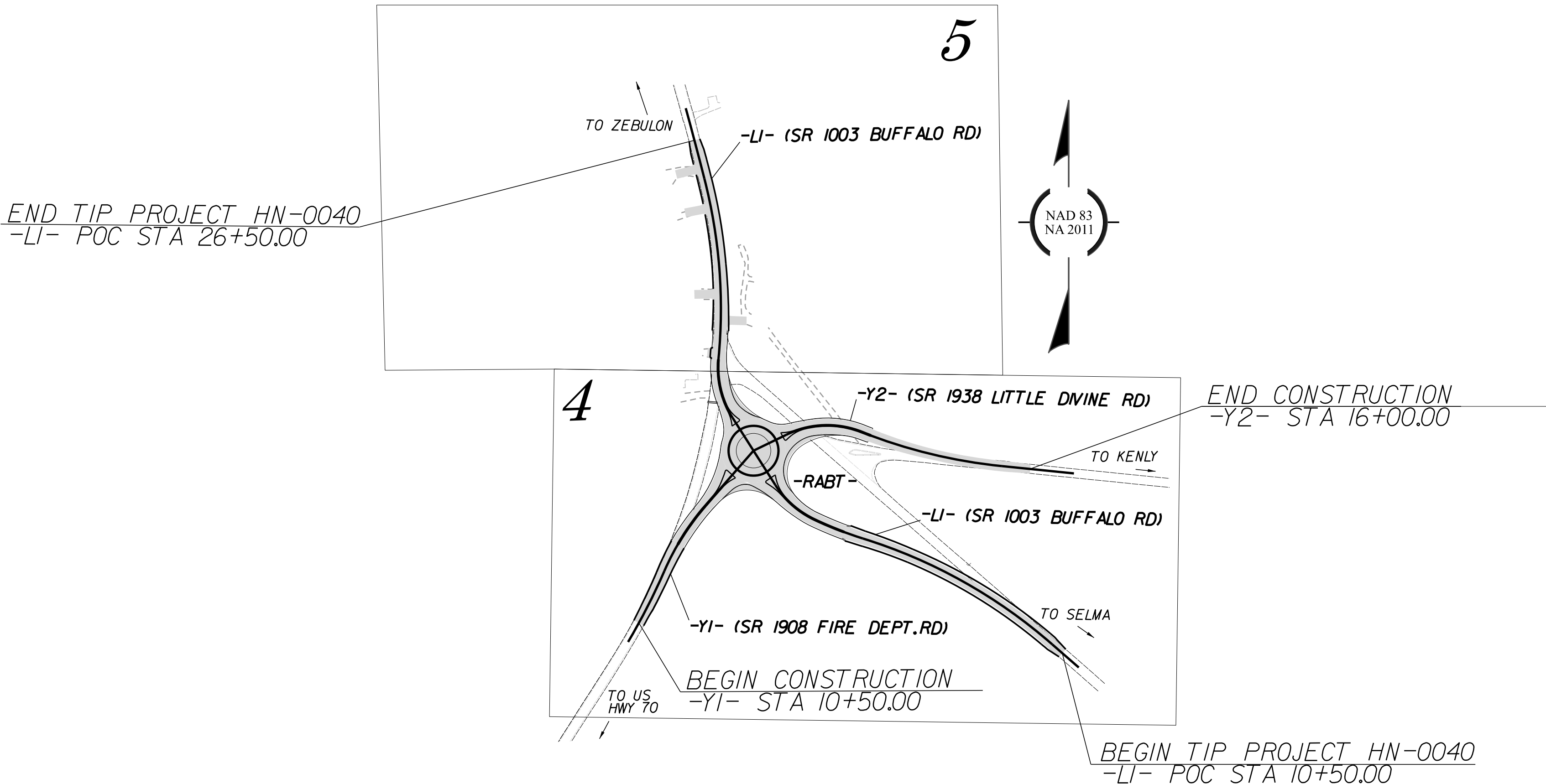
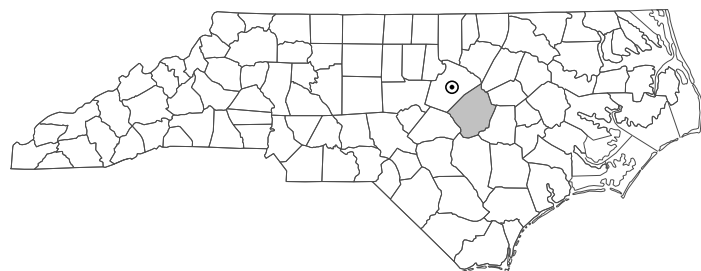
VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

LOCATION: *SR 1908 (FIRE DEPT. ROAD) AT BUFFALO ROAD INTERSECTION
NORTH OF WILSON'S MILLS. CONSTRUCT ROUNDABOUT.*

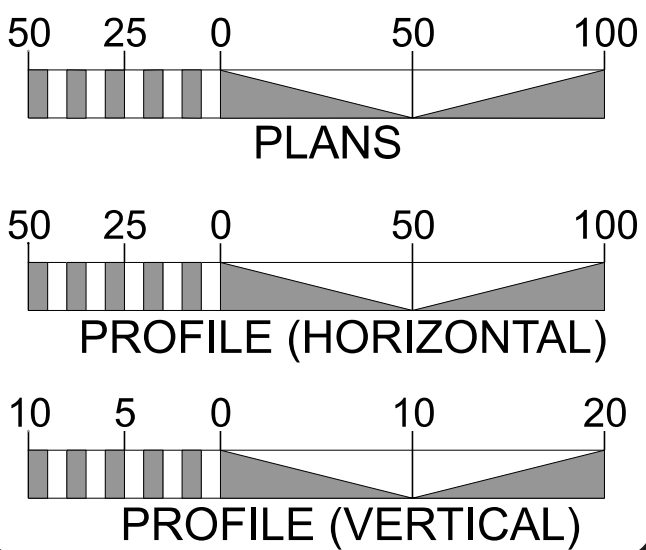
TYPE OF WORK: *GRADING, DRAINAGE, AND PAVING*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HN-0040	11	
STATE PROJ. NO.		F. A. PROJ. NO.	DESCRIPTION
51758.1.1		5175801	PE
51758.2.1		5175801	RW & UTIL
51758.3.1		5175801	CONST



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2025 = 10,000

V = 60 MPH

FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT HN-0040 = 0.303 MILES

TOTAL LENGTH OF TIP PROJECT HN-0040 = 0.303 MILES



Prepared In the Office of:
JOHNSON, MIRMIRAN, & THOMPSON, INC.
4700 Falls of Neuse Rd, Suite 100
Raleigh, NC, 27609
License No. C-3097

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 8, 2025

LETTING DATE:
SEPTEMBER 15, 2026

JOSHUA ROEMER, PE
PROJECT ENGINEER

SAVANNA FEARON, EI
PROJECT DESIGN ENGINEER

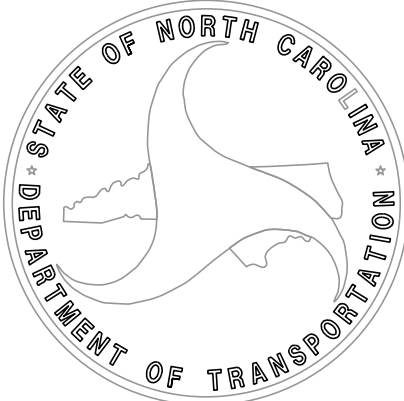
JAKE GREEN, PE, PLS
NCDOT CONTACT

HYDRAULICS ENGINEER

Signed by: Kevin Higgins
P.E.
SIGNATURE: 7/14/2026 10:38:26 AM EDT

ROADWAY DESIGN ENGINEER

Signed by: JOSHUA ROEMER
P.E.
SIGNATURE: 7/6/2026 10:40:00 AM EDT



INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-6	ROADWAY DETAILS AND CONDUIT PLANS
2C-1 THRU 2C-2	METHOD OF PIPE INSTALLATION DETAILS
2C-3	MODIFIED CONCRETE FLUME DETAIL
2C-4 THRU 2C-6	CURB TRANSITION DETAILS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 7	PLAN AND PROFILE SHEET
R/W-1 THRU R/W-5	ROW PLANS
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-6	SIGNING PLANS
UC-1 THRU UC-5A	UTILITIES CONSTRUCTION PLANS
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-25	CROSS-SECTIONS

GENERAL NOTES:	2024 SPECIFICATIONS
	EFFECTIVE: 01-16-2024
	REVISED:
GRADING AND SURFACING OR RESURFACING AND WIDENING:	THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.
CLEARING:	CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
SUPERELEVATION:	ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.
SHOULDER CONSTRUCTION:	ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01
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.
DRIVEWAYS:	DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS 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.
UTILITIES:	UTILITY OWNERS ON THIS PROJECT ARE Johnston County Public Works AT&T, DUKE ENERGY, and CHARTER COMMUNICATIONS ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.
RIGHT-OF-WAY MARKERS:	ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

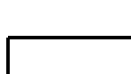
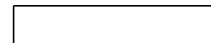
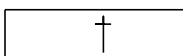
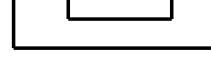
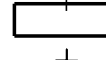
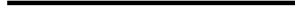
EFF. 08-11-2025	
REV. 11-26-2025	
2024 ROADWAY ENGLISH STANDARD DRAWINGS	
The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:	
STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
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 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
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
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.03	Driveway Turnout - Drop Curb Type
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
876.01	Rip Rap in Channels and Ditches
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

Note: Not to Scale

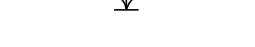
BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water		
Hydro, Pool or Reservoir		
Jurisdictional Stream		JS
Buffer Zone 1		BZ 1
Buffer Zone 2		BZ 2
Flow Arrow		
Disappearing Stream		
Spring		
Wetland		
Proposed Lateral, Tail, Head Ditch		
False Sump		

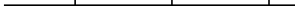
RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent Easement Monument (Rebar and Cap)	
Existing C/A Monument	
Proposed C/A Monument (Rebar and Cap)	
Proposed C/A Monument (Concrete)	
Existing Right of Way Line	
Proposed Right of Way Line	
Existing Control of Access Line	
Proposed Control of Access Line	
Proposed ROW and CA Line	
Existing Easement Line	
Proposed Temporary Construction Easement	
Permanent Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage/Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement		
Existing Curb		
Proposed Slope Stakes Cut		
Proposed Slope Stakes Fill		
Proposed Curb Ramp		
Existing Metal Guardrail		
Proposed Guardrail		
Existing Cable Guiderail		
Proposed Cable Guiderail		
Equality Symbol		
Pavement Removal		

VEGETATION:

Single Tree _____

Single Shrub _____

CONVENTIONAL PLAN SHEET SYMBOLS

Hedge _____ 

Woods Line _____ 

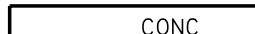
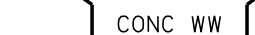
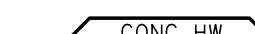
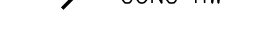
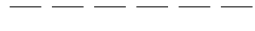
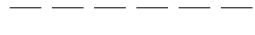
Orchard _____

Vineyard _____

Vineyard

EXISTING STRUCTURES:

MAJOR:

Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

* SUE - Subsurface Utility Engineering
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:

Existing Power Pole	_____	
Proposed Power Pole	_____	
Existing Joint Use Pole	_____	
Proposed Joint Use Pole	_____	
Power Manhole	_____	
Power Line Tower	_____	
Power Transformer	_____	
U/G Power Cable Hand Hole	_____	
H-Frame Pole	_____	
U/G Power Line Test Hole (SUE - LOS A)*	_____	
U/G Power Line (SUE - LOS B)*	_____	-----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	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
U/G Telephone Test Hole (SUE - LOS A)*	
U/G Telephone Cable (SUE - LOS B)*	-----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)*	-----TF-----
U/G Fiber Optics Cable (SUE - LOS C)*	-----TF-----
U/G Fiber Optics Cable (SUE - LOS D)*	-----TF-----

WATER:

Water Manhole	_____	
Water Meter	_____	
Water Valve	_____	
Water Hydrant	_____	
U/G Water Line Test Hole (SUE - LOS A)*	_____	
U/G Water Line (SUE - LOS B)*	_____	-----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	_____	
TV Tower	_____	
U/G TV Cable Hand Hole	_____	
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 ---

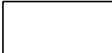
GAS:

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	_____	<u>A/G Sanitary Sewer</u>
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-----

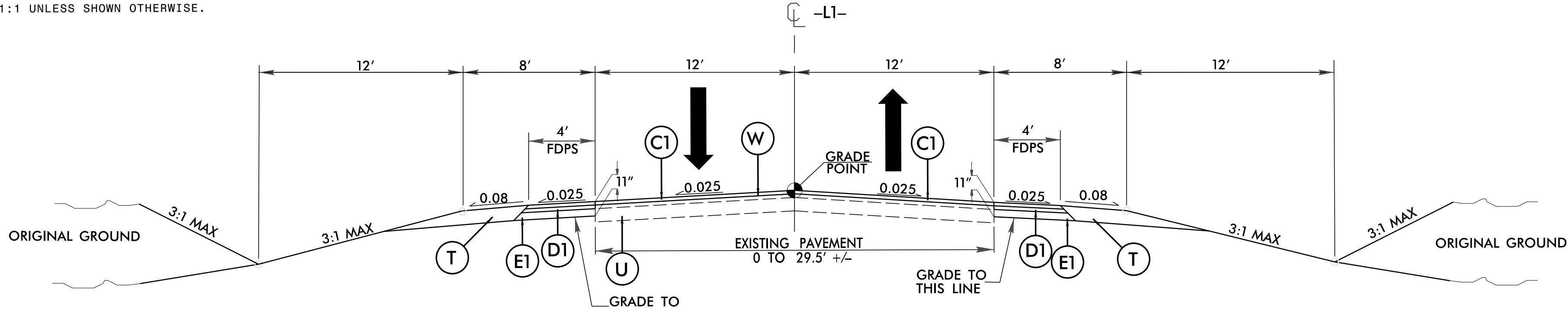
MISCELLANEOUS:

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

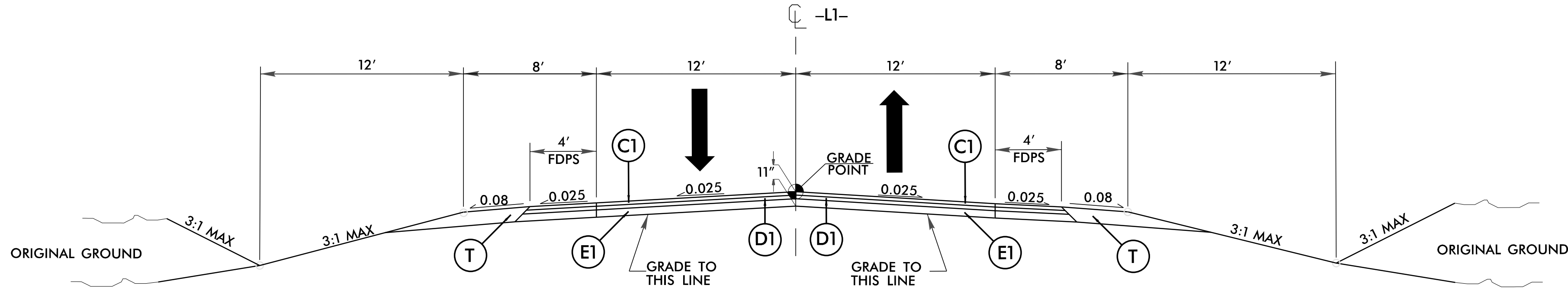
11/14/23

F I N A L P A V E M E N T S C H E D U L E					
A	12" CONCRETE TRUCK APRON WITH WIRE MESH REINFORCEMENT	R1	2'-6" CONCRETE CURB AND GUTTER	V1	INCIDENTAL MILLING (SEE STANDARD MILLING DETAIL).
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD IN EACH OF TWO LAYERS.	R2	1'-6" CONCRETE CURB AND GUTTER	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.	R3	9" X 18" CONCRETE CURB		
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN)		
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R5	2'-9" CONCRETE CURB AND GUTTER		
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. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	U	EXISTING PAVEMENT		

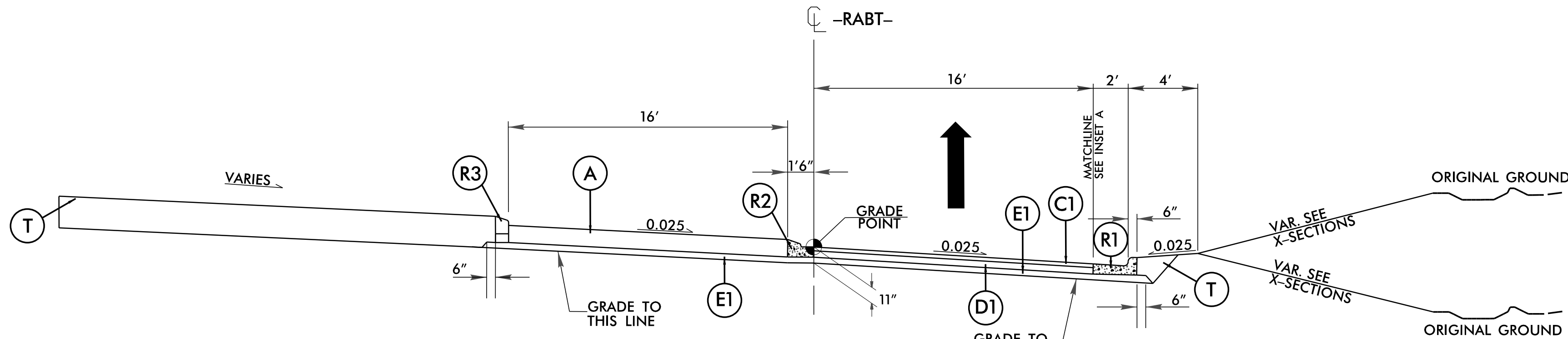
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



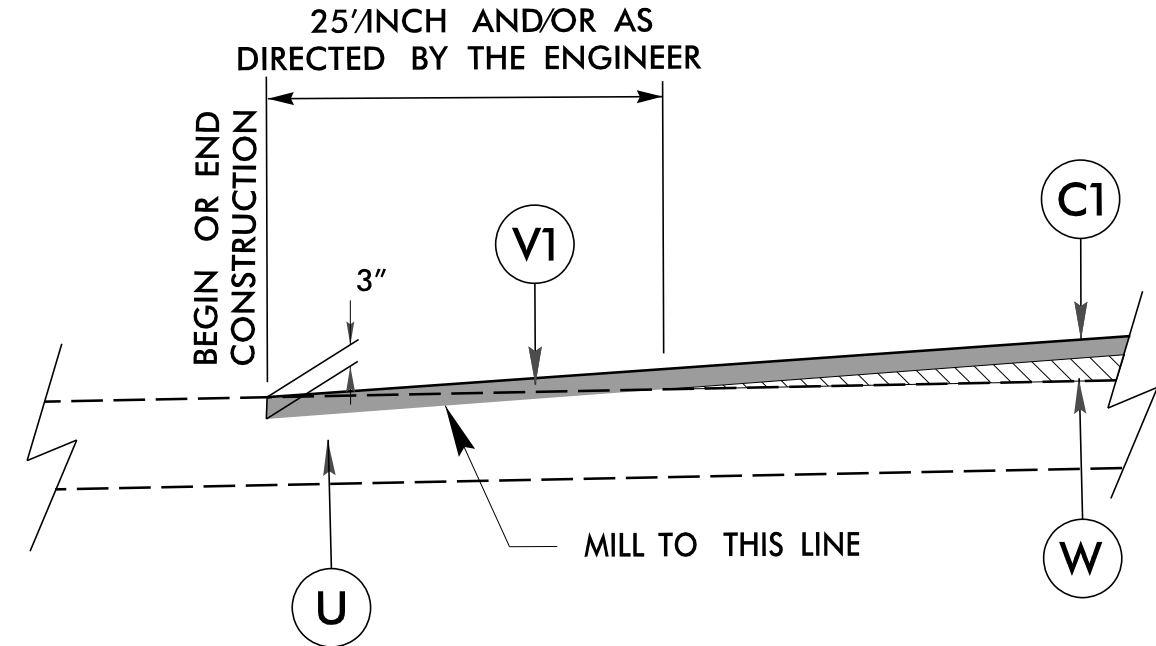
TYPICAL SECTION NO. 1
-L1- STA. 10+50.00 TO STA. 12+50.00
-L1- STA. 22+00.00 TO STA. 26+50.00



TYPICAL SECTION NO. 2
-L1- STA. 12+50.00 TO STA. 16+25.00

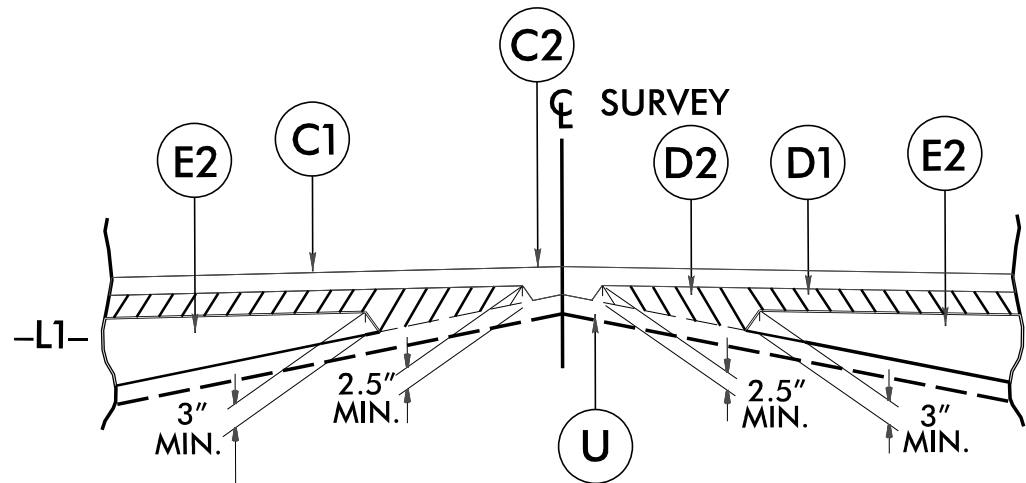


TYPICAL SECTION NO. 3
-RABT- STA. 10+00.00 TO STA. 13+58.14



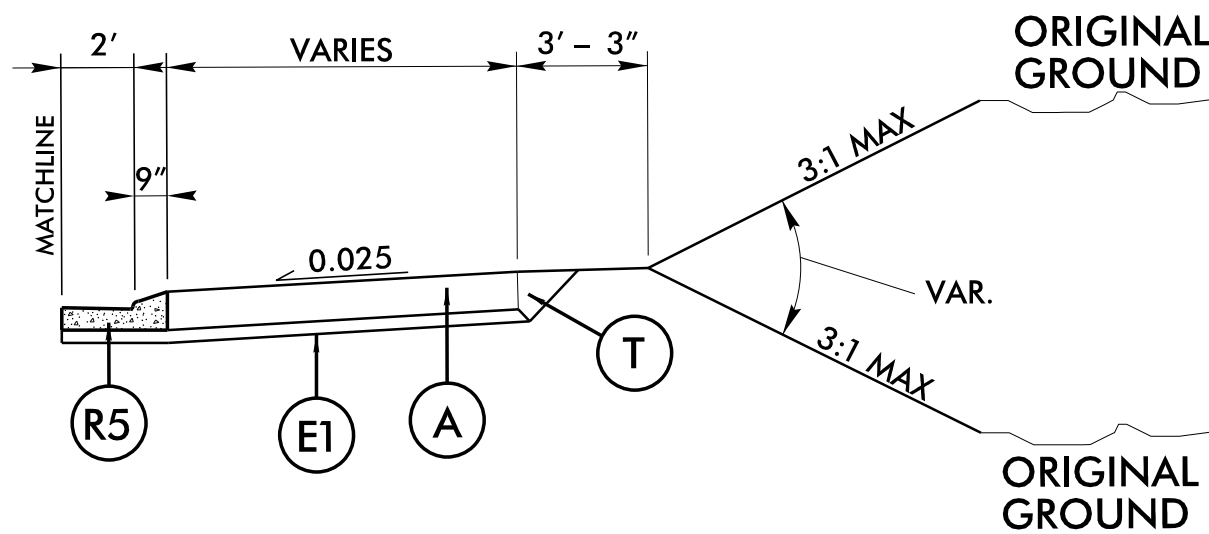
INCIDENTAL MILLING DETAIL

*MILLING STATIONS
-L1- STA. 10+50.00 - 10+75.00
-L1- STA. 26+25 - 26+50.00
-Y1- STA. 10+50 - 10+75.00
-Y2- STA. 15+75 - 16+00.00



DETAIL SHOWING METHOD OF WEDGING

INSET A



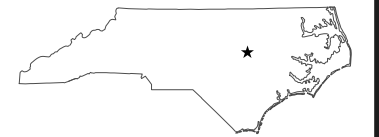
-L1- STA. 20+98.67 TO 19+69.29
-Y1- STA. 13+97.3 TO -L1- STA. 17+99.25
-L1- STA. 17+81.49 TO -Y2- STA. 11+56.68

HN-0040

2A-I

R/W SHEET NO.

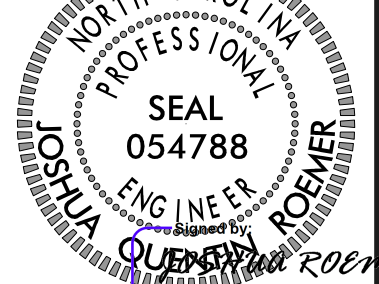
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER

7/6/2026 11:41:02 AM EDT



PAVEMENT DESIGN
ENGINEER

7/6/2026 11:41:02 AM EDT



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UNLESS ALL SIGNATURES COMPLETED

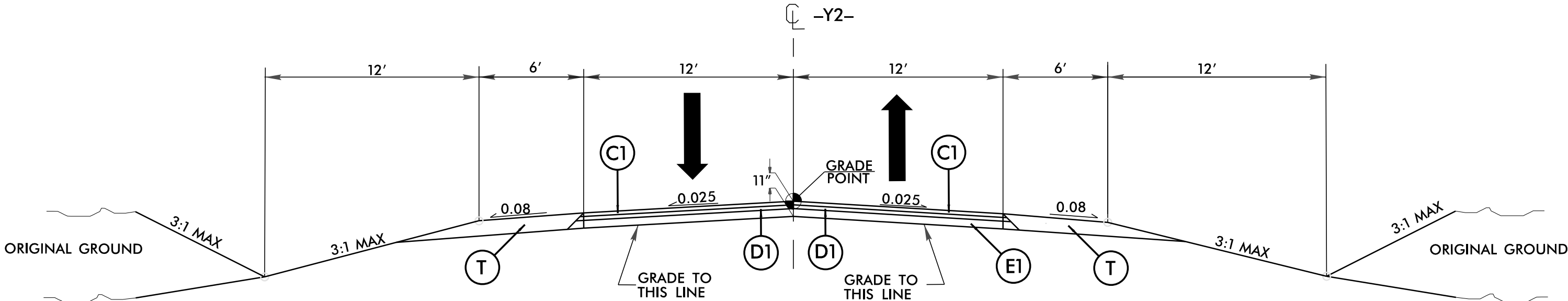


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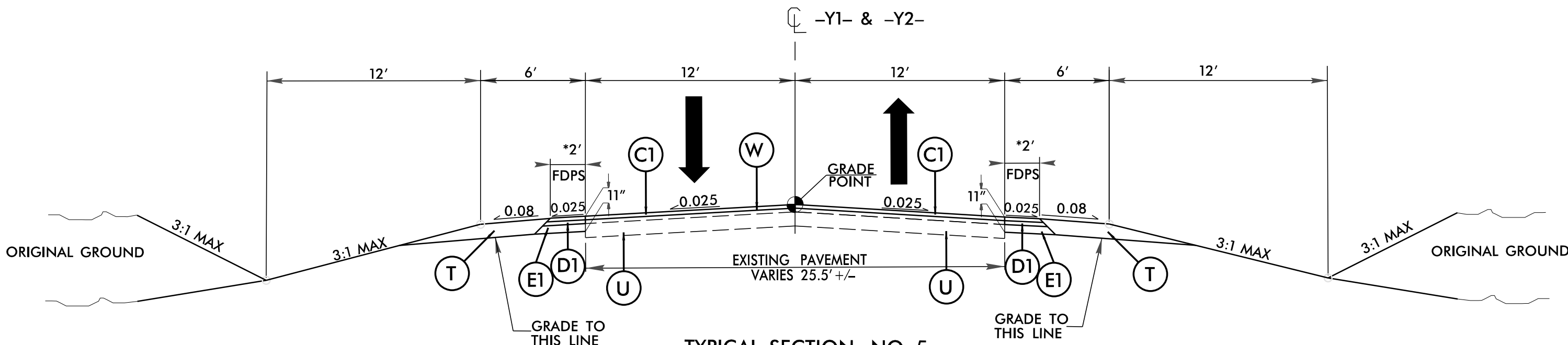
11/14/23

PAVEMENT SCHEDULE	
(FINAL PAVEMENT DESIGN)	
A	12" TRUCK APRON
C1	3.0" S9.5B
C2	VAR. S9.5B
D1	4" I19.0C
D2	VAR I19.0C
E1	4" B25.0C
E2	VAR B25.0C
R1	2'6" CONC C&G
R2	1'6" CONC C&G
R3	9"X18"CONC C&G
R4	CONC. ISLAND
R5	2'9" CONC C&G
T	EARTH MATERIAL
U	EXISTING PVT
V1	INCID. MILLING
W	VAR. WEDGING

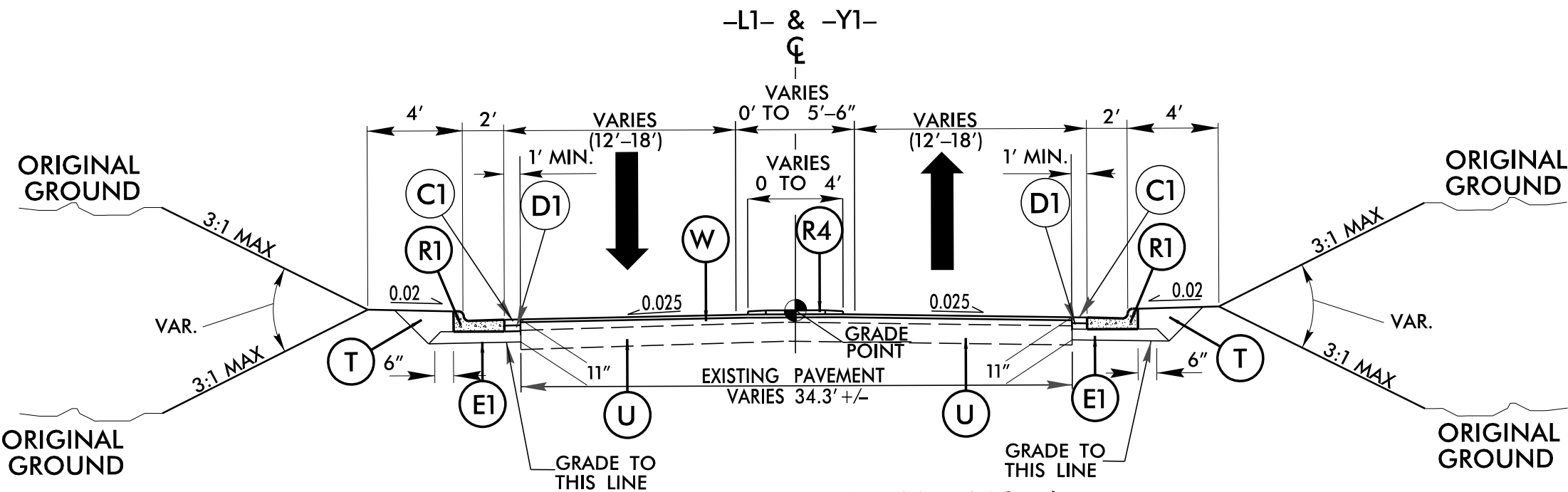
NOTE: PVMNT EDGES ARE 1:1



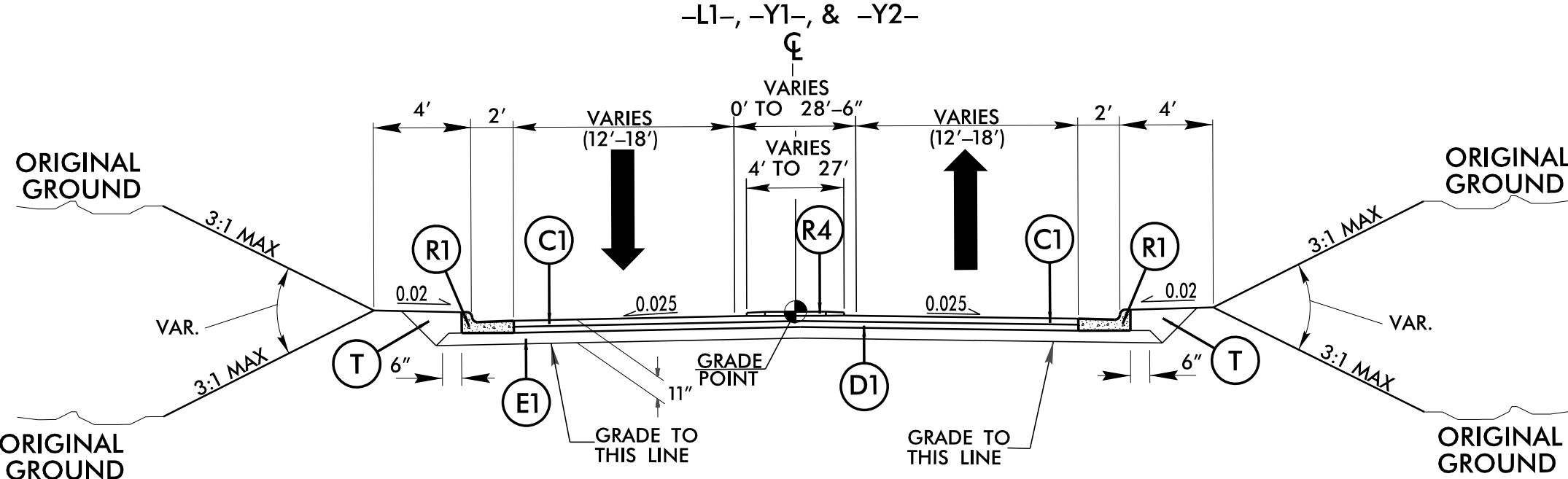
TYPICAL SECTION NO. 4
-Y2- STA. 12 + 25.00 TO STA. 14 + 13.00



TYPICAL SECTION NO. 5
-Y1- STA. 10 + 50.00 TO STA. 12 + 50.00
*-Y2- STA. 14 + 13.00 TO STA. 16 + 00.00



TYPICAL SECTION NO. 6
-L1- STA. 21 + 00.00 TO STA. 22 + 00.00
-Y1- STA. 12 + 50.00 TO STA. 13 + 38.00



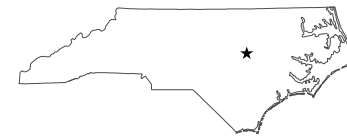
TYPICAL SECTION NO. 7
-L1- STA. 16 + 25.00 TO STA. 18 + 56.35
-L1- STA. 19 + 70.85 TO STA. 21 + 00.00
-Y1- STA. 13 + 38.00 TO STA. 14 + 53.68
-Y2- STA. 10 + 30.00 TO STA. 12 + 25.00

HN-0040

2A-2

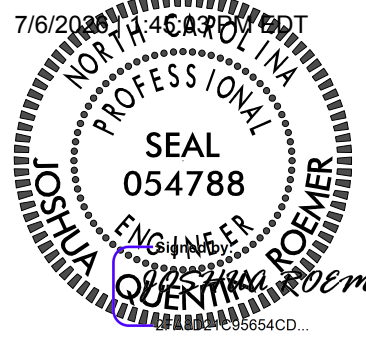
R/W SHEET NO.

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY

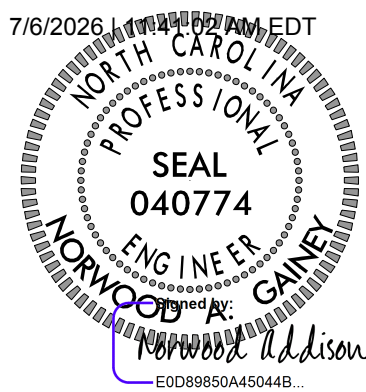


ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER



PAVEMENT DESIGN
ENGINEER



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CONDUIT DETAIL SHEET

HN-0040

2B-2

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DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY

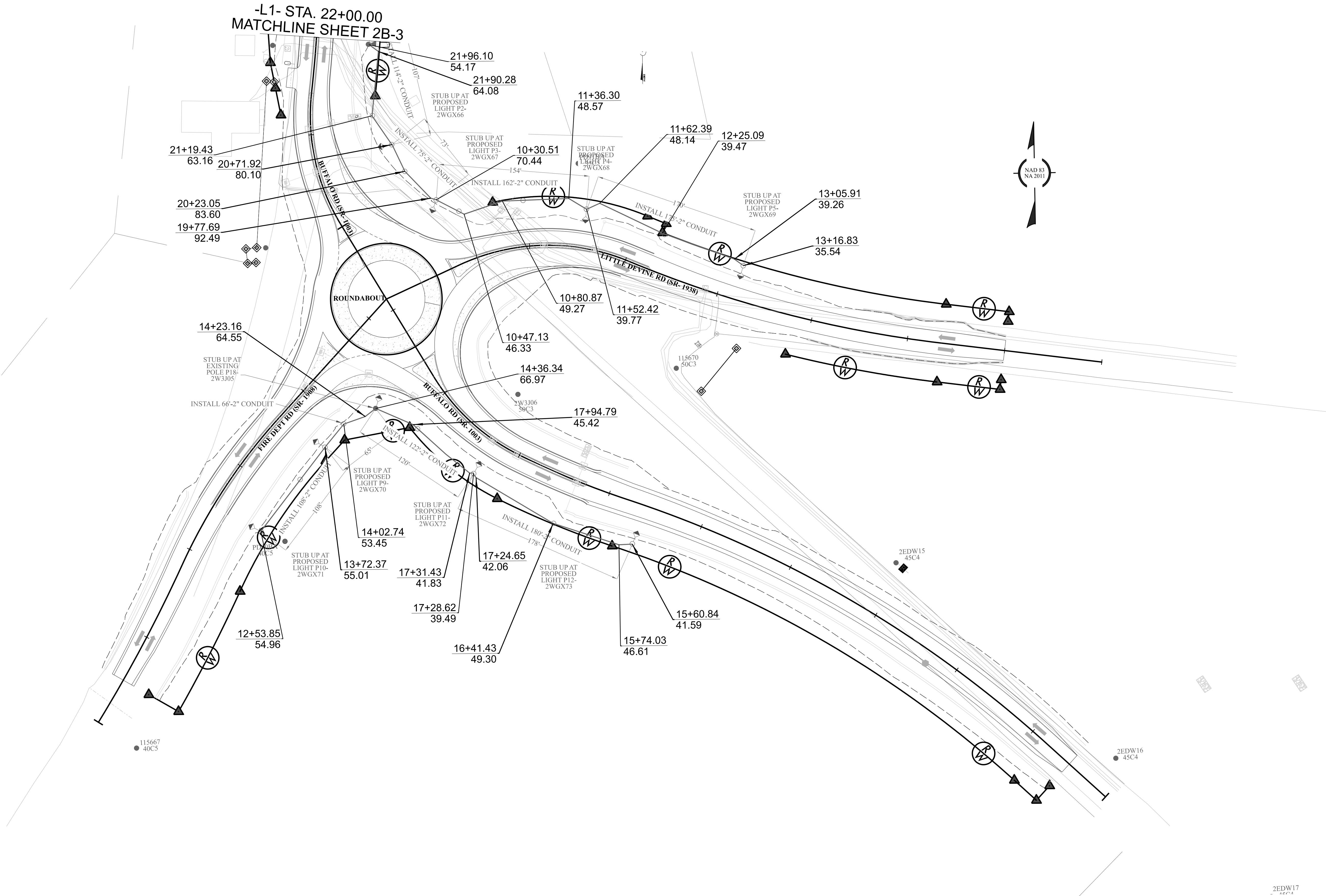


ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULIC DESIGN
ENGINEER


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CONDUIT DETAIL SHEET



PD97BA
45C4

PD96BA
45C4

P12W3J02
EX: 50C3
EX: DOWN GUY
EX: 37 kVA TFO
SETBACK:

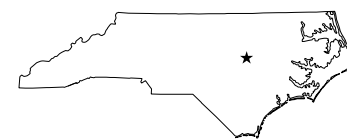
STUB UP AT
EXISTING
POLE P1-
2W3J03

-L1- STA. 22+00.00
MATCHLINE SHEET 2B-2

HN-0040

2B-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



ROADWAY DESIGN UNIT

ROADWAY DESIGN
ENGINEER

HYDRAULIC DESIGN
ENGINEER

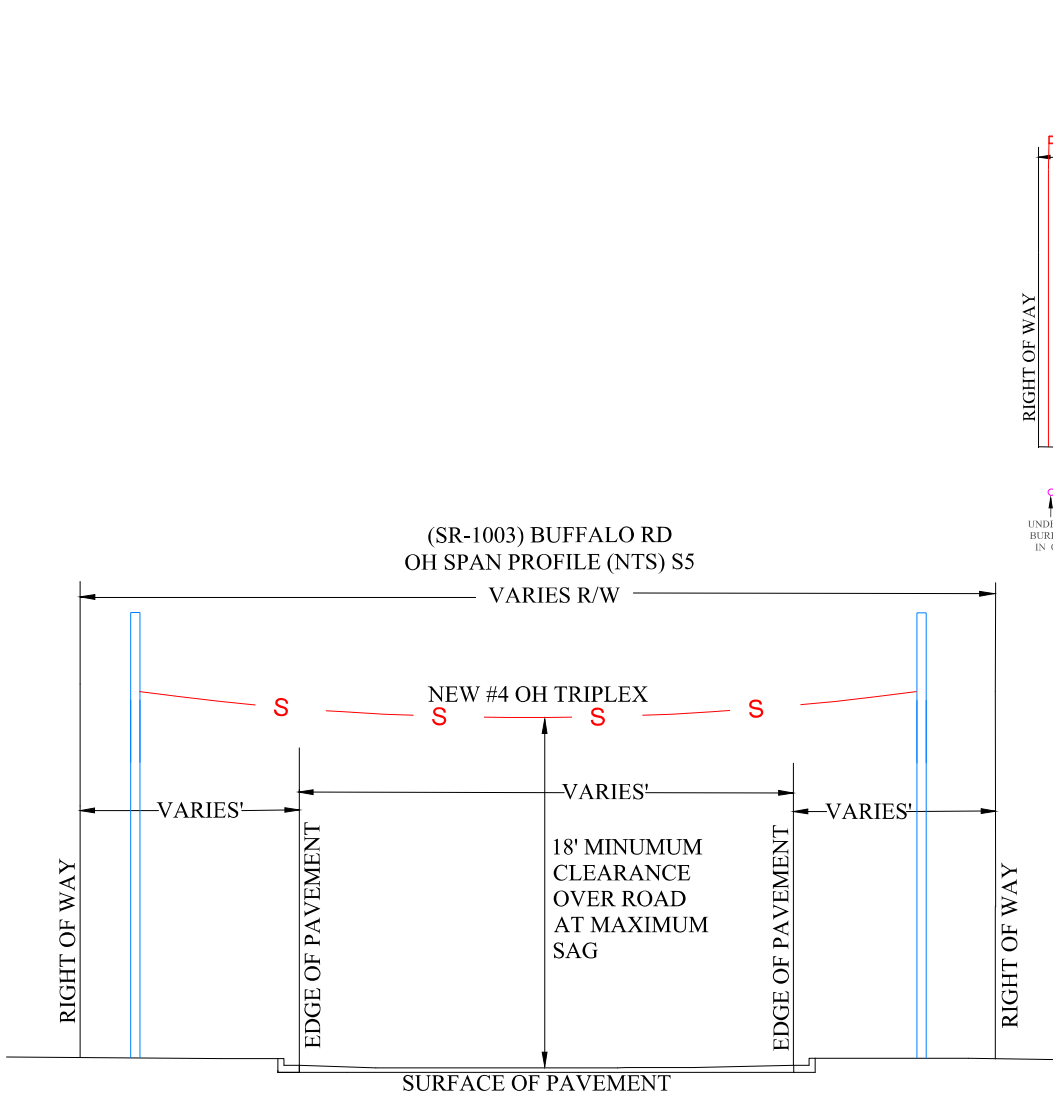


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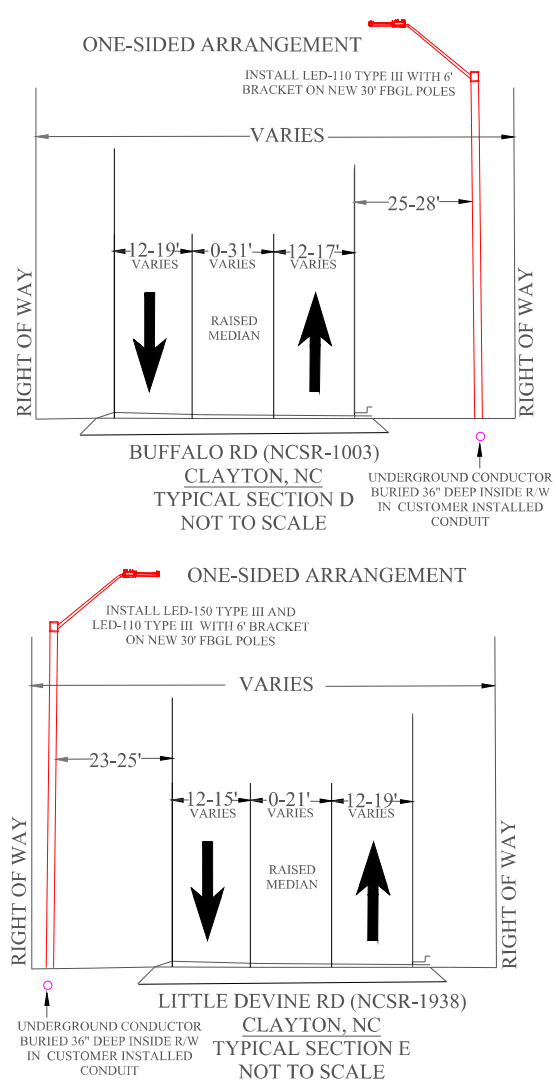
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UNLESS ALL SIGNATURES COMPLETED

NOTES

1. CONDUIT LAYOUT FOR DECORATIVE STREET LIGHTING ALONG BUFFALO RD (SR-1003), LITTLE DEVINE RD (SR-1938), FIRE DEPARTMENT RD (SR-1908), AND THE ROUNDABOUT.
2. 2" STICK OR FLEX CONDUIT TO BE INSTALLED 22-42' FROM EDGE OF TRAVEL ON BUFFALO RD (SR-1003), 40' FROM EDGE OF TRAVEL ON FIRE DEPARTMENT RD (SR-1908), 17-23' FROM EDGE OF TRAVEL ON LITTLE DEVINE RD (SR-1938), AND 14-20' FROM EDGE OF TRAVEL IN THE ROUNDABOUT AT LEAST 36" DEEP WITHIN THE RIGHT OF WAY. INSTALL CONDUIT FROM EXISTING POLE P1-2W3J03 AND STUB UP AT EACH OF THE PROPOSED LIGHT LOCATIONS P2-P5. INSTALL CONDUIT FROM EXISTING 2W3J05 TO EACH OF THE REMAINING PROPOSED LIGHT LOCATIONS. SEE DESIGN FOR DETAILS.
3. ALL CONDUIT AND CONDUIT FITTING FOR STREET LIGHTING MUST BE SCHEDULE 40 PVC OR GREATER OR SDR13.5 HDPE AND MUST BE 2" DIAMETER. ALL CONDUIT BENDS/ELBOW MUST HAVE A 36" MINIMUM RADIUS.
4. INSTALL PULL STRING IN EACH SPAN OF CONDUIT. THE PULL STRING MUST EXTEND AT LEAST 36 INCHES OUTSIDE OF THE CAPPED OF CONDUIT. ALL PULL STRING MUST BE MADE FROM A MATERIAL THAT WILL NOT ROT AND MUST NOT BE ACCIDENTALLY GLUED ANYWHERE INSIDE THE CONDUIT. CUSTOMER WILL BE REQUIRED TO INSTALL NEW PULL STRING IN SEGMENTS OF CONDUIT WHERE THE INITIAL PULL STRING IS NOT USABLE.
5. CAP OFF ALL BURIED CONDUIT ENDS. ASSURE NO DIRT, DEBRIS, WATER, OR OTHER FOREIGN MATER IS PRESENT IN ANY CONDUIT SEGMENT. TAPE OR RAGES ARE NOT SUFFICIENT. PLUG MUST NOT BE CEMENTED TO THE CONDUIT.
6. REVIEW PAGES 4 & 5 OF THE "GUIDE FOR CUSTOMER INSTALLED CONDUIT" FOR MORE DETAILS.
7. PLEASE CONTACT DESIGNER AT 984-381-3869 ONCE CONDUIT INSTALLATION IS COMPLETE.



PROPOSED	EXISTING	REMOVE	ABANDON	LEGEND
				LED LUMINAIRE
				DECORATIVE LUMINAIRE
				FIBERGLASS/STEEL LIGHTING POLE
				WOOD POLE
				FOREIGN POLE
				TRANSFORMER (POLE MOUNTED)
				STREET LIGHT CIRCUIT UNDERGROUND
				PRIMARY CIRCUIT UNDERGROUND
				STREET LIGHT CIRCUIT OVERHEAD
				PRIMARY CIRCUIT OVERHEAD
				RIGHT OF WAY
				PROPERTY LINE
				INSTALL CONDUIT
				EXISTING CONDUIT
				EXISTING SPAN GUY
				ABOVE GROUND PEDESTAL
				FLUSH MOUNTED 15' X 23' PED
				PAD MOUNTED ENCLOSURE
				JUNCTION BOX
				TRANSFORMER (PAD MOUNTED)
				RECLOSER
				CABLE MARKER



FOR CONSTRUCTION DETAILS, REFER IN PARTICULAR TO THE FOLLOWING PE SPECIFICATION DRAWINGS

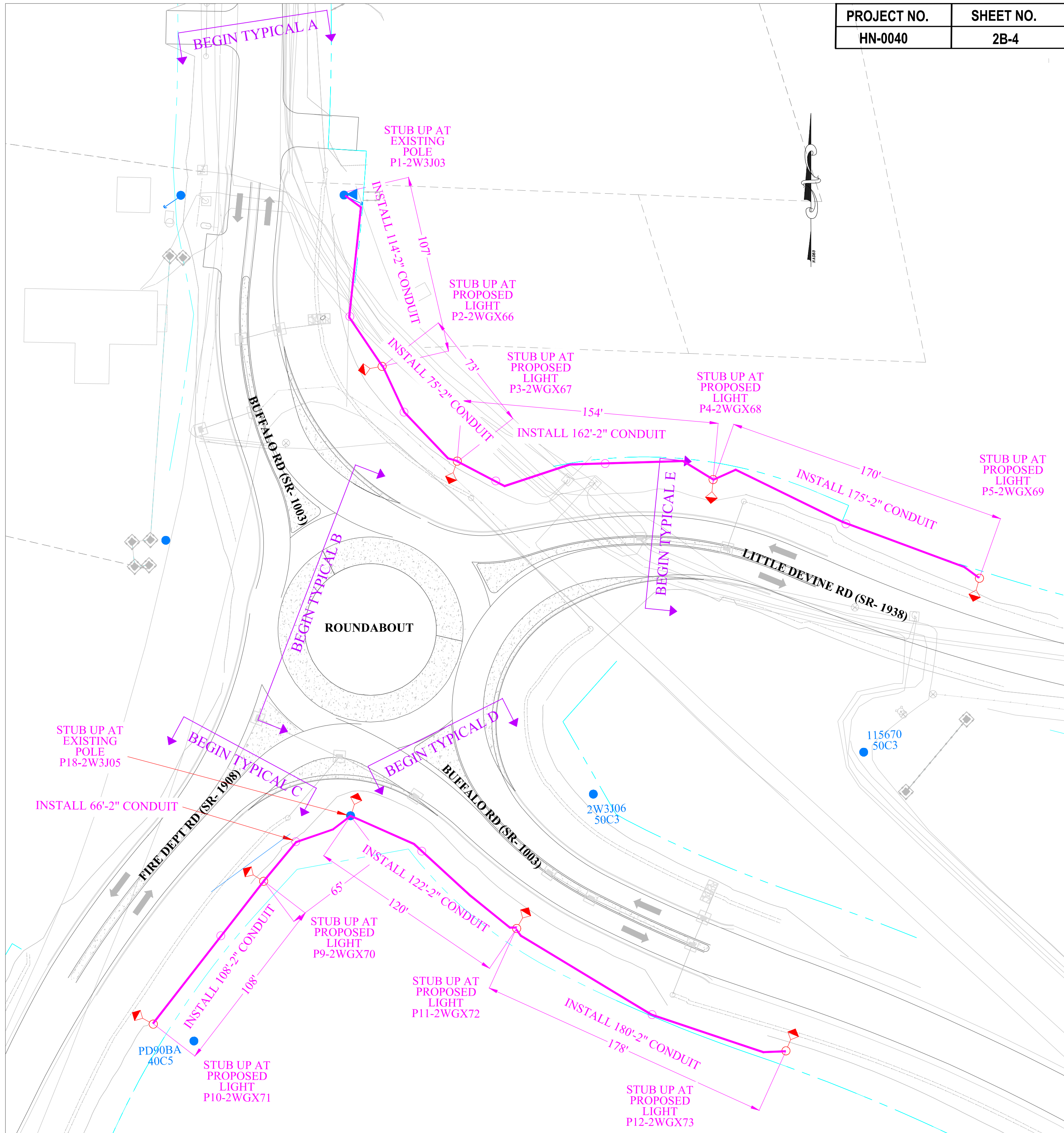
DRAWING NUMBER	DRAWING TITLE
30.08-101	GRAY FIBERGLASS POLE LIGHTING INSTALLATION
30.02-120	LIGHTING BRACKETS FOR STEEL (AND FIBERGLASS) POLES
21.01-100A-B	CONDUIT RISERS ON WOOD POLES
03.02-100	SECONDARIES AND SERVICES
30.08-100	MOUNTING HEIGHT FOR LUMINAIRES
22.10-101A-B	GUIDE FOR PULLING UNDERGROUND CABLE IN CONDUIT
25.06-112	SMALL FLUSH MOUNTED PEDESTAL TIER 22 TRAFFIC RATED

ROUNDABOUT	IES REQUIREMENTS	ACTUAL
OTHER PRINCIPAL ARTERIAL/COMMERCIAL		
Ave. Maint. FC:	0.9 MIN. 1.25	
Ave. / Min. Ratio:	3:1 MAX. 3:1	
Lv Ratio:	0.3:1 MAX. 0.25:1	
LIGHTING LEVELS CALCULATED USING ALADAN/LITEPRO		
MINIMUM CLEAR ZONE SETBACK: 16 FEET EOT (4' BKWY)		
ACTUAL SPEED LIMIT: 45 MPH		
AVG SPAN DISTANCE: 135 FEET		

(SR-1908) FIRE DEPARTMENT RD	IES REQUIREMENTS	ACTUAL
COLLECTOR/RESIDENTIAL		
Ave. Maint. FC:	0.6 MIN. 1.10	
Ave. / Min. Ratio:	4:1 MAX. 3.67:1	
Lv Ratio:	0.4:1 MAX. 0.12:1	
LIGHTING LEVELS CALCULATED USING ALADAN/LITEPRO		
MINIMUM CLEAR ZONE SETBACK: 24 FEET EOT (7' BKWY)		
ACTUAL SPEED LIMIT: 45 MPH		
AVG SPAN DISTANCE: 87 FEET		

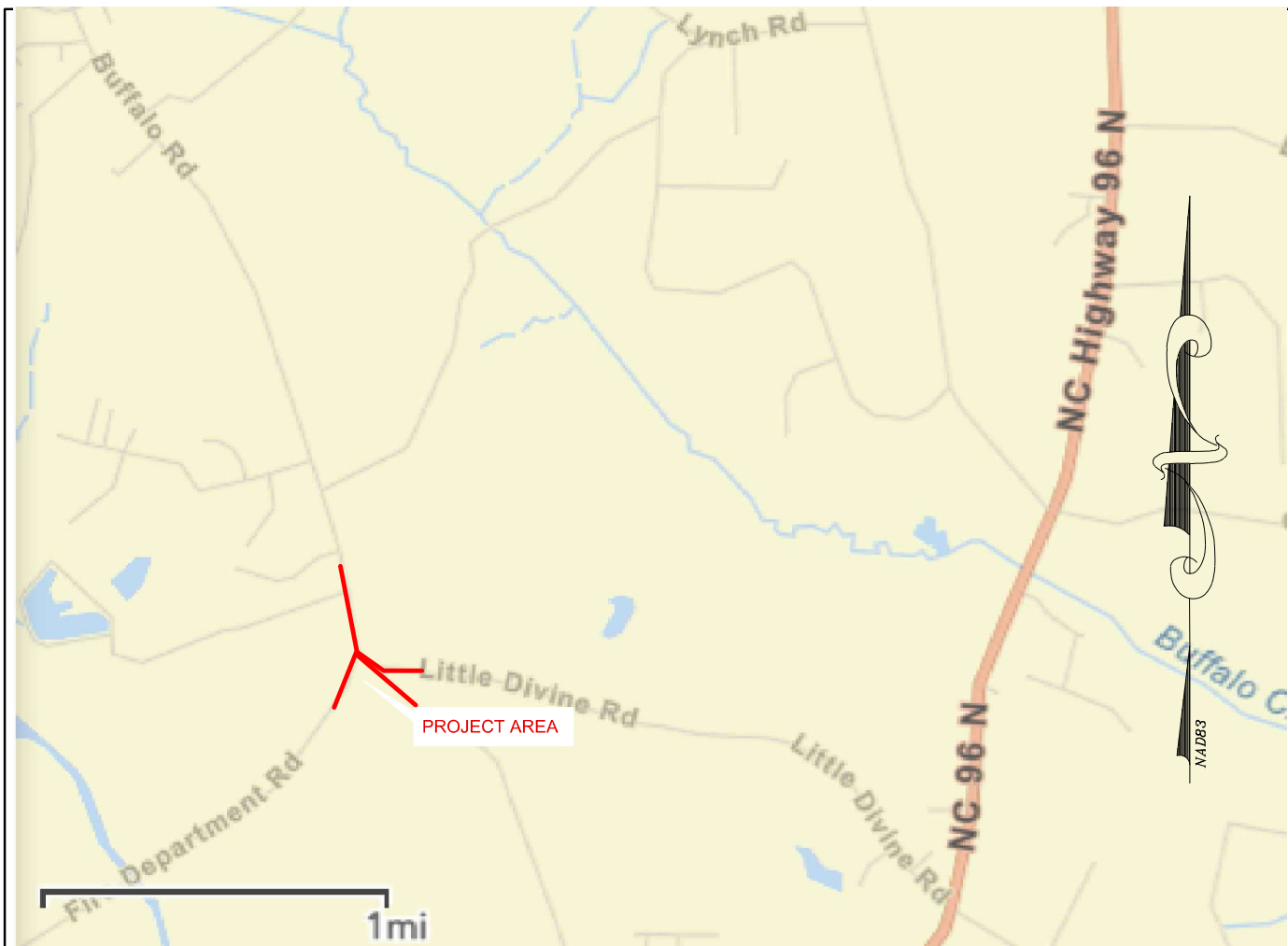
(SR-1938) LITTLE DEVINE RD	IES REQUIREMENTS	ACTUAL
COLLECTOR/RESIDENTIAL		
Ave. Maint. FC:	0.6 MIN. 1.10	
Ave. / Min. Ratio:	4:1 MAX. 3.67:1	
Lv Ratio:	0.4:1 MAX. 0.21:1	
LIGHTING LEVELS CALCULATED USING ALADAN/LITEPRO		
MINIMUM CLEAR ZONE SETBACK: 22 FEET EOT (7' BKWY)		
ACTUAL SPEED LIMIT: 45 MPH		
AVG SPAN DISTANCE: 162 FEET		

(SR-1003) BUFFALO RD	IES REQUIREMENTS	ACTUAL
MINOR ARTERIAL/RESIDENTIAL		
Ave. Maint. FC:	0.7 MIN. 1.10	
Ave. / Min. Ratio:	4:1 MAX. 3.7:1	
Lv Ratio:	0.3:1 MAX. 0.21:1	
LIGHTING LEVELS CALCULATED USING ALADAN/LITEPRO		
MINIMUM CLEAR ZONE SETBACK: 24 FEET EOT (7' BKWY)		
ACTUAL SPEED LIMIT: 45 MPH		
AVG SPAN DISTANCE: 135 FEET		



PROJECT NO.	SHEET NO.
HN-0040	2B-4

VICINITY MAP



BY INITIATING THIS BLOCK THE CUSTOMER STATES THEY HAVE REVIEWED EACH SHEET OF THE PROPOSED LIGHTING DESIGN AND APPROVES OF ALL PROPOSED LIGHTING FACILITY LOCATIONS. CUSTOMER HAS VERIFIED THERE ARE NO CONFLICTS WITH PROPOSED LIGHTING ARRANGEMENT AND THE PLANS ARE CURRENT.

CUSTOMER INITIALS
X _____

Safety Reminders / Adverse Conditions		REMEMBER: Work zone area conditions may have changed for this job! Everyone is responsible for verifying the above safety information is correct prior to any work being performed each day.	

WZS: REMEMBER "YOUR CIRCLE OF SAFETY"
WZS: SET PROPER WORK ZONE NEEDS
WZS: SET PROPER SIGNS, CONES, AND BARRICADES
WZS: REMEMBER WALK AROUNDS AND PRETRIP
WZS:



LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.



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CONDUIT ARRANGMENT FOR

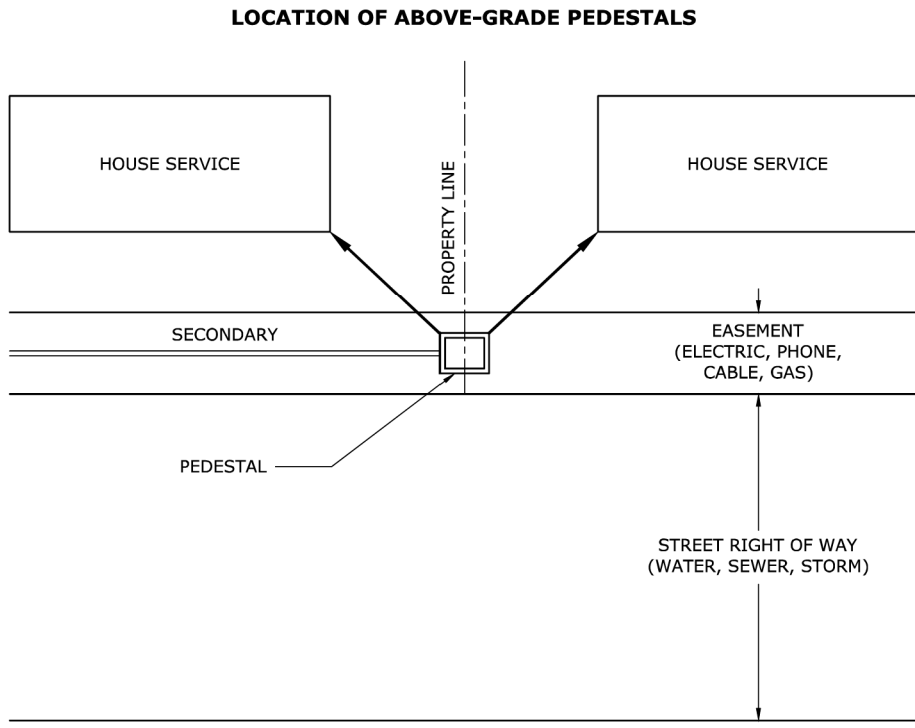
(SR1938)LITTLE DEVINE,(SR1003)BUFFALO,(SR1908)FIRE DEPT	
SELMA/CLAYTON, NC	
Designed by	DUKE ENERGY PROGRESS LIGHTING SOLUTIONS
Reviewed by	MAGGIE AMBROSE
Date	4/16/2026
Description	WO 59714993
Drawing No.	14993
Sht.	1 OF 1

Designer: Maggie Ambrose
(984) 381-3869
Project Manager: Stacy Kromko
(984) 255-3436

NO.	DATE	REVISION	BY

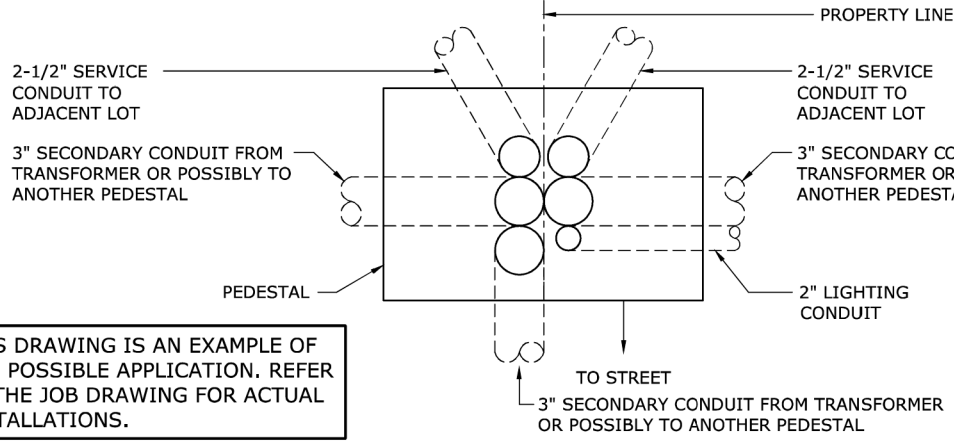
- THERE SHALL BE NO ABOVE-GROUND OBSTRUCTIONS WITHIN TEN (10) FEET OF THE FRONT OF THE TRANSFORMER OR WITHIN THREE (3) FEET OF THE SIDES AND BACK. IF A METER IS INSTALLED ON THE TRANSFORMER, NO OBSTRUCTIONS MAY BE WITHIN FOUR (4) FEET OF THAT SIDE.
- SIDE VENTILATION MAY BE REQUIRED IF A WALL IS TO BE CONSTRUCTED AROUND THE TRANSFORMER. CONTACT DUKE ENERGY TO OBTAIN THE REQUIRED SEPARATION BETWEEN THE TRANSFORMER AND A WALL.
- THE GROUND UNDER THE PAD SHALL BE LEVEL AND THOROUGHLY COMPACTED.
- INSTALL CONDUITS FOR THE PRIMARY CABLE IN THE CENTER OF THE DESIGNATED PRIMARY CABLE AREA AS SHOWN ON DWG. 22.08-101I.
- CONDUITS FOR SECONDARY/SERVICE CABLES ARE TO BE CENTERED IN THE AREA SHOWN ON DWG. 22.08-101I. NO PART OF ANY CONDUIT MAY EXTEND OUTSIDE OF THE DIMENSIONS SHOWN.
- ▶ • PLACE THREE (3), FORTY (40) POUND BAGS OF CONCRETE AGAINST EACH 90° BEND CONTAINING PRIMARY CABLE AS SHOWN ON DWG. 22.08-101F TO PREVENT MOVEMENT DURING CABLE PULLING. DO NOT OPEN THE BAGS, JUST MAKE THREE CUTS ACROSS THE FRONT OF THE BAG TO ALLOW MOISTURE TO ENTER, AND PLACE THEM AGAINST THE BEND.
- ALL CONDUITS IN A PIT PAD SHALL EXTEND 6" ABOVE THE GRAVEL BED IN THE PIT.
- INSTALL PLUGS IN EACH CONDUIT TO KEEP SAND, RAIN, ETC. OUT OF THE CONDUITS. DO **NOT** GLUE THE PLUGS ONTO THE CONDUIT.

CONDUIT POSITIONING IN ABOVE-GRADE PEDESTALS

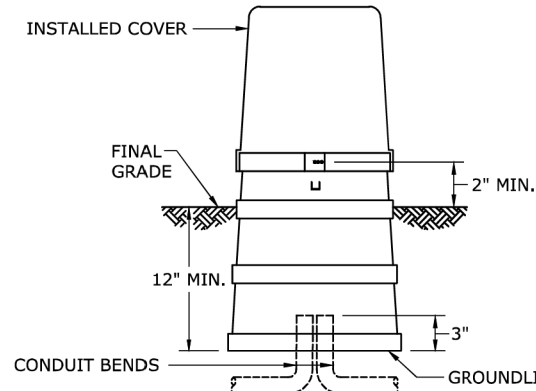


DUKE ENERGY.			
3			
2			
1	10/1/21 FLETCHER EAMES GRAYHAM		
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101J			

POSITIONING CONDUIT IN ABOVE-GRADE PEDESTALS



- SERVICE CONDUIT WILL BE 2-1/2" SCHEDULE 40 PVC OR SDR 13.5 HDPE. SECONDARY CONDUIT WILL BE 3" SCHEDULE 40 PVC OR SDR 13.5 HDPE.
- A MAXIMUM OF FOUR (4) CONDUIT BENDS MAY BE INSTALLED IN THE SMALL PEDESTAL, SIX (6) CONDUIT BENDS MAY BE INSTALLED IN THE MEDIUM PEDESTAL, AND EIGHT (8) CONDUIT BENDS MAY BE INSTALLED IN THE LARGE PEDESTAL. FOR ALL APPLICATIONS, THE TOP OF THE BENDS MUST BE BANDED TOGETHER, POSITIONED IN THE CENTER OF THE PEDESTAL AND ORIENTED AS SHOWN IN THE ABOVE DRAWINGS.
- PLACE TWO (2), FORTY (40) POUND BAGS OF CONCRETE AGAINST EACH BEND AS SHOWN ON DWG. 22.08-101F TO PREVENT MOVEMENT DURING CABLE PULLING. DO NOT OPEN THE BAGS, JUST MAKE THREE CUTS ACROSS THE FRONT OF THE BAG TO ALLOW MOISTURE TO ENTER, AND PLACE THEM AGAINST THE BEND.
- ▶ • EXTEND CONDUITS THREE (3) INCHES ABOVE THE GROUNDLINE INSIDE THE PEDESTAL BASE. SEE DRAWING BELOW.



- NO ABOVE-GROUND OBSTRUCTION SHALL BE PLACED WITHIN 3 FEET OF A PEDESTAL.
- SOIL BENEATH THE PEDESTAL BASE SHALL BE COMPACTED TO THE FIRMNESS OF UNDISTURBED EARTH AND SHALL BE FREE OF ROOTS AND OTHER ORGANIC MATERIALS.
- INSTALL PLUGS IN EACH CONDUIT TO KEEP SAND, RAIN, ETC. OUT OF THE CONDUITS. DO **NOT** GLUE THE PLUGS ONTO THE CONDUIT.

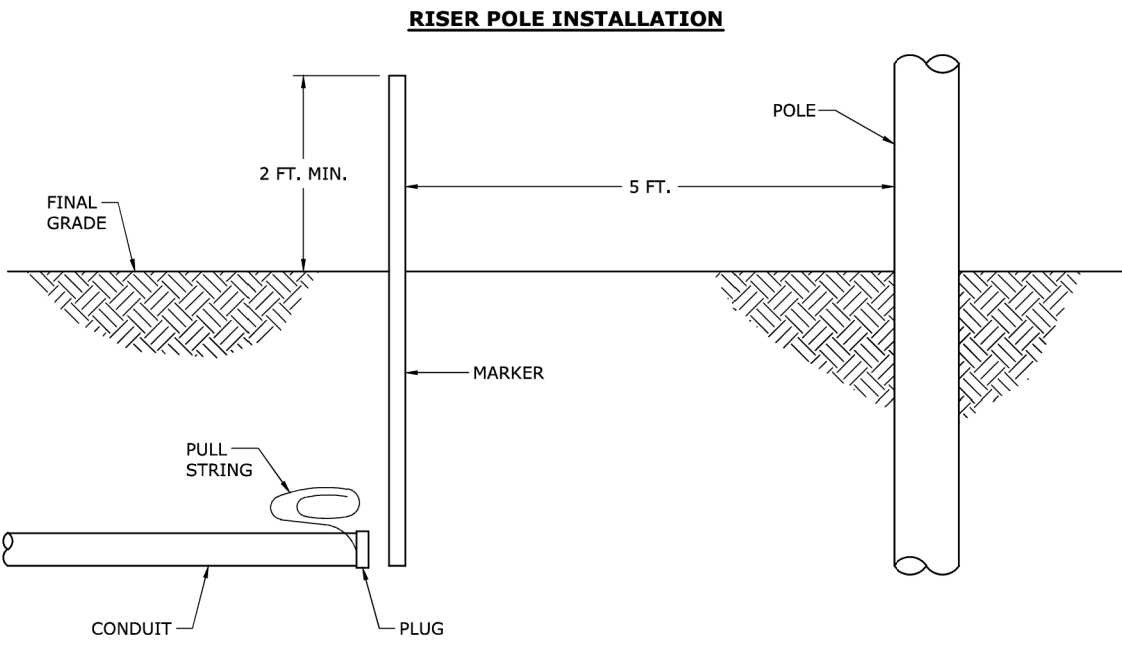
CONDUIT POSITIONING IN SWITCHGEAR

- THERE ARE TOO MANY DIFFERENT TYPES AND CONFIGURATIONS OF PAD-MOUNTED SWITCHGEAR TO LIST IN THIS DOCUMENT. DUKE ENERGY WILL PROVIDE CONDUIT PLACEMENT INFORMATION FOR THE SPECIFIC SWITCHGEAR THAT IS TO BE INSTALLED WHEN IT IS REQUIRED. NOT ALL SUBDIVISIONS WILL REQUIRE SWITCHGEAR.
- THERE SHALL BE NO ABOVE-GROUND OBSTRUCTIONS WITHIN TEN (10) FEET OF THE FRONT AND BACK OF THE SWITCHGEAR OR WITHIN THREE (3) FEET OF EACH SIDE. IF THE SWITCHGEAR HAS A CONTROL CABINET, FIVE (5) FEET OF SPACE MUST BE PROVIDED ON THE SIDE WHERE THE CABINET IS LOCATED.
- THE GROUND UNDER THE PAD SHALL BE LEVEL AND THOROUGHLY COMPACTED.
- POSITION AND ORIENT ALL CONDUIT BENDS AS DIRECTED BY DUKE ENERGY. PLACE THREE (3), FORTY (40) POUND BAGS OF CONCRETE AGAINST EACH 90° BEND AS SHOWN ON DWG. 22.08-101F TO PREVENT MOVEMENT DURING CABLE PULLING. DO NOT OPEN THE BAGS, JUST MAKE THREE CUTS ACROSS THE FRONT OF THE BAG TO ALLOW MOISTURE TO ENTER, AND PLACE THEM AGAINST THE BEND.
- EXTEND CONDUITS SIX (6) INCHES ABOVE THE LEVEL OF THE SOIL IN THE BOTTOM OF THE PIT PAD.
- INSTALL PLUGS IN EACH CONDUIT TO KEEP SAND, RAIN, ETC. OUT OF THE CONDUITS. DO **NOT** GLUE THE PLUGS ONTO THE CONDUIT.

DUKE ENERGY.			
3			
2			
1	10/1/21 FLETCHER EAMES GRAYHAM		
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101K			

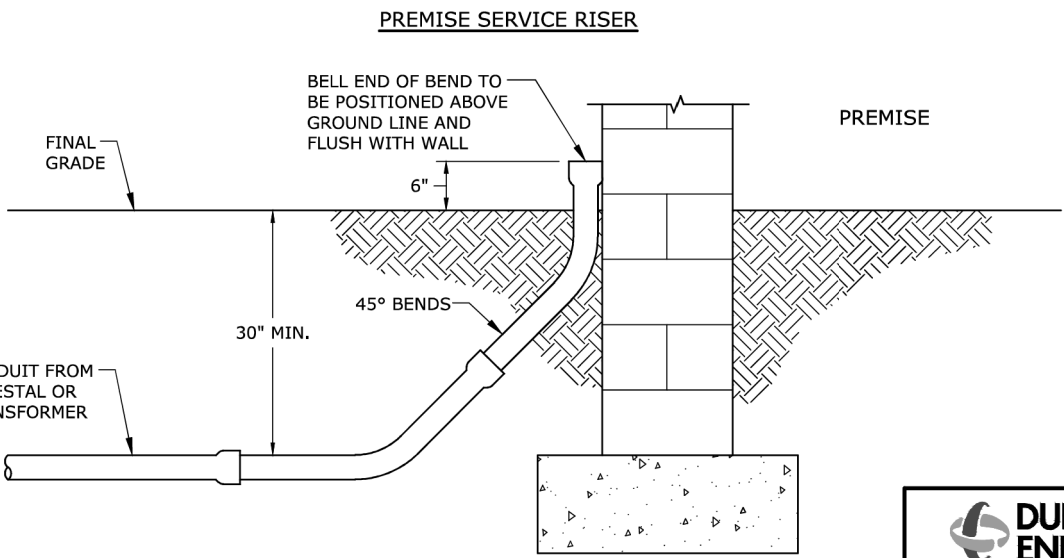
CONDUIT POSITIONING AT RISERS

- DUKE ENERGY WILL STAKE THE EXACT LOCATION OF THE POLE RISER.
- STOP THE CONDUIT FIVE (5) FEET FROM THE POLE.
- A MINIMUM OF FIVE (5) FEET OF PULL STRING MUST EXTEND OUT OF THE CONDUIT AND BE PLACED IN A COIL AT THE END OF THE CONDUIT.
- PLACE A PLUG ON THE END OF THE CONDUIT BUT DO NOT CEMENT THIS PLUG TO THE BEND.
- PLACE A MARKER (A PIECE OF CONDUIT FOR EXAMPLE) AT THE END OF THE CONDUIT THAT WILL EXTEND ABOVE FINAL GRADE A MINIMUM OF TWO (2) FEET.



CONDUIT POSITIONING AT PREMISE RISERS

- THE TOP OF THE CONDUIT BEND MUST BE IN CONTACT WITH THE PREMISE.
- EXTEND CONDUIT SIX (6) INCHES ABOVE FINAL GRADE OF THE SOIL.
- THE PULL STRING MUST EXTEND A MINIMUM OF FOUR (4) FEET OUTSIDE OF THE CONDUIT.
- INSTALL A PLUG ON THE CONDUIT TO KEEP DIRT, RAIN, ETC. OUT OF THE CONDUIT. DO **NOT** GLUE THE PLUG ONTO THE CONDUIT.



DUKE ENERGY.			
3			
2			
1			
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101L			

CONDUIT POSITIONING IN PULLBOXES

PULLBOXES ARE BELOW-GRADE ENCLOSURES USED TO FACILITATE THE INSTALLATION OF CABLE IN CONDUIT SYSTEMS.

DUKE ENERGY WILL:

- PROVIDE AND INSTALL ALL REQUIRED PULLBOXES.
- STAKE THE LOCATION WHERE ALL PULLBOXES ARE TO BE INSTALLED.
- PROVIDE THE DIMENSIONS OF ALL PULLBOXES.
- IDENTIFY THE NUMBER, SIZE, LOCATION AND ORIENTATION OF ALL CONDUIT/BENDS ENTERING OR EXITING EACH PULLBOX.

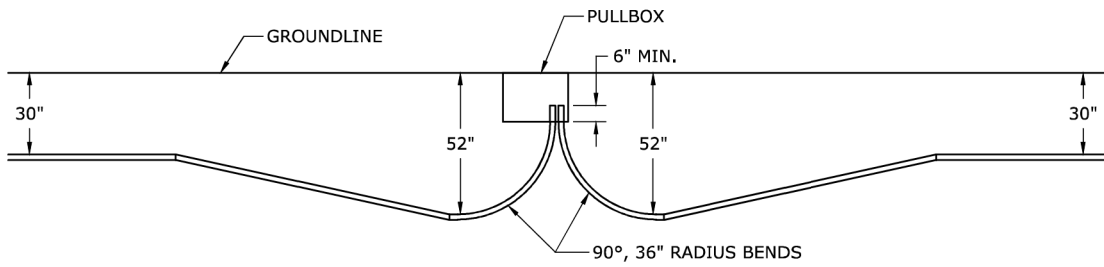
1. NON-CONCRETE PULLBOXES

DUKE ENERGY USES SEVERAL SIZES OF NON-CONCRETE PULLBOXES AS LISTED IN THE TABLES BELOW. LARGER SIZES, SUCH AS 4" X 8", ARE OCCASIONALLY ORDERED FOR PRIMARY CABLE APPLICATIONS. DUKE ENERGY WILL PROVIDE AND INSTALL ALL NON-CONCRETE PULLBOXES. THE CUSTOMER WILL TERMINATE THE CONDUIT SYSTEM AS REQUIRED BELOW SO DUKE ENERGY WILL BE ABLE TO INSTALL THESE PULLBOXES.

DUKE ENERGY CAROLINAS NON-CONCRETE PULLBOXES		
WIDTH (W)	LENGTH (L)	DEPTH (D)
11" ROUND	-	18"
13"	24"	18"
17"	30"	18"
24"	36"	18"
30"	60"	30"

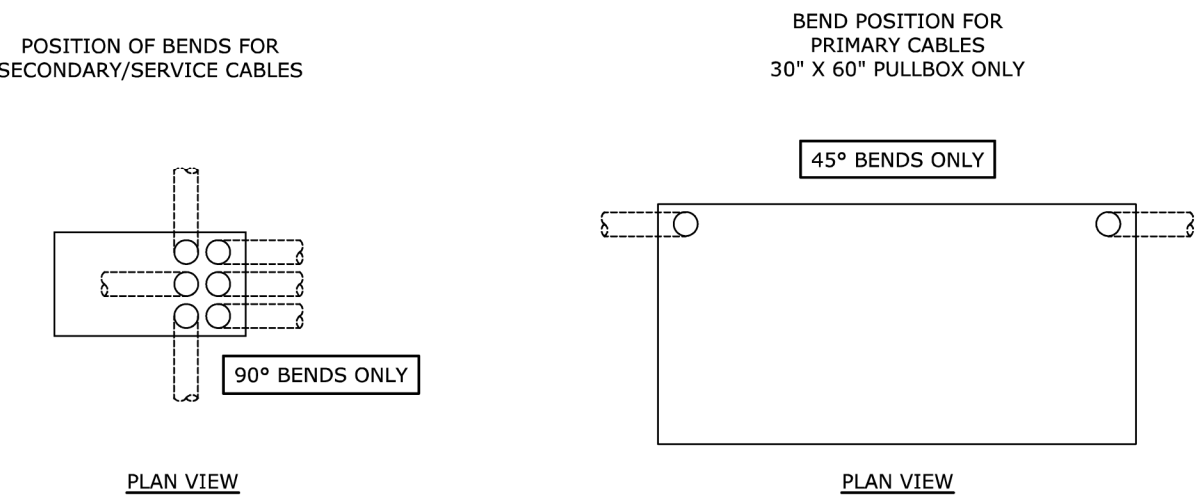
DUKE ENERGY PROGRESS NON-CONCRETE PULLBOXES		
WIDTH (W)	LENGTH (L)	DEPTH (D)
11" ROUND	-	18"
13"	23"	15"
30"	48"	18"

- DUKE ENERGY WILL STAKE THE LOCATION OF EACH PULLBOX, IDENTIFY THE PULLBOX SIZE THAT WILL BE USED, AND PROVIDE THE NUMBER, SIZE, POSITION AND ORIENTATION OF EACH BEND THAT WILL BE INSTALLED IN THE PULLBOX.
- EXCAVATE AN AREA APPROXIMATELY TEN (10) INCHES GREATER THAN THE OUTSIDE LENGTH AND WIDTH OF THE PULLBOX BEING INSTALLED AND TO THE DEPTH OF THE PULLBOX. THE GROUND UNDER THE PULLBOX SHALL BE PARALLEL TO THE GROUNDLINE OUTSIDE THE PULLBOX AND THOROUGHLY COMPACTED.
- SLOPE THE DEPTH OF EACH CONDUIT CONTAINING SECONDARY/SERVICE CABLE THAT WILL ENTER OR LEAVE THE PULLBOX FROM THE NORMAL BURIAL DEPTH OF 30" TO A DEPTH OF 52" TO ALLOW BENDS TO BE PROPERLY POSITIONED BELOW THE PULLBOX. THIS SLOPE SHOULD BEGIN ABOUT TEN (10) FEET AWAY FROM THE PULLBOX. THE CONDUIT DOES NOT HAVE TO BE SLOPED WHEN INSTALLING PRIMARY CABLE IN THE 30" X 60" X 30" PULLBOX.



DUKE ENERGY.			
3			
2			
1			
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101M			

- INSTALL THE CONDUIT AND ALL REQUIRED BENDS WITH THE BENDS POSITIONED AND ORIENTED AS DESCRIBED BY THE DUKE ENERGY DESIGNER. THE TOP OF ALL BENDS MUST EXTEND SIX (6) INCHES ABOVE THE GROUNDLINE INSIDE THE PULLBOX. BENDS FOR SECONDARY/SERVICE CABLE WILL ALL BE POSITIONED ON ONE END OF THE PULLBOX. BENDS FOR PRIMARY CABLE WILL BE POSITIONED ON OPPOSITE ENDS OF ONE SIDE OF THE PULLBOX. 90° BENDS WILL BE USED FOR SECONDARY/SERVICE CABLES AND 45° BENDS WILL BE USED FOR PRIMARY CABLE.



THESE DRAWINGS ARE EXAMPLES OF ONE POSSIBLE APPLICATION. REFER TO THE JOB DRAWING FOR ACTUAL INSTALLATIONS.

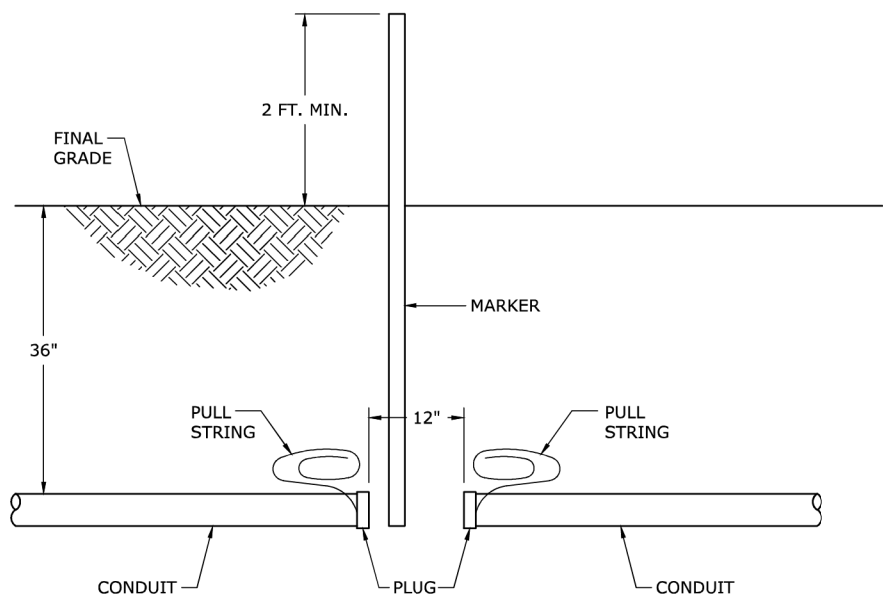
- WHEN MULTIPLE BENDS ARE POSITIONED TOGETHER, THEIR TOPS MUST BE FIRMLY BANDED TOGETHER IN THE PROPER CONFIGURATION.
- THE TOP OF EACH BEND IN THE PULLBOX MUST BE COLOR CODED AS DESCRIBED ON DWG. 22.08-101F.
- ▶ • PLACE TWO, FORTY (40) POUND BAGS OF CONCRETE AGAINST EACH 90° BEND CONTAINING SECONDARY/SERVICE CABLE AND THREE, FORTY (40) POUND BAGS AGAINST EACH 90° BEND CONTAINING PRIMARY CABLE AS SHOWN ON DWG. 22.08-101F TO PREVENT MOVEMENT DURING CABLE PULLING. DO NOT OPEN THE BAGS, JUST MAKE THREE CUTS ACROSS THE FRONT OF THE BAG TO ALLOW MOISTURE TO ENTER.
- A SHORT PIECE OF CONDUIT, LONG ENOUGH TO REACH ONE (1) FOOT ABOVE GROUND, MUST BE ATTACHED TO EACH BEND IN THE PULLBOX. THESE PIECES OF CONDUIT MUST NOT BE CEMENTED TO THE BENDS. THE PULL STRING FOR EACH CONDUIT SEGMENT (TRANSFORMER TO PEDESTAL, PEDESTAL TO SERVICE RISER, ETC.) MUST PASS THROUGH THESE CONDUIT PIECES AND EXTEND A MINIMUM OF 36" BEYOND THEIR END. INSTALL A PLUG IN EACH CONDUIT TO KEEP SAND, RAIN, ETC. OUT OF THE CONDUIT. DO NOT CEMENT THESE PLUGS INTO THE CONDUIT.
- FILL THE HOLE WITH SOIL TO PREVENT THIS FROM BEING A SAFETY HAZARD. DUKE ENERGY WILL REMOVE THE SOIL WHEN THE PULLBOX IS INSTALLED.

DUKE ENERGY.			
3			
2			
1	10/1/21 FLETCHER EAMES GRAYHAM		
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101N			

1. LARGE CONCRETE PULLBOXES

DUKE ENERGY USES A 56" X 96" X 44" CONCRETE PULLBOX.

- DUKE ENERGY WILL STAKE THE EXACT LOCATION OF THE PULLBOX.
- CREATE A ONE (1) FOOT GAP IN THE CONDUIT IN THE CENTER OF THE PULLBOX LOCATION AS SHOWN BELOW.
- A MINIMUM OF FIVE (5) FEET OF PULL STRING MUST EXTEND OUT OF THE CONDUIT AND BE PLACED IN A COIL AT THE END OF THE CONDUIT.
- PLACE A PLUG ON THE END OF THE CONDUIT BUT DO NOT CEMENT THIS PLUG TO THE CONDUIT.
- PLACE A MARKER (A PIECE OF CONDUIT FOR EXAMPLE) AT THE GAP BETWEEN THE ENDS OF THE CONDUIT THAT WILL EXTEND A MINIMUM OF TWO (2) FEET ABOVE GRADE.



DUKE ENERGY.			
3			
2			
1			
0	4/26/21 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101O			

CLEARANCES

SEPARATION MUST BE MAINTAINED BETWEEN CONDUITS INSTALLED FOR DUKE ENERGY AND OTHER CABLES, PIPES OR STRUCTURES AS SHOWN IN THE FOLLOWING TABLE AND DRAWINGS.

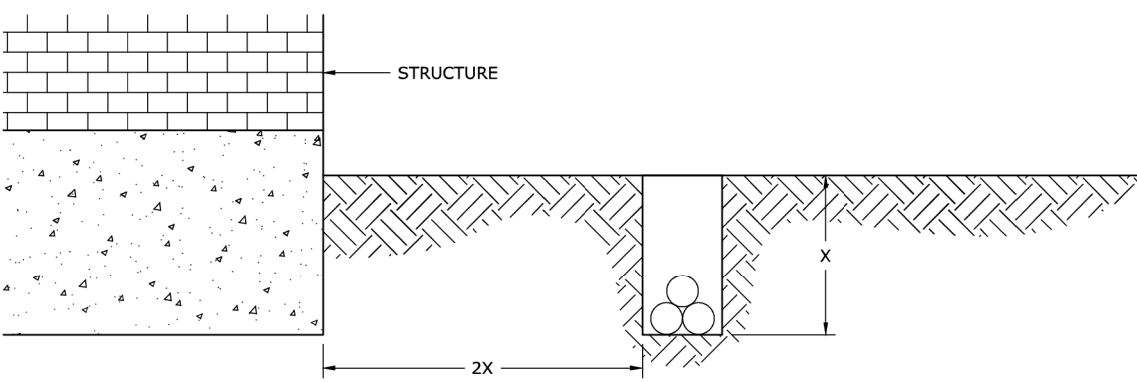
PRIMARY OR SECONDARY CABLES IN A CONDUIT SYSTEM			
PARALLELING	HORIZONTAL SEPARATION (IN)	CROSSING	VERTICAL SEPARATION (IN) (SEE NOTE 2)
COMMUNICATION LINES	12	COMMUNICATION LINES	12
WATER LINES	36	WATER LINES	12
SEWER LINES	36	SEWER LINES	12
FUEL LINES	36	FUEL LINES	12
STEAM LINES	60	STEAM LINES	36
CUSTOMER-OWNED CABLES	36	CUSTOMER-OWNED CABLES	12
IN-GROUND SWIMMING POOL	60	IN-GROUND SWIMMING POOL	N/A

NOTES:

- THE HORIZONTAL AND VERTICAL SEPARATION SHOULD BE ADEQUATE TO PERMIT ACCESS AND MAINTENANCE OF EITHER FACILITY TO LIMIT DAMAGE TO THE OTHER. THE DISTANCES SHOWN IN THE TABLE ABOVE HAVE BEEN FOUND TO MEET THESE CRITERIA.
- VERTICAL SEPARATION MUST BE SUFFICIENT TO LIMIT THE LIKELIHOOD OF DETRIMENTAL LOAD BEING TRANSFERRED TO EITHER OF THE UTILITIES OR STRUCTURES INVOLVED. THE DISTANCES SHOWN IN THE ABOVE TABLE HAVE BEEN FOUND TO MEET THESE CRITERIA.
- CONTACT DUKE ENERGY WHEN DIMENSIONAL VARIANCES ARE REQUIRED.

DUKE ENERGY.			
3			
2			
1			
0	7/1/23 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101P			

INSTALLING UNDERGROUND CABLES PARALLEL TO STRUCTURES

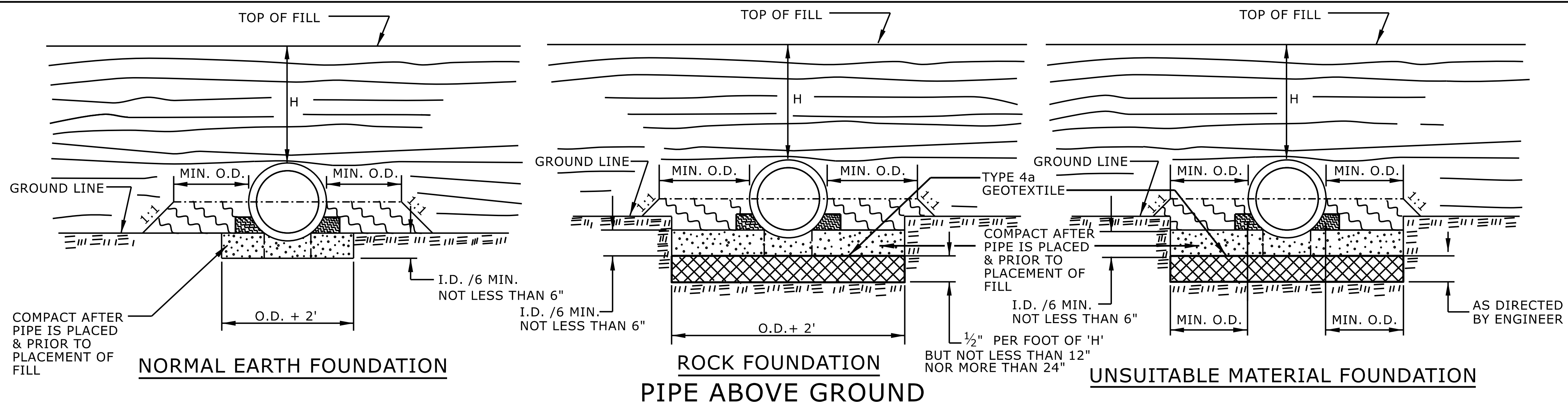
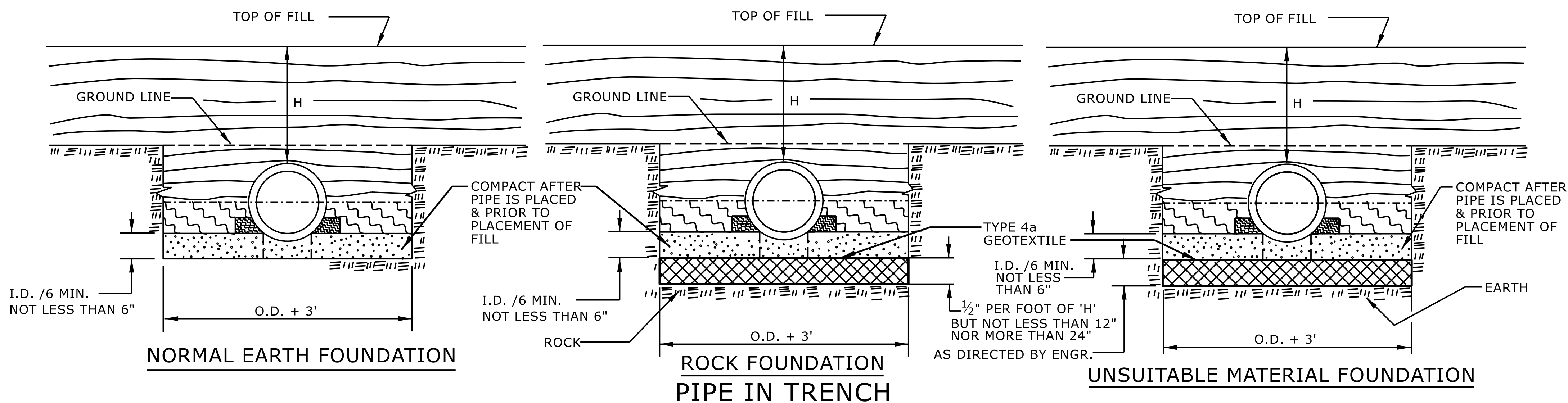


NOTES:

- WHEN INSTALLING UNDERGROUND CABLE PARALLEL TO EXISTING STRUCTURES, OR THOSE THAT ARE UNDER CONSTRUCTION, IT IS NECESSARY TO MAINTAIN ADEQUATE CLEARANCE FROM THOSE STRUCTURES. THIS CLEARANCE IS NECESSARY TO MAINTAIN THE INTEGRITY OF THE SOIL, AND THE SUPPORT PROVIDED BY THE SOIL, UNDER THE FOUNDATION OF THE STRUCTURE.
- UNDERGROUND FACILITIES INSTALLED PARALLEL TO A STRUCTURE SHOULD BE LOCATED AT LEAST TWICE AS FAR AWAY FROM THE STRUCTURE AS THE DEPTH OF THE TRENCH THAT IS DUG. FOR EXAMPLE, IF A TRENCH IS TO BE TWO (2) FEET DEEP, THEN THE TRENCH MUST BE LOCATED AT LEAST FOUR (4) FEET AWAY FROM THE STRUCTURE.
- THIS REQUIREMENT DOES NOT APPLY TO CABLE THAT IS NOT INSTALLED PARALLEL TO A STRUCTURE.
- ON INSTALLATIONS WHERE THE CABLE CANNOT BE INSTALLED TWICE AS FAR FROM THE FOUNDATION AS THE CABLE IS DEEP, THE SOIL MUST BE COMPACTED THROUGHOUT THE ENTIRE TRENCH DEPTH TO 100% OF THE ORIGINAL SOIL DENSITY IN ALL AREAS WHERE ADEQUATE SEPARATION CANNOT BE OBTAINED FROM THE FOUNDATION.

DUKE ENERGY.			
3			
2			
1			
0	7/1/23 FLETCHER EAMES GRAYHAM		
REVISED	BY CHK'D APPR.		
CUSTOMER GUIDE FOR INSTALLING CONDUIT			
DEC	DEM	SEP	DEF
X		X	
22.08-101Q			





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.

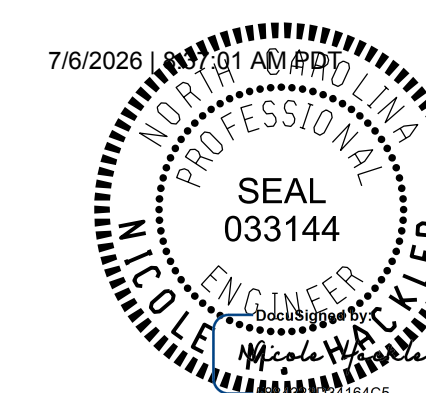
DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

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

ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE	STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
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SHEET 2 OF 2
300.01



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AND DEVELOPMENT UNIT**
919-707-6950 FAX 919-250-4

SEE TITLE BLOCK

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

PROJECT REFERENCE NO.	SHEET NO.
HN-0040	2C-3

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

ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH

PLAN VIEW

DOWNGRADE OR SAG

SAG

FLOW DIVERSION EXAMPLES

SECTION C-C

DOWN GRADE

SECTION A-A

SECTION B-B

RIP-RAP LINED DITCH

NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

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

ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH

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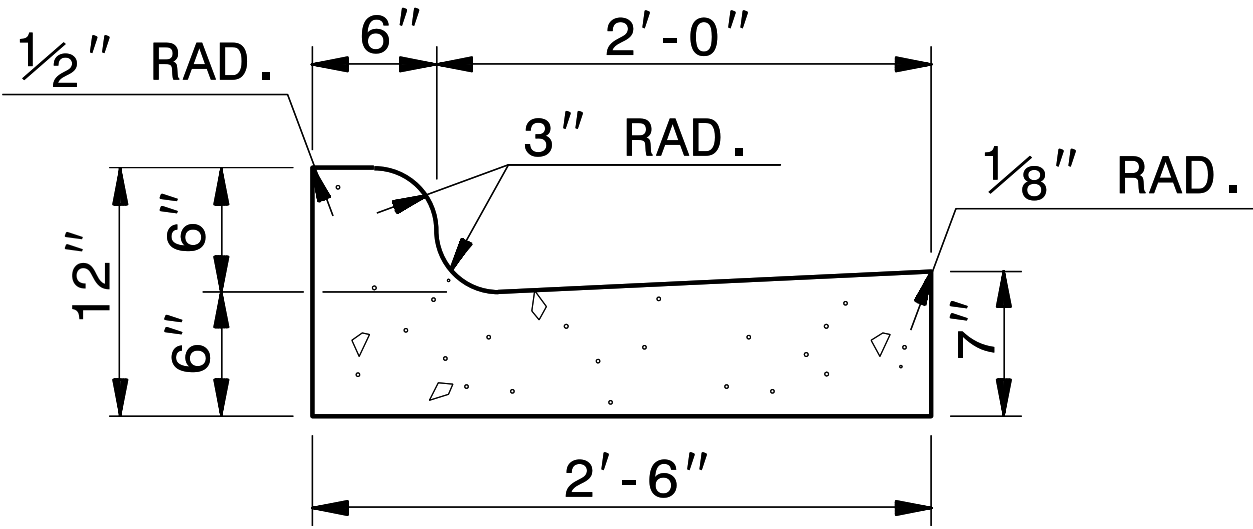
SEE PLATE FOR TITLE

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MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: DATE:
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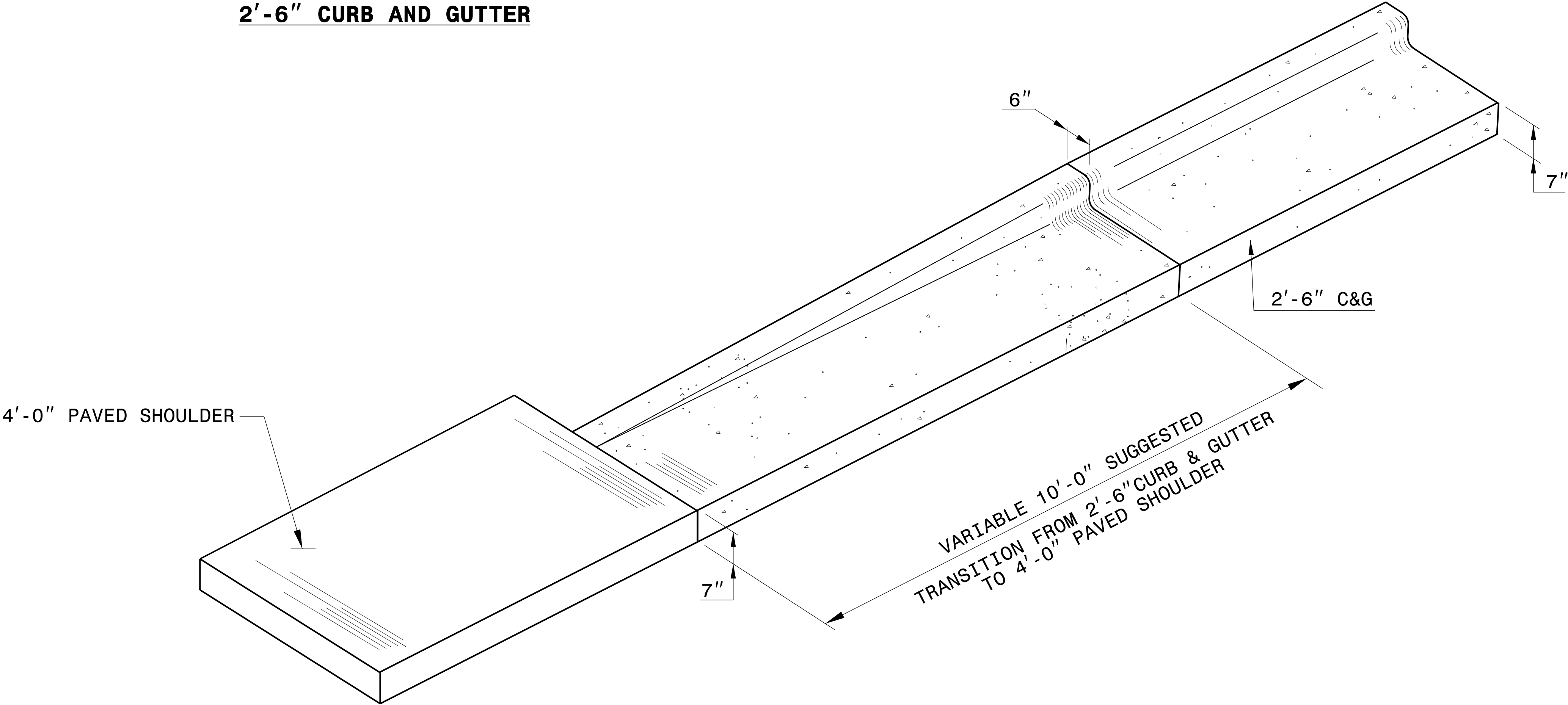
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HN-0040	2C-4

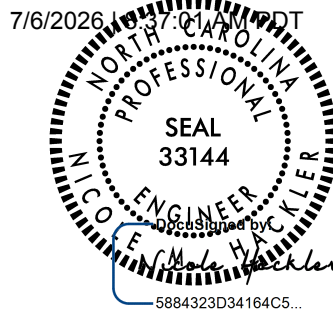
*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES



2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION



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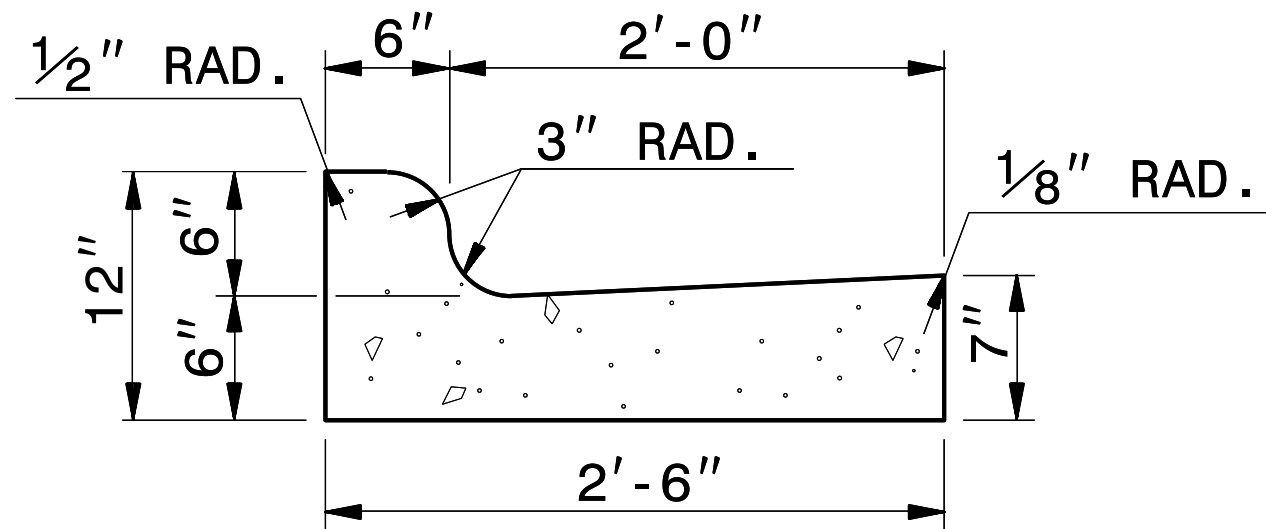
**DETAIL OF 10' TRANSITION
FROM 2'-6" CURB & GUTTER
TO 4'-0" PAVED SHOULDER**

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt DATE: 04-13-2016
CHECKED BY: _____ DATE: _____
FILE SPEC: details/nbritt/english/misc/c&g transition sections.dgn

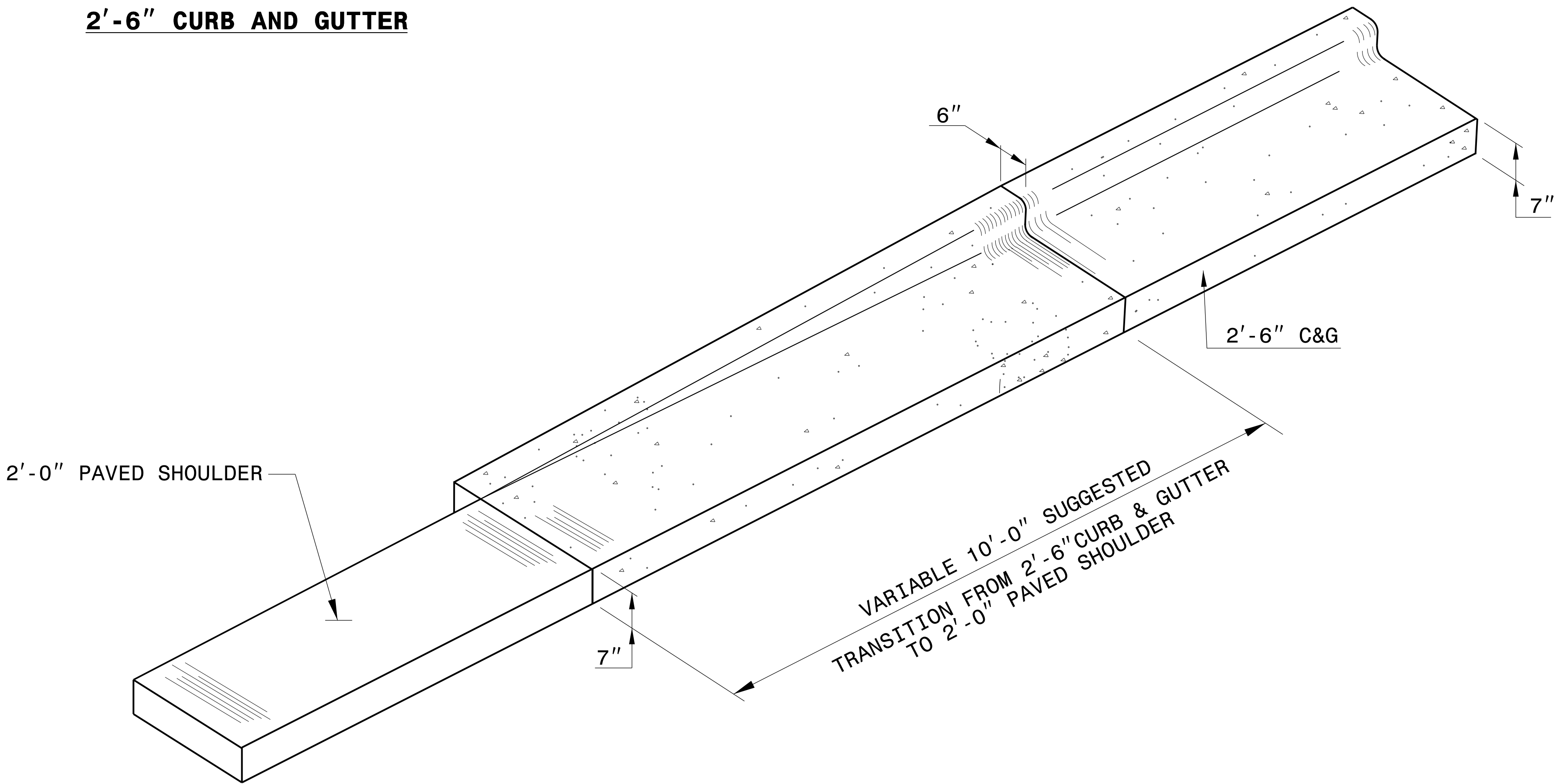
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PROJECT REFERENCE NO.	SHEET NO.
HN-0040	2C-5

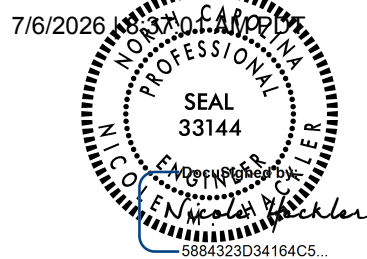
*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES



2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION



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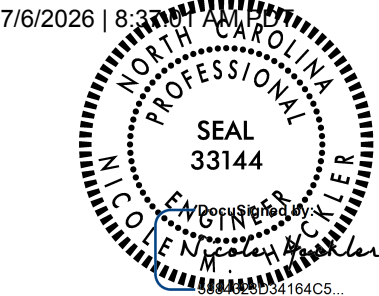
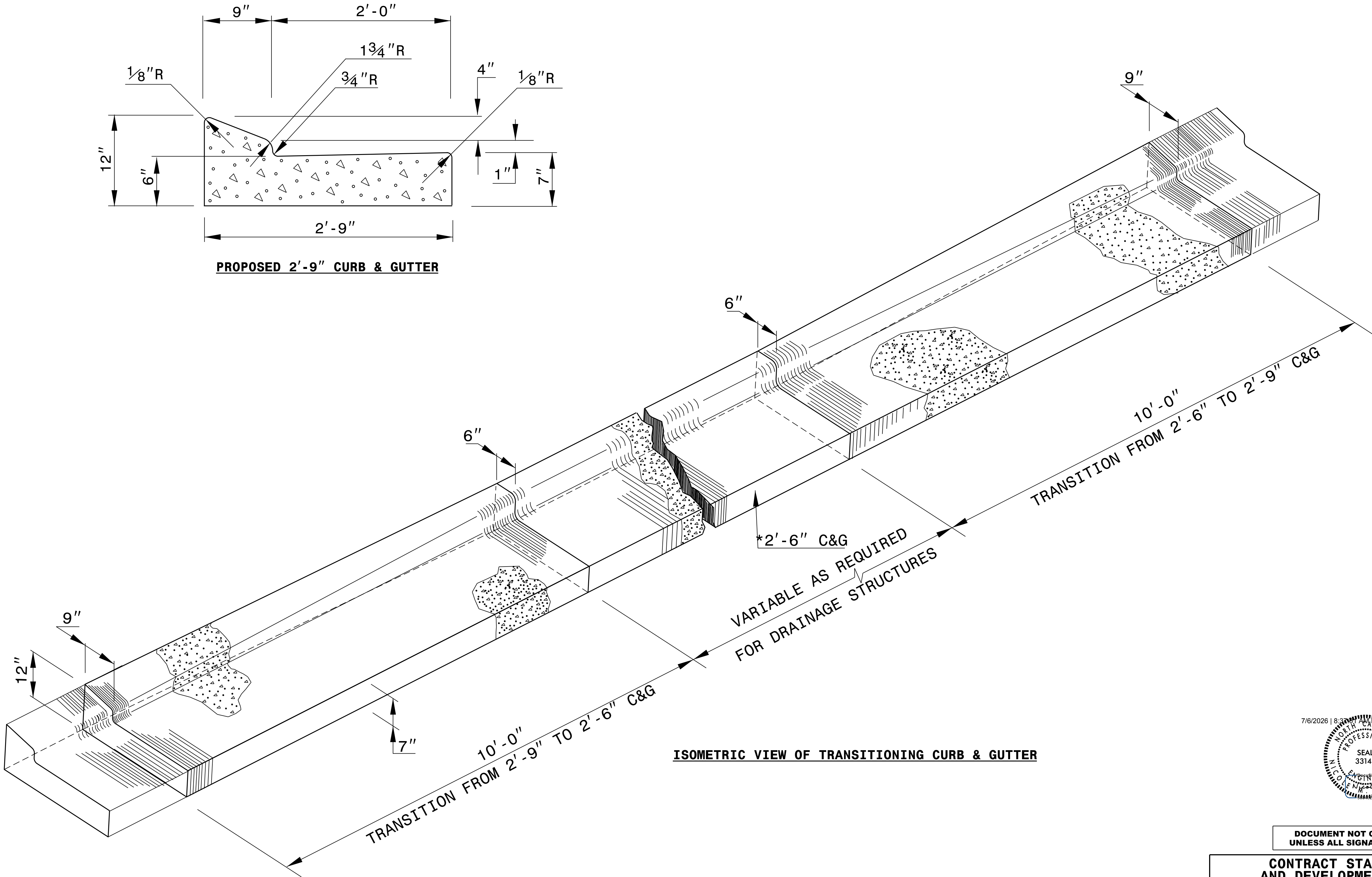
**DETAIL OF 10' TRANSITION
FROM 2'-6" CURB & GUTTER
TO 2'-0" PAVED SHOULDER**

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MODIFIED BY: rnbritt DATE: 04-13-2016
CHECKED BY: _____ DATE: _____
FILE SPEC: details/nbritt/english/misc/c&g transition sections.dgn

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PROJECT REFERENCE NO.	SHEET NO.
HN-0040	2C-6

*NOTE: SEE STD. DWG. 846.01
FOR 2'-6" CURB AND GUTTER
INFORMATION.



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DETAIL OF 2'-9" TO 2'-6" CURB & GUTTER TRANSITION SECTION	
ORIGINAL BY: _____	DATE: _____
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _DS174:/usr/details/stand/cgtransit.dgn	

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L1- STA 10+50.00	-L1- STA 18+00.00	1,014	399		
-L1- STA 20+00.00	-L1- STA 26+50.00	1,073	824		
SUBTOTALS:		2,087	1,222		865
-Y1- STA 10+50.00	-Y1- STA 14+53.68	867	253		
SUBTOTALS:		867	252		615
-Y2- STA 10+30.00	-Y2- STA 16+00.00	344	410		
SUBTOTALS:		344	410	66	
-RABT- STA 10+00.00	-RABT- STA 13+58.14	244	2,085		
SUBTOTALS:		244	2,085	1,841	
TOTALS:		3,542	3,969	1,907	1,479
MATERIAL FOR SHOULDER CONSTRUCTION			775	775	
WASTE IN LIEU OF BORROW				-1,479	-1,479
PROJECT TOTAL:		3,542	3,969	1,203	
EST. 5% REPLACE TOPSOIL ON BORROW PIT				1,263	
GRAND TOTAL:		3,542	3,969	1,263	
SAY:		3,719		1,326	

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

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

2'-9" CURB & GUTTER

IN LINEAR FEET

LINE	Station	Station	LENGTH
-L1-	17+81.49	18+55.84	79.99'
-L1-	17+99.25	18+57.48	71.85'
-L1-	19+69.29	20+98.67	146.35'
-Y1-	13+97.30	14+57.03	66.38'
-Y2-	9+97.28	11+56.68	156.28'
		TOTAL:	521'
		SAY:	530'

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L1-	11+10.66	26+50.00	CL	2295.61			
-Y1-	10+50.00	15+26.68	CL	663.93			
-Y2-	10+46.15	11+16.15	CL	18.58			
		TOTAL:	2978.12				
		SAY:	2980				

1'-6" CURB & GUTTER

IN LINEAR FEET

LINE	Station	Station	LENGTH
-RABT-	10+00.00	13+58.14	358.14'
		TOTAL:	358.14'
		SAY:	360'

2'-6" CURB & GUTTER

IN LINEAR FEET

LINE	Station	Station	LENGTH
-L1-	16+15.39	17+81.49	159.16'
-L1-	16+16.46	17+99.26	193.25'
-L1-	19+66.24	22+07.99	242.72'
-L1-	20+98.67	22+07.99	112.92'
-Y1-	12+50.00	14+90.03	253.28'
-Y1-	12+50.00	13+97.30	144.82'
-Y2-	9+90.41	12+25.00	260.91'
-Y2-	11+56.68	12+25.00	65.30'
		TOTAL:	1432'
		SAY:	1440'

HN-0040

3B-1



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SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	100
				TOTAL LF:	100

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

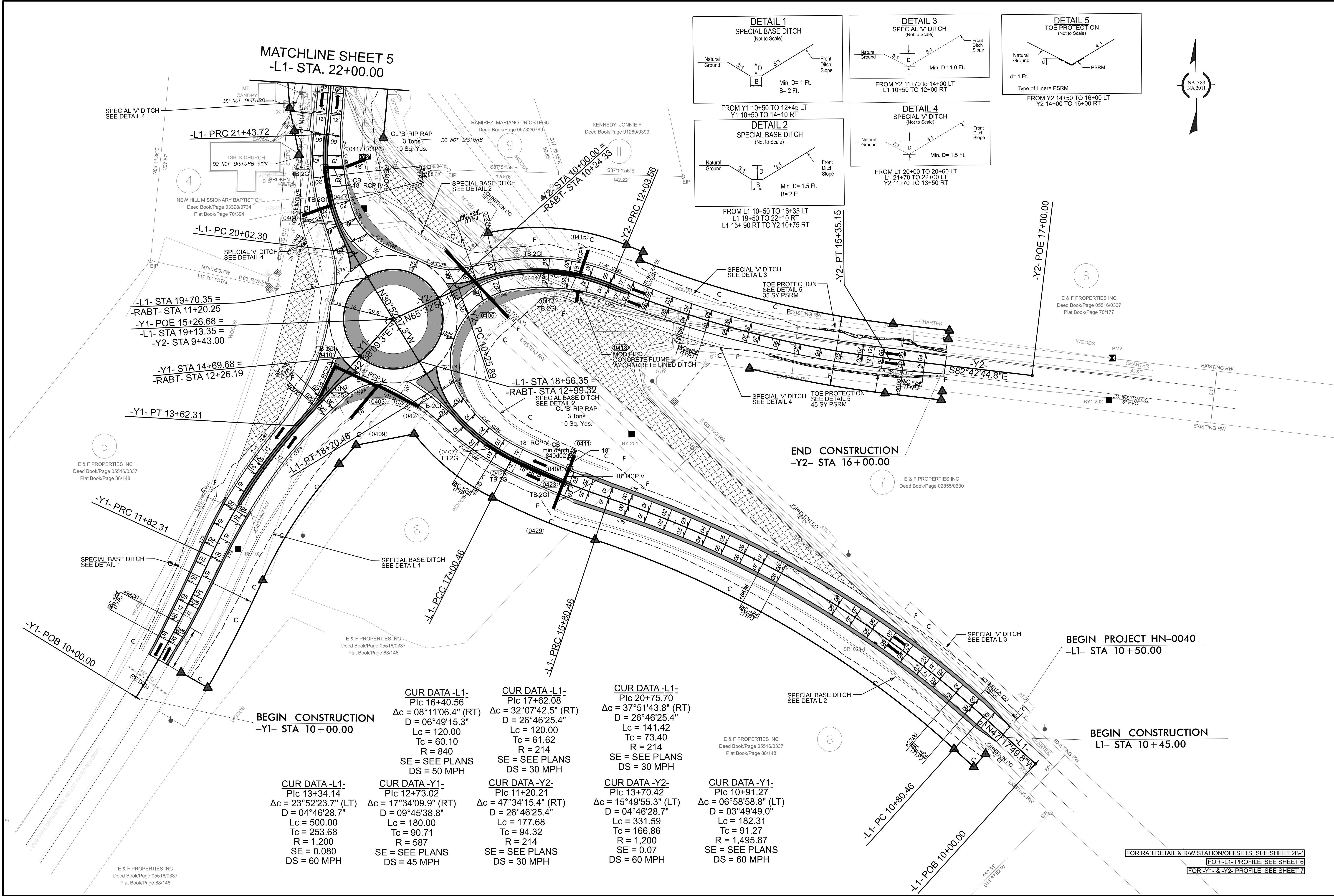
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ***PARCEL INDEX SHEET***

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11/14/23



HN-0040

04

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



ROADWAY DESIGN UNIT

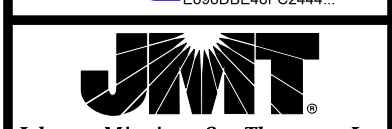
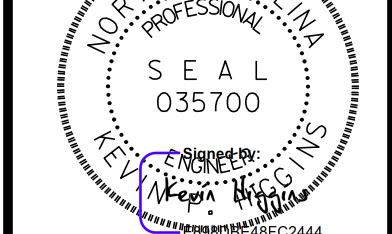
ROADWAY DESIGN
ENGINEER

7/16/2026



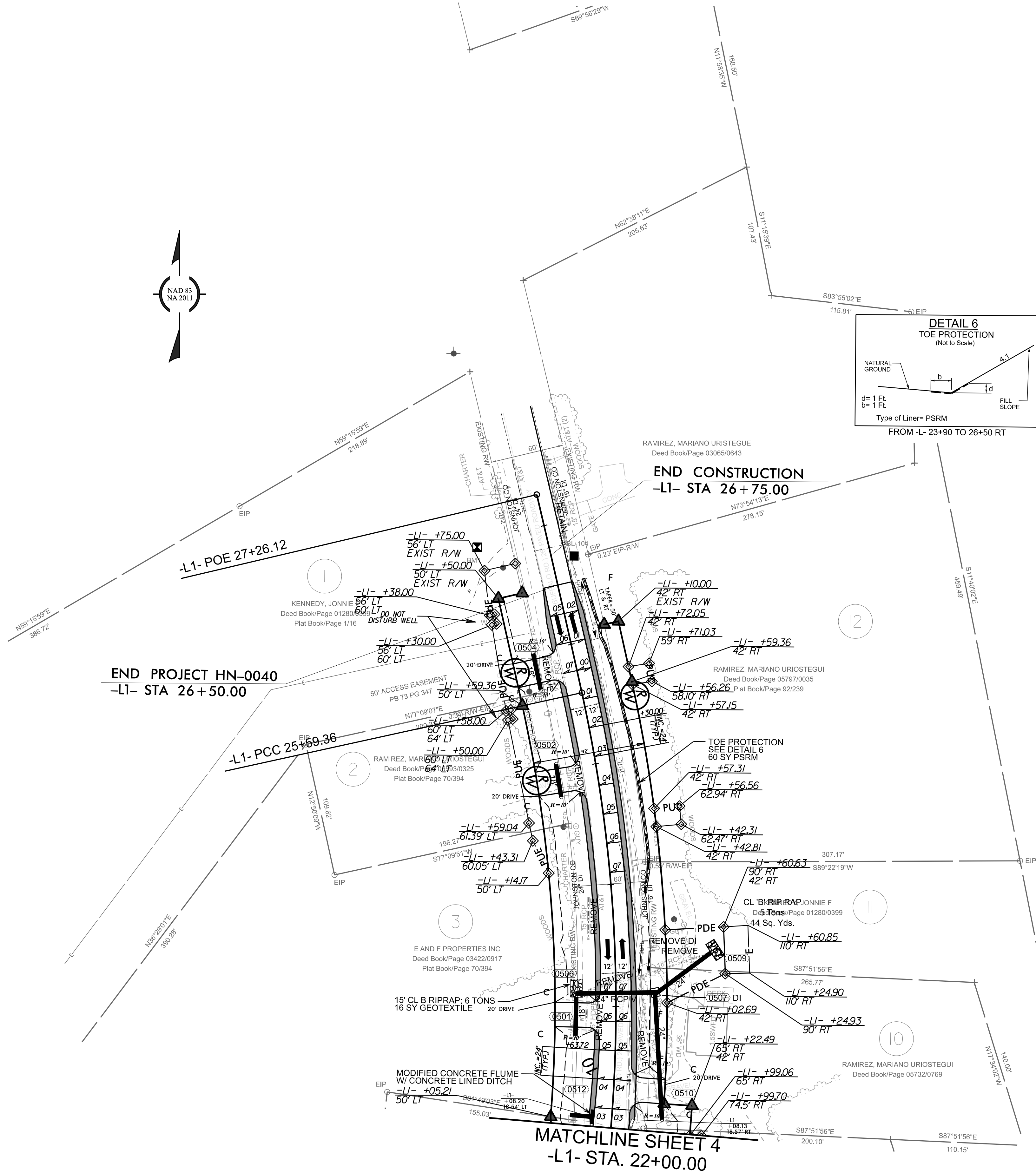
HYDRAULIC DESIGN
ENGINEER

7/14/2026



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HN-0040

05

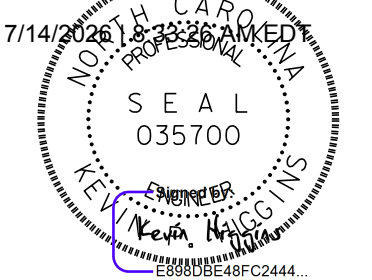
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER



HYDRAULIC DESIGN
ENGINEER

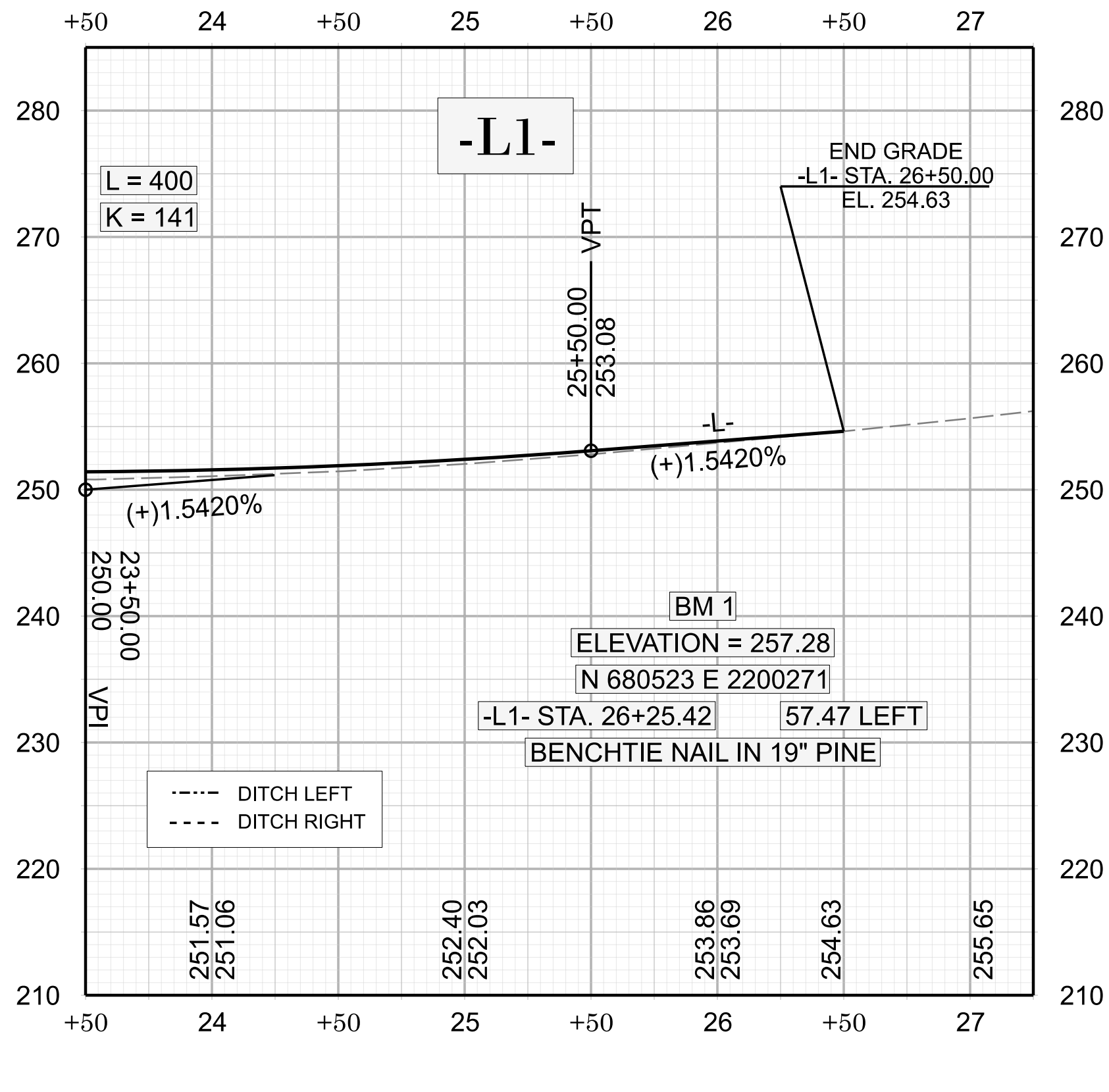
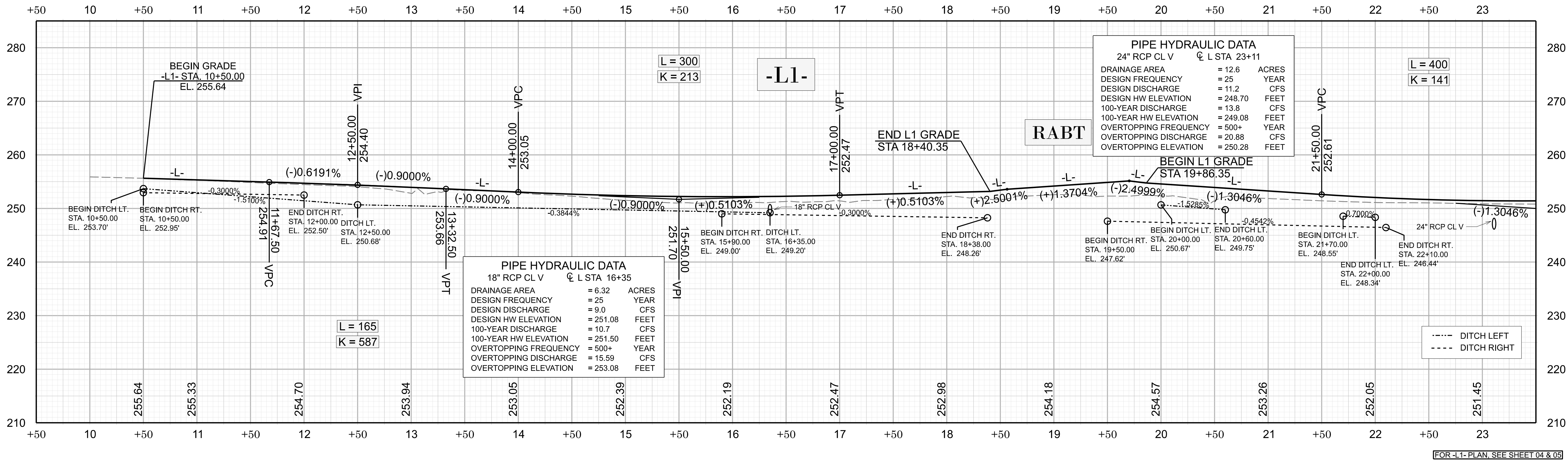


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FOR -L1- PROFILE, SEE SHEET 6

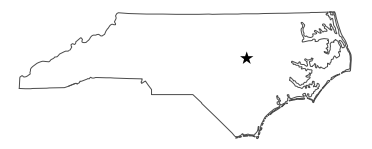
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HN-0040

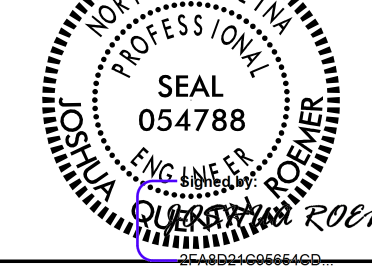
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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



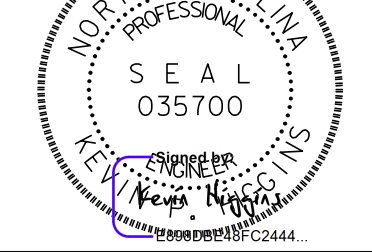
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ENGINEER

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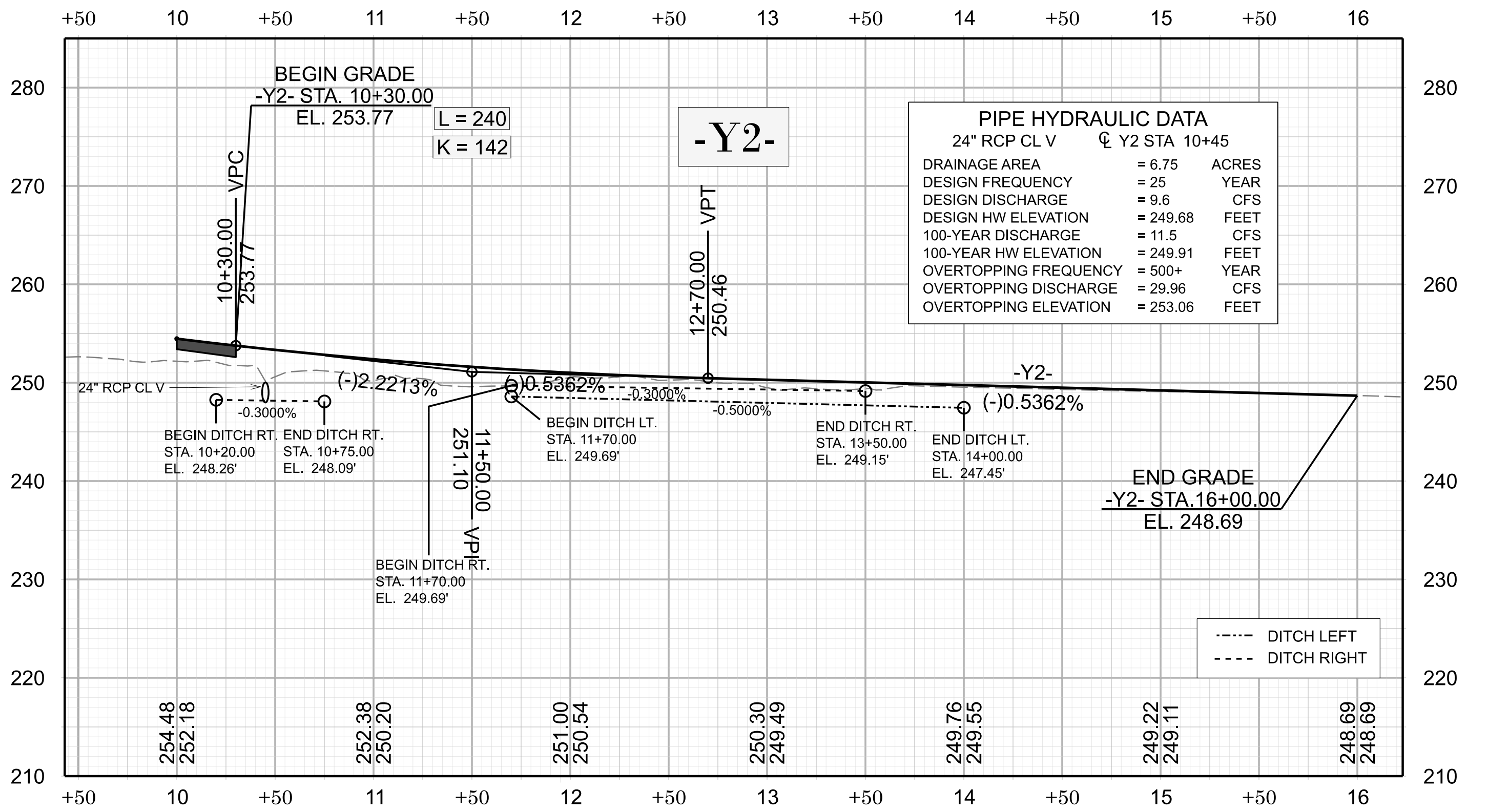
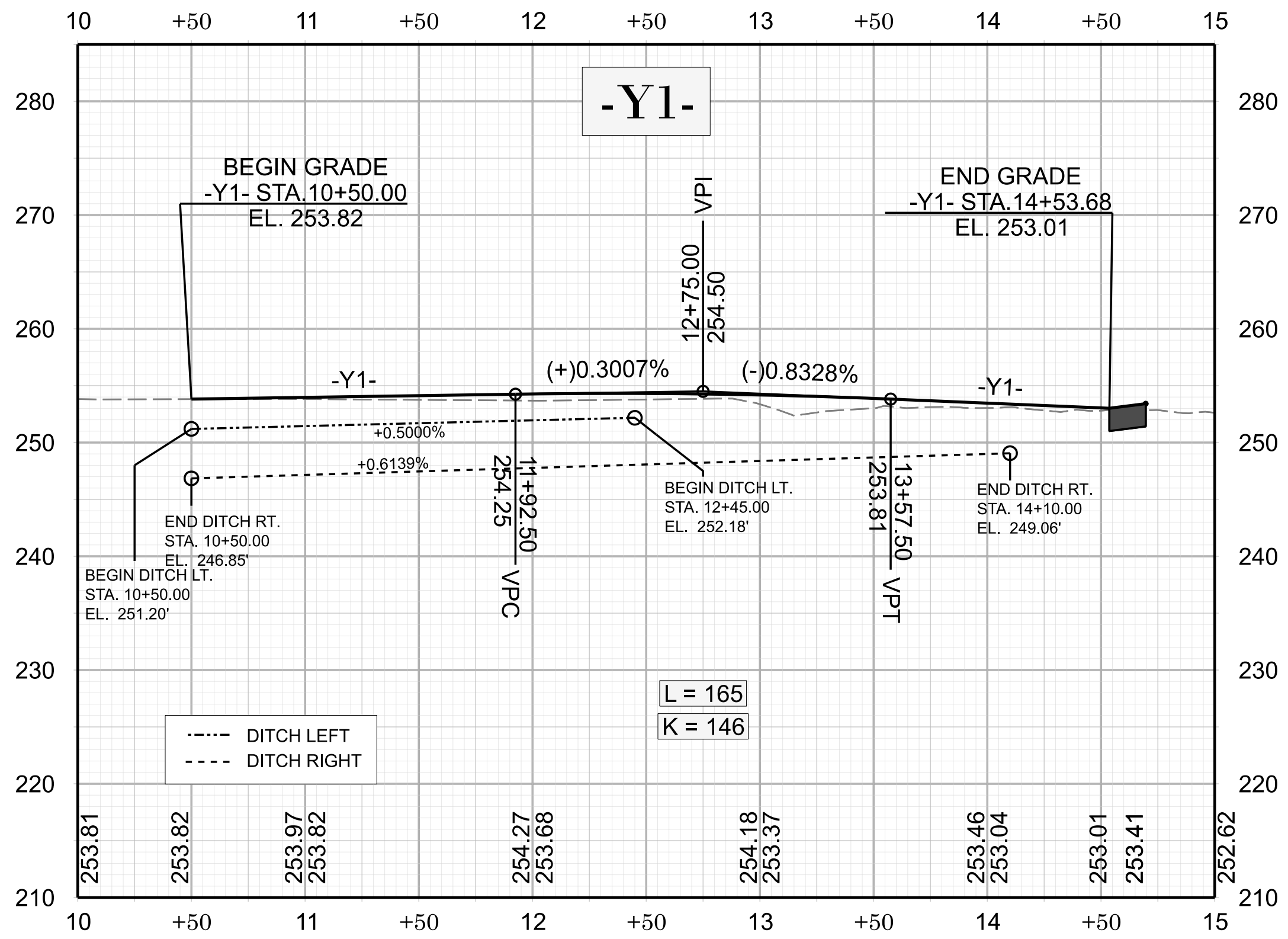
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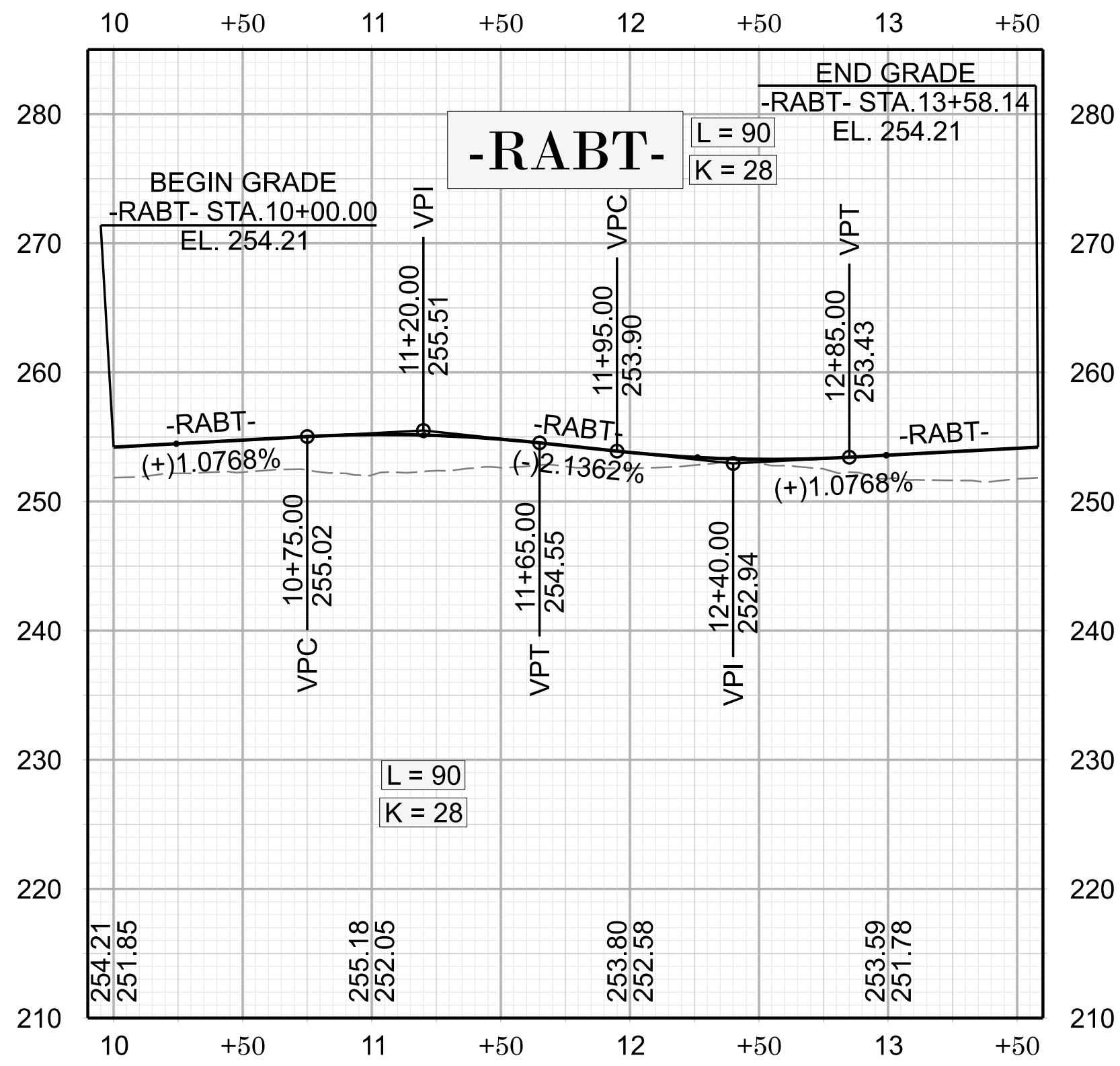


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FOR -Y1- & -Y2- PLAN, SEE SHEET 04

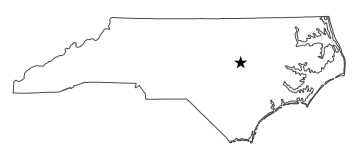


FOR -RABT- PLAN, SEE SHEET 04

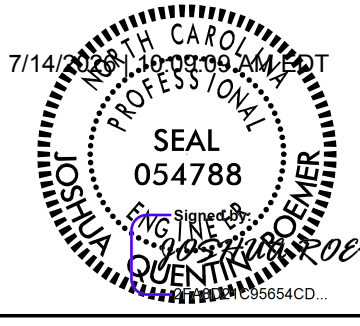
HN-0040

07

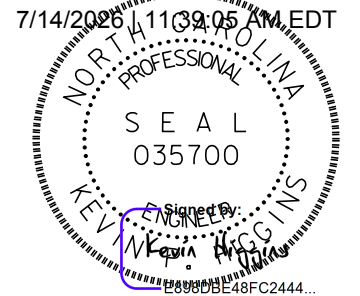
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
JOHNSTON COUNTY



ROADWAY DESIGN UNIT
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